



## **REASSESSMENT OF THE RESPONSE TO RAIL SAFETY RECOMMENDATION R01-06 - R99T0298**

### **HORIZONTAL ALIGNMENT STANDARDS FOR APPROACHES TO PRIVATE AND FARM CROSSINGS**

#### **BACKGROUND**

On 23 November 1999, at approximately 1845 Eastern standard time, Canadian National (CN) freight train M-321-21-22, travelling westward on the north main track, struck the trailer portion of an abandoned highway tractor-trailer at a farm crossing at Mile 292.59 of CN's Kingston Subdivision, near Bowmanville, Ontario. Both the tractor and the trailer were dragged westward for approximately 2000 feet. Approximately 800 feet west of the crossing, metal parts from the trailer portion became entangled under the wheels of the lead locomotive, resulting in the derailment of both locomotives and the following 10 rail cars. The tractor portion remained connected to the trailer and ignited. The local fire department extinguished the fire. Three of the derailed cars were residue liquefied petroleum gas (LPG) tank cars and five of the derailed cars were loaded with butadiene.

Just before the derailed freight train came to a stop, VIA Rail passenger train No. 68 (VIA 68), travelling eastward on the south main track, struck the tractor portion of the tractor-trailer, which was hooked onto the lead freight locomotive, tore it away from the trailer portion, and dragged it eastward for approximately 700 feet. Parts of the tractor became lodged under the wheels of the VIA locomotive causing it and the following 5 passenger coaches to derail. Minor injuries were sustained by 6 VIA employees, including 4 on-train service (OTS) personnel, and 5 passengers.

The Board concluded its investigation and released report R99T0298 on 19 October 2001.

#### **Board Recommendation R01-06 (19 October 2001)**

This investigation demonstrated that a lack of geometric design criteria for crossings can lead to accidents. Because there is no horizontal alignment standard for road approaches to private and farm crossings outside railway right-of-ways, an unnecessary risk is posed to the travelling public, train crews and users of those crossings. Therefore, the Board recommends that:

The Department of Transport's new regulations include horizontal alignment standards for approaches to private and farm crossings.

R01-06

#### **Response to R01-06 (24 January 2002)**

Transport Canada (TC) stated that the Railway Safety Act currently requires that all grade

crossings be built based on sound engineering principles, and that a professional engineer take responsibility for the engineering work.

TC agreed with the need to have horizontal alignment standards. TC indicated that the proposed Grade Crossing Regulations will be modified to address requirements for horizontal alignment of approaches for private and farm crossings.

The proposed regulations already include several crossing design standards that will greatly improve safety at private farm crossings. The proposed regulations will require that new crossings be built based on the specific characteristics of the vehicles intending to use a particular crossing (e.g. farm equipment, long heavy trucks). Also, the width of the road lanes and shoulders at the grade crossing surface will be required to be no less than the width of the road approaches so that vehicles can quickly move across rail lines. The angle of intersection will also be regulated to ensure that appropriate sight lines are in place.

### **Board Assessment of the Response to R01-06 (January 2002)**

With specific plans to modify the proposed Grade Crossing Regulation to address requirements for the horizontal alignment of approaches for private and farm crossings, TC's response was assessed as "**Satisfactory Intent**".

### **Additional Response to R01-06 (28 July 2006)**

TC reconfirmed that they agreed with the need to include horizontal alignment standards for private and farm crossings in the proposed Grade Crossing Regulations.

TC also indicated that a Regulatory Impact Statement is being prepared.

### **Board Reassessment of the Response to R01-06 (25 August 2006)**

Considering that a Regulatory Impact Statement is being prepared, and that there are specific plans to modify the grade crossing regulations to address the requirements for private and farm crossings, the reassessment will remain as "**Satisfactory Intent**".

### **Additional Response to R01-06 (January 2010)**

TC indicated that an internal group is working on a full time basis on the proposed new grade crossing regulations. The draft of the proposed regulations and accompanying technical standards manual (RTD10) have been modified to address certain technical issues. The existing RTD10 includes horizontal alignment standards and has been published on TC's web site for use by the railway industry.

### **Board Reassessment of the Response to R01-06 (January 2010)**

TC's Technical Standards, RTD10, include horizontal alignment standards and are included in the proposed Crossing Regulations. RTD10 has been issued on TC's web site for use by the industry as the accepted standard. However, the new crossing regulations, which will include the RTD10 standards, have not yet been published in the Canada Gazette. Therefore, the Board reassesses the response to Recommendation R01-06 to remain "**Satisfactory Intent**".

### **Additional Response to R01-06 (December 2010)**

TSB has received confirmation that RTD10 is being used by CN, CP and VIA.

### **Board Reassessment of the Response to R01-06 (February 2011)**

In consideration that TC has published horizontal alignment standards for use by industry and it has been verified that the standards are being used by the 3 largest railways in Canada, it is considered that an equivalent level of safety has been reached. Therefore, the Board reassesses the response to Recommendation R01-06 as being “**Fully Satisfactory**”

### **Next TSB Action**

This file is assigned a “**Closed**” status.