



## REASSESSMENT OF THE RESPONSE TO RAIL SAFETY RECOMMENDATION R09-04

### Low ground clearance signs at railway crossings

#### Background

On 15 July 2008, at approximately 1525 eastern daylight time, VIA Rail Canada Inc. passenger train No. 60, travelling eastward on the north main track of the Canadian National Kingston Subdivision, struck a loaded tractor-trailer immobilized at the public crossing at Quabbin Road, Mallorytown, Ontario, and derailed. The locomotive engineer had applied the brakes, but the train was unable to stop before colliding with the tractor-trailer. The trailer and equipment it was carrying was destroyed. The truck driver had exited the tractor before impact and escaped unharmed. The operating locomotive engineer and four train passengers received minor injuries.

Following the Quabbin Road accident, TC has taken action to support the timely communication and implementation activities to improve crossing safety. The June 2009 letter to road authorities on the Kingston Subdivision alerts them to crossings that may have troublesome approach gradients, encourages them to confirm the approach gradient, and where necessary, to install signage to alert motorists to the gradient and/or hazards to low-clearance vehicles. The July 2009 letter to CN requested the railway to report back on its most recent private crossing inspections, on its communications with property owners, and on its corrective actions. While these letters do not consider crossings with approach gradients less than 5 per cent that can also be problematic to low-clearance vehicles, these actions demonstrate a proactive response.

However, with more than 10 000 low ground clearance vehicles on the road,<sup>1</sup> and with the presence of grade crossings with non-standard gradient approaches on main-line track in high density corridors, the risk for accidents involving vehicles with low-clearance designs continues. When crossing accidents involve immobilized trucks and high-speed passenger trains or trains carrying dangerous goods, the consequences can be catastrophic.

Professional truck drivers are expected to know the limits of their equipment. Some modern trucks have been equipped with hydraulic systems that allow the operator to increase ground clearance. However, drivers expect that unusual road hazards that affect safety will be identified, including but not limited to low overpasses, high bumps and sharp curves in the road. Drivers expect hazards to be appropriately marked with advance warning signs to identify the risk and to suggest suitable driver action. Advance warning signs have been

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<sup>1</sup> Based on information provided by the Ontario Ministry of Transportation.

recently installed at two crossing locations with non-standard gradient approaches (i.e., Coronation Boulevard and Quabbin Road) on the Kingston Subdivision.

To date, TC's efforts have increased awareness of the risks of non-standard gradient crossings and the need to provide advance warning to drivers of low-clearance vehicles. However, the absence of a national signage standard to warn low-clearance vehicles can lead to inconsistent signage. Standard, nationally recognized signage would provide a defence to alert oncoming drivers to the risk of proceeding over the crossing. Therefore, the Board recommends that:

Transport Canada work with the provincial governments to expedite the implementation of a national standard for low ground clearance advance warning signs at railway crossings.

**TSB Recommendation R09-04**

**Transport Canada's response to Recommendation R09-04 (March 2010)**

TC accepts the recommendation and is currently working with the Traffic Operation and Management Standing Committee (TOMSC) of the Transportation Association of Canada to develop a sign for low ground clearance advance warning at railway crossings. The TOMSC has concurred with the proposal to develop the sign. TOMSC is organizing and coordinating research for the improvement of traffic control devices and practices in Canada and disseminating information relating to recommended traffic control practices. The Board's Final Report R08T0158 was distributed to all members of the committee.

**Board assessment of the response to Recommendation R09-04 (September 2010)**

TC has accepted the Board's recommendation and has indicated that the department is working with the appropriate authorities to develop a sign for low ground clearance advance warning at railway crossings. Distribution of the Investigation Report to the members of the committee doing the work should promote this safety issue and facilitate the desired outcome.

Given that the development of the proposed sign and its effectiveness will not be known immediately, the Board assesses the response to Recommendation R09-04 as having **Satisfactory Intent**.

**Transport Canada's response to Recommendation R09-04 (October 2011)**

The development of a new highway sign for low ground clearance advance warning sign is the responsibility of the Traffic Operation and Management Standing Committee (TOMSC) of the Transportation Association of Canada (TAC). Work is currently being done on the development of the sign and representatives from TC Rail Safety and Road Safety Directorates are actively participating in the committee. Next meeting is to be held in April 2012.

**Board reassessment of the response to Recommendation R09-04 (February 2012)**

TC continues to be involved in the development of the new highway sign for advance warning of low ground clearance at railway crossings. However, the development of the proposed sign and its implementation are not yet complete.

Therefore, the Board reassesses the response to Recommendation R09-04 to remain as having **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R09-04 (January 2013)**

Representatives from TC Rail Safety and Road Safety directorates are actively participating in the Traffic Operation and Management Standing Committee (TOMSC).

Transport Quebec has developed a sign for low ground clearance advance warning at railway crossings. In order to have the required sign in the Manual of Uniform Traffic Control Devices for Canada (MUTCDC), the design went through recognition and comprehension testing by a TOMSC member. The project team members are reviewing the results of the testing and will prepare a final project report to be presented at the 2013 Spring TAC meeting.

### **Board reassessment of the response to Recommendation R09-04 (March 2013)**

The TOMSC has developed the new highway sign for advance warning of low ground clearance at railway crossings. However, approval of the proposed sign and its implementation are not yet complete.

Therefore, the Board reassesses the response to Recommendation R09-04 to remain as having **Satisfactory Intent**.

This recommendation is related to the TSB Watchlist issue of passenger trains colliding with vehicles at crossings on busy rail corridors.

### **Transport Canada's response to Recommendation R09-04 (January 2014)**

A meeting of the Traffic Operations and Management Standing Committee (TOMSC) of the Transportation Association of Canada (TAC) was held in Winnipeg on 21 and 22 September 2013. The final report on the Low Clearance Warning Signs Project will be tabled at the TAC Spring 2014 meeting by the new project leader. This signage was field tested in Quebec.

### **Board reassessment of the response to Recommendation R09-04 (April 2014)**

The Traffic Operations and Management Standing Committee is progressing on the development of a low ground clearance advance warning sign at railway crossings. However, approval of the proposed sign and its implementation are not yet complete.

Therefore, the Board reassesses the response to Recommendation R09-04 to remain as having **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R09-04 (February 2015)**

The final report on the low ground clearance warning signs was tabled at the TOMSC September 2014 meeting and was approved with minor amendments. The report was approved by the TAC Chief Engineers Committee and has been forwarded to the Editing and Publishing Sub-Committee. The new national standard for low ground clearance advance warning signs at

railway crossings will be published in the 5th edition of the *Manual of Uniform Traffic Control Devices for Canada* in Fall 2015, and will come into effect immediately upon publication.

### **Board reassessment of the response to Recommendation R09-04 (March 2015)**

The TOMSC and TAC have developed and approved a national standard for low ground clearance advance warning signs at railway crossings. The installation of the new sign at non-standard gradient railway crossings will substantially reduce the risk of low clearance trucks making contact with the track surface. The new standard will be published in the fall 2015 and will come into effect immediately. Existing low ground clearance advance warning signs will subsequently be replaced with a new national standard sign. In addition, with the promulgation of the new *Grade Crossings Regulations*, crossing safety information, including crossing profile, must be proactively shared between the railway and the road authority during the first two years of the new *Grade Crossings Regulations* coming into effect. This will help identify other non-standard gradient railway crossings requiring the installation of these signs. With the implementation of this new standard and sign, the Board anticipates a substantial reduction in risk of having low clearance vehicles becoming stuck at grade crossings.

Therefore, the response to the recommendation is considered to be **Fully Satisfactory**.

### **Next TSB action**

This deficiency file is **Closed**.