



National Transportation Safety Board

Marine Accident Brief

Fire on board Fishing Vessel *Northern Pride*, with Subsequent Capsizing

Accident no.	DCA15LM020
Vessel name	<i>Northern Pride</i>
Accident type	Fire and subsequent capsizing
Location	Gulf of Alaska, approximately 12 miles* east of Shuyak Island 58°27.77' N, 151°47.49' W
Date	April 21, 2015
Time	1430 Alaska daylight time (coordinated universal time – 8 hours)
Injuries	None
Damage	Total loss of vessel, estimated at \$425,000
Environmental damage	Approximately 5,000 gallons of marine diesel oil, 300 gallons of hydraulic oil, and 140 gallons of lubrication oil released into the sea
Weather	Clear, fair visibility, winds 25 knots from the east, seas 4–6 feet, air temperature 33°F, water temperature 43°F
Waterway information	Gulf of Alaska, open water near Portlock Bank

On the afternoon of April 21, 2015, a fire broke out in the forepeak machinery space on the uninspected fishing vessel *Northern Pride* while under way in the vicinity of Portlock Bank, Alaska. Smoke and fire spread quickly to the main cabin and wheelhouse, prompting the captain to broadcast a Mayday alert. The captain then ordered his crew to don their immersion suits and abandon ship into the vessel's inflatable liferaft. A US Coast Guard helicopter responding to the emergency hoisted the crew aboard and transported them to Kodiak, Alaska. Shortly after the rescue, the *Northern Pride* capsized. The overturned vessel drifted northwest towards the Shakun Islets, and on May 7 its splintered hull washed ashore at Cape Chiniak within Katmai National Park. About 5,440 gallons of fuel, hydraulic, and lubricating oil were released to the sea. No injuries were reported. The vessel was declared a total loss valued at an estimated \$425,000.



***Northern Pride* with smoke exiting forward and from the wheelhouse. (Photos by US Coast Guard)**

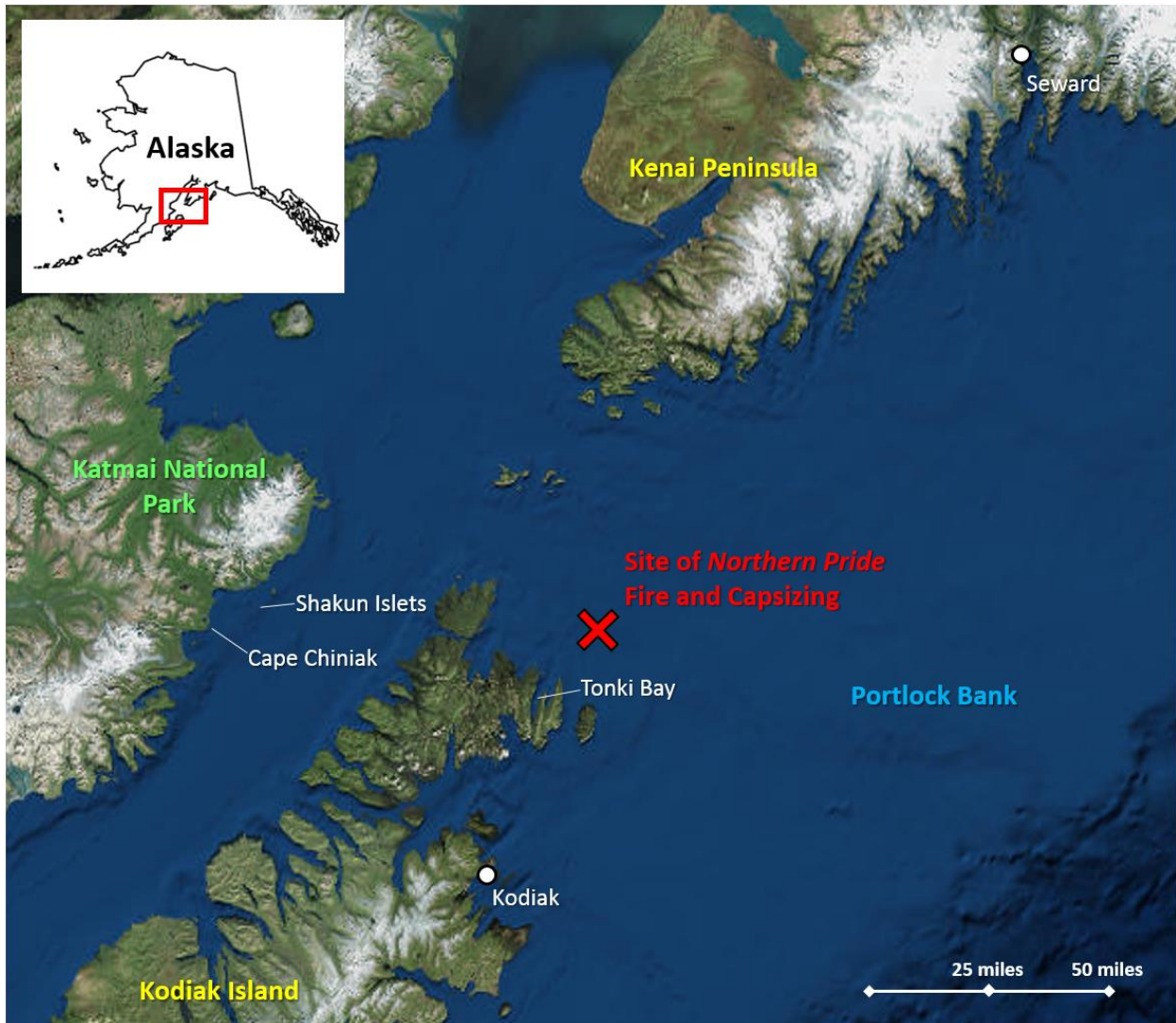
* Unless otherwise noted, all miles in this report are nautical miles (1.15 statute miles).

Note: This report was reissued on April 3, 2017, with corrections to page 9.

NTSB/MAB-16/12

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The *Northern Pride* was built for the US Army in 1943 by Maritime Shipyards in Seattle, Washington, as a Barge Self-Propelled (BSP). Commonly referred to as a power scow, the twin-engine vessel had a shovel-nosed rectangular hull with an open deck. The scow was constructed of Douglas fir frames and planks with spike and bolt fasteners. Although vessels of its kind were designed and intended to make only a single trip delivering military cargo to the Aleutian theater in World War II, very few were lost, and at the end of the war they were sold off as surplus. The *Northern Pride* was purchased and converted to a fish tender for the Aleutian trade, a job in which it functioned for over 70 years. Fish tenders meet at sea with fishing boats that have reached full capacity, on-load the fish, and transport the catch to the nearest fish processing plant.



Satellite image of the accident area. (Background by National Geographic MapMaker Interactive)

In May 2014, Northern Fisheries LLC took ownership of the *Northern Pride*. Three months later, it was taken out of the water in Seward, Alaska, where it remained for the next eight months. The owner stated that during that time two of the six fuel tanks were replaced, and two 27 kW Isuzu generator sets were installed. Shipyard personnel also caulked and painted the hull and added new zinc anodes for corrosion control.

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The captain and two crewmembers, a deckhand and an engineer, joined the *Northern Pride* on April 11, 2015, while it was still in drydock. All crewmembers were seasoned mariners in the Alaskan fishing industry, but none had ever made a voyage on this vessel.

The crew told investigators that they found the vessel in disrepair. There were leaks in the roof of the deckhouse, electrical wiring issues, electrical junction boxes missing, and portable fire extinguishers not serviced. Several propulsion engine gauges as well as wheelhouse engine monitoring gages were not operational, and there was no alarm system for the main engine or reduction gears. Additionally, neither the propulsion engine room aft or the forepeak machinery space, which contained the generators, were equipped with fire detection or fixed fire-extinguishing systems.

Despite the various deficiencies, the crew continued to prepare the vessel for sea. They installed a new washdown pump, repacked the rudder shafts, and conducted routine maintenance on machinery and deck equipment.

When the vessel was relaunched, it began to leak through the wood hull planking. Some leakage was expected in a wooden boat that had been out of the water for an extended period; however, the leaking did not subside as the wood planks swelled. The captain told investigators the bilge high-level audible alarm worked locally, but the alarm located at the operating station did not function.

About 1800 on April 20, the vessel departed Seward in calm seas and clear visibility en route to the Togiak herring fishery, about 900 miles away by sea. Five of the six 1,000-gallon fuel tanks were topped off with marine diesel fuel prior to departing Seward. The deckhand told investigators the bilge pumps were running about every 10 minutes to keep up with the inflow of seawater from hull leaks. According to the captain, the vessel continued to take on seawater at about the same rate for the duration of the trip.

On the morning of April 21, the captain stated the weather was clear with fair visibility, but seas had increased to 6–8 feet with easterly winds around 40 knots. At approximately 0600, the two generators in the forepeak machinery space shut down due to clogs in both of the engine-mounted fuel filters. There were no spare generator fuel oil filters on board, so the engineer flushed the fuel lines until clean fuel was present and changed the day-tank fuel filter (the day-tank supplied fuel to both generators and was fitted with an output filter prior to the engines). After the day-tank fuel filter was replaced, the generators would run for about 15 minutes and shut down again due to the day-tank filters clogging. They replaced the fuel filter on the day-tank six times after each shutdown. Ultimately, the crew decided to remove the generator's engine mounted filters, effectively bypassing them.

While the generators were shut down to clear fuel filter clogs, the backup battery system provided power for lighting and communications. But with each use the battery system was slowly being drained. To conserve battery power, the crew used the refrigerated seawater system to discharge seawater that had accumulated in the bilge from hull leaks. This pump was driven by a Detroit Diesel 6-71 engine located on main deck aft of the engine room space.

As with the generators, the main propulsion engines also lost power due to clogged fuel filters, requiring the crew to replace the filters multiple times. The captain told investigators he was confident the vessel could make it to Tonki Bay on Kodiak Island, Alaska, by continually replacing the main engine filters with spares they had on board. He relayed his intention to proceed to Tonki Bay to the owner, who agreed to have new generator filters sent to him there. The vessel continued its transit, while experiencing multiple losses of main propulsion, steering, and electricity.

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The captain did not notify the Coast Guard of the intermittent engineering casualties the *Northern Pride* was experiencing. Nonetheless, about 0930, the Coast Guard overheard the vessel communicating with a sister vessel, the fish tender *Dancer*, about the loss of electrical power and propulsion. In response, the Coast Guard hailed *Northern Pride*.

About 1200, the *Northern Pride* generators ceased functioning, resulting in the vessel's complete loss of power, including battery power (the main propulsion engines continued to operate). About 30 minutes later, the captain noticed smoke exiting the starboard vent of the forepeak machinery space where the generators were located. When the engineer and deckhand went forward and opened the forepeak hatch to investigate, they noticed thick billowing dark smoke that smelled like burning electrical wiring. They could not see anything in the space, so they closed the hatch and reported their findings to the captain. The crew determined the fire could not be fought or extinguished.

About five minutes later, smoke and fire had spread to the main cabin and wheelhouse. The captain broadcast the international distress signal Mayday over VHF radio and prepared to abandon ship. He then activated the emergency position indicating radio beacon (EPIRB) and ordered the crew to manually launch the inflatable liferaft and don their survival suits.¹ Once their suits were on, the crew abandoned the vessel about 1300.

The *Dancer* reported the fire aboard the *Northern Pride* to the Coast Guard and turned to respond. The Coast Guard issued an urgent marine information broadcast and launched an MH-60 Jayhawk helicopter from Air Station Kodiak, Alaska. The helicopter arrived on scene, located the liferaft, and hoisted the three crewmembers safely on board by 1445. All personnel were transported to Air Station Kodiak.

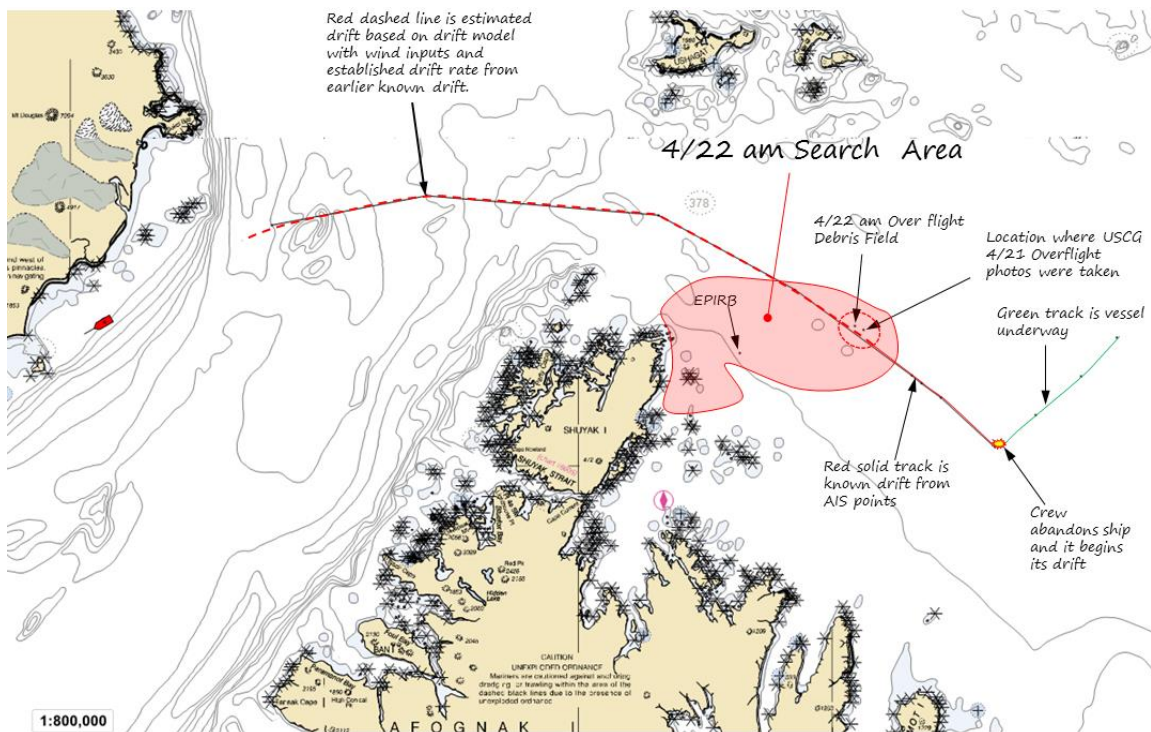


Coast Guard rescue, left, and capsized *Northern Pride*, right. (Photos by Coast Guard)

¹ An emergency position indicating radio beacon (EPIRB) alerts search and rescue services in an emergency by transmitting a coded message on the 406 MHz distress frequency via satellite and earth stations to the nearest rescue coordination center. The device can be activated manually or automatically when submerged and deployed from the vessel.

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About 1445, the *Northern Pride* capsized but did not sink. The overturned vessel drifted northwest towards the Shakun Islets as depicted in the chart image below. On May 7, the *Northern Pride*'s splintered hull washed ashore at Cape Chiniak within Katmai National Park, Alaska. All superstructure above the main deck was missing. Planking and vessel debris extended south of the wreck several hundred yards along the shore. A hull examination by a salvage company found all that remained attached were the main propulsion engines and fuel, potable water, and chill water tanks. All tanks were inspected through tank fittings, manhole covers, or piping. They were found to be either empty or have trace amounts of fuel mixed with seawater. Residual lubrication and diesel oil remained in the engine.



Coast Guard chart showing the location where *Northern Pride* capsized, the rescue site, and the estimated track line of the drifting capsized vessel.

Because of the fire and capsizing, investigators could not conduct a post-accident vessel survey or inspection. Therefore, they reviewed events involving the vessel being placed in the water in Seward, interviews with the crew and owner, and maintenance performed on the vessel to determine any relevance to the circumstances of the accident.

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***Northern Pride* hull washed ashore at Cape Chiniak within the Katmai National Park, Alaska. (Photo by Global Diving & Salvage, Inc.)**

The *Northern Pride* was designated an uninspected commercial fish tender engaged in the Aleutian trade, as defined in 46 *Code of Federal Regulations* (CFR) Subchapter C. As such, the vessel was not required to be inspected by the Coast Guard, registered with a classification society, or issued a load line certificate.

The last reported condition and valuation marine survey was conducted on February 11, 2014, while pierside in Seattle, Washington. The survey stated that tanks were not opened for internal examination, but the engine room section of the report recorded that “the fuel tanks inspected also showed signs of deterioration; some wire brushing and primer paint would stop this from further damage.” The report further noted “burned outlet receptacles in the engine room and no ground fault circuit interrupter (GFCI) outlets.”

The *Northern Pride*’s fuel oil tanks were constructed of steel and located below the main deck on the port and starboard sides of the vessel. Steel-pipe supply lines, hoses, and shutoff valves at the tanks met Coast Guard standards, according to the marine survey.

A Coast Guard voluntary commercial fishing vessel dockside safety examination was conducted on February 28, 2014, in Seattle, Washington, by a third-party examiner. Communications, documentation, and prevention systems for fire-fighting, lifesaving, and pollution were assessed as satisfactory; furthermore, no deficiencies were recorded in the exam. Dockside safety examinations—which are valid for two years—primarily assess the lifesaving equipment on board a vessel and do not include hull or other machinery assessments. At the time of the accident, examinations were voluntary and conducted at the request of the vessel owner/operator. (As of October 15, 2015, examinations are required for vessels operated more than 3 miles offshore, such as the *Northern Pride*.)

Testing for alcohol and other drugs was conducted on the *Northern Pride* crewmembers the morning after the incident, as directed by the Coast Guard Marine Safety Detachment Kodiak investigator. At that time, the captain and engineer told the investigator they would not pass the

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test because they had smoked marijuana after being rescued and arriving on Kodiak. Both tested positive for marijuana; the deckhand's results were negative.

There were no reported injuries to *Northern Pride* crewmembers.

Analysis

Fuel filters capture unwanted contaminants from fuel. These contaminants can cause serious and expensive damage to diesel engine system components, including pumps, lines, and injectors. Fuel contaminants may come from numerous sources after distillation. Most sources are external to the fuel itself; that is, most contaminants are picked up over time during transfer and storage. Water, minerals, heavy particulate metals, and algae are common examples of contaminants that can accumulate in a vessel's fuel tanks.

Leading up to the accident, the vessel's fuel oil filters were likely clogged from the accumulated rust, heavy particulate metals, and sediment that had laid dormant at the bottom of the empty fuel tanks through its long lay-up period prior to the accident voyage. On April 21, only 12 hours into the voyage, the sea state increased, thereby subjecting the contents of the tanks to significant liquid motion for the first time in about 8 months. The contaminants in the bottom of the tanks were agitated and became suspended in the fuel. With no filters, contaminants had an unrestricted path to clog pumps and fuel injector tips, which prevented the generators from operating. Bypassing the engine-mounted generator filters likely contributed to the final complete shutdown of the generator units in the forepeak machinery space.

The vessel was not equipped with a fixed fire-suppression system in the forepeak machinery space. Therefore, the crew had only handheld fire extinguishers and fire hoses to combat smoke and flames, which they deemed ineffectual. Although self-contained breathing apparatuses (SCBAs) were on board, the deckhand stated to investigators that he was not trained on this equipment. Crewmembers also reported that several portable fire extinguishers had not been inspected. All of these factors contributed to the decision to abandon ship.

The captain held a current Fishing Vessel Safety Drill Conductor certificate that enabled him to conduct safety training on board as defined in 46 CFR 28.270. However, it is unlikely that any training occurred in port while the crew was preparing for their first voyage.

Although the captain and engineer both tested positive for marijuana, there is no evidence to suggest the captain and engineer had used the drug while on board. Therefore, it could not be determined that marijuana use was a factor in this accident.

The crew stated that all logs and maintenance records were kept on the vessel but were lost after the capsizing. Thus, limited records were available for investigators to review and analyze. Despite the lack of documentation, it became apparent during the investigation that the *Northern Pride* was in poor condition. Although the vessel was not subject to inspection by regulations, the owner and captain had the responsibility to maintain the vessel in a safe condition. The decision to get under way for a lengthy transit was imprudent given known significant safety deficiencies.

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Probable Cause

The National Transportation Safety Board determines that the probable cause of the loss of the commercial fishing vessel *Northern Pride* was a fire in the forepeak machinery space and flooding through the hull planking, which led to its capsizing. Contributing to the accident were the overall poor condition and maintenance of the vessel and the captain's decision to get under way in a vessel with known deficiencies. Also contributing to the accident was the rapid spread of the fire in the wooden vessel due to the absence of machinery space fire-suppression systems and fire-protected subdivision bulkheads, neither of which were required for uninspected fishing vessels.

Vessel Maintenance and Safety

The investigation into the fire on board the *Northern Pride* and its subsequent capsizing found that poor maintenance and the decision to get under way with known deficiencies contributed to the vessel's loss. Regardless of inspection requirements, owners are obligated to ensure vessels are properly maintained, equipped, and operated in a safe condition. Captains also have the responsibility to ensure vessels are safe to operate and correct known deficiencies.

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Vessel Particulars

Vessel	<i>Northern Pride</i>
Owner/operator	Northern Fisheries LLC
Port of registry	Seward, Alaska
Flag	United States
Type	Fish tender
Year built	1943
Official number (US)	251716
Hull identification number	7307495
Construction	Wood
Length	82 ft 5 in (25.1 m)
Draft	9 ft (2.7 m)
Beam/width	26 ft 10 in (8.2 m)
Gross ITC tonnage	174 gross tons
Engine power, manufacturer	2 X 304 hp (227 kW) Detroit Diesel 8V71N
Persons on board	3

NTSB investigators worked closely with our counterparts from Coast Guard Marine Safety Detachment Kodiak throughout this investigation.

For more details about this accident, visit www.nts.gov and search for NTSB accident ID DCALM005.

Issued: August 12, 2016

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 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.” 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. 49 *United States Code*, Section 1154(b).
