



National Transportation Safety Board

Marine Accident Brief

Flooding and Sinking of Fishing Vessel *Rebecca Mary*

Accident type	Flooding	No. DCA20FM021
Vessel name	<i>Rebecca Mary</i>	
Location	Atlantic Ocean, about 40 miles south of Martha's Vineyard, Massachusetts 40°47.0' N, 070°25.6' W	
Date	June 17, 2020	
Time	About 0530 eastern daylight time (coordinated universal time – 4 hours)	
Injuries	None	
Property damage	\$375,000 est.	
Environmental damage	Oil sheen visible, pollution potential of 3,000 gallons diesel fuel	
Weather	Clear skies, winds from east at 15 knots, seas 3–5 feet, air temperature 60°F, water temperature 57°F, sunrise 0509.	
Waterway information	Atlantic Ocean water depth west of Nantucket Shoals is about 160 feet.	

On June 17, 2020, in the early morning, the commercial fishing vessel *Rebecca Mary* began flooding in the aft portion of the vessel while under way in the Atlantic Ocean about 40 miles south of Martha's Vineyard, Massachusetts.¹ The vessel capsized and subsequently sank. All four crewmembers abandoned the vessel in their survival suits and were rescued by a US Coast Guard helicopter crew with no injuries reported. The vessel had approximately 3,000 gallons of diesel fuel aboard; after the vessel sank, an oil sheen was visible in the water. The *Rebecca Mary*'s estimated value was \$375,000.



Rebecca Mary before the accident. (Source: Mike Roderick)

¹ All miles in this report are nautical miles (1.15 statute miles).

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Area of accident where the *Rebecca Mary* flooded, as indicated by the red triangle. (Background source: Google Maps)

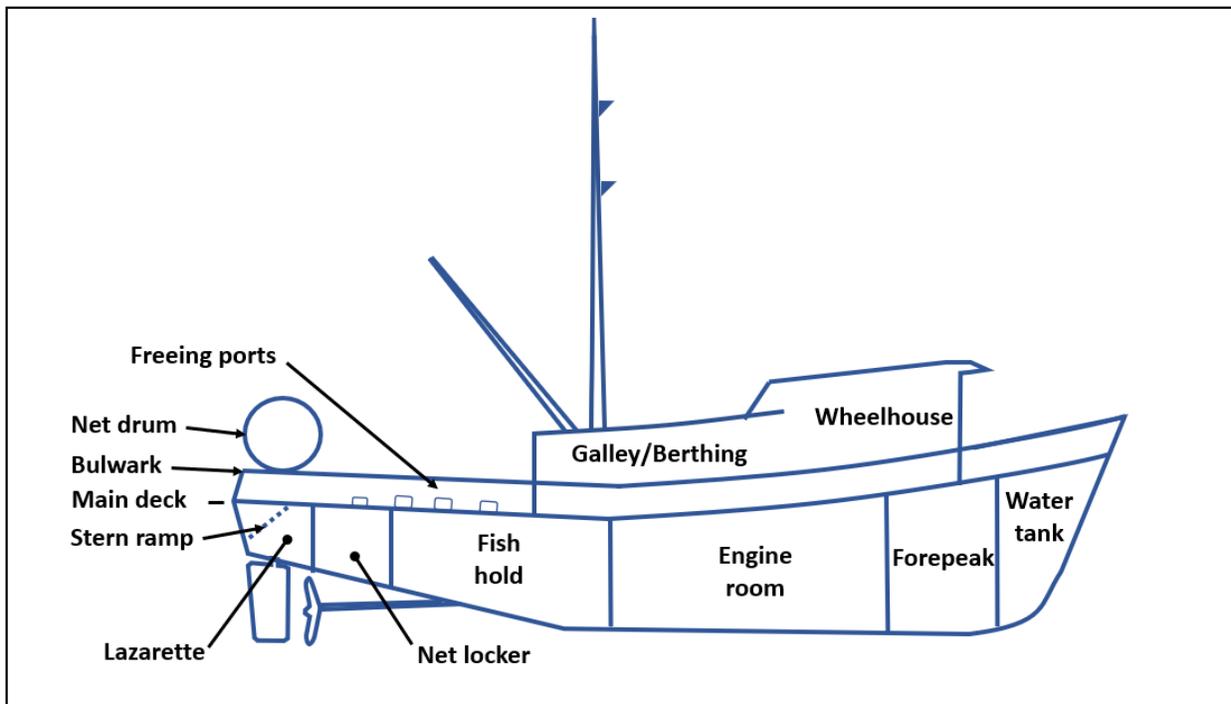
Background

The *Rebecca Mary* was a steel-hulled stern trawler built in 1983 by Horton Boats in Bayou la Batre, Alabama. Previously named the *Yankee Lady*, the vessel was purchased in April 1986 by the current owner, Sea Watch Fishing Co.

Above the main deck were a wheelhouse and crew quarters. Deck gear on the aft section of the main deck (working deck) included a boom, two outriggers, two winches, and a net drum. A "hog pen" near the stern constructed of removeable 2-inch-by-12-inch wooden boards (which the crew called checkerboards) was used to contain fish for distribution to the fish hold. With all the checkerboards in place, the hog pen was about 4 feet high. The hog pen extended from the back end of the fish hold hatch to the stern ramp. The stern of the vessel had a ramp for the deployment and retrieval of the fishing net. Without catch aboard the vessel (empty fish hold), the top of the ramp was approximately 6 feet above the waterline. When the vessel was loaded, the top of the ramp was estimated to be 18 inches above the waterline. The working deck was protected by 33-inch-high steel bulwarks. Four 21-inch-by-10-inch freeing ports were located on either side of the bulwarks to allow water to drain from the working deck.

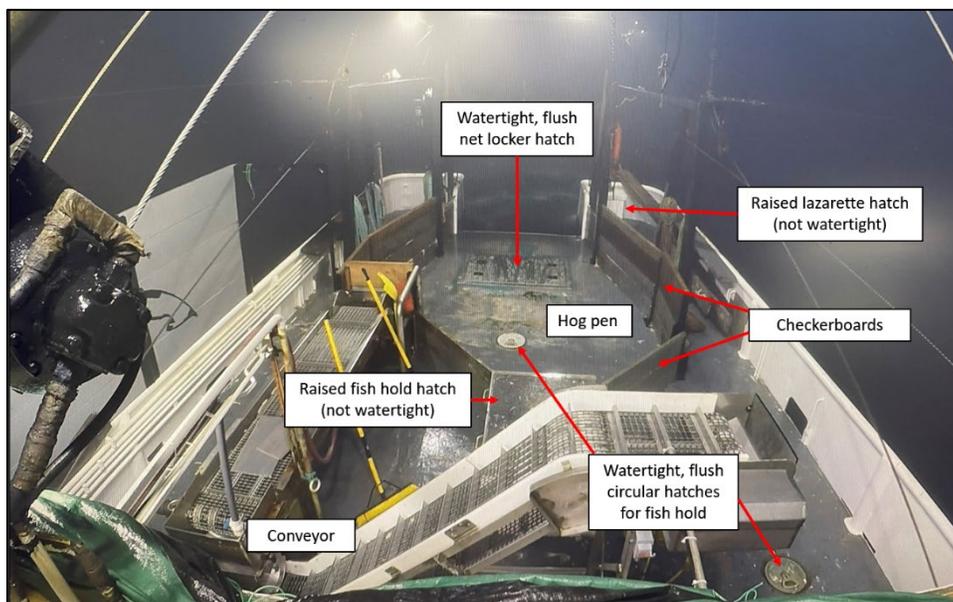
Below-deck areas from forward to aft were divided into a water tank, forepeak, engine room, fish hold, net locker, and lazarette. The fish hold had six pens on each side, and the pens were loaded with fish via 11 circular, flush hatches, each equipped with quick-acting, watertight covers. In addition, a 37-inch-by-48-inch rectangular hatch with a 28-inch raised steel coaming and a non-watertight, aluminum cover was located above the center of the fish hold. This hatch was used for personnel access to the fish hold as well as for offloading catch from the vessel.

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Simple representation of *Rebecca Mary* profile (not to scale).

The net locker was used to store spare nets and other equipment and was equipped with a 12-dog, stainless-steel, flush watertight hatch cover. The lazarette, the vessel's aftermost compartment below the main deck, was located on either side of and below the stern ramp and contained the steering gear. The space was accessed through a raised portside hatch on the aft working deck, which measured 29 inches by 18 inches with a 26-inch steel coaming. The hatch was equipped with a non-watertight aluminum cover (lid) and no fastening devices.



Working deck of *Rebecca Mary*. (Source: Kevin Ralph, annotated by NTSB)

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The vessel's bilge system consisted of two electrically driven pumps, each with a capacity of 200 gallons per minute, and two bilge manifolds, each with its own separate overboard discharge pipe on the starboard side of the vessel. The pumps could be configured to take suction from the forepeak, engine room, fish hold, fish hold bilge (shaft alley), net locker, and lazarette. Each of these spaces was equipped with at least one high-level bilge alarm that sounded in the wheelhouse. The vessel's propeller shaft passed through the hull at the aft end of the shaft alley in the bottom of the fish hold, and the rudder trunk passed through the lazarette.

Accident Events

About 1630 on June 14, 2020, the *Rebecca Mary* departed New Bedford, Massachusetts, after loading 25 tons of ice in the fish hold. The vessel had a crew of four: a captain and three deckhands. The captain had worked on the *Rebecca Mary* for about 5 years. The deckhands had varied experience in the fishing industry: one deckhand had over 20 years of experience, the others each had about 1–2 years. The crew set out to fish for illex (shortfin squid) in the vicinity of Atlantis Canyon, about 95 miles south of Nantucket, Massachusetts.

During the trip, the crew fished for 2 days from sunrise to sunset, deploying the net off the stern several times (usually three to four hauls a day), dragging the net along the sea floor, and retrieving it using winches. While dragging, the net was held open on the seafloor with a trawl door on either side. On the sea floor, trawl doors acted as wings, using a hydrodynamic shape to provide a horizontal spread of the net as the vessel moved ahead. Once hauled, the catch was unloaded from the net into the hog pen on the stern while the crew sorted and lowered the fish into the pens in the fish hold through the hatches and packed it in layers of ice.

Just after 2100 on June 16, the crew completed fishing operations and began the transit back to New Bedford at about 6 knots to offload their catch. Crewmembers estimated that they had approximately 75,000–85,000 pounds (lb.) of illex, 20 tons of ice, and 3,000 gallons of diesel fuel aboard. For comparison, the vessel's managers and crew estimated that the *Rebecca Mary* had carried about 90,000 lb. of fish on several previous trips, including about 97,000 lb. on a voyage the previous summer. The quantities of ice and fuel aboard the vessel were typical.

About 0230 on June 17, the engine room high-level bilge alarm sounded on the bridge. The deckhand on watch exited the wheelhouse, lined up the bilge system, and pumped out the water in the engine room. He stated that there was very little water, just enough to have set off the alarm, and everything on the vessel appeared to be normal at that time. Sea conditions were estimated to be 3-foot following seas that were washing onto the aft deck and into the hog pen over the stern ramp.

Later that morning, about 0400, the fish hold high-level bilge sump alarm sounded. According to the deckhand, it was typical for this alarm to sound once or twice during a watch due to melting ice. The deckhand noticed the vessel was trimmed by the stern. He went to the engine room and lined up a bilge pump to take suction from the fish hold bilge sump. After starting the pump, looking aft, he noticed that the port quarter (the port aft corner of the vessel) was taking waves over the gunwale (the upper edge of the vessel's side), and seawater was accumulating on the aft deck over the top of the lazarette hatch on the port side.

The deckhand woke the captain, and after witnessing the condition of the stern, the captain turned on a second bilge pump. He stopped pumping the fish hold bilge sump and started pumping

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from the two aftermost compartments of the *Rebecca Mary*, the net locker and the lazarette. The captain and deckhand observed water being discharged through both overboard discharge fittings on the starboard side of the vessel. The captain woke the other two crewmembers, and they all donned their survival suits. At 0409, he made a distress call to the Coast Guard on VHF channel 16 and activated the emergency position indicating radio beacon. The captain estimated that the vessel was making headway at approximately 6 knots when he called the Coast Guard. While pumping the aft spaces, the captain provided several updates via VHF radio to the Coast Guard as the crew monitored the seawater level on the working deck, which “kept creeping up” as the vessel’s stern sank deeper in the water. The captain stated that he was unable to access the lazarette hatch, but believed the cover was gone.



Inverted and mostly submerged *Rebecca Mary* during rescue operations on the morning of the sinking. (Source: Coast Guard, annotated by NTSB)

About 0500, the vessel was still moving ahead when the seawater level approached the forward part of the working deck, and the vessel began listing to port. The crew removed the liferaft canister from its cradle above the wheelhouse, lowered it to the main deck, tied off the liferaft’s sea painter to a portside handrail in the midship area, and deployed the liferaft by throwing its canister overboard. After the liferaft inflated, the *Rebecca Mary* rolled over to port; the vessel’s rigging punctured the liferaft, instantly deflating it. As the vessel capsized, all four crewmembers jumped overboard in their survival suits. Once in the water, they locked arms and waited for a Coast Guard helicopter to arrive on scene. Crewmembers reported that the main engine continued to run throughout the flooding sequence and shut down when the *Rebecca Mary* capsized.

A Coast Guard helicopter launched from Air Station Cape Cod at 0446 and arrived on scene at 0507. Upon arrival, the helicopter crew reported that the *Rebecca Mary* was inverted and mostly submerged; an oil sheen was also observed. The helicopter crew hoisted all four crewmembers, and they were taken to Air Station Cape Cod, arriving at 0559.

Additional Information

The *Rebecca Mary*’s first illex fishing trip of the season took place about a week before the accident voyage with no issues reported. Prior to that fishing trip, 2 of the 11 circular, flush hatches

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leading to the fish hold pens were found to be deteriorated. As a result, all 11 circular, flush hatches on the vessel were cropped out and replaced with new stainless-steel units. During this repair period, the stanchions on the stern for the hog pen checkerboards were relocated to improve efficiency when loading fish into the conveyor. Additionally, all the bilge alarms throughout the vessel were successfully tested, and the gasket for the watertight net locker flush hatch was replaced. It is unknown if the new gasket was tested, but a deckhand stated that there had not been any noticeable water accumulation in the net locker after the gasket replacement.

The owner voluntarily participated in the Coast Guard's commercial fishing vessel safety examination program, which primarily focuses on lifesaving equipment on board the vessel, not the hull or machinery as required for Coast Guard-inspected vessels. These exams are valid for 2 years. In April 2020, the Coast Guard conducted a Fishing Vessel Safety Examination and noted three deficiencies; all were corrected. A Fishing Vessel Safety Compliance Decal was issued.

Aboard the *Rebecca Mary*, while the catch was being sorted, all the hog pen boards remained in position on all four sides, creating a 4-foot-high containment to prevent fish from going overboard through the freeing ports or over the stern ramp. After the catch was distributed into the fish hold pens, the stern boards of the hog pen were typically removed, opening the transom to the sea, and the upper front boards were removed to allow easier access to the hog pen for the crew. A deckhand stated that during the return transit of the accident voyage the stern boards were removed.

After the accident, the two deckhands that were off watch and woken up by the captain screened positive for cannabinoids on clinical drug urine testing; there were no secondary tests to confirm the results.

After the sinking, a survey vessel working in the area attempted to locate the sunken *Rebecca Mary* using a multi-beam echosounder and side scan sonar systems, but the *Rebecca Mary* was not detected in the vicinity of the last reported surface position.

Analysis

Because the *Rebecca Mary* was not salvaged, a postaccident vessel examination could not be conducted to determine the initial source of flooding. Investigators interviewed the crew and reviewed the sequence of events to determine any relevance to the accident. The vessel's managers and crewmembers said they were not aware of any issues or prior damage to the vessel.

During the return transit, with a typical load of illex and ice (75,000–85,000 lb. of illex and roughly 20 tons [40,000 lb.] of ice) on board, the vessel's freeboard (the distance between the waterline and the uppermost watertight deck) was low. A deckhand estimated that the stern ramp was sitting about 18 inches above the waterline. During the accident voyage, crewmembers witnessed waves from the 3-foot following seas washing onto the aft deck via the ramp into the hog pen area, which had its stern boards removed. While some seawater would flow back overboard via the ramp, a portion of the seawater would have likely been contained in the forward part of the hog pen and prevented from quickly draining over the sides via the port and starboard freeing ports. As the hog pen collected water, it would have further lowered the vessel's freeboard, allowing more seawater to wash into the hog pen and also over the stern gunwales, filling the aft deck area outside of the hog pen.

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About 0400, crewmembers observed that the stern sank low enough that seawater began washing over and covering the non-watertight, raised lazarette hatch, which was equipped with a cover that could not be latched closed. The captain stated that he believed the cover for the lazarette was no longer sitting on top of the hatch after the water level rose above it. It is likely that the lazarette cover was displaced by the seawater, causing the lazarette to flood through the open hatch. As seawater entered the lazarette, the vessel's freeboard would have been reduced further.

Because the vessel could not be examined after the sinking, it is unknown if there were any hull failures or areas of other water ingress prior to the time the deckhand noticed sea water coming over the gunwale about 0400. A failure of or an issue with the rudder stock, which would have allowed water to enter the lazarette, is unlikely, since the deckhand had no issues with steering. The loss of or an issue with the propeller and shafting, which would have allowed seawater to enter the fish hold bilge in the shaft alley, is also unlikely, since the vessel continued to maintain forward headway without any loss of speed. It is unlikely that large quantities of seawater quickly entered the net locker's flush deck hatch since the watertight hatch had a new gasket. The crew and managers indicated that there were cables and hydraulic lines that passed through the bulkhead between the net locker and the lazarette, but the bulkhead penetrations had been recently checked and sealed with foam, and there had not been any reported water communication between those spaces before the accident voyage. It is unclear whether there was progressive flooding through the bulkhead from the lazarette to the net gear locker, or the water was from another source of ingress. Once the stern lowered to a certain point, water would have downflooded into the fish hold after displacing the raised, rectangular, non-watertight hatch cover. It is likely that the vessel capsized because the flooding caused a loss of stability.

The deckhand stated that he did not hear any high-level bilge alarms for the net locker or the lazarette when he was in the wheelhouse; however, the captain stated that when he started the bilge pumps for those spaces, he observed water exiting through the two overboard discharge pipes, indicating that water was present. It is possible the high-level alarms sounded while crewmembers were not in the wheelhouse and were conducting casualty control measures on the aft deck. All bilge alarms had been successfully tested before the first illex trip of the season but had not been tested before the accident voyage.

The crew stated that they had no issues donning their survival suits, which were easily accessed and put on as soon as the captain recognized the vessel was in danger due to the flooding. The crew launched the liferaft in the best possible location with the *Rebecca Mary* still moving ahead and the stern flooded, but, immediately upon launching, the vessel rolled over onto the liferaft. All crewmembers were in survival suits and in the water for about 15 minutes before the Coast Guard helicopter came to their rescue.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the flooding and sinking of the fishing vessel *Rebecca Mary* was undetected flooding of the lazarette, likely through a non-watertight raised hatch.

Preparing for Abandonment

Early communication with the Coast Guard and preparing to abandon ship by donning survival suits or personal flotation devices when experiencing significant flooding, fire, or other emergencies increases the likelihood of survival. When deploying liferafts and other life-saving appliances, crews should attempt to launch in areas clear of obstructions.

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Vessel Particulars

Vessel	<i>Rebecca Mary</i>
Owner/operator	Sea Watch Fishing Co. Inc.
Port of registry	South Kingstown, Rhode Island
Flag	United States
Type	Fishing vessel
Year built	1983
Official number (US)	656328
IMO number	8855475
Classification society	N/A
Construction	Steel
Length	74 ft (22.6 m)
Beam/width	22 ft (6.7 m)
Draft	11.2 ft (3.4 m)
Tonnage	120 GRT
Engine power; manufacturer	1 x 575 hp (428.8 kW); Caterpillar 3412 diesel engine
Persons on board	4

NTSB investigators worked closely with our counterparts from Coast Guard Sector Southeastern New England throughout this investigation.

For more details about this accident, visit www.nts.gov and search for NTSB accident ID DCA20FM021.

Issued: May 13, 2021

The NTSB has authority to investigate and establish the probable cause of any major marine casualty or any marine casualty involving both public and nonpublic vessels under Title 49 *United States Code*, Section 1131(b)(1). This report is based on factual information either gathered by NTSB investigators or provided by the Coast Guard from its informal investigation of the accident.

The NTSB does not assign fault or blame for a marine casualty; rather, as specified by NTSB regulation, “[NTSB] investigations are fact-finding proceedings with no formal issues and no adverse parties . . . and are not conducted for the purpose of determining the rights or liabilities of any person.” Title 49 *Code of Federal Regulations*, Section 831.4.

Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by conducting investigations and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report. Title 49 *United States Code*, Section 1154(b).
