



National Transportation Safety Board

Marine Accident Brief

Flooding and Sinking of Fishing Vessel *Lady Damaris*

Accident no.	DCA17FM019
Vessel name	<i>Lady Damaris</i>
Accident type	Flooding
Location	Gulf of Mexico, about 32 miles* southeast of Galveston, Texas 28° 52.72' N, 094° 24.78' W
Date	June 22, 2017
Time	About 1140 central daylight time (coordinated universal time – 5 hours)
Injuries	None reported
Property damage	\$210,000 est.
Environmental damage	About 5,000 gallons of diesel fuel and lube oil resulting in oil sheen on water
Weather	Tropical storm Cindy, overcast, visibility 8 miles; winds southwest at 18 knots gusting to 24 knots, seas about 6 ft, air temperature 79°F
Waterway information	Open waters of the Gulf of Mexico; water depth about 70 feet at accident site

About 1140 on June 22, 2017, the shrimp trawler *Lady Damaris* sank in the Gulf of Mexico en route to Galveston, Texas. The day prior, the crew had discovered a hole in the hull, which they were unable to effectively plug. As water flooded the trawler's engine room and freezer hold, the bilge pumps failed. The crew broadcast a distress call, and a US Coast Guard helicopter and small boat responded, along with a Good Samaritan vessel. Coast Guard personnel assisted the *Lady Damaris*'s crew in attempting to dewater the vessel, but they were unable to keep up with the flooding. The vessel was abandoned and sank soon thereafter. No one was injured during the accident. About 5,000 gallons of diesel fuel and lube oil were released into the water. The *Lady Damaris* and its catch of bagged shrimp, valued at \$210,000, were lost.

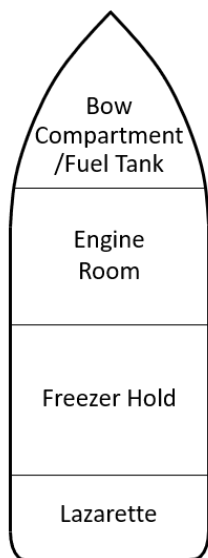


Lady Damaris on January 2016. (Photo by G&M Marine, Inc.)

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

Background

The uninspected fishing vessel *Lady Damaris* was built in 1971 by Marine Mart, Inc. in Port Isabel, Texas. It had a steel hull with a single-level wood and fiberglass deckhouse forward on the main deck. Aft of the deckhouse were the trawling gear, aft deck work area, and accesses



General layout of *Lady Demaris* below main deck, with primary bulkheads. (Dimensions and bulkhead locations not to scale.)

to a freezer hold and the lazarette. Below the main deck, the vessel had three bulkheads. Although the forward engine room bulkhead was originally designed to be watertight, the captain stated that the door on the bulkhead that led to the bow compartment was not watertight. He also said that there may have been small openings around wire and piping runs passing through the bulkhead between the engine room and freezer hold.

The *Lady Damaris* had a single 365-horsepower diesel engine for propulsion power. Two bilge pumps were installed on the vessel (both in the engine room), one electrical and the other hydraulic. The vessel also carried a portable electric pump. The owner had purchased the vessel about 5 years before the accident and owned two other similar trawlers.

Accident Events

On June 8, 2017, the *Lady Damaris* departed its homeport of Brownsville, Texas, with four crew on board—a captain, a rig man, and two deckhands—to trawl for shrimp off the coast of Louisiana. The vessel arrived at the fishing grounds on June 10, and for the next 8 days the crew hauled in about 6,000 pounds of catch. During the entire voyage, the vessel had been taking on water in the engine room at a slow rate, which required the crew to pump out the water about every 2 days. At the time, the crew did not know the source of the water ingress.

On June 19, the weather deteriorated as several storm systems that would eventually converge to form tropical storm Cindy moved into the Gulf of Mexico. According to *Lady Damaris* crewmembers, they were informed of the storm and sought shelter in Port Fourchon, Louisiana. However, due to a lack of dock space, the vessel was not able to enter the port. The captain therefore made the decision to anchor and ride out the storm offshore near Port Fourchon.

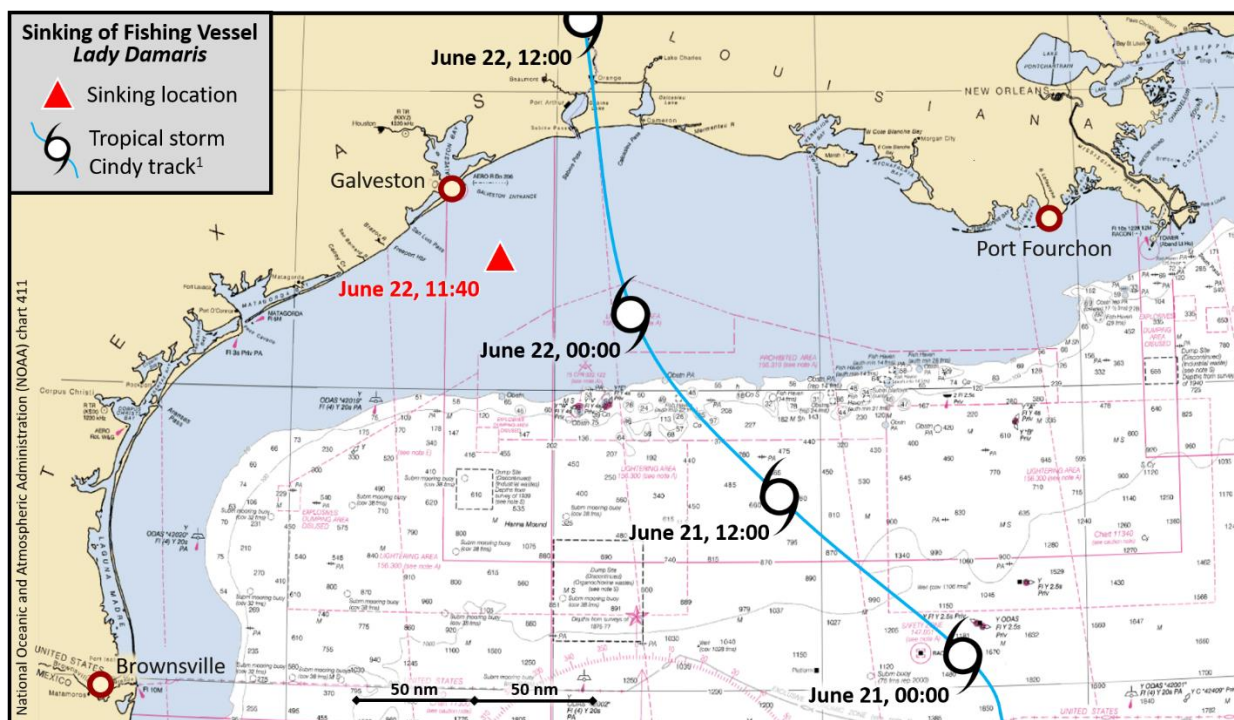
Between 0200 and 0400 on June 20, the *Lady Damaris*'s anchor line parted in the high winds and seas. Consequently, the captain decided to head west toward Galveston, Texas, in an attempt to escape the storm. Commenting on the captain's decision, the owner, who did not speak with the vessel's crew during the storm, told investigators that the captain should have sought shelter in a port. At 2300 on June 20, Cindy became a tropical storm centered about 210 miles south-southwest of the mouth of the Mississippi River and moving northward with sustained winds

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of 45 knots. As the trawler headed west through the following day, the winds and seas increased. The crew stated that wave heights during this time reached 14 feet.

Late on June 20 or early on June 21, according to crew accounts, the water ingress into the engine room began to increase, forcing the crew to pump out the engine room more frequently—about every 2 hours. On the evening of June 21, the crew said that they shut down the engine and began to search for the leak. During the search, the crew checked the freezer hold, which was nearly full of frozen bags of shrimp. At 0100 on June 22, they found water coming through a crack in the cement and foam insulation that lined the hold below the tail shaft as well as a 3-inch-diameter hole in the hull underneath the cement and insulation. To slow the leak, the crew plugged the hole using the handle end of a claw hammer and rags.

Water leaking into the vessel entered the engine room through a 2.5-inch drain pipe from the freezer hold. Although there was a valve in the drain line that could have isolated the engine room from the leak in the hold, the captain told investigators that he kept the valve open so that water coming in through the hull would flow into the engine room to the two fixed bilge pumps. The crew did not close the valve in the freezer hold drain line during the entire voyage.



The crew told investigators that they were initially able to control the flooding with the bilge pumps and the portable pump rigged to the freezer hold, but the pounding of the waves further opened the hole in the hull. The water in the engine room and freezer hold rose, and the pumps began to malfunction. By 0400, the portable pump in the freezer hold and the electric pump

¹ Tropical storm Cindy best track from National Hurricane Center Tropical Cyclone Report, *Tropical Storm Cindy (AL032017) 20–23 June 2017*, published January 26, 2018.

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in the engine room became clogged with debris and failed. The crew stuffed more wood and rags into the hole, restarted the vessel's propulsion engine, and continued toward Galveston.

About 0903 on June 22, the *Lady Damaris* was approximately 32 miles southeast of Galveston and its engine compartment was flooded about 30 percent. Unable to stop the flooding, the crew broadcast a distress call over VHF radio. Coast Guard Sector Galveston responded by dispatching a helicopter from Air Station Houston and small boat from Station Galveston to proceed to the scene. A Good Samaritan vessel, the offshore supply vessel *Ajax*, had also heard the distress call while transiting the area. The *Ajax* proceeded to the trawler's location, arriving at 0914, and stopped to render assistance and relay communications to the Coast Guard. About 0925, with water in the engine room above the main engine, generator, and alternator, the vessel lost propulsion, electrical power, and the last working bilge pump.

At 1009, the Coast Guard helicopter arrived on scene, and the *Ajax* was released to continue its voyage. A rescue swimmer was lowered to the stricken vessel from the helicopter, along with a P6 portable pump rated at 250 gallons per minute. Once on board, the rescue swimmer rigged the pump to take suction from the engine room.



Lady Damaris about 1049 on morning of accident. (Photo by Coast Guard)

About a half hour later, Coast Guard small boat *CG 45630* arrived on scene and a crewmember was transferred to the *Lady Damaris* together with a second P6 pump. The crewmember and the rescue swimmer rigged the second pump to dewater the freezer hold. The two P6 pumps could not keep up with the water coming into the *Lady Damaris*, so another crewmember and a third P6 pump were transferred to the trawler. Soon thereafter, the helicopter, which was running low on fuel, hoisted the rescue swimmer back on board the aircraft and returned to Air Station Houston.

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The third P6 pump was rigged to the freezer hold, but the three pumps together still could not keep up with the flooding. At 1121, the senior Coast Guard crewmember on board the *Lady Damaris* determined that the vessel was no longer safe to remain aboard. The *Lady Damaris* crew and the Coast Guard crew and equipment were transferred to the *CG 45630*.

About 15 minutes after the transfer, the *Lady Damaris* rolled on its starboard side and sank. A large fuel slick developed over the sinking location. *CG 45630* transported the trawler's crew back to Station Galveston. The *Lady Damaris* was not salvaged.



Portside outrigger of sunken *Lady Damaris* about 1206 on day of accident. (Photo by Coast Guard)

Additional Information

The captain told investigators that he had been working as a fishing vessel captain for 7 years, with about 3 months as captain of the *Lady Damaris*. The rig man had about 3 years' experience on fishing vessels. The first deckhand had been working on fishing vessels for 15 years, while the second deckhand had no previous experience. This voyage was the first on the *Lady Damaris* for all crewmembers, except the captain who had one previous voyage.

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A Coast Guard dockside commercial fishing vessel safety examination was conducted on the *Lady Damaris* in January 2014. No structural or mechanical issues were discovered during the assessment, and the vessel passed the examination after correcting minor safety equipment and documentation discrepancies. Safety examinations for commercial fishing vessels primarily focus on lifesaving equipment; the hull and machinery are not examined as they are on vessels subject to Coast Guard inspections. At the time, dockside safety examinations were voluntary. However, on October 15, 2015, examinations became mandatory every 5 years for fishing vessels operating more than 3 miles off the coast of the United States, in accordance with Title 46 *Code of Federal Regulations*, Subchapter C. Because the *Lady Damaris* had been examined less than 5 years before the accident date, the vessel met the requirements.

The Coast Guard states in Navigation and Inspection Circular 7-68 (NVIC 7-68), *Notes on Inspection and Repair of Steel Hulls*, that “deterioration of the metal structure is probably the most common, single defect in steel vessels.” According to the circular, the causes of deterioration include age, inadequate maintenance, and electrolysis. The Coast Guard notes that “the only practical way of determining the degree of deterioration is to measure the thickness of the member in question and compare it with the original thickness.” Measurement of thickness is known as “gaging.” The *Lady Damaris* had last been drydocked in 2014, during which time the hull was sandblasted and painted, but the owner told investigators that the 5/16-inch-thick hull plating was not gaged. An invoice from the drydock period included work to weld patches on the vessel, which the owner stated were to fix “pin holes” that had developed in the hull. A crewmember described the *Lady Damaris* to investigators as “old and rusty.”

A survey of the vessel conducted in January 2015 found that the “hull sides and stern were relatively fair with some indentations noted at the stern and rub-rail.” (The survey defined fair condition as “functional as is with minor repairs.”) The survey also found that the freezer hold was “clean and in fair condition.” The surveyor determined that the vessel was “in good condition and suitable for operation in intended service,” but noted that the examination was conducted while the vessel was in the water, that no gaging or testing for structural thickness of the hull was conducted, and that areas normally concealed were not opened for inspection.

Analysis

The three Coast Guard P6 pumps, each rated at 250 gallons per minute, could not overcome the flow of water coming through the hole in the vessel. Using a total pumping rate of 750 gallons per minute and assuming the depth of the ingress hole to be about 8 feet below the water line, investigators calculated that a hole greater than 3.67 inches in diameter would overwhelm the P6 pumps.² Crewmembers stated that the hole in the freezer hold was about 3 inches in diameter when it was first discovered, then as the vessel transited toward Galveston it “seemed to get bigger.” When the crew put more wood and rags into the hole, the opening continued to expand.

The expansion of the hole in the hull from the wave action indicates that there was very thin steel in the area around the initial opening. Given this evidence, in addition to the previous hull deterioration repairs, the amount of time since the previous repairs (3 years), the age of the

² The diameter of the hole was calculated by using the flooding rate formula provided in section 079-42.9.6.1 of the Naval Ships’ Technical Manual Chapter 079, *Volume 2 - Damage Control/Practical Damage Control*, Washington DC: Naval Sea Systems Command, 2008.

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vessel, and the location of the leak in an area prone to corrosion, it is likely that the hole was the result of deterioration of the hull plating.

The pipe between the freezer hold and the engine room, a common feature in shrimping vessels, was designed to drain melted ice and seawater into the engine room, where the water could be pumped out by the bilge pumps. This pipe was fitted with a valve accessible from the engine room. Crewmembers stated that the valve was not shut throughout the voyage. The crew left the valve open in order to remove water using the two pumps in the engine room, rather than solely relying on the portable pump that they had placed in the freezer. Had the valve been shut once the pumps in the engine room failed, progressive flooding into the engine room would have been slowed.

The *Lady Damaris* had been taking on water since it departed its homeport 14 days before the accident. The crew knew that there was a leak somewhere in the hull, which required them to regularly pump out the bilges. However, instead of immediately returning to port to locate the leak (or leaks) and conduct necessary repairs, the captain elected to continue on the voyage. Heavy weather may have accelerated the flooding that eventually sank the vessel, but it is probable that the leak would have progressed over time, even in more benign conditions. By remaining at sea, the captain put his vessel and crew at risk.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the flooding and sinking of the fishing vessel *Lady Damaris* was the captain's decision to continue to operate with a known hull leak.

Vessel Particulars

Vessel	<i>Lady Damaris</i>
Owner/operator	Vela's Pride, Inc.
Port of registry	Brownsville, Texas
Flag	United States
Type	Fishing vessel
Year built	1971
IMO number	7207774
Classification society	N/A
Construction	Steel
Length	64.6 ft (19.7 m)
Draft	11.3 ft (3.4 m)
Beam/width	20.1 ft (6.1 m)
Gross tonnage (Domestic)	103 GRT
Engine power; manufacturer	365 hp (272 kW); Caterpillar 3408 marine diesel engine
Persons on board	4

NTSB investigators worked closely with our counterparts from Coast Guard Marine Safety Unit Texas City and Marine Safety Detachment Brownsville throughout this investigation.

For more details about this accident, visit www.nts.gov and search for NTSB accident ID DCA17FM019.

Issued: July 27, 2018

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).