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## NATIONAL TRANSPORTATION SAFETY BOARD

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Office of Marine Safety

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March 30, 2022

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Investigator in Charge Factual Report

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# Sinking of Fishing Vessel *Emmy Rose*

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DCA21FM007

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1 **Casualty Information**

2 Location: Atlantic Ocean, about 27 miles off Provincetown, Massachusetts

3 Date: November 23, 2020

4 Time: About 0130 eastern daylight time (coordinated universal time -5 hours)

5 Vessel: CFV *Emmy Rose*

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11 **Investigator in Charge**

Brian Young  
National Transportation Safety Board  
Washington, DC

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## 1 **Casualty Summary**

2 About 0130 local time on November 23, 2020, the US Coast Guard in Boston,  
3 Massachusetts, received a distress signal from the 82-foot, 116-gross-ton commercial  
4 fishing vessel *Emmy Rose*. The vessel had been under way after completing groundfishing  
5 operations with four crewmembers on board and sank about 27 miles northeast of  
6 Provincetown, Massachusetts. Its estimated value was \$325,000. The pollution potential  
7 was about 6,000 gallons, and sheening was observed during search missions. None of the  
8 crewmembers were located as of the date of this report and are presumed deceased.



10 **Figure 1.** *Emmy Rose* sinking site. (Background source: Google Maps)

## 1 **FACTUAL INFORMATION**



2

3 **Figure 2.** *Emmy Rose* under way at unknown date before the casualty. (Source: Coast Guard)

### 4 **1.0 Vessel Information**

5 The *Emmy Rose* was a steel-hulled, single-propeller fishing vessel built as the  
6 *Miss Elizabeth III* in 1987 at the Tommy Nguyen shipyard in New Iberia, Louisiana. The  
7 Gulf-shrimp-style fishing vessel had subsequently been named *Miss Monica* (1994-  
8 1995), *Virgin Steel* (1995-1997), and *Miss Elizabeth III* (1997-2001). In January 2001, the  
9 vessel was sold to Sasha Lee, Inc. Its homeport was changed to New Bedford,  
10 Massachusetts, and the vessel was renamed the *Sasha Lee*.

11 With the change in location and fishery, the *Sasha Lee* was modified to  
12 accommodate the regional fishery. Two seven-foot-diameter steel net drums and a  
13 mounting frame were added to the stern of the vessel. The port and starboard  
14 walkways were closed off and the bulwarks were extended to provide protection from  
15 the elements for the crew on the aft deck.

1           In May 2020, the *Sasha Lee* was purchased by the most recent owner, its  
2 homeport was changed to Portland, Maine, and the vessel was renamed the *Emmy*  
3 *Rose*. The *Emmy Rose* was licensed by National Oceanic and Atmospheric  
4 Administration (NOAA) to engage in the New England multi species fisheries trade and  
5 was used exclusively for groundfishing. The vessel held a valid certificate of  
6 documentation and was classified by the US Coast Guard as an uninspected fishing  
7 vessel.

### 8 **1.1 Casualty Events**

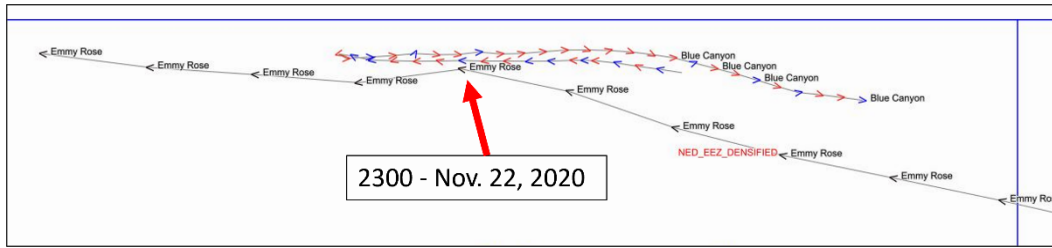
9           About 1603 on November 17, 2020, after loading supplies and 17 tons of ice, the  
10 *Emmy Rose* departed Portland, Maine, with a captain and three deckhands aboard.  
11 Over the next few days, the crew fished at several locations in the Gulf of Maine. On  
12 November 21, the captain emailed the vessel manager and reported that fishing was  
13 "slow", and he was hoping for a "big last day" and continued fishing operations. On  
14 November 21 at 2248, the captain of the *Emmy Rose* contacted the captain of the  
15 fishing vessel *3 Girls*, under way in the Gulf of Maine, and stated that he was welding  
16 on the trawl door. (Depending on fishing conditions and sea floor characteristics, trawl  
17 doors may require the worn shoes of the doors to be repaired by welding).

18           At 1428, on November 22, the captain contacted a seafood distribution facility in  
19 Gloucester, Massachusetts, via satellite phone to schedule the *Emmy Rose's* arrival and  
20 make offload arrangements. He reported that the *Emmy Rose* would arrive at the facility  
21 at 0600 on Monday, November 23 to offload about 45,000 pounds of fish. After the  
22 phone call, the crew of the *Emmy Rose* continued to fish for about 4 hours before

1 starting the transit to Gloucester. It is unknown how much additional fish had been  
2 caught during these final hours. The captain and crew planned to offload the catch and  
3 head back out to resume fishing operations, a process that they referred to as a “turn  
4 and burn.”

5 Throughout the evening, crewmembers used the vessel’s satellite phone to  
6 communicate with shoreside contacts. At 1848, one of the deckhands called his  
7 girlfriend and told her they completed fishing and were headed to Gloucester to  
8 unload the catch. He said he was at the helm but was being relieved to go to sleep.  
9 The girlfriend told investigators that the deckhand said, “it was the biggest catch they  
10 had ever had” and she heard other crewmembers in the background “laughing,  
11 giggling, and so excited to be coming home.” About 1830, on November 22, the *Emmy*  
12 *Rose* departed fishing grounds and headed for Gloucester at a speed about 7 knots.  
13 At 2101, a call was made from an unknown landline to the *Emmy Rose* satellite phone.  
14 The phone call lasted about 5 minutes.

15 About 2320, the *Emmy Rose* passed within 1 nautical mile of the fishing vessel  
16 *Blue Canyon*. The *Emmy Rose* maneuvered away from the *Blue Canyon* and continued  
17 on its course for Gloucester at 7 knots. The captain of the *Blue Canyon* stated that he  
18 did not communicate with the crew of the *Emmy Rose* and that he could see people on  
19 the aft deck amid the illuminated deck lights.

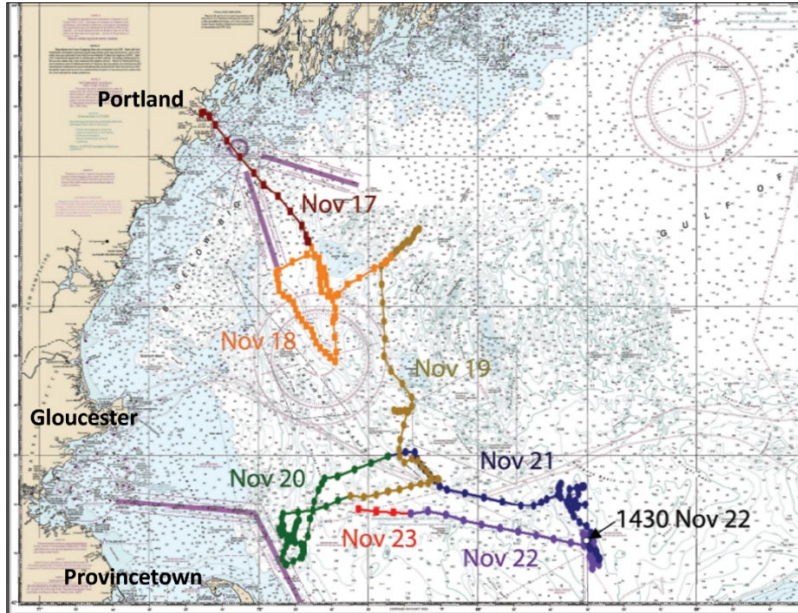


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2 **Figure 3.** Location of *Emmy Rose* and *Blue Canyon* at 2330 on November 22. (Source: Coast  
3 Guard)

4 At 0100, on November 23, 2020, the *Emmy Rose* was identified on the vessel  
5 monitoring system (VMS) to be 27 nautical miles northeast of Provincetown,  
6 Massachusetts on a course 277° at 7 knots.<sup>1</sup> This was the last VMS position transmitted  
7 by the *Emmy Rose*.

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<sup>1</sup>The vessel monitoring system (VMS) is a satellite surveillance system primarily used by NOAA to monitor the location and movement of commercial fishing vessels within US jurisdiction and treaty areas. The system uses satellite and cellular based communications from onboard transceiver units, which certain vessels are required to carry. The transceiver units send position reports that include vessel identification, time, date, and location, and are mapped and displayed on the end user's computer screen. Positions for *Emmy Rose* were transmitted every 30 minutes.



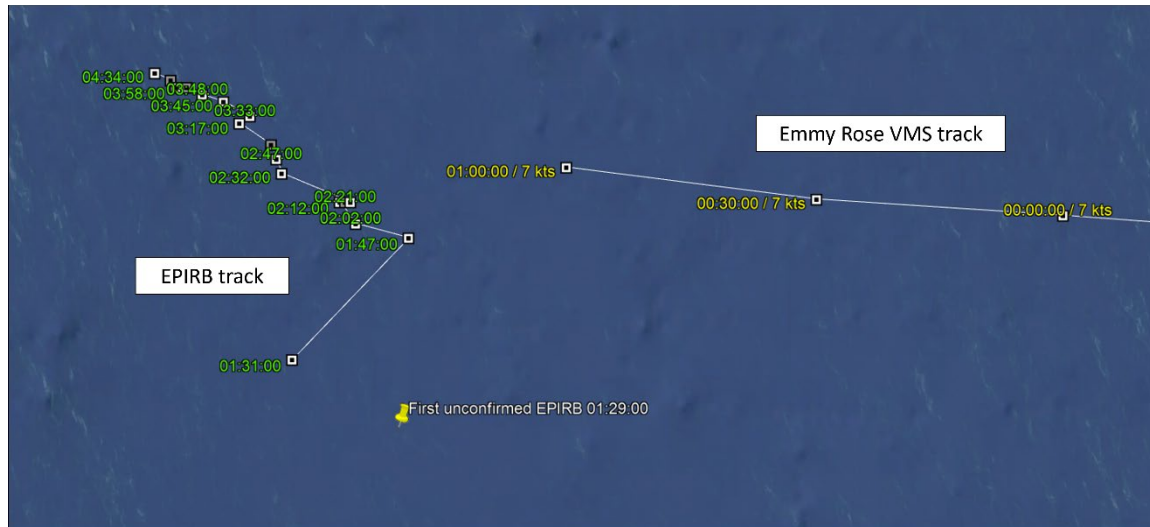
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2 **Figure 4.** *Emmy Rose* final voyage. (Source: NOAA chart 13260, annotated by NTSB)

3 At 0129 on November 23, 2020, the US Coast Guard Rescue Coordination Center  
4 (RCC) received an alert from the emergency 406-MHz emergency position indicating  
5 radio beacon (EPIRB) registered to the *Emmy Rose*. This initial unlocated position was  
6 about 2.4 nautical miles southwest from the 0100 VMS position of the *Emmy Rose*. At  
7 0131, a second EPIRB alert was received with a unconfirmed position, and at 0147, a  
8 confirmed alert was received with an updated position. There were no VHF radio  
9 transmissions received from the *Emmy Rose*. The last outgoing satellite phone call was  
10 at 1848, about 6 hours before the EPIRB triggered the first alert.

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1  
2 **Figure 5.** *Emmy Rose* final VNS track and EPIRB positions. (Source: Google Earth, annotated  
3 by NTSB)

#### 4 **1.2 Search and Rescue**

5 At 0154, the 210-foot-long Coast Guard cutter *Vigorous* was diverted from its  
6 location about 12 nautical miles from the *Emmy Rose* to assist with search and rescue  
7 (SAR) efforts. At 0228, the Coast Guard launched a SAR helicopter from Cape Cod,  
8 Massachusetts. The cutter and helicopter arrived at the *Emmy Rose*'s EPIRB position  
9 and began searching about 0300.

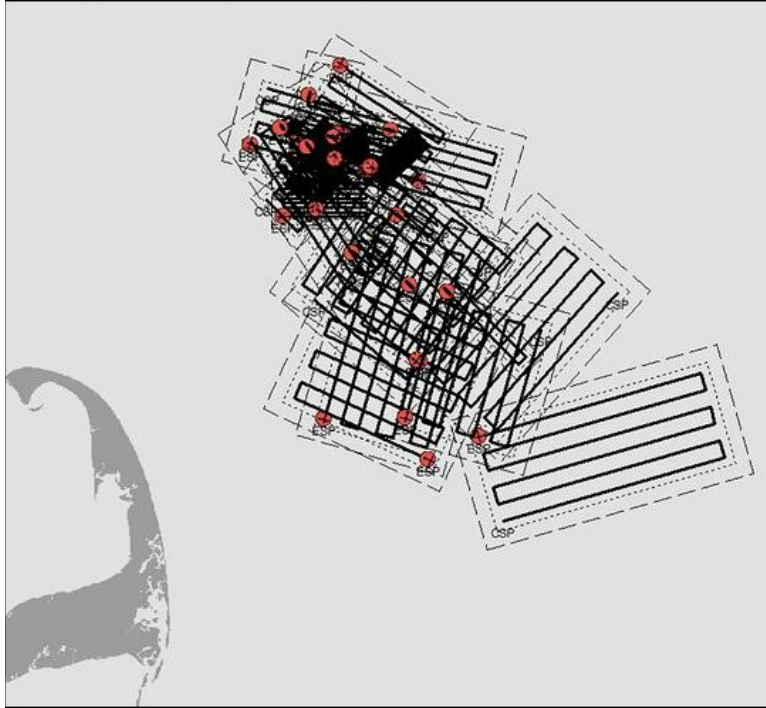
10 At 0307, the helicopter crew located an inflated liferaft and notified the cutter  
11 crew of its position. The cutter crew maneuvered their vessel alongside the liferaft,  
12 launched a rescue boat crew, and found no crewmembers in the liferaft. They reported  
13 a "strong scent of diesel" in the area. At 0326, the helicopter crew located the *Emmy*  
14 *Rose*'s EPIRB about 500 yards from the liferaft in a debris field containing a fish tote  
15 and other small objects. Throughout the early morning hours, the Coast Guard

- 1 deployed a 47-foot-long motor lifeboat and a fixed wing aircraft to the area to search
- 2 for survivors.



- 3
- 4 **Figure 6.** Recovered *Emmy Rose* EPIRB (*left*) and liferaft (*right*). (Source: Coast Guard)

5 About 0640, SAR crews spotted an estimated 600-foot-wide oil sheen. Later that  
6 morning, the EPIRB, liferaft, one life ring, and two wooden fish hold hatch covers from  
7 the *Emmy Rose* were recovered by the crew of the cutter. On November 24 at 1722,  
8 after searching over 2,200 square miles over a 38-hour period, the Coast Guard  
9 suspended SAR efforts.



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2 **Figure 7.** Search patterns for *Emmy Rose*. (Source: Coast Guard)

### 3 **1.3 Injuries / Fatalities**

4 The four crewmembers aboard the *Emmy Rose* were not located or recovered  
5 during search and rescue efforts and are presumed to be deceased.

### 6 **1.4 Vessel Damage**

7 The vessel sank in about 800 feet of water and was not recovered. The vessel was  
8 declared a constructive total loss and was valued at \$325,000. Side scan sonar and a  
9 remotely operated vehicle (ROV) were used to survey the sunken vessel. The vessel  
10 was found to be sitting upright on the seafloor, facing to the southeast, with its  
11 outriggers deployed (see [Section 2.0, Post Sinking Activities](#)).

## 1 **1.5 Weather**

2 At 2140 on November 22, the National Weather Service Ocean Prediction Center  
3 released an Offshore Waters Forecast for November 23. The overall synopsis for New  
4 England stated:

5 A high pressure currently north of the area will shift NE of the region  
6 tonight into Mon as a strengthening warm front gradually moves NE  
7 across the waters. Developing low pressure will track NE and pass N of  
8 the region Mon and Mon night while pulling a strong cold front E across  
9 the waters. Predicted winds and seas were SE winds 20-30 knots and  
10 seas 5 to 8 feet for the evening of the 22nd of November. Monday the  
11 23rd called for S to SE winds 25-35 knots becoming 20 to 30 knots with  
12 seas 8-14 with a chance of rain.

13 The *Emmy Rose* email account received the Offshore Waters Forecast notification  
14 email from the National Weather Service at 2210 on November 22. The message read:

15 Offshore Waters Forecast  
16 NWS Ocean Prediction Center Washington DC  
17 940 PM EST Sun Nov 22 2020

18  
19 New England continental shelf and slope waters from 25 nm  
20 offshore to the Hague Line, except to 1,000 [fathoms] south of New  
21 England.

22  
23 Seas given as significant wave height, which is the average  
24 height of the highest 1/3 of the waves. Individual waves may be  
25 more than twice the significant wave height.

26  
27 ANZ805-231430-  
28 Georges Bank between Cape Cod and 68W north of 1000 FM-  
29 940 PM EST Sun Nov 22 2020

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...GALE WARNING...

.TONIGHT...SE winds 20 to 30 kt. Seas 5 to 8 ft. Scattered showers.

.MON...S winds 20 to 30 kt. Seas 7 to 9 ft. Chance of rain early, then scattered showers and [thunderstorms].

.MON NIGHT...NW winds 30 to 40 kt. Seas 9 to 13 ft. Chance of rain.

.TUE...NW winds 25 to 35 kt, diminishing to 20 to 30 kt. Seas 7 to 13 ft.

A weather buoy located about 9 nautical miles north of Provincetown, Massachusetts, and about 31 nm east of the *Emmy Rose*'s last known position recorded weather conditions at 0130 on November 23. The air temperature was observed to be 51° F, dewpoint 49° F, and seawater temperature 50.5° F. The winds were from the east-southeast at 17 knots, gusting to 21 knots, and the sea state was 5.6 feet observed with an easterly sea swell of 5-6 feet and a period of 6 seconds.

Responding Coast Guard SAR crews provided weather observations near the last known position of the *Emmy Rose*. At 0300, the cutter crew reported the weather as seas of 2-4 feet at direction 105° with winds at 18 knots from east-southeast (130°), overcast skies and 10-mile visibility. The air temperature was 53° F and sea temperature was 52° F.

The CFV *Blue Canyon* had been fishing in the vicinity of the *Emmy Rose*, and its captain estimated the weather to be, "nothing that the *Emmy Rose* couldn't easily handle." He described the seas as "sloppy" but no bigger than 5-8 feet with a windspeed about 20-30 knots.

## 1 **1.6 Personnel Information**

2 The 41-year-old captain of the *Emmy Rose*, who had about 25 years of fishing  
3 experience, had worked on the vessel since July 2020. He was the only captain that  
4 had worked aboard *Emmy Rose* since the most recent purchase. He was reported to  
5 be a hands-on captain and performed welding repairs and engine room duties on the  
6 vessel.

7 All three deckhands had previously sailed on other fishing vessels. The vessel's  
8 manager allowed the captain to hire the vessel's crew. Deckhand no. 1, aged 55, had  
9 about 35 years of experience in the fishing industry and had been working aboard the  
10 *Emmy Rose* for a month prior to the sinking. Deckhand no. 2, aged 38, had about  
11 20 years of experience in the fishing industry and had been working aboard the *Emmy*  
12 *Rose* for about 3 months. Deckhand no. 3, aged 23, had about 3 years of experience  
13 in the fishing industry and had also been working aboard the *Emmy Rose* for about  
14 3 months. None of the crewmembers were credentialed mariners; there was no  
15 requirement for any of the *Emmy Rose* crewmembers to hold merchant mariner  
16 credentials.<sup>2</sup> At time of the casualty, there were no regulatory requirements for  
17 watchstanding, manning, or work/rest-hour restrictions. Aboard the *Emmy Rose*, there

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<sup>2</sup> US Code and federal regulations exempt vessels of less than 200 GT from compliance with the Officers Competency Certificates Convention, 1936, implemented in 46 *United States Code* 8304 and Title 46 *Code of Federal Regulations (CFR)* 15. Therefore, since the *Emmy Rose* was 129 GT, there was no requirement for its crewmembers to hold a valid merchant mariner license or credential.

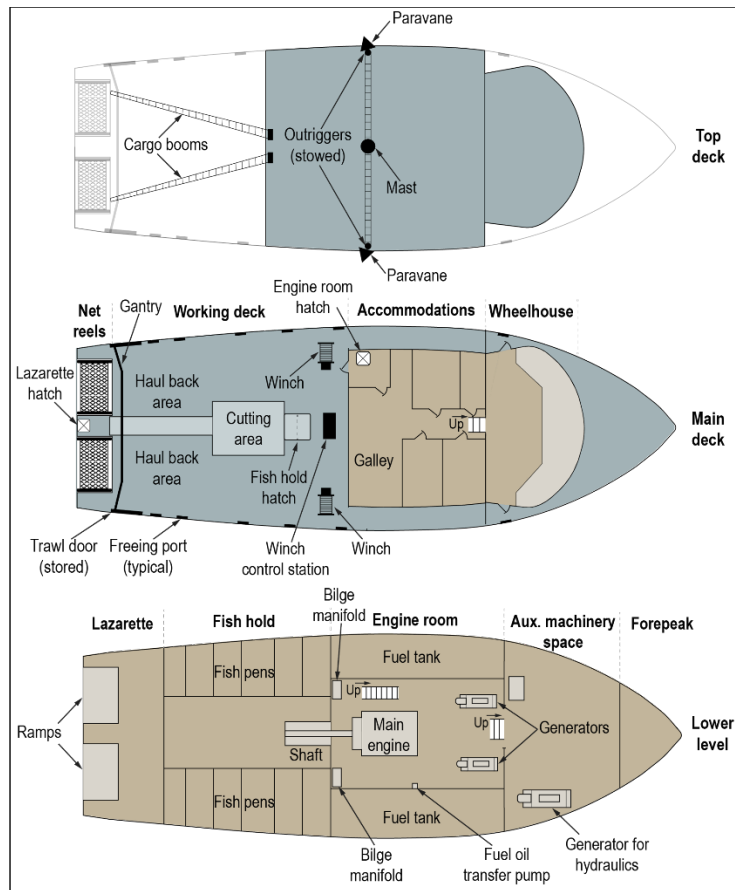
1 was no set watch rotation for the crew. The captain would determine the watch  
2 schedule based upon fishing operations. It is unknown which crewmember was on  
3 watch at the time of the sinking.

#### 4 **1.7 Vessel Construction and Equipment**

5 The *Emmy Rose's* above-deck structures included a wheelhouse and crew  
6 quarters. Deck gear included port and starboard outriggers, two cargo booms, two  
7 hydraulic trawl winches, and two net reels on the stern. Below-deck areas from forward  
8 to aft were divided into a forepeak, an engine room, a fish hold, and a lazarette.<sup>3</sup>

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<sup>3</sup> A vessel's lazarette is its aftermost compartment below the main deck, typically accessed by a deck hatch.



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**Figure 8.** Graphic layout of *Emmy Rose*.

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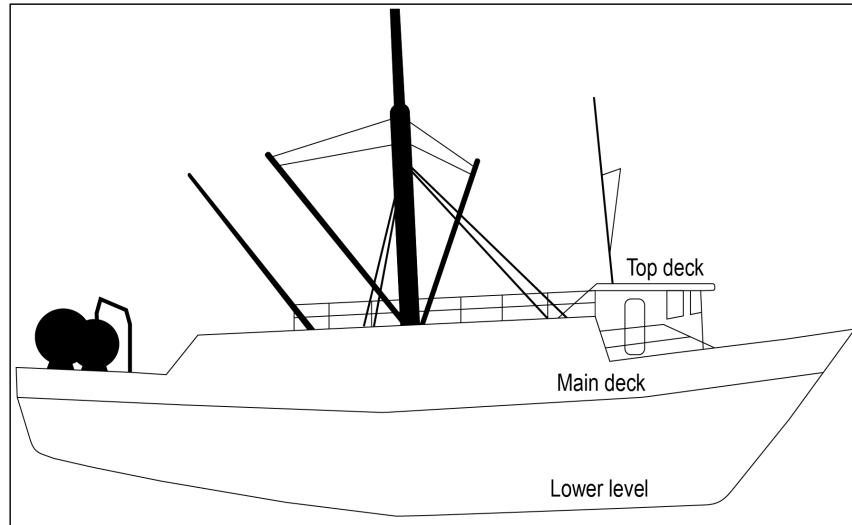
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The *Emmy Rose* was modified from a Gulf shrimp side-trawler to a stern trawling vessel after it was sold to Sasha Lee Inc. in 2001. Gulf-shrimp-style vessels are typically designed with a raised bow and stern to handle the majority of the cargo weight amidships as the nets are deployed over the sides of the vessel with the outriggers, as opposed to over the stern, as done in the northeast groundfishing fleet. The *Emmy*



- 1 Rose was constructed with a sheer design and described to as having a “banana”  
2 shape, in which the midships area is lower than the bow and the stern.<sup>4</sup>



3

4 **Figure 9.** Graphic profile view of *Emmy Rose*.

5 The hydraulic port and starboard cargo booms and winches were located on the  
6 top deck. The top deck also housed a steel mast with a crosstree with cradles for storing  
7 the port and starboard outriggers when stowed. At sea, the crew would typically  
8 deploy the outriggers and lower the paravanes, or “birds,” into the water after  
9 departing the harbor to slow the roll of the vessel to make it more comfortable and  
10 more workable. The vessel manager estimated that each paravane weighed 100  
11 pounds, and when fully deployed to their stops, the paravanes would extend into the  
12 water about 30 feet.

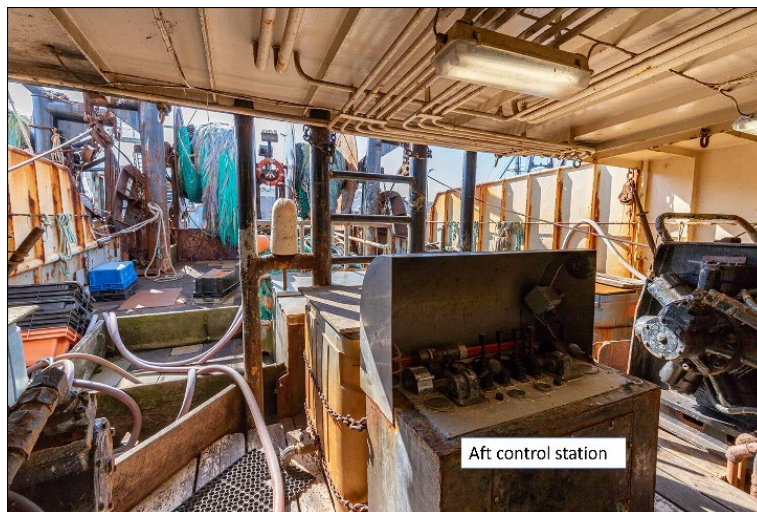
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<sup>4</sup> Sheer is a measure of longitudinal curvature of a vessel’s main deck.

1           The superstructure, which consisted of the wheelhouse, was elevated over the  
2 main deck. Access to the wheelhouse was through the port and starboard watertight  
3 doors as well as from the accommodation space.

4           Accommodation spaces for the crew were located on the main deck a few steps  
5 below the wheelhouse. Accommodations consisted of a four-person bunkroom on the  
6 starboard side aft of the wheelhouse, the crew's lavatory on the port side, and a two-  
7 person bunkroom aft. The galley area was located furthest aft on the starboard side,  
8 with a watertight door on the port side aft leading to the aft working deck.

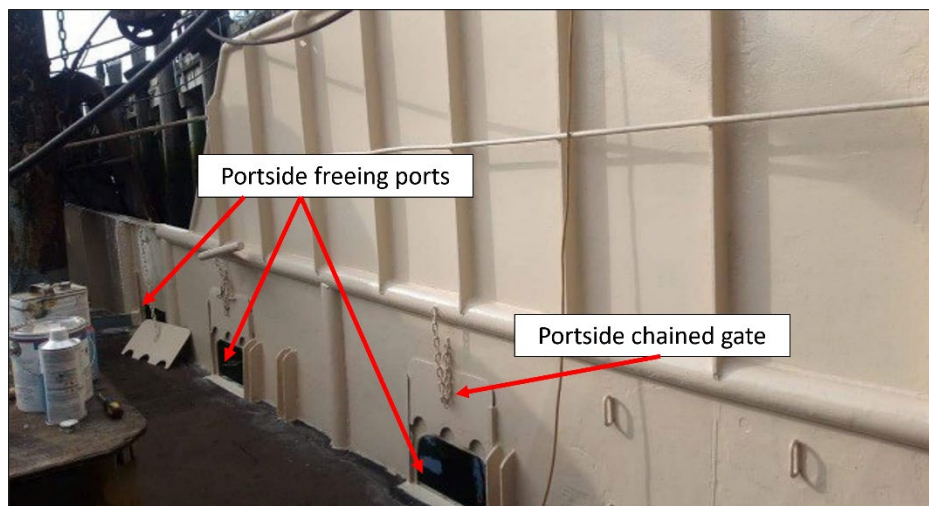
9           The forward part of the working deck was equipped with two hydraulic winches  
10 for operating trawling machinery sheltered by an extended deck level above. The  
11 winches were controlled from a station between them.



12

13 **Figure 10.** Trawl winch control station on aft working deck. (Source: Atlantic Brokerage  
14 House)

1           The aft portion of the working deck was surrounded by 36.5-inch-high steel  
2 bulwarks. On each side of the vessel, the bulwarks were fitted with five freeing ports,  
3 each measuring 10 inches by 20 inches. Each freeing port had a chained gate with  
4 three half-circle cutouts to allow water to drain in the closed position.<sup>5</sup> There were two  
5 freeing ports in the forward portion of the vessel, one on each side below the  
6 wheelhouse doors.



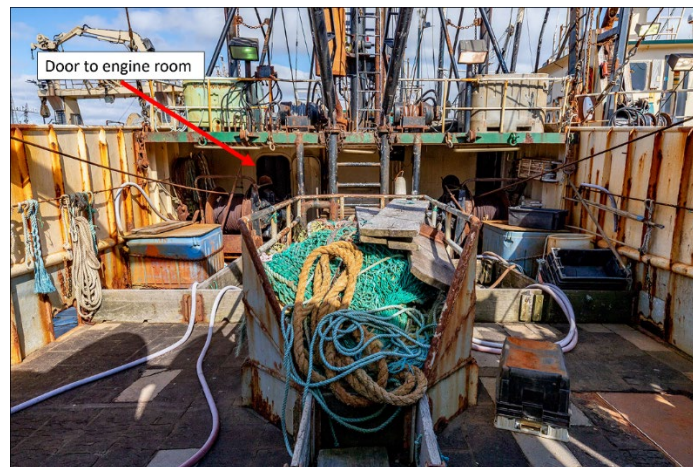
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8 **Figure 11.** Freeing ports on portside bulwarks. (Source: Boat Aaron & Melissa, Inc)

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<sup>5</sup> 46 *CFR* 28.555 states freeing ports must be located to allow the rapid clearing of water in all probable conditions of list and trim and provides formulas to determine the aggregate clear area of freeing ports on each side of the vessel. Freeing port covers are permitted provided that the freeing port area required by this section is not diminished and the covers are constructed and fitted so that water will readily flow outboard but not inboard.

1 Forward of the haul-back area (where the catch was landed), the bulwarks rose to  
2 meet the main deck level, forming a shield for the working deck area on both sides,  
3 and creating storage areas outboard of the accommodation space. Two hydraulically  
4 operated, chain-driven net reels were mounted over the port and starboard net ramps  
5 above the vessel's transom. Below each net reel there was a hinged storm gate, about  
6 six feet wide, which could be raised to a vertical position and pinned from each side to  
7 limit sea water from entering the working deck over the stern ramps. The aft working  
8 deck housed three hatches, which provided access to the engine room, fish hold, and  
9 lazarette.

10 A watertight door to the engine room and accommodation spaces was located  
11 on the port side of the forward bulkhead of the aft deck.



12

13 **Figure 12.** Watertight door to engine room and accommodation spaces from aft working  
14 deck. (Source: Atlantic Brokerage House)

15 The fish hold was located aft of the engine room and was subdivided into  
16 12 individual two-tiered pens. Wooden boards were used to contain fish in each pen.

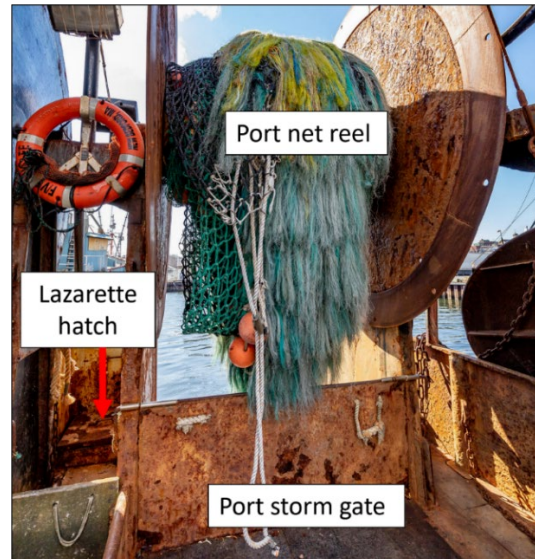
1 The fish hold was accessed through a centerline hatch that measured 46 inches by 48  
2 inches. The hatch had a 32-inch raised steel combing and was secured with a  
3 non-watertight, two-piece wooden cover, which was then covered with a two-piece  
4 hinged stainless-steel cover. The stuffing box for the propeller shaft through-hull  
5 penetration was housed in the bilge of the fish hold. This area was fitted with a high-  
6 water alarm and bilge suctions from the engine room pumping system.



8 **Figure 13.** Aft working deck (*left*) and fish hold pens (*right*). (Source: Atlantic Brokerage  
9 House and Marine Safety Consultants)

10 The lazarette was the furthest aft compartment and contained the steering rams,  
11 a high-water bilge alarm, and a bilge suction. The lazarette was accessed through a 24-  
12 inch-by-24-inch hatch. The hatch had a 6-inch raised steel combing and was secured  
13 with a non-watertight, steel cover.

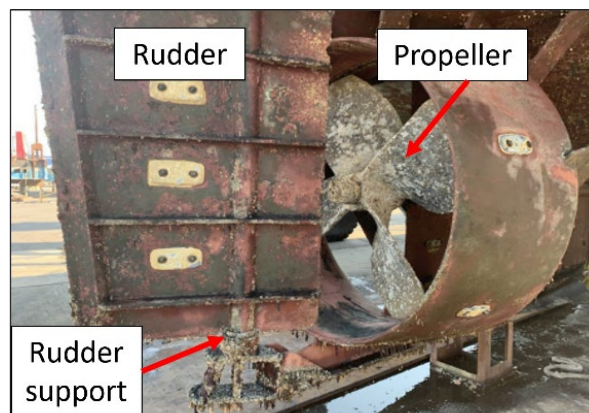




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2 **Figure 14.** Port net reel, storm gate, and lazarette hatch. (Source: Atlantic Brokerage House).

3 Propulsion for the *Emmy Rose* was provided by a 12-cylinder, keel-cooled diesel  
4 engine rated at 630 hp. The engine was coupled to a four-bladed bronze propeller  
5 set in a non-rotating nozzle on a 6-inch shaft. A semi-balanced steel rudder was hung  
6 from the skeg and supported from below.



7

8 **Figure 15.** *Emmy Rose* propeller and rudder arrangement. (Source: Marine Safety  
9 Consultants)

1           Electrical power for the *Emmy Rose* was provided by two 220-volt diesel  
2 generators: a four-cylinder diesel generator rated for 65-kilowatt (kW) and a smaller  
3 20 kW unit. The deck hydraulic systems were powered by a six-cylinder diesel engine  
4 located in the auxiliary machinery room forward of the engine room. There was no  
5 door between the two spaces.

6           The *Emmy Rose* had a fuel capacity of 15,000 gallons in two 7,500-gallon fuel  
7 tanks located outboard of the engine room. A fuel oil transfer pump was located in  
8 the engine room with an estimated capacity of 26 gallons per minute. The transfer  
9 pump was used to transfer fuel between the port and starboard tanks for both fuel  
10 service and to control the vessel's list that might develop as a result of regular  
11 operations. According to the vessel manager, the fuel transfer valves were labeled in  
12 paint on the tank bulkhead, but there were no written procedures for fuel transfer  
13 aboard the *Emmy Rose*.<sup>6</sup>

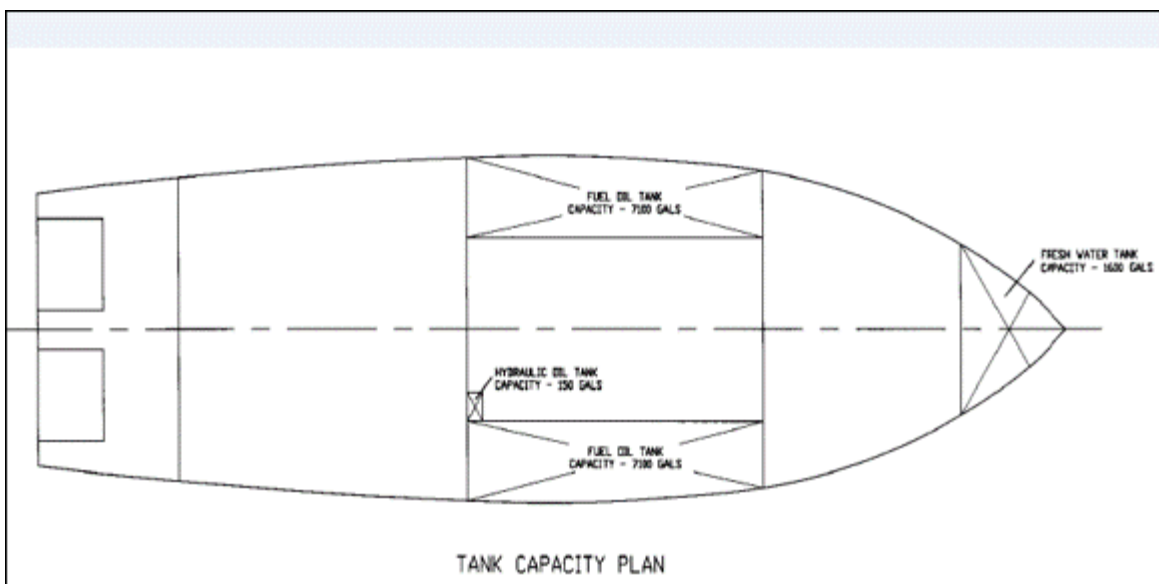
14           According to the manager and previous crewmembers, fuel for the main engine  
15 could be supplied from either the port or starboard tank. The unburned, excess fuel

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<sup>6</sup> The regulations in 33 *CFR* 155.720 require that the operator of a vessel with a capacity of 250 or more barrels (10,500 gallons) of oil, hazardous material, or liquefied gas as regulated in Table 4 of 46 *CFR* Part 154 shall provide transfer procedures that meet the requirements of this part and Part 156 of the chapter for transferring: (1) to or from the vessel; and (2) from tank to tank within the vessel.

1 returns could be directed to either tank. The *Emmy Rose* typically burned about  
2 550 gallons of fuel per day while under way.

3 When the crew loaded fuel, the two fuel tanks would be filled to about 75%  
4 capacity (11,250 gallons). The *Emmy Rose* loaded 4,297 gallons of fuel on November  
5 12, 2020 and then had been underway for about 7 days before the casualty. The  
6 amount of fuel aboard the *Emmy Rose* at the time of the sinking is unknown;  
7 however, it is estimated there were about 6,000 gallons remaining aboard the vessel.

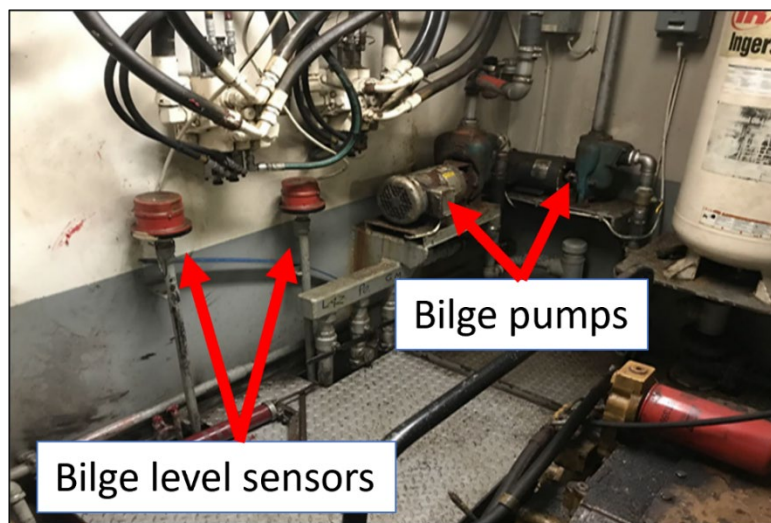


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9 **Figure 16.** *Emmy Rose* tank capacity plan. (Source: Marine Safety Consultants)

10 The vessel's bilge pumping and deck washdown operations were provided by  
11 four electrically driven, self-priming centrifugal pumps in the engine room. Two  
12 independent manifolds were piped to sea chests for sea water priming and supply.  
13 Both manifolds included suction piping from the engine room, fish hold, and  
14 lazarette. All pumps discharged to a manifold on the aft working deck where water



1 could be discharged overboard or directed over the working deck through flexible  
2 hoses for washdown. The engine room, fish hold, and lazarette were equipped with  
3 high-water bilge alarms with audible and visual alarms in the wheelhouse. The audio  
4 and visual bilge alarms in the wheelhouse were successfully tested in July 2020  
5 during a safety examination. Bilge alarms were typically tested by manually lifting the  
6 high-level sensor float in the spaces.

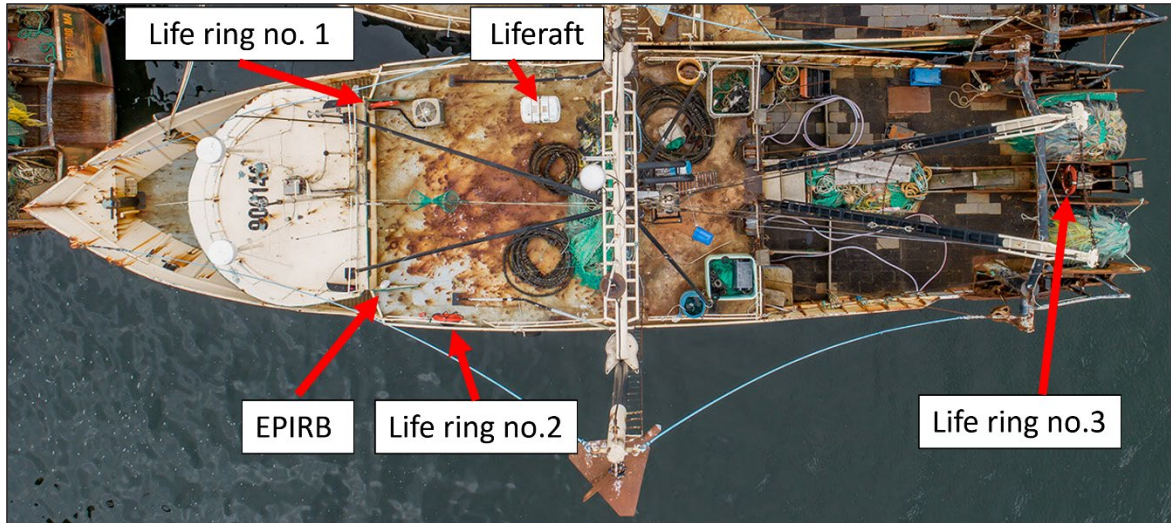


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8 **Figure 17.** *Emmy Rose* bilge pumps and level sensors. (Source: Marine Safety Consultants)

9 For navigation and communication, the *Emmy Rose* was equipped with two  
10 radars, two GPS navigation systems, three VHF radios, one single side band (SSB)  
11 radio, one automated identification system (AIS), one autopilot, a compass,  
12 3 computers, and a satellite telephone. The autopilot system controlled the rudder  
13 and was not connected to the engine for propulsion control. The vessel was also  
14 equipped with a video camera system that monitored the aft deck and engine room  
15 but was not designed to record.

1 Lifesaving equipment aboard the *Emmy Rose* consisted of five personal survival  
2 suits, three life ring buoys, one liferaft, and an EPIRB.



3

4 **Figure 18.** *Emmy Rose* lifesaving appliances. (Source: Atlantic Brokerage House)

5 The inflatable 6-person liferaft, manufactured by New Wave Guardian in 2009  
6 was stored in a cradle aft of the wheelhouse on the starboard side. The liferaft was  
7 equipped with a hydrostatic release that was designed to deploy and inflate the raft  
8 when submerged. It had been last inspected in May 2020.

9 An ACR Electronics 406-MHz model RLB-32 category-1 EPIRB was mounted in a  
10 bracket aft of the wheelhouse on the port side. The EPIRB was a non-GPS-enabled  
11 beacon.<sup>7</sup> The battery had been replaced in July 2020 and had an expiration date of

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<sup>7</sup> A non-GPS-enabled beacon provides an approximate location (within 2 miles), but not exact coordinates. Depending on the position of satellites passing overhead, it could take up to 90 minutes

1 June 2026. The EPIRB was equipped with a hydrostatic release that would deploy  
2 when submerged. It is unknown if any of the crewmembers had personal locator  
3 beacons (PLB) while aboard the *Emmy Rose*.<sup>8</sup>

4 Investigators inspected the EPIRB and liferaft, which were recovered by SAR  
5 crews, and determined that both pieces of equipment had functioned properly and  
6 had been deployed hydrostatically, meaning that no crewmember manually  
7 deployed either device.

## 8 **1.8 Certification and Inspections**

9 As a commercial fishing vessel, the *Emmy Rose* was subject to the federal  
10 regulations under Title 46 *Code of Federal Regulations (CFR)* Subchapter C  
11 (Uninspected Vessels). The intent of these regulations was to improve the overall  
12 safety of commercial fishing vessels and to reduce fatalities and casualties.  
13 Regulations in this subchapter included provisions for lifesaving, firefighting,  
14 navigation, communication, dewatering systems, and emergency instructions and  
15 drills. Because the *Emmy Rose* was less than 200 gross tons, the vessel was not

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for a standard 406 MHz EPIRB's position to be reported. A GPS-enabled-beacon sends exact GPS coordinates within a radius of approximately 0.5 miles within 2-3 minutes.

<sup>8</sup> A personal locator beacon, or PLB for short, is a personal electronic device that transmits a distress signal to a global system of satellites to alert potential rescuers to an emergency.

1 subject to Coast Guard inspection and certification or manning and licensing  
2 requirements.

3 Under the Coast Guard Authorization Act of 2010, vessels that operate  
4 3 nautical miles beyond the shore are required to complete a dockside safety  
5 examination at least once every 5 years. Regulations and Coast Guard policies  
6 authorized designated third-party examiners to conduct these safety examinations  
7 upon the request of vessel owners.

8 In March of 2002, *Sasha Lee* underwent an incline test and a stability analysis.  
9 The resulting report indicated that the *Sasha Lee* exceeded the required the stability  
10 characteristics in all intact stability conditions, and a stability instruction booklet was  
11 provided to the vessel. The booklet contained operating instructions, intact stability  
12 conditions, hydrostatic properties, tank capacity plans, and tables. The manager  
13 stated that he received the booklet when he purchased the vessel and believed that it  
14 was kept aboard the vessel, and that it was mandatory for the captain to “know what  
15 his stability stuff is.” The manager stated that there had not been any modifications  
16 that added weight to the vessel since he purchased it.

17 In August 2019, in-water and out-of-water surveys were conducted of the *Sasha*  
18 *Lee* in preparation for the sale of the vessel. Using an ultrasonic thickness gauge,  
19 approximately 80 spot measurements of the underwater body were taken. Readings  
20 showed “very little overall wastage around 10%. The lowest readings were taken  
21 along the garboard plate on either side as well as on the transom where there was a

1 low reading of (0.263 inches) with multiple other low similar readings taken below the  
2 net drum ramps." The report indicated that the as-built plate thickness was unknown,  
3 and based on the readings, the bottom plate appeared to be 3/8-inch thick. The  
4 general overall condition vessel was found to be "very good" and considered "fit for  
5 service as an offshore ground fish vessel".

6 On July 21, 2020, a commercial fishing vessel safety examination was conducted  
7 by a designated third-party commercial fishing vessel examiner. A safety examination  
8 helps ensure that all of the required safety equipment on board is in serviceable  
9 condition and is required for fishing vessels once every five years. The examiner  
10 identified two deficiencies while aboard the *Emmy Rose*: the EPIRB battery was  
11 expired, and the vessel did not have a waste management plan. The deficiencies  
12 were corrected, and a Commercial Fishing Vessel Decal was issued on July 22, 2020.

### 13 **1.9 Company Operations**

14 On May 6, 2020, the manager of the *Emmy Rose* purchased the *Sasha Lee*,  
15 renamed it *Emmy Rose*, and transferred ownership to Boat Aaron & Melissa, Inc in  
16 order to fish using an unused fishing permit held by the owner of Boat Aaron & Melissa,  
17 Inc. The manager had been working on fishing vessels for about 35 years and had  
18 owned about 12 fishing vessels in his career. The owner of Boat Aaron & Melissa, who  
19 had been in the fishing industry for 43 years, purchased his first boat in 1986, and  
20 owned three other fishing vessels at the time of the casualty.

21 The operating company for the *Emmy Rose* did not have a safety management  
22 system, nor was one required. The owner and manager were not aware of any

1 emergency drills that had been conducted aboard the vessel, nor did they know which  
2 crewmember was a qualified drill conductor; the manager believed the captain was a  
3 qualified drill conductor but could not confirm.<sup>9</sup> They stated that the captain would  
4 determine when drills were to be conducted. Previous crewmembers stated that new  
5 crewmembers would receive an orientation to the vessel, but no emergency drills had  
6 been conducted aboard the *Emmy Rose* while they were aboard.

7 Each crewmember was required to sign a contract referred to as a “fishing  
8 agreement” before joining the vessel as an independent contractor. The agreement  
9 addressed payment, fitness for duty, illness, injury, and other terms of employment.  
10 Each crewmember signed that they agreed to obey lawful commands, ; refrain from  
11 intoxication, use or possession of any alcohol, drugs or narcotics, ; and that there would  
12 be no sleeping on watch.

13 There were no logs to document the testing of alarms and inspection of lifesaving  
14 appliances, nor was they required. The vessel did not have a drug policy in place for  
15 the captain or crew. The owner stated that it was up to the captain to drug test the crew  
16 if he so desired.

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<sup>9</sup> As per 46 *CFR* 28.270, The captain or individual in charge of each vessel must ensure that drills are conducted, and instruction is given to each individual on board at least once each month.

Contingencies that were to be addressed included abandoning the vessel, fighting a fire, minimizing the effects of unintentional flooding, using lifesaving appliances, making distress calls.

1           Between trips, a shore engineer conducted maintenance on the *Emmy Rose*  
2 based on worklists left by the captain that identified what tasks needed to be  
3 completed. The shore engineer welded and performed engine maintenance and other  
4 mechanical repairs.

5           The manager kept in contact with the crew of the *Emmy Rose* via email and  
6 satellite phone while it was under way. No issues or problems were communicated to  
7 the manager or to any other fishing vessels during the final voyage.

### 8 **1.10 Previous Voyages**

9           After being purchased and renamed in April 2020, the *Emmy Rose* completed its  
10 first voyage on July 30, 2020, and subsequently completed 12 fishing trips over 6  
11 months. The average trip lasted between 5-7 days; each time, the vessel departed  
12 Portland, Maine, and fished in the Gulf of Maine. The crew offloaded their catch in  
13 Gloucester, Massachusetts, and then typically returned to Portland. During the 12  
14 previous trips, the average catch was about 36,370 pounds of assorted groundfish. The  
15 largest offload of fish from the *Emmy Rose* was 50,150 pounds on August 15. The  
16 *Emmy Rose* was estimated to be able to hold over 100,000 pounds of fish in the fish  
17 hold.

18           While under way, the crew of the *Emmy Rose* would typically navigate the vessel  
19 using the autopilot system which would maintain the vessel's course. While fishing, the  
20 captain was typically at the helm, except when deploying and hauling back the nets,  
21 where he would transfer control to the aft control station. The vessel would drag for  
22 about 3-4 hours, and after each haul back, the crew processed the catch on deck. After

1 cleaning the fish, they would be lowered down into the fish hold, segregated in pens,  
2 and sorted by species. Once the nets were clear of fish, they would be redeployed over  
3 the stern ramps.

4 A deckhand who had worked aboard *Emmy Rose* for two fishing trips in late  
5 summer 2020 reported that, on his second trip, as the vessel was transiting back to port  
6 to offload the catch, the vessel suddenly “started listing pretty bad” and there was  
7 waist-deep water on the aft working deck while the captain was transferring fuel  
8 between the two fuel tanks. He stated that the list was so severe that the water was  
9 coming over the starboard bulwark and the aft deck was awash. According to the  
10 deckhand, the captain started the transfer and then fell asleep in his bunk. The captain  
11 was awakened, he transferred the fuel back, and the list was corrected.

12 On September 11, 2020, the *Emmy Rose* was hauled out of water to have the  
13 propeller resized after the captain reported the engine was running “a little bit warm  
14 and the rpms aren’t there.” The manager contacted a propeller company, and a  
15 reconditioned, smaller propeller was installed to replace the original propeller. The  
16 manager and shore engineer reported that engine operations improved after the  
17 replacement.

18 In early November, an observer from NOAA joined the *Emmy Rose* for an 8-day  
19 fishing trip to collect data on fish species that were caught in each fishery area. Upon  
20 arrival, a safety checklist provided by the NOAA office was completed with no  
21 discrepancies. The observer recalled there were no emergency drills conducted



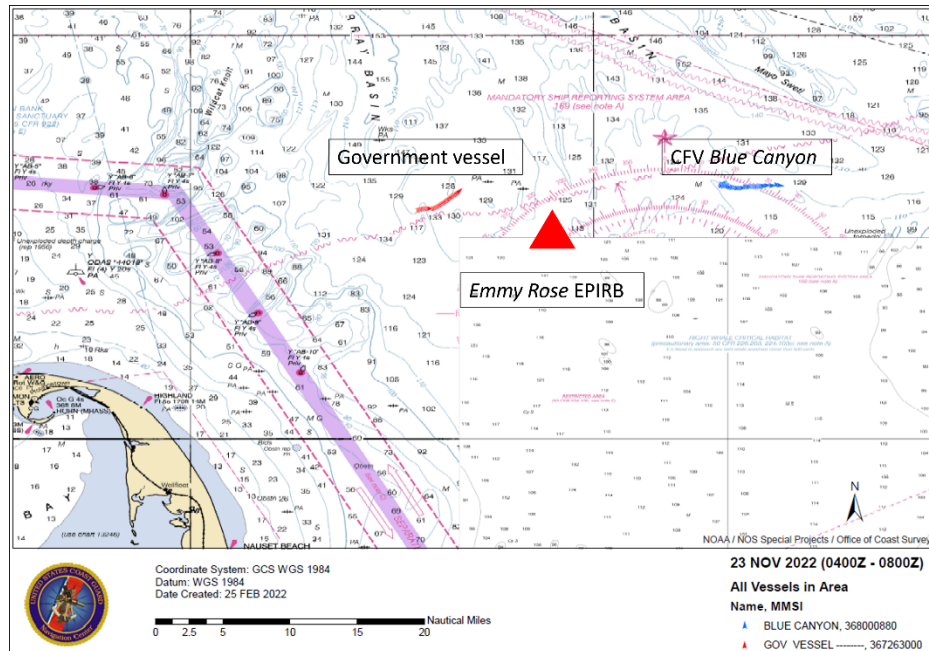
1 during the voyage, and that the crew fished around the clock; the time between hauls  
2 was about 5 hours, and they would rest between hauls. While the vessel was under  
3 way, the observer saw three crewmembers “smoking weed,” as a “daily occurrence  
4 pretty much in between each haul.” The captain was not seen smoking but had fallen  
5 asleep at the wheel “often” and had left the nets dragging longer than expecting,  
6 tearing the nets and requiring the crew to repair them two or three times.

7 On November 11, 2020, the trawl doors were replaced with a different style of  
8 doors. This was common based on wear and operations. According to the manager,  
9 the new doors were about the same weight as the replaced doors.

## 10 **2.0 Post-Sinking Activities**

### 11 **2.1 Navigation Center Vessel Search**

12 After the sinking, the Coast Guard Navigation Center (NAVCEN) performed a  
13 search of vessels in the vicinity of the *Emmy Rose*’s EPIRB position from 2300 on  
14 November 22 to 0300 on November 23. The fishing vessel *Blue Canyon* and the  
15 Coast Guard cutter *Vigorous* were detected but were not within several miles of the  
16 sinking site. No other vessels were in the area of the *Emmy Rose* in the 2.5 hours  
17 before the sinking.



1

2 **Figure 19.** Search for vessels near the *Emmy Rose*. (Source: NAVCEN)

### 3 **2.2 Underwater Acoustic Recording Devices**

4 Several underwater acoustic recording devices that provided weather  
 5 information and monitored whale activity off the coast of Massachusetts were  
 6 recovered from the general area of the *Emmy Rose* sinking site. Recorded data from  
 7 the devices was analyzed, but no information associated with *Emmy Rose*  
 8 characteristics was observed around the time of the sinking.

### 9 **2.3 Side Scan Sonar Search**

10 In May 2021, MIND Technologies provided side scan sonar devices to locate the  
 11 *Emmy Rose* on the seafloor and assess its condition. The side scan sonars were towed  
 12 from the NOAA research vessel, *Auk*. The vessel departed Scituate, Massachusetts, on  
 13 May 18 and began following a search pattern the following day which was developed  
 14 based on weather and sea conditions at the time of the sinking.



1

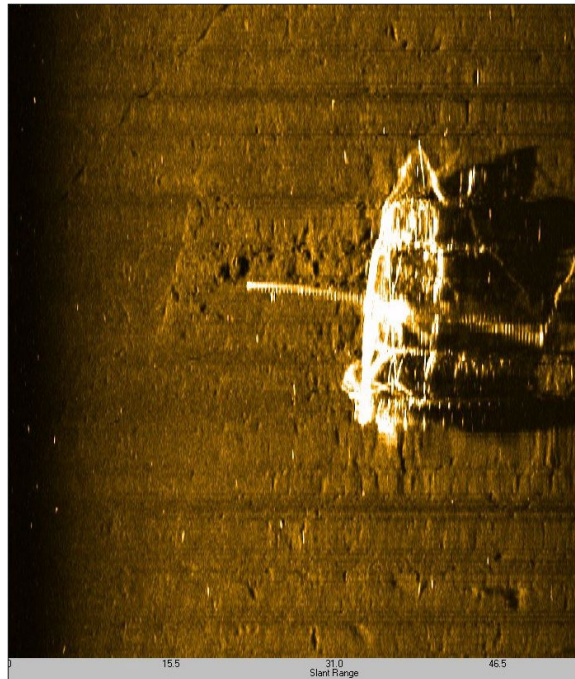
2 **Figure 20.** Side scan sonar sea floor search patterns for *Emmy Rose*. (Source: MIND

3 Technologies)

4 After 6.5 hours searching, the *Emmy Rose* was located at 1415 on May 19. The  
5 sunken vessel was about 3.5 nautical miles west of the last VMS position at a depth of  
6 794 feet. Several side scan images were taken with different levels of frequency and at  
7 different heights above the sea floor. The images were interpreted by specialists of  
8 MIND Technologies, and a report was provided to investigators.

9 The side scan survey report stated that the *Emmy Rose* was found to be “sitting  
10 upright on the seafloor with the bow oriented at 135° (southeast direction) and both  
11 outriggers fully deployed.” The side scan images did not detect any debris field on the  
12 seafloor near to the sunken vessel. Additionally, the report stated that there was “no  
13 visible damage to *Emmy Rose* evident as the mast, wire rigging, and superstructure  
14 features all appeared to be intact. The ladders on both port and starboard outriggers  
15 were visible in the sonar imagery.” Sonar images indicated that both paravanes were  
16 deployed from the outriggers. Based on interpretation of imagery, MIND Technologies

1 engineers believed that about 203 feet of cable had been deployed from the port  
2 outrigger, and the paravane was this distance ahead of the vessel. The position of both  
3 paravanes leading forward of the vessel indicated that “the stern sunk to the seafloor  
4 before the bow at least just prior to the vessel making contact with the seafloor.”



5

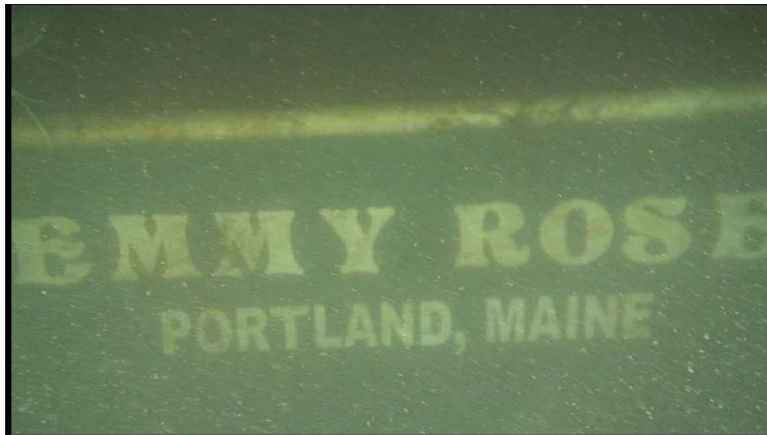
6 **Figure 21.** Side scan sonar image of *Emmy Rose* from 246 feet above at 600 kHz. (Source:  
7 MIND Technologies)

8 The side scan sonar operation identified the position of the *Emmy Rose* on the  
9 seafloor, thereby giving investigators the opportunity to survey the *Emmy Rose* with  
10 an ROV.

#### 11 **2.4 Remotely Operated Vehicle Survey Operations**

12 The Coast Guard and the National Transportation Safety Board requested the  
13 Woods Hole Oceanographic Institute (WHOI) conduct an ROV survey of the *Emmy*

1 Rose and provided the WHOI with the location, depth of the vessel, and high-resolution  
2 imagery from the side scan survey to support planning. On September 21, an ROV and  
3 associated equipment were loaded aboard the Coast Guard cutter *Sycamore* in  
4 Newport, Rhode Island. The following morning, the vessel arrived at the sinking site of  
5 the *Emmy Rose*. The ROV survey results found the vessel to be in the same position as  
6 the side scan survey indicated, in a water depth of 794 feet, sitting upright on the sea  
7 floor, with the bow heading of 135° (southeast). There was no visible damage to the  
8 vessel in the areas the ROV was able to inspect on both sides of the bow, port and  
9 starboard sides, stern, and the wheelhouse.



10

11 **Figure 22.** ROV image of *Emmy Rose* name on starboard side. (Source: WHOI)

12 The ROV could not access the hull under the outriggers, aft working deck,  
13 starboard outrigger, stern ramps, or stern deck hatches due to the risk of entanglement  
14 and maneuvering in the currents. The undersea currents had caused sediment to build  
15 up on the starboard side and at the stern of the vessel and prevented inspection below  
16 the rub rail. The vessel's position on the seafloor and the sediment buildup prevented

1 an inspection of the vessel's rudder and propeller. The two fishing nets were found  
2 stowed on the net reels and covered the storm gates, preventing the ROV from  
3 assessing the position of the gates. On the port side of the vessel aft working deck, the  
4 trawl door was found to be out of position from the typical stowage position above the  
5 bulwarks, perpendicular to the length of the vessel, and its leading edge extending  
6 over the bulwarks. The starboard trawl door was stowed inside the bulwarks. It is  
7 unknown if the portside trawl door was intentionally set on the rails for maintenance or  
8 for docking operations.

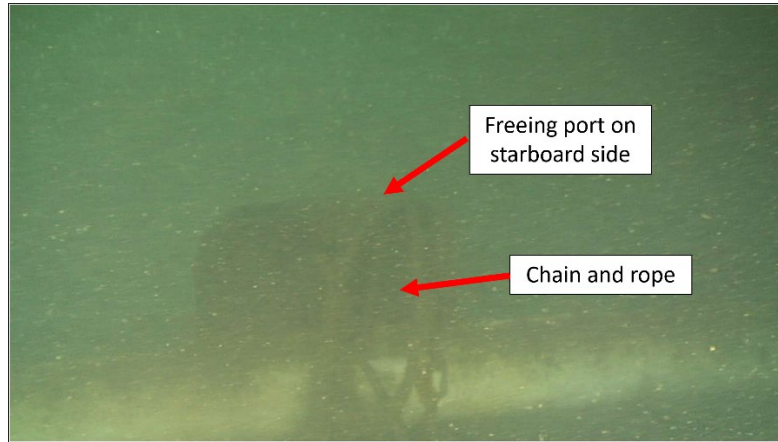


9

10 **Figure 23.** ROV image of portside trawl door. (Source: WHOI)

11 The ROV inspected the condition of the freeing ports on either side of the *Emmy*  
12 *Rose*. On the port side of the vessel, the aftermost freeing port was open. The next  
13 freeing port forward was closed. The next freeing port forward was partially open and  
14 had its plate hanging through the port. On the starboard side, the two aftermost  
15 freeing ports were closed. The next two freeing ports forward were open, and both

- 1 had chain and rope hanging out of the ports. The starboard freeing port under the
- 2 wheelhouse was open.



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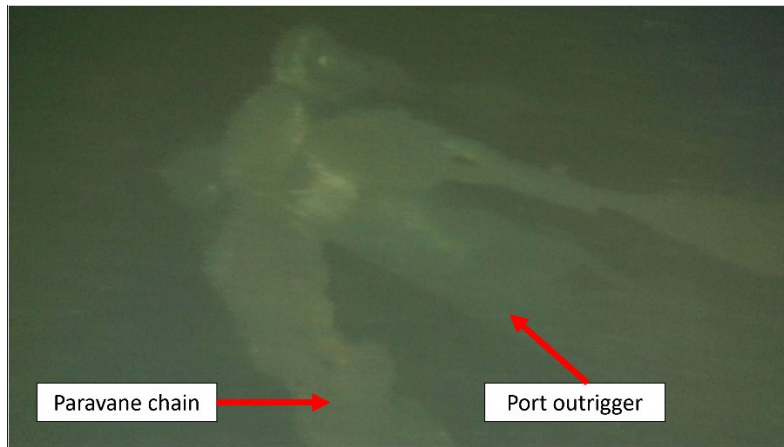
4 **Figure 24.** ROV image of freeing port on the starboard side with chain and rope hanging out.

5 (Source: WHOI)

6 On the bow, the forepeak space hatch cover was found in the closed position,  
7 and the forward-facing wheelhouse windows were intact.

8 Due to the findings from the side scan sonar report, an inspection was completed  
9 on the portside outrigger; the port outrigger and associated rigging were all identified  
10 and appeared to be free of damage. The chain for the port paravane led down to the  
11 sea floor. A line or cable leading forward off the top of the outrigger was not observed.





1

2 **Figure 25.** ROV image of port outrigger. (Source: WHOI)

### 3 **2.5 Coast Guard Marine Safety Center Stability Report**

4 The Coast Guard Marine Safety Center (MSC) was asked to conduct a stability  
5 analysis of the *Emmy Rose* to assist in determining possible causes of the sinking. Using  
6 the data from the 2002 stability test with the computer model, the MSC calculated the  
7 vessel's lightship characteristics (vessel weight and center of gravity). The calculated  
8 lightship characteristics were within 2% of those calculated in the 2002 analysis, thus  
9 verifying the model's characteristics below the waterline. The 2002 stability model did  
10 not include the vessel's sheer design.

11 The MSC identified possible downflooding points based on photographs with  
12 estimated locations and information provided in the 2002 stability test. Using  
13 information from interviews regarding typical operation of the *Emmy Rose*, 12 sample  
14 loading conditions were established to cover the range of loads the vessel would  
15 encounter during routine operations. The first seven loading conditions covered  
16 departure, mid-voyage with different cargo loads, and arrival with different cargo  
17 loads, all of which matched those of the 2002 stability analysis for comparison. The



1 remaining loading conditions represented estimated conditions at the time of the  
2 sinking and included consideration for vessel lists due to 25% and 50% differences in  
3 fuel quantities between the port and starboard tanks.

4 As an uninspected fishing vessel, the *Emmy Rose* was subject to regulations for  
5 stability requirements found in 46 *CFR* Subchapter C. The applicable stability criteria  
6 at the time of the incident used in the analysis was 46 *CFR* 28.565 (Water on Deck), 46  
7 *CFR* 28.570 (Intact Righting Energy), and 46 *CFR* 28.575 (Severe Wind and Roll). The  
8 MSC's analysis indicated that the vessel failed one or more of the 46 *CFR* Subchapter C  
9 stability criteria in every load condition. This contrasts with the 2002 stability analysis in  
10 which the vessel passed load conditions 1 through 7. Without the model used in the  
11 2002 stability analysis, the MSC could not account for these differences.

12 The MSC also evaluated the vessel's stability using criteria in 46 *CFR* 28.580  
13 (Unintentional Flooding) considering flooding in each of the four watertight  
14 compartments. Unintentional flooding criteria were not required for *Emmy Rose*  
15 because it was built in 1987, before the criteria came into effect on September 15,  
16 1991. The MSC's analysis indicated that when the forward auxiliary machinery space or  
17 fish hold compartments flooded, the vessel failed the damage criteria. When the  
18 engine room compartment or aft lazarette compartment flooded, the vessel passed  
19 the damage criteria.

20 The MSC's stability analysis showed the vessel had inadequate stability according  
21 to the regulatory criteria and stated that any condition that may have caused the vessel

1 to list—such as a list resulting from a fuel transfer operation or uneven paravane  
2 deployment—degraded stability further from the even keel condition. The MSC noted  
3 that failure to meet regulatory stability standards was not an indication of capsize or  
4 sinking; however, by not meeting regulatory stability, the *Emmy Rose* had a reduced  
5 ability to withstand wind and waves. The *Emmy Rose's* ability to withstand  
6 environmental conditions would have been further reduced by off-center weights such  
7 as fuel or paravane deployment.

8         The MSC also considered the information provided in the side scan sonar survey  
9 of *Emmy Rose* resting on the seabed. The MSC's analysis stated that because the sonar  
10 survey revealed that the paravanes were paid out forward of the vessel from the tips of  
11 the outriggers, the vessel had moved aftward into its final resting place, thus  
12 supporting a stern-first sinking (possibly caused by a downflooding situation in the fish  
13 hold or aft lazarette compartments). The MSC also noted that the sonar images  
14 indicated the paravanes may have been paid out at different lengths; they evaluated  
15 whether this could have contributed to the sinking—for instance, by snagging the  
16 bottom. However, the MSC found that the water depth was much greater than the  
17 length of wire paid out and therefore ruled out paravane contact with the ground while  
18 the *Emmy Rose* was floating as a possibility.

19         The MSC calculated flooding rates based on different diameters of holes allowing  
20 sea water to enter a space. In the lazarette, (with an estimated volume of 1,150 cubic  
21 feet), a 1-inch hole would fill the space to equilibrium in 350 minutes; a 3-inch hole  
22 would fill the space in 38 minutes; and a 6-inch hole would fill the space in 9.5 minutes.

1 In the combined engine room and auxiliary machinery space, (with an estimated  
 2 volume of 7,167 cubic feet), a one-inch hole would fill the space in 360 minutes and  
 3 result in the vessel sinking. A 3-inch hole would sink the vessel in 40 minutes, and a  
 4 6-inch hole would sink the vessel in 10 minutes.

5 Based on the deck drainage requirements in 46 *CFR* 28.555, the MSC calculated  
 6 that 55.5 square feet of total freeing port area was required for the *Emmy Rose*. Using  
 7 estimated freeing port dimensions, the MSC calculated the total freeing port area  
 8 aboard the *Emmy Rose* to be 26.25 square feet when the freeing ports were open, and  
 9 storm gates closed. With all freeing ports and storm gates closed, the actual freeing  
 10 port area was reduced to 1.57 square feet.

## 11 **Vessel Particulars**

| <b>Vessel</b>                 | <i>Emmy Rose</i>           |
|-------------------------------|----------------------------|
| <b>Owner/operator</b>         | Boat Aaron & Melissa, Inc. |
| <b>Port of registry</b>       | Portland, Maine            |
| <b>Flag</b>                   | United States              |
| <b>Type</b>                   | Fishing (Fishing vessel)   |
| <b>Year built</b>             | 1987                       |
| <b>Official number (US)</b>   | 909149                     |
| <b>IMO number</b>             | N/A                        |
| <b>Classification society</b> | N/A                        |

|                                   |   |
|-----------------------------------|---|
| <b>Construction</b>               | Steel   |
| <b>Length</b>                     | 82.0 ft (25.0 m)                                      |
| <b>Beam/width</b>                 | 22.9 ft (7.0 m)                                       |
| <b>Draft</b>                      | 11.6 ft (3.5 m)                                       |
| <b>Tonnage</b>                    | 116 GT  |
| <b>Engine power; manufacturer</b> | 1 x 630 hp (484.7 kW); Caterpillar 3412 diesel engine |
| <b>Persons on board</b>           | 4   |

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1

2 Submitted by:

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4 Brian Young

5 Marine Engineer, NTSB

6