



Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada



MARINE TRANSPORTATION SAFETY INVESTIGATION REPORT M24A0269

FIRE AND ABANDONMENT

Fishing vessel *Elite Navigator*
130 nautical miles east-northeast of Fogo Island, Newfoundland and
Labrador
17 July 2024

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Description of the vessel

The *Elite Navigator* (Transport Canada official number 823767) was a fishing vessel built in 2000 (Figure 1). It had a length overall of 16.74 m and a gross tonnage of 69.77. The vessel was built primarily for crab fishing, but was later adapted to fish turbot using gillnets. At the time of the occurrence, the vessel was certified by Transport Canada (TC) to operate up to 200 nautical miles (NM) from shore between 01 April and 30 November.

Figure 1. The *Elite Navigator* (Source: Third party, with permission)



The vessel's hull was constructed of moulded fibreglass. The superstructure was of a stepped design, with the deckhouse located forward of amidships and the wheelhouse raised above the forecastle deck forward. The superstructure was constructed of wood covered with fibreglass. The area below the main deck was divided into 4 compartments (from forward): the forecastle, the engine room, the fish hold, and the lazarette. The exhaust trunking, which contained piping for the engine room exhaust, passed through the aft portion of the deckhouse.

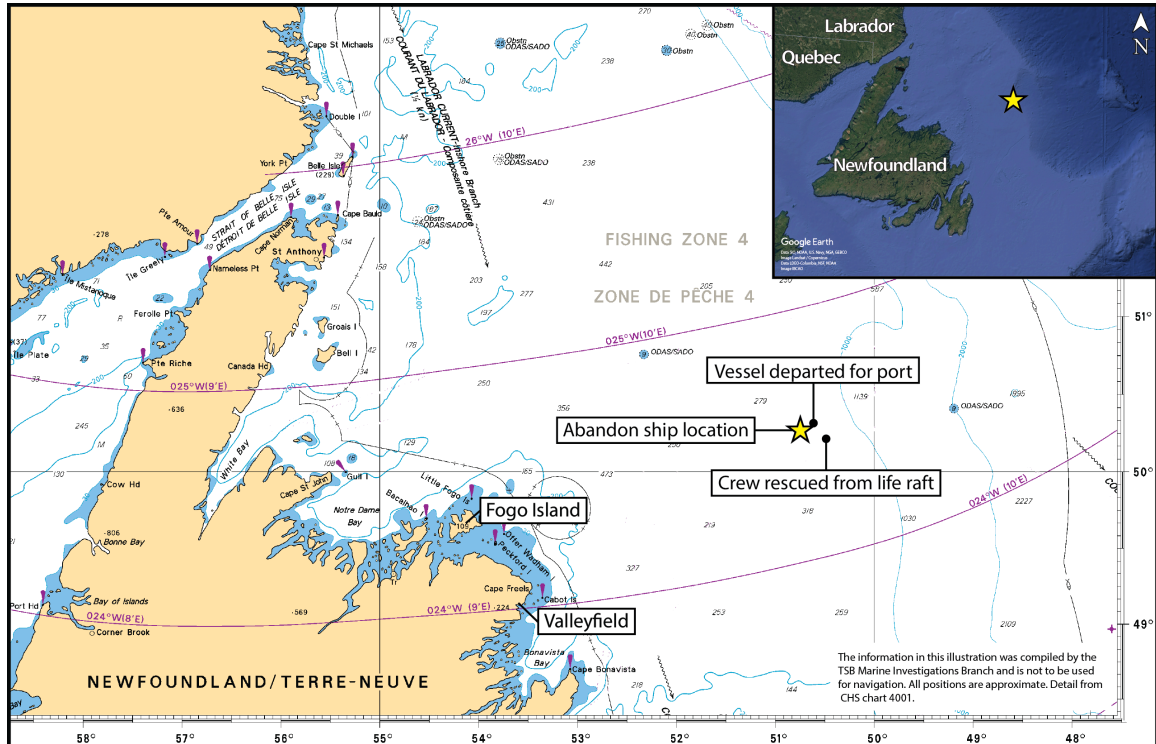
The vessel carried 7 life jackets and 7 immersion suits; some were stored in the forecastle and some in a locker in the wheelhouse. The vessel also had two 8-person inflatable life rafts stored in cradles on top of the wheelhouse. The life rafts were fitted with hydrostatic releases and were connected to the vessel by painters. The life rafts were each equipped with paddles as well as an emergency pack that included water, sugar biscuits, flares, thermal protective aids, a sponge, and a bailer.

History of the voyage

On 08 July 2024, the *Elite Navigator*, with the master and 6 crew members on board, departed Valleyfield, Newfoundland and Labrador, to fish turbot. By 17 July, the vessel had caught its

quota. At approximately 1830,¹ the master used a satellite messenger² to notify the owner that they were on the way to port to land their catch and that their estimated arrival time was 1430 on 18 July. At this time, the vessel was about 137 NM east-northeast of Fogo Island (Figure 2).

Figure 2. Area of the occurrence (Source: TSB)



At approximately 1930, an alarm sounded in the wheelhouse. The master checked the alarm panel and determined that it was from a smoke detector in the engine room. The master looked at the video camera that monitored the engine room, but there was no smoke visible. The master then went to one of the engine room access hatches in the deckhouse and proceeded partway down a ladder into the engine room to check for smoke. Light smoke was now visible. Shortly after, a crew member in the deckhouse yelled that there was a fire in the exhaust trunking (Figure 3).

¹ All times are Newfoundland Daylight Time (Coordinated Universal Time minus 2.5 hours).

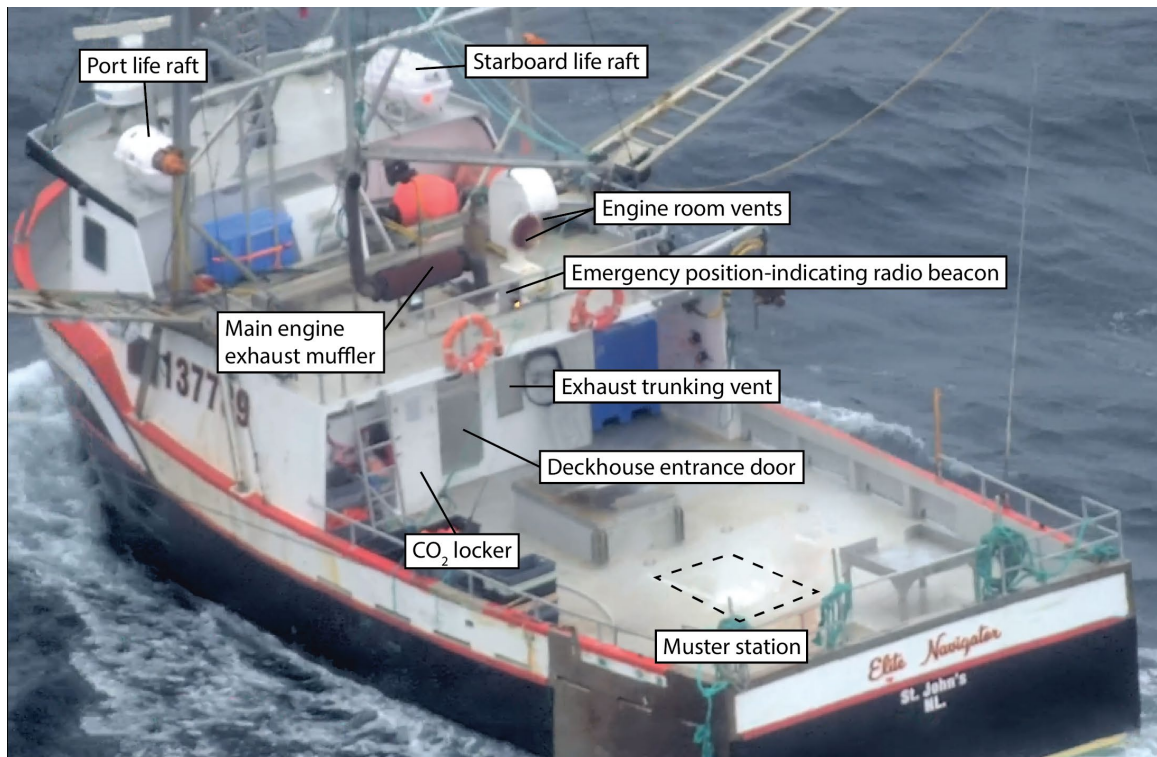
² Satellite messengers are small portable devices that typically allow for 2-way text messaging and route tracking. They work through commercial satellite networks and have wide coverage, in some cases worldwide.

Figure 3. Photo of exhaust trunking taken in 2020 (Source: Third party, with TSB annotations)



Another crew member grabbed a dry powder fire extinguisher and tried to extinguish the fire through the interior doorway to the exhaust trunking. Meanwhile, the master returned to the wheelhouse and shut down the main engine. The master and one of the crew members then went outside on the main deck and pried the exhaust trunking vent off the back of the deckhouse to get access to the other side of the exhaust trunking (Figure 4). From here, they continued to try to fight the fire with another extinguisher.

Figure 4. Aft view of the *Elite Navigator* from a voyage in 2022 showing exhaust trunking vent as well as other relevant locations and equipment (Source: Fisheries and Oceans Canada, with TSB annotations)



The attempts to fight the fire with the extinguishers were not successful, and the master told the crew to prepare to abandon ship. He instructed them to get the immersion suits from the wheelhouse and bring them to the muster station on the aft portion of the main deck.

The master returned to the wheelhouse and activated the digital selective calling (DSC) button on the vessel's very high frequency (VHF) radiotelephone to send a distress signal. He watched the VHF-DSC count down and heard it beep, indicating that the distress signal was sent successfully. He then made 2 Mayday calls by voice over the VHF radiotelephone. The master then went to the top of the wheelhouse and threw the 2 life rafts into the water.

In the meantime, one of the crew members grabbed 5 immersion suits, the most he could carry, from the wheelhouse and brought them to the muster station. He donned an immersion suit and proceeded to the top of the wheelhouse to inflate the starboard life raft by pulling the painter.

Two of the crew members became trapped forward as the fire grew, and they were unable to go aft to the muster station. One of these crew members sent another Mayday call by voice over the VHF radiotelephone. The 2 trapped crew members then tried to retrieve immersion suits and life jackets from the wheelhouse but were unable to do so because of smoke and fire. They exited the wheelhouse to the bow.

After donning immersion suits, the master and the 4 other crew members jumped into the water. The wave heights were 1 to 3 m, and the visibility was poor with patchy fog. The master and 2 crew members swam to the life raft and boarded it, while 2 crew members (Crew A and Crew B) stayed in the water in their immersion suits. Crew A held onto the life raft and helped manoeuvre

it by kicking, while Crew B swam to the bow where the remaining 2 crew members were stranded without immersion suits or life jackets.

One of the crew members on the bow jumped into the water. Crew B pulled him over to the life raft, and the master and crew members pulled him on board. Crew B then swam back to the bow and the other crew member on the bow jumped into the water. Using the life raft's painter, Crew B pulled him over to the life raft and both of them boarded it. One of the crew members in the life raft then cut the painter to release the life raft from the burning vessel. At this time, embers from the vessel fire were burning holes in the life raft's canopy.

At approximately 1938, the master and crew members began manoeuvring the life raft away from the burning vessel. As the life raft began to move away, Crew A was pulled on board. The other life raft, which was uninflated, was visible drifting away from the *Elite Navigator*. The master and crew members tried to paddle to retrieve it but could not reach it. Shortly after, the *Elite Navigator* and the uninflated life raft drifted out of view.

Approximately 6.5 hours later, the life raft with the master and crew members on board drifted back in sight of the burning vessel. At this time, the superstructure and deck were completely burnt. The vessel sank shortly thereafter.

At 1521 on 18 July, the owner, concerned because the vessel was overdue and there had been no recent communication or social media activity from the master or crew, called Marine Communications and Traffic Services (MCTS) to report the situation. MCTS attempted to contact the *Elite Navigator* on VHF and medium frequency (MF) radiotelephone but was unsuccessful in reaching the vessel. MCTS determined that there had been no signal from the vessel's automatic identification system since 2030 on 17 July. The Joint Rescue Coordination Centre was notified and, at 1535 on 18 July, resources from the Canadian Coast Guard and Department of National Defence were deployed.

On 19 July, after more than 50 hours in the life raft, the master and crew saw a helicopter and the lights of a vessel nearby and set off their last flare. The helicopter spotted the life raft and shortly after, at 2328, the Canadian Coast Guard ship *Teleost* rescued everyone from the life raft. All 7 on board survived with only minor injuries.

Cause of the fire

The *Elite Navigator* was not recovered, so it was not possible to determine the exact cause of the fire. The fire was first identified in the exhaust trunking, which contained piping for the main engine and generator exhaust. The exhaust trunking measured approximately 120 cm by 60 cm and was located on the vessel's centreline, just forward of the aft bulkhead in the deckhouse. It was constructed of wood, and the interior bulkheads were covered by painted plywood, which is not fire resistant.

Design of carbon dioxide fixed fire suppression systems on fishing vessels

The *Elite Navigator's* engine room was fitted with a carbon dioxide fixed fire suppression system (CO₂ system). CO₂ is non-flammable and non-conductive and is often used for fire suppression in

engine rooms. When applied to a fire, CO₂ provides a heavy blanket of gas that displaces oxygen to a point where combustion cannot occur. Any openings to the engine room space must be sealed before the CO₂ is released. Because fires can grow rapidly, it is important these openings can be sealed quickly.

In this occurrence, the CO₂ system was not used because the fire was in the exhaust trunking and it was not clear to the crew whether the system would be able to extinguish a fire in that location. In the course of collecting data about the CO₂ system on the *Elite Navigator*, the investigation identified that the vents on the deckhouse top were not fitted with covers or shutters. This meant that there was no way to quickly seal the engine room for the release of CO₂. The vessel did have removeable shutters that could be installed to close the vents; however, locating and installing these shutters could take time that may not be available in an emergency.

The CO₂ system on the *Elite Navigator* had been fitted on the vessel voluntarily; it was not required by regulation. There are many other fishing vessels under 24 m like the *Elite Navigator* that are similarly equipped with voluntarily fitted systems. Because TC does not require these systems on small fishing vessels, there are no specific regulations covering them. While the *Fishing Vessel Safety Regulations* do broadly require machinery and equipment to be maintained in a safe operating condition,³ the regulations do not provide any specifics about CO₂ systems. When TC inspectors board fishing vessels to do inspections, they therefore have no procedure with which to verify CO₂ systems for compliance. TC inspectors may visually verify the overall condition of the systems during inspections and, if requested by the authorized representative, check the maintenance records for the system.

Distress notification

When a vessel's crew needs to abandon ship, their survival often depends on transmitting a distress signal that reaches search and rescue resources. The *Elite Navigator* carried a number of distress alerting devices, each of which had different capabilities, as described in Table 1.

³ Transport Canada, C.R.C., c. 1486, *Fishing Vessel Safety Regulations* (as amended 20 December 2023), subsection 3.04(1).

Table 1. Distress alerting devices carried on the *Elite Navigator* and their capabilities

Distress alerting device	Required by regulation	Capabilities
VHF radiotelephone	Yes	Can be used to make a distress call by voice. The typical maximum range for voice communications is between 10 to 60 NM depending on factors such as available power and height of the antenna.
VHF-DSC	Yes	When the DSC button is pushed for the prescribed time, a digital distress signal is sent to ship and shore stations within range. A DSC's functional range is typically 25% further than voice communications sent by VHF radiotelephone.
MF radiotelephone	Yes	Can be used to make a distress call by voice. The typical maximum range for voice communications is between 100 to 150 NM.
Emergency position-indicating radio beacon	Yes	Automatically sends a distress signal if fitted with a float-free mechanism and submerged. The distress signal is transmitted through satellites and has wide coverage, in most cases worldwide. Can also be activated manually.
Pyrotechnic devices*	Yes	Can be used to generate visual signals that alert others within sight of distress. Common types include rocket parachute flares, multi-star flares, hand-held flares, and smoke signals. Visual distress signals are only effective when someone is in a position to see them.
Commercially-available satellite communication devices (satellite phone and satellite messenger)	No	Satellite phones and messengers can be used for 2-way communication. Satellite phones allow for voice communication, whereas satellite messengers allow for text messaging. Satellite messengers also typically allow route tracking and manual distress signals, among other things. Both devices work on commercial satellite systems and have wide coverage, in some cases worldwide.
Cellphone	No	Can be used for 2-way communication, but may have limited coverage at sea due to the distance and characteristics of the nearest cell tower. In 2024, cellular airborne sensors were installed on some SAR aircraft. ^[1] If such an aircraft is within range of a cellphone, the rescue crew can detect its location and text or call the phone. This is only possible if the phone number is known and the phone is capable of sending and receiving calls.

* Both the vessel and the life raft carried various pyrotechnic devices.

^[1] National Defence, Cellular Airborne Sensor for Search and Rescue (CASSAR), at <https://www.canada.ca/en/department-national-defence/corporate/transparency/access-information-privacy/privacy-impact-assessment/cellular-airborne-sensor-for-search-rescue.html> (last accessed 25 February 2025).

In this occurrence, in the limited amount of time available before the crew abandoned ship, distress calls were made using the vessel's VHF radiotelephone and VHF-DSC. VHF-DSC is required on many vessels⁴ and is a well-known distress alerting device. Training for the Radio Operator Certificate – Maritime Commercial, which the master had taken, is focused on VHF communications, and the master naturally went to the VHF radiotelephone to make distress calls.

⁴ Transport Canada, SOR/2020-216, *Navigation Safety Regulations, 2020* (as amended 20 December 2023), subsection 204(1).

However, because the vessel was approximately 130 NM from shore, beyond the range of VHF and VHF-DSC, it was not possible for these calls to reach MCTS stations directly. There was a chance that the voice calls might have reached other vessels, but there was no indication that they did. MF radiotelephones have a greater maximum range than VHF and VHF-DSC devices, at approximately 100 to 150 NM, which increases the potential that the distress call will be received by other vessels or by MCTS stations.

The *Elite Navigator* also had an emergency position-indicating radio beacon (EPIRB) located on top of the deckhouse. The EPIRB could be activated manually or automatically by submersion in water. The EPIRB did not send a signal, likely because it was damaged by the fire. The EPIRB was not manually activated because the crew were focused on other emergency duties.

TSB Watchlist

The Watchlist identifies the key safety issues that need to be addressed to make Canada's transportation system even safer. Commercial fishing safety has been on the Watchlist since 2010. The issue of commercial fishing safety will remain on the Watchlist until there are sufficient indications that a sound safety culture has taken root throughout the industry and in fishing communities across the country.

TSB investigations often find evidence of weak safety cultures on commercial fishing vessels; however, in the case of the *Elite Navigator*, the vessel carried more safety equipment than was required by regulation, and the master and crew members were in the practice of talking through emergency scenarios and responses. They also demonstrated concepts from safety training during the occurrence, in particular their use of lifesaving equipment.

Safety messages

If fishing vessels are fitted with CO₂ systems, it is important that these systems be designed optimally for emergencies. For example, the ventilation to the engine room must be able to be sealed quickly.

The survival of the crew in an abandonment situation often depends on successfully transmitting a distress signal to search and rescue resources. For this reason, it is important that mariners be familiar with the capabilities of different distress alerting devices so they can use the most appropriate device for the scenario.

Having emergency equipment available, and ensuring that the crew are familiar with its use, contributes to survival in an emergency.

This report concludes the Transportation Safety Board of Canada's investigation into this occurrence. The Board authorized the release of this report on 26 February 2025. It was officially released on 12 March 2025.

Visit the Transportation Safety Board of Canada's website (www.tsb.gc.ca) for information about the TSB and its products and services. You will also find the Watchlist, which identifies the key safety issues that need to be addressed to make Canada's transportation system even safer. In each case, the TSB has found that actions taken to date are

inadequate, and that industry and regulators need to take additional concrete measures to eliminate the risks.

ABOUT THIS INVESTIGATION REPORT

This report is the result of an investigation into a class 4 occurrence. For more information, see the Policy on Occurrence Classification at www.tsb.gc.ca

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