



REASSESSMENT OF THE RESPONSE TO RAIL SAFETY RECOMMENDATION R09-01

Assessment of level crossings

Background

On 17 December 2007, at approximately 1549 eastern standard time, VIA Rail Canada Inc. (VIA) passenger train No. 35, travelling westward at 62 mph on the south main track of Canadian National's (CN) Kingston Subdivision, struck an empty tractor-trailer that was immobilized on the 3^e Avenue level public crossing located at Mile 23.57, near Pincourt/Terrasse-Vaudreuil, Quebec. The tractor-trailer was destroyed; the locomotive was damaged and was unable to continue. Subsequently, 76 passengers were transferred to another VIA train and rail traffic was delayed for up to 3½ hours. The truck driver sustained minor injuries. There was no derailment and no track damage.

Between 1997 and 2008, there were eight tractor-trailers struck at public crossings protected by automatic warning devices (AWD) along the Kingston Subdivision; six of these crossing collisions involved a high-speed VIA passenger train. This accident history indicates that risks for crossing collisions continue, particularly for high-speed passenger trains, along the rail corridor between Québec and Windsor, Ontario. Even though many of the crossings are equipped with the highest level of AWD protection currently available in Canada and emergency contact information is posted at the crossings, these measures are not always adequate to protect against crossing collisions.

Before authorizing VIA to increase train speed up to 100 mph on the Québec–Windsor rail corridor in the early 1990s, crossing safety assessments were conducted to identify crossings that required upgrading. These crossing assessments are now nearly 20 years old and do not accurately reflect the present risks nor consider emerging risks. Over the same period of time, rail traffic has increased and communities along the corridor have experienced substantial industrial and residential expansion, as in Terrasse-Vaudreuil. These factors increase the likelihood for a crossing collision involving a passenger train. To ensure that the increased risk to rail passengers and vehicle drivers is adequately addressed, the Board recommends that:

Transport Canada conduct safety assessments of level crossings on the high-speed passenger rail Québec–Windsor corridor and ensure that defences are adequate to mitigate the risk of truck/train collisions.

TSB Recommendation R09-01

Transport Canada's response to Recommendation R09-01 (June 2009)

Transport Canada (TC) has carefully and thoroughly reviewed the Board's recommendation R09-01, and agrees in principle. TC recognizes and takes seriously the risk associated with the use of long and heavy vehicles at grade crossings particularly on high-speed corridors. However, TC notes that safety assessments at grade crossings are usually conducted jointly by

railway companies and road authorities. They are the responsible parties at a grade crossing and have all the information pertaining to their current and future operations.

TC also notes that most railway crossings on the Québec–Windsor corridor are already equipped with flashing lights, gates and bell which, other than grade separation, is currently the highest level of automated crossing protection in Canada.

With respect to safety assessments on the high-speed passenger rail Québec–Windsor corridor, VIA Rail is in the process of conducting safety assessments of level crossings on the Brockville, Chatham and Smiths Falls Subdivisions as well as on the Goderich Exeter Railway (GEXR) Guelph Subdivision.

CN and VIA are also conducting safety assessments on selected parts of the Kingston Subdivision in relation to the proposed third main track. TC reminded the parties involved in the project to conduct safety assessments at all crossings within the limits of the project and to include the review of the approach gradients in the assessments. TC has requested copies of the CN and VIA safety assessments at crossings on a sampling basis to ensure they conform with sound engineering practice. Furthermore, TC expects to meet with railway officials in Q4 2009 and is considering requesting that CN and VIA conduct safety assessments on all grade crossings on the Kingston Subdivision.

With respect to trucks and grade crossing safety, TC notes the following on-going initiatives:

- TC, in collaboration with the Transportation Development Centre (TDC), initiated Phase II of its study on the impact of heavy vehicles on crossing safety to obtain information on crossing time of long combination vehicle and possibly with semi-trailers with dropped chassis. Vehicle presence or “obstacle” detection is also being discussed.
- TC has identified a risk associated with oversize vehicles, including long combination vehicles requiring a special permit. Generally, grade crossings are designed to accommodate regular vehicles which routinely use the highway where the crossing is located. Grade crossings are not necessarily designed to accommodate special or oversize vehicles. The issuance of permits to use oversize vehicles does not include any provision to contact railway companies to verify if the time required to cross a crossing will be within the grade crossing system warning time and if sightlines available are adequate. TC officials have verbally contacted all provincial departments of Transport in this regard. As a result, Transports Québec (MTQ) has voluntarily agreed to prohibit long combination vehicles from using two grade crossings.
- The issue of truck safety was brought to the attention of TC Railway Safety Inspectors involved with crossing safety. Accordingly, the above action taken by MTQ is a direct result of TC Québec Region involvement. While not on a high-speed corridor, TC Pacific region was also concerned with the operation of heavy trucks at certain grade crossings, and regulatory action was taken.
- In 2009–2010 alone, as part of the Grade Crossing Improvement Program, the Minister has approved contributions to improvement projects estimated at more than \$1.2 M, for grade crossings located on the high-speed corridor. Of particular interest is the closure

of three crossings and two projects focused on improving the geometry of roadway approaches.

- TC Ontario Region is pursuing the issue of approach gradients with CN for private crossings along the Kingston Subdivision.
- TC Rail Safety sits on the Transportation Association of Canada Traffic Operation and Maintenance Standing Committee and recently reiterated the need to adopt a warning sign indicating the risk for low-clearance vehicles to be hung up on the tracks on account of the vertical profile of a road.
- Operation Lifesaver has developed and published a “Can’t Fit – Don’t Commit” poster for truck drivers to raise awareness of the risks posed by trucks that stop foul of the tracks. The poster will be posted at key areas such as truck stops.

The Department will continue to monitor the railway activities on the high-speed passenger corridor between Québec and Windsor.

Board assessment of the response to Recommendation R09-01 (September 2009)

Transport Canada (TC) has acknowledged the deficiency and followed up with the stakeholders, whereby the involved railways have conducted some safety assessments of crossings on the corridor and more are planned. However, TC indicates that safety assessments at grade crossings are not its responsibility, but instead, the responsibility of the railway companies and road authorities. This response seems to be inconsistent with TC’s responsibility for overall regulatory oversight of crossing safety.

To mitigate the risk of truck/train collisions, TC is considering requesting that CN and VIA conduct safety assessments on all grade crossings on the Kingston Subdivision. When completed, this activity will help ensure that high-risk crossings are identified. TC has also outlined a number of on-going initiatives with respect to trucks and grade crossing safety that will potentially result in additional safety benefits.

TC has described action which, if implemented in full, will substantially reduce or eliminate the safety deficiency. However, at present, the action has not been sufficiently advanced to reduce the risks.

The Board assesses TC’s response to Recommendation R09-01 to indicate **Satisfactory Intent**.

Transport Canada’s response to Recommendation R09-01 (January 2010)

In collaboration with Operation Lifesaver, educational material aimed at the trucking industry was recently developed: a poster for truck drivers raising awareness not to stop on tracks and an information sheet for snow plow operation while in the vicinity of grade crossings.

Board reassessment of the response to Recommendation R09-01 (September 2010)

Transport Canada (TC) has provided additional safety action taken. Safety assessments of level crossings on the high-speed passenger rail Québec–Windsor corridor to ensure that defences are adequate to mitigate the risk of truck–train collisions are still on-going.

The Board reassesses TC's response to Recommendation R09-01 to remain at **Satisfactory Intent**.

Transport Canada's response to Recommendation R09-01 (October 2011)

It is the responsibility of the rail company and road authority to conduct safety assessments of their grade crossings. The industry has indeed conducted many safety assessments of both public and private crossings in the high-speed passenger corridor. As a result, crossings with safety deficiencies were either closed or improved. In support of the industry assessments, in 2010 TC approved two new standards related to warning systems at private and farm crossings and, in 2011, has approved nearly \$4M in funding to improve grade crossings located in the Québec-Windsor passenger corridor. TC further approved approximately \$200 000 in grants to close 42 private crossings in the corridor. TC actively supports the industry through its safety programs such as monitoring and funding.

Board reassessment of the response to Recommendation R09-01 (February 2012)

Transport Canada (TC) has taken the position that it is the responsibility of the railway company and road authority to conduct safety assessments of their grade crossings. However, it is the Board's view that as the safety regulator, TC may wish to reconsider the role it ought to play in conducting or overseeing safety assessments to ensure the safety of grade crossings. Safety assessments of level crossings on the high-speed passenger rail Québec-Windsor corridor to ensure that defences are adequate to mitigate the risk of truck/train collisions are still on-going.

The Board reassesses TC's response to Recommendation R09-01 to remain at **Satisfactory Intent**.

Transport Canada's response to Recommendation R09-01 (January 2013)

Transport Canada (TC) believes that it is the responsibility of the railway company and road authority to conduct safety assessments of their grade crossings. Many safety assessments of both public and private grade crossings have been conducted on the high-speed passenger corridor. TC Rail Safety has formally requested periodic scheduled updates of the assessment from the three railways concerned in this report. As a result, crossings with safety deficiencies were either closed or improved. In support of those assessments, in 2010, TC approved one new standard related to warning systems at private and farm crossings and, in 2011, has approved nearly \$4M in funding to improve grade crossings located in the Québec-Windsor passenger corridor. TC further approved approximately \$200 000 in grants to close 42 private crossings on that corridor. The Railway-Roadway Grade Crossing Regulations (in development) would encourage road authorities and railway companies to perform safety assessments of their grade crossings to assess their level of safety in order to mitigate the risk of collisions.

Board reassessment of the response to Recommendation R09-01 (March 2013)

By formally requesting periodic scheduled updates of the assessment from the three railways concerned in this report, Transport Canada (TC) is taking a more active role in oversight. TC is also providing more funding for crossing projects.

This safety issue has been on the TSB Watchlist since 2010. During the 10-year period from 2003 to 2012, there have been 86 vehicle/train collisions at crossings on the Québec-Windsor corridor. In the most recent 5 years (2008–2012), there were 29 collisions, which is a decrease from 57 collisions during the previous 5 years (2003–2007). The Board acknowledges this improvement but remains concerned that the risk to Canadians persists.

While the Board acknowledges the progress being made, TC is projecting almost two more years to completion. Therefore, the Board maintains the response to Recommendation R09-01 at **Satisfactory Intent**.

Transport Canada's response to Recommendation R09-01 (March 2014)

It is the responsibility of the railway company and road authority to conduct safety assessments of their grade crossings. Many safety assessments of both public and private grade crossings have been conducted on the high-speed passenger corridor. Transport Canada Rail Safety has formally requested periodic scheduled updates of the assessment from the three railways concerned in this report. As a result, crossings with safety deficiencies were either closed or improved.

As of today, 97% of all public railway crossings in the high-speed passenger rail Québec-Windsor corridor are either grade separated or equipped with automatic warning systems, leaving 3% as passive crossings (cross bucks). The Grade Crossings Regulations, which were pre-published in the *Canada Gazette* Part I on 08 February 2014, will encourage road authorities and railway companies to perform safety assessments of their grade crossings to assess their level of safety in order to mitigate the risk of collisions.

- Transport Canada has no legislative authority under the *Railway Safety Act* (RSA) to impose safety assessments to road authorities in its proposed Grade Crossings Regulations (GCR). For railway companies and road authorities to meet the requirements of the proposed regulations, they would have to collaborate and work together to assess the safety of all of their federally regulated grade crossings in Canada by the end of the implementation period (proposed as five years), to ensure that they meet the safety requirements of the proposed GCR.
- TC's Quebec and Ontario regions will work together with federally regulated railway companies and road authorities to promote the completion of safety assessments of grade crossings on the Québec-Windsor corridor and also promote the requirements of the GCR when they come into force. TC's Quebec Region has only three public crossings on the high-speed corridor that do not have automatic warning systems with gates.

By the end of 2014, TC Rail Safety will provide a list of the federally regulated railway grade crossings on the Québec-Windsor high-speed corridor where TC inspectors have performed regulatory inspections as a part of their regional and national inspection programs.

Board reassessment of response to Recommendation R09-01 (April 2014)

Transport Canada (TC) indicates that it is the responsibility of the railway company and the road authority to conduct safety assessments at their grade crossings. The Grade Crossings Regulations (GCR), as published in *Canada Gazette*, Part I, will require the railways and road

authorities to share detailed information in writing on every crossing, within five years of the regulations coming into force. The GCR do not require that safety assessments of grade crossings in the high-speed corridor be conducted. However, the provision of this information may facilitate grade crossing safety assessments.

While detailed crossing information will be collected on all crossings within five years of the passing of the GCR, and this information can be used for safety assessments, there is no commitment that formal crossing safety assessments will be completed or continue on an on-going basis.

Therefore, the Board reassesses TC's response to Recommendation R09-01 to be **Satisfactory in Part**.

Transport Canada's response to Recommendation R09-01 (February 2015)

The *Grade Crossings Regulations* (GCR), published in the *Canada Gazette*, Part II, came into effect on 17 December 2014. They require that the railways and road authorities share detailed crossing information in writing, on every crossing, within two years of the regulations coming into force. The mandated information is that which facilitates grade crossing safety assessments. Grade crossings must also meet all safety requirements of the GCR within the following five years.

On the Québec-Windsor high-speed corridor, there are approximately 50 non-protected passive crossings which have not received a full grade crossing safety inspection. Transport Canada will inspect these remaining crossings in 2015 as part of its standard passive grade crossing inspection program.

Board reassessment of the response to Recommendation R09-01 (March 2015)

The new *Grade Crossings Regulations* (GCR) ensure that railways and road authorities exchange safety-related crossing information within two years of the regulations coming into force. The requirement that all grade crossings meet the safety requirements of the GCR within the following five years will substantially reduce the level of risk at grade crossings. In addition, TC will be inspecting the remaining 50 non-protected passive crossings on the Québec-Windsor high-speed corridor in 2015 as part of its standard passive grade crossing inspection program.

These inspections, when completed in combination with the other safety actions taken, will fully address the safety deficiency. Until then, the Board considers the response to the recommendation to indicate **Satisfactory Intent**.

Transport Canada's response to Recommendation R09-01 (January 2016)

The remaining 50 non-protected passive crossings on the high-speed Québec-Windsor passenger rail corridor were inspected and assessed for safety. These inspections and assessments were completed in August 2015. Grade crossings, where safety deficiencies were identified, were either closed or corrective actions were implemented. These corrective actions included work to improve signage, sightlines, warning systems, and the crossing surface at grade crossings, as well as actions taken to reduce the speed of trains. Follow-up was conducted

through regular inspections and correspondence with the railway companies and road authorities to ensure that all safety deficiencies were addressed.

Furthermore, the *Grade Crossings Regulations* that came into effect on 27 November 2014 require road authorities and railway companies to share safety-related information within two years. They will then have five years to use this information to assess safety of the crossings and determine what defences need to be implemented in order for railway companies and road authorities to meet the safety requirements of the Regulations.

Response from the Railway Association of Canada to Recommendation R09-01 (January 2016)

The Railway Association of Canada (RAC) and industry are fully participating in an Access Control Steering Committee that was formed to guide working groups to research a number of safety issues, including crossing safety.

Board reassessment of the response to Recommendation R09-01 (March 2016)

In August 2015, Transport Canada completed its inspection of the remaining 50 non-protected passive crossings on the Québec-Windsor high-speed corridor as part of its standard passive grade crossing inspection program. Where safety deficiencies were identified, grade crossings were either closed or corrective action was taken. The corrective action included work to improve sightlines, signage, warning systems, crossing surface, as well as action to reduce the speed of trains. These safety actions, in conjunction with the new *Grade Crossings Regulations*, have fully addressed the recommendation.

Therefore, the Board considers the response to Recommendation R09-01 to be **Fully Satisfactory**.

Next TSB action

This deficiency file is **Closed**.