

Transportation Safety Board
of Canada



Bureau de la sécurité des transports
du Canada

**MARINE INVESTIGATION REPORT
M15A0045**



PERSON OVERBOARD AND SUBSEQUENT LOSS OF LIFE

**SMALL FISHING VESSEL *FOUR LADIES* 2003
15 NAUTICAL MILES SOUTH OF CAPE SABLE ISLAND,
NOVA SCOTIA
09 MARCH 2015**

Canada

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Marine Investigation Report M15A0045

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The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

Marine Investigation Report M15A0045

Person overboard and subsequent loss of life

Small fishing vessel *Four Ladies 2003*

15 nautical miles south of Cape Sable Island,

Nova Scotia

09 March 2015

Summary

On 09 March 2015, at approximately 2105 Atlantic Daylight Time, 1 of the 3 crew members on the fishing vessel *Four Ladies 2003* went overboard when some stacked lobster traps fell onto the main deck and knocked the crew member over the open stern. At the time, the vessel was 15 nautical miles south of Cape Sable Island, Nova Scotia. Another fishing vessel responded to a distress call by the *Four Ladies 2003* and recovered the crew member from the water. Rescue specialists from a Canadian Coast Guard cutter also responded and provided assistance. The crew member was transported to hospital but was later pronounced deceased.

Le présent rapport est également disponible en français.

Factual information

Particulars of the vessel

Table 1. Particulars of the vessel

Name of vessel	<i>Four Ladies 2003</i>
Registry/Licence number	825736
Port of registry	Shelburne, Nova Scotia
Flag	Canada
Type	Small fishing vessel
Gross tonnage	52.34
Length	15.15 m
Built	2003, Clark's Harbour, Nova Scotia
Propulsion	1 diesel engine
Cargo	36 lobster traps
Crew	3
Registered owner/ manager	Private owner, Nova Scotia

Description of the vessel

The *Four Ladies 2003* is a small open-construction fishing vessel of the Cape Island design, built from moulded, glass-reinforced plastic. The wheelhouse and accommodation are located forward of amidships, and the engine room is situated beneath the wheelhouse (Photo 1). The wheelhouse can be accessed via doors on its starboard and aft sides. Access to the engine room is through a covered hatch located in the wheelhouse.

The working deck, which extends aft of amidships, has bulwarks on the port and starboard sides; each side has 3 freeing ports located at deck level. The working deck also has 3 flush watertight hatches located aft. A large watertight hatch amidships provides access to the hold. There are 3 watertight bulkheads below the main deck (Appendix A).

Photo 1. *Four Ladies 2003*



At the stern, a 61 cm hinged gate forms the transom when in the upright position (Photo 2) and extends the working deck when lowered. A cargo boom with a small winch is mounted atop the wheelhouse. The vessel is used primarily for trapping lobster and catching swordfish and is fitted with a trap hauler on the starboard side of the working deck.

Photo 2. Hinged gate in the upright position



Prior to the occurrence, there was an aluminum guardrail bolted to the gunwale on the port side; the guardrail extended upwards from the gunwale by about 1.5 m and extended from the cabin to the stern. The guardrail provided a measure of support when stacking the lobster traps on deck. The guardrail was torn off the vessel during the occurrence.

History of the voyage

On 09 March 2015, at about 0600,¹ the *Four Ladies 2003* departed Shag Harbour, Nova Scotia, with the master and 2 crew members on board. The vessel was headed towards the lobster grounds in order to relocate traps to shallower water, as was the practice in previous years when the weather began to warm up.

At around 0830, the vessel arrived at the lobster grounds and the crew began hauling the strings of traps. Each string had 12 traps connected at 25 m intervals to a length of rope that was weighted at either end by 40 kg anchors. In order to haul the strings on board, the crew used the hauler to first retrieve one of the anchors and place it on the stern. The hauler was then used to bring the traps up, which were emptied and rebaited as they came on board. The remaining anchor was hauled up and left by the hauler.

By about 2035, the crew had hauled and stowed 3 strings. They were configured on the working deck such that:

- The traps on the first string were stowed along the port side at deck level,
- The traps on the second string were stacked on top of them in a row of 8 and then a row of 4, and
- The traps on the third string were stowed in a row of 7, located amidships, with 5 traps placed along the port side of the row (Appendix A).

¹ All times are Atlantic Daylight Time (Coordinated Universal Time minus 3 hours) unless otherwise noted.

The weather had deteriorated as the crew was working, so they departed the area for shallower water, leaving the hinged gate at the stern in the lowered position, as was the common practice for the vessel when lobster fishing.

As they were proceeding towards shallower water, a wave struck the port side of the vessel and knocked a few of the traps off the top row of the stack on the port side. The crew retrieved the traps from the deck, put them back on the top row of the stack, and secured them to the aluminum guardrail.

At about 2100, the master was turning the vessel to position it for setting the first string of traps when a wave struck the port side again. The anchor attached to the first string was knocked over the open stern, followed by the first trap on the string. One of the crew members moved to the stern and began physically hauling on the rope attached to the trap and anchor. The master took the vessel out of gear and, accompanied by the other crew member, went aft to the stern to assist.

At approximately 2105, while the master and crew were attempting to recover the trap and anchor, another wave struck the vessel on the port side. Although some of the traps had been secured to the aluminum guardrail, this wave knocked about 6 of the stacked traps onto the deck. Upon impact, one of the crew members was thrown to the centre of the deck and the master was thrown overboard via the open stern. Moments later, the anchors and remaining traps went overboard, pulling the port aluminum guardrail off the gunwale and overboard by way of the open stern as well. At this time, the vessel was approximately 15 nautical miles south of Cape Sable Island, Nova Scotia (Appendix B).

The master's personal flotation device (PFD) inflated once he was in the water and he yelled to one of the crew members to put the vessel in reverse and retrieve him. Once the vessel was backed up near the master, one of the crew members hooked the master's PFD with a gaff and the other crew member managed to grab his arms from the starboard quarter of the vessel. The crew members passed a rope under the master's arms, tied the rope to a cleat on the starboard quarter, and tried multiple times to haul him on board, but were unable to do so. The master had lost consciousness by this time. One of the crew members made a distress call on the very high frequency (VHF) radiotelephone, and another lobster fishing vessel, *3 P's and a Pa*, responded to the distress call and proceeded towards the *Four Ladies 2003*.

By about 2140, the *3 P's and a Pa* was in proximity and passed a rope to the crew members on the *Four Ladies 2003*. The *Four Ladies 2003* crew tied this rope to the one wrapped under the master's arms and released the end securing the master to the cleat. The crew of the *3 P's and a Pa* then attempted to haul the master over to their vessel. They were unable to do so, however, as the rope secured around the master was caught on something under the *Four Ladies 2003*. One of the crew members on the *Four Ladies 2003* lay across the open stern and cut the snagged rope. The crew of the *3 P's and a Pa* were then able to haul him over to the side of their vessel. Once alongside, the 4 crew were able to haul the master over the side, albeit with difficulty.

Once the master was on board the *3 P's and a Pa*, at about 2205, the crew began administering cardiopulmonary resuscitation (CPR) and headed towards West Head, Nova Scotia,

followed by the *Four Ladies 2003*. The 3 *P's and a Pa* crew continued to administer CPR until 2238, when 2 search and rescue specialists from the Canadian Coast Guard (CCG) cutter *Spray* boarded the vessel and took over the resuscitation effort. The master was transferred to an ambulance at West Head at about 0010 on 10 March and was taken to the hospital, where he was pronounced deceased from exposure and drowning.

Environmental conditions

At the time of the occurrence, winds were 25 knots with seas between 1 m and 2 m. The air temperature was 1°C. The average water temperature at this time of year is about 3°C.²

Vessel certification

As a small fishing vessel with a gross tonnage (GT) exceeding 15, the *Four Ladies 2003* was subject to quadrennial inspections carried out by Transport Canada (TC) and held a valid Ship Inspection Certificate.

Personnel certification and experience

The master held a certificate of service for a fishing vessel less than 60 GT, a Marine Emergency Duties (MED) certificate, and a Radio Operator's Certificate with Marine Qualifications (ROC-M) as required. He had been fishing for over 40 years.

One of the crew members held a MED certificate and first aid certificates. The other crew member held a first aid certificate and had been fishing intermittently for 25 years, but did not hold a MED certificate as required.

Safe work practices

TC regulations place the responsibility on the authorized representative (AR)³ to develop procedures for the safe operation of the vessel.⁴ The resulting safe work practices help to ensure that masters and crew members have the knowledge, as well as the necessary information, to make sound decisions in any operating condition—including both routine and emergency operations.

The Nova Scotia *Occupational Safety and Health Regulations* apply to fishermen. These regulations include owners' responsibilities for ensuring workers' safety, mandatory usage of PFDs and the proper stowage of "piled material."

² Global Sea Temperature, available at: <http://www.seatemperature.org/north-america/canada/yarmouth-march.htm> (Last accessed 02 February 2016).

³ Subsection 14(1) of the *Canada Shipping Act, 2001* specifies that every Canadian vessel must have a person, known as the authorized representative, who is responsible for acting with respect to all matters related to the vessel that are not otherwise assigned to another person.

⁴ *Canada Shipping Act, 2001* (S.C. 2001, c. 26), section 106.

There is guidance available to help ARs with the development of safe work practices. In 2004, an advisory committee led by the Nova Scotia Fisheries Sector Council published a handbook entitled *Fish Safe: A Handbook for Commercial Fishing and Aquaculture*. It is intended to address workplace health and safety issues in the fishing industry. Some key points that are addressed in the handbook are as follows:

- ensuring employees know about workplace hazards, including how to identify hazards and how to protect themselves from those hazards;
- using a pre-sailing checklist;
- securing loads so they do not shift on rough seas;
- using a fall restraint system to protect against falling overboard (e.g., use of guardrails and handrails that surround the vessel);
- using a fall arrest, or life line, to prevent falls (e.g., even a rope tied to a secure post or rail will keep a gaffer from falling overboard);
- knowing how to rescue someone who has fallen overboard; and
- wearing a floater suit or other survival gear when water is extremely cold and the risk of falling in is high.⁵

On board the *Four Ladies 2003*, it was the practice for the master to advise the crew members if he observed unsafe practices. The master also enforced a policy that all hands were to don an inflatable PFD prior to going out on deck, and signs were posted on the 2 accommodation access doors to remind the crew. The *Four Ladies 2003* did not have written safe work practices, and it could not be determined whether the master was aware of the *Fish Safe* handbook.

Provincially, there are ongoing initiatives to increase safe work practices on fishing vessels. For example, on 04 June 2015, a plan for Nova Scotia's fishing industry was released, called *Fishing Safety Now*. It was developed by the Safe at Sea Alliance, which is a group of fishermen, family members, industry, safety organizations, community leaders, and government representatives. The plan includes recommendations to help improve safety, including developing a code of safe work practices for fishing vessels, developing occupational health and safety awareness, and making improvements in safety training and equipment.

Emergency preparedness

TC requires fishing vessel masters, under section 206 of the *Marine Personnel Regulations*, to ensure that each crew member becomes familiar with their assigned duties vital to safety and that each crew member can effectively perform them.

⁵ Nova Scotia Fisheries Sector Council, *Fish Safe: A Handbook for Commercial Fishing and Aquaculture*, 2004, available at: <http://novascotia.ca/lae/healthandsafety/docs/fishsafe.pdf> (Last accessed 02 February 2016).

To assist masters in familiarizing crew members, the Fisheries Safety Association of Nova Scotia (FSANS), the Nova Scotia Department of Labour, the Nova Scotia Fisheries Sector Council (NSFSC), and the Workers' Compensation Board of Nova Scotia (WCBNS) published and distributed an on-board familiarization and training checklist. The checklist includes a number of types of equipment, including lifesaving appliances, firefighting equipment, communication equipment, and emergency systems, and indicates that crew members should know the location and proper use of this equipment. The checklist also lists a variety of emergency situations and indicates that crew members should know their responsibilities for each situation.⁶

FSANS has also partnered with local fishermen, representatives from the Nova Scotia Community College, the Nova Scotia Department of Labour, the NSFSC, and WCBNS to conduct person overboard drills at local wharves before the opening of lobster season throughout Nova Scotia. Since 2012, there have been more than 50 such events held on wharves across the province. The master and 1 of the crew members on the *Four Ladies 2003* had watched this training take place in a nearby port.

Although not required for small fishing vessels (those with gross tonnage less than 150), periodic emergency drills are one way to ensure that crew members are properly trained on shipboard lifesaving and firefighting equipment. The master and crew of the *Four Ladies 2003* did not practise emergency drills such as person overboard, fire, or abandon ship drills.

Lifesaving appliances

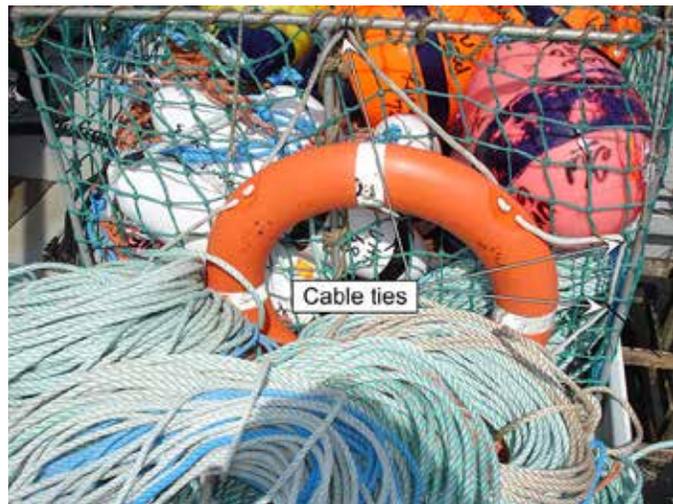
The *Four Ladies 2003* was equipped with the following lifesaving equipment:

- 6 standard lifejackets
- 3 inflatable PFDs
- 6 immersion suits
- a 7-person hard-shell life raft
- an electronic position-indicating radio beacon (EPIRB)
- 2 life rings

The immersion suits and lifejackets were stowed in the vessel's forepeak.

The life rings were located on top of the wheelhouse and their grab lines had been secured to a mesh container using cable ties (Photo 3).

Photo 3. Locations of cable ties



⁶ Fisheries Safety Association of Nova Scotia and Workers' Compensation Board of Nova Scotia, *On-board Familiarization and Training*, available at: <http://www.fisherinessafety.ca/Familiarization%20checklist%202015.pdf> (Last accessed 02 February 2016).

Man overboard response

In Canada, falling overboard is the second highest cause of fatality in the fishing industry.⁷

There are a number of commercially available devices to facilitate re-boarding in the event of a person overboard incident. These include:

- a removable ladder or scramble net that allows a conscious person in the water to climb back on board;
- a lifting sling that can be passed under a person's arms and then used to haul the person back on board manually or by mechanical means such as a hauler or winch;
- a life net, which is used in a similar manner to a sling, but also has a net suspended underneath it for further support of the person being lifted aboard; and
- a Jason's cradle, which is a stowable net-like device that can be passed under an unconscious person in the water and used to haul the person on board.

Apart from these commercially available options, some fishermen have devised their own devices to be used in a person overboard incident, such as crafting a buoyant ring with netting attached to the underside.

There were no re-boarding devices on board the *Four Ladies 2003*, nor were any required by regulation. To reduce the risk of falling overboard, the crew members avoided spending time near the stern unless necessary.

Open-stern vessels

Cape Island-style fishing vessels were designed in the early 1900s on Cape Sable Island, Nova Scotia, and remain a prevalent style of vessel in the Atlantic provinces.

Person overboard incidents are preventable and their incidence can be minimized by employing safe work practices in combination with physical defenses such as railings or bulwarks of adequate height. Many operators of Cape Island-style fishing vessels have dispensed with a fixed transom, leaving the stern open to facilitate lobster fishing operations. Others have either attached a hinged gate that, when lowered, acts as a deck extension, or have added a permanent deck extension to extend the work area.

During lobster fishing, strings of traps are set by dropping the first anchor over the stern of the vessel while the vessel is slowly moving ahead. The weight of the anchor hauls the first trap overboard through the open transom, and the rest of the traps follow one by one as the strain from the rope pulls them overboard.

⁷ Transportation Safety Board of Canada, Safety Issues Investigation Report No. M09Z0001, *Safety Issues Investigation into Fishing Safety in Canada*, p. 31.

While the majority of fishermen on these types of vessels leave the stern open while fishing lobster, some will place a chain or aluminum pole across the opening to act as a guardrail (Photo 4). Poles can be adjustable and can be placed in numerous orientations across the deck so that the crew members are never nearer the open stern than they have to be. Additionally, crew members can place the pole between themselves and the open stern when preparing traps for setting, which maintains a physical barrier.

Photo 4. Aluminum stern pole as seen on some lobster vessels



Regulatory requirements

For vessels like the *Four Ladies 2003*, which are over 15 in GT, subsection 28(1) of the *Small Fishing Vessel Inspection Regulations* (SFVIR) requires that “bulwark, rails, chains, wire rope or any combination of these shall be fitted around the weather deck of a fishing vessel at least 760 mm in height above the weather deck.”⁸ However, subject to subsection 28(2),

an inspector may allow the bulwarks, rails, chains and wire rope referred to in subsection (1) to be portable or to be dispensed with, at his discretion, at places where, in his opinion, they would interfere with the fishing operations of the vessel.⁹

Most of the vessels in southwest Nova Scotia, including the *Four Ladies 2003*, are granted this dispensation.

Previous occurrences

TSB data indicate that, between 1999 and August 2015, there were 55 deaths on Canadian fishing vessels due to falling overboard.

TSB Watchlist

Loss of life on fishing vessels is a 2014 Watchlist issue

The Watchlist is a list of issues posing the greatest risk to Canada’s transportation system; the TSB publishes it to focus the attention of industry and regulators on the problems that need addressing today.

⁸ *Small Fishing Vessel Inspection Regulations* (C.R.C., c. 1486), subsection 28(1).

⁹ *Ibid.*, subsection 28(2).

In November 2014, the Board released its third Watchlist, which identifies critical transportation safety issues investigated by the TSB that pose the greatest risks to Canadians. One of these critical safety issues is the loss of life on fishing vessels, given that there continues to be approximately 1 fishing-related fatality per month in Canada. The Board remains concerned about vessel stability, the use and availability of lifesaving appliances on board, and unsafe operating practices. Although regulations have been proposed by TC to address several deficiencies with respect to fishing safety, there have been significant delays in their implementation.

The Watchlist highlights the need for concerted and coordinated action by federal and provincial authorities and by leaders in the fishing community to improve the safety culture in fishing operations, recognizing the interaction of safety deficiencies.

Analysis

Events leading to person overboard occurrence and loss of life

As the master on the *Four Ladies 2003* was making a turn prior to setting traps, a wave struck the port side of the vessel and knocked an anchor and 1 trap over the open stern. While all 3 crew members were attempting to retrieve the anchor and trap, another wave struck the vessel and knocked some unsecured traps onto the main deck, which in turn knocked the master overboard.

The master was wearing a personal flotation device (PFD), which provided him flotation in the water, which was around 3°C. The crew tried multiple times to haul him over the side of the vessel but were unable to do so. Approximately 1 hour elapsed while the master was in the water before a nearby vessel was able to haul the master on board and begin resuscitation attempts, which were later taken over by Canadian Coast Guard (CCG) responders. The master was taken to hospital but was later pronounced deceased from exposure and drowning.

Risk management

Fishing operations, especially those conducted on an open-stern vessel, have a particular set of hazards and risks that must be managed. Generally, there are 2 ways that risks can be mitigated: administratively and physically. An example of an administrative defence is the development of safe work practices, which take into account various risks, such as that of falling overboard, and establish safe practices to minimize the possibility of this occurring. An example of a physical defence to protect against a person overboard situation is the use of a pole or other barrier across the open stern. Both administrative and physical defenses must be implemented consistently and periodically evaluated for effectiveness.

On the *Four Ladies 2003*, the crew members recognized the risk posed by the open stern and attempted to reduce their exposure informally by limiting the amount of time that they spent near it. Although the master consistently enforced a policy that all crew members were to wear a PFD while on deck, there was no specific guidance or policies to help crew members make decisions about when and how to go near the stern safely. As a result, it was not always apparent to the crew members whether a situation warranted going to the open stern (e.g., whether to retrieve overboard gear or cut it loose) and how to do so safely.

In this occurrence, when the anchor and trap went overboard, 1 of the crew members, not wanting to lose the master's gear, went to the stern to try to retrieve it. He was joined shortly after by both the master and the other crew member. The deterioration of the weather, and the stern being open to the sea, increased the risk to the crew. However, without guidance or policies in place about working safely near the stern, the crew were not prompted to consider other options, such as using a life line or cutting the gear loose.

Emergency preparedness for a person overboard situation

When a person goes overboard in cold water, it is critical that he or she be retrieved as fast as possible due to the imminent danger of exposure and drowning. Having an emergency response plan, conducting regular drills, and carrying appropriate lifesaving equipment and re-boarding devices are steps to enable crew members to act quickly and efficiently to retrieve a person overboard.

In the case of the emergency encountered on the *Four Ladies 2003*, the crew members did not have an emergency response plan to follow, nor had they been afforded opportunities to practise retrieval of a person overboard during drills. After the master went overboard, both of the crew members were near the open stern while attempting to recover the master, but neither was using any type of equipment to protect themselves against falling overboard, nor was there any type of barrier to the open sea. This put them in a situation where they were also at risk of going overboard.

Carrying out regular emergency drills helps crew members become familiarized with the vessel's emergency equipment and allows them a chance to practise retrieval strategies using various types of equipment. Regular drills can also help crew discover deficiencies in emergency procedures and equipment and take mitigating actions. For instance, a person overboard drill conducted in a realistic manner would likely demonstrate the degree of difficulty involved in the recovery process, as well as the need for crew members to have quick access to safety equipment, such as a life line, to ensure their own safety when attempting to help a person overboard.

The *Safety Issues Investigation into Fishing Safety in Canada* (SII),¹⁰ published by the Transportation Safety Board of Canada (TSB) following a broad safety issues investigation into accidents involving commercial fishing vessels in Canada, found that fishermen assess and manage risk based on personal experience and do not always conduct drills. Although there are regulatory requirements for fishermen to conduct drills, follow-up on these regulations is difficult and infrequent for a variety of reasons. Furthermore, although fishermen are required to take Marine Emergency Duties (MED) training, which covers emergency drills, the SII found that this training does not instill the importance of safety drills. While the local programs also provide training on how to conduct emergency drills, their success relies on fishermen taking ownership of safety and conducting drills on a regular basis, which occurs in some cases but not in others.

With respect to lifesaving equipment, the *Four Ladies 2003* carried what was required by regulation. The vessel was not fitted with re-boarding devices, such as a sling or a ladder, to help with the task of recovering a person overboard back on deck, a task that can be a very difficult, if not impossible, task for 1 or 2 people. The difficulty increases depending on the level of exhaustion or the state of consciousness of the person overboard, the height of

¹⁰ Transportation Safety Board of Canada, Safety Issues Investigation Report No. M09Z0001, *Safety Issues Investigation into Fishing Safety in Canada*.

freeboard, and the meteorological conditions and sea state. While there are various tools and methods available to assist in lifting a person overboard onto the deck, including the use of any on-board winch or manual hoist, these tools and methods need to be identified and practised in advance to help ensure a quick and successful recovery. The *Four Ladies 2003* had a trap hauler mounted on the starboard side amidships and a cargo boom with a hydraulic winch, both of which are devices that can be rigged for retrieval of a person overboard.

Another aspect that must be considered is the stowage of emergency equipment to ensure ease of access. On the *Four Ladies 2003*, the life rings were not stowed in a location that was readily accessible from the working deck and were lashed with cable ties, making them difficult and time consuming to deploy in the event that they were required.

If fishermen operate their vessels without comprehensively assessing them for emergency preparedness and do not conduct drills that provide an opportunity for crew to practise their emergency response, there is a risk that fishermen will not be able to effectively respond in an emergency, which may lead to fatalities.

Mitigating the risk of open-stern vessels

Most fishermen in Nova Scotia with Cape Island-style fishing vessels accept the risk of lobster fishing with the stern open to the sea, as evidenced by the widespread use of these vessels in the area. Where once an open stern on a Cape Island-style vessel was the exception, it is now the majority compared to closed-stern vessels.

While the *Small Fishing Vessel Inspection Regulations* (SFVIR) require bulwarks, rails, chains, wire rope or any combination of these to be fitted around the weather deck of a fishing vessel, Transport Canada inspectors may grant exemptions to this regulation at their discretion, and in fact do so. However, without any other requirement for fishermen to put in place safeguards to address the hazards posed by an open stern, there is a risk that these hazards will go unaddressed.

If fishermen are granted an exemption from the regulatory requirement for bulwarks across the stern of a fishing vessel and there is no other requirement for fishermen to put in place safeguards to address the hazards posed by an open stern, there is a risk that these hazards will go unaddressed.

Safety issues in the fishing industry

The SII categorized actions impacting safety into 10 significant safety issues and found that there are complex relationships and interdependencies among them. These safety-significant issues are further analyzed in the SII.¹¹ In this occurrence, 3 of these 10 safety-significant

¹¹ Transportation Safety Board of Canada, Safety Issues Investigation Report No. M09Z0001, *Safety Issues Investigation into Fishing Safety in Canada*.

issues were present and are reflected in the on-board practices and procedures of the *Four Ladies 2003*.

Table 2. Lifesaving appliances

Safety issues investigation findings	Relationship to this occurrence
Fishermen may fit their vessels with lifesaving appliances (LSAs) only for regulatory compliance.	The vessel did not carry any re-boarding device on board, and the life ring was not easily accessible.
Fishermen do not always conduct drills.	Emergency drills were not conducted on board the <i>Four Ladies 2003</i> .

Table 3. Training

Safety issues investigation findings	Relationship to this occurrence
Fishermen assess and manage risk based on experience.	Although the risk of falling over the open stern was recognized, it had never happened on board the <i>Four Ladies 2003</i> .

Table 4. Safe work practices

Safety issues investigation finding	Relationship to this occurrence
Fishermen do not emphasize the importance of safety in work practices.	It was standard practice to leave the stern open with no barriers while lobster fishing on the <i>Four Ladies 2003</i> , and no additional mitigation or safeguards had been put in place to address the increased risk.

Interdependency of safety issues

The safety of fishermen is compromised by numerous issues which are interconnected. The following safety issues share a complex relationship and contributed to this occurrence:

- Lifesaving appliances – there was no re-boarding device on board, the life ring was not easily accessible, and emergency drills were not practised.
- Training – without drills, the crew were not trained in the retrieval of a person overboard.
- Unsafe work practices - the risks of leaving the stern open, with no barrier, was accepted.

Past attempts to address these safety issues on an issue-by-issue basis have not led to the intended result: a safer environment for fishermen. The SII emphasizes that in order to obtain real and lasting improvement in fishing safety, change must address not just one of the safety issues involved in an accident, but all of them, recognizing that there is a complex relationship and interdependency among those issues. Removing a single unsafe condition may prevent an accident, but only slightly reduces the risk of others. The safety of fishermen will be compromised until the complex relationship and interdependency among safety issues is recognized and addressed by the fishing community.

Findings

Findings as to causes and contributing factors

1. The master was knocked overboard by lobster traps that fell on deck while he was near the open stern attempting to retrieve a trap and anchor that had fallen overboard.
2. Despite the crew's efforts to physically haul the master on board, they were unable to do so, and about an hour elapsed while the master was in the water before another vessel was able to come to their assistance and recover him.

Findings as to risk

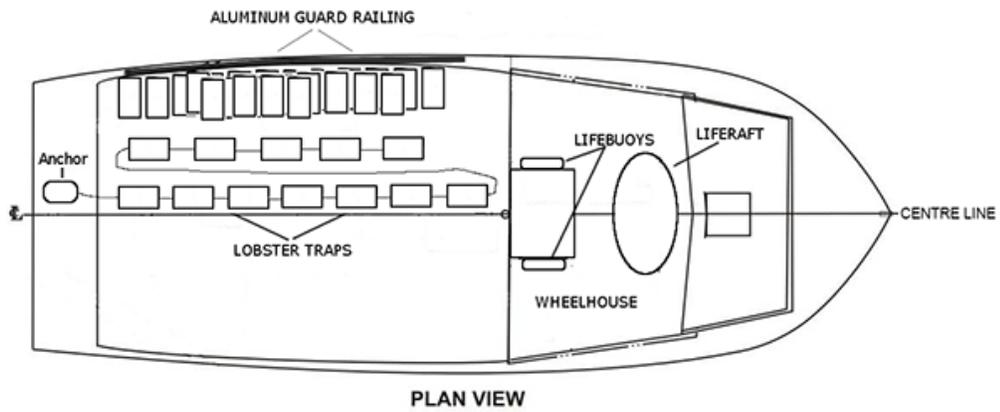
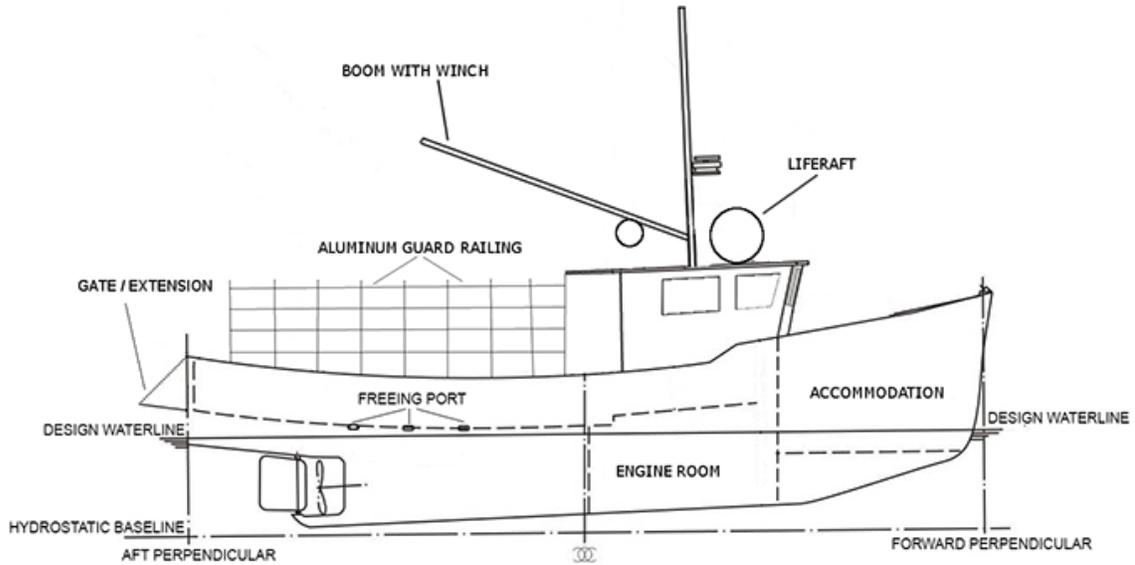
1. If fishermen operate their vessels without comprehensively assessing them for emergency preparedness and do not conduct drills that provide an opportunity for crew to practise their emergency response, there is risk that fishermen will not be able to effectively respond in an emergency, which may lead to fatalities.
2. If fishermen are granted an exemption from the regulatory requirement for bulwarks across the stern of a fishing vessel and there is no other requirement for fishermen to put in place safeguards to address the hazards posed by an open stern, there is a risk that these hazards will go unaddressed.
3. The safety of fishermen will be compromised until the complex relationship and interdependency among safety issues is recognized and addressed by the fishing community.

This report concludes the Transportation Safety Board's investigation into this occurrence. The Board authorized the release of this report on 27 January 2016. It was officially released on 03 March 2016.

Visit the Transportation Safety Board'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 transportation safety issues that pose the greatest risk to Canadians. 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.

Appendices

Appendix A – Four Ladies 2003 profile and deck arrangement



Appendix B – Area of the occurrence

