

# Indian Coast Guard in the Bay of Bengal: Economic Dimensions of Search and Rescue

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India is a major fish producing country and fisheries is an important source of foreign exchange earning. It is also an instrument of livelihood for a large section of the economically backward coastal population.

Approximately six million fishermen from more than 3 930 villages in India fish in the coastal waters and on the high seas. Of these, 2.4 million are full-time fishermen, 1.45 million part time, the rest are occasional fishermen. Many of these fishermen do not carry basic life-saving equipment or SAR (search and rescue) alerting devices. They are therefore extremely vulnerable when disaster strikes, despite round-the-clock effort by SAR authorities.

Some 200 000 traditional crafts, 55 000 beach landing crafts with outboard motors and 51 000 mechanised crafts fish in India. The average length of these boats varies between 15 and 18 m (45-50 ft). None of the conventions such as SOLAS or GMDSS apply to them – since the Government of India’s Distress & Safety Communication Rules, 1995 cover only fishing vessels more than 20 m in length. The salient features of these rules are:

- Vessels are to carry at least one float free EPIRB & one Search and Rescue Transponder (SART),

- VHF set manning channel 16 and capable of receiving and transmitting distress alerts on VHF DSC channel 70.
- Other mandatory requirements as per GMDSS.

### Indian Coast Guard

The Indian Coast Guard was constituted under the Coast Guard Act, 1978. One of its “charter of duties” is to protect fishermen and assist them when they run into distress at sea.

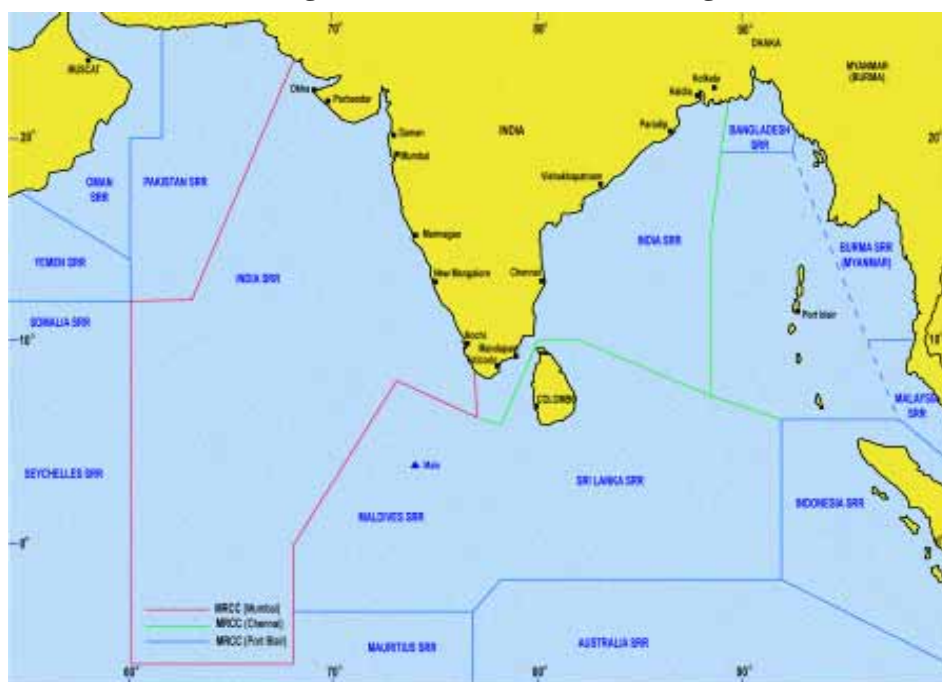
The Coast Guard has been helping fishermen on the basis of requests received from state governments by Coast Guard Commanders located in each coastal state. A schematic diagram is shown on page 6.

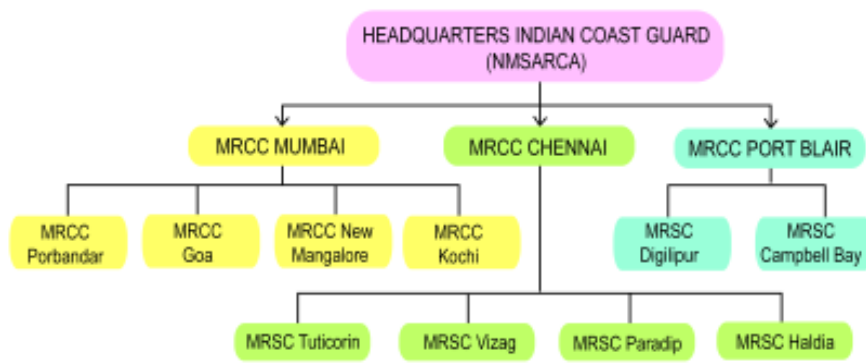
India acceded to the International SAR Convention 1979 in 2001. The following year, the Coast Guard was designated the nodal agency for coordination of SAR in the Indian Search and Rescue Region, measuring 4.6 million sq km (see figure 1).

Under the SAR Convention, the Coast Guard set up a National SAR Board, a chain of Maritime Rescue Coordination Centres (MRCCs) and a computerized ship-reporting system. In order to effectively coordinate SAR missions, MRCCs have been established in Mumbai, Chennai and Port Blair. These are assisted by a series of sub-centres located at the district headquarters of each coastal state (see figure 2).

All Coast Guard ships, shore stations and MRCCs/ MRSCs are equipped with GMDSS equipment

Fig 1. Indian Search and Rescue Region





**Fig 2. Indian Coast Guard Search and Rescue Organisation**

comprising INMARSAT terminals, etc. Distress alerts from vessels are received at the MRCCs. Using the database of registered vessels with INMARSAT terminals, communication is established with the vessel by phone, fax or telex to ascertain the nature and type of distress and the assistance requirement.

Besides the resources available with the National SAR Coordinator (Director General, Coast Guard – DGCG), several other authorities and facilities can be requisitioned for carrying out SAR operations – such as ships/ aircrafts/ shore-based facilities with the Navy, the Air Force, the DG (Shipping), Customs and State Maritime Boards, and State/ Central fisheries authorities. The SAR authorities levy no costs for Search and Rescue of lives at sea.

### **SAR for Fishermen – Bay of Bengal**

The Coast Guard has so far saved 3 342 lives since inception. In 2005 alone, 49 lives were saved through 34 SAR missions. Of these, 27 were fishermen in the Bay of Bengal. 49 cases of missing/ overdue fishermen were reported to MRCC Chennai and other MRSCs of this region.

In some cases, the fishing vessels returned safely before Coast Guard units were deployed. A total of 50 ship days and 67 hrs of air sorties were undertaken for SAR of fishermen alone in various SAR missions. The cost incurred during these operations was approximately Rupees 41.8 million.

The costs incurred by merchant ships can't be calculated with any degree of accuracy. The cost of diverting a merchant vessel to SAR operations is much more than the operating cost; the delay caused to the voyage adds substantially to costs. Therefore, the SAR services of merchant ships can't be cost-quantified.

### **SAR Deployment**

Most fishermen do not carry any communication equipment or minimum life saving appliances onboard while venturing into sea. No emergency can be communicated to any vessel in the vicinity or shore authority. If a vessel capsizes suddenly, its fate is sealed in the absence of life-saving appliances. Most fishermen do not stick to their schedule or area of operation; at times, they delay their return according to the fish catch.

Sometimes, local authorities fail to report the safe return ashore of fishing boats and crew. Result: Coast Guard SAR units continue a vain search for the vessels and lives in distress. Unnecessary searches entail an expensive waste of SAR's assets and efforts. State fisheries authorities have been told about this many times in the past.

Our fishermen cannot afford EPIRBs and other sea safety equipment. But they have been persuaded to carry at least the bare minimum that's essential – such as life jackets and portable radio communication equipment.

An aircraft is the best and fastest means of locating a vessel in distress. If the latter can answer or

respond to the aircraft during communication search, a rescue can be effected quickly.

### **Case Studies**

#### **Sri Lankan Fishing Boat *Lak Mali***

On 26 March 2005, MRCC Chennai received a telephone call from the Defence Attaché, Colombo. A Sri Lankan fishing vessel, *Lak Mali*, was disabled and adrift. Its approximate position was given. The assistance of the Indian Coast Guard was sought to search and locate the vessel.

Immediately, the Coast Guard vessel *Kittur Chennama*, then at sea, was diverted to locate the disabled fishing vessel. Two other vessels from Chennai – CGS *Ranijindan* and CG Dornier aircraft – were deployed for a SAR mission on March 27, 2005. The authorities in Sri Lanka were contacted regularly by MRCC, Chennai and the CG ship to ascertain the last known position of the fishing boat. International Safety Net messages were transmitted by MRCC Chennai at 12-hour intervals from the evening of 27 March till 31 March 2005 to report sighting by merchant vessels transiting through the area. But the missing boat could not be located in the computed area.

At last, on the evening of 1 April 2005, MV Gem of Ennore, an Indian Flag vessel, reported sighting the *Lak Mali* at a position approximately 345 NM north east of Chennai. MRCC Chennai requested the ship to tow the fishing boat to Chennai harbour but MV Gem was unable to do so, being fully loaded. But at the MRCC's request, the ship's crew provided a hand-held portable VHF set with a spare battery to *Lak Mali*. CGS *Priyadarshini* from Vizag then sailed to the area, established communication with FV *Lak Mali*, sighted the boat, rendered logistics and first aid and towed it to Chennai harbour. The *Lak Mali* had drifted 312 nautical miles, an average drift of 1.87 NM/hr.

If the Coast Guard were to compute costs for this SAR operation, the

total cost for the operations of three ships – the CG Dornier (five sorties in 19 hours and 10 minutes), the *Priyadarshini* (three ship days), the *Chennamma* and the *Ranijindan* (five ship days) – would have worked out to Rs 7.4 million. (This figure excludes the cost for escorting the boat during its disability.)

The vessel was adrift and disabled. It had communication sets onboard, but these were crippled by power failure. Had the vessel been equipped with an EPIRB or SART, it could have been saved by CG aircraft on their first sortie.

### **Indian Fishing Vessel MDS-967**

On August 9, 2004, MRCC was informed about a missing fishing boat, MDS-967. It had left Chennai with six crew on 26 July, was due to return on 6 August, but there was no sign of it. A search sortie was immediately undertaken, and two ships were alerted to look for the missing boat and render assistance. Three Safety Net messages covering the entire Bay of Bengal were transmitted by MRCC, Chennai in view of a possible drift of the boat towards Bangladesh or Myanmar.

On a report that the missing boat's crew had contacted the owners by cell phone off Kakinada, searches were diverted to that area. District Commanders in the region were requested to enhance surveillance. It was only on 30 Aug 2004 that the vessel's owners in Chennai reported drifting of the vessel to Teknaf in Cox's Bazar district, Bangladesh. MRCC contacted the authorities in Bangladesh and confirmed their safety.

The drifting of this boat to Bangladesh could have been avoided if it had some communication equipment, and either the owners or SAR authorities had been informed in time.

### **Initiatives by Indian Coast Guard**

MRCCs are capable of receiving alerts through the COSPAS-SARSAT system from EPIRBs operating on 406 Mhz. These

EPIRBs cost around Rs 50 000 in the international market; our fishermen can't afford them.

The Coast Guard has requested the Indian Space Research Organisation to develop a low-cost EPIRB costing below Rs 10 000 to enable our fishermen to relay any distress situation. They could also press one of four simple buttons to indicate distress. The EPIRB transmits the alert through the INSAT satellite system to a reception centre at the MRCCs. The SAR can then be initiated without any loss of time.

The low-cost EPIRBs are scheduled to complete extensive trials in 2006. They will then be ready for mass production. State governments will be requested to subsidize the costs and issue the transmitters to fishermen. Another Coast Guard initiative relates to training and community interaction programmes to educate fishermen on sea safety measures.

A toll-free four digit maritime SAR emergency telephone number 155204/(1718) has been activated all along the Indian coastline to warn about emergency at sea. These telephone numbers have been installed at all rescue co-ordinating centres, and are manned round the clock. Extensive publicity is given to fishermen to promptly report incidents of missing fishermen.

### **Fishing community initiatives**

Innovations in technology are such that we can predict cyclones well in time. Certain fishing hamlets in Tamil Nadu are said to have monitored the movement of cyclones and issued warnings on their own. These warnings were heeded and fishermen stayed ashore. Similar efforts should be encouraged in all of India's coastal fishing villages. The local administration should be pro-active in monitoring the weather and preventing fishermen from venturing out to sea during rough weather.

Time is of the essence in SAR. The SAR authority has the best chance of locating a person or vessel in distress if it has been notified the relevant details – about the vessel, the persons missing, the area of vessel operation – by the quickest means possible.

### **Recommendations:**

The following mandatory safety devices and measures are recommended for immediate implementation onboard all fishing vessels to optimize and economise SAR efforts and operations.

a) Traditional craft (vallams & catamarans).

- Life jackets and life floats for all crew.
- Hand-held VHF Sets/ GPS.
- Restricted area of operation, within the VHF range of a Coast VHF Station.
- Regular training on sea safety measures.

b) Mechanised fishing boats <20 m.

- Life jackets for all crew.
- Life floats onboard the vessel.
- 25 watt VHF set with Channel 16 and other frequencies.
- Hand-held GPS equipment.
- Low cost 406 Mhz EPIRB float free manually operated with GPS integrated.
- One SART (Search and Rescue Transponder).
- Restricted area of operation.
- Regular mandatory training on sea safety measures.
- Mandatory daily report to SAR agencies/state authorities.

c) Shore infrastructure

- VHF towers to be set up along the coast by state authorities at least 80 kms apart.
- Dissemination of weather bulletins and information on potential fishing zones.
- Recall of vessels during cyclones/storm surge.
- Encourage cellular operators to locate towers along the coast.