



## TSB Recommendation M16-02

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

The Transportation Safety Board of Canada recommends 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.

Marine transportation safety investigation report	<a href="#">M15P0286</a>
Date the recommendation was issued	14 December 2016
Date of the latest response	December 2022
Date of the latest assessment	March 2023
<a href="#">Rating</a> of the latest response	Satisfactory in Part
<a href="#">File status</a>	Active

#### Summary of the occurrence

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.

#### Rationale for the recommendation

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**

## Previous responses and assessments

### March 2018: response from Transport Canada

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.

### March 2018: TSB assessment of the response (Satisfactory Intent)

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**.

## January 2019: response from Transport Canada

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.

## March 2019: TSB assessment of the response (Satisfactory Intent)

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 Recommendation M16-02 to show **Satisfactory Intent**.

### **January 2020: response from Transport Canada**

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:

- the stability standards that were applied to the vessel for the stability assessment,
- 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
- 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.

### **March 2020: TSB assessment of the response (Satisfactory Intent)**

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**.

### **February 2021: response from Transport Canada**

Transport Canada agrees with the recommendation, but does not agree with the Transportation Safety Board's March 2020 comment that notes that this recommendation may not be satisfied due to small fishing vessels not being regularly inspected. The department's *Fishing Vessel Safety Regulations (FVSR)* indicate that the stability of a vessel must conform to the selected recommended practices and standards. Section 3.12 of the *Fishing Vessel Safety Regulations* indicates that the authorized representative of a fishing vessel shall ensure that a record is kept of any modification or series of modifications that affects the stability of the vessel and that the record shall be in the form and manner specified by the Minister. As the implementation and oversight of new stability requirements continue, Transport Canada is placing additional emphasis on the verification of stability notices, records of modifications, and stability assessments during vessel inspections.

The Transportation Safety Board's March 2020 reassessment indicated that there is no assurance that all small fishing vessel owners and operators are aware of the requirements of SSB 03/2019 (and thus, the attachment form to record modifications), as small fishing vessels are not regularly inspected. Transport Canada would like to note that Ship Safety Bulletins are easily accessible from the department's webpage and can be sent directly to small fishing vessel owners who have signed up for the e-bulletin. To make the best use of resources and focus on areas of higher risk, the inspection of fishing vessels below 15 gross tonnage (GT) is risk-based and the department continues to design outcome and performance-based regulations where appropriate with the view of minimizing the regulatory burden imposed on small businesses and Canadians. Under the *Canada Shipping Act, 2001*, the onus for compliance falls to the vessel's authorized representatives. In fulfilling this obligation authorized representatives should be aware of regulations and safety publications.

The department is currently reviewing its inspection requirements. The *Canadian Vessel Plan Approval and Inspection Standard*, which was presented at the fall 2020 national Canadian Marine Advisory Council meeting (CMAC), will be issued when the *Vessel Safety Certificate Regulations* come into force in spring 2022. Instructions will verify the presence of the stability notice when required by the *Fishing Vessel Safety Regulations*. Instructions will also be sent to

inspectors regarding the same verification when performing risk-based inspections of fishing vessels below 15 gross tonnage (GT).

### **March 2021: TSB assessment of the response (Satisfactory in Part)**

Transport Canada's (TC) response notes its disagreement with the TSB's statement that the recommendation may not be satisfied due to small fishing vessels not being regularly inspected by TC. The department's response emphasizes that it is up to the vessel's authorized representative to be aware of regulations and safety publications, which includes keeping a record of modifications that affect the stability of the vessel. TC indicates that these regulations and safety publications are easily accessible from the department's webpage and that they can be sent directly to small fishing vessel owners who have signed up for the e-bulletin.

TC also indicates that it will be placing additional emphasis on the verification of stability notices, records of modifications, and stability assessments during vessel inspections. The department is currently reviewing its inspection requirements and developing the *Canadian Vessel Plan Approval and Inspection Standard* that will be issued when the *Vessel Safety Certificate Regulations* come into force in spring 2022.

The Board notes that the mandatory stability assessment and stability notice are only applicable to new vessels, vessels that have undergone a major modification, or vessels that have changed fishing activities. The requirement to prepare and post a stability notice does not apply to vessels which have stability assessments but have not undergone major modifications.

The Board considers that the format for stability notices developed by TC will improve safety by making stability information more easily understood by vessel crews. However, the Board notes that while Ship Safety Bulletins and other tools are available on the TC website, they will only be viewed by fish harvesters who are aware of the resource. In addition, Ship Safety Bulletins and other online tools will remain inaccessible to vessel owners that lack the appropriate technological resources and knowledge. The Board remains concerned that without some verification by TC, such as would occur during an inspection, there is no assurance that all small fishing vessel owners, authorized representatives, and operators are aware of the requirements. Finally, TC has not provided sufficient data to indicate the number of small fishing vessels that have been assessed for stability. The Board's concern thus remains that there are small fishing vessels that have had a stability assessment but for which the stability information is inadequate and not readily available to the crew.

Therefore, the response to Recommendation M16-02 is considered to be **Satisfactory in Part**.

### **December 2021: response from Transport Canada**

Transport Canada agrees with the recommendation, and notes the comment made in the Transportation Safety Board's March 2021 reassessment.

Transport Canada would like to reiterate that Ship Safety Bulletins are easily accessible from the department's webpage and can be sent directly to small fishing vessel owners who have



signed up for the e-bulletin. Regarding oversight of small fishing vessels, the department has determined that to make the best use of resources and focus on areas of higher risk, the inspection of fishing vessels below 15 gross tonnage (GT) is risk-based and the department continues to design outcome and performance-based regulations where appropriate with the view of minimizing the regulatory burden imposed on small businesses and Canadians. Under the *Canada Shipping Act, 2001*, the onus for compliance falls to the vessel's authorized representatives. In fulfilling this obligation authorized representatives should be aware of regulations and safety publications.

TC's *Fishing Vessel Safety Regulations (FVSR)* indicate that the stability of a vessel must conform to the selected recommended practices and standards. Section 3.12 of the *Fishing Vessel Safety Regulations* indicates that the authorized representative of a fishing vessel shall ensure that a record is kept of any modification or series of modifications that affects the stability of the vessel and that the record shall be in the form and manner specified by the Minister. As the implementation and oversight of new stability requirements continue, Transport Canada is placing additional emphasis on the verification of stability notices, records of modifications, and stability assessments during vessel inspections. Although the mandatory stability assessment and stability notice are only applicable to new vessels, SSB 03/2019 strongly suggests that all owners or masters of commercial fishing [vessels] follow these new requirements.

Transport Canada released this summer the new TP15456 - Canadian Vessel Plan Approval and Inspection Standard, together with the new *Vessel Safety Certificate Regulations*. Using these new regulatory instruments TC will continue to work to further develop its inspection procedure, including the process for verification of the availability of the vessel stability information and the record of modifications during the inspection.

As well, for the small fishing vessel fleet, TC released the Web Application to enable the fishing industry to enroll within our Small Vessel Compliance Program for Fishing (small fishing vessel, less than 15 GT). Over the winter TC will continue its direct outreach to fishing industry association and fishing vessels operators to encourage participation in the program. The program is an easy to use all in one tool that enables owner and operator of small fishing vessel to understand the requirements of the regulations while promoting the safety culture. The programs come with a detail compliance report, a guidance TP and an orange decal, once the enrolment process is completed. See Small Vessel Compliance Program at <https://tc.canada.ca/en/programs/small-vessel-compliance-program>.

### **March 2022: TSB assessment of the response (Satisfactory in Part)**

Transport Canada's (TC) response restates the availability of Ship Safety Bulletins (SSB) on its website, its risk-based approach to small vessel inspections, and the additional emphasis placed on the verification of stability information during vessel inspections. The department also highlights its new web application for the Small Vessel Compliance Program and its release of TP15456 - *Canadian Vessel Plan Approval and Inspection Standard*.

While the Board considers that the format for stability notices developed by TC will improve safety by making stability information more easily understood by vessel crews, it notes that the mandatory stability assessment and stability notice are only applicable to new vessels, vessels that have undergone a major modification, or vessels that have changed fishing activities. The requirement to prepare and post a stability notice does not apply to vessels that have stability assessments but have not undergone major modifications.

Additionally, the Board would like to reiterate that while SSBs and other tools are available on the TC website, they will only be viewed by fish harvesters who are aware of the tools. In addition, vessel owners who lack the appropriate technological resources and knowledge will be unable to access the tools. The Board remains concerned that without some verification, there is no assurance that all small fishing vessel owners, authorized representatives, and operators are aware of, or complying with, the requirements. Thus, there are small fishing vessels that have had a stability assessment, but for which the stability information is inadequate and not readily available to the crew.

Therefore, the Board considers the response to Recommendation M16-02 to be **Satisfactory in Part**.

## Latest response and assessment

### December 2022: response from Transport Canada

Since the last report, Transport Canada has undertaken several initiatives to address TSB's assessment that "without some verification, there is no assurance that all small fishing vessel owners, authorized representatives, and operators are aware of, or complying with, the requirements".<sup>1</sup>

Several initiatives are currently underway in partnership with the Department of Fisheries and Oceans (DFO).

- Collaboration is ongoing to share database information to ensure all vessels receiving DFO fishing licenses are first registered with TC, which is the first point of access to ensure that vessel safety requirements are communicated and enforced.
- A targeted campaign is underway to promote enrollment in the Small Vessel Compliance Program – Fishing (SVCP-F), with enrollment information outlined on a postcard for vessels in receipt of fishing licenses.
- External stakeholders are being engaged on potential amendments to existing vessel registration policies in the inshore fleet (<65') in Atlantic Canada and Quebec. Transport Canada is leveraging the opportunity provided by this engagement to provide up-to-date information to DFO Inshore Licence Holders on their obligations

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<sup>1</sup> All responses are those of the stakeholders to the TSB in written communications and are reproduced in full. The TSB corrects typographical errors in the material it reproduces without indication but uses brackets [ ] to show other changes or to show that part of the response was omitted because it was not pertinent.

with respect to vessel registration, construction and equipment, with a specific emphasis on stability assessments.

Transport Canada is developing a Fishing Vessel Safety Guide for small fishing vessels aimed to promote and strengthen safety culture for the fishing industry. The Guide will consolidate key safety and regulatory information and provide guidance to fishing vessel owners and fishers on their regulatory obligations as well as best practices.

As part of Transport Canada's risk-based oversight regime, regulatory surveillance for 2022–23 has had a special emphasis on small vessels under 15 GT. Ongoing and targeted inspections are being undertaken to ensure fishing vessels are properly registered and in compliance with regulations under CSA 2001.

### **March 2023: TSB assessment of the response (Satisfactory in Part)**

Transport Canada's (TC) response highlights the collaborative work the department is undertaking with the Department of Fisheries and Oceans (DFO), which includes sharing fishing license database information, a targeted campaign to promote enrollment in the Small Vessel Compliance Program – Fishing, and engaging with external stakeholders on potential amendments to existing vessel registration policies in the inshore fleet in Atlantic Canada and Quebec. TC is also developing a fishing vessel safety guide to provide safety and regulatory information to small fishing vessel owners and is currently carrying out targeted inspections on small vessels under 15GT.

While the Board considers these initiatives to be helpful in aiding commercial fish harvesters to understand applicable regulations, they do not directly address the safety deficiency underlying this recommendation. The Board has previously concluded that the format for stability notices developed by TC will improve safety by making stability information more easily understood by vessel crews. However, it continues to note that the mandatory stability assessment and stability notice are only applicable to new vessels, vessels that have undergone a major modification, or vessels that have changed fishing activities. The requirement to prepare and post a stability notice does not apply to vessels that have stability assessments but have not undergone major modifications. This continues to leave a large number of existing fishing vessels that might not have adequate and readily available stability information for their crews and relies on those vessels' owners to voluntarily provide it in a simple, clear, and practical format.

Therefore, the Board considers the response to Recommendation M16-02 to be **Satisfactory in Part**.

### **File status**

The TSB will continue to monitor Transport Canada's proposed actions.

This deficiency file is **Active**.