



National Transportation Safety Board

Marine Accident Brief

Flooding and Sinking of Fishing Vessel *Ambition*

Accident no.	DCA16FM045
Vessel name	<i>Ambition</i>
Accident type	Flooding and sinking
Location	Bering Sea, 19 nautical miles north-northeast of False Pass, Alaska 55° 09.2 N, 163° 16.3 W
Date	July 23, 2016
Time	2209 Alaska daylight time (coordinated universal time – 8 hours)
Injuries	None
Property damage	\$700,000 est.
Environmental damage	A light sheen was observed in the days after the sinking near the vessel's last known position, and a diver later saw 4–5 drops of oil per minute rising to the surface. 2,500 gallons of diesel (mostly recovered), 55 gallons of hydraulic oil, and 250 gallons of gasoline were on board the vessel when it sank.
Weather	Overcast with visibility 3 miles, winds west at 25 knots, air temperature 52°F, water temperature about 50°F, seas 10 feet.
Waterway information	The Bering Sea is north of the Alaska Peninsula and the Aleutian Islands, which form an island chain in the north Pacific Ocean.

About 1600 on July 23, 2016, the commercial fishing vessel *Ambition* started taking on water in its lazarette while transiting in the Bering Sea near the northern entrance to False Pass off the Alaska Peninsula. The vessel began sinking by the stern, and efforts by the crew to determine the source of the flooding were unsuccessful. After the captain transmitted a distress call over VHF radio at 1832, the five crewmembers donned immersions suits and abandoned the vessel into the water and onto an awaiting good Samaritan vessel. The crew suffered no injuries. The *Ambition* continued to slowly sink and was last seen at 2209. Most of the fuel oil on board was later recovered by salvors, but a light oil sheen was observed in the area in the days immediately following the sinking. Two attempts to raise the wreck were unsuccessful, and the vessel was declared a total loss with an estimated value of \$700,000.



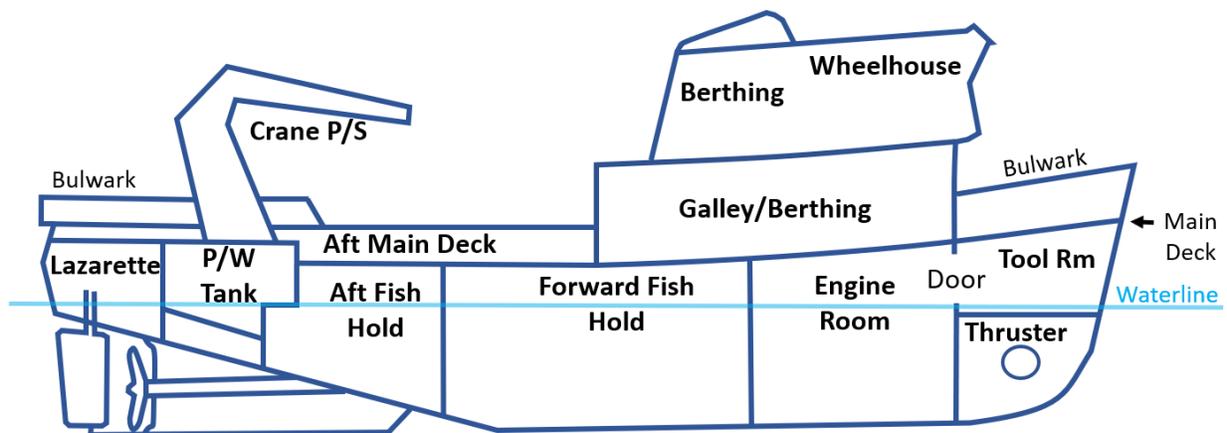
Ambition prior to the accident. (Photo provided by vessel owner)

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Background

The 74-foot-long, steel-hulled *Ambition* was built in 1957 in British Columbia, Canada, as a drum seiner named *Silver Viking II*. A drum seiner is a fishing vessel that hauls in and stores nets on a large drum. The vessel worked in the Canadian fishery until it was bought in 2013 by its last owner/captain (hereinafter referred to as the captain), who transferred it to a new homeport in Kodiak, Alaska, and renamed it the *Ambition*.

Previous owners had modified the vessel's wheelhouse and aft deck bulwarks and added a circular net guard—a frame around the propeller and rudder to protect them during fishing. The new captain further modified the vessel by converting it from a drum seiner to a fish tender, a vessel that meets at sea with fishing boats that have reached full capacity, unloads the fish, and then transports the catch to the nearest fish-processing plant. In the process, the drum and other gear were removed from the vessel's aft deck and replaced by two cranes, and centerline fish bins with six adjacent outboard fish tanks were converted to two full-beam fish holds. Although no professional stability assessment was completed after the conversion, the captain estimated that the weight of the gear removed was more than the weight of the cranes added to the *Ambition*. He estimated that the vessel's weight without cargo (or light ship displacement) was about 80–90 long tons (LT) and said that the empty draft was 6 feet. He stated that the vessel could carry a maximum of about 190,000 pounds (85 LT) of fish and that the full draft was about 8 feet. He recalled that the vessel's draft when configured as a drum seiner had been “a little lower” due to the extra weight on deck.



Simplified side profile of *Ambition*. (Based on original construction general arrangements drawings and captain's description of vessel layout)

The *Ambition* was configured with a deckhouse above the main deck that included the wheelhouse and crew berthing areas. A tool room was below the main deck, forward, and contained refrigeration and freshwater equipment for the fish holds. The tool room was accessed either through a small watertight main deck hatch or from a short stairway from the berthing above. Below the tool room were a hydraulic oil tank and an inaccessible space containing a bow thruster tunnel. The engine room was aft of the tool room and accessed through a non-watertight wooden door and down a short stairway from the tool room. The engine room contained two diesel-powered electrical generators and a diesel engine driving a single propeller shaft. Aft of the engine room were the two fish holds, accessible through 5-foot rectangular bolt-down hatches on the main deck that had smaller quick-acting personnel-access hatches inset into them. A potable-water tank was between the holds and the lazarette. The lazarette contained the steering

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gear, including the rudder post that penetrated through the bottom of the hull. According to the owner, the lazarette extended the full width of the vessel.



At left is the aft main deck of the *Ambition*, viewed from the stern, showing rectangular bolted hatches for the forward and aft fish holds with access hatches inset. At right is the aft deck, viewed from the deckhouse, showing access hatches to the lazarette and potable-water tank.

The original construction drawings from 1957 showed that the vessel had four transverse watertight bulkheads, including one forward of the lazarette. Stability documents indicated a light ship mean draft of 5 foot 9 inches at 85 LT displacement and a “deep load” draft of 9 foot 7 inches with a corresponding displacement of 215 LT. The vessel’s stability was examined by the Canadian Steamship Inspection Office and found satisfactory per a stability letter issued in 1958.

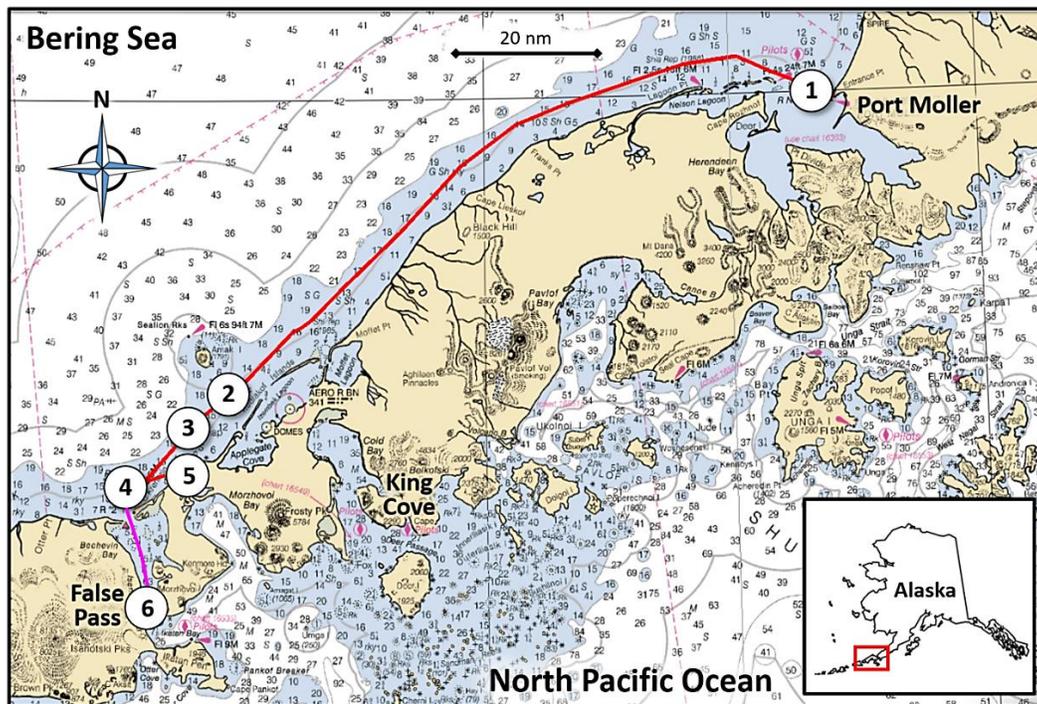
Accident Events

At the time of the accident, the *Ambition* was under contract to a company with fish-processing plants in several Alaskan ports. On July 22, the *Ambition* unloaded 170,000–180,000 pounds of sockeye salmon from the fishing vessel *Melanie* while in Port Moller, Alaska (filling both fish holds). Upon completion of loading, the fish hold hatches were bolted closed and the inset access hatches secured. After waiting for an optimal tide, the *Ambition* departed about 2300 bound for a fish-processing plant in King Cove, Alaska.

For the next 17 hours, the vessel transited uneventfully in Bristol Bay and the Bering Sea, along the north coast of the Alaska Peninsula. The vessel had a crew of five—four of whom were members of the same family—who stood wheel watches in 2–3-hour shifts. The captain stated that winds were 25 knots from the west, and seas were about 10 feet and in the direction of the wind. He said that it was “pretty good sailing” for the load that the vessel was carrying and that the autopilot held the course.

In the late afternoon on July 23, the captain’s spouse had the wheel watch. Sometime after 1600, the captain, who was also in the wheelhouse, noticed that the vessel was “sluggish.” At the same time, he noted that the stern was sitting about 5 inches too low in the water, a situation that concerned him. About 1700, he gathered the crew in the wheelhouse to discuss the problem and to establish a plan to check spaces on the vessel. The engineer (the captain’s son) told investigators that the crew checked the *Ambition* and found that the engine room and tool room were free of water and the fish holds were not slack. While the crew was checking spaces, the lazarette bilge high-water alarm began sounding intermittently in the wheelhouse.

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Chartlet showing the approximate locations of critical events in the accident voyage: (1) About 2300, July 22, *Ambition* departs Port Moller en route to King Cove, Alaska; (2) about 1600, July 23, vessel has slight list and is “sluggish”; (3) an hour later, crew attempts to locate source of flooding as vessel sinks lower in the water; (4) unable to stop flooding, crew initiates VHF mayday calls at 1832, activates inReach SOS at 1842, and then abandons the vessel about 1900; (5) partially sunken *Ambition* continues to drift until it fully submerges, last seen at 2209 by a Coast Guard aircraft; (6) crew is transported to False Pass by fishing vessel *Star Watcher*. (National Oceanic and Atmospheric Administration [NOAA] chart 16011)

The captain and the engineer went aft to check the lazarette. By the time they reached the access to the space, the bilge alarm was sounding continuously and waves were breaking over the stern of the vessel. The engineer told investigators that they found the hatch securely dogged. The captain said that, when they opened the hatch, there was more water in the space than they could pump out. They could not see fully into the space because seawater running over the deck was pouring into the lazarette from the hatch, but the engineer said he did not see water coming from the rudder-post packing seal. The captain and the engineer closed and dogged the hatch and proceeded back to the wheelhouse.

The captain used the automatic identification system (AIS) to locate the nearest vessel, the fishing vessel *Kona Kai*. He then contacted the vessel via VHF radio and asked it to stand by “just in case.”

Shortly thereafter, the *Ambition* began to list to port. The engineer swung the vessel’s deck cranes out over the starboard side in an attempt to counter the list, but the list did not noticeably change. The crew discussed other means to address the list and rigged a portable bilge pump in preparation for taking a suction through the lazarette’s hatch. However, the vessel’s aft deck soon became awash under a foot of water. The crewmembers realized they could not keep up with the flooding.

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The captain radioed the *Kona Kai* again and notified its crew that the *Ambition* was in danger. The *Kona Kai*, which was about 3 nautical miles away, began heading toward the *Ambition*. Then, about 1826, the captain broadcast a Mayday call over the VHF radio on channel 16. The fishing vessels *Star Watcher* and *Time Bandit* heard the broadcast. The *Star Watcher* noted that it was closer to the *Ambition* than the *Kona Kai* and began heading toward the scene. The *Time Bandit* immediately relayed the radio distress call to the Coast Guard using HF radio frequency 4125. In response, the Coast Guard launched an MH-60 helicopter and a C-130 fixed-wing aircraft from Air Station Kodiak.

On the *Ambition*, the captain broadcast another Mayday call, but the *Kona Kai* informed him that the Coast Guard was not receiving his message. About 1842, now aware that the Coast Guard was not getting the Mayday calls, the captain's spouse activated the emergency "SOS" function on a Delorme inReach portable satellite communication device. (The fish-processing company had advised all contracted vessels to carry the device.) "Within seconds," according to the spouse, a duty officer located at a commercial emergency response coordination center in Houston, Texas, responded via text. The spouse informed the coordination center via text that the vessel was taking on water. At 1847, the duty officer notified Coast Guard Sector Anchorage of the *Ambition's* location and lazarette flooding. The Coast Guard advised the duty officer that it was working a response to that vessel.



Photo of partially submerged *Ambition* taken from *Star Watcher* deck. (Photo courtesy of M. Potter)

At 1851, the coordination center duty officer called the *Ambition's* fish-processing company contact (located in Kodiak) listed on the inReach registration. The call was not immediately answered, but at 1857 the company contact called the duty officer back. Following the call, the company contact notified the Coast Guard, providing specific crew information and an accurate vessel position as received from the inReach device.

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The captain of the *Ambition* said that he considered beaching the vessel on the shoreline a few miles away, but the vessel was sinking too quickly. Instead, he instructed the crew to don their immersion suits. He then put the engine transmission in neutral (the vessel maintained electrical and propulsive power). By this time, the *Star Watcher* was in sight, so he told the crew not to activate the *Ambition*'s emergency position-indicating radio beacon (EPIRB).

The captain ordered the crew to abandon the *Ambition*, and they proceeded single-file from the wheelhouse to the back deck and entered the water from the port side. The captain was the last crewmember to abandon the vessel. The *Ambition* crew swam toward the *Star Watcher*, whose crew used a life ring to assist them aboard. Radio logs indicated all crewmembers were aboard by 1909. Upon being notified that the crew of the *Ambition* were accounted for and safely on board the *Star Watcher*, the Coast Guard diverted the MH-60 helicopter. Later, the *Star Watcher* transported the *Ambition* crew to an abandoned fish-processing plant at False Pass, where the caretaker provided them food, clothing, and shelter until they could be flown out of the area.

After the abandonment, the *Ambition* continued to slowly sink. At 2002, the *Kona Kai* reported that the *Ambition* had a heavy port list with "lights and pumps still on." The *Kona Kai* remained on scene to potentially tow the stricken vessel but departed at 2022 after determining that towing was not possible due to weather conditions. The *Ambition* was last sighted at 2209 by the Coast Guard C-130 aircraft that had been launched in response to the accident. The vessel's float-free liferaft was observed deployed.

On August 5, 2016, a salvage team located the *Ambition* in 60 feet of water and made plans to remove the fuel and lube oil and raise the wreck, which was found to be relatively intact. By August 26, the oil had been pumped out of the *Ambition*'s tanks, but the vessel was unable to be raised. No further salvage operations were conducted in 2016. In the summer of 2017, another salvage effort was undertaken to raise the wreck, which had moved 300 feet. This operation was likewise unsuccessful. Neither salvage report indicated the location of the hull breach that caused the flooding.



Starboard aft quarter of the *Ambition* prior to final sinking. Arrow shows part of net guard installed to protect the propeller and rudder. (Photo by Coast Guard)

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Personnel

The captain of the *Ambition* had about 36 years of experience crewing and owning fishing vessels performing crabbing, long-lining, cod fishing, and tendering in the waters of the Aleutian Islands, the Gulf of Alaska, and the Inside Passage. The captain's son, the designated engineer on the *Ambition*, had been a crewmember on board the vessel since his father purchased it 3 years prior to the accident. The engineer had a total of 11–12 years' experience on board crabbing, gill-netting, cod-fishing, and tendering vessels in Alaskan waters. He held a Fishing Vessel Safety Instructor card, which he obtained after receiving training in Kodiak in spring 2016. For the remaining crewmembers, the 2016 season was their first year on board the *Ambition*; each had between 1 and 3 years of experience on board Alaskan fishing vessels.

Crewmembers told investigators that they conducted drills on board the vessel regularly, including man overboard, flooding, and abandon-ship drills. The captain said that he instructed the crew about the location of the fire extinguishers and life rings, walked through how to deploy the EPIRB, and ensured that each could don their immersion suits within 60 seconds. A Coast Guard fishing vessel dockside safety examination, conducted on June 6, 2016, indicated that drills and safety orientations had been performed within 30 days of the exam.

VHF Radio Coverage and Satellite Communication Devices

The fish-processing company's fleet coordinator stated that VHF radio coverage was typically limited to 2–3 miles in range (6 miles maximum) in the Aleutian Islands fishing grounds and that satellite phone connectivity had worsened in recent years. For these reasons, the processing company had stressed that all vessels under contract have an inReach satellite communication device. The company used these devices to communicate with its contracted tenders, sending and receiving information regarding the vessels' positions and status, and thus allowing the company to direct the tenders more effectively. The coordinator said the company did not require their use for vessel emergencies but that the devices had proven to be a valuable safety tool.

Although the VHF mayday call from the *Ambition* was relayed to the Coast Guard by another vessel, the use of the inReach satellite communication device's SOS function prompted an immediate response from the commercial response coordination center that in turn notified the Coast Guard search and rescue (SAR) command center. The device provided accurate position data and allowed for the exchange of text messages describing the situation and number of persons on board in real time (inReach does not allow for voice calling). Additionally, by using the fish-processing company's fleet coordinator—a person knowledgeable in the vessel's operation and route—as a contact during device registration, critical information was able to be passed on to SAR personnel.

Garmin purchased Delorme, the inReach manufacturer, shortly after the accident. Garmin's website states that the hand-held inReach models have “pole to pole global Iridium satellite coverage for two-way messaging and SOS alerting anywhere in the world” and have built-in high-sensitivity GPS for location tracking. The device can be connected to a vessel operator's smart phone or used stand-alone to send and receive text messages with any mobile phone, email, or another inReach device. Use of the SOS function triggers an emergency response from the command center. The website states, “After the SOS is received, inReach users are then able to communicate back and forth with [the command center] about the nature of the emergency, and

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receive confirmation when help is on the way. Users can also set up emergency contacts on their devices that will also be notified in the event of an SOS.”

Garmin provided the NTSB with data for all consumer SOS emergency alerts through the end of 2017. Alert data were divided into air, land, and marine categories. Garmin inReach devices began activation in 2011, but SOS statistics were not formally tracked until 2014. Garmin’s records indicate that 203 rescues have been categorized as marine emergencies, or about 10 percent of all rescues. The specific number of devices in marine use is not tracked. Garmin stated nearly all “false alarms” are triaged by command center operators using 2-way communication before they reach out to the SAR community.

2016 Maintenance, Bilge Pumping, and Alarm System

Prior to the 2016 fishing season, repairs and upgrades were conducted on the *Ambition* while the vessel was in a shipyard in Kodiak. The captain told investigators that during this period he replaced the packing on the propulsion shaft with six lines of rope packing. The engineer stated that the shaft did not penetrate the hull in the lazarette but rather in the shaft tunnel that began in the engine room and passed under the fish holds. The crew indicated that there were no bulkhead penetrations between the fish holds and the lazarette. They did not report any work done to the hull or rudder during this shipyard period. The captain stated that the rudder post, which penetrated the hull in the lazarette, hadn’t been packed in 2–3 years, but there was no indication it needed to be packed.

During the shipyard period, the crew also added an independent 4,200-gallons-per-minute bilge pump to the lazarette. The pump was mounted low in the space with a 1-inch plastic discharge pipe that penetrated the vessel’s transom about 2 feet above the waterline—“as high as possible,” according to the captain. All the *Ambition*’s bilge pumps in the lazarette, engine room, and shaft tunnel were set to automatic mode at all times.

The engineer stated that the *Ambition* had a panel in the wheelhouse with pump switches, pump-running indicators, and bilge alarm indicators. He said that both the lazarette and the engine room had bilge high-level alarms and that they were tested during a Coast Guard examination. However, the June 6, 2016, Coast Guard fishing vessel examination form did not have “checked” boxes for high-water alarm or bilge pump function testing, as it did for most other items. The engineer recalled the lazarette bilge alarm as being about a foot off the bilge, which was above the float switch for the bilge pump actuation. He said he was confident the bilge pumping systems and alarms were energized during the final voyage.

Flooding

Based on the crew statements, flooding occurred in the lazarette, up to the aft bulkhead of the aft fish hold. This bulkhead was shown to be watertight in historical drawings. The dedicated bilge pump in the lazarette was assumed to be pumping, but the crew could not see the overboard discharge because it was under water as the vessel’s stern sank. The pump could have been fouled or unable to keep up with the flooding. Because the vessel retained electrical power for over 6 hours (until at least 2022) and the crew stated that the engine room was “dry,” it is improbable that rapid progressive flooding through forward spaces occurred. Rather, as the vessel sank lower by the stern, seawater likely entered a deck opening leading to the engine room and downflooding began. Engine room flooding would have progressed into the tool room until the *Ambition*’s reserve buoyancy became insufficient for the vessel to remain afloat.

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The point of flooding into the lazarette could not be determined because the *Ambition* was not raised and salvors did not report on hull breaches. Possible points of ingress include: 1) seawater backflow through the overboard discharge of the bilge pump; 2) a failure of the rudder-post packing; or 3) a wastage hole or crack in the hull. Investigators believe that the bilge pump overboard discharge was an unlikely source given the small piping size (1-inch diameter) and crew statements that the *Ambition* had successfully transited in much larger seas (20 feet) without lazarette flooding issues. Although the rudder-post packing had not been renewed or tightened in at least 3 years, the captain stated that there was no indication that it needed to be packed and the engineer told investigators that he saw no indication of it leaking when he looked inside the lazarette during the sinking.

A postaccident overflight photograph (included earlier in this brief) showed struts and bars that were part of the propeller net guard. The vertical strut was fixed to the underwater portion of the hull plate beneath the lazarette at the transom, and other structure supporting the guard was likely attached to the hull forward (no pictures of the guard were able to be obtained). If the guard had contacted the ground, drifting debris (such as a log), or other objects, the weld points where the struts were attached to the hull may have been subject to cracking. Such cracking could have been the source of flooding during the accident voyage. Although the crew did not report a grounding or contact with an object, forces working on the guard over time may have also been transmitted and concentrated to the point of attachment to the hull. The original hull design did not incorporate a guard and investigators found no evidence that engineering work was procured to assess the design.

Investigators considered whether overloading or a cargo shift could have contributed to the accident. According to the captain, the vessel was loaded to near maximum capacity based on the weight of fish in the holds. Investigators estimated that the vessel displacement would have been about 180 LT on the voyage with a mean draft of about 8 feet 8 inches per the hull's original hydrostatic curves (the hull dimensions were not modified throughout the vessel's life). Because the *Ambition* historically met stability criteria at a maximum displacement at 215 LT with a mean draft of 9 feet 7 inches, and considering similarities between current and historical light ship displacements and the general configuration, overloading was likely not a factor in this accident.

Although the engineer stated that the fish holds were not slack when he checked them, there was potentially some space in the holds for movement of the fish cargo. However, while it is feasible that the cargo shifted and contributed to the port list, a cargo shift without flooding would have presented a risk of capsizing (a loss of stability) and would not explain the vessel's continued gradual sinking by the stern. Thus, a cargo shift was not considered a factor in this accident.

Probable Cause

The National Transportation Safety Board determines that the probable cause of the sinking of the fishing vessel *Ambition* was the flooding of the lazarette from a breach in the steel hull.

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Alternate Emergency Communication Systems in Alaska Region

Vessel owners, operators, and crewmembers should be aware of the limitations of VHF radio reception in the Aleutian region. In addition to VHF radios, mariners should have alternate means of immediately alerting Coast Guard search and rescue (SAR) centers, such as satellite phones, other satellite communication devices, or marine medium-frequency (MF)/high-frequency (HF) radios. Captains and vessel owners should ensure that crewmembers are knowledgeable and proficient in the use of the designated alternate communication devices, and contact information for the SAR center should be posted in the wheelhouse and in crew common areas. In the case of satellite communication devices with SOS functionality, designated emergency contacts ashore should know critical information such as the vessel's intended route, the vessel's operations, and the number of persons on board.

Vessel Particulars

Vessel	<i>Ambition</i>
Owner/operator	Private citizen
Port of registry	Kodiak, Alaska
Flag	United States
Type	Fishing vessel
Year built	1958
Official number (US state)	AK9035AN
IMO number	N/A
Classification society	N/A
Construction	Steel
Length	75 ft (22.9 m)
Depth	11 ft (3.4 m)
Beam/width	22 ft (6.7 m)
Draft (full load, approximate)	9 ft (2.8 m)
Gross tonnage	138
Engine power; manufacturer	1 @ 360 hp (270 kW); Caterpillar 353
Persons on board	5

NTSB investigators worked closely with our counterparts from Coast Guard Sector Anchorage throughout this investigation.

For more details about this accident, visit www.ntsb.gov and search for NTSB accident ID DCA16FM045.

Issued: January 30, 2018

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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. 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).
