



TSB Recommendation M95-10

Demonstration of BRM by all navigation officers prior to receiving a Continued Proficiency Certificate

The Transportation Safety Board of Canada recommends that the Department of Transport require that all ship officers demonstrate skills in Bridge Resource Management before being issued Continued Proficiency Certificates.

Marine transportation safety investigation report	SM9501
Date the recommendation was issued	11 October 1995
Date of the latest response	December 2022
Date of the latest assessment	March 2023
Rating of the latest response	Unsatisfactory
File status	Active

Summary of the occurrence

The Transportation Safety Board of Canada (TSB) has released the final report on its *Safety Study of the Operational Relationship Between Ship Masters/Watchkeeping Officers and Marine Pilots*. This study examined safety deficiencies associated with teamwork on the bridge, including communications between marine pilots and masters/officers of the watch (OOW) on Canadian and foreign vessels, over 5,000 gross registered tons, that were under the conduct of pilots in Canadian pilotage waters.

The study was done in two phases. The first phase involved analyzing 273 occurrences where vessels were under the conduct of a pilot in Canadian pilotage waters; most of these involved misunderstandings, inattention or a lack of communications. Vessels greater than 5,000 gross registered tons were involved in 87% of these 273 occurrences.

The 273 occurrences were made up of five types:

- **Collisions:** 43 collisions with another vessel underway;
- **Groundings:** 88 vessels struck shoals, touched bottom or an underwater reef and remained stranded until refloated;
- **Strikings:** 95 vessels struck a stationary object, such as a vessel not underway, a quay or other fixed installation;
- **Contacts:** 46 light impacts with another vessel, marker, buoy or the bottom; and
- **Sinking:** 1 vessel became submerged from water intake below the water line and settled to the bottom.

The Board, concerned by the frequency and potential consequences of such occurrences, conducted a preliminary examination consisting of a review of these 273 occurrences. For each occurrence, the most significant factor contributing to the occurrence was identified.

There were 200 accidents identified as involving human factors, and 84 (42%) involved misunderstanding between pilot and master, inattention by the pilot or the officer of the watch (OOW) or a lack of communication between the pilot and the OOW. In addition, 91 (46%) involved misjudgment by the pilot or master. Breakdowns in communication or teamwork on the bridge appear to be implicated in many of these marine occurrences.

As a result of its preliminary examination, the Board decided to study the conditions or practices which lead to such breakdowns, with a view to identifying safety deficiencies.

In the second phase, a questionnaire was distributed to 1,300 individuals including pilots, masters and ship officers to identify issues relevant to the interaction among the bridge team. After the responses to the questionnaire were analyzed, supplemental interviews were conducted with representatives from pilotage authorities, the shipping industry and the Canadian Coast Guard. In addition, recent occurrences were reviewed in light of the information gleaned from the results of the questionnaire. Some of the key findings that came out of the study included: inadequacy of bridge teamwork; reluctance of bridge crew to question pilot's decisions; inadequacy of information being passed between pilots and masters/OOWs and masters/OOWs and pilots; misperceptions that the other party has the necessary information; inadequate knowledge of the operating language preventing effective communication between the pilot and bridge crew; disagreement on the extent to which the OOW monitors the vessel's conduct while under the control of a pilot; and the absence of Bridge Resource Management (BRM) training in Canada.

The Board found that differences in perceptions and expectations between pilots and masters/OOWs contribute to a lack of mutual understanding between the groups. Because of the potentially serious consequences of these misunderstandings, the Board felt that strong measures were required to improve bridge team effectiveness through enhanced information exchange and made two recommendations to that effect: one concerning a formal exchange of information between the master and the pilot before the pilot commences duty, and the other concerning training for Canadian pilots and ship officers to include practice on hand-over procedures.

The TSB considers that close and continuous monitoring of a vessel's progress following an agreed passage plan is essential for the safe conduct of a vessel. In order for OOWs to effectively monitor the vessel's movements, they should know the pilot's passage plan. In December 1994, the TSB issued a recommendation to Transport Canada (TC) to require pilotage authorities to publish official passage plans for compulsory pilotage waters in order to facilitate monitoring of the pilot's actions by the vessel's bridge team. The Board has now further recommended that pilots, as part of their hand-over briefing, obtain the master's agreement to the intended passage plan and invite the OOW to monitor the vessel's position at regular intervals with respect to the agreed plan. BRM, the managing of human and technical resources in an operational marine environment, is a function comprising several elements. These include the application of effective communication, the use of briefings and debriefings, and the creation of an environment where all members of the bridge team feel free to question assumptions and actions.

The Board concluded its investigation and released report SM9501 on 11 October 1995.

Rationale for the recommendation

Misunderstanding among the bridge team, lack of adequate information exchange, incomplete understanding of the intended manoeuvres, loss of situational awareness, absence of monitoring of the ship's progress, etc., as evidenced by the Canadian marine occurrence experience, are symptomatic of more fundamental problems in bridge practices. Such factors suggest deficiencies in the effectiveness of current bridge team management practices in compulsory pilotage areas.

A lack of teamwork on the bridge of vessels in Canadian pilotage waters is continuing to compromise safe navigation. The recent occurrences involving the *Concert Express*, the *Lake Anina*, the *Malinska*, the *Halifax*, and the *Irving Nordic* all point to a lack of communication and cooperation as contributing factors in the occurrences.

As it has stated in the past, the Board continues to believe that increased emphasis on information exchange and coordination could improve bridge team management and therefore advance safe navigation. Systematic instruction of ship officers and marine pilots in operating practices and procedures designed to facilitate information exchange and coordination among all members of the bridge team is required.

The overwhelming majority of pilots, masters and bridge officers who responded to the Board's questionnaire rated teamwork as important as technical proficiency for safe navigation. However, less than half of those who responded stated that they always worked as a team. The accident record confirms that current bridge procedures and practices frequently reflect an absence of teamwork.

In rejecting the Board's Recommendation M94-34 regarding passage planning, the Department of Transport stated (22 March 1995):

However, it is believed that a more effective bridge resource management regime (including enhanced communication between the pilot and the officer of the watch), rather than a voyage plan, may potentially have contributed to the incident being avoided.

The Board notes the intention of the Department of Transport to develop optional training courses in Bridge Resource Management. However, the Board is concerned that optional training might not have the desired effect within the industry. Not all the major constituents of the marine industry have indicated strong support for such training.

Bridge Resource Management, the managing of human and technical resources in an operational marine environment, is a function comprising several elements. These include the application of effective communication, the use of briefings and debriefings, and the creation of an environment where all members of the bridge team feel free to question assumptions and actions.

As a result of the problems identified in this study relating to the absence of handover briefings, the ineffective monitoring of the vessel's position and in view of the frequency of occurrences involving demonstrated breaches of sound teamwork principles, the Board recommends that

the Department of Transport require that all ship officers demonstrate skills in Bridge Resource Management before being issued Continued Proficiency Certificates.

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Previous responses and assessments

January 1996: response from Transport Canada

The current *Masters and Mates Examination Regulations* do not deal with Continued Proficiency. The "Certification Regulations," which have been published in the *Canada Gazette*, Part I, deal with Continued Proficiency. These latter Regulations, once in effect, will initiate the Continued Proficiency process for Canadian certificates of competency.

The section of the *Certification Regulations* dealing with Continued Proficiency does not currently require any demonstration of proficiency for serving seafarers. Appropriate Continued Proficiency examinations or courses are only required by those seafarers who do not qualify under the service options.

There has been some informal discussion at CMAC meetings on the requirement for some type of compulsory courses or examination in safety critical items, as a part of the Continued Proficiency process. These, however, have not yet been formalized to the extent they have become an agenda item for a sub-committee meeting.

The Minister of Transport accepts the recommendation.

The Department of Transport will promote the development and provision of Bridge Resource Management training courses by marine training institutions in Canada. There can be a requirement for prior completion of an approved Bridge Resource Management training course when they are available in Canada. The Department of Transport will phase in this requirement consecutively for certificate groups (MM, CFGS, ONI, CNI, and CP for this group), (ON2, CN2, WKM, and CP for this group), and (CFLR, 1MFLR, CHT350, CHT350S, and CP for this group), (CFV1, CFV2, and CP for this group).

March 1996: TSB assessment of the response (Satisfactory in Part)

Recommendations M95-09 and M95-10 state that current radar courses address issues related to BRM training, recent discussion by the staff with a radar instructor from the Institute Maritime du Quebec (IMQ) pointed out that very little time is actually devoted to BRM during the SEN I and SEN II courses. (SEN I course focuses on anti-collision while SEN II course includes radar navigation and anti-collision.) Consequently, the IMQ is preparing BRM courses as distinct training for pilots, ship masters and officers. Furthermore, although there are presently no compulsory requirements for BRM training, TC intends to promote the development and the provision of BRM training courses and plans to phase in such requirements starting with higher level certificates.

Concerning Recommendation M95-11, TC and Pilotage authorities intend to promote the inclusion of a BRM training course for applicants and holders of pilot licences and pilotage certificates. So far, TC prefers to include such a requirement in the certificates of competency and continued proficiency endorsements. Although TC's response does not provide any specific action plan and falls short of compulsory BRM, it is viewed as a positive approach.

The TSB considers TC's response to Recommendation M95-10 (as well as to recommendations M95-09 and M95-11) to be **Satisfactory in Part**.

January 2014: response from Transport Canada

According to the STCW Convention, there is no requirement to mandate BRM training for the renewal of certificates of competency. The BRM is only mandated for the issuance of a certificate of competency.

However, in accordance with Regulation I/14 of the STCW Convention and sections 205 & 206 of the *Marine Personnel Regulations*, companies are responsible for the assignment of seafarers for service on their ships and must ensure that seafarers assigned to any ships have received refresher and updated training as required by the Convention and that the seafarers assigned to any of their ships, are familiarized with their specific duties and all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to the routine or emergency duties.

March 2014: TSB assessment of the response (Satisfactory in Part)

Among the STCW Manila amendments in 2010 was the requirement to introduce mandatory training in resource management, leadership and teamworking skills at the operational level, and leadership and managerial skills at management levels. Seafarers holding certificates issued in accordance with the provisions of STCW will have to complete the necessary training to obtain their certificate of competency by 01 January 2017. While it is noted that TC is taking measures to ensure that seafarers seeking new certificates of competency will be required to have BRM training, there was no information to indicate whether holders of the existing certificates of competency will be grandfathered, and thus not required to have any BRM continued proficiency training.

Therefore the assessment of the response to Recommendation M95-10 remains **Satisfactory in Part**.

December 2014: response from Transport Canada

Transport Canada's response reiterated information provided in its response of January 2014 and indicated the following:

According to the STCW Convention, there is no requirement to mandate BRM training for the renewal of certificates of competency. The BRM is only mandated for the issuance of a certificate of competency.

However, in accordance with Regulation I/14 of the STCW Convention and sections 205 & 206 of the *Marine Personnel Regulations*, companies are responsible for the assignment of seafarers for service on their ships and must ensure that seafarers assigned to any ships have received refresher and updated training as required by the Convention and that the seafarers assigned to any of their ships, are familiarized with their specific duties and all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to the routing [*sic*] or emergency duties.

Drafting of the MPR began in September 2014. TC is aiming to publish in the *Canada Gazette*, Part I, the proposed amendments to the MPR by the end of 2015. Once in force, this will apply to new and renewed certificates.

March 2015: TSB assessment of the response (Satisfactory Intent)

TC's response indicated little new substantive information. In accordance with the international STCW Convention requirement for BRM training, which is for new certificates of competency only, the proposed amendments to the *Marine Personnel Regulations* will require BRM training

to be mandatory for obtaining new certificates of competency. However, taking into account that companies are also responsible under the Convention to ensure that crews receive refresher and updated training, and for effective communication on board the vessel, and recognizing that there are more seafarers who have received BRM training since the recommendation was issued, once TC amends the regulations to give effect to the STCW requirement for BRM training, the safety deficiency identified in the recommendation will be substantially mitigated.

Therefore the assessment of the response to Recommendation M95-10 is changed to **Satisfactory Intent**.

March 2016: response from Transport Canada

Transport Canada's response indicated that it is in the process of amending TP4958, *Simulated Electronic Navigation Courses*. The amendments will require BRM competency and knowledge to be added to the Simulated Electronic Navigation (SEN) at the operational level training course (for OOWs) and at the management level (for masters and mates). A status on the amendment is to be presented at the April 2016 meeting of the Canadian Marine Advisory Council, and it is expected that a draft of the TP will be available by September 2016.

The response also noted that drafting of the *Marine Personnel Regulations* began in September 2014 and TC is aiming to publish its proposed amendments to the MPR by the end of 2016. Once in force, the amendments to the MPR will apply to both new and renewed certificates.

March 2016: TSB assessment of the response (Satisfactory Intent)

Once the changes to TP 4958, *Simulated Electronic Navigation Courses* are in force, mandatory training in BRM will be incorporated into all SEN courses, which is required for new and renewed certificates. Once TC requires all ship officers to demonstrate skills in BRM before being issued Continued Proficiency Certificates, the safety deficiency underlying this recommendation will be addressed.

Therefore, the assessment of the response remains **Satisfactory Intent**.

May 2016: response from Transport Canada

TC Marine Safety and Security presented the status of TP4958 at the April, 2016 CMAC. A draft of the TP4958 will be available by September 2016. In addition, there will also be a draft Leadership and Teamwork TP available in September 2016. The competency and knowledge outlined in the STCW 2010 with the Manila Amendments for Bridge Resource Management will be met at the operational level (Officer of the Watch) once a candidate has completed the Leadership and Teamwork training course (LTW) and Simulated Electronic Navigation at Operational Level (SEN-O) training course. Candidates at the Management level (Master and Chief Mate) will review the competency and knowledge for Bridge Resource Management in the Leadership and Managerial Skill course (LMS) and Simulated Electronic Navigation at Management Level (SEN-M).

TC Marine Safety and Security is aiming to publish the *Marine Personnel Regulations* in the *Canada Gazette*, Part I, by mid-2017. Once in force, the Leadership Training Courses will be mandatory only for a new Certificate of Competency.

In the interim a policy will be developed. This policy will require any candidate wishing to acquire a new or higher level Certificate of Competency to complete the required Leadership training course. It will also require the candidate to complete the required simulated electronic navigation training course for that level.

December 2016: response from Transport Canada

TC Marine Safety and Security presented the status of TP4958 at the April 2016 CMAC. A draft of the TP4958 is available for Course Providers to elaborate the new training. In addition, a draft TP of Leadership, Teamwork and Managerial Skills has been provided to Course Providers to elaborate the new trainings (sic) in Leadership and Teamwork and Leadership and Managerial Skills.

The competencies and knowledge related to watchkeeping officers outlined in STCW Convention (including 2010 Manila Amendments) for Bridge Resource Management will be met at the Operational level (Officer of the Watch) once a candidate has completed the Simulated Electronic Navigation training course at Operational Level (SEN-O) and the Leadership and Teamwork training course (LTW).

The competencies and knowledge related to Masters and Chief Mates outlined in STCW Convention (including 2010 Manila Amendments) for Bridge Resource Management will be met at the Management level once a candidate has completed the Simulated Electronic Navigation training course at Management Level (SEN-M) and the Leadership and Managerial Skills course (LMS).

Marine Safety and Security is aiming to publish the revised *Marine Personnel Regulations* (MPR) in the *Canada Gazette*, Part I, by 2018. Once the MPR in force, Leadership, Teamwork and Managerial Skill training Courses will be mandatory for a candidate who wish (sic) to obtain a new Certificate of Competency (CoC) or to upgrade his current CoC to a higher CoC.

In the interim, a policy has been developed by TC Marine Safety and Security to implement, immediately after January 1st 2017, the mandatory requirements for Leadership, Teamwork and Managerial Skill training Courses. This policy requires that any candidate wishing to acquire a new CoC or to upgrade their current CoC to a higher CoC complete the relevant Leadership, Teamwork and Managerial Skill training Course.

March 2017: TSB assessment of the response (Satisfactory in Part)

TC has revised TP 4958 to elaborate the new training required for “Leadership, Teamwork and Managerial Skills” which will be mandatory for any candidate who wishes to obtain a new Certificate of Competency (CoC) or to upgrade his current CoC to a higher CoC. Once the proposed TP 4958 training curriculum is in force, the deficiency identified in M95-10 will be

addressed. As of 01 January 2017, TC has a policy in place that requires any candidate wishing to acquire a new CoC (i.e., for the first time) or to upgrade their current CoC to a higher CoC complete the relevant Leadership, Teamwork and Managerial Skill Training Course.

However, those candidates who are wishing to renew their CoC (required every five years) will still not be required to obtain training in BRM. Therefore, the assessment of the response has been changed to **Satisfactory in Part**.

December 2017: response from Transport Canada

Marine Safety and Security presented the status of TP 4958 at the April, 2016 CMAC. A draft of TP 4958 is available for course providers to aid with the new training. The competencies and knowledge outlined in TP 4958 related to watchkeeping officers outlined in STCW Convention (including 2010 Manila Amendments) for Bridge Resource Management will be met at the Operational level (Officer of the Watch) once a candidate has completed the Simulated Electronic Navigation training course at Operational Level (SEN-O). The competencies and knowledge related to Masters and Chief Mates outlined in STCW Convention (including 2010 Manila Amendments) for Bridge Resource Management will be met at the Management level once a candidate has completed the Simulated Electronic Navigation training course at Management Level (SEN-M).

In addition, a draft TP 15337 regarding Leadership, Teamwork and Managerial Skills has been provided to course providers to aid the new training in Leadership and Teamwork, and Leadership and Managerial Skills. Following the draft TP, since April 2017, several course providers in Canada have been approved to deliver these training courses. TC requires any seafarers who apply for a new Ministers CoC to comply with Leadership and Teamwork at operational level and Leadership and Managerial Skills at Managerial level.

The Bridge Resource Management course will also remain as a stand-alone training course in TP 13117 for the convenience of the seafarers.

March 2018: TSB assessment of the response (Satisfactory in Part)

Transport Canada began drafting the *Marine Personnel Regulations* (MPR) in September 2014 aiming to publish its proposed amendments to the MPR, such as the STCW Convention which included the 2010 Manila amendments, STCW-F and 2014 Amendments to the Maritime Labour Convention, 2006, by the end of 2016. After the latest consultation with stakeholders at CMAC on 20 April 2016, Transport Canada now anticipates a pre-publication of the MPR in the *Canada Gazette*, Part I, in late 2018.

As part of the regulatory amendment process TC also presented drafts of TP 4958, TP 15337 and TP 13117 to aid the course providers with the new training requirements.

Although, once in force, the amendments to the MPR will apply to both new and renewed Certificates of Competencies (CoC), TP 15337 will require only seafarers who apply for a new CoC to comply with Leadership and Teamwork at the operational level and Leadership and

Managerial Skills at the managerial level. However, this training requirement will not apply to existing seafarers who are required to have their CoC renewed once every 5 years, as TC considers these seafarers to be ‘grand-fathered’ and compliant with the STCW 2010 Manila amendments. TC has not provided the TSB with the number of seafarers exempt from this training requirement.

Therefore, the Board considers the response to the recommendation to be **Satisfactory in Part**.

January 2019: response from Transport Canada

Transport Canada agrees in part with the recommendation. Until such time that the *Marine Personnel Regulations* are amended, Transport Canada (TC) has included the new mandatory training requirements in Leadership and Teamwork, and Leadership and Managerial Skills in Ship Safety Bulletin 09/2017, issued on November 27, 2017, titled “Update on How to Meet the *International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers* (STCW), 2010 Manila Convention”.

Since January 1, 2017, Certificates of Competency have been issued only to individuals who have completed the required mandatory training, as per the STCW Convention and as identified in SSB 09/2017. TC is targeting to have the amendments to the *Marine Personnel Regulations* in the *Canada Gazette* process in spring 2019. The publication of these amendments are expected to satisfy the recommendation.

March 2019: TSB assessment of the response (Satisfactory in Part)

The Board notes that until the *Marine Personnel Regulations* are amended, TC has included the new mandatory training requirements in Leadership and Teamwork, and Leadership and Managerial Skills in Ship Safety Bulletin 09/2017.

However, the Board remains concerned that these requirements only apply to seafarers who apply for a new certificate of competency (CoC). The requirements do not apply to seafarers who renew their existing CoC (required every 5 years). TC has not provided the TSB with the number of seafarers who renewed their CoC versus the number that applied for a new CoC. Without this information, the Board is unable to assess the residual risk.

Therefore, the Board considers the response to the recommendation remains as **Satisfactory in Part**.

January 2020: response from Transport Canada

Transport Canada agrees with this recommendation. Regulations amending the *Marine Personnel Regulations* are now anticipated to advance to the *Canada Gazette*, Part I, in 2020.

March 2020: TSB assessment of the response (Satisfactory in Part)

The Board notes that, until the *Marine Personnel Regulations* are amended, TC has included the new mandatory training requirements in Ship Safety Bulletin 09/2017.

However, the Board remains concerned that these requirements only apply to seafarers who apply for a new certificate of competency (CoC). The requirements do not apply to seafarers who renew their existing CoC (required every 5 years). The TSB still has no indication from TC about the number of seafarers who renew their CoCs versus the number that apply for a new CoC. Without this information, the Board is unable to assess the residual risk.

Therefore, the Board considers the response to the recommendation to be **Satisfactory in Part**.

February 2021: response from Transport Canada

Transport Canada agrees with this recommendation. Proposed amendments to the *Marine Personnel Regulations* are now anticipated to advance to the *Canada Gazette*, Part I, in late 2021 and will be published in the *Canada Gazette*, Part II, in summer 2022. Once these regulations are published, it is expected the risk identified in this recommendation will be mitigated.

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

Transport Canada (TC) indicates that the publication of amendments to the *Marine Personnel Regulations* in the *Canada Gazette*, Part I, is now anticipated in late 2021. In addition to the proposed regulatory amendments to require Bridge Resource Management training for seafarers being issued a Certificate of Competency (CoC), TC has indicated that mariners with existing CoCs will be grandfathered; the Standards of Training, Certification and Watchkeeping for Seafarers Convention (STCW) provides a mechanism to allow seafarers to meet requirements through sea service.

The Board notes that it will soon be five years since the completion of the implementation period of the STCW Convention with 2010 Manila Amendments. As CoCs must be renewed every five years, seafarers whose training included the Bridge Resource Management elements required by the STCW will begin to renew their CoCs. If TC provides the required data to the TSB, the Board will be able to evaluate the residual risk by comparing how many seafarers requesting a CoC have completed Bridge Resource Management training, and how many seafarers are meeting the requirement through sea service. This will allow the Board to determine whether further actions are required from TC to satisfy Recommendation M95-10.

Therefore, the Board considers the response to Recommendation M95-10 to be **Satisfactory In Part**.

December 2021: response from Transport Canada

Proposed amendments to the *Marine Personnel Regulations* are now targeted for publication in:

- *Canada Gazette*, Part I, December 2022
- *Canada Gazette*, Part II, Summer 2023

Transport Canada will discuss the proposed *Marine Personnel Regulations, 2023* in detail at the National Canadian Marine Advisory Council (CMAC) Standing Committee on Personnel on December 1, 2021.

Since January 1, 2017, a total of 1949 Canadian seafarers renewed their STCW nautical certificate of competency. As permitted by the STCW Convention these seafarers meet table A-II/1, of column 3 of the Convention by possessing approved in-service experience respecting Bridge Resource Management.

Since January 1, 2017, a total of 1403 Canadian seafarers were issued a new STCW nautical certificate of competency. One of the conditions for issuance was the successful completion of a TC approved course in either Leadership and Teamwork or Leadership and Managerial Skills, as appropriate for the certificate sought. Both of these approved courses contain the competencies and knowledge related to watchkeeping officers outlined in STCW Convention for Bridge Resource Management.

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

Transport Canada's (TC) response indicates that the publication of the new *Marine Personnel Regulations* (MPR) in the *Canada Gazette*, Part I, has been further delayed from late 2021 to late 2022. The response also indicates that since 01 January 2017, 1949 Canadian seafarers renewed their Certificate of Competency (CoC) under the STCW Convention, which allows meeting the requirement for Bridge Resource Management (BRM) training through approved in-service experience. In order to validate their experience, a seafarer is required to meet a threshold of time they have spent in their position, with three thresholds depending on the specific type of position, as listed in Section 106 of the MPR.

The Board is concerned that there is residual risk remaining for this safety deficiency as this mechanism does not evaluate the adequacy of the in-service experience of BRM.

Recommendation M95-10 was issued to require training since the TSB Safety Issues Investigation (SM9501) found that “[t]he accident record confirms that current bridge procedures and practices frequently reflect an absence of teamwork.” As has been shown in several occurrences investigated by the TSB since the SII, time spent as part of a bridge team does not necessarily provide a seafarer with experience in proper BRM.

The Board is additionally concerned that there may be further delays in the advancement of the MPR, which are required to legally recognize the Manila Amendments to the STCW Convention. The Board considers the response to Recommendation M95-10 to be **Satisfactory in Part**.

Latest response and assessment

December 2022: response from Transport Canada

Transport Canada continues to advance work to amend the *Marine Personnel Regulations* to address this recommendation. Consultations with key stakeholders are ongoing, including at the National Canadian Marine Advisory Council (CMAC) Standing Committee on Personnel on November 10, 2022. Revised targets for amendments to the *Marine Personnel Regulations* include publication in *Canada Gazette, Part I* in Fall 2023 and *Canada Gazette, Part II* in 2024. Until the amendments have been made and in recognition of the importance of Bridge Resource Management skills, Transport Canada has set out through Ship Safety Bulletin 09/2017, specific

requirements in leadership and teamwork skills as well as other mandatory training for seafarers who must comply with the *International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, as amended by the 2010 Manila Conference* (STCW).¹

A condition for issuance of a new STCW nautical certificate of competency since January 2017 is the successful completion of a Transport Canada-approved course in Leadership and Teamwork or Leadership and Managerial Skills. These courses encompass the competencies and knowledge related to watchkeeping officers outlined in STCW for Bridge Resource Management.

March 2023: TSB assessment of the response (Unsatisfactory)

Transport Canada's (TC) response indicates that the pre-publication of the new *Marine Personnel Regulations* (MPR) in the *Canada Gazette*, Part I has been further delayed from late 2022 to fall 2023; previous responses from TC had first indicated an expected pre-publication in 2015. TC also mentions Ship Safety Bulletin (SSB) 09/2017. However, the SSB does not include any requirements for demonstrating skills in Bridge Resource Management (BRM) before renewing a Certificate of Competency. Under the SSB, seafarers with existing certificates of competency issued under the *International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers* are considered to meet the requirements of the Manila Amendments, which allow for in-service experience as a way to demonstrate skill in BRM. The Board is concerned that there is residual risk remaining as TC does not evaluate the adequacy of the in-service experience of BRM.

The Board is additionally concerned over the continued delays in the publication of the new MPR. The persistent delays mean some Canadian mariners continue to sail without adequate BRM training.

The Board considers the response to Recommendation M95-10 to be **Unsatisfactory**.

File status

The TSB will continue to monitor the progress made by Transport Canada.

This deficiency file is **Active**.

¹ 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.