NATIONAL TRANSPORTATION SAFETY BOARD
Virtual Meeting of October 18, 2022
(Information subject to editing)

Capsizing of Liftboat *SEACOR Power*
Port Fourchon, Louisiana
April 13, 2021
DCA21MM024

This is a synopsis from the NTSB's report and does not include the Board's rationale for the findings, probable cause, and safety recommendations. NTSB staff is currently making final revisions to the report from which the attached findings and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing to reflect changes adopted during the Board meeting.

Executive Summary

What Happened

On April 13, 2021, about 1537 local time, the US-flagged liftboat *SEACOR Power* capsized about 7 miles off the coast of Port Fourchon, Louisiana, in a severe thunderstorm. Eleven crew and eight offshore workers were aboard the liftboat. Vessel operators in the area reported heavy rain, winds exceeding 80 knots, and 2- to 4-foot seas at the time of the capsizing. Search and rescue efforts were hampered by 30- to 40-knot winds and seas that quickly built to 10 to 12 feet and persisted throughout the evening and into the next day. Six personnel were rescued by the US Coast Guard and Good Samaritan vessels, and the bodies of six fatally injured personnel were recovered. Seven personnel were never found and are presumed dead. The vessel, valued at $25 million, was a total constructive loss.

What We Found

We found that the captain's decision to get underway on the day of the casualty was reasonable and was not influenced by commercial pressure. However, weather information that SEACOR Marine provided to the *SEACOR Power*'s crew was insufficient for making weather-related decisions about the liftboat's operation. Additionally, due to a Coast Guard broadcasting station outage, the *SEACOR Power* crew did not receive a National Weather Service Special Marine Warning notifying mariners of a severe thunderstorm that was approaching.

Even if the *SEACOR Power* crew had received the Special Marine Warning, data gaps, including a lack of low-altitude radar visibility over the Louisiana coastal areas, prevented the National Weather Service office that issued the Special Marine Warning from identifying and forecasting the surface wind magnitudes that impacted the *SEACOR Power*. Lowering the angle of the lowest radar beam at select coastal weather radar sites would improve low-altitude radar visibility over coastal waters.

The capsizing occurred when the *SEACOR Power* was struck by severe thunderstorm-generated winds that exceeded the vessel's operational wind speed limits, causing a loss of stability. Other operational factors may have also played a role in the capsizing, including the liftboat's trim by the stern (the difference between a ship's forward and aft drafts), its turn to port and speed through the water, a cargo shift, and movement of the vessel's legs.

We found that due to the unpredictability of thunderstorm phenomena and the vulnerability of restricted-service liftboats like the *SEACOR Power*, operating restricted-service liftboats like the *SEACOR Power* in the afloat mode at any time when a Special Marine Warning has been issued for the vessel's planned route increases their risk of capsizing. Further, increasing minimum stability criteria for liftboats in restricted service would improve vessel survivability in severe thunderstorms.

The speed at which the *SEACOR Power* capsized and angle at which it came to rest made egress difficult and likely contributed to the fatalities. Following the capsizing, the Coast Guard Response Command Center did not effectively use available information to verify the validity of the location of *SEACOR Power*'s emergency position indicating radio beacon alerts, which led to a delay in dispatching search and rescue units and notifying Good Samaritan vessels of the emergency. Additionally, SEACOR Marine did not have adequate procedures nor did it provide its staff with training for responding to the Coast Guard when contacted regarding emergency position indicating radio beacon alerts, and inaccurate information about the *SEACOR Power*'s location provided to the Coast Guard by a SEACOR Marine employee contributed to the delayed response.

High winds and heavy seas, combined with underwater and overhead obstructions, prevented both surface and air resources from getting close enough to the vessel to rescue personnel directly from the wreck, which contributed to the loss of life. In the future, a detailed procedure in Coast Guard mass rescue operations plans combined with mutual aid agreements between the Coast Guard and air rescue providers would improve and expand search and rescue capabilities.

In previous casualty investigations, we found that mariners have benefited from their vessels or employers providing personal locator beacons; had the crewmembers of the *SEACOR Power* been required to carry personal locator beacons, their chances of

being rescued would have been enhanced. The search and rescue transponder held by the mate after he had been swept into the water from the wreck was not effective in signaling vessels or aircraft.

Probable Cause

We determined that the probable cause of the capsizing of the liftboat *SEACOR Power* was a loss of stability that occurred when the vessel was struck by severe thunderstorm winds, which exceeded the vessel's operational wind speed limits. Contributing to the loss of life on the vessel were the speed at which the vessel capsized and the angle at which it came to rest, which made egress difficult, and the high winds and seas in the aftermath of the capsizing, which hampered rescue efforts.

What We Recommended

Because the localized weather could not be detected by nearby radars due to their elevation angles (antenna angles relative to the horizon), we recommended that that the National Weather Service, Federal Aviation Administration, and Air Force work together to assess coastal weather radar sites to determine if it is safe and appropriate to lower the radar angles, and then lower the angles of the lowest radar beams where appropriate.

We also recommended that the Coast Guard develop procedures to inform mariners in affected areas whenever there is an outage at a navigational telex broadcasting site, modify restricted-service liftboat stability regulations to require greater stability for newly constructed restricted-service liftboats, and develop procedures to integrate commercial, municipal, and non-profit air rescue providers into Sectors' and Districts' mass rescue operations plans, when appropriate.

We reiterated a recommendation to the Coast Guard to require that all personnel employed on vessels in coastal, Great Lakes, and ocean service be provided with a personal locator beacon to enhance their chances of survival. Given the benefits of personal locator beacons, we also recommended that the Offshore Marine Service Association notify members of personal locator beacons' availability and value.

Lastly, we recommended that SEACOR Marine review its fleet to ensure its vessels are being operated strictly within the limits specified in operating manuals, stability documentation, and other required guidance, and revise its liftboat safety management system and operations manuals to include a policy requiring the vessel to remain in port or lower its legs and cease afloat operations when a Special Marine Warning has been issued for the vessel's planned route. We similarly recommended that the Offshore Marine Service Association inform their members of the circumstances of this accident and the importance of remaining in port or jacking up when a Special Marine Warning has been issued.

Findings

1. None of the following were safety issues for the casualty voyage: (1) mechanical and electrical systems, (2) watertight integrity, (3) crew experience and qualifications, or (4) fatigue.

2. Commercial pressure was not a factor in the captain's decision to get underway.

3. The weather forecast SEACOR Marine provided to the *SEACOR Power* crew on the morning of the capsizing was insufficient for making weather-related decisions about the liftboat's operation.

4. Given the conditions and the marine weather information available to the captain at the time the liftboat left Port Fourchon, the captain's decision to get underway on the day of the casualty was reasonable; although the captain was not aware of the severe thunderstorm watch, it likely would not have changed his decision.

5. Because the Coast Guard's New Orleans navigational telex site was not operational on the afternoon of the capsizing, the *SEACOR Power* crew did not receive the Special Marine Warning and was not aware of the severity of thunderstorms that were approaching that afternoon.

6. Data gaps, including a lack of low-altitude radar visibility over the Louisiana coastal areas, prevented the National Weather Service office that issued the Special Marine Warning for the casualty site area around the casualty time from identifying and forecasting the surface wind magnitudes that impacted the *SEACOR Power*.

7. Lowering the angle of the lowest radar beam at selected coastal weather radar sites would improve low-altitude radar visibility over coastal waters and, therefore, improve forecasters' ability to accurately monitor, forecast, and notify the public of weather conditions.

8. As designed, the *SEACOR Power* met applicable intact stability criteria.

9. The *SEACOR Power* capsized when it was struck by severe thunderstorm winds that exceeded the vessel's operational wind speed limits and, when combined with sea conditions, resulted in a loss of stability.

10. Although the *SEACOR Power* met stability criteria at the time of the casualty, the vessel's trim by the stern decreased the vessel's ability to resist capsizing.

11. Operation of the *SEACOR Power* with trim by the stern that exceeded the limit specified in the operating manual, stability documentation, and other required guidance was an accepted practice by vessel crews.

12. The *SEACOR Power*'s trim by the stern, its turn to port and speed through the water, a cargo shift, and movement of the vessel's legs may have contributed to the vessel's capsizing.

13. Due to the unpredictability of localized thunderstorm phenomena and the vulnerability of restricted-service liftboats in these storms, operating a restricted-service liftboat in the afloat mode at any time when a Special Marine Warning has been issued for the vessel's planned route increases its risk of capsizing.

14. Increasing minimum stability criteria for liftboats in restricted service would improve vessel survivability in severe thunderstorms.

15. The speed at which the vessel capsized and angle at which it came to rest made egress difficult and likely contributed to the fatalities.

16. The Coast Guard Rescue Coordination Center did not effectively use available information to verify the validity of the location of *SEACOR Power*'s emergency position indicating radio beacon alerts, which led to a delay in dispatching search and rescue units and notifying Good Samaritan vessels of the emergency.

17. Inaccurate information about the *SEACOR Power*'s location provided to the Coast Guard by a SEACOR Marine employee when contacted regarding the vessel's emergency position indicating radio beacon alert contributed to the delayed response.

18. SEACOR Marine did not have adequate procedures nor did it provide its staff with training for responding to the Coast Guard when contacted regarding emergency position indicating radio beacon alerts.

19. A detailed procedure in Coast Guard mass rescue operations plans combined with mutual aid agreements between the Coast Guard and air rescue providers would improve and expand search and rescue capabilities for future casualties.

20. High winds and heavy seas, combined with underwater and overhead obstructions, prevented both surface and air resources from getting close enough to the vessel to rescue personnel directly from the wreck, which contributed to the loss of life.

21. Mariners have benefited from their employers voluntarily providing personal locator beacons or satellite emergency notification devices.

22. Had the crewmembers of the *SEACOR Power* been required to carry personal locator beacons on board, as recommended in Safety Recommendation M-17-45, and had they been activated when abandoning the vessel, search and rescue crews would have had continuously updated and correct coordinates of individual crewmembers' locations, enhancing their chances of being rescued.

23. Although not causal to the fatalities and despite functioning as designed, the search and rescue transponder held by the mate in the water was not effective in signaling vessels or aircraft due to high seas, no means to hold the device high enough above the water, and lack of rescuer training.

Recommendations

To the US Coast Guard:

1. Develop procedures to inform mariners in affected areas whenever there is an outage at a navigational telex broadcasting site.

2. Modify restricted-service liftboat stability regulations to require greater stability for newly constructed restricted-service liftboats.

3. Develop procedures to integrate commercial, municipal, and non-profit air rescue providers into Sectors' and Districts' mass rescue operations plans, when appropriate.

To the National Weather Service:

4. In collaboration with the Federal Aviation Administration and the US Air Force, determine if it is appropriate to lower the radar angle for coastal weather radar sites without compromising aviation safety or other products, and lower the radar angle at those sites where it is appropriate.

To the Federal Aviation Administration and the US Air Force:

5. Work with the National Weather Service to determine if it is appropriate to lower the radar angle for coastal weather radar sites without compromising aviation safety or other products, and lower the radar angle at those sites where it is appropriate.

To the Offshore Marine Service Association:

6. Inform your members of the circumstances of this capsizing and encourage them to implement policies to stop afloat operations for restricted-service liftboats when a Special Marine Warning has been issued for the vessel's planned route.

7. Notify your members of the availability and benefits of personal locator beacons.

To SEACOR Marine:

8. Ensure your vessel crews receive timely and accurate weather forecasts tailored to each vessel's location, including applicable National Weather Service watch and warning products when they are issued.

9. Conduct a comprehensive review of your active fleet to ensure your vessels are being operated strictly within the limits specified in operating manuals, stability documentation, and other required guidance.

10. Revise your restricted-service liftboat safety management systems and operations manuals to require the vessel to remain in port or jack up when a Special Marine Warning has been issued for the vessel's planned route.

Previously Issued Recommendations Reiterated in This Report

The National Transportation Safety Board reiterates the following safety recommendation.

To the US Coast Guard:

11. Require that all personnel employed on vessels in coastal, Great Lakes, and ocean service be provided with a personal locator beacon to enhance their chances of survival.