

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



The Indian Ocean Region continues to be the centre stage of global maritime traffic providing vital maritime linkage between the west and the east. The ever increasing maritime traffic in the Region envisages that our Search and Rescue response capability too keeps pace with the escalating traffic so as to establish a robust SAR mechanism. Technological advancements in the field of Search and Rescue have immensely benefitted the SAR procedures in terms of distress transmission and reception. However, the basic concept of 'safety at sea' has remained almost unchanged as ships and aircraft are, and always will, be required to be deployed for rescuing personnel in distress.

The unfortunate incident of ditching of a Pawan Hans helo off 'Bombay High', the third aviation incident over the Indian ocean area in the last one year is an indication of the future SAR requirements. The increasing aeronautical incidents over the oceanic areas of Indian Search and Rescue Region, highlight the aeronautical dimension of the maritime SAR. I am sure that the National Aeronautical Search and Rescue Manual published by Ministry of Civil Aviation in November 2015 would further synergize aeronautical and maritime SAR to establish an effective SAR architecture over the Indian SRR.

Increasing exchange of information between neighbouring MRCCs is a positive sign towards Regional SAR cooperation, and would help cement the SAR framework in the Indian Ocean Region. National level SAR workshop and exercise (SAREX), planned in the mid of this year by the ICG would further bridge the Regional gap wherein participation of observers from IOR littorals would help understand one another's SAR procedure.

However, I must bring out that the lack of minimum life saving equipment onboard fishing boats continues to be the weakest link in the SAR mechanism directly affecting the safety of fishermen in Indian waters. Coast Guard has taken a stride forward wherein 450 lifejackets were distributed to the fishermen in Gujarat during Community Interaction programmes. Such programmes not only help sensitize the fishermen but also help spread awareness among the coastal populace. Greater participation of fishermen in SAR response at sea is indicative of growing spreading responsiveness among the fishermen. Since September last year, 57 lives have been saved at sea by fishermen that responded to distress calls by fellow fishermen.

I must also compliment the proactive support by ISRO, Airports Authority of India and DG Shipping towards training and exercise that has not only helped strengthen the SAR mechanism, but also enhanced coordination at the working level. The key for establishing a robust SAR mechanism continues to be coordination, training and commitment. I am confident that with the support of all resource agencies, the Indian Maritime SAR mechanism will continue to strengthen and render yeoman services to one and all in ISRR.

"VAYAM RAKSHAMAH"

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

New Delhi
10 Mar 16

The Indian Ocean Region continues to maintain a central and strategic position for the world maritime community and is a hub of intense global activity. The maritime trade growth not only establishes India's maritime prowess to provide security to the mariners, but also envisages a greater responsibility to be undertaken for the safety of seafarers. The concerted efforts of resource agencies, merchantmen, fishing community, and the technological advancements provided by ISRO have ensured that an effective response is initiated towards any distress within our waters.

The success of the Beacon Exercise conducted from 28-30 Dec 15 is testimony to the coordinated efforts towards an effective distress beacon management and registration. I am sure that continued coordination and support of ISRO, DG Shipping and AAI would soon yield in development of effective SAR software.

I express my gratitude to all the M-SAR resource agencies for their unstinting support to the NMSAR Board towards development of an effective SAR regime in India. I further look forward to our esteemed NMSAR Board members and their representatives for feedback and suggestions to improve upon the contents of this newsletter.



(Paritosh Pathak)
Commandant (JG)
Dy Director (Ops & SAR)

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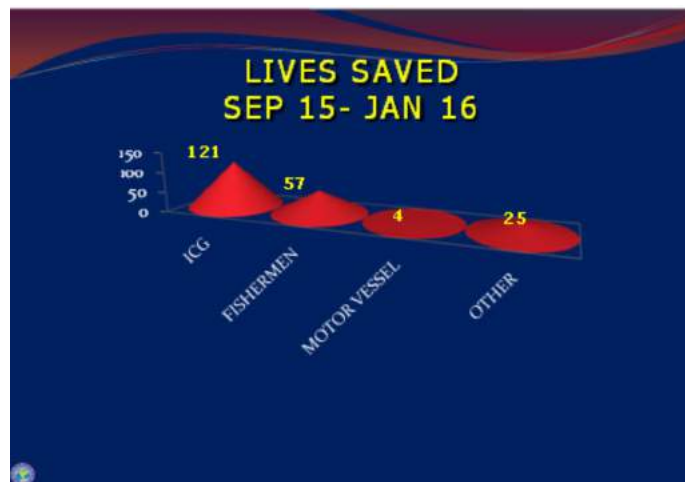
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SAR DATA

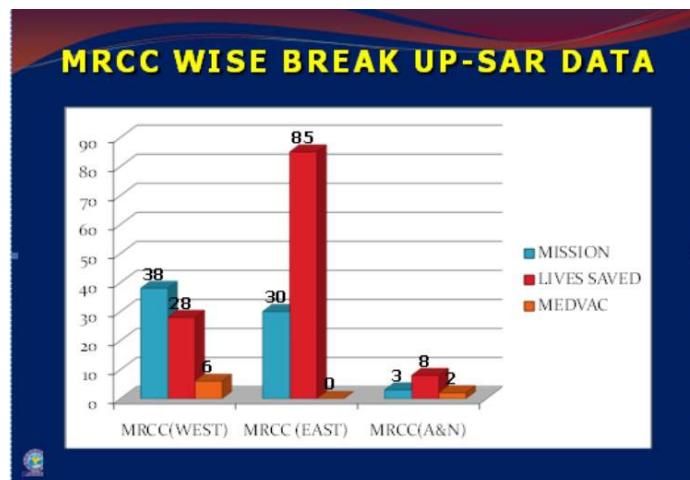
Graph below indicates number of missions, lives saved and medical evacuations undertaken by ICG.



Graph below indicates lives saved by various agencies during period Sep 15 - Jan 16.



Graph below indicates the SAR missions and lives saved under three MRCCs from Sep 15- Jan 16.



'Operation Talash' : India's Largest and Longest Maritime Search

Maritime search has and always will test the true limits of a nation's search capability. Finding a needle in a haystack perhaps would always be less daunting and preferred than a search over the vast oceanic area. The situation gets compounded when coupled with the "underwater" factor. Cut to March last year, Malaysia Airlines Flight 370, a Boeing 777-200, vanished and till date remains untraceable.

On 08 Jun 15 at 1730 hrs, CG Dornier aircraft 791 got airborne from Chennai International Airport for night surveillance and was scheduled to return at 2200 hrs. However, the aircraft went missing at about 2100 hrs with nil distress call or reported emergency onboard. What followed this fateful incident was the execution of the largest and longest ever Search and Rescue operation executed by Coast Guard code-named '**Operation Talash**'.

Over 15 surface units, six ICG aircraft, Naval ships and long range maritime surveillance aircraft were immediately deployed for the search operation.



Search and Rescue for CG Dornier

Initially, surface search was undertaken on inputs by the Trichy radar, however, subsequently, the search area was narrowed down to 70 n miles seawards but the air search area continued to extend up to 180 n miles based on inputs from Chennai ATC Radar.

What the operation brought out best was the coordination among all SAR resource agencies. In addition to Coast Guard and Navy, Indian National Centre for Ocean Information Services (INCOIS), National Remote Sensing Agency (NRSA), Hyderabad, National Institute of Ocean Technology (NIOT), Subsidiary Intelligence Bureau (SIB), Tamil Nadu and even local fishermen joined the Search Operation. Surface search module was developed by INCOIS with NRSA providing the satellite imagery of the most probable areas. Despite the untiring efforts, the surface search yielded nil success with nil debris found in the entire search area. On 12 Jun 15, the first hope of success in the form of a thin oily-sheen observed on the water surface was also short-lived as the sample was devoid of any oil derivatives. In addition to the Indian Naval Submarine, which was continuously searching the area for any underwater signal, M/s Reliance India Ltd too was approached for services of its state of art Multi Support



Underwater wreckage of CG 791

Vessel (MSV) 'Olympic Canyon'. The vessel equipped with Remotely Operated Underwater Vessel (ROV) and High Precision Acoustic Positioning Equipment (HIPAP) undertook the sub-surface search along with Indian Navy.

Naval Submarine Sindhudhwaj, Multi Support Vessel (MSV) 'Olympic Canyon' continued the underwater search with NIOT Research Vessel (RV) Sagar Nidhi providing valuable seabed profiling data. However, steep gradient of the seabed posed a major challenge in conducting the underwater search. Despite intermittent reception of sub-surface transmission a firm position could not be localized.

to locate the wreckage of the ill-fated Dornier aircraft.

Human remains and wreckage of the aircraft were recovered by Reliance's vessel 'Olympic Canyon' at a depth of 990 meters in position 17 n miles South East of Cuddalore. The recovery marked the culmination of 33 days of determined search for the ill-fated aircraft.

'Operation Talash' proved that any successful Search and Rescue mission at sea can be achieved through untiring efforts and more importantly, through coordinated efforts by all.

Search and Rescue of missing boat alongwith 06 crew.

On 02 Jul 15, Coast Guard Air Enclave (CGAE), Bhubaneswar was tasked for the search of a missing boat alongwith 06 fishermen. Despite prevailing weather conditions indicating presence of low and cumulonimbus clouds the Dornier was launched to undertake the search.



Wreckage spread over Sea Bed

It was only after 28 days and persistent efforts that the first actionable transmission from the lost Dornier was picked up by an Indian Naval submarine participating in the search efforts on 05 Jul 15. The submarine received a barrage of transmissions from a depth of 990 meters from the Sonar Locator Beacon of the missing aircraft. M/s Reliance again redeployed its MSV 'Olympic Canyon' and the position was identified. Finally after 33 days of continuous search and persistent efforts, the breakthrough came on 10 Jul 15 with MSV Olympic Canyon able



Planning Search and Rescue

Using text book search procedure and meticulous planning, the crew sighted the boat approximately 125 n miles from the coast. The

position of the boat was immediately passed to ICG Ship Rajkiran in area and the ship was subsequently vectored towards the boat. Notwithstanding the inclement weather conditions, the boat alongwith 06 fishermen was taken under tow and safely brought back to Paradip.



Search and Rescue of lives at sea

SAR of Fishing Vallam ‘Jumana’

At about 2100 hrs on 16 Aug 15, ICG Station Beypore received information from AD Fisheries, Beypore regarding overdue fishing Vallam ‘Jumana’ alongwith 03 crew.

On receipt of information, ICG Ship C-404 was deployed to undertake the search despite inclement weather. ICG Station Beypore also liaised and coordinated with Coastal Police Station Beypore for coordinated search and rescue. Marine Enforcement Wing (MEW) boat ‘Golden’ was subsequently deployed for SAR assistance.

At about 0805 hrs on 17 Aug 15, C-404 sighted the Vallam ‘Jumana’ alongwith three survivors adrift at sea view machinery failure. Due to shallow waters in area, C-404 directed MEW rescue boat ‘Golden’ to tow the disabled boat. C-404

escorted rescue boat ‘Golden’ alongwith the Vallam ‘Jumana’ and safely brought them back to Beypore Port.

Rescue of adrift FB ‘Tata’

Fishing boat ‘Tata’ with 04 crew had ventured into sea at 0600 hrs on 19 Aug 15 from Thankachimadam. At about 0715 hrs on 20 Aug 15, MRCC Chennai received information from Coastal Security Group (CSG), Chennai regarding fishing boat ‘Tata’ adrift in position 24 n miles North East of Pamban, Mandapam. The boat reported flooding in engine room and required immediate assistance.



Adrift Fishing Boat “Tata”

ICG Air Cushion Vehicle H-181 was immediately deployed by ICG Station Mandapam for SAR alongwith ICG Ship Rajkamal. ICG Ship Rajkamal arrived datum at 1015 hrs on 20 Aug 15 and the disabled boat was taken alongside. The crew observed that the engine room was flooded and the boat could not undertake de-flooding. The ship subsequently rigged up two submersible pumps and de-flooded the boat. The engine was thereafter started and the boat was safely escorted to Mandapam Anchorage.

Stranded FB 'Sri Master'

On 30 Aug 15, Coast Guard Station Karwar received information from Coastal Police Station (CPS) Udupi, Karnataka regarding adrift fishing boat 'Sri Master' alongwith 10 crew.

ICG Ship C-420 was immediately deployed at 1500 hrs on 30 Aug 15 for search of the adrift fishing boat. However, the boat could not be located. Subsequently, ICG Ship Amartya on routine patrol was diverted at 2205 hrs on 30 Aug 15. At about 0200 hrs on 31 Aug 15, the adrift fishing boat was sighted in position 22 n miles South West off Tadri Light. The boat had been adrift since 28 Aug 15 due to engine failure.



Stranded FB "Sri Master"

The boarding party of ICG Ship Amartya boarded the boat and attempted to rectify the defect. However, the engine could not be started as it had seized and was beyond repair at sea.

Local fishing boat 'Dariya Daulat' ex-Honavar was arranged by the owner of boat for towing assistance. The fishing boat alongwith 10 crew was safely towed by 'Dariya Daulat' upto Bhatkal Port under escort of ICG Ship Amartya.

Assistance to FB 'Vijaya Ragavan'

At about 0900 hrs on 03 Sep 15, Coastal Security Group (CSG), Chennai informed RHQ(E) about adrift fishing boat 'Vijaya Ragavan' in position 07 n miles South East of Porto Nova Light due to engine failure. The boat with 07 crew had ventured into the sea for fishing on 31 Aug 15 from Nagapattinam.



Adrift FB "Vijaya Ragavan"

C-414 was deployed for SAR by ICG Station Karaikal. IB arrived datum at 0945 hrs on 03 Sep 15 and took the disabled boat under tow. The boat and its 07 crew members were safely brought back to Nagapattinam and handed over to Fisheries department on 03 Sep 15.

Assistance to Adrift FB 'Laila'

At about 2130 hrs on 05 Sep 15, DHQ-07, Paradip received information from the owner of fishing boat "Laila" that the boat was adrift alongwith 08 crew. The owner intimated that the boat was in position 20 n miles South East of Paradip and required assistance.

ICG District Headquarters No. 07, Paradip deployed ICG Ship C-426 for Search and Rescue.

Technical team Ex-C-426 boarded the boat and concerted efforts were made to provide technical support. However, repairs could not be undertaken view rough sea conditions coupled with heavy swells.



SAR for Adrift FB "Laila"

Subsequently, the boat was taken under tow and C-426 shaped course to Paradip. At 1530 hrs on 06 Sep 15, C-426 alongwith distressed boat arrived off Mahanadi River Mouth. After provided food and necessary assistance to the crew, the boat along with crew was handed over to another fishing boat "Biseswara Bharasa" off fairway buoy, Paradip.

Towing assistance to FB 'Mahasakthi'

At about 0800 hrs on 30 Sep 15, Coast Guard District Headquarters No 13, Puducherry received information about adrift fishing boat 'Mahasakthi' alongwith 04 crew in position 15 n miles North East of Puducherry Light.

Interceptor Craft (IC)-120 was deployed at 0830 hrs on 30 Sep 15 for undertaking SAR Operation. The boat was located and Coast Guard technical team was embarked onboard for investigation /rectification of the broken propeller shaft. However, view non-availability of spares, the repairs could not be undertaken and the boat

alongwith crew were towed by IC-120. At 1245 hrs on 30 Sep 15 the boat was safely handed over to another fishing boat off Kalapet Harbour. Fishing boat "Mahasakthi" reached Kalapet Harbour safely.

'Operation Sahayata' - SAR for 'Pawan Hans' Helicopter off Mumbai

On 04 Nov 15 at 1931 hrs, MRCC Mumbai received one unresolved COSPAS SARSAT distress alert by Pawan Hans, Dauphin helicopter, call sign 'VT-PWF'. Simultaneously, ICG Air Station Daman telephonically intimated MRCC Mumbai that at 1955 hrs on 04 Nov 15 Coast Guard Dornier aircraft CG 764 on transit to Goa relayed a distress message, received through Rig SLQ. The rig intimated regarding crash of a Pawan Hans helicopter with 02 crew onboard in position 19 Deg 16.9 N 071 Deg 27.2E (287 Prongs Lt 79.6 nm).

Simultaneously, MRCC Mumbai contacted the M/s Pawan Hans office who confirmed that the said helicopter has ditched at sea alongwith two pilots, Captain E Samuel and Colonel (Retd) TK Guha.



SAR for "Pawan Hans" Helicopter

Primary information brought out that the helicopter had taken off from Juhu airport for the

ONGC Rig-1182 at 1615 hrs on 04 Nov 15 and landed at 1900 hrs. The helicopter again took off at 1905 hrs on 04 Nov 15 for Oil Rig Ron Tappmeyer, however, it lost communication at 1915 hrs. ICG Dornier Aircraft CG-768 on patrol was diverted for aerial search. Aircraft reached datum at 2003 hrs and established communication with rigs in area. However, no debris was sighted on the sea surface.

Considering the requirement of a coordinated search for the lost Helo, 'Operation Sahayata' was executed by Commander Coast Guard Region (West). Three Coast Guard ships were immediately diverted/ sailed towards the datum. Subsequently, MRCC Mumbai located nearby ships on SB-AIS at the site of crash and contacted TAG-VI (ONGC vessel) operating near the datum. TAG-VI reported that Samudra Sevak has recovered some floating debris. ISN was activated by MRCC (MB) requesting mariners to keep a sharp look out and render assistance.

ICG Ship SK Chauhan assumed the duties of On Scene Commander (OSC) and planned out the search area. Naval ship INS Mumbai along with 02 Immediate Support Vessels soon joined the search alongwith ONGC vessels in area. By 0600 hrs on 05 Nov 15, a total of nine ships were carrying out search in the area.

ICG Ship Vijit arrived from Porbandar with integral helicopter to have a greater radius of search. ICG Ship Achook and INS Makar also joined the operation. Meanwhile CG 853 ALH helicopter launched from ICG Ship Vijit reported sighting of floating debris in position NW of the datum.

At 1900 hrs on 05 Nov 15, ELT transmission was received by Underwater Acoustic Locator Receiver of 'MSV Samudra Sewak' in position

19 Deg 21.65 N 071 Deg 19.06 E and Fugro Mapper was diverted to undertake advance investigation/ scanning, however, nothing conclusive could be ascertained. 'Samudra Sevak' confirmed later that the transmission was received from underwater locator beacon. Seabed mapping of the area was undertaken by vessels Albatross-19 and Fugoro Mapper close to the position of reported debris without any success. Indian Navy too augmented the sub surface search by utilizing the sonars fitted onboard ships, however, the wreckage could not be located. The search continued for three more days with Indian Coast Guard, Navy and ONGC utilizing the assets in close coordination with each other.



SAR for "Pawan Hans" Helicopter

At 1219 hrs on 09 Nov 15, Fugro Mapper reported debris of 8.5 m x 2.5 m x 1.2 m dimension in position 19 deg 16.52 N 071 deg 27.52 E (Close to the last known position of ill-fated Pawan Hans). Diving was undertaken by PSV Samudra Sevak and helicopter wreckage was sighted in close proximity. On 09 Nov 15 at 1815 hrs, salvage of cockpit was carried out. The mortal remains of Captain TK Guha were also recovered by Samudra Sevak. Underwater search for Captain E Samuel was continued by vessel 'Hal Anant' and 'Samudra Sewak' using blue water acoustic cameras. ICG and

IN too continued surface search to locate Captain E Samuel, and the remaining part of the wreckage, however no further success was achieved in the operation. 'Operation Sahayata' was finally terminated on 15 Nov 15.

[Rescue of stranded FB 'St Thomas'](#)

On 08 Nov 15, MRCC Chennai received information from Commissioner, Fisheries, Chennai regarding adrift fishing boat 'St. Thomas' with 06 crew onboard. The boat had developed an engine failure in position 26.5 n miles Southwest off Chennai.

On receipt of information, ICG Ship Rani Abbakka was deployed on 09 Nov 15 for rendering assistance to the fishing boat. The ship located the boat alongwith its crew at about 2300 hrs on 09 Nov 15 and escorted it to Chennai Fisheries Harbour for handing over to AD fisheries on 10 Nov 15.

[SAR for Stranded Families in Nellore District](#)

In the early hours of 17 Nov 15, local police at Krishnapatnam intimated Indian Coast Guard Station Krishnapatnam regarding stranded families at Polam Rajugunta Aqua Farms, at Muthukur Mandal, Nellore District. The area had been flooded due to torrential rainfall in southern Andhra Pradesh for last 72 hours and the families were cut off from the main village.



Rescue Operation of Stranded Families, Nellore (AP)

ICG Station Krishnapatnam immediately mobilised the rescue team alongwith Gemini, life jackets and first aid kit. Krishnapatnam Port Authorities and local police too supported the rescue team for mobilization to the area. Upon reaching the area, it was ascertained that 13 persons including 04 women and 03 children had been stranded for over 72 hrs. Using Gemini crafts and life jackets, the Coast Guard team rescued all the stranded personnel and brought them to the place of safety.



Rescue Operation of Stranded Families, Nellore (AP)

[Rescue of Capsized FB 'Mahasakthi'](#)

At about 0830 hrs on 26 Nov 15, Kalapet Police Station Puducherry intimated Coast Guard District Headquarters (CGDHQ) No-13 regarding capsizing of a fishing boat 'Mahasakthi' with 04 fishermen onboard. The boat had capsized due to unfavourable sea conditions at about 0545 hrs on 26 Nov 15.

Coast Guard Interceptor Craft IC-119 was immediately sailed for SAR of the capsized boat and rescue of the crew. The craft arrived datum at 0900 hrs and observed that the boat had capsized in position with four crew holding on to the boat. All four crew were taken onboard and the capsized boat was towed upto Pillaichavadi near Kalapet. The crew were safely disembarked at Pillaichavadi beach area.

[SAR for FB 'Venmathi'](#)

On 27 Nov 15, Coast Guard Regional Headquarters at Chennai received an information from Coastal Security Group, Chennai regarding fishing boat 'Venmathi' alongwith 06 crew in distress. The boat was reportedly drifting in approx position 07 n miles East of Sriharikota due to engine failure.

On receipt of information, Indian Coast Guard Ship C-417 was deployed from Krishnapatnam at 0700 hrs on 27 Nov 15. In addition, ICG Ship Sarang in area was also diverted to the area for further assistance. C-417 arrived datum at 1000 hrs and sighted fishing boat 'Venmathi' anchored off Sriharikota in shallow waters. Boarding party ex-C-417 boarded the fishing boat and assessed that the ingress of water through the boat's damaged hull had resulted in main engine failure. All the 06 crew were rescued by C-417 and handed over at 1130 hrs to ICG Ship Sarang.

All 06 crew were safely handed over to the owner at 1445 hrs on 27 Nov 15. Simultaneously, another fishing boat 'Autum' was arranged by the owner of the fishing boat to tow the disabled boat.

[Search for Overdue FB 'Samson Saniya'](#)

On 29 Nov 15, Coast Guard Regional Headquarters Chennai received information from Coastal Security Group, Chennai regarding distressed fishing boat 'Samson Saniya'. The boat was reported drifting 26 n miles South East of Manapad Light due to engine failure.

Indian Coast Guard Ship Abhiraj was deployed from Tuticorin at 0900 hrs on 29 Nov 15 and arrived datum at 1420 hrs. The distressed boat was located in position 25 n miles South of Manapad Light and safely towed to Tuticorin Harbour. At

2100 hrs on 29 Nov 15, the boat alongwith crew was safely handed over to another boat off Tuticorin Harbour.

[SAR for Fishing Trawler 'Rabzsea'](#)

At about 1820 hrs on 05 Dec 15, Coast Guard District Headquarters No. 12, Kavaratti received a telephonic call from a crew onboard fishing trawler 'Rabzsea' intimating about its collision with a wreck. The trawler had collided with a wreck in position 06 n miles South West of New Mangalore light. The crew reported water ingress from aft side of the trawler and partial submerging of its engine.

On receipt of information, ICG Ship C-410 was sailed with dispatch from Mangalore at 1940 hrs on 05 Dec 15. C-410 reached datum at 2015 hrs and rescued all 05 crew. The trawler was observed to be grounded on the wreck in position with water ingress inside the trawler. The distressed trawler was towed to Mangalore harbour with the help of fishing boats arranged by the owner.

[Assistance to FB 'Priyanka'](#)

At about 1000 hrs on 12 Dec 15, Mr. Gunasekharan requested Coast Guard District Headquarters No.13, Puducherry for assistance to his fishing boat 'Priyanka'. The



Assistance to FB "Priyanka"

boat was stranded at sea due to defective gear box as a result of flooding in the engine compartment.

ICG Interceptor Craft IC-120 was deployed from Puducherry at 1100 hrs and reached datum at 1240 hrs. Coast Guard rescue and technical team embarked the fishing boat and de-flooded the engine room using submersible pump. Defect rectification was attempted by the technical team, however, due to absence of spares the same could not be undertaken at sea. Water ingress was sealed and the boat was handed over to another fishing boat arranged for towing by the owner. FB 'Priyanka' safely entered Thengaijittu Harbour the same evening.

SAR of IFB 'Bhakiyam & Chitugurvi-2'

At about 0600 hrs on 16 Dec 15, RHQ(E) Chennai, received a message from Coastal Security Group, Chennai regarding fishing boat 'Bhakiyam'. The boat alongwith five crew was in distress off Rameshwaram due to a broken crank-shaft connecting rod.

On receipt of information, ICG Station Mandapam diverted ICG Ship Rajtarang, to render assistance. At 0100 hrs on 17 Dec 15, the disabled boat alongwith crew was located 15 n miles North of Pamban Lt and subsequently taken under tow upto Mandapam. The boat was safely handed over to Indian fishing boat 'St Mary' for towing inside the fishing harbour.

Meanwhile, ICG Ship Rajtarang received another VHF distress alert from Indian fishing boat 'Chitugurvi-2' intimating flooding onboard and engine break-down. The ship immediately commenced search and located the boat at 0535 hrs on 17 Dec 15. Despite strong winds and rough seas, ship's boarding party boarded the boat

and carried out de-flooding of the engine room using submersible pumps. At 0640 hrs, the boat was fully de-flooded and subsequently handed over to another Indian fishing boat 'Arogyadas' for towing till Rameshwaram.

Assistance to adrift FB 'Raja'

At about 1400 hrs on 20 Dec 15, ICG Ship Rajtarang whilst patrolling in area, informed to RHQ(E) Chennai that an Indian fishing boat 'IFB Raja' alongwith 04 crew was adrift due to broken engine shaft in position 17 n miles South East of Kottaipattinam, Pudukottai Distt, Tamil Nadu. The boat could not communicate with other boats view non-availability of a communication set. The boat had ventured into the sea at 0800 hrs on 19 Dec 15 from Kottaipattinam and was scheduled to return at 0800 hrs on 20 Dec 15.

The disabled boat was taken under tow by ICG Ship Rajtarang and safely handed over to another fishing boat 'IFB Vijay' in position 6.4 n miles South East of Kottaipattinam at 1720 hrs for towing it till the fishing harbour.

SAR Assistance to Dhow 'MSV Sarojini'

At about 1845 hrs on 25 Dec 15, ICG Ship



Search and Rescue for Dhow "MSV Sarojini"

Samrat received a distress call from MSV Sarojini on VHF CH-16. The vessel reported flooding due to crack in the hull and was adrift in position 12.5 n miles West of Murud Lt. The water ingress had rendered the dhow unlit and adrift.

ICG Ship Samrat immediately altered course and started heading towards the position of the dhow. ICG Ship Samrat sighted 'MT Harsh Prem' 14 n miles from the dhow and requested it to head towards distress position for interim assistance. At about 2045 hrs 'MT Harsh Prem' reached area and contacted 'MSV Sarojini', however, due to shallow depth and draught constraint the vessel was unable to reach the dhow.

ICG Ship Samrat reached area at 2100 hrs and despatched safety boat for rescue of the crew ex-MSV Sarojini. International Safety Net (ISN) was activated by MRCC Mumbai and subsequently NAVAREA warning for the mariners was also issued.

At about 2200 hrs on 25 Dec 15, all 08 crew of 'MSV Sarojini' were rescued by ICG Ship Samrat and taken onboard prior handing over to ICG Ship Subhadra Kumari Chauhan. ICG Ship C-402 was also sailed from Mumbai at 0615 hrs for taking over the crew from ICG Ship Subhadra Kumari Chauhan off

Mumbai. At about 1400 hrs on 26 Dec 15 ICG Ship C-402 entered Mumbai harbour and safely handed over all 08 crew to local Police station Yellow Gate, Mumbai.

[SAR for Missing Fishing Boat 'Super'](#)

On 23 Dec 15, ICG Station Kakinada received information from Dy Director Fisheries, Kakinada regarding overdue fishing boat 'Super' alongwith 07 crew. The boat had sailed from Kakinada fishing harbour on 10 Dec 15 and had lost communication since 18 Dec 15. On 23 Dec 15, 02 out of 07 crew reached harbour in another fishing boat and informed regarding engine failure of the boat resulting in boat being adrift in area.

On receipt of information, MRSC Vizag diverted ICG Ship Vighraha for SAR. Additionally, fishing boat 'Super' on entering Kakinada harbour on 22 Dec 15 reported sighting of adrift boat South of Sacramento Shoals. Immediately ICG Ship C-141 was deployed from Kakinada at 0900 hrs on 25 Dec 15. The missing boat alongwith 05 crew was located at 1530 hrs in position 32 n miles South of Kakinada. The disabled boat was taken under tow and safely brought till Kakinada prior handing over to Fishing Development Officer, Kakinada on 26 Dec 15.

[Assistance to Missing IFB 'Pantandi'](#)

On 24 Dec 15, AD Fisheries, Kakinada informed ICG Station Kakinada regarding adrift Indian fishing boat 'Pantandi' due to reported loss of propeller fan at sea. The boat had sailed with 06 crew on 13 Dec 15 and had been adrift since 21 Dec 15.

ICG Ship C-430 was deployed from Kakinada at 0600 hrs for Search and Rescue. Additionally,



Search and Rescue for Dhow "MSV Sarojini"

ICG Dornier aircraft undertook aerial search in the area on 25 Dec 15. Additional ICG Ship Rani Avantibai was deployed by Coast Guard District Headquarters on 26 Dec 15 to augment the SAR operations.

At 2300 hrs on 26 Dec 15, ICG Ship Rani Avantibai sighted the missing fishing boat alongwith 06 crew in position 06 n miles East of Narasapur Light. Ship ascertained that fishing boat 'Masurya' had been arranged by the owner of fishing boat 'Patandi' to provide towing assistance. At 0830 hrs on 27 Dec 15, fishing boat 'Masurya' started towing the distressed boat and ICG Ship Rani Avantibai escorted the fishing boats upto Kakinada. Fishing boat 'Masurya' alongwith 'Pantandi' safely entered Kakinada Fishing Harbour on 27 Dec 15.

MEDICAL EVACUATION

Medical Evacuation ex-MT Team Spirit

At about 1906 hrs on 25 Aug 15, MRCC Mumbai received a message from 'MT Team Spirit' (Flag-Antigua) in position 265 n miles west of Agatti Island regarding medical emergency onboard. The master reported that the fitter (named Ram Nivas Chauhan, 35 yrs old, Indian) of the vessel had acute pain in his upper abdomen with an episode of vomiting.



Medical Assistance to Crew of "MT Team Spirit"

On receipt of the information, District Medical Officer, DHQ-2, Mumbai communicated with the vessel over email and provided requisite medical advice. MRCC Mumbai directed the vessel to head towards Agatti for disembarkation of the patient. ICG Ship Samar was kept standby to render assistance for disembarkation of patient, if required. Coast Guard District Headquarters No. 12, Kavaratti liaised with Rajeev Gandhi Specialty Hospital, Agatti for immediate medical assistance. At 1445 hrs on 27 Aug 15 the patient was disembarked onboard hired boat 'Sultham' arranged by the local agent and safely admitted to Rajeev Gandhi Speciality Hospital.

Evacuation of Expectant Woman from Neil Island (A&N)

At about 2330 hrs on 10 Sep 15, Coast Guard Regional Headquarters, Port Blair was informed by Dy Director Health Services, A & N about an expectant lady requiring immediate Medical Evacuation.

RHQ (A&N) deployed ICG Ship C-150 from Port Blair at 0100 hrs on 11 Sep 15. The patient was embarked and safely brought to Port Blair at 0430 hrs. The patient was subsequently shifted to GB Pant Hospital, Port Blair for further medical care.

Evacuation of injured crew from 'MT Malhari'

At about 1531 hrs on 26 Sep 15, Coast Guard District Headquarter No-1, Porbandar received a message from Maritime Rescue Coordination Centre Mumbai regarding an injury to a crew onboard 'MT Malhari'. The vessel was reported in position 85 n miles South West off Porbandar Light with the crew (Mr. Anil Sharma, Indian) sustaining injury below his right eye.

ICG Ship C-409 was sailed with medical team embarked at 1700 h and effected R/V with the vessel 20 nm SW off Porbandar Light. The patient was evacuated and brought to Porbandar at 2100 Hrs.

Post initial medical assessment and first aid by Coast Guard District Medical Officer, the patient was handed over to the local agents at 2115 hrs. The patient was taken to Sterling Hospital at Rajkot for further treatment.

Rescue of crew ex fishing vessel FV Jalashwa-I (FV St. Sabastian-I)

At about 1000 hrs on 06 Oct 15, Indian Coast Guard Ship IC- 124 while on coastal surveillance off North Karwar received a distress alert on CH-16 from fishing vessel 'FV Jalashwa-I' (FV ST. Sabastian-I). The boat in position 12 n miles South West off Devagagudda Light requested assistance for its crew member that had sustained injury on the neck. The master intimated that the crew has suffered a severe wound around his neck by a rope and required immediate evacuation.



Medical Assistance to Crew of "FV Jalashwa-I"

IC-124 relayed the medical emergency message to ICG Station Karwar and IC-124 headed for medical evacuation. Simultaneously C-155 in area was also diverted for medical evacuation and

arrived datum at 1100 hrs. The patient alongwith three attendants were safely embarked onboard C-155, and IB entered Karwar at about 1140 hrs. The patient was shifted to Government Hospital Karwar for further medical management.

Medical Evacuation of ex-MT 'Alpine Magic'

At about 1500 hrs on 14 Nov 15, MRCC Port Blair received information from MT 'Alpine Magic' (Flag-Hong Kong) regarding the emergency evacuation of a crew member (Mr. Vijay B Jethva / Indian) 140 n miles SW of Indira Point. The patient had fallen from a height of 18 mtrs and ruptured his spleen. The master also reported that the pulse of the injured crew was feeble.

On receipt of information, ICG Ship Durgabai Deshmukh with a medical team embarked was deployed from Campbell Bay and effected rendezvous (R/V) with MT Alpine Magic at about 0120 hrs on 15 Nov 15. The Medical Officer declared the patient as 'brought dead'. His body alongwith personal belongings/ documents was embarked onboard ICG Ship Durgabai Deshmukh. The ICG ship arrived at Campbell Bay at about 0530 hrs on 15 Nov 15 and handed over the body of deceased to the local police for further formalities.

Medical Evacuation from MV 'Therese Selmer'

At about 1600 hrs on 20 Nov 15, Maritime Rescue Coordination Centre Mumbai received a call from the Master of MV 'Therese Selmer' (Flag-Marshall Island) requesting for medical evacuation of the 2nd Officer (Mr. Miaksym Anyutin, Ukrainian) that had sustained a leg injury.

On receipt of the information, Maritime Rescue Sub Coordination Centre Porbandar established communication with the vessel and ascertained that

the vessel was 49 n miles North West of Porbandar. MRSC Porbandar directed the vessel to head towards Porbandar for facilitating evacuation. Indian Coast Guard Ship C-409 was sailed from Porbandar at 1730 hrs on 20 Nov 15 with medical assistant embarked and affected R/V with MV 'Therese Selmer' at 1815 hrs in position 13 n miles North West of Porbandar Light.

The Patient was safely embarked onboard C-409 using ship's Rigid Inflatable Boat (RIB) and brought to Porbandar Harbour at 1945 hrs. The patient was subsequently handed the patient over to the rep of M/s Samsara Shipping Jamnagar at 2000 hrs.

Evacuation by Helo-LPG Mubaraz

At about 1030 hrs on 21 Nov 15, UK Coast Guard intimated Maritime Rescue Coordination Centre Mumbai regarding a medical emergency onboard LPG Mubaraz (Flag-Liberia) in position 51 n miles West of Vizhinjam. UK Coast Guard intimated that one crew member (Mr. Ali Chemoune, Algerian) had suffered a suspected stroke and required immediate assistance.



Medical Assistance to Crew of "LPG Mubaraz"

On receipt of the information, MRCC Mumbai established communication with the vessel and ascertained that the second engineer had suffered

stroke resulting in no movement/ feeling on the right side of the body. MRCC directed the vessel to head towards Kochi for facilitating evacuation of the crew. Simultaneously, the local agent of the vessel was contacted and advised to make the necessary medical arrangements at Kochi.

Coast Guard Helo ex-CGAE Kochi got airborne with the Duty Medical Officer ex-INHS Sanjivani, Kochi at 1520 hrs on 21 Nov 15. The patient was winched up in position 10 n miles SW of Kochi Light. Helo alongwith patient landed at Coast Guard Air Enclave, Kochi at 1635 hrs. After providing the first aid the patient was handed over to the local agent and shifted to Medical Trust Hospital for further medical management.

Evacuation ex-MV RHL Constantia

On 26 Nov 15 at 1435 hrs, MRCC Mumbai received an email from 'MV RHL Constantia', (Flag-Malta) for medical evacuation of a crew member in position 236 Mangalore Lt 31 n miles.



Medical Assistance to Crew of "MV RHL Constantia"

MRCC established communication with the vessel over VHF and ascertained that Master (MR. Millinovic Borivoje, Montenegrin) is suspecting danger of heart attack due to high BP/pulse. The vessel was advised to approach New Mangalore

AID TO CIVIL AUTHORITIES

Chennai Floods

Intense torrential rains since 30 Nov 15 had caused heavy inundation in and around Chennai. The situation further deteriorated after release of water from Chembarambakkam reservoir into Adyar, resulting in the flooding of the river banks. When the weather forecast predicted incessant rain and formation of a low pressure area in the first week of December, Indian Coast Guard Regional Headquarters (East), Chennai immediately issued an advisory to the State Administration and Fisheries to recall all fishermen at sea and prevent fishing off Tamil Nadu and Andhra Pradesh.



CG Helo on a rescue mission

In the aftermath of deluge which inundated Chennai and suburban areas, massive rescue and relief efforts by the Indian Coast Guard in conjunction with civil authorities were initiated. Heavy rains also affected Chennai airport suspending all operations. Coast Guard Helicopters operated from Air Force Station Tambaram towards Search and Rescue Operations.

ICG relief teams were pressed into action and relief operations were undertaken in Vekanchivuram, Kodapakkam, Rajaji Nagar, Pullicat, Arambakam,

and establish contact with MRSC, New Mangalore. MRSC Mangalore provided MEDICO on VHF and ICG Ship Amartya was diverted to escort the vessel. Further, MRSC New Mangalore also establish communication with the local agent to undertake necessary arrangement for disembarkation. The patient was evacuated off fairway buoy at 1740 hrs using hide boat arranged by the local agent and was subsequently admitted to AJ Hospital, Mangalore.

Medical Evacuation from Fishing Boat 'Ganga Prasad'

At about 0900 hrs on 09 Dec 15, Maritime Rescue Coordination Centre Mumbai received a call from Mr. Babubhai, Secretary Jafrabad Fisheries requesting immediate medical evacuation of a crew onboard Fishing Boat 'Ganga Prasad' (Flag-Indian). Mr. Babubhai intimated MRCC that the crew had sustained a deep cut in his stomach and was bleeding.

ICG Ship C-419 was sailed with despatch from Veraval at 1030 hrs and arrived datum at 1430 hrs. C-419 embarked the injured crew and safely shifted him to Pipavav for immediate medical aid. The patient was handed over to Jafrabad Fisheries Association and admitted to local hospital at Mahuva for further medical management.



Medical Evacuation from "FB Ganga Prasad"

SAR TRAINING

M-SAR Training for MRCC/RCC Operators



Saving precious lives

VGP Salai and Saidapet areas. The overall status of relief and rescue efforts undertaken by Coast Guard is as follows:-



SAR Refresher Course for MRCC/RCC

The National Maritime Search and Rescue Board (NMSARB) conducted fifth refresher course on Search and Rescue for MRCC/RCC operators at MRCC Chennai, from 04-06 May 15. Fifteen participants from Indian Coast Guard and Airport Authority of India attended the course.

People rescued	3440
Medical Aid provided	5260
Food packets distributed	31599
Provisions distributed	23818 Kgs
Water bottles/ pouches distributed	56720
Bed sheets / blankets distributed	4568
Air drops of relief material (kgs)	5515 Kgs
First aid medicines distributed	124 Boxes
Medical camps conducted	12



SAR Refresher Course at MRCC Chennai : 04-08 May 15



Distributing Relief Material

The classes were conducted on Maritime and Aeronautical Search and Rescue operations. During the course, experience- sharing exercises resulted in enhancement of inter-agency coordination between both operators.

ARTICLES ON MARITIME SAFETY

SEARCH AND RESCUE OPERATIONS

Asst Comdt Ravi Shankar, ICGS H-183

India ratified the SAR convention of 1979 only in 2001. Soon thereafter, in fulfillment of our obligations under the convention, the Indian Coast Guard was designated as the nodal agency for coordinating search and rescue and the Director General Indian Coast Guard was nominated as the national maritime SAR coordinating authority. As the designated agency for coordinating search and rescue in the Indian Search and Rescue Region, the Indian Coast Guard has resolutely attempted to impart maximum momentum for improving SAR infrastructure, services and in strengthening the cooperative mechanism between various resources agencies.

No Search and Rescue (SAR) mission can be successful, unless the personnel manning rescue co-ordination centre have thorough knowledge of the system and procedures. To build up the same various training capsule periodically organized by the organization in coordination with other resources agencies.

In addition to the training of personnel at rescue centers it is pertinent that seafarers, especially our fisher folk adhere to safety regulations and carry adequate safety equipment whilst proceeding to sea. In this regard, Indian Coast Guard in coordination with Coastal State Governments/UT administration organizing various community programmes for the fishing community on regular basis to bring in awareness about safety aspects at sea.

The Indian Coast Guard is all set to grow into one of the world's largest Coast Guards. As the

fastest growing armed force of the union the service is developing its technological advancements in the field of electronic surveillance. Search and Rescue being one of the main charter, the service has focused upon training and infrastructure development to keep pace in the growing marine traffic in the Indian waters and to ensure that SAR services are available to one and all transiting through the Indian ISRR.

SEARCH AND RESCUE OF FISHING VESSEL

Asst Comdt RG Aghav, ICGS H-181

It is a known fact that offshore fishery started its development in the mid-eighties, hence safety at sea became a serious issue. With the fast development of multiday offshore boats and the expansion of the offshore fishery, an increasing number of boats and crew were reported missing from the distant fishing grounds. Only about half the boats reported missing was found, either at sea or more often in foreign countries after days, weeks and even months of ordeal for the crew. The loss of boats and fishermen was to a great extent attributed to inadequate safety equipments and lack of communication equipment on board the boats to warn shore stations of their distress.

The main recommendations for improving this situation is by providing better SAR Services for fishermen through a well-coordinated effort within existing organization. Educating and training skippers and fishermen on preventive measures would ensure better safety and thereby, reduce frequent and avoidable search and rescue efforts. Further, formulation of legislative measures and Government policy towards ensuring installation/ carriage of required safety equipment are two important pillars that strengthen and result into a robust search and rescue setup.

CASE STUDY

PORT ENTRY OF STRANDED FOREIGN CREW OF MV BULK ROSE:

DIG Anish Hebbar

The sequence of events

M.V. Bulk Rose, a 158 meter, 16,042 gross tonnage bulk carrier flagged in Turkey was lying at South Hazira Anchorage with a crew of six Turkish nationals since 12 Oct 15 under detention of the Honorable High Court of Gujarat. On 25 Dec 15, the Regional Headquarters of the Indian Coast Guard (ICG) at Gandhinagar in Gujarat received information from Vessel Traffic Management System (VTMS) Khambhat regarding a distress call by the master of the anchored *Bulk Rose*. The master had intimated the VTMS of his intention of abandoning the vessel due to absence of any provisions onboard and the imminent probability of a blackout as the emergency generator onboard had also shut down. Subsequently, the Turkish Consulate at Mumbai also requested the VTMS for assistance to its nationals onboard the vessel. To ensure safety of the crew and the vessel, the ICG advised the crew to remain onboard. ICG Station at Pipavav monitored the vessel through its Coastal Security Network radar station at Hazira point. The Directorate General of Shipping whose intervention was sought by the Coast Guard, shot off an e-mail to the Port Officer Magadalla Port suggesting that while the flag administration had been requested to provide necessary assistance, and it is the duty of the petitioner to take care of the arrested property, the port may tow the vessel to safe place by exercising statutory lien in accordance with Indian Port Act to protect environment and navigation hazard in the port. However, neither the ICG nor DGS has provision under Coast Guard Act or Merchant Shipping Act to take any action.

At 1655 hrs on 28 Dec 15, ICG Ship *C-411* received a distress call from South Hazira anchorage. *C-411* immediately proceeded to the datum and observed that the entire crew of the *Bulk Rose* had abandoned to a self-propelled lifeboat and was proceeding towards Hazira Port.



MV "Bulk Rose"

One crew was bleeding excessively and provided first aid by the ICG medical team. Considering the safety of the crew, *C-411* escorted the lifeboat and entered Hazira Port at 2000 hrs on 28 Dec 15. Whilst search and rescue assistance was underway, Coast Guard Regional Headquarters (Northwest) wrote once again to the DGS and the Gujarat Maritime Board at Gandhinagar with a request to direct Port Officer, Magdalla to receive crew and lifeboat and take action for safety of the abandoned *Bulk Rose*. However, the Port Officer, Magdalla did not respond. The Marine Police Hazira refused to take over the crew citing non-jurisdiction. The agent nominated by the Turkish Consulate ex *M/s ISS Shipping* expressed inability to take over the crew in absence of no objection certificate by Marine Police or port authorities. Meanwhile, the crew members were hosted by *C-411*. The ICG then issued another letter to the DGS, GMB and Inspector General of Police, Gandhinagar on 29 Dec 15 appraising of the pitiable situation and indicating that impending prior commitment of

C-411, the six crew and lifeboat were planned to be disembarked at Essar jetty by 1500 hrs on 29 Dec 15.



Self Propelled life raft under escort by ICG

After much perseverance, the Turkish crew members of the *m.v. Bulk Rose* were finally handed over to the Marine Police Hazira on 29 Dec 15, at 1730 hrs, in the presence of vessel agent. However, given risk posed by the abandoned vessel at Hazira Anchorage, the Coast Guard Regional Headquarters (Northwest) wrote to GMB recommending urgent action to shift the vessel to a safe location with due monitoring, until disposal of the legal proceedings. DGS was requested to pursue the matter with flag administration for early conclusion of the case.

After taking over the crew of the *m.v. Bulk Rose* on 29 Dec 15, Marine Police Hazira completed certain documentation following which the crew was allowed to put up in a hotel at Hazira. They were summoned to the Police Station the following day and granted customs and immigration clearance and a temporary visa for 72 hours. They departed Hazira at 1600 hrs to arrive Mumbai airport at 0100 hrs and took the flight to Istanbul at 0650 hrs on 31 Dec 15.

Seafarer's rights

A key question which arises in the whole case is that if the foreign nationals had abandoned a

vessel in distress and were legitimately seeking entry to the nearest port, why did it take forty-five hours for Indian authorities to decide to grant them entry? The *Seafarer Rights Organisation* has hosted a subject guide on the abandonment status in India "Abandonment in India version 2" and reflects the law as at 2013. A point to note in the Guide is that abandoned seafarers are considered as non-immigrants and may be granted a temporary visa to facilitate repatriation to native country.

Exercising right of shore leave could also have been an option for the stranded crew. The law recognizes the necessity of shore leave for maintaining a mariner's health. The International Maritime Organization Convention on Facilitation of International Maritime Traffic (Article 3.44) specifies that foreign crew members shall be allowed ashore by the public authorities while the ship on which they arrive is in port subject to due formalities and that public authorities have no reason to refuse permission to come ashore for reasons of public health, public safety or public order. Similar provisions are mirrored in the International Ship and Port Facility Security Code (ISPS) and the International Labor Organization Seafarers' Identity Documents Convention (Revised), 2003 (ILO-185).

Incidentally, both the National Union of Seafarers of India and International Seafarers Union primarily deal with training of seafarers and collective bargaining agreements for their placement onboard vessels. They did not appear to have dealt with other welfare issues of seafarers, such as expediting repatriation of stranded seafarers.

Treaty Provisions

Transit and repatriation are professional movements within the scope of immigration

admission, albeit temporary. For this reason, Article 6(2) of ILO Convention No. 108 requires these facilities to be granted subject to the condition that the identity document contains space for appropriate entries. Besides the passport, the seafarers' identity document issued under ILO Convention No. 108 may be used as a travel document. The Netherlands and Portugal are amongst countries known to regard the seafarers' identity document as a self-standing travel document for seafarers.

The Vienna Convention on Consular Relations, 1963, Article 5(I), defines the consular function as, inter alia, providing assistance to ships' crews. Thus, the Turkish Consulate at Mumbai was discharging its duties under the Vienna Convention when it requested the VTMS at Khambhat to provide all possible assistance to its nationals.

The International Aeronautical and Maritime Search and Rescue Convention Manual deals with various organisational and operational aspects of search and rescue, but does not cover the procedures to be followed by a State on repatriation of rescued seafarers.

Regulatory and policy provisions in India

Sections 161-167 of the MS Act, 1958 deal with relief and maintenance of distressed seamen, mode of providing their return, receiving distressed seamen on ships and provisions thereof, and power to make rules with respect to distressed seamen. However, the MS Act in general, and Sections 161-167 of the Act in particular, do not contain any provisions for dealing with seafarers landing ashore from foreign vessels abandoned in Indian waters.

Owing to this inherent lacuna, the DGS had categorically stated that it had no responsibility towards the rescued seafarers under the MS Act. This is despite its mandate to deal with all matters

pertaining to ships, and shipping. As per section 218 of the MS Act, there exists a National Welfare Board for Seafarers for promoting welfare of seamen, whether ashore or onboard. The DGS could have possibly referred the matter to the Board for intervention.

The Foreigners Act, 1946 is silent on the status and action to be taken in respect of foreign seafarers that may be rescued in the Indian Search and Rescue Region and brought to any port in India. No relevant regulations are mentioned in the Immigration Act, 1983 either. Section 16 of the Registration of Foreigners Rules, 1992, however, obliges the master of vessel arriving at any place in India to furnish the particulars to the Registration Officer, of foreigners intending to disembark the vessel and leave India.

As per the Allocation of Business Rules of the Ministry of Home Affairs, the Department of Internal Security is allocated the duties of regulation of entry/stay of all foreigners in the country and their deportation to their homeland. The provisions are contained in Part II Law and Order, para 24 and 25 respectively.

Functions, roles and duties of Police are elucidated in the *Model Police Manual 2* issued by Bureau of Police Research and Development. According to the manual, the Station House Officer will report the movements of foreigners, including their arrivals and departures, to the District Special Branch (*para 568*) who will maintain all the relevant records in accordance with the instructions of the State Intelligence Department. The District Special Branch will keep the State Intelligence Department promptly informed of the arrival and movements of all foreigners and if any foreigner is undesirable, should prevent him from departing, and institute enquiries into the matter, under rule 15

of the Registration of Foreigners Rules, 1939 (para 571).

Analytical thoughts

The six Turkish nationals remained with the Coast Guard from 2000h on 28 December 2015 to 1730 hrs on 29 Dec 15 when they were taken over by the Marine Police of the Government of Gujarat. C-411 maintained with the Turkish crew at Hazira all through and provided logistics and medical support. Their port entry process involved intensive liaison and correspondence by the ICG with the Indian maritime administration namely the DG Shipping as well state level authorities at the Magdalla Port, Coastal Security Police, and the GMB under the Government of Gujarat.

In some countries the ship's agent is *required* to facilitate everything – from reporting to border control authorities that a seafarer is signing off, to signing a guarantee assuming liability for possible financial claims, besides producing ticket and travel document enabling the seafarer's repatriation. At no stage are police authorities involved.

The Coast Guard Act, 1978 indeed obliges taking of measures for safety of life at sea. But, the Coast Guard went the extra mile in escorting the crew in lifeboats, and handing them to the authorities. It took the effort to coordinate with all concerned authorities – the Port Officer, Gujarat Maritime Board, Marine Police, Directorate General of Shipping. Regardless, of the Coast Guard's proactive actions, Indian authorities' took forty five hours to decide on grant of entry to foreign nationals that had abandoned a vessel in distress and were legitimately seeking entry to the nearest port. Perhaps, it will be for the Coast Guard to *also* take the next steps, possibly by way of an SOP, to prevent a recurrence.

PREDICTING ROGUE WAVES

DIG Anish Hebbar

Rogue waves cause far more damage than stormy seas. The behemoths, which form when smaller, harmless waves meld into one may be up to 30 metres high and can badly damage, and even sink, all but the largest merchant vessels. Prediction of rogue waves has proved impossible largely because researchers attempted monitoring every wave in a region using radar, and then forecasting the behaviour of each of them which needed processing power far in excess of that carried on board an average merchant vessel, and hours to run the calculation.

Dr Will Cousins and Dr Themistoklis Sapsis at the Massachusetts Institute of Technology resolved the problem by ignoring most of the waves in an area and homing in on only a tiny, relevant subset. Their system determines normal behaviour using years of data about a particular part of the ocean surface collected by buoys, and then analyses this behaviour alongside data on wave heights and movements collected in real time by ships radar, looking for groups of waves that might possibly end up forming a rogue.

The algorithm designed by the researchers is parsimonious enough to run on any laptop and able to make all of the calculations needed to predict rogue waves in about 153 seconds before a putative wave would have struck. That is not enough time to get out of a wave's path or reorient the vessel but enough for a crew to batten down the hatches, both literally and metaphorically and to brace for impact before they are hit, thus increasing the chance that both the crew and the vessel will survive.



Abridged from: *Incoming!* The Economist, March 5th 2016, Vol 418(8979), pp.66-67.



Safe Waters

An Indian Coast Guard Publication

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