



National Transportation Safety Board

Marine Accident Brief

Grounding of Commercial Fishing Vessel *Savannah Ray*

Accident no.	DCA15LM013
Vessel name	<i>Savannah Ray</i>
Accident type	Grounding
Location	Southeast coast of Long Island, Alaska, 57°45.45' N, 152°15.02' W About 255 miles* southwest of Anchorage, Alaska
Date	February 16, 2015
Time	0048 Alaska standard time (coordinated universal time – 9 hours)
Injuries	One crewmember sustained a minor injury
Property damage	Total loss of vessel valued at \$800,000
Environmental damage	None
Weather	Rain, winds from the southeast at 35 knots, seas 15 to 18 feet from the southeast
Waterway information	Chiniak Bay, located about 5 miles southeast of Kodiak, Alaska

About 0048 Alaska standard time on February 16, 2015, the commercial fishing vessel *Savannah Ray* grounded on the lee shore of Long Island, Alaska, while traveling in rough seas from fishing grounds off Ugak Island in the Gulf of Alaska to the vessel's home port at St. Paul Harbor, Kodiak Island, Alaska. The vessel then washed up on the beach about 5 miles from St. Paul Harbor. The four crewmembers were rescued from the vessel by a helicopter from US Coast Guard Air Station Kodiak. The insured value of the *Savannah Ray* was \$800,000, and the vessel was deemed a constructive total loss as a result of the grounding.



The *Savannah Ray* at its spring 2014 survey. (Photo by Resurrection Technologies)

* Unless otherwise noted, all miles in this report are nautical miles (1.15 statute miles).

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The *Savannah Ray*, owned and operated by Group 5/Mystic Blue LLC, was built in 1980 and was outfitted in 2010 for pot fishing and tendering. Pot fishing uses large heavy-baited steel cages to catch fish, and a tender vessel accepts fish from “catcher” boats for processing and/or transporting to shore.

The *Savannah Ray* generally operated on a 3-day round-trip schedule from St. Paul Harbor to the vessel’s normal fishing grounds off Ugak Island. The operation exchanged newly hoisted pots containing fish with empty, freshly baited fish pots carried on deck. The live catch was placed in a fish hold, and the emptied pots remained on deck to be baited again and then returned to the sea floor. This cycle occurred about every 12 hours. After about 3 days of operation, the vessel would transport a load of fish to port to offload and then resume the pot swapping process. The *Savannah Ray* would occasionally offload its catch to another vessel (tender) for transport to shore. On the trip during which the vessel grounded, it was heading to port to offload its catch.

The vessel was crewed by one captain and three deckhands. Because the Coast Guard classified the *Savannah Ray* as an uninspected commercial fishing vessel, none of the crewmembers were required to hold mariner credentials issued by the Coast Guard. Further, the captain stated that he had no formal navigation training.

The *Savannah Ray* successfully passed a Coast Guard fishing vessel safety examination in January 2015. Commercial fishing vessel safety examinations primarily assess the lifesaving equipment on board a vessel and do not include hull or other machinery assessments required for Coast Guard-inspected vessels.

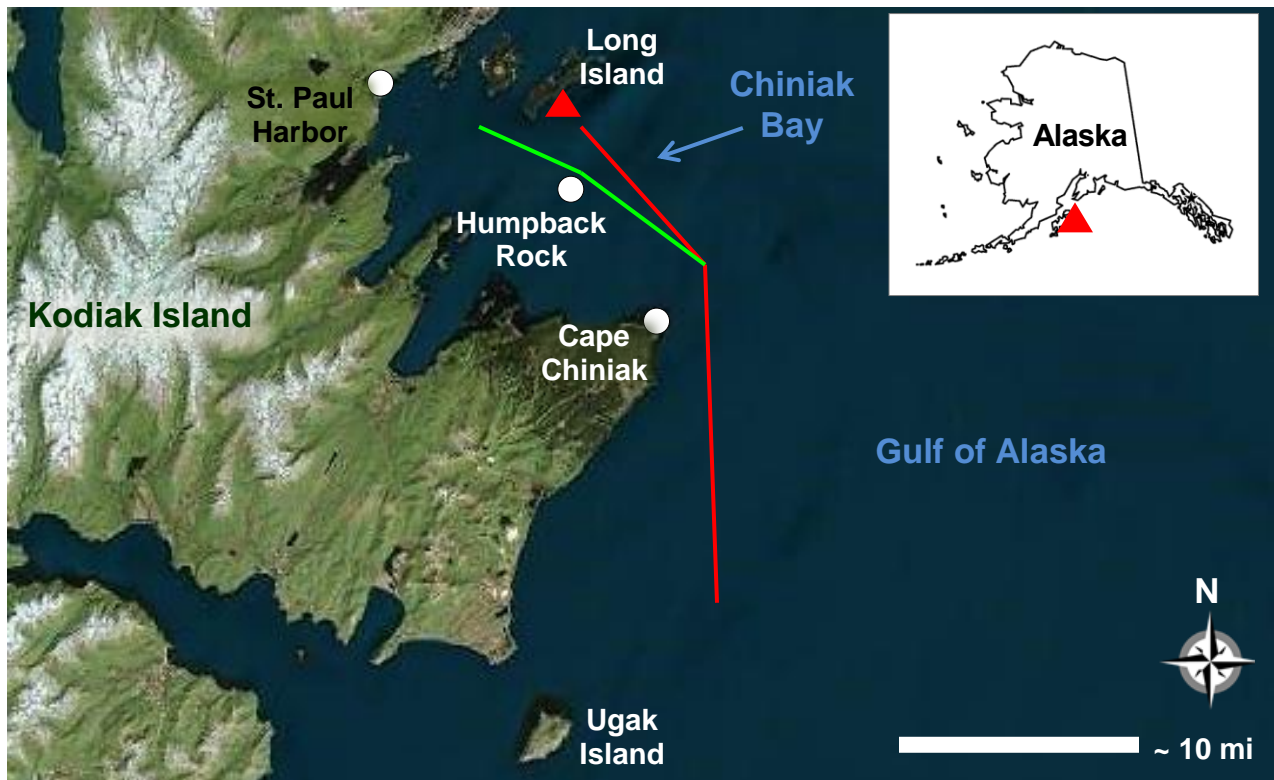
According to a spring 2014 survey of the vessel, the *Savannah Ray* had numerous navigation and alerting systems on board, including two global positioning system (GPS) receivers; two depth sounders; one radar; one navigation computer; and one Watch Commander Pro watch alarm system, which was installed during the 2010 outfitting of the vessel. The captain told investigators that the watch alarm had a two-stage alarm. The first-stage alarm had a time interval that could be set from 3 to 90 minutes; the *Savannah Ray*’s first-stage alarm was set to sound at 60-minute intervals. If the first-stage alarm was not addressed within 30 seconds, a much louder second-stage alarm was supposed to sound.

The captain described an approximate and intermittent daily work cycle during a 72-hour work/rest period. While on the fishing grounds, the crew worked daily from 0400 to 2200. Between 2200 and 0400 while on the fishing grounds and when the vessel was under way between port and the fishing grounds (and vice versa), each crewmember was responsible for a 1.5-hour watch, called a “jog watch,” during which the crewmember minded the helm. This schedule limited the crew’s opportunity for uninterrupted sleep to a maximum of 4.5 hours per day; the only two crewmembers who received 4.5 hours of uninterrupted sleep were the first and last watchstander of the jog watch rotation. The crew took midday naps when possible but with no regularity. Statements from the captain indicated it was normal, during fishing season, to work long hours with short periods of rest. The captain said he received an average of between 4 and 6 hours of sleep each night during the week before the accident. The captain also said he probably received “a little less” sleep than his crew.

According to the captain, during the day before the accident, the crew fished the waters near Ugak Island. During the evening before the accident, fishing ceased, and the captain set a northeasterly course toward a position off Cape Chiniak, Alaska, while en route to St. Paul Harbor.

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He chose a northeasterly heading to have a comfortable ride in rough 15- to 18-foot seas. He obtained the heading by placing the cursor of his radar on a waypoint off the cape and then reading the GPS-generated bearing to this position. The autopilot heading was then set to this bearing value. The captain then placed the crew on jog watches; turned over the conn (navigational control) of the vessel to a deckhand; left orders to wake him up when the vessel arrived at the Cape Chiniak waypoint, when he would start his jog watch shift; and went to bed.



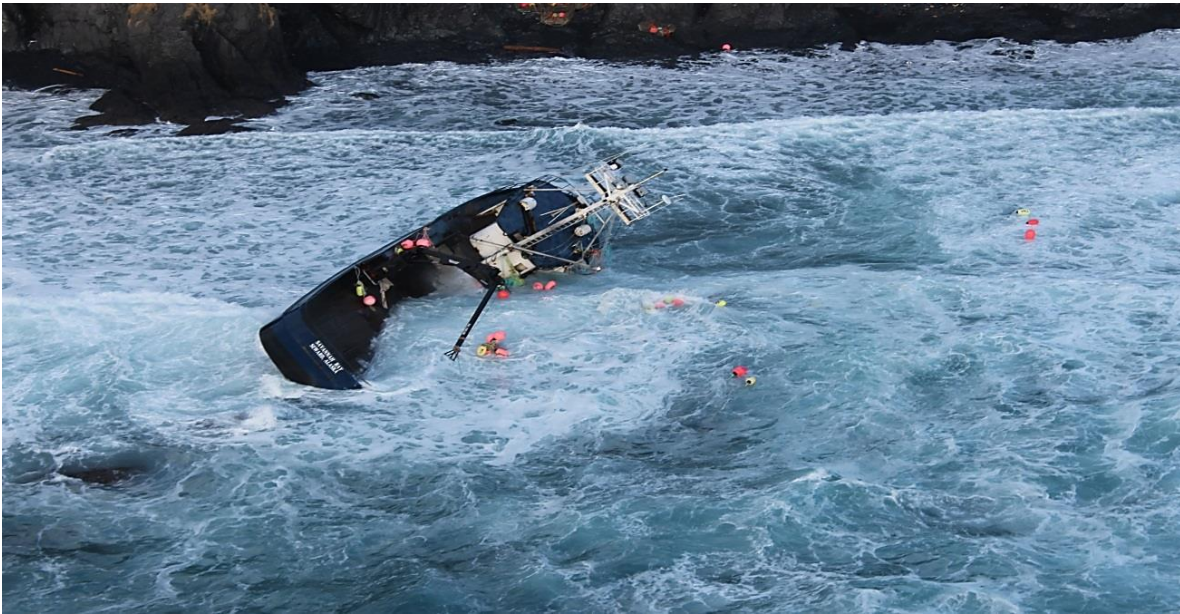
Satellite image of the accident area, with the *Savannah Ray*'s actual trackline overlaid by a red line and intended trackline overlaid by a green line. The grounding site on Long Island is marked by a red triangle. (Image based on information from the Coast Guard; background by Google Earth)

The captain said a deckhand woke him to assume the jog watch about midnight, which was earlier than expected because the vessel had made better time than anticipated. At that time, the vessel was near Cape Chiniak. The captain described that he went to the wheelhouse and saw that the seas were more from the east than expected; the vessel, due to the rough seas, had actually made a course over the ground of 007 degrees. According to automatic identification system (AIS) information, about 0003 on the morning of the accident, the captain altered the vessel's course to a northwesterly direction. The new course would bring the vessel to a position northeast of Humpback Rock, where the captain planned on changing the vessel's track to a course for entering St. Paul Harbor. The captain stated that, after setting the autopilot to the new course, he sat down in a chair next to the helm and fell asleep.

With no one minding the helm, the vessel continued past the waypoint off Humpback Rock and, according to AIS data, grounded at 0048 in the shallow water off the southeast coast of Long Island. Minutes later, strong seas shattered the aft wheelhouse window, allowing water ingress, and the vessel took a 45-degree list and lost power. With no power or lights, the crew donned immersion suits, and the captain broadcast a mayday call on the vessel's hand-held very high frequency (VHF) radio, which he used because the batteries to the fixed

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VHF radios had broken away from their connections. About 1 hour later, a Coast Guard helicopter arrived to hoist the crew to safety. The captain said he did not hear the watch alarm when he woke at the time of the grounding.



The *Savannah Ray* aground off Long Island, Alaska. (Photo by the Coast Guard)

The captain's fatigue and inability to stay awake during the hours of darkness, when the body is typically used to getting sleep, likely resulted in part from an inadequate amount of sleep. The evening before the grounding, the captain took the conn northeast of Cape Chiniak, about 6 miles from the Humpback Rock waypoint. On reaching the Humpback Rock waypoint, he planned on changing the course toward the northwest so the vessel could pass safely into St. Paul Harbor. The deckhand on the jog watch was to wake the captain just before reaching the Chiniak waypoint (which the captain estimated would have given him 5 to 6 hours of sleep). However, the deckhand woke the captain earlier than planned because the vessel made better time than anticipated. This early awakening resulted in the captain getting only 2 hours of sleep before beginning his jog watch.

The captain's fatigue and inability to stay awake also likely resulted from the lack of consecutive sleep. The sleep/wake cycle typically follows a 24-hour (circadian) schedule, which includes 6 to 8 hours of consecutive sleep. During the days preceding the accident, the captain's sleep/wake cycle was very intermittent, and, when he was able to get sleep, it was for about 4.5 hours at night and perhaps a 1- to 2-hour nap during the day.

In addition, the physical labor required to perform his duties, especially during poor weather conditions, contributed to the captain's fatigue and inability to stay awake. The captain described the physical labor required while on the fishing grounds, which included pulling the fish pots, emptying and baiting them, and then returning the pots to the sea floor twice per day (every 12 hours). He stated that the wind during the afternoon and evening before the grounding, while the crew emptied and baited pots, was about 35 knots.

The *Savannah Ray* was fitted with alarms on its depth sounders that, if properly set and activated, would sound to warn of shallow water depth. Additionally, the vessel's GPS units

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could be programmed to sound alarms as the vessel approached a preprogrammed waypoint or if the vessel strayed from a preprogrammed course. The captain stated he used none of those alarms. However, if the alarms had been used, they might have prevented this accident by alerting the captain and other crewmembers to take action to correct the vessel's track and avoid entering shallow water.

The owner/operator of the *Savannah Ray* stated the company did not have any written guidance for the captain and the other vessel crewmembers or a safety policy that required the crew to use all available alerting and navigation alarms. The owner/operator also stated that he had no specific knowledge of the navigation systems or communication equipment on board the vessel and instead relied on the captain for this knowledge.

AIS information showed the vessel's change of course at 0003, indicating the captain was awake at that time. The captain fell asleep sometime afterward and stated he awoke when the vessel grounded (at 0048). The captain also stated he did not hear the first-stage alarm at that time. It is not known why the captain did not hear the first-stage alarm. It is possible the actual time interval between the last alarm sounding and the grounding was less than 1 hour (the watch alarm setting) or the alarm was not properly set. Regardless, the watch alarm was not effective in ensuring the captain would be awake while navigating the vessel. The proper use of the watch alarm, which includes setting an appropriate time interval, would likely have prevented this accident and could prevent other grounding accidents from happening.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the grounding of the *Savannah Ray* was the vessel straying off course and entering shallow water because the captain fell asleep while navigating due to fatigue. Contributing to the grounding was the captain's failure to use all of the vessel's available alerting and navigation alarms.

Safety Issues

- **Crew knowledge of alerting and navigation alarms:** The vessel was equipped with a watch alarm that, if used properly, would likely have prevented this accident. Best practices for commercial fishing operations include vessel owners/operators ensuring that their crews have sufficient knowledge of all onboard alerting and navigation alarms.
- **Written procedures for alerting and navigation alarms:** The owner/operator of the vessel did not have any written guidance that required the crew to use all available onboard alerting and navigation alarms. Owners/operators can promote the proper use of alerting and navigation alarms by providing their crews with written procedures for this equipment.

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Vessel Particulars

Vessel	<i>Savannah Ray</i>
Owner/operator	Group 5/Mystic Blue LLC
Port of registry	Seward, Alaska
Flag	United States
Type	Commercial fishing vessel
Builder and year built	Bender Shipbuilding & Repair Company; 1980
Official number (US)	625096
IMO number	8124199
Construction	Welded steel
Length	82 ft (25 m)
Draft	11.7 ft (3.6 m)
Beam/width	24 ft (7.3 m)
Gross and/or ITC tonnage	199 gross tons
Engine power; manufacturer	500 hp (373 kW); Cummins
Persons on board	Four

NTSB investigators worked closely with our counterparts from US Coast Guard Sectors Kodiak and Anchorage throughout this investigation.

For more details about this accident, visit www.nts.gov/investigations/dms.html and search for NTSB accident ID DCA15LM013.

Adopted: November 5, 2015

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*, 1131. 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*, 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*, 1154(b).
