Transportation Safety Board of Canada
Bureau de la sécurité des transports du Canada

REASSESSMENT OF THE RESPONSE TO MARINE SAFETY RECOMMENDATION M94-23

Passenger safety on high speed craft

Background

At 0818, 06 February 1992, in light airs, calm sea and fog, the catamaran passenger ferry *Royal Vancouver* and the British Columbia Ferry Corporation vehicle/passenger ferry *Queen of Saanich* collided head-on off Georgina Point at the northern entrance to Active Pass, British Columbia. On board the *Royal Vancouver,* which was extensively damaged, 19 passengers and 4 crew members were injured. The bow doors of the *Queen of Saanich* were also damaged.

The Board determined that the bridge team of the *Royal Vancouver* did not positively identify and track a radar target and, as a result, altered course into the projected path of the *Queen of Saanich* about one minute before the collision. Contributing to the situation was the bridge team's limited experience with the catamaran's equipment.

The Board concluded its investigation and released report M92W1012 on 21 July 1994.

Board Recommendation M94-23 (November 1994)

Since impact energy increases exponentially with speed, the potential for structural damage and for injuries to passengers increases significantly on vessels travelling at higher speeds.

None of the 536 passengers or 32 crew members on the *Queen of Saanich* was injured; however, the *Royal Vancouver* was extensively damaged and 19 passengers and 4 crew members suffered injuries and concussions. Several passengers on the *Royal Vancouver,* including the three who suffered the worst injuries, were thrown about violently upon impact. None of the 19 passengers injured were secured in their seats; not all seats were fitted with seat-belts.

Collisions and groundings involving high-speed craft have usually led to serious injuries. In a 1991 accident, when a high-speed catamaran similar to the *Royal Vancouver* collided with a land mass in Norway, 2 people were killed and 68 injured. In Hong Kong, two recent groundings and one collision involving hydrofoils at high speed resulted in 3 fatalities and 191 injuries to passengers and crew members.

In all these accidents, including the *Royal Vancouver* and *Queen of Saanich* collision, injuries resulted when passengers, crew members, luggage and loose objects and, in some cases, secured seats were thrown about during impact. The investigation into the Norwegian catamaran accident found that the displacement of chairs and the failure of the tracks in which the chairs were fastened exacerbated the passenger injuries, and that hard surfaces and sharp

protrusions were the sources of serious injuries. The investigation concluded that proper fastening of heavy objects and equipment in service areas; padding or removing hard components; and securing and padding children play areas may reduce the seriousness of injuries.

Currently, there is no high-speed passenger craft operator based in Canada (there are three U.S.-based high-speed vessels providing passenger services between Seattle, Washington, and Victoria, British Columbia). However, it is expected that Canadian-based operations will commence in the near future. For example, a consortium in Gaspé, Quebec, is reportedly preparing for a high-speed (35 knot) passenger catamaran operation between Chandler and Îles-de-la-Madeleine, Quebec, to commence in April 1995, and the Province of British Columbia is reportedly planning to build three high-speed catamaran ferries to carry passengers and cars between North Vancouver and Nanaimo, British Columbia.

The Board believes that there is significant potential for serious injuries in collisions or groundings involving high-speed craft as a result of passengers being thrown about or being struck by unsecured objects. Therefore, in order to reduce the severity of injuries and to enhance the survivability to passengers on high-speed craft, the Board recommends that:

> The Department of Transport establish safety standards for the furnishing and finishing of the passenger areas on high-speed craft.
>
> **TSB Recommendation M94-23**

Transport Canada's response to Recommendation M94-23 (February 1995)

The Minister of Transport agrees with the recommendation.

Canadian Coast Guard is planning to incorporate the *International Code of Safety for High Speed Craft (*the HSC Cod*e)* in regulations for HSC. The HSC Code includes the recommended safety standards. The International Maritime Organization has prepared the *International Code of Safety for High Speed Craft* dealing with all aspects of ships such as the *Royal Vancouver.* This code has been approved by the Organization and will come into effect in 1996. Amendments to regulations to give effect to the Code will be undertaken by the Canadian Coast Guard and in the interim the code will be implemented by the Board of Steamship Inspection decision.

Board assessment of the response to Recommendation M94-23 (May 1995)

(The Assessment included recommendations M94-24, M94-25, M94-26, M94-27, and M94-28.)

The Board's recommendations all dealt with deficiencies relating to the operations of high speed craft such as the *Royal Vancouver.* The response indicates agreement with all of the recommendations.

In May 1994, the International Maritime Organization (IMO) adopted the International Code of Safety for High Speed Craft (the Code); the Code will come into effect in 1996. The Canadian Coast Guard (CCG) is planning to incorporate the Code in Canadian regulations; in the interim, the code will be implemented by the Board of Steamship Inspection decision.

The response also indicated some safety initiatives that CCG intends to pursue in addition to the Code; e.g., proposed amendments to *Boat & Fire Drill Regulations*.

The response refers extensively to the implementation of the new IMO Code of Safety for High Speed Craft to address the Board's recommendations. Staff communication with CCG officials following the response confirms that CCG is proceeding with its plan to incorporate the Code in Canadian regulations.

Given that the deficiencies identified by the Board's recommendations can be dealt with by implementation of the Code, the response is considered to be **Satisfactory in Intent**.

Transport Canada's response to Recommendation M94-23 (April 2000)

Transport Canada (TC) has implemented the HSC Code through a decision of the Board of Steamship Inspection, as is permitted under the *Canada Shipping Act*. A TC Working Group was previously established to review the HSC Code and recommend any alterations required to address Canadian operating conditions/requirements. TC Marine Safety is now satisfied that the HSC Code addresses the regulatory requirements to ensure the safety of the ship, its crew and passengers.

Board reassessment of the response to Recommendation M94-23 (September 2004)

As of April 2000, Transport Canada implemented the HSC Code through a decision of the Board of Steamship Inspection. However, high speed craft engaged in domestic voyages are not required to comply with the Code but may do so. The Code may also be applied with Canadian modifications, as per Board Decision 5837.

The response is considered **Satisfactory in Part**.

Board reassessment of the response to Recommendation M94-23 (December 2005)

No substantial change to the reassessment of September 2004.

Transport Canada's response to Recommendation M94-23 (November 2006)

TC's activity update of November 2006 provides no further information than what is contained in its original response and subsequent updates. It is noted the proposed new Marine Personnel

Regulations, which were published in the *Canada Gazette*, Part I on 18 November, 2006. The proposed new regulations define a "high-speed craft" as capable of an operating speed of at least 25 knots and that is built in accordance with the requirements of the HSC Code. However, there is no indication that TC will require vessels capable of operating at high speed but not built to the HSC Codes to apply the provisions that deal with furnishings and the finishing of the passengers areas. Such vessels may comply with the HSC Code, 1994, if they wish. The Code may also be applied with Canadian modifications, as per Board Decision 5837.

Board reassessment of the response to Recommendation M94-23 (November 2006)

The action taken will reduce but not substantially reduce or eliminate the deficiency. TC's update, dated November 2006, provided no new information to address the safety deficiency.

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

Transport Canada's response to Recommendation M94-23 (June 2008)

TC's update, dated June 2008, indicated that high-speed craft engaged in domestic voyages are not required to comply with the HSC Code but may do so voluntarily. Domestic operators may also apply the HSC Code with Canadian modifications, as per Board Decision 5837. TC will apply the HSC Code to high-speed craft engaged in domestic voyages as part of the proposed Vessel Construction and Equipment Regulations and Standards. Pre-publication in Part I of the *Canada Gazette* is anticipated in spring 2011.

Board reassessment of the response to Recommendation M94-23 (September 2008)

No substantial change to the reassessment of November 2006. There is no indication TC will require vessels capable of operating at high speeds, other than those built in accordance with the HSC Codes, to comply with provisions similar to those contained in the HSC Codes.

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

Transport Canada's response to Recommendation M94-23 (November 2009)

TC's response, dated November 2009, indicated that high-speed craft engaged in domestic voyages are not required to comply with the Code, but may do so voluntarily. The Code may also be applied with Canadian modifications, as per Board Decision 5837. TC will apply the HSC Code to high-speed craft engaged in domestic voyages as part of the proposed Vessel Construction Regulations. Pre-publication in Part I of the *Canada Gazette* is anticipated in fall 2011.

Follow-up information provided by TC in February 2010, indicated that proposed Vessel Construction Regulations are currently in development and it is too early to say what specific provisions or Canadian modifications may or may not apply. Specific provisions addressing the furnishing and finishing of the passenger areas are not included in the list of Canadian modifications as detailed in BD 5837.

The anticipated date for the pre-publication of the Vessel Construction Regulations in the Part I of the *Canada Gazette* is now March 2012.

Board reassessment of the response to Recommendation M94-23 (July 2010)

It is anticipated that the proposed Vessel Constructions Regulations will replace a number of existing regulations and standards; including the *Hull Construction Regulations*, *Marine Machinery Regulations*, *Hull Inspection Regulations*, and the *Ships Electrical Standard* (TP 127). It is also anticipated that the proposed regulations will apply to vessels of more than 24 metres in length.

TC's update indicated that the HSC Code will apply to high speed craft engaged in domestic voyages as part of the proposed Vessel Construction Regulations, however there is uncertainty at this time as to whether those provisions of the HSC Code addressing the furnishing and finishing of the passenger areas will apply. On the other hand, given the costs associated with operating passenger vessels capable of operating at high speeds, there are fewer vessels in service today and the safety risk is considered low.

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

Consequently, the Board assigned the deficiency file **Inactive** status.

Transport Canada's update concerning Recommendation M94-23 (December 2014)

> The proposed *Vessel Construction and Equipment Regulations* (VCER) will incorporate by reference the SOLAS Convention Chapter X **Safety measures for high-speed craft** and the construction and equipment chapters of the IMO **High Speed Craft Code** for new Canadian vessels of more than 24 metres. The VCER will make the HSC Code also applicable to high speed craft on domestic services. It should be noted that the number of high speed craft in Canada is very low and is not expected to increase in the near future. There is currently only one passenger vessel that operates as a high speed craft, the vessel is compliant with the HSC Code through an MTRB decision.
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> The anticipated date for the pre-publication of the proposed *Vessel Construction and Equipment Regulations* in the *Canada Gazette*, Part I is now the end of 2016.

Consequently, on 1 April 2015, the Board assigned the deficiency file **Active** status.

Transport Canada's response to Recommendation M94-23 (December 2015)

TC's response indicated that there was no new information.

Board reassessment of the response to Recommendation M94-23 (March 2016)

If fully implemented, the IMO *International Code of Safety for High-Speed Craft* (the HSC Code) will apply to vessels greater than 24 metres in length on domestic services in all Canadian waters. The portions of the HSC Code related to vessel design, construction, and structure, including the furnishing and finishing of the passenger areas, will be applied by the *Vessel Construction and Equipment Regulations*, but only to new builds.

Since the recommendation was issued some 20 years ago, there have been only two occurrences (M04L0105 and M09W0147) involving high-speed passenger vessels. Both of these vessels were capable of travelling at speeds in excess of 30 knots but were not required to comply with the HSC Code because they were on domestic services. The TSB could not determine how many other passenger-carrying vessels capable of operating as a high-speed craft as per the HSC Code criteria may be in operation.

TC reported that no high-speed craft carrying passengers are registered as high-speed craft in Canada. There are, however, 10 vessels that were constructed to the standards of high-speed craft and are capable of carrying passengers either commercially or for transport. Of the 10 vessels, 9 are Canadian Coast Guard vessels built to the HSC Code, which includes one built under the DSC Code. The lone passenger vessel which was built to the HSC Code is now registered as a "passenger vessel". There may be other vessels in Canada that meet the criteria of a high-speed craft but are not registered as such.

If a vessel is registered as a high-speed craft, it will be inspected and the crew certified as such because TC has adopted the HSC Code as the standard. However, none of these 10 vessels are registered as high-speed craft, and therefore are not inspected, nor are their crews certified, according to the HSC Code. Moreover, all but three are delegated to Class. There have been no reported instances of passenger injury on a vessel built to the HSC Code. The risk is therefore assessed as low based on the number of people these vessels would carry.

Given the risk is low, the reassessment of this response is changed to **Fully Satisfactory**.

Next TSB action (March 2016)

This deficiency file is **Closed**.