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JOINT IMO/ITU EXPERTS GROUP ON MARITIME RADIOCOMMUNICATION MATTERS
19th meeting
Agenda item 6

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ANY OTHER BUSINESS

Report of the investigation into the circumstances surrounding the capsize of the liftboat SEACOR POWER with multiple losses of life in the Gulf of Mexico on 13 April 2021

Submitted by the United States

SUMMARY

Executive summary:	Two independent United States casualty reports have been released regarding the capsizing of the liftboat **Seacor Power** resulting in the loss of 13 lives on 13 April 2021. Their findings and recommendations are especially pertinent to the work of the IMO/ITU Experts Group's remit and are summarized in this document, in particular regarding radar SARTs, maritime survivor locating devices, NAVTEX, VHF and single distress activation
Action to be taken:	Paragraph 11
Related documents:	USCG Report of Investigation #7175076, US NTSB MIR 22/26 and IMO/ITU EG 14/7/5

Introduction

1 On 13 April 2021, liftboat **Seacor Power** out of Port Fourchon, Louisiana, United States, encountered a rain squall. Thirteen minutes later, **Seacor Power** encountered a second squall with white-out conditions and winds that exceeded 80 knots and gusted up to 99 knots. The Master and the First Mate attempted to lower **Seacor Power**'s legs to the seafloor in order to hold position until the storm passed, but the vessel heeled to starboard and quickly capsized. There was very little time to react, and only some of the people aboard managed to escape. Six individuals who washed into the water, or entered the water, survived and were rescued that evening. Two deceased individuals were found during surface searches and dive teams found four more. The remaining seven individuals from **Seacor Power** were never found and are presumed deceased. **Seacor Power**'s crew did not have time to send any distress signals.

2 The United States National Transportation Safety Board (NTSB) and the United States Coast Guard both completed independent casualty reports of the incident[1]. Findings and recommendations especially pertinent to the work of the Experts Group are summarized below.

Radar SART

3 The mate had grabbed one of two radar SARTs when egressing the **Seacor Power** and turned it on after being washed off by the seas. However, responders stated they never saw the SART's signal appear on their radars, even though the mate stated seeing the light on the device illuminate, indicating that it was being interrogated by a ship's radar. During post-casualty testing with a response boat and fire department boat, the NTSB found that crews were able to see the SART signal only after familiarization with procedures addressing radar gain, clutter, and range settings. Follow-on testing with SAR aircraft was also successful after training the air crews on what to look for. Crews of ships and aircraft responding to the incident may not have known to tune their radars for optimal detection. The NTSB concluded that, although not causal to the fatalities and despite functioning as designed, the radar SART held by the mate in the water was not effective in signalling ships or aircraft due to high seas, no means to hold the device high enough above the water, and lack of rescuer training.

4 Although IMO resolution MSC.192(92) on *Adoption of the revised performance standards for radar equipment* requires the X-band radar to be capable of detecting radar SART's, it also requires that it "be possible to switch off those signal processing functions, including alternate polarisation modes, which might prevent an X- band radar beacon or SARTs from being detected and displayed"[2]. Those same signal processing functions which must be switched off to detect and display a radar SART are generally needed to ensure that radar targets are clearly detected and displayed amongst the clutter, as well as for the safe navigation of ships, including while engaged in SAR operations. No amount of training in how to tune a radar for optimal radar SART detection is likely to be satisfactory, if it degrades detection of other radar targets, especially given how infrequently SARTs are used.

5 Five years ago, the United States proposed[3] that radar SARTs be phased out in favour of AIS SARTs, whose performance is superior, whose response is easier to recognize on navigation displays, and whose signals are also commonly used as locating signals on EPIRBs and maritime survivor locating devices. Recognizing that this proposal was not adopted and that radar SARTs will remain a part of the GMDSS for the foreseeable future, other means for improving and simplifying radar SART detectability should be found. For example, radar signal processing circuits could be designed to recognize the response from a radar SART and notify the user of its detection, without requiring the operator to disable that circuitry necessary for the clear detection and display of radar targets. Alternatively, ship owners and operators might be encouraged to fit AIS SARTs in favour of radar SARTs.

Maritime survivor locating devices (MSLD)

6 Several individuals testified at the investigation about the benefits of using or requiring personal locator beacons (PLBs), a type of MSLD that transmits a 406 MHz distress alert rather than a VHF DSC distress alert. Using 406 MHz for MSLD alerting rather than VHF DSC can be advantageous, especially outside Sea Area A1 in areas away from ship traffic. If a survivor

1 See NTSB Marine Investigation Report 22-26 dated 18 October 2022 available at https://www.ntsb.gov/investigations/Pages/DCA21MM024.aspx; and USCG Marine Casualty Report of Investigation (ROI) Report 7175076, available at https://www.news.uscg.mil/maritime-commons/Article/3462775/report-of-the-investigation-into-the-circumstances-surrounding-the-capsizing-of/

2 See IMO resolution MSC 192(95), §5.3.4.2, also included in IEC 62388:2013 §6.2.2.

3 See IMO/ITU EG 14/7/5

floating in the water has an MSLD (or PLB) with them, then they could be located and rescued more quickly. Each crewmember on a Coast Guard 45-foot response boat is required to wear a PLB. NTSB has repeatedly urged the Coast Guard to require all ship operators be provided with a PLB[4].

Simplified distress activation

7 Although fitted for GMDSS, "SEACOR POWER did not release a VHF radio MAYDAY call, or an INMARSAT or DSC distress call, before it capsized. Any of these calls could have significantly reduced the response time for search and rescue. The First Mate stated that he pressed a GMDSS alert button (likely the INMARSAT) after the vessel capsized, but this signal was never received. The only GMDSS signal that made it ashore was from the EPIRB, which was not manually operated. Despite the large amount of various distress systems on the bridge, none of the manually operated systems assisted with the response, so there may be an opportunity to simplify the process to activate distress equipment on the bridge"[5]. The Coast Guard investigation recommended "a study to evaluate whether it would be beneficial to create one distress button that links to a variety of different shipboard systems, including, but not limited to, VHF DSC, MF/HF DSC, INMARSAT, and the vessel's general alarm." A single "red" distress button is a requirement for passenger ships to comply with SOLAS regulation IV/6.

EPIRB

8 The **Seacor Power**'s EPIRB floated free, and its signal was first detected by a GEOSAR satellite at 15:40 (local time). This first alert had ship and registration information but no position. The next alert, the first to include a position via a MEOSAR satellite, was received a minute later, about 0.3 miles south-southeast of the ship's final position. RCC watchstanders were very heavily inundated with potential distress calls from both commercial and recreational vessels. The RCC was resolving seven cases before **Seacor Power** capsized. When calling the phone number on the ship's EPIRB's registration, which was the company's main phone line, the RCC was incorrectly told "I pretty much guarantee that they are not in distress… they are just sitting at the dock doing maintenance on the vessel." The employee who responded to the Coast Guard call was in an entry level position at the company who had not been informed of the ship's departure, was not aware of any for responding to ship emergencies, and had received false EPIRB alert notifications before. Once the squall had passed, a nearby ship saw the overturned **Seacor Power**, then contacted the RCC at 1628 on VHF channel 16 to report the incident.

NAVTEX

9 At 08:00, a scheduled NAVTEX broadcast that included a meteorological forecast for the Gulf of Mexico, weather statements for Brownsville and Corpus Christi, Texas, and a couple of navigational warnings were initiated. At approximately 10:00, the watchstander noticed an issue with the internet connectivity with the remotely operated radio site in New Orleans (Belle Chasse), Louisiana. The watchstander tried to send out a weather forecast manually to test the internet connectivity, but could not confirm that the message was sent. The watchstander requested technical assistance to repair the system. No scheduled or unscheduled NAVTEX broadcasts were possible until the system was restored. There were no alternative methods to send NAVTEX messages while the internet was down.

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4 See the press release: *NTSB Again Calls for Marine Personal Locator Beacons After Sinking of the Fishing Vessel Emmy Rose*, https://www.ntsb.gov/news/press-releases/Pages/NR20220913.aspx

5 US NTSB Marine Investigation Report

VHF

10 The **Seacor Power** was well within Sea Area A1 and within the United States NOAA weather radio service range. At 14:57, the NWS issued a Special Marine Warning for coastal waters, which impacted areas included **Seacor Power**'s location and planned trackline. The First Mate stated that **Seacor Power** was not equipped with a dedicated NOAA weather radio. If the crew wanted to listen to NOAA weather broadcasts, they could select the appropriate channel on one of the VHF maritime radios. VHF maritime radios sold in the United States are capable of tuning to NOAA weather radio channels, but since those radios are normally monitoring maritime channels (e.g. channels 16 and 13), alert signals sent on weather channels would not have been detected on these radios. The Coast Guard also broadcasts routine weather forecasts on a schedule, and broadcasts unscheduled NWS special weather warnings (including special marine, small craft, gale, storm and hurricane warnings) on VHF channel 1022 (22A), announced on channel 16, immediately upon receipt. The Coast Guard duty officer stated that he saw an email from the NWS that morning, and the email stated that there was a slight risk of severe weather in the afternoon. He did not remember receiving any other NWS warnings that day. The Master of pre-commissioned Coast Guard cutter **Glenn Harris**, which was located 11 nautical miles northeast of **Seacor Power**, stated that he did not hear any special marine warnings broadcast on VHF that day.

Action requested of the Experts Group

11 The Experts Group is invited to note the information provided, in particular:

.1 the feasibility of implementing radar signal processing capable of detecting and displaying a radar SART signal regardless of the operator settings, as described in paragraphs 6 to 8; and

.2 the feasibility of implementing an optional single-press, activate all distress alert button capability, as described in paragraph 10, and

advise, as appropriate.