



## REASSESSMENT OF THE RESPONSE TO TSB RECOMMENDATION R91-01

### Fencing regulations

#### Background

At approximately 2100 eastern daylight time on 24 May 1990, a Canadian Pacific Railway (CP) freight train, designated as Extra 1841 East, travelling at 30 mph, struck and seriously injured a pedestrian on a railway bridge at Mile 2.4 of CP's Ellwood Subdivision, within the campus boundary of Carleton University in Ottawa, Ontario.

The pedestrian had attempted to cross the Rideau River using a bridge designed exclusively for railway traffic, and had disregarded warning signs designed to deter such activity. The network of well-worn footpaths in the vicinity of the Carleton campus was indicative of the regularity with which people were crossing the railway right-of-way. This investigation determined that the two chain-link fences were ineffective in restricting access to the railway right-of-way. In addition, evidence gathered from several other trespasser accidents in Canada indicated a pattern of frequently used footpaths, and disregard for available fencing and posted warnings.

The Board concluded its investigation and released report R90H0524 on 21 February 1992.

#### TSB Recommendation R91-01 (February 1992)

The Board has expressed concern over the frequency and gravity of occurrences involving trespassing on railway properties as these occurrences normally account for the second highest portion of railway-related fatalities.

Therefore, the Board recommends that

The Department of Transport establish minimum standards for the type, location and requirement for fencing along railway rights-of-way approaching railway bridges and any other areas where frequent pedestrian incursions are known.

**TSB Recommendation R91-01**

#### Transport Canada's response to Recommendation R91-01 (May 1992)

Transport Canada advised that widespread consultation with railway companies, municipalities, property owners, and the general public will be required before legal standards can be established. Transport Canada also indicated that their rail safety officers will monitor the situation and take whatever action is necessary to correct identified problems.

### **TSB assessment of Transport Canada's response to Recommendation R91-01 (June 1992)**

TC's response did not indicate that any preventative measure would be taken to stop trespassers from entering railway property at the many known locations.

Therefore, the Board assessed the response as **Unsatisfactory**.

### **Transport Canada's response to Recommendation R91-01 (July 2006)**

Transport Canada submitted a Rail Safety Update and, in that document, they advised that a significant issue arose from the last draft of the regulation related to whether Transport Canada (TC) has the authority under the *Railway Safety Act* concerning the control of access to railway property. In February 2005, this legal issue was resolved. As a result, the working group reconvened in fall 2005 and met again in spring 2006. TC indicated that there remain a few outstanding issues regarding triggers for safety assessments and safety reviews by railway companies and landowners. These issues have to be resolved by the working group before the draft regulation and the regulatory impact analysis statement (RIAS) can be completed.

### **TSB reassessment of Transport Canada's response to Recommendation R91-01 (August 2006)**

Transport Canada has settled the legal issue of authority. In addition, the working group has reconvened and is working towards resolving the remaining issues.

In consideration that TC's working group is progressing with a certain amount of success, the response to Recommendation R91-01 is reassessed as having **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (June 2010)**

Transport Canada advised that the draft regulation (19th version) has been completed. TC is now working on the completion of internal regulatory requirements. TC expects that the draft regulation will be published in the *Canada Gazette* in fiscal year 2011-2012.

### **TSB reassessment of Transport Canada's response to Recommendation R91-01 (June 2010)**

In consideration that TC's working group is continuing to progress the draft regulations with a certain amount of success, the response to Recommendation R91-01 is reassessed to remain as having **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (December 2010)**

The Railway Right of Way Access Control Regulations have been prepared and TC expects the draft regulation will be published in the *Canada Gazette* in the fiscal year 2011-2012.

## **TSB reassessment of Transport Canada's response to Recommendation R91-01 (February 2011)**

TC expects the draft regulation will be published in the *Canada Gazette* in the fiscal year 2011–2012. Therefore, the Board reassesses the response to Recommendation R91-01 to remain as **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (October 2011)**

Work on the proposed access control regulation is on hold pending the resolution of some jurisdictional issues. Fencing has been installed in all urban areas of VIA right-of-way, which has improved the safety of VIA's lines. TC is investing in 2 R&D projects related to access control: effectiveness of counter measures and rail related suicides. Operation Lifesaver has updated *Trespassing on Railway Property – A Community Problem-solving Guide*. This document has been a key instrument in resolving some access control issues between railways and municipalities.

### **Transport Canada's response to Recommendation R91-01 (January 2012)**

Standards for the type, location and requirement for fencing along railway rights-of-way are included in the proposed draft of the regulation on access control. The draft was developed by a working group led by Transport Canada and, further to a jurisdictional review, it will not be pursued further in its current form. From this draft regulation, only the proposed danger sign has been widely used as an access control measure.

Transport Canada (TC) has been successful in having access control measures put in place in the following situations:

- In rural areas, adjacent to farm land with livestock
- In urban areas, as part of any upgrade to passenger service
- At locations where a cessation of train whistling is being contemplated
- As part of any railway work requiring Minister's approval.

The draft regulations have been posted on the TC website as a proposed legislative instrument and not as a guideline. Nevertheless, the Department is developing another course of action that could include the development of industry guidelines using the situations stated above as a starting point.

## **TSB reassessment of Transport Canada's response to Recommendation R91-01 (February 2012)**

Transport Canada indicates that subsequent to the results of a jurisdictional review, the proposed regulation on access control will not be pursued in its current form. Despite continuing efforts to promulgate the proposed access control regulations, that included standards for the type, location and requirement for fencing along railway right-of-way, it has not yet been possible to do so.

Therefore the Board reassesses the response to Recommendation R91-01 to remain as **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (January 2013)**

Transport Canada (TC) has commenced a new approach to the Access Control Regulations. The intent of the regulation is to restrict or prevent, by means of fences, signs or any other means, access to a line of railway at specific locations and to regulate the control or prohibition of any other activity on land adjoining railway lands. The process is expected to take 2 to 3 years to make the regulations law, at which time the responsibility for access control is being put on the railways. TC will formalize instructions to its field inspectors on how to address trespassing in the field.

### **TSB reassessment of Transport Canada's response to Recommendation R91-01 (March 2013)**

This recommendation is more than 20 years old. During this period, there have been 1138 trespasser fatalities on federally regulated railways. In the most recent 5 years (2008–2012), there was an average of 50 trespasser fatalities per year, which is a decrease from approximately 59 trespasser fatalities per year averaged over the prior 15 years (1993–2007). The Board remains concerned that the risk to Canadians persists and, with the slow rate of progress, the fatalities will continue at these rates until this safety issue is resolved.

More than a decade later, Transport Canada indicates that a new approach to the Access Control Regulations has commenced. With the responsibility for access control to be put on the railways and with TC formalizing instructions to its field inspectors on how to address trespassing in the field, the likelihood of risk reduction in access control issues is increased.

However, with an expected 2- to 3-year period to make the regulations law and to achieve full implementation, the Board reassesses the response to Recommendation R91-01 to remain as **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (January 2014)**

Transport Canada plans to launch a study in April 2014 focused on viable countermeasures to trespassing. TC will use the results of the study to help develop regulations and/or to further enhance the programs already in place to combat trespassing.

### **TSB reassessment of Transport Canada's response to Recommendation R91-01 (April 2014)**

Transport Canada is implementing yet another approach with the launch of a study focused on countermeasures to trespassing. However, as this recommendation has been outstanding for over 20 years with no clear plan or timeline to achieve full implementation of the regulations, the Board reassesses the response to Recommendation R91-01 to be **Unsatisfactory**.

### **Transport Canada's response to Recommendation R91-01 (February 2015)**

The *Grade Crossings Regulations* (GCR) were posted in the *Canada Gazette*, Part II, on 17 December 2014 and came into force on that date. The Grade Crossings Standards, published by the Department of Transport in July 2014 and referenced in the regulations, form an integral part of the new regulatory framework. Sections 104 and 106(3) of the GCR mandate the use of

barriers and guide fencing in the vicinity of the crossing to deter persons from crossing the line of railway other than at the grade crossing. The *Grade Crossings Regulations* state in part:

Guide fencing

(3) If a warning system without a gate is indicated as being required in Table D-1 of the Grade Crossings Standards, guide fencing must be installed to deter persons from crossing the line of railway other than at the grade crossing.

Guide fencing and barriers

(4) If a warning system is not indicated as being required in column 5 of Table D-1 of the Grade Crossings Standards, guide fencing must be installed, as well as a barrier that is intended to slow a person's approach to the grade crossing and to encourage a person to look both ways before crossing the grade crossing.

TC has formed an Access Control Steering Committee. The committee has established a project to develop a risk and countermeasure assessment tool to control access to railway property. The objective of this project is to provide guidance on the implementation of trespassing countermeasures from a reactive and a proactive point of view. Reactive refers to addressing known trespassing problem areas by implementing effective countermeasures. Proactive refers to identifying trespassing hotspots and assessing risks in order to recommend appropriate and effective countermeasures. A tool will be provided to regulators, railways, municipalities and planners that will create a typology for high-risk trespass areas and provide appropriate and effective countermeasures to mitigate the risk of injuries and fatalities.

### **Railway Association of Canada's response to Recommendation R91-01 (February 2015)**

The RAC and industry are participating in the Access Control Steering Committee, which was formed to guide research and make recommendations on fencing regulations.

### **TSB reassessment of the response to Recommendation R91-01 (March 2015)**

A minimum standard for the requirement of fencing along railway rights-of-way approaching railway grade crossings has been established in the *Grade Crossings Regulations*. The risk of accidents involving unauthorized pedestrians in the vicinity of grade crossings will be reduced.

In addition, guidelines were developed and published by the RAC and the Federation of Canadian Municipalities (FCM) in May 2013 relating to security fencing along the railway right-of-way. The guidelines include the need for chain-link fencing for new residential developments and the consideration for increased safety/security measures in the vicinity of parks, trails, open space, community centres and schools.

In February 2015, through Bill C-52, Transport Canada proposed changes to the *Railway Safety Act* (RSA), Section 24.1(f), which, if enacted, would clarify the power of the Governor in Council to make regulations for restricting or preventing access to a line of railway.

While the trespassing accidents have decreased over the past 10 years, Transport Canada has formed an Access Control Steering Committee. The committee has initiated an access control project focusing on trespassing problem areas and effective countermeasures. Although it is too

soon to assess the study results, various initiatives have been implemented by TC, FCM and industry to help mitigate the risks.

The response to the recommendation is considered to have **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (January 2016)**

Transport Canada (TC) has initiated a study focused on viable countermeasures to trespassing which was scheduled to be completed by end of 2015. Once TC has reviewed the findings, the Department will develop an options paper with recommendations on the way forward to address this issue, by spring 2016. On 18 June 2015, a series of amendments to the *Railway Safety Act* came into force, which included broader authorities for Railway Safety Inspectors so that when an Inspector is of the opinion that a person's conduct or anything for which the person is responsible (including landowners adjacent to a railway line and road authorities) constitutes a threat or immediate threat to safety, the Inspector may issue them a Notice or a Notice and Order.

TC also supports Operation Lifesaver and has an Education and Awareness Program whose mandate includes informing communities about the dangers of trespassing.

Sections 104 and 106(3) of the *Grade Crossings Regulations* that came into force in November 2014 mandate barriers and guide fencing to deter persons from crossing the line of railway other than at a grade crossing. These provisions apply to crossings that have met the provisions of section 23.1 of the *Railway Safety Act* for restricted use of audible warning.

### **Railway Association of Canada's response to Recommendation R91-01 (January 2016)**

In the last few years, trespassing incidents have been reduced in spite of increasing urban growth near railway property. Increased awareness raised through various efforts such as industry initiatives, Operation Lifesaver and better land use guidelines (i.e., Proximity initiative for safety and consultation between communities and railways) have helped. Additionally, a risk based review of crossings, combined with a collaborative approach between railways and municipalities, including voluntary cost sharing seemed to have worked well in the last few decades without a need for fencing regulations. A key problem with regulation is the uncertainty about federal jurisdiction over municipal and provincial governments.

The RAC and industry are participating in the Access Control Steering Committee. The industry believes that trespass prevention must be a multi-faceted program consisting of education, enforcement and physical tools/defences, as fencing is rarely an effective control to prevent trespassing along right-of-ways. Using this approach and by targeting identified high risk areas, CN has reduced its trespass accidents by 50% over the last 5 years. VIA and CP have also met with success targeting high risk areas in each of its regions.

### **TSB reassessment of the response to Recommendation R91-01 (March 2016)**

Transport Canada has initiated a study to identify viable countermeasures to trespassing. Transport Canada will review the findings and develop an options paper with recommendations by spring 2016. TC continues to support Operation Lifesaver, which has an Education and Awareness program to provide information to communities about the dangers of trespassing.

The RAC and industry are participating in the Access Control Steering Committee. In the absence of fencing regulations, there continues to be a collaborative approach between railways and municipalities, including voluntary cost sharing.

Although it is too early to assess the results of the study on viable countermeasures, various initiatives have been implemented by TC, FCM and industry to help mitigate the risks.

The Board considers the response to the recommendation to have **Satisfactory Intent**.

### **Transport Canada's response to Recommendation R91-01 (February 2017)**

Under the *Railway Safety Act*, it is illegal to unlawfully access a railway right of way, or any works that facilitate railway operations. Transport Canada works with railway companies, road authorities, local communities, Operation Lifesaver and other stakeholders, including private citizens to raise public awareness about the dangers of trespassing. Obviously, these joint efforts have yielded results as, based on TSB data, the long term (5-year) trend is on the decline. However, the short term improvements have plateaued (since 2015).

TC concluded that based on the long term trend, the desired outcomes of the recommendation – reducing the risk of trespassing – are being met. Despite all the efforts, there will always be a residual risk that Transport Canada will never be able to eliminate completely as there will always be people who will choose to trespass and others who will put themselves in the path of a train on purpose (suicides). Despite this, Transport Canada will continue to work with other partners to reduce this residual risk to the lowest level as possible.

Over the last three years, significant initiatives as well as legislative and regulatory measures have come into force that will further aid Transport Canada's efforts to combat trespassing, including:

- **Launch of the Railway Safety Improvement Program** – The Minister of Transport announced on October 12, 2016, the Rail Safety Improvement Program (RSIP), an investment of more than \$55 million over a period of 3 years to improve rail safety across Canada. RSIP is a comprehensive approach to improving the safety of rail transportation through Infrastructure, Technology and Research, and Public Education and Awareness. The new program builds on Transport Canada's three rail safety programs: the Grade Crossing Improvement Program; the Grade Crossing Closure Program; and Operation Lifesaver, with an increased funding level, an expanded list of eligible recipients and a broadened scope of projects.
  - **Eligible recipients:** Provinces and territories; Indigenous communities, groups and organizations; Municipalities, and local and regional governments; Road and transit authorities; Crown Corporations (including VIA Rail); For-profit organizations (i.e. railway operators, railway owners); Not-for-profit organizations; and Individuals.
  - **Eligible project categories:** Infrastructure, Technologies, and Research Category: Safety enhancements and infrastructure such as installation of flashing lights, bells, gates; and roadway and intersection improvements. Technology such as the implementation of Intelligent Transportation System or other innovative technologies. Research and studies related to enhancing safety of rail lines such as blocked crossings. Closure of crossing for both private and public crossings.

- **Education and Awareness Category:** Projects that enhance awareness of grade crossing and trespassing hazards; promote safe practices at road/railway grade crossings on railway property; and research, studies and analysis that contribute to a better understanding of behaviours, attitudes and impact of rail safety issues.
- **Continued support for Operation Lifesaver** - Transport Canada continues to fund and work with Operation Lifesaver a leader in rail safety education and awareness over the last 35 years. Their main mandate is to reduce the number of railway crossing and trespassing accidents in communities across Canada.
- **New legislative powers for the Minister of Transport and Rail Safety Inspectors** - A series of amendments to the *Railway Safety Act* came into force on June 18, 2015, which included (1) new authorities for the Minister of Transport who may order a company, road authority or municipality to stop any activity that might constitute a threat to safe railway operations, or to follow any procedures, or take corrective measures specified in the order, including constructing, altering, operating or maintaining a railway work; (2) new authorities for Railway Safety Inspectors to issue enforcement action against a municipality, road authority or private citizen (such as landowners adjacent to a railway line) whose actions constitute a threat or immediate threat to safety.
- **Better standards under the *Grade Crossings Regulations*** - Sections 104 and 106(3) of the *Grade Crossings Regulations* that came into force in November 2014 mandate barriers and guide fencing to deter persons from crossing the line of railway other than at a grade crossing. The *Grade Crossings Regulations* also provide enhanced safety standards for grade crossings and provide greater clarity about who is responsible for ensuring the crossing is safe including roles for railway companies and road authorities.
- **Proximity Guidelines** - Transport Canada endorses the Guidelines for New Development in Proximity to Railway Operations developed by the Federation of Canadian Municipalities and the Railway Association of Canada and will continue to encourage the relevant parties to adopt it.

Given the above, Transport Canada will no longer be pursuing this TSB recommendation as stated. The TSB may wish to consider redrafting this recommendation to take into consideration the above actions with a focus on addressing residual risk, or to close this recommendation completely.

Finally, Transport Canada did commission an independent study focused on viable countermeasures to trespassing which has recently been completed. The Technical Memorandum entitled “Risk and Countermeasure Assessment Tool to Control Access to Railway Property” did not yield the results expected. As such, Transport Canada will not be advancing this work further.

### **Railway Association of Canada’s response to Recommendation R91-01 (March 2017)**

The Railway Association of Canada (RAC) and industry are participating in the Access Control Steering Committee. The industry believes that trespass prevention must be a multi-faceted program consisting of education, enforcement and physical tools/defences, as fencing is rarely an effective control to prevent trespassing along rights-of-way.

Increased awareness through various efforts such as industry initiatives, Operation Lifesaver, and better land use guidelines (i.e., Proximity initiative for safety and consultation between



communities and railways) have helped. Additionally, a risk-based review of crossings, combined with a collaborative approach between railways and municipalities, including voluntary cost sharing seemed to have worked well in the last few decades without a need for fencing regulations.

### **TSB reassessment of the response to Recommendation R91-01 (March 2017)**

The Board recognizes that TC's joint efforts with railway companies, road authorities, local communities, Operation Lifesaver, and other stakeholders have yielded results and that the long-term trend (since 2007) for trespassing occurrences is on the decline. However, after plateauing at about 55 per year between 2013 and 2015, trespasser occurrences increased to 69 in 2016.

Transport Canada had commissioned an independent study focused on viable countermeasures to trespassing. However, there was insufficient data to develop a predictive model and thus the study did not yield the hoped-for results. The study did provide a literature review of current knowledge concerning railway trespassing, including planned and ongoing initiatives from jurisdictions in Canada, the United States, Australia, and the United Kingdom.

The Board acknowledges that there will always be a residual risk that cannot be completely eliminated. The Board is encouraged that Transport Canada will continue to work with other partners to reduce this residual risk to the lowest level possible. Over the past 3 years, Transport Canada has implemented a number of initiatives, including legislative and regulatory measures focused on rail safety in general. These initiatives have and will continue to help address the ongoing residual risk related to trespassing. As TC has no further plans to pursue the development of standards for fencing along railway rights-of-way, the Board reassesses the response to the recommendation as **Satisfactory in Part**.

### **Next TSB action**

Given that the long-term trend for trespassing occurrences is on the decline and that initiatives have been implemented to mitigate the ongoing residual risks, this deficiency file is **Closed**.