



REASSESSMENT OF THE RESPONSE TO TSB RECOMMENDATION M16-02

Adequate stability information for crews on small fishing vessels that have previously been assessed for stability

Background

On 05 September 2015, the fishing vessel *Caledonian* capsized 20 nautical miles west of Nootka Sound, British Columbia. At the time, the vessel was trawling for hake with 4 crew members on board. Following the capsizing, the master and mate climbed onto the overturned hull and remained there for several hours. When the vessel eventually sank, the master and mate abandoned it, and the mate swam toward and boarded the life raft. The Canadian Coast Guard subsequently rescued the mate and recovered the bodies of the master and the 2 other crew members.

The Board concluded its investigation and released report M15P0286 on 14 December 2016.

TSB Recommendation M16-02 (December 2016)

Crews on fishing vessels need adequate stability information to enable them to determine safe operating limits. A fishing vessel may undergo major modifications at one or more times in its life, and it is always subject to many minor changes that accumulate over the years, contributing to changes in its lightship weight. These changes are not necessarily reflected in the vessel's stability calculations. The need for vessel crews to have easily understood, accessible, up-to-date stability information that can be adapted to the operations at hand will help to ensure that day-to-day operations are conducted safely.

In order for fishing vessel stability information to be adequate to meet the needs of crew:

- the vessel must have had its stability assessed according to a recognized standard that is appropriate to its size and operation;
- the information from that assessment must be analyzed/interpreted to determine safe operating limits (such as draft/freeboard, appropriate maximum cargo loads, sequences for loading, lifting, and stowing of cargo and gear, and for managing fuel consumption);
- these operating limits must be easily measurable and relevant to the vessel's operation;
- the information must be presented in a manner and format that enables it to be clearly understood and easily accessible to crew while working onboard;
- the information must be maintained so that it is current, and reviewed and amended as necessary to reflect changes to the vessel and/or its operations. For example, if the vessel starts exceeding its draft or freeboard limits, the loading limits may need to be

amended accordingly, or the reason for the change in draft (such as increased lightship weight) needs to be identified and rectified.

The *Caledonian* had a stability assessment and stability booklet prepared in 1976; however, the information in that booklet was outdated due to changes made to operational practices and an increase in the vessel's lightship weight that had accumulated over its 39 years of service. These factors reduced the vessel's freeboard and stability significantly, contributing to its capsizing and the loss of 3 lives.

Additionally, the *Caledonian's* stability booklet did not include an assessment of the effect of lifting bags of fish on deck with the boom, nor did it offer guidance or information sufficient to enable the assessment of load conditions that were different from those in the stability booklet. The basic information that was provided for this purpose was not in a user-friendly format and had not been interpreted to provide clear, safe operating limits.

The stability information available to the crew of the *Caledonian* was deemed to have met the applicable regulatory requirements. However, when compared against the elements of adequate stability information described above, only the requirement for the original stability assessment was fully satisfied.

The issue of adequate stability information for fishing vessels is not limited to large vessels; it extends to small fishing vessels (not more than 150 gross tonnage and not more than 24.4 metres in length) as well. In 1990, the Transportation Safety Board of Canada (TSB) identified a deficiency related to the adequacy of stability information in an occurrence involving the small fishing vessel *Le Bout De Ligne* and recommended that

The Department of Transport establish guidelines for stability booklets so that the information they contain is presented in a simple, clear, and practical format for end-users.

TSB Recommendation M94-33

Since then, the TSB has published over 100 investigation reports on accidents involving the loss of 120 lives on fishing vessels of all sizes. These reports highlight issues regarding stability, the need for stability assessments, and the need for adequate stability information for fishermen. However, the response to Recommendation M94-33 is still considered by the Board to be only Satisfactory in Part.

In its 2012 *Safety Issues Investigation into Fishing Safety in Canada* (SII), the TSB found that fishermen generally do not understand or use information in stability booklets and determine the stability of a vessel based only on experiencing its movements in a variety of operating conditions. During the SII, fishermen told the TSB that they do not understand how a stability booklet can make their operation safer. Without a simple, clear and practical format containing minimum freeboard limits, load limits, loading sequence, identified downflooding points, and minimum and maximum stability conditions, the stability booklet is considered to be of no use.

Under the *Small Fishing Vessel Inspection Regulations* (SFVIR), a portion of small fishing vessels have been required to undergo stability assessments and have stability booklets produced. However, the SFVIR do not address the regular monitoring of vessel lightship weight and do not include standards or guidelines to ensure that adequate vessel-specific stability information is provided for the use of fishermen.

In July 2016, in response to TSB Recommendation M94-33 and numerous others relating to fishing vessel stability, TC published, in the *Canada Gazette*, Part II, regulations to create new *Fishing Vessel Safety Regulations* (FVSR) and replace the SFVIR. However, these new regulations do not address the regular monitoring of vessel lightship weight or the provision of adequate stability information for small fishing vessels that had stability booklets produced under the old regulations.

Therefore, the Board recommended that

The Department of Transport establish standards for all small fishing vessels that have had a stability assessment to ensure their stability information is adequate and readily available to the crew.

TSB Recommendation M16-02

Transport Canada's response to Recommendation M16-02 (March 2018)

Transport Canada (TC) agrees with the recommendation. As of July 13, 2017, small fishing vessels required to undergo a mandatory stability assessment (new vessels, vessels that have undergone major modifications or a change in fishing activities) will be required to have a stability notice posted onboard. Grandfathered vessels will be required to have a stability notice if the vessel stability needs to be reassessed at some future time.

To remind vessel operators of their responsibilities, increase awareness and foster compliance, TC will review and reissue Ship Safety Bulletin (SSB) 01/2008. This bulletin will be updated and include emphasis on the importance of having accurate stability information and operational procedures. The revised bulletin will be sent before the start of the next fishing season in spring 2018.

During any inspection conducted in accordance with requirements of the FVSR, an inspector may review the vessel's stability information and require Authorized Representatives (AR) comply with any observed nonconformities. Therefore:

- TC, when providing instructional information to inspectors/surveyors as part of its training program, will place renewed emphasis on this aspect of vessel inspection.
- In addition, a Flagstatenet instruction to inspectors/surveyors will be issued regarding the review of the Fishing Vessel Modification History (as detailed in SSB 01/2008) as part of the TC procedure for inspecting and monitoring fishing vessels. The Flagstatenet will be sent prior to the start of the next fishing season in spring 2018.

TC will update its fishing vessel safety webpages to provide information on how to obtain Stability Notice templates. Samples of Stability Notices including guidelines on how to complete the templates will also be made available. These templates have already been presented to the fishing vessel stakeholders at the Transport Canada National Canadian Marine Advisory Council (CMAC). These will also be provided to the Transportation Safety Board (TSB) upon completion.

TSB assessment of Transport Canada's response to Recommendation M16-02 (March 2018)

Transport Canada indicates that it agrees with this recommendation. The TSB is encouraged by TC's proposed actions to provide stability notice templates and guidelines on how to complete them, to reissue SSB 01/2008, and to renew emphasis on stability booklets during inspections.

Once fully implemented, TC's actions should ensure that, for this category of small fishing vessels, fishermen have access to stability information that is current and continually updated to reflect any changes to the vessel and/or its operations, and that this information is used to provide user-friendly safe operating limits (stability notices) to crew. This will address the safety issue underlying the recommendation. The Board considers the response to the recommendation to show **Satisfactory Intent**.

Transport Canada's response to Recommendation M16-02 (January 2019)

Transport Canada (TC) agrees with the recommendation. TC continues to raise awareness about stability, including the risks of inadequate stability and vessel modifications.

To remind vessel operators of their responsibilities, increase awareness and foster compliance, TC has revised Ship Safety Bulletin (SSB) 01/2008 – "Fishing Vessel Safety: Record of Modifications." The bulletin is expected to be published in winter 2019.

TC is currently reviewing its inspector training program. Once complete, TC will place renewed emphasis on this aspect of vessel inspection when providing instructional information to inspectors/surveyors.

A FlagState.net instruction to inspectors/surveyors will be issued in spring 2019 regarding the review of the Fishing Vessel Modification History (as detailed in SSB 01/2008) as part of the TC procedure for inspecting and monitoring fishing vessels.

TC has updated its fishing vessel safety webpages to provide information on how to obtain Stability Notice templates, which have been developed in an easy-to-use format. Samples of Stability Notices, including guidelines on how to complete the templates, have also been made available: <https://www.tc.gc.ca/eng/marinesafety/how-obtain-stability-notice-templates-instructions.html>

The *Guidelines for Fishing Vessel Major Modifications or a Change in Activity* (TP 15392) and the *Adequate Stability and Safety Guidelines for Fishing Vessels* (TP 15393), developed jointly with the Canadian Independent Fish Harvesters Federation (CIFHF) and in consultation with the Canadian Marine Advisory Council (CMAC), were published on the TC Marine Safety Publications webpage and the TC Small Fishing Vessel Safety webpage on October 25, 2018.

At the National Canadian Marine Advisory Council meeting in November 2018, industry representatives agreed to support distribution of these guidelines to fish harvesters.

TSB reassessment of Transport Canada’s response to Recommendation M16-02 (March 2019)

The Board notes that Transport Canada (TC) has updated its website to include stability notice templates and guidelines for how to complete them and to renew the emphasis on stability booklets during inspections.

The Board also notes that TC has published the *Adequate Stability and Safety Guidelines for Fishing Vessels* (TP 15393) and the *Guidelines for Fishing Vessel Major Modifications or a Change in Activity* (TP 15392), which includes a Fishing Vessel Safety: Record of Modifications form.

Further to Transport Canada’s response of January 2019, TC has issued Ship Safety Bulletin (SSB) 03/2019 – “Fishing Vessel Safety Regulations: Stability, major modifications and record of modifications” to replace SSB 01/2008. TC is also reviewing its inspector-training program with emphasis on modification and stability as detailed in SSB 03/2019.

TC will issue instructions to inspectors/surveyors in spring 2019 with procedures for inspecting and monitoring fishing vessels concerning the review of the Fishing Vessel Modification History in the revised SSB 03/2019.

While the Board is encouraged by these actions, it remains concerned that the use of stability notice templates and the Fishing Vessel Safety: Record of Modifications form is voluntary. Voluntary use of these forms may not be sufficient to reduce the risk that stability information is inadequate and not presented in a manner and format that enables it to be clearly understood and easily accessible to crew while working onboard. The Board considers the response to the Recommendation M16-02 to show **Satisfactory Intent**.

Transport Canada’s response to Recommendation M16-02 (January 2020)

Transport Canada (TC) agrees with the recommendation. Section 3.12 of the *Fishing Vessel Safety Regulations* requires that the record of modification affecting stability shall be in the form and manner specified by the Minister.

TC issued Ship Safety Bulletin (SSB) 03/2019 “Fishing Vessel Safety Regulations: Stability, major modifications and record of modifications” in February 2019 which included an attachment to be used as the prescribed form to record modifications. As the SSB indicates that the form will be reviewed and modifications will be discussed with the owner during an inspection, a subsequent FlagStateNet was no longer deemed necessary.

The use of the TC stability notice templates is voluntary and the competent person or the authorized representative may choose to use another template, as appropriate. However, the creation of a stability notice is mandatory per the requirements of the regulations for all vessels subject to a stability assessment. As prescribed by the regulations, the stability notice must set out:

- (i) the stability standards that were applied to the vessel for the stability assessment,
- (ii) a graphical representation, including a description or legend, of the operational practices necessary to operate the vessel within the safe operating limits set out in the vessel’s stability booklet or record of stability, and
- (iii) a statement indicating whether the vessel has been assessed for operations in freezing spray conditions.

As the implementation and oversight of the new requirements related to stability (e.g. record of modifications, stability assessment, stability notice) continue, TC is placing added emphasis on the verification of these elements during vessel inspections.

TSB reassessment of Transport Canada's response to Recommendation M16-02 (March 2020)

The Board notes that Transport Canada (TC) issued Ship Safety Bulletin (SSB) 03/2019 "Fishing Vessel Safety Regulations: Stability, major modifications and record of modifications" in February 2019. The Board also notes that the mandatory stability assessment and stability notice is only applicable to new vessels, vessels that have undergone a major modification, or vessels that have changed fishing activities. Furthermore, the Board also notes that the use of the form and stability notice template is voluntary, but the information contained within these documents to ensure vessel stability is easily understood by the operator is not.

However, TC has not provided sufficient data that would indicate the number of small fishing vessels previously assessed for stability. In addition, small fishing vessels are not regularly inspected by TC and, as a result, there is no assurance that these small fishing vessel owners and operators are aware of the requirements of SSB 03/2019. The Board is therefore concerned that there remain small fishing vessels that have had a stability assessment but for which the stability information is inadequate and not readily available to the crew.

The Board considers the response to the recommendation to show **Satisfactory Intent**.

Next TSB action

The TSB will monitor the results of TC's implementation of the new requirements related to stability and the verification during vessel inspections.

This deficiency file is **Active**.