



TSB Recommendation M23-07

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

The Transportation Safety Board of Canada recommends that the Department of Transport require that planned modifications to small fishing vessels and other small commercial vessels be assessed by a competent person, that all records of modifications to these vessels be maintained, and that the records be made available to the Department.

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 in Part
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

TC does not require authorized representatives (ARs) to seek pre-approval or assessment of planned modifications, which could also assist in identifying whether a modification is likely to negatively affect stability. In contrast, the United Kingdom requires that owners of fishing vessels seek approval from the Maritime and Coastguard Agency before carrying out modifications.¹ There is no consistent understanding of what constitutes a major modification for small commercial vessels in Canada,² and the true scope of this issue is difficult to quantify. In its 2016 regulatory impact analysis statement, TC estimated that 25% of fishing vessels

¹ UK Maritime and Coastguard Agency, Statutory guidance MIN 593 "Amendment 1 Vessel Modifications – pre-approval by MCA" (15 February 2022), at <https://www.gov.uk/government/publications/min-593-f-amendment-1-vessel-modifications-pre-approval-by-mca/min-593-amendment-1-vessel-modifications-pre-approval-by-mca> (last accessed on 19 October 2023).

² Small commercial vessels in this context are fishing vessels of 150 GT and under and other commercial vessels of 15 GT and under.

would make major modifications,³ whereas Fish Safe NS estimated that most fishing vessels in Nova Scotia have made unreported modifications. In addition, TSB investigations have routinely identified vessels to which major modifications were made and not identified.⁴

While ARs are responsible for vessel safety, TC is responsible for regulatory surveillance. A systematic assessment by a competent person of all planned modifications, as is done in other countries, can assist in identifying which are major modifications and when stability assessments are required. Regulatory surveillance gives TC an opportunity to evaluate records of modifications. As many small fishing vessels and other small commercial vessels change hands, having an established record of modifications can help ensure that ARs, masters, and TC have complete and current information when evaluating vessel stability.

To help ARs, masters, and TC inspectors verify that vessels are operating with adequate stability, the Board recommended that

the Department of Transport require that planned modifications to small fishing vessels and other small commercial vessels be assessed by a competent person, that all records of modifications to these vessels be maintained, and that the records be made available to the Department.

TSB Recommendation M23-07

Previous responses and assessments

N/A

Latest response and assessment

February 2024: response from Transport Canada

Transport Canada (TC) agrees with the safety recommendation M23-07. The Department recognizes the impact modifications may have on the overall safety of small commercial vessels, particularly if undertaken without a formal assessment to determine the impacts they may have on the vessel's stability. Official records of any such modifications are especially important for both new vessel owners and TC inspectors to understand the vessel's design history, so they may evaluate if a reassessment of the vessel's stability is necessary for it to safely execute its intended operations.

In July 2017, TC's *Fishing Vessel Safety Regulations* (FVSR) entered into force. These regulations require that the authorized representatives of small fishing vessels—those that are less than 24.4 metres in length and not more than 150 gross tonnage—maintain a record of any modifications or series of modifications which may have altered or impacted the vessel's

³ Government of Canada, *Canada Gazette*, Part 1, Vol. 150, No. 6 (06 February 2016), "One-for-One" Rule, Regulations Amending the *Small Fishing Inspection Regulations*: Regulatory Impact Analysis Statement.

⁴ For recent examples, see TSB marine transportation safety investigation reports M21P0229, M20A0434, M20A0160, M19A0030, M19A0025, M18A0425, M15A0189, M15P0286, and M00C0033.

stability. These are recorded on a standardized Fishing Vessel Record of Modifications Affecting Stability form, where the authorized representative outlines their vessel's details and describes what type of modification was put in place (changes to the vessel's deck, electronics, hull, etc.), as well as if it resulted in any changes to the vessel's tonnage or size.

This record must be kept on board the vessel and made available to TC inspectors upon request during an inspection. Should the inspector determine that any listed modification was major in nature (i.e., it was a modification or repair which substantially changed the vessel's capacity or size, or which affected its watertight integrity or stability) but was not recorded as such by the vessel's authorized representative, the vessel must undergo a stability reassessment. Any stability reassessment must be carried out by a competent person/organization, as defined in the FVSR. Further, as per requirements under section 58 of the *Canada Shipping Act, 2001*, any modifications which change a vessel to the extent where it no longer corresponds with the description set for it on its certificate of registry must be reported to Transport Canada directly within 30 days of the alteration being made.

Although TC has issued guidance to assist inspectors, as well as authorized representatives of fishing vessels, in determining if any changes to a vessel would be considered a major modification, and thus require a stability reassessment, this determination is based on qualitative analyses, without objective criteria in place which fully define what constitutes a major modification. In response to the Transportation Safety Board's Recommendation M23-06, Transport Canada has committed to initiating a third-party research contract in 2024 to develop criteria for what constitutes a major modification to a small commercial vessel.⁵ Once these criteria are defined and publicly available, small vessel owners and operators will have clear direction as to which planned modifications would require a stability reassessment from a competent person. These criteria will also provide TC inspectors, while on board a vessel, with an objective basis to determine if any recent changes will require the vessel to undergo a stability reassessment before it may be permitted to continue its intended operations.

May 2024: TSB assessment of the response (Satisfactory in Part)

Transport Canada (TC) indicates that it agrees with this recommendation. The Department highlights that the current *Fishing Vessel Safety Regulations* require fishing vessels that are under 24.4 metres in length and less than 150 gross tonnage to maintain a record of modifications which may have altered the vessel's stability. This record must be kept on board the vessel and made available upon request during an inspection. If the inspector determines a major modification was not recorded as such, the vessel must undergo a stability reassessment. Additionally, TC mentions that the *Canada Shipping Act, 2001* requires all vessel owners to report any modifications which alter a vessel beyond its description set on its certificate of registry to Transport Canada within 30 days of the alterations.

⁵ TC confirmed that the research contract would apply to small fishing vessels only.

To address Recommendation M23-06, TC will initiate a third-party research contract to develop criteria to define what constitutes major modifications to small commercial fishing vessels, which will then be used to support the determination of stability reassessments as described in Recommendation M23-07. TC believes these objective criteria will better assist its inspectors during inspections in determining what constitutes a major modification, as inspectors currently rely on a qualitative review of a vessel and any modifications that have been made.

While the Board agrees that the criteria will help inspectors and authorized representatives better assess new vessel alterations, it remains concerned that there may be circumstances where the records are not available to TC inspectors. This is particularly the case for non-fishing vessels, which do not have a requirement to maintain a record of modifications. Additionally, the Board is concerned about the effects of cumulative small modifications, as authorized representatives may lack the training required to fully evaluate the stability implications; a competent person would be able to examine the history of changes on a vessel to evaluate the cumulative effects. Finally, while quantitative criteria will assist in determining when a modification is major, authorized representatives will still be asked to make the determination. Without proper assessment by a competent person, the Board believes many small vessels will remain at risk of stability issues. Therefore, the Board considers TC's response to Recommendation M23-07 to be **Satisfactory in Part**.

File status

The TSB will monitor the actions taken by Transport Canada.

This deficiency file is **Active**.