DISTRESS ALERT TRANSMITTER

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A DECU ISRO's news letter

India is endowed with 8000 kilometre of coastline and 2 million square kilometre of Exclusive Economic Zone (EEZ). For exploitation of fishery resources from the sea, the country has fishing fleet of nearly 2,39,000 which includes 1,60,000 traditional crafts powered by sails or oars, around 32,000 motorized crafts (converted from traditional crafts), 47,000 mechanized vessels being operated with different gear combination, nearly 400 purseseiners and 174 fishing vessels including a few tuna long liners.

Fishing at sea, which provides livelihood for millions of families in India, is considered as India's most dangerous occupations. Coast Guard being the Nodal agency for Maritime Search and Rescue Operations had indicated the urgent need to develop a Low Cost user friendly stand alone Distress Alert Transmitter (DAT) for fishing boats operating in the sea.

Space Applications Centre, SAC/ISRO had taken up the development of INSAT based Distress Alert Transmitter for the fisherman. This DAT is developed and productionized through the industry (M/s VXL Technologies Pvt.Ltd., Faridabad). The first Purchase Order for 1000 sets was placed on the industry for the production and the industry delivered the DAT to SAC in 2007-2008 and subsequently SAC dispatched them to the different Coast Guard District Headquarters.

DISTRESS ALERT TRANSMITTER (DAT)

THE MAGIC BOX

a documentary produced by DECU - ISRO

The Distress alert Transmitter is an innovative instrument built by the Space Application Center, ISRO, using the true modern space technologies, space communication and space navigation to help fishermen in distress. This is very inexpensive, innovative example of the use of space technology to help the fishermen.

Producer: Kamlesh Udasi Duration:16 minutes

The DAT contains the UHF Transmitter, GPS receiver, Omni directional antenna and a 7.2 volts battery pack (made up of 2 cells of primary Lithium battery). The shelf life of battery is five years, and in operation the battery life is 24 hours to 30 hours after activation of DAT.

The water proof sealed package of the DAT is made such that it can be either mounted on the roof top of the boat or on the mast or pipe of the boat. In case of sinking boat, the fisherman can wear the lanyard and swim in the water along with the transmitting DAT. The DAT will float on the water and will give boat's coordinates under the global positioning system to the Coast Guard, Maritime Rescue Coordination Centre (MRCC) at Chennai. Distress alert will be picked up and received by INSAT 3A satellite and relayed to the reception centre at MRCC Chennai. Situations like medical emergency, fire onboard sinking or capture of boats can be reported to the authorities on shore for immediate action.

The DAT operates through Data Reply Transponder (DRT) of INSAT 3A, in the frequency band of 402.65 to 402.85 MHz. SAC has installed a Receive Hub station at MRCC Chennai. This station receives the alert from the fishermen. At the reception of the 'alert', the hooter will sound in the control room and the message will be displayed on the PC. The message contains the boat ID, type of emergency, time of distress happened and the position of the affected boat in terms of longitude and latitude, at the same time the position of the boat will also be displayed on the (GUI) map. This message will be repeatedly conveyed every five minutes (average) with the updated position of the boat with time.

A formal handing over function was held on 8th January 2008 at Coast Guard premises, Chennai. State Fisheries Minister K.P.P. Samy handed over five DATs free of cost to fishermen. Dr. R.R. Navalgund, Director, SAC-ISRO and Inspector General Rajendra Singh, Commander Coast Guard Region (East), Leena Nair Fisheries Secretary, Shambu Kallolikar, Fisheries Commissioner were present on the occasion.

This device is very much helpful for the fishermen. Being small in size (1'x 1') and light weight (3.25 kg.) fishermen can easily carry with them. The bright red colour of the DAT is easily visible from the far end in the sea, which help the Coast Guard in Rescue Operation. The DAT will considerably reduce the time spent in searching fishermen lost in sea during bad weather and cyclone in high sea.Total 852 DATs have been dispatched to the different coastal districts, Chennai, Pondicherry (TN), Paradip (Orissa), Haldia (W.Bengal), Vishakapattanam (A.P.), Kochi (Kerala), Mangalore (Karnataka), Goa, Mumbai (Maharashtra) & Porbandar (Gujarat).

Presently the coordinated field trials are also being conducted periodically to endorse the performance of DATs as well as receive station and feed back for updating the DAT. SAC team is continuously working for the improvement of the DAT in terms of reliability and for making the system user friendly. Consequently, smaller sized version of DAT with the better reliability has come up and another 1000 sets of the smaller version DAT are being procured.