



TSB Recommendation M23-06

Definition of major modifications to small fishing vessels and other small commercial vessels

The Transportation Safety Board of Canada recommends that the Department of Transport introduce objective criteria to define major modifications to small fishing vessels and other small commercial vessels.

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| Marine transportation safety investigation report | M21A0065 |
| Date the recommendation was issued | 22 November 2023 |
| Date of the latest response | February 2024 |
| Date of the latest assessment | May 2024 |
| Rating of the latest response | Satisfactory Intent |
| File status | Active |

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Summary of the occurrence

On 01 April 2021, Fisheries and Oceans Canada (DFO) assessed the weather conditions and notified fish harvesters that the snow crab fishery in area 12 of the Gulf of St. Lawrence would open at 0001 on 03 April 2021. At the time of the notification, there was ice in Richibucto Harbour, New Brunswick, and an excavator was needed to break ice at the wharf to put the *Tyhawk* in the water.

On 02 April at 0435, the master and 4 crew members sailed the 13.61 m open fishing vessel *Tyhawk* from Richibucto, New Brunswick, to Chéticamp, Nova Scotia, for the season. They were joined in Chéticamp by 4 additional crew members, who had driven from Richibucto.

On 03 April, starting at approximately 0240, the *Tyhawk* made 2 voyages from Chéticamp to the fishing grounds. On the first voyage, with the master and all 8 crew members on board, they set about 75 crab traps. During this voyage, ice was accumulating on the vessel. On the second voyage, the master and 4 crew members departed to set about 50 more crab traps.

On the trip to the fishing grounds, the master and 3 crew members napped in the accommodation space while another crew member stood watch. The winds had increased to 20 to 25 knots with 1 to 2 m seas. Waves were hitting the starboard side, and rain and freezing rain were falling. A second crew member came to the wheelhouse where he noticed an accumulation of water in the bilge. He called the master and the other crew members, and the bilge pumps were started. Shortly afterwards, a crew member went under the removable deck to get some of the gear and found water on the main deck. He alerted the other crew members, and the wash-down pump configuration was changed to dewater the bilge. At this time, the weather seemed to increase in severity and the vessel's movements became more severe. Following a significant heel to starboard, the vessel's main deck submerged, allowing water in addition to that already on deck to enter the *Tyhawk*.

Crew members could not reach the lifejackets and immersion suits stowed in the accommodation space or launch the life raft, which had slid under the removable deck. Shortly afterward, the *Tyhawk* capsized and the master and crew members climbed on to the overturned hull. One crew member called 911. The automatic emergency position-indicating radio beacon (EPIRB) floated free and at 1750, the Joint Rescue Coordination Centre Halifax received notice of an EPIRB signal from the *Tyhawk*.

As the overturned *Tyhawk* sank lower in the water, wave action repeatedly swept the master and 1 crew member clear of the hull and into the water. Eventually, the master and this crew member remained in the water. The fishing vessel *Northumberland Spray* arrived on scene and rescued the 4 *Tyhawk* crew members, but the master could not be located. The *Northumberland Spray* returned to Chéticamp and the 4 crew members received medical assistance. One crew member was pronounced dead. The search for the master continued through the night and all the next day. At 1955 on 04 April 2021, the case was turned over to the RCMP as a missing persons case.

The Board concluded its investigation and released report M21A0065 on 22 November 2023.

Rationale for the recommendation

The investigation determined that the *Tyhawk's* stability was compromised in part by the addition of a removable deck, which had not been evaluated for its impact on the vessel's stability. In 2013, Transport Canada (TC) inspected the vessel, issued a deficiency notice because of the removable deck, and required a stability assessment. The master completed a stability questionnaire in May 2015 and identified the removable deck, but he did not recognize the deck as a modification that would require a stability assessment. The stability assessment required by TC was not completed, and TC's subsequent inspection documentation did not refer to the removable deck.

In accordance with the *Fishing Vessel Safety Regulations*, stability assessments are required for all new fishing vessels¹ over 9 m and those that have undergone a major modification or a change in activity that is likely to adversely affect their stability.² TC's definition of major modification is

[...] a modification or repair, or a series of modifications or repairs, that substantially changes the capacity or size of a fishing vessel or the nature of a system on board a fishing vessel, that affects its watertight integrity or its stability.³

For other small commercial vessels (15 gross tonnage and under) that are not passenger vessels, the definition of a major modification in the *Small Vessel Regulations* is similar. It is the responsibility of the authorized representative (AR) to identify whether a modification is major.

Both the *Fishing Vessel Safety Regulations* definition of major modification (that “substantially changes”) and the requirements for stability assessment (likely to adversely affect stability) are qualitative and open to interpretation. While TC does provide some guidance to help ARs and masters identify major modifications,^{4,5} the guidance is qualitative and requires knowledge of stability to interpret it correctly. Compliance with the guidance is voluntary. In contrast, TC's guidance for maintaining a record of modifications is quantitative, noting that changes in weight of more than 100 kg should be tracked.

In this occurrence, the Board found that, without an objective definition of a major modification, ARs, masters, and TC may not identify the impact on vessel stability of a major modification. As a result, there is a risk that vessels will operate without adequate stability for their intended operations.

Regulators have a role to play in supporting the consistent identification of major modifications by providing specific, measurable, and understandable criteria.

¹ In this context, “new” is defined according to the date when the *Fishing Vessel Safety Regulations* came into force (Transport Canada, C.R.C., c. 1486, *Fishing Vessel Safety Regulations* [as amended 23 June 2021], part 0.1, subsection 3.01[1]).

² Ibid., section 3.48.

³ Ibid., subsection 3.48(3). The *Small Vessel Regulations* definition is almost identical (Transport Canada, SOR/2010-91, *Small Vessel Regulations* [as amended 23 June 2021], subsection 710[3]).

⁴ Transport Canada, Ship Safety Bulletin 04/2006: Safety of Small Fishing Vessels: Information to Owners/Masters about Stability Booklets, at <https://tc.canada.ca/en/marine-transportation/marine-safety/ship-safety-bulletins/bulletin-no-04-2006> (last accessed on 19 October 2023), which contains a stability questionnaire, Transport Canada, TP 15392E, *Guidelines for fishing vessel major modification or a change in activity*, section 5, at <https://tc.canada.ca/en/marine-transportation/marine-safety/tp-15392e-guidelines-fishing-vessel-major-modification-change-activity> (last accessed on 19 October 2023).

⁵ Transport Canada, TP 15393E, *Adequate stability and safety guidelines for fishing vessels*, at <http://www.tc.gc.ca/eng/marinesafety/adequate-stability-safety-guidelines-fishing-vessels.html> (last accessed on 19 October 2023).

Therefore, the Board recommended that

the Department of Transport introduce objective criteria to define major modifications to small fishing vessels and other small commercial vessels.

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Previous responses and assessments

N/A

Latest response and assessment

February 2024: response from Transport Canada

Transport Canada (TC) agrees with the safety recommendation M23-06. The Department recognizes the impact major modifications can have on small vessels as, by definition, these modifications substantially change the capacity, or size of the vessel, or the nature of a system on board. This type of modification has the potential to impact a vessel's stability which, if unrecognized, can jeopardize the safety of the vessel and its crew.

In July 2017, TC's *Fishing Vessel Safety Regulations* (FVSR) entered into force. These regulations require that small fishing vessels—those that are less than 24.4 metres in length and not more than 150 gross tonnage—undertake a stability assessment, conducted by a competent person, should they undergo a major modification or change in activity that is likely to adversely affect their stability. TC has issued guidance to assist the authorized representatives of fishing vessels in determining if any planned changes to their vessels would be considered a major modification. During a TC inspection, the inspector will review any modifications which have been made to the vessel and listed on the vessel's Fishing Vessel Record of Modifications Affecting Stability form. Based on the information provided, the TC inspector will assess the situation and determine whether any other modifications made to the vessel should have been included on the form and if any could have adversely impacted the vessel's stability. However, this guidance issued by TC is based on qualitative analyses, with the ultimate determination of whether a modification is considered major and may adversely affect the vessel's stability, left to the technical knowledge and best judgement of the vessel owner, their marine consultant, and the TC inspector.

In response to this recommendation, TC will initiate a research contract to develop potential criteria which could more clearly define what constitutes a major modification that could adversely affect stability.⁶ This work will be conducted by a neutral third-party to help ensure any developed criteria are fully objective and free from pre-conceived biases or opinions. The objective of this work would be to develop criteria which could be applied to any given vessel, taking into account there may be a limited amount of information available about its current stability level, and used to objectively determine if a modification would adversely impact its

⁶ TC confirmed that the research contract would apply to small fishing vessels only.

stability. This work will be presented in an accessible, easy to understand manner and will be made publicly available, for use by a vessel owner, their marine consultant, or a TC inspector.

The research contract to develop these criteria will be initiated in 2024. Once draft criteria have been determined, TC will consult with safety partners, as well as both the fishing industry specifically and the small commercial vessel industry broadly, to help ensure the selected criteria capture, to the greatest extent possible, the wide variations in vessel design, for which modifications could be considered to adversely affect stability. These consultations will also help ensure any selected criteria will sufficiently address outstanding safety concerns without creating undue hardship on the fishing industry. This work will be initiated with the goal of having criteria developed and available by 2025, noting that this timeline will be dependent on the degree of feedback received during consultations.

While this research project is underway, TC will continue to spread awareness of best safety practices around vessel stability and the adverse impacts which may be caused by major modifications. This includes the recent publication of a ship safety bulletin which outlines important safety information and regulatory requirements which must be considered when adding a removable deck to a fishing vessel. TC will also continue promoting the department's Small Vessel Compliance Program, to help increase enrollment. This program, which includes a component specific to fishing vessels, provides vessel owners and operators with tools and resources to remain in compliance with all applicable regulations, and includes information as to how vessel safety may be maintained. This includes extensive information on how to determine if a vessel has adequate stability to complete its intended operations.

TC will also continue to promote safe vessel operation generally, through updated communication and outreach initiatives to better inform vessel owners and operators of the importance of maintaining best safety practices on board their vessels. Further, TC will continue to disseminate information specific to assessing the potential impacts of major modifications on vessel stability, largely through an enhanced online presence.

May 2024: TSB assessment of the response (Satisfactory Intent)

Transport Canada (TC) states that it agrees with the recommendation and has already taken steps to address it. TC indicates that the current *Fishing Vessel Safety Regulations* require fishing vessels that are under 24.4 metres in length and not more than 150 gross tonnage to undergo a stability assessment if they sustain a major modification or a change in activity that would adversely affect the vessel's stability. TC has also issued guidance to help fishing vessels' authorized representatives determine whether a modification should be deemed as major.

To address this recommendation, TC will initiate a contract to develop criteria to better define what constitutes a major modification to small commercial fishing vessels and, once developed, will consult with safety partners and industry. TC aims to have this criteria developed and available by 2025, depending on the degree of feedback received. In the meantime, TC will continue to spread awareness of best safety practices and potential safety issues related to major modifications, as well as promote its Small Vessel Compliance Program. It will also

continue to disseminate information regarding the impacts of major modifications, such as the recent publication of Ship Safety Bulletin 02/2024 addressing removable decks on fishing vessels.

The Board is encouraged by the steps taken by TC. Once developed, the TSB will assess the new criteria and review how they will be implemented and enforced. Therefore, the Board considers TC's response to Recommendation M23-06 to show **Satisfactory Intent**.

File status

The TSB will monitor the actions taken by Transport Canada.

This deficiency file is **Active**.