November 4, 2026 MIR-26-36

Capsizing and Sinking of Commercial Fishing Vessel *Wind Walker*

On December 1, 2024, about 0005 local time, the fishing vessel *Wind Walker* was transiting the Icy Strait, 0.9 miles southwest of Point Couverden, Alaska, when it capsized (see Figure 1 and Figure 2).[1] The captain issued mayday calls, stating that the vessel had rolled over and was sinking and that the crew was attempting to launch the vessel's liferaft. The vessel sank before response assets could reach the scene. No survivors were located during the ensuing 34-hour search effort. The bodies of two crewmembers were recovered 9 days after the casualty; the three remaining crewmembers are missing and presumed dead. A small oil slick was observed near the last known position of the vessel. The *Wind Walker*, valued at an estimated $650,000, was lost.



Figure 1. *Wind Walker* fishing with seining gear in March 2022. (Source: James Poulson, *Daily Sitka Sentinel*)

[1] (a) In this report, all times are Alaska standard time, and all miles are nautical miles (1.15 statute miles). (b) Visit ntsb.gov to find additional information in the public docket for this NTSB accident investigation (case number DCA25FM006). Use the CAROL Query to search investigations.

Casualty Summary

NTSB casualty category	Capsizing/Listing
Location	Icy Strait, 0.9 nm southwest of Point Couverden, Alaska 58°10.64' N, 135°04.18' W
Date	December 1, 2024
Time	0005 Alaska standard time (coordinated universal time −9 hours)
Persons on board	5
Injuries	5 fatal
Property damage	$650,000 est.
Environmental damage	Small oil sheen near last known position of vessel
Weather	Visibility <1 nm, with periods of no visibility; snow; winds northeast at 42 kts, gusts 53 kts; seas 6 ft; air temperature 21°F, water temperature 41°F; morning twilight 0734, sunrise 0823
Waterway information	Inland passage; width 6 nm, depth 150 ft at casualty location and 1,398 ft at center of channel, current 0.2 kts flood near center of channel

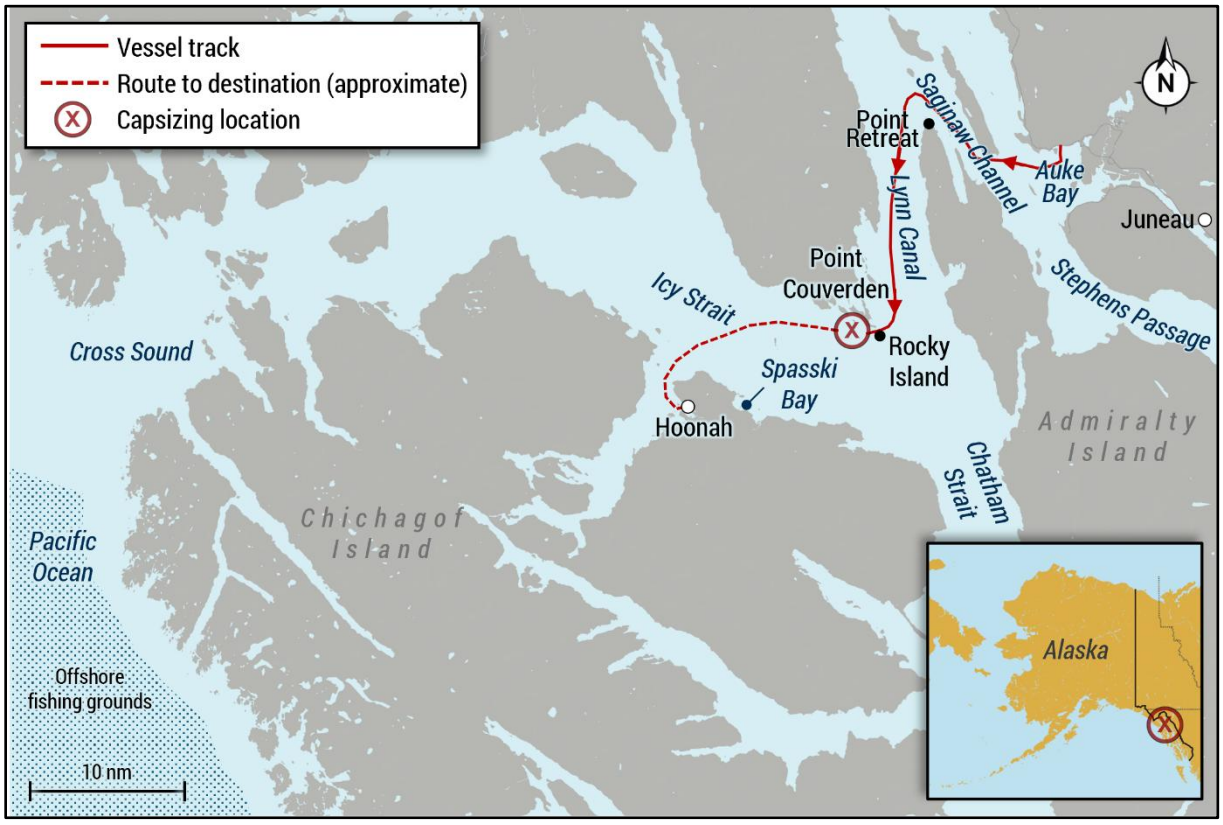


Figure 2. Area where the *Wind Walker* capsized, as indicated by a circled *X*. (Background source: Google Maps)

1 Factual Information

1.1 Background

The 50-foot-long, steel-hulled commercial fishing vessel *Wind Walker* was built in 1982 near Seattle, Washington. The *Wind Walker* was owned by Mermaid Fisheries LLC, a company wholly owned by the vessel's captain. The *Wind Walker* was designed as a purse seiner and was primarily employed in the Alaska salmon fishery.[2] However, after the salmon season concluded around September of each year, the vessel was reconfigured for longline fishing in the Alaska halibut and sablefish fisheries.[3]

The modifications for longline fishing included the addition of a "bait shed," an aluminum housing over the aft one-third of the vessel that was affixed to the boat's gunwales and provided the crew with protection from the weather while fishing (see Figure 3). A walkway along the port side connected the top of the bait shed to the wheelhouse deck, and aluminum plating was added between the walkway and the portside gunwale for additional weather protection. Various equipment required for longline fishing, as well as the associated weighted lines, were installed on the vessel's main deck working area (see section 1.3.2.2 for more information regarding the bait shed and longline fishing equipment). When rigged for longline fishing, the seining net and a skiff used to deploy the net were removed from the vessel.

[2] *Purse seiners* use a large wall of netting with floats on the top of the net and a lead line strung through rings at the bottom of the net. The net is deployed using a skiff and then circled around fish as they school or run. Once the fish are encircled, the lead line is drawn tight to close, or "purse," the bottom of the net, preventing the catch from escaping downward. The net is then pulled alongside the fishing vessel, where the fish are loaded into holds.

[3] (a) *Longline* means a line that is deployed horizontally and to which gangions and hooks or traps (pots) are attached. Longlines can be stationary, anchored, or buoyed lines that may be hauled manually, electrically, or hydraulically. See Title 50 *Code of Federal Regulations* (*CFR*) 600.10.
(b) Sablefish is also known as black cod.

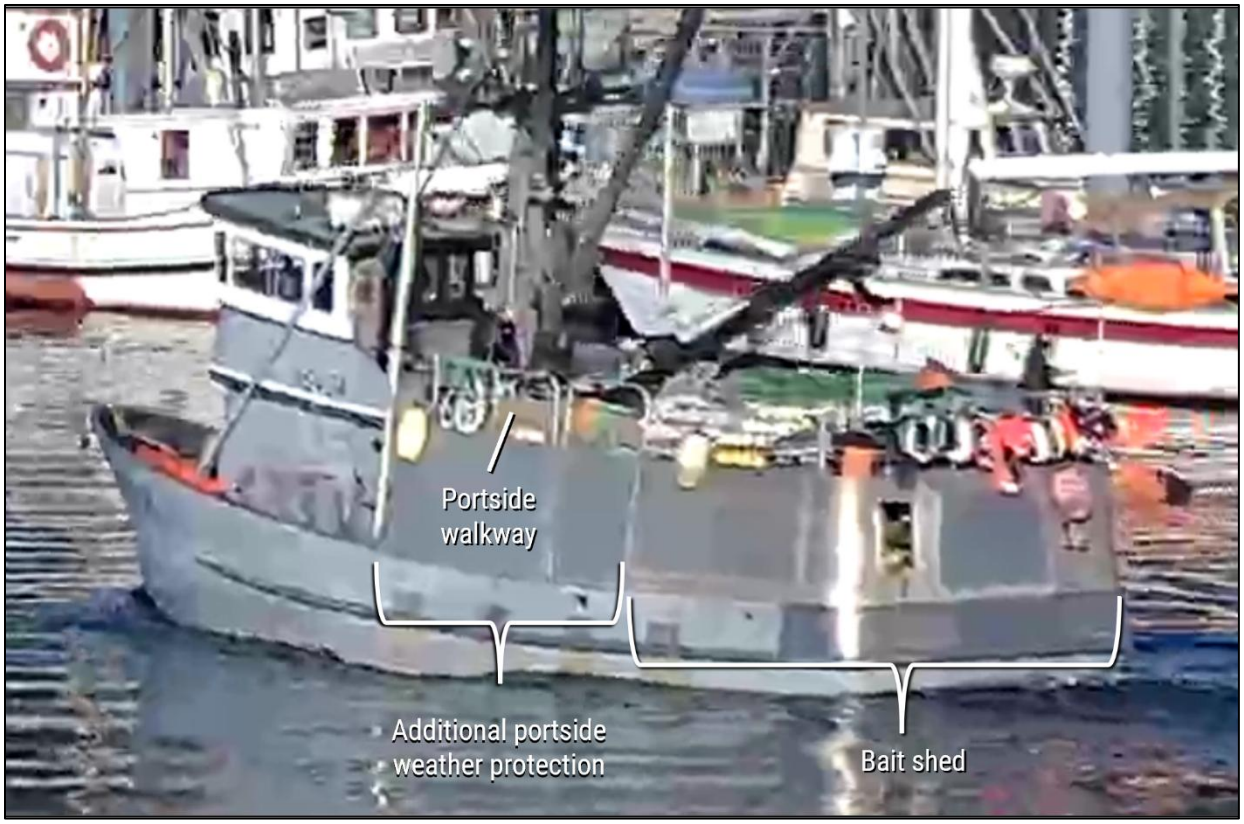


Figure 3. Screen capture of November 24, 2024, video showing *Wind Walker* configured for longline fishing. (Background source: City and Borough of Sitka Harbor Department)

1.2 Event Sequence

1.2.1 Precasualty Events

On November 27, 2024, the crew of the *Wind Walker* deployed longlines with fishing traps in the fishing grounds off the coast of Southeast Alaska. Leaving the fishing gear to "soak," the vessel then departed the grounds en route to a fish processing plant in Auke Bay, near Juneau, Alaska, where the crew intended to offload halibut and sablefish that had been previously caught.[4] Per regulations, the fishing traps that had been left behind to soak had to be retrieved within 5 days, or the vessel would be subject to a fine.[5] The 2024 halibut and sablefish seasons, which had opened on March 15, were due to close on December 7.

[4] When a fishing vessel crew leaves gear to *soak*, it remains deployed to attract and capture fish.

[5] See 50 *CFR* 679.42(l)(5)(iii).

At 1500 the next day, November 28, the *Wind Walker* arrived in Auke Bay, but the crew could not offload the catch because the plant was closed for Thanksgiving Day. They could not offload the following day either, because other vessels were offloading and the plant had no availability.

On Saturday, November 30, three days after the *Wind Walker* had left the offshore fishing grounds, the crew offloaded their catch. During the offload, a National Oceanic and Atmospheric Administration (NOAA) fisheries enforcement officer conducted a routine boarding of the *Wind Walker* to ensure the vessel and its catch were compliant with fisheries regulations. During the boarding, the enforcement officer and the captain discussed the weather forecast (the weather conversation was not related to the boarding). The captain noted that during the upcoming voyage, weather forecasts predicted poor conditions on the fishing grounds offshore; he did not discuss any forecasts for the Alaska Inside Passage through which the vessel would transit after it left Auke Bay.

After the offload, the crew onloaded 6.3 long tons (7 short tons) of ice into the main fish hold in preparation for their next fishing trip.[6] The captain then asked for additional ice, loaded into four plastic totes and four woven plastic bags, to be onloaded on top of the bait shed. Based on the capacity of the totes and bags, the weight of the eight containers of ice loaded onto the bait shed was about 2.6 long tons. The captain told the dock manager at the fish processing plant that he intended to use the totes of ice to store halibut separate from sablefish during the fishing trip. The dock manager and other Alaska fishermen who were interviewed as part of the investigation told investigators that loading ice on top of the bait shed was unusual.

1.2.2 Event Narrative

After onloading the ice, the *Wind Walker* moved to a municipal pier nearby in Auke Bay. A few hours later, at 1934, the *Wind Walker* got underway for the planned fishing trip. A friend of the captain, who was on the pier as the vessel departed, noted that the vessel was listing about "3 inches" to port. He told investigators that when he had seen the vessel 2 days before, it had been "perfectly ballasted."

Earlier in the day on November 30, the captain told another friend that he intended to transit that night as far as Hoonah, Alaska, located on a bay off the

[6] A *short ton*, also known as a US ton, is equal to 2,000 lbs. A *long ton*, also known as an imperial ton, is equal to 2,240 lbs.

Icy Strait, and would wait there until the weather offshore improved. The total distance of the voyage from Auke Bay to Hoonah was about 45 miles.

Beginning at 2145, the *Wind Walker* transited southbound in the Lynn Canal en route to Hoonah. While in the Lynn Canal, the northerly winds were on the *Wind Walker*'s stern, and the captain told a friend over the phone that the vessel was not building up any ice from the sea spray.[7] The captain also called his partner, and during their conversation he stated that the weather was bad but "nothing he hadn't experienced before." According to his partner, the phone call ended about 2350, and the captain was at the helm of the vessel at the time.

At 2354, the *Wind Walker* began a broad turn to starboard, entering the Icy Strait from the Lynn Canal, at a speed of 7 knots. During the turn, the vessel passed between Point Couverden and Rocky Island, a small outcropping at the entrance to the Icy Strait. A crewmember, who was sitting at the helm chair at the time, took a video using his phone looking out the forward wheelhouse windows. The video showed snow blowing horizontally from starboard to port. The deckhand texted the video to a friend ashore, adding that the vessel was "in a storm."

At 0005 on December 1, the *Wind Walker*'s automatic identification system (AIS), which broadcast the vessel's location and other data, stopped transmitting (see Figure 4).

[7] Throughout the voyage, crewmembers communicated with people ashore via voice, video call, and text using the vessel's Starlink satellite internet system.

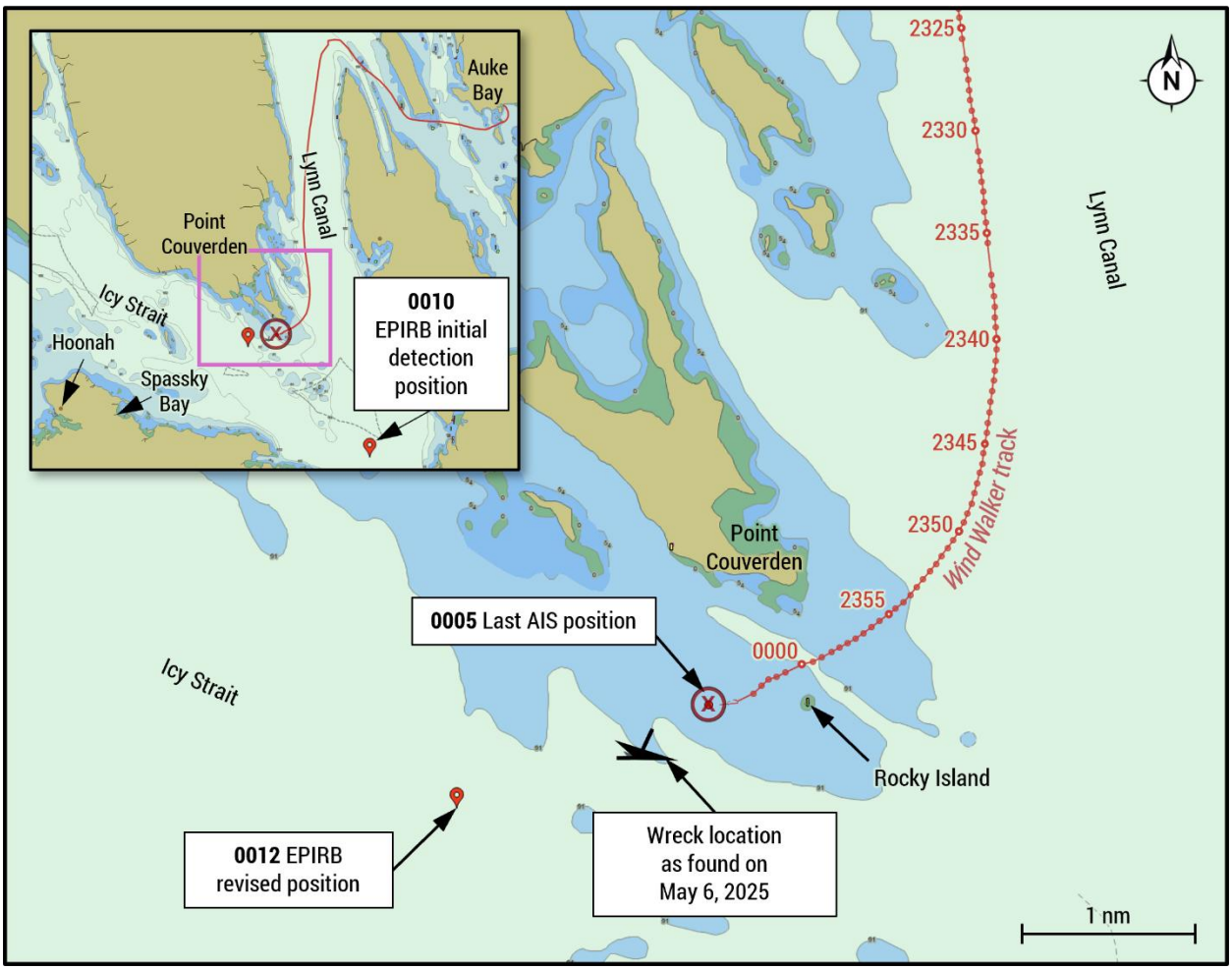


Figure 4. *Wind Walker* trackline leading up to the capsizing, with emergency position indicating radio beacon detection positions immediately following the capsizing. (Background source: NOAA electronic navigation chart US4AK5RI as viewed on Made Smart)

At 0008, the US Coast Guard Sector Southeast Alaska Command Center (Sector SEAK), located in Juneau, received four VHF marine radio transmissions in quick succession, beginning with "Mayday, mayday, mayday, Coast Guard, mayday. This is *Wind Walker*, mayday." During the follow-on transmissions, the *Wind Walker* captain gave the vessel's location off Point Couverden and stated that it had "rolled over" on its side and was flooding. In the final transmission, the captain indicated that the crew was attempting to launch the vessel's liferaft. In each of the VHF radio transmissions from the fishing vessel, which were recorded by Sector SEAK, a high-pitched (3,045-hertz) electronic alarm tone could be heard in the background.

1.2.3 Casualty Response

Immediately after receiving the mayday calls, Sector SEAK, in coordination with Coast Guard District 17 (D17), began ordering Coast Guard vessels and aircraft to

respond.[8] Additionally, Sector SEAK issued an Urgent Marine Information Broadcast (UMIB) over VHF radio, informing all vessels in the area of the *Wind Walker*'s distress call.[9] Sector SEAK repeated the UMIB at regular intervals throughout search operations.

At 0010, two minutes after the mayday calls, D17 received a report of the activation of an emergency position indicating radio beacon (EPIRB) registered to the *Wind Walker*. The initial location for the EPIRB was 8.1 miles southeast of the vessel's last AIS position, but an EPIRB report received 2 minutes later showed the beacon's position about 1.8 miles west-southwest of the fishing vessel's last AIS position (see Figure 4). The EPIRB data was relayed to Sector SEAK.

The Alaska Marine Highway System ferry *Hubbard*, which was transiting north in the Chatham Strait, responded to the UMIB and diverted from its standard route. The ferry was the first to arrive on scene at 0056 and began searching for survivors. Coast Guard helicopter CG-6045, which had launched from Air Station Sitka, arrived on scene at 0236, followed by the 45-foot-long Coast Guard response boat-medium (RB-M) *CG-45662*, which arrived just after 0300 after getting underway from Auke Bay.

The Coast Guard cutter *Healy*, which was operating in Frederick Sound, about 100 miles by waterway from the Icy Strait, also responded and began proceeding toward the scene, a voyage that would take several hours.[10] Sector SEAK also tasked the Coast Guard fast response cutter *Douglas Denman* to respond to the capsizing. At the time it was tasked, the cutter was patrolling in the Behm Canal over 300 miles from Point Couverden by waterway.

Figure 5 shows the approximate locations of search and rescue (SAR) assets when they were ordered to deploy to the casualty location.

[8] In July 2025, the Coast Guard renamed its districts from numerical to geographic designations. The former District 17 is now known as US Coast Guard Arctic District.

[9] An *urgent marine information broadcast* (UMIB) is a request for assistance from any available mariners. It is broadcast on VHF channel 16 and by Navigational Telex (NAVTEX).

[10] The *Healy* was an ice breaker predominantly employed in scientific research operations.

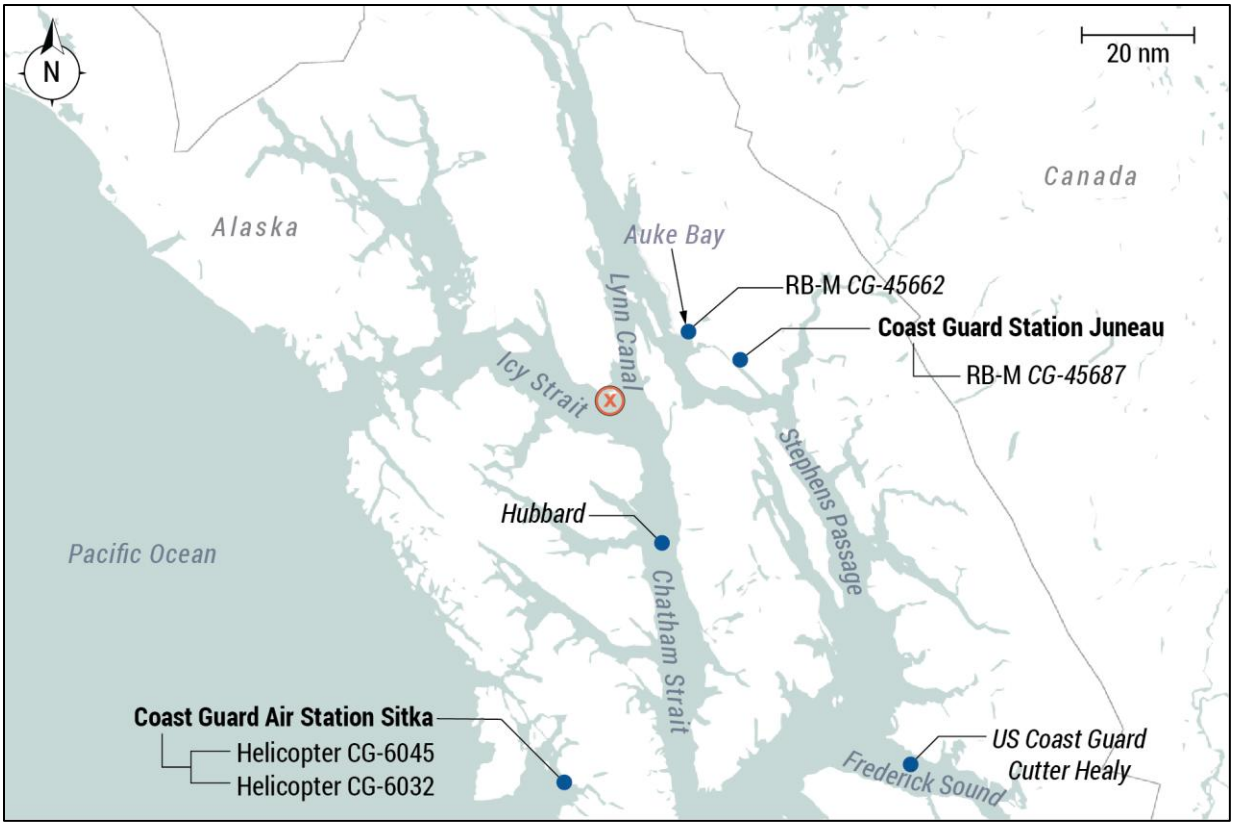


Figure 5. Assets that participated in the search for the *Wind Walker*. A circled *X* marks the last known location of the *Wind Walker*. Assets are shown at their approximate locations when ordered to deploy to the scene. (The location of the *Douglas Denman* is not shown since it was farther away from the scene when it deployed.) (Background source: Google Maps)

SAR assets reported extreme weather, including snow and ice, waves 10–12 feet, periods of low-to-zero visibility, and high winds. The crew of helicopter CG-6045 reported icing on the aircraft. The RB-M *CG-45662* crew was almost immediately impacted by seasickness. The conditions, which the master of the ferry *Hubbard* described as "disorienting," prevented the Coast Guard helicopter and RB-M from conducting effective search patterns.

About 0325, the crew of helicopter CG-6045 located the *Wind Walker*'s EPIRB, homing in on the device's 406-MHz and 121.5-MHz beacon signals. When located, the EPIRB was near the center of the Icy Strait, about 3.5 miles southwest of the last AIS position of the *Wind Walker*. About 100 yards away from the EPIRB, the helicopter crew sighted an empty immersion suit with its strobe light activated.[11]

[11] An *immersion suit*, also known as a *survival suit*, is a buoyant protective suit that reduces the body-heat loss of a person wearing it in cold water. Each immersion suit is required to have a light and a whistle.

Conditions continued to worsen, and RB-M *CG-45662* was forced to seek shelter in Hoonah. A second RB-M, *CG-4671*, which had gotten underway from Juneau to assist the search, was forced to turn back because the conditions exceeded the boat's operating limits.

Coast Guard helicopter CG-6032, which had been launched from Air Station Sitka to relieve helicopter CG-6045, arrived on scene at 0832 and continued the air search. The crew of helicopter CG-6032 again located the EPRIB, now in Spasski Bay across the Icy Strait from Point Couverden. Continuing to search Spasski Bay, the helicopter crew spotted various debris from the *Wind Walker*, including fish totes, seven immersion suits, and a couple of immersion suit storage bags. Some of the immersion suits had washed up on the beach; some were still in the water. None of the suits were in the storage bags.

Meanwhile, the Coast Guard cutter *Healy* had arrived in the Icy Strait. The vessel was assigned as the on-scene coordinator and began conducting search patterns in the area. The ferry *Hubbard* was released from the scene and proceeded to its destination in Auke Bay.

The cutter *Douglas Denman* arrived on scene later in evening on December 1. Throughout the night and into the morning of December 2, the cutter conducted a shoreline search followed by a parallel search pattern of the area. In the darkness, the crew used the vessel's search lights to illuminate the water and the vessel's forward looking infrared camera to search for heat signatures. The cutter crew reported 40- to 50-knot wind gusts, 6- to 8-foot seas, and visibility of 100 yards near Point Couverden. Conditions were less intense further west in the Icy Strait.

At 1125 on December 2, the Coast Guard D17 commander suspended the search based on his determination that the search area had been saturated with coverage yet there had been no signs of survivors, the vessel, or its liferaft.

The bodies of the captain and a deckhand were found 9 days after the casualty on the Spasski Bay shore, about 9 miles from the last AIS position of the vessel. The causes of death for both crewmembers were hypothermia and drowning. The three remaining crewmembers were never found and are presumed dead.

1.3 Additional Information

1.3.1 Damage

On May 6, 2025, about 5 months after the casualty, the NOAA hydrographic survey ship *Fairweather* located the wreck of the *Wind Walker* using side scan sonar

and multibeam echo sounding. The wreck was 0.6 miles southwest of the *Wind Walker*'s last AIS position before the capsizing, resting upright on the seafloor in about 300 feet of water (see Figure 6). The vessel, valued at $650,000, was not salvaged.

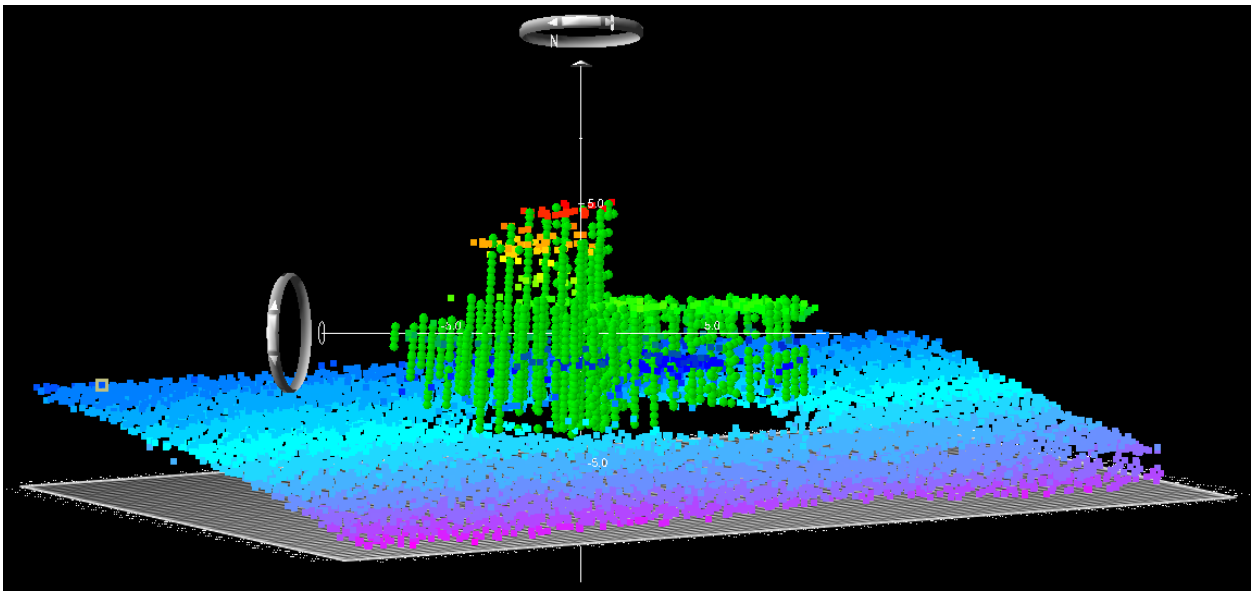


Figure 6. Survey imagery from NOAA ship *Fairweather* showing the wreck of the *Wind Walker* as represented by green, orange, and red points. (Source: NOAA)

1.3.2 Vessel Information

1.3.2.1 General Arrangement

The *Wind Walker* was configured with a forward deckhouse that included a captain's cabin, galley, and lavatory on the main deck, and an enclosed wheelhouse one deck above. The working area of the vessel was on the main deck aft of the deckhouse. Three booms used for handling nets and other lifting operations extended over the working area from a mast at the aft end of the wheelhouse. The hatch for the vessel's main fish hold was midship on the main deck.

Below the main deck, a forepeak void space was forward, separated from a crew berthing area by a collision bulkhead.[12] Aft of the berthing area, the vessel was

[12]A *collision bulkhead* is a vessel's foremost main transverse watertight bulkhead. It extends from the inner bottom of the hull to the freeboard deck or to the forecastle deck and is designed to contain flooding to a forward space or compartment (the forepeak on the *Wind Walker*) in case of bow collision damage.

arranged (forward to aft) with an engine room, the main fish hold flanked by fuel tanks, a bait/secondary hold, and a lazarette.

Figure 7 shows the layout of the *Wind Walker*'s three decks.

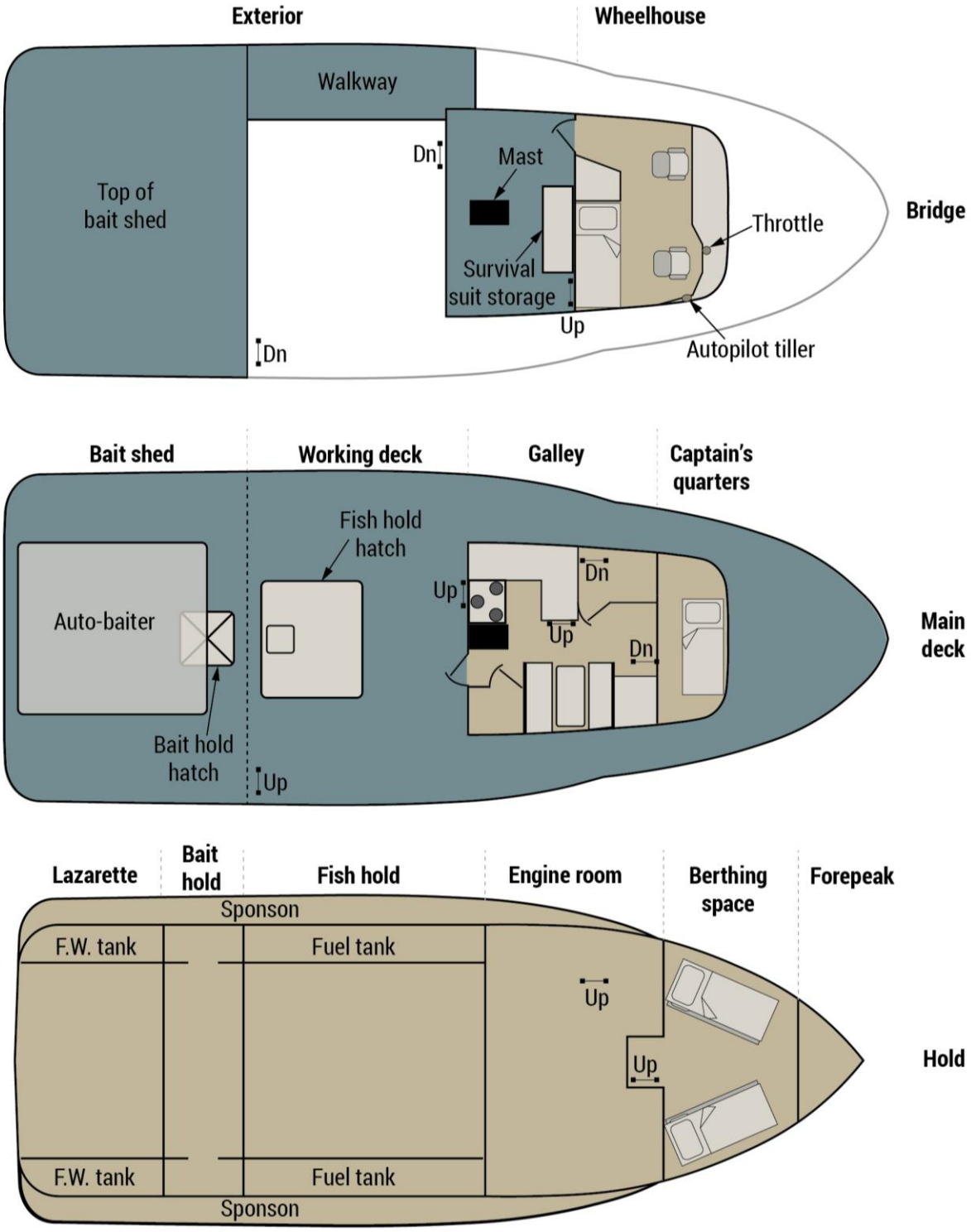


Figure 7. *Wind Walker* general arrangement, as configured for longline and trap fishing.

1.3.2.2 Modifications

When the *Wind Walker* was originally constructed in 1982, its beam was 15 feet 8 inches. In 1985, the vessel changed ownership and, in 1986, the then-owner

modified the vessel to add sponsons to the side of the hull to improve stability (see Figure 7 and Figure 8 and section 1.3.2.3). The sponson modifications were designed by a naval architect. Each of the sponsons was 18 inches wide, bringing the total beam of the modified vessel to 18 feet 8 inches.

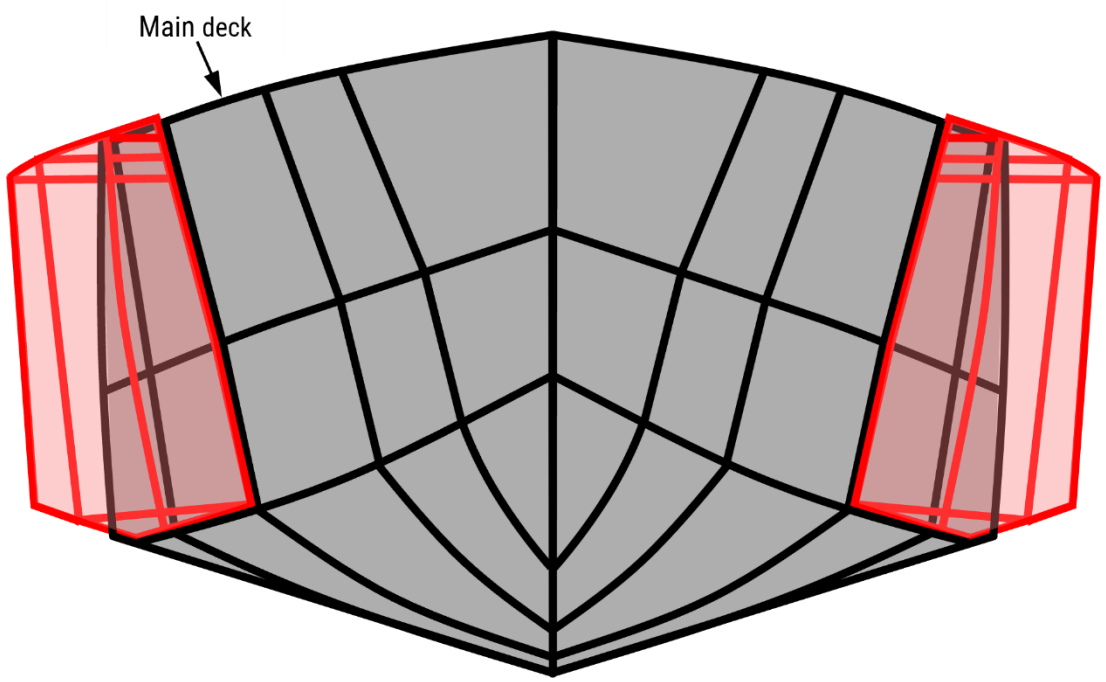


Figure 8. Bow view of *Wind Walker* original 1982 hull form in gray, with sponsons added in 1986 in red.

The addition of the sponsons created void spaces on either side of the hull that were inaccessible except for drain plugs installed in the original hull plate between each sponson and the engine room. According to an individual who had done sandblasting work on the boat's hull, the metal in the interior of the sponsons was not painted or treated when the sponsons were added.

The owner who added the sponsons also constructed the temporary modifications for longline fishing (the owner sold the vessel to another owner in 1992). According to the owner, the bait shed and portside walkway that were added were constructed of 3/16-inch-thick aluminum plating. The top of the bait shed was about 8 feet above the main deck.

Various equipment was added to the *Wind Walker* to configure it for longline fishing. This equipment included a bait chopper, an automatic baiting machine, storage racks for longlines, a hook separator, a line-hauling apparatus, and other smaller equipment. Based on manufacturer specifications, investigators calculated the added weight for the equipment, all installed on the main deck, was 2.3 long

tons. The weighted longlines that were stored on board added 1.1 long tons above the main deck. The weights for longline fishing equipment did not include fish traps, buoys, totes, trash cans, or other loose gear that may have been aboard the vessel at the time it capsized.

While configured for longline fishing, the seining net and skiff used to deploy the net were removed. The weights of the net and skiff are unknown.

1.3.2.3 Stability

Stability refers to the tendency of a vessel to return to its upright position after being heeled over by any combination of wind, waves, or forces from fishing operations. Stability criteria have been established for various types of vessels, including commercial fishing vessels. A margin of safety is built into stability criteria that is intended to accommodate events that can happen to a vessel, such as rolling in waves, heeling due to wind, or a limited degree of listing as weight or liquids move from side to side. Because of the margin of safety in stability criteria, a vessel may be functionally stable even if it does not meet the criteria. When a vessel is underway, this margin of safety can be considered as the remaining stability, or margin of stability, that provides a buffer between the vessels existing stability condition and that at which the vessels loses stability and capsizes.

Following the 1986 sponson modification to the *Wind Walker*, a rolling test was conducted on the vessel.[13] Although not required by regulations, the naval architect who conducted the rolling test provided to the owner at the time a stability letter based on the test results. A stability letter or stability booklet contains essential information for operating a vessel in accordance with the applicable stability criteria. The stability letter provided by the naval architect was specifically developed for the *Wind Walker* being outfitted and used for crab fishing (a fishery for which the vessel was not originally designed); it did not address the vessel's stability as configured for seining or longline fishing. The lightship displacement for the *Wind Walker* used in the calculations during the test was 50.6 long tons. A provision in the stability letter stated that it was "voided if any modifications are made to the vessel, which includes both adding, deducting, or changing weights."

After the *Wind Walker*'s capsizing, the Coast Guard Marine Safety Center (MSC) reviewed the 1986 stability letter. The MSC determined that the stability test

[13] A *rolling test* uses a vessel's period of roll in seas to "approximately determine" the vessel's stability (see Recommendation on Intact Stability of Fishing Vessels, Resolution A.168(ES.IV)). A *period of roll* is how long it takes a vessel to roll from upright to one side, then to the opposite side, and then back upright again.

from which the letter was developed was "not properly performed" because it used the rolling test, which provides only an estimate of initial stability, instead of an inclining experiment.[14] Further, the MSC determined that "the changes to the vessel that were made after the vessel's stability test and stability instructions would adversely affect stability and thus require new stability instructions." The MSC concluded that "the sum of the changes made over the more than 35 years since the [1986] stability test is substantial enough to void the stability letter."

After the capsizing, the MSC attempted to analyze the stability of the *Wind Walker* using a hull model developed from the vessel plans and reference photographs. However, the MSC model could not be validated against stability test data generated by the naval architect following the 1986 rolling test. Therefore, an accurate postcasualty stability analysis could not be completed.

1.3.2.4 Hull and Equipment Condition

In 2018, the hull of the *Wind Walker* was sandblasted in preparation for repainting. During the work, the sandblasting penetrated through the steel in several places along the sponsons on both sides of the vessel. According to the individual doing the sandblasting, "We pretty quickly realized we had an issue with the quality of the steel and the sponsons."

A welder who had conducted repairs on the *Wind Walker* for 10–15 years before the capsizing told investigators, "There was a lot of corrosion going on inside the sponson volume. We know that because it was constantly rusting through to the outside of the boat, especially around the waterline." The welder stated that he repaired the sponson hull plating using doubler plates, and the plates ranged in size up to a square foot.[15] He estimated that the *Wind Walker* had "at least a dozen" doubler plate repairs installed on both sides of the vessel. Photos taken during a 2021 survey of the vessel showed multiple doubler plates above and below the waterline (see Figure 9).

[14] An *inclining experiment* involves loading test weights onto a vessel and then moving the weights to each side of the vessel to measure the amount of incline induced by the added weight. A standardized inclining test accurately finds a vessel's lightship weight and vertical center of gravity to determine its stability characteristics.

[15] A *doubler plate* is attached to the surface of a larger plated area to provide strengthening in that location—often to provide additional strength in areas subject to wear and impact or as a temporary repair solution to cover hull damage or corrosion.



Figure 9. October 28, 2021, photo of doubler plates below the waterline on *Wind Walker*'s hull. (Source: Norcoast Marine Surveyors, Inc.)

The welder who had conducted repairs on the *Wind Walker* stated that installing doubler plates "isn't the right way to repair it, and we made that clear to everyone." However, the doubler plate repairs were "the only thing [the *Wind Walker* captain] could achieve financially."

In addition to the doubler plates attached by the welder, a commercial diver who also worked on the vessel said that the captain would occasionally ask him to temporarily plug corrosion holes in the sponsons using a two-part epoxy compound.

The *Wind Walker* had a single plate-style rudder attached to a rudder post that protruded through the hull into the lazarette. The rudder was physically turned by a power steering system connected to the rudder post. The power steering system was controlled by an autopilot system in the wheelhouse (the *Wind Walker*'s steering wheel had been removed, so operators could only steer using the autopilot system). Using the autopilot system, the vessel could be steered manually using a tiller handle or automatically by entering a heading to steer into the system's control unit. The autopilot system included a "rudder follower" unit in the lazarette that transmitted the rudder's actual position to the control unit in the wheelhouse.

According to the autopilot manual, an alarm triggered at the control unit in the wheelhouse when errors were detected in the system. The errors could be caused by, among other issues, a rudder follower error or a problem with the rudder angle

indicator. The audio tone generator for the alarm produced a 2,900-hertz (+/- 500 hertz) tone, according to the device specifications.

About 2 weeks before the *Wind Walker* casualty, a technician visited the vessel to troubleshoot a problem with the autopilot system. According to the technician, the rudder follower unit was intermittently giving erroneous feedback to the control unit, which led to erratic rudder movement. The *Wind Walker* captain could temporarily correct the problem by turning off and turning back on the autopilot. According to the technician, the captain had to reset the system every couple of days.

The technician believed that the symptoms shown by *Wind Walker*'s autopilot system indicated that the rudder follower unit was beginning to fail. However, during his visit to the vessel to troubleshoot the problem, he was unable to access the lazarette to confirm the issue because the hatch was obstructed by equipment on deck, and there was insufficient time to conduct repairs before the *Wind Walker* left on its next fishing trip. The technician later told investigators that if the rudder follower unit completely failed, any command by the operator to turn the rudder to port or starboard would result the rudder swinging all the way to one side until it reached its mechanical stops.

A former crewmember of the *Wind Walker*, who made two fishing trips with the vessel in the month before the capsizing, stated that on several occasions the vessel experienced problems with the rudder. The captain told him the rudder was "hanging one direction … and not moving."

1.3.3 Vessel Maintenance, Examinations, and Survey

The Coast Guard last conducted a commercial fishing dockside safety examination of the *Wind Walker* in April 2024.[16] All discrepancies identified by the examiner were corrected within 24 hours, except for a VHF radio license issue, which was corrected a day later. An examination compliance decal was issued upon the correction of all deficiencies and was valid at the time of the casualty.

In October 2021, a marine surveyor conducted a condition and valuation survey of the *Wind Walker* at the request of the previous owner. The comprehensive survey included evaluations of the hull, machinery, and navigation and fishing

[16] Under the Coast Guard Authorization Act of 2010, commercial fishing vessel dockside safety examinations are required once every 5 years for fishing vessels that operate 3 miles beyond shore. These examinations help ensure that all the required safety equipment and systems on board are in serviceable condition; examinations do not include the hull, electrical systems, or machinery as required for Coast Guard-inspected vessels.

equipment. In his report of the survey, the surveyor assessed the condition of the vessel as "very good overall" while noting "some thin areas in sponson sides."

During the survey, the surveyor conducted "limited ultrasonic testing" of the hull plate and found that "bottom and stern plates," which were installed when the vessel was originally built (before the sponsons had been installed), had wastage generally between 5 and 8%, with a few areas of 14% wastage.[17] Hammer testing of the sponson plating revealed several pinholes in the steel. The surveyor noted that the "corrosion appears to originate from the interior surface of these plates."

1.3.4 Survival Factors

1.3.4.1 Lifesaving Equipment

The *Wind Walker* was equipped with standard lifesaving equipment required by regulations, including a liferaft, an EPIRB, immersion suits, a lifering, and distress signals, as verified during the April 2024 dockside safety examination (see section 1.3.3).

The *Wind Walker*'s eight-person inflatable liferaft was stowed on top of the wheelhouse (see Figure 10). The liferaft had been serviced just before the 2024 safety examination, and the hydrostatic release had an expiration date of March 2026. Although the captain stated in his mayday call that the crew was attempting to launch the liferaft, it was never found after the sinking.

[17] According to Coast Guard guidance, wastage should be less than 25%. See Coast Guard, 1968, "Notes on Inspection and Repair of Steel Hulls," Navigation and Vessel Inspection Circular No. 7-68.



Figure 10. *Wind Walker* wheelhouse as viewed from astern, with lifesaving appliances. (Background source: *Wind Walker* captain's partner)

The *Wind Walker* was required to have immersion suits for all crewmembers.[18] During the 2024 dockside safety examination, the *Wind Walker* had six immersion suits, each stored within individual storage bags in a locker behind the wheelhouse (see Figure 10). Seven suits were recovered or sighted during SAR operations.

The *Wind Walker*'s EPIRB was mounted in a bracket and enclosure aft of the liferaft on top of the wheelhouse (see Figure 10). In addition to 406-MHz and 121.5-MHz beacon signals, the EPIRB could transmit its GPS position.

The EPIRB was designed to float free and automatically activate if the vessel sank. The EPIRB could also be activated manually by sliding open a clear cover, which broke a witness seal and exposed a button, and then depressing the activation button. If automatically activated, the clear cover remained in place over the manual activation button, and the witness seal remained undisturbed.

[18] See 46 *CFR* 28.110.

The EPIRB was recovered by the crew of helicopter CG-6032. When they found it, the crew deactivated the unit by depressing the activation button. The crew stated that they did not need to slide the clear cover over to depress the button. The witness seal was missing from the recovered unit (see Figure 11).

There was no evidence that the *Wind Walker* crew used personal locator devices. None were detected during search operations.

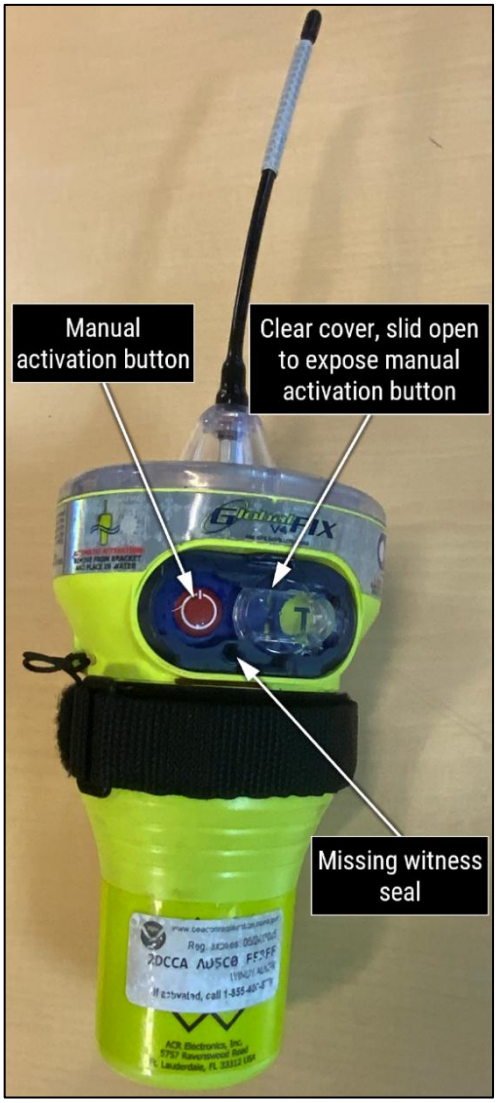


Figure 11. *Wind Walker* EPIRB as found during search. (Source: Coast Guard)

1.3.4.2 Cold Water Survivability

The Probability of Survival Decision Aid (PSDA) is a computer application used by the Coast Guard during SAR operations to predict the elapsed time before a person succumbs to the effects of hypothermia or dehydration.[19] During the *Wind Walker* SAR response, Sector SEAK ran PSDA calculations based on an air temperature of 23°F, water temperature of 41°F, and wind speed of 45 knots for a medium-build male immersed up to the neck in turbulent water. The results of the PSDA calculations are provided in Table 1.

[19] The PSDA outputs are based on current scientific understanding of human physiology and hypothermia. The PSDA does not account for the effects of cold shock, cold incapacitation, or other factors such as fatigue or medications.

Table 1. PSDA results obtained during *Wind Walker* SAR.

PSDA Results	Without immersion suit	With immersion suit
Functional time[20] (hours)	4.0	9.3
Survival time[21] (hours)	7.8	11.7

Over the last 80 years, various researchers have developed alternative models for predicting survival time in cold water. Most models are based on hypothermia as the cause of death and do not take into account cold shock or cold incapacitation. In models developed during five different studies between 1946 and 1989, predicted survival times were significantly shorter than PSDA generated survival times. In 41°F (5°C) water, the predicted survival times in the models were between 0.9 and 2.3 hours.[22]

1.3.5 Crewmember Qualifications and Experience

None of the crewmembers aboard the *Wind Walker* held a Coast Guard-issued merchant marine credential, nor were they required to by regulations for uninspected fishing vessels.

The 45-year-old captain of the *Wind Walker* had 25 years' experience in the Alaska fishing industry, working as an engineer and deckhand on a crabbing vessel/fish tender and on purse seiners. From 2019 to 2023, he had worked as the deck boss on the *Wind Walker* under the previous owner. He took over as captain when he bought the boat through his company in 2023. Before his time on the *Wind Walker*, he had co-owned a 58-foot seiner for 12 years, during which he worked as the deck boss, engineer, and captain.

The *Wind Walker*'s 34-year-old deck boss had joined the vessel in July 2024, 5 months before the capsizing. Before joining the crew, he had worked as a

[20] *Functional time* is the time elapsed from initial immersion to the time in which the body's core temperature is below 93.2°F and it is assumed that a person has lost the cognitive capacity to prolong their life.

[21] *Survival time* is the elapsed time after immersion that the body's core temperature drops to 82.4°F and a person is expected to lose consciousness

[22] Transport Canada, 2003, *Survival in Cold Waters: Staying Alive*.

heavy-equipment operator and had no previous experience in commercial fishing or other maritime industries.

The three deckhands, ranging in age between 22 and 28, had been on the *Wind Walker* for about a month before the capsizing. Information about the deckhands was limited, but each had worked on other fishing vessels for a season or more before the casualty.

Investigators did not find any records indicating that the captain or crew of the *Wind Walker* had attended formal vessel stability training.[23]

1.3.6 Southeast Alaska Fisheries

The *Wind Walker* fished in the Southeast Alaska salmon seining fishery, as well as the halibut and sablefish longline fisheries. The Southeast Alaska salmon seining fishery, which was regulated by the State of Alaska, was managed by limiting access through permits and by actively opening and closing the fishery based on monitoring of fish stocks. Permits were assigned to individuals operating fishing vessels, and according to representatives of the Alaska Commercial Fisheries Entry Commission, permits could, in certain cases, such as a health issue that prevented the permit-holder from fishing, be leased on an "emergency transfer" basis. In these cases, the lessees paid a fee to the permit holders for the right to use the permit. None of the *Wind Walker* crewmembers held salmon seining permits for the 2023 and 2024 seasons. However, the captain was able to lease permits during each season through the emergency transfer process.[24]

[23] The 2010 Coast Guard Authorization Act required the Coast Guard to develop regulations requiring an individual in charge of a fishing industry vessel operating 3 miles beyond the baseline to pass a training program and hold a valid certificate issued under the training program (see Title 46 *United States Code* [U.S.C.] 4503). However, captains and crew of uninspected commercial fishing vessels such as the *Wind Walker* are currently not required to participate in formal stability training or to demonstrate proficiency in vessel stability.

[24] The fees paid by the *Wind Walker* captain to the permit-holders for the 2024 season were not publicly releasable information. (For the 2025 season, the average leasing fees advertised by permit brokers were about $15,000.)

The Southeast Alaska offshore halibut and sablefish fisheries were managed by the NOAA National Marine Fisheries Service under a quota system.[25] Under the system, fishermen owned "quota shares" for the fisheries. Each season a total allowable catch, specified as the weight of the catch in pounds, was determined for each species and region based on monitoring of fish stocks. The total allowable catch was then divided up into individual fishing quotas and assigned to quota holders in proportion to the number of shares they held.[26]

For the 2024 season, the captain and crew of the *Wind Walker* owned no quotas for the federal offshore halibut fishery. All federal halibut quotas fished by the vessel were obtained through leasing agreements. For the federal offshore sablefish fishery, the captain owned 3% of the quotas fished by the *Wind Walker*. The remaining 97% of quotas were obtained through Category A hired master agreement and leasing agreements.[27]

After the November 30 offload in Auke Bay, the *Wind Walker* had filled 52% of its federal offshore halibut quotas and 60% of its federal offshore sablefish quotas, with 7 days remaining in the 2024 season. A former *Wind Walker* crewmember that had made a trip on the vessel 2 weeks before the capsizing told investigators, "[The captain] was definitely under a lot of pressure to get all of his [quota] pounds caught, with December 7th being the deadline."

[25] Quota-based fisheries management systems like those used for the Alaska halibut and sablefish fisheries were designed to be safer than traditional time-based, "derby-style" management systems. Under the time-based systems, fishermen harvest as much fish as possible during short openings of the fishery. With the quota systems, the fishing season is opened for long periods, but vessels are limited to a maximum weight of catch. With the lengthened season, fishermen are less likely to fish for extended periods of time or in heavy weather.

[26] C. Pautzke and G. Oliver, 1997, *Development of the Individual Fishing Quota Program for Sablefish and Halibut Longline Fisheries off Alaska*, North Pacific Fishery Management Council.

[27] (a) Individual fishing quotas could also be leased under special circumstances, such as when a quota holder had a medical condition, as approved by the National Marine Fisheries Service. The quota-holder and the quota-lessor split the proceeds of the catch. (b) For most quota shares, the shareholder was required to either actively participate in fishing for the quota or hold a minimum 20% ownership stake in the vessel fishing under the quota. The latter option was known as a "hired master" arrangement. For quotas assigned to "vessel category A" quota, the quota could be fished under a hired master agreement without the quota holder having an ownership stake in the vessel fishing the quota. Category A hired master agreements were usually structured such that the quota holder and hired master split the proceeds of the catch.

1.3.7 Vessel Financials

Numerous Sitka-based fishermen, friends, and other people familiar with the *Wind Walker* with whom investigators spoke stated that the captain faced significant financial pressure to continue fishing and that this pressure likely contributed to his decision to get underway for the casualty voyage.

The captain of the *Wind Walker* bought the vessel through his company, Mermaid Fisheries, in April 2023, via a commercial loan financed through North Pacific Seafoods, Inc., which owned and operated several fish processing plants in Alaska. Between the time he bought the vessel and the time of the casualty, the captain struggled to make payments on the loan. The loan interest continued to accrue, and by November 30 (the day before the capsizing), the remaining principal plus interest owed on the loan was over $13,000 more than the original loan amount. In addition, during the 2024 season, the captain had difficulty paying other costs, including the *Wind Walker*'s insurance premium.

To save money on crew costs, the captain paid his crew a lower share than other fishing vessel captains, and a witness told investigators that, as a consequence, the captain had difficulty finding experienced crewmembers. Other witnesses stated that the crewmembers did not get their full pay after the salmon seining season, which contributed to a high turnover. At the time of the capsizing, the deck boss had not yet been paid for his work during the seining season, but, according to the deck boss's spouse, the captain had promised to pay him after the longline fishing season.

1.3.8 Environmental Conditions

1.3.8.1 Point Couverden Weather Overview

Meteorologists at the National Weather Service's (NWS) Juneau Weather Forecast Office told investigators that Point Couverden was prone to higher winds than surrounding areas in the Icy Strait, because winds coming down from the nearby Snowcap Mountains had more area to expand around the peninsula, accelerating the winds. Fishermen familiar with the area confirmed the NWS meteorologists' observations. A fisherman told investigators, "If it's a northerly wind, the colder air picks up speed as it goes down those mountains and once it hits the water … the surface of the ocean, and it intensifies, it picks up speed and those gusts are quite severe." Fishermen and other mariners further stated that the increased winds combined with an opposing current caused seas near Point Couverden to "stack up," with larger waves and shorter wave periods.

1.3.8.2 Forecast

Beginning on Saturday, November 30—the day before the capsizing—and extending through the morning of Monday, December 2, a winter storm warning was in effect for the region that included Juneau, Hoonah, and the waterways in between, with heavy snow and 45-knot wind gusts expected.[28]

Throughout the day on November 30, NWS marine forecasts for that night included a gale warning in the Southern Lynn Canal and small craft advisories for the Icy Strait and Northern Chatham Strait. The 1458 coastal waters forecast predicted 35-knot winds, 7-foot seas, freezing spray, and snow throughout the night in the southern Lynn Canal. Wind gusts of 45 knots were predicted for the Icy Strait near Point Couverden. At 2245, the NWS issued an urgent winter weather message for the area predicting accumulating snowfall that would be greatest along the Icy Strait corridor during the night.

Before and during the casualty voyage, the *Wind Walker* captain would have had access to weather forecasts and real time observations through broadcasts on NOAA Weather Radio, which could be received by VHF marine radios; web-based applications; and the "Windy" application, which he regularly used.[29]

The predicted current for the center of Icy Strait, about 0.8 miles from the last AIS location of the *Wind Walker*, was about 0.2 knots flood at 0000 on December 1. However, according to the NOAA *US Coast Pilot 8*, currents in the strait area varied with the width of the channel.[30] The *Coast Pilot* noted that "the currents are erratic in the channel between Rocky Island and Point Couverden" and recommended that vessels avoid this area.

[28] A winter storm warning is issued when a significant combination of hazardous winter weather is occurring or imminent, including 5 inches or more of snow/sleet within a 12-hour period, enough ice accumulation to cause damage to trees or powerlines, and/or a life-threatening or damaging combination of snow and/or ice accumulation with wind. See Watch/Warning/Advisory Definitions.

[29] (a) NOAA Weather Radio "is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest [NWS] office." NOAA Weather Radio broadcasts official NWS forecasts, including watches, warnings, and other hazard information, 24 hours a day, 7 days a week. See NOAA Weather Radio. (b) Windy.app is an application originally designed to provide information for wind- and water-sports enthusiasts. It provides weather and environmental forecast information, including wind, temperature, precipitation, wave heights, and tides. The application can also provide spot observations from connected reporting stations. See https://windy.app/.

[30] NOAA, 2025, *US Coast Pilot 8*, *Alaska: Dixon Entrance to Cape Spencer, 2024 Edition*.

1.3.8.3 Environmental Observations

The Marine Exchange of Alaska maintained a weather station on Rocky Island, 0.6 miles from the last AIS position of the *Wind Walker*. At 0008 on December 1, when the *Wind Walker* first transmitted a mayday call, the Rocky Island station recorded an average wind speed of 42 knots from the northeast (72°), with gusts to 53 knots.[31] The air temperature was 21°F. High winds and cold temperatures continued throughout the night and into the morning.

The water temperature at 0006 on December 1 was 41°F, as recorded at the nearest monitoring station in Juneau. The temperature would drop to 39°F by 0130 that morning.

[31] Average wind speed is equal to the 10-minute rolling average wind magnitude; gust wind speed is equal to the 1-minute peak wind speed.

2 Analysis

On December 1, 2024, about 0005 local time, the fishing vessel *Wind Walker* was transiting in the Icy Strait, 0.9 miles southwest of Point Couverden, Alaska, when it capsized. The vessel sank before response assets could reach the scene, and there were no survivors among the 5-person crew.

2.1 Loss of Stability

In the mayday calls from the *Wind Walker*, the captain reported that the vessel had rolled over on its side, indicating that it had capsized and therefore had lost stability. Following the capsizing, the Coast Guard MSC attempted to model the *Wind Walker* to determine its initial stability and the possible effects of modifications, vessel loading, and the environmental conditions on the night of the casualty. However, the MSC could not validate the model based on existing drawings and documentation for the vessel. But while a quantitative analysis was not possible, a qualitative assessment provides insight into factors that could have contributed to the loss of stability.

Vessel Configuration and Loading. The vessel was designed as a purse seiner, but at the time of the casualty, it was rigged for longline fishing. The vessel had been modified to include a bait shed, portside walkway, and longline fishing equipment, all of which was installed on or above the main deck. Investigators estimated that the total weight of the shed and walkway was about 1 long ton. The weight of the longline fishing equipment was 2.3 long tons, and the vessel was carrying up to 1.1 tons of weighted longlines, bringing the total weight of the modifications and additions to 4.4 long tons (during the 1986 stability testing, the lightship weight of the vessel was determined to be 50.6 long tons). According to the Coast Guard MSC, these changes "would adversely affect [the vessel's] stability." Further, when the vessel got underway on the night of the casualty, it was loaded with an estimated 2.6 long tons of ice on top of the bait shed, about 8 feet above the main deck. Generally, weight added above a vessel's original center of gravity will raise the center of gravity, reducing its stability.[32] Therefore, the structural modifications and added ice likely decreased the vessel's margin of stability as compared to the designed seining configuration and likely contributed to the capsizing.

Environmental Factors. On the night of the capsizing, winds off Point Couverden were from the northeast at 42 knots, gusting to 53 knots. While the *Wind Walker* was transiting down the Lynn Canal before reaching Point Couverden,

[32] For the purposes of calculating stability, the force of gravity can be considered to act downward through a single point, known as the vessel's *center of gravity*.

the northerly winds had been on the vessel's stern. However, when the vessel turned to starboard as it rounded Point Couverden, the wind acting on the vessel would have moved from astern to directly on its starboard side, maximizing the area (often called "sail area") on which the gale-force winds could produce a heeling force. The NWS predicted 7-foot seas in the southern Lynn Canal, and fishermen familiar with the area stated that waves could "stack up" near Point Couverden with the flood tide.

In the extreme sea conditions, the *Wind Walker* may have experienced increased rolls from side to side, which, combined with wind-induced heel, could have overcome the vessel's remaining stability. Additionally, the vessel may have also experienced icing, which can occur as wind-generated spray contacts a vessel's cold, exposed surfaces when the air temperature is below freezing. The ice builds up, adding weight to the vessel, generally above the vessel's center of gravity. Air temperatures along the *Wind Walker*'s route were well below freezing, freezing spray was predicted for the area, and helicopter CG-6045 experienced icing during the SAR operations. Although the *Wind Walker* the captain told a friend that ice was not building up on the vessel as it transited the Lynn Canal, it is possible that that he was unable to see any buildup on the mast, booms, and rigging that were above and aft of the wheelhouse.

Loss of Watertight Integrity. Numerous witnesses told investigators, and a marine surveyor reported, that the steel plating for the sponsons had wastage holes that had progressed from the interior surface of the plate, indicating corrosion cells had developed. The holes were repaired by doubler plates or epoxy, contrary to Coast Guard guidance, which recommends cropping out and replacing the wasted steel plate.[33] If additional wastage holes had opened up in the days and weeks before the casualty voyage, or if any of the doubler plates or epoxy failed, one of the sponsons may have flooded.

A friend of the captain recalled that the *Wind Walker* was listing slightly to port as it departed on the casualty voyage. Although the list could have been caused by loading of equipment and ice, it could also have been an indicator of a failure of watertight integrity of the port sponson—the side on which the vessel most likely capsized. With the port sponson flooded, the vessel's center of gravity would have shifted to port, reducing the freeboard on that side and potentially causing the deck edge to submerge. As the deck edge of a vessel submerges, its tendency to right itself begins to rapidly diminish. With a flooded sponson, the vessel may have also had a tendency to "hang" (temporarily pause at its maximum roll angle) as it rolled to

[33] See "Navigation and Vessel Inspection Circular No. 7-68: Notes on Inspection and Repair of Steel Hulls."

that side in the seas due to a reduction in stability, making it more susceptible to capsize in the wind and waves.

Shift in Weight. Wind-induced heel, a significant roll, a list caused by a flooded sponson, or a combination of these events could have caused the 2.6 long tons of ice stowed on top of the bait shed or other equipment stowed on deck to break free from lashings and shift. If the ice or equipment shifted to one side, it would have further heeled the vessel and contributed to reducing the vessel's margin of stability.

Steering System Casualty. A former crewmember recalled issues with the vessel's steering system, which was the sole means of controlling steering (the steering wheel had been removed; operators could steer manually by using the autopilot's tiller controller). The crewmember stated that on a few occasions in the month before the capsizing, the captain reported that the rudder was "hanging one direction … and not moving." A technician who worked on the vessel told investigators that he believed that these symptoms indicated a failing rudder follower unit. He stated that if the rudder follower unit completely failed, any command by the operator to move the rudder would result in the rudder swinging all the way to one side to its mechanical stops. If the rudder follower failed and the rudder swung to its stops, the *Wind Walker* would have turned quickly, inducing a heel on the vessel that, when added to heel caused by the winds and seas or a list due to a flooded sponson, could have momentarily overwhelmed the vessel's margin of stability.

During the captain's mayday calls from the *Wind Walker* at the time of the capsizing, a 3,045-Hz alarm tone was audible in the background of the transmission. The frequency of the tone was within the specifications for the autopilot's error alarm (2,900 +/- 500 Hz) and could have indicated problems with the rudder follower or rudder angle indicator. However, because the vessel was not salvaged and there may have been other systems that alarmed with a similar tone, investigators could not conclusively determine whether the alarm was the result of a steering casualty.

2.2 Decision to Get Underway

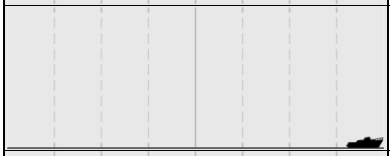
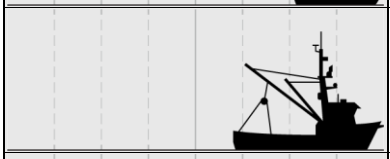
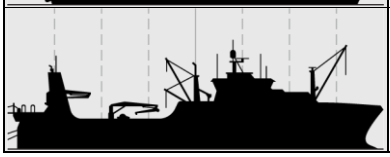
Getting the *Wind Walker* underway on the night of November 30 was highly risky. A winter storm warning was in effect for the area through which the *Wind Walker* would need to transit. Heavy snow and 45-knot wind gusts as well as 7-foot seas and freezing spray were expected. The *Wind Walker* had known material issues with its sponson hull plating and steering system. The crew lacked experience: the deckhands had about a month's experience on the vessel, and the deck boss had 5 months of experience in the commercial fishing industry in total. Investigators attempted to determine why the captain decided to get underway despite these factors.

Financial and Operational Pressures. The captain's financial situation was dire. He faced spiraling debt centered around the loan for the vessel and had trouble paying insurance premiums. Additionally, he could not afford to make needed repairs to the vessel, such as properly fixing wastage holes in the sponsons, and instead relied on temporary measures, such as doubler plates and epoxy patches, to address these issues. Crewmembers had not been paid, resulting in a high turnover and inexperience among the crew that was aboard during the casualty. The captain was under pressure to earn as much money as possible in the few days left in the season to help rectify his poor financial situation and pay his crew. A witness and a former crewmember stated that the captain was under "tremendous pressure" to make his catch quotas.

There were just 8 days left in the 9-month long halibut and sablefish seasons. After its offload on November 30, the *Wind Walker* had caught 52% of its federal offshore halibut quota and 60% of its federal offshore sablefish quota for the 2024 season. Given the time required to transit to and from the fishing grounds, there was not enough time to make more than one trip before the season ended. This was likely a factor in his decision to load additional ice on the vessel—the ice that was loaded on top of the bait shed. Additionally, when the *Wind Walker* departed the offshore fishing grounds en route to the Auke Bay fish processing plant on November 27, the crew left behind traps deployed to catch sablefish. By regulation, the crew had to retrieve those traps within 5 days, but because of the Thanksgiving holiday and a holdup while other vessels offloaded, the *Wind Walker* was delayed 2 days in Auke Bay. Any further delay would have put the *Wind Walker* captain in danger of incurring a fine for not meeting the deadline to retrieve the traps. The combined financial and operational pressures likely influenced the captain's decision to get underway.

Lack of Stability Booklet. The 50-foot-long *Wind Walker*, built in 1982 and modified in 1986, was not covered by any regulations governing minimum standards of stability (see Table 2). As such, the vessel did not have, nor was it required to have, a stability letter or booklet that was informed by an inclining experiment and reflected the configuration of the vessel during the casualty voyage. (A stability letter produced in 1986, which the MSC determined was developed from an improper stability test, was voided due to the modifications for longline fishing.) A stability booklet would have provided the *Wind Walker* captain an available, objective reference for specifically how to load his vessel, including the maximum weight he could load and where it could be loaded when the vessel was configured for longline fishing and operated during potential icing conditions.

Table 2. US domestic fishing vessel stability laws and regulations in effect as of the publication of this report.

175 150 125 100 75 50 25	**Vessel Length** (in feet)	**Recreational Boat Regulations** 33 *CFR* 181/183	**Classification** 46 *U.S.C.* 4503(a)	**Alternative to Classification** 46 *U.S.C.* 4503(d) (Fishing vessels & fish tenders only)	**Load lines** 46 *U.S.C.* Ch. 51 46 *CFR* Subch. E
	**<20**	**Built on/after** January 1, 2010			
	**20–49**	*Subject to recreational boat regulations, but regulations contain no stability criteria for vessels >20 feet*			
	**50–78**		**Built after** July 1, 2013[34] ***OR >***	**Built after** February 8, 2016[35]	
	**79–180**		**Built after** July 1, 2013[Error! Bookmark not defined.7] ***OR >***	**Built after** February 8, 2016[Error! Bookmark not defined.8]	**Built after** July 1, 2013[36]
	**>180**		**Built on/after** July 1, 2013[Error! Bookmark not defined.7]		**Built after** July 1, 2013[Error! Bookmark not defined.9]

Lack of Stability Training. Even if the *Wind Walker* had an updated, accurate stability letter or booklet at the time of the casualty, the booklet would not have been useful to the captain if he was not adequately trained to apply the information that the booklet provided. The information contained in a stability booklet requires an understanding of the concepts, data, and figures provided in the booklet;

[34] Applies to fishing industry vessels operating more than 3 miles from the baseline. Date shown is for fishing vessels and fish tenders only; classification is required for fish processing vessels that were built or underwent major conversion after July 27, 1990.

[35] Applies to fishing vessels and fish tenders operating more than 3 miles from the baseline.

[36] Applies to fishing industry vessels operating outside the boundary line. Date shown is for fishing vessels only. Load lines are required for fish tenders that were built on or after January 1, 1980, or converted for use as a fish tender on or after January 1, 1983. Load lines are required for fish processing vessels built on or after August 16, 1974, or converted for use as a fish processing vessel on or after January 1, 1983.

determination that the loaded vessel meets the applicable stability criteria (and thereby the intended margin of stability) may require calculations by the user.

Previous fishing vessel casualty investigations by the National Transportation Safety Board (NTSB) have shown that, without training, crews may not be able to effectively utilize a stability booklet to ensure the safe operation of a vessel. During the investigation into the 2008 sinking of the fishing vessel *Katmai*, the NTSB found that the vessel master had no training in stability and ultimately loaded a quantity of fish weighing twice as much as the weight used in the vessel's stability booklet calculations.[37] The captain of the fishing vessel *Scandies Rose* did not have formal stability training, and the NTSB investigation into the casualty found that such training would have provided him better knowledge of stability, in particular the effect of icing on stability.[38] The NTSB has previously issued safety recommendations to the Coast Guard relating to stability training and regulations.[39]

There were no records indicating that the *Wind Walker* captain—or any crewmember on the vessel—had attended a formal stability training course. Without a stability booklet and formal stability training, the captain was not prepared to objectively ascertain, and make informed decisions about, his vessel's stability in its loading condition, ensuring that when the fishing vessel departed Auke Bay it could maintain the stability required throughout the voyage. If the *Wind Walker* had a valid stability booklet and the captain been trained to use it, he would have been better informed as to the consequences of decisions that reduced his vessel's margin of stability, such as loading 2.6 tons of ice on top of the bait shed and choosing to sail into conditions forecast to have icing. Without the objective criteria that a stability booklet would have provided, the captain's decision was more easily influenced by the financial and operational pressures he was facing.

2.3 Search and Rescue Response

The captain of the *Wind Walker* made four mayday calls when the vessel capsized, providing the vessel's location and the nature of the emergency. The vessel's EPIRB was activated and provided distress notification and general location

[37] NTSB, 2011, *Sinking of Commercial Fishing Vessel* Katmai, Marine Accident Brief NTSB/MAR-21/02.

[38] NTSB, 2021, *Capsizing and Sinking of Commercial Fishing Vessel* Scandies Rose, *Sutwik Island, Alaska, December 31, 2019*. Marine Accident Report NTSB/MAR-21/02.

[39] See Safety Recommendations M-11-23 and M-11-24, which are both currently classified Open—Unacceptable Response.

information. Coast Guard Sector SEAK received the distress notifications and assessed the urgency of the situation. The sector command center immediately tasked Coast Guard surface and air assets to respond and began issuing UMIBs alerting other mariners of the casualty.

Multiple assets, including Coast Guard response boats, helicopters, and cutters, as well as an Alaska Marine Highways ferry, responded to the scene. The location of the *Wind Walker*'s capsizing, 16 miles from the nearest good Samaritan vessel and many more miles by water and air from the nearest Coast Guard SAR assets, lengthened the response time.

Once on scene, vessel and aircraft crews had to contend with extreme weather and sea conditions, in addition to darkness, which hampered their ability to locate any survivors. The conditions, described as "disorienting" by the ferry *Hubbard* master, prevented Coast Guard helicopter and RB-M from conducting effective search patterns, and the confused seas made identification of objects in the water difficult.

The Coast Guard calculated that, in the weather conditions at the time of the capsizing, the crewmembers could have survived a maximum of 7.8 hours without an immersion suit. Even if the crew of the fishing vessel had survived long enough for rescuers to reach the scene, the winds, seas, darkness, and low visibility conditions would have made locating them exceptionally difficult. Despite having to operate at the limits of their aircraft and vessels' capabilities, Coast Guard crews continued to search for 34 hours, well past any reasonable expectation of survival. Although no survivors were found, the emergency response to the casualty was timely and appropriate.

2.4 Cold Water Survival

In the mayday calls, the *Wind Walker* captain stated that the crew was attempting to launch the vessel's liferaft. During the search, seven immersion suits were located, and none were within their storage bags. The crew of helicopter CG-6045 reported that the manually activated strobe light on one immersion suit that they sighted was illuminated. When the EPIRB was recovered, the cover over the manual activation button had been slid open, and the witness seal was missing. Given these factors, it is apparent that some or all of the crew made an attempt to abandon the vessel after the capsizing. However, none were able to don their immersion suits, and the liferaft was never found.

The probability of survival when immersed in cold water is extremely low, particularly without an immersion suit. Cold shock and cold incapacitation can kill

within minutes of immersion.[40] If a person survives these initial perils, hypothermia will eventually set in. The Coast Guard's PSDA calculated that, in the conditions present on the night of the *Wind Walker* capsizing (actual air temperature 21°, water temperature 41°, turbulent seas, winds 42 knots gusting to 53 knots), a crewmember could have survived a maximum 7.8 hours without a survival suit. However, hypothermia would have caused a person without an immersion suit to lose the cognitive capacity to prolong their life within 4 hours of immersion. Other survivability models predicted much shorter survival times, between 0.9 and 2.3 hours. The key to survival when immersed in cold water is to be found and rescued quickly. In remote areas where SAR assets take time to reach the scene, the window for finding survivors is compressed down to minutes, not hours.

Personal locator devices are meant to be carried by individuals and, when activated, provide SAR responders with an accurate, continuously updated location of the person carrying the device. A personal locator beacon (PLB) is a type of personal locator device that, like an EPIRB, transmits 406-MHz and 121.5 MHz signals when activated. Satellite emergency notification devices (SENDs) are another type of personal locator device that function like a PLB but use commercial satellite systems. Some SEND models include two-way texting.

There was no evidence that the *Wind Walker* crew used personal locator devices, and no personal locator devices were detected during search operations. These devices are not required for mariners. However, it is notable that during the *Wind Walker* search, both Coast Guard helicopters that responded were able to locate the vessel's EPIRB using the 406-MHz and 121.5-MHz beacons that PLBs are equipped with. Had the *Wind Walker* crewmembers carried personal locator devices on board and had they been able to activate them and abandon the vessel, their chance of survival would have been enhanced.

[40] Coast Guard, 2013, *The U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement (NSS) to the International Aeronautical and Maritime Search and Rescue Manual (IAMSAR)*, COMDTINST M16130.2F.

3 Conclusions

3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the capsizing and sinking of the fishing vessel *Wind Walker* was a loss of stability due to one or a combination of several possible factors, including the modification of the vessel for longline fishing; the loading of ice on top of the vessel's bait shed; icing; flooding due to material issues with the hull; shifting weights, such as equipment or ice, aboard the vessel; a steering system casualty; or other unknown factors that reduced the vessel's margin of stability while it transited in high winds and heavy seas. Contributing to the capsizing was the lack of a stability booklet for the *Wind Walker* and formal stability training for the crew, which left the captain unequipped to make informed, objective decisions about the effect of the loading of equipment and ice on the vessel's stability. Contributing to the captain's decision to get underway in the severe environmental conditions forecasted for the area were financial and operational pressures on the captain, which compelled him to load the vessel with additional ice and accept the risks presented by known degradation to the vessel's hull and deficiencies with the vessel's steering system.

3.2 Lessons Learned

Using Personal Locator Devices

During an emergency at sea, a mariner's chance of survival decreases if search and rescue personnel cannot quickly and accurately identify their location. Personal locator devices greatly aid in rescue by providing a location accuracy of about 300 feet and nearly instant search and rescue notification when activated. Vessel owners and operators can enhance the safety of their crews by providing each crewmember with a personal locator device, such as a personal locator device or satellite emergency notification device, to supplement emergency position indicating radio beacons.

Fishing Vessel Stability Booklets

A critical component of a fishing vessel's stability is its loading: the amount and location of fish and ice in cargo holds; ballast and consumable fluids, such as fuel and fresh water, in tanks; and amount of gear and equipment aboard. A stability booklet, or stability instructions, allows the captain and crew to load a vessel in a manner that meets the intended margin of safety provided by the stability criteria applicable to the vessel. Loading in accordance with an accurate stability booklet ensures the

margin of safety built into the stability criteria to accommodate forces that can act on a vessel is available (forces such as winds or waves). Although regulations do not require a stability booklet or instructions for existing commercial fishing vessels that are less than 79 feet long, owners can protect their vessels and crews by having a naval architect conduct a stability test and produce a stability booklet specific to their vessel's particulars and fishing operations. Because fishing vessels are often modified, periodic stability assessments are needed to evaluate the effects of vessel modifications, fishing equipment on board, and operational changes.

Fishing Vessel Stability Training

Understanding the various factors that influence fishing vessel stability, such as the vessel's loadout, the environment (including icing), vessel modifications, and weight creep, is critical to ensuring that fishing vessels are operated with a sufficient margin of safety. Commercial fishermen are encouraged to attend fishing vessel stability training provided by organizations such as the North Pacific Fishing Vessel Owners Association, the Alaska Marine Safety Education Association, and Fishing Partnership Support Services.

Vessel Particulars

Vessel	*Wind Walker*
NTSB vessel group	Fishing
Owner/operator	Mermaid Fisheries LLC (Commercial)
Flag	United States
Port of registry	Sitka, Alaska
Year built	1982
Official number	648796 (US)
IMO number	N/A
Classification society	N/A
Length (overall)	50.0 ft (15.2 m)
Breadth (max.)	18.0 ft (5.5 m)
Draft (casualty)	7.2 ft (2.2 m)
Tonnage	56 GRT
Engine power; manufacturer	365 hp (272 kW); Caterpillar 3408TA diesel engine

NTSB investigators worked closely with our counterparts from **Coast Guard Headquarters**, **Coast Guard Arctic District**, **Coast Guard Sector Southeast Alaska**, and the **Coast Guard Investigations National Center of Expertise** throughout this investigation.

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable cause of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for any accident or event investigated by the agency. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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For more detailed background information on this report, visit the NTSB Case Analysis and Reporting Online (CAROL) website and search for NTSB accident ID DCA25FM006. Recent publications are available in their entirety on the NTSB website. Other information about available publications also may be obtained from the website or by contacting—

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