



STAFF REASSESSMENT OF THE RESPONSE TO RAIL SAFETY RECOMMENDATION R01-04 R98T0292 HEAVY TONNAGE OTHER THAN MAIN TRACKS

Background

On 26 November 1998, at approximately 0645 eastern standard time (EST), Canadian National (CN) freight train M-333-31-26 (train 333), departing MacMillan Yard in Concord, Ontario, derailed three loaded tank cars on the Green Route track. The derailed tank cars were loaded with anhydrous ammonia. The protective housing and valving on one of the cars were damaged, resulting in a minor leak. The yard was evacuated, and public roadways in the area, including Highway 7, were closed for approximately five hours. There were no injuries.

Contributing to the accident were: two rail breaks, rail wear exceeding the allowable limits, the lack of clear maintenance criteria for “other than main track”, and the under-inspection of heavy tonnage yard tracks.

The Board concluded its investigation and released report R98T0292 on 05 September 2001.

Board Recommendation R01-04 (05 September 2001)

CN’s Standard Practice Circulars (SPCs) outline standards and procedures for maintenance; however, they apply only to “main tracks.” In most yards, tracks carry very light traffic at low speeds; therefore, the risks are relatively low and the absence of clear maintenance criteria is less detrimental to safety. However, shortcomings in track maintenance practices become evident when heavy tonnage yard tracks, such as inbound or outbound tracks, are considered. The existing discrepancies between “main tracks” and “other than main track” jeopardize safety as they do not permit railway personnel to assess, with consistency and accuracy, the track condition and to determine the appropriate safety action. Therefore, the Board recommends that:

The Department of Transport and the Railway Association of Canada ensure that maintenance standards and practices address the level of risks in heavy tonnage “other than main tracks”.

R01-04

Response to R01-04 (21 November 2001)

Transport Canada accepted the intent of the Board’s recommendation, and has taken action to address the Board’s concerns. Specific safety action included:

- TC exempted CN from the TSR at MacMillan Yard for a one-year trial period to implement and evaluate an inspection regime specifically tailored for that rail yard;
- CN’s new inspection regime at MacMillan Yard categorizes tracks into high, medium and low usage, proportional to the frequency of use and tonnage of trains;

- Inspections of entrance and exit tracks at the test site were increased to bi-weekly rather than monthly inspections;
- After the first year implementation of the pilot-project, TC inspectors found improved safety conditions related to inspections as well as maintenance of the yard tracks;
- TC granted CN a three-year extension to the exemption to refine the new inspection regime and allow sufficient time for TC and the railway industry to work towards developing a uniform set of rules that could apply to all railway yards;
- TC and the railway industry have agreed to form a working committee to recommend amendments to the Canadian Track Safety Rules and railway industry practices; and
- TC will keep the TSB informed of developments with respect to this recommendation.

Board Assessment of Response to R01-04 (January 2002)

The pilot project, facilitated by TC granting CN an exemption to the Track Safety Rules at MacMillan Yard, has identified and initiated significant safety action towards eliminating the existing safety deficiency relating to maintenance standards and practices in heavy tonnage "other than main tracks". The end result may, if implemented in full, substantially reduce or eliminate the safety deficiency.

The initial implementation has resulted in improvements at the test location. In consideration that the final effectiveness cannot be assessed until the formulation of new Track Safety Rules, the response to Recommendation R01-04 was assessed as **Satisfactory Intent**.

Additional Response to R01-04 (June 2003)

TC advised in an update that the exemption granted to CN Rail by TC is in effect till May 12, 2004. There have been no engineering caused derailments in MacMillan yard since granting the exemption on May 12, 2000. There is interest growing in the industry on expanding the "MacMillan Yard" concept. This item was also on the agenda of the first meeting of the Track Safety Rules Working Group held on April 22, 2003. The group is presently developing a modification to the Track Safety Rules regarding the inspection of other than main-tracks. It is anticipated that the modifications will be submitted to TC by the end of 2003.

Board Reassessment of Response to R01-04 (June 2003)

As sufficient time is required to form the new Track Safety Rules, the Board maintained the assessment of response to this recommendation as **Satisfactory Intent**.

Additional Response to R01-04 (June 2004)

TC has provided an update advising that as of June 2004 - TC has met with industry representatives on several occasions during the past year to discuss track inspection requirements of the Track Safety Rules (TSR). These discussions addressed the inspection requirements included in both Parts I and II of the TSR:

- (i) Part I, clause 13.1: track inspections at such frequency and by such a method to ensure that a line of track is safe for the operation of trains at the authorized speed; and
- (ii) Part II, F. ©: inspecting track to detect deviations from standards.

Inspections under Part I are required in order that a railway company stay aware of track conditions in order to plan and carry out maintenance before the track falls below safety standards, while inspections under Part II are required to identify, in a timely manner, deviations that occur in the track despite the best efforts of the railway company to maintain their track to minimum safety standards. Deviations in track for the standards of the Track Safety Rules may occur in track due to unforeseen factors such as weather extremes, material defects, and geological events, as well as the quality of inspection and maintenance programs. These inspection requirements complement one another and should not be considered independently.

TC is continuing work with the RAC Track Safety Rules Committee, which is currently developing a proposal for minimum frequencies of inspection of track for deviations based upon risk and the consequence of a deviation to standards occurring in tracks. However, a very important factor now being also considered is railway company practices with respect to the inspection requirements of clause 13.1.

Board Reassessment of Response to R01-04 (November 2004)

As time is required to develop the new Track Safety Rules, and no new rules have been developed yet, the Board maintained the assessment of response to this recommendation as **Satisfactory Intent**.

Board Reassessment of Response to R01-04 (December 2005)

TSB has been advised by TC that the original exemption granted to CN was extended to 2007 and the issue is being addressed by the Track Safety Rules Working Group. As TC is keeping the issue in the forefront and new rules appear imminent, the Board reassessed the response to this recommendation as **Satisfactory in Part**.

Additional Response to R01-04 (28 July 2006)

TC has met with industry representatives on several occasions during the past year to discuss track inspection requirements of the Track Safety Rules (TSR). These discussions addressed the inspection requirements included in both Parts I and II of the TSR:

Part I, clause 13.1: track inspections at such frequency and by such a method to ensure that a line of track is safe for the operation of trains at the authorized speed; and Part II, F.c): inspection track to detect deviation from standards.

Inspection of “other than main track” under Part II are required to identify, in a timely manner, deviations that occur in the track despite the best efforts of the railway company to maintain their track to minimum safety standards. Deviations in track from the standards of the TSR may occur in track due to unforeseen factors such as weather extremes, material defects, and geological events, as well as due to the quality of inspection and maintenance programs. These two inspection requirements of the TSR complement one another and should not be considered independently.

TC is of the view that the condition of “other than main track” is related primarily to the adequacy of railway company’s track inspections and the adequacy of a company’s track maintenance program to maintain track above the minimum standards of the TSR, as required by clause 13.1, as opposed to inspection requirements for track deficiencies that have occurred

in track under Part II. TC has stressed this in discussions with the RAC Track Safety Rules Committee, and CN and CP in particular.

Transport Canada's monitoring programs are being adjusted to emphasize assessment of a railway company's inspections and track maintenance activities under clause 13.1, as well as the results of its inspections for deficiencies to the TSR under Part II. No new developments have resulted from the Railway Association of Canada (RAC) TSR Committee regarding an acceptable proposal for modifying the minimum frequencies of inspection of "other than main track" for deviations under Part II of the TSR.

Additionally TC is sponsoring a RSR symposium to be held in September 2006 to develop a strategy for modernizing the TSR. Track inspection will certainly be considered when modifying or revising the rules.

Board Reassessment of Response to R01-04 (August 2006)

TC initially provided CN an exemption of the TSR in order to pilot a project concerning inspections and maintenance in MacMillan Yard, which seemed a positive step in achieving significant safety action towards eliminating the existing safety deficiency relating to maintenance standards and practices in heavy tonnage "on other than main tracks." In attempting to create a safer work environment, TC extended this exemption to 2007. As the recommendation was given in 2001, the length of this exemption appears extreme considering there have been no substantial changes or improvements.

Part I, clause 13.1 refers to inspection frequency and methods to ensure safety for operation of trains at the authorized speed. The guidelines for these inspections refer to appropriate speeds in conjunction with Class of track. TC indicated that they are predominantly interested in this area, pertaining to "other than main track", as opposed to Part II, which pertains mainly to details of track defects. TC's concern predominantly with Part I seems reasonable.

The original exemption granted to CN was extended to 2007 and the issue is being addressed by the Track Safety Rules Working Group. Furthermore, TC sponsored a TSR symposium in September 2006 to develop a strategy to modernize the TSR. As such, the Board maintained the assessment of response to this recommendation as **Satisfactory in Part**.

Board Reassessment of Response to R01-04 (06 October 2006)

At the end of the symposium the RAC advised that it would take anywhere from six to twelve months to review and assess all the information collected at the symposium. As sufficient time is required for TC to process the outcome of the symposium, and until further information is received, the Board maintained the assessment of response to this recommendation as **Satisfactory in Part**.

Additional Response to R01-04 (February 2008)

TSB has been advised by TC that the Track Safety Rules Working Group has favoured a risk-based approach to inspection frequencies. TC also advised that the amendments to the TSR will require other than main track to be regularly inspected.

Board Reassessment of Response to R01-04 (March 2008)

As TC has kept the issue in the forefront, and a new TSR which will require regular inspection of other than main track appears imminent, the Board reassesses the response to this recommendation as **Satisfactory Intent**.

Additional Response to R01-04 (November 2009)

TSB has been advised by TC that the Track Safety Rule Working Group has a new draft of Track Safety Rules being reviewed with the Rail Industry that proposes to set requirements on inspection frequency based on track use (tonnage) and risk. This recommendation remains open for TC.

Board Reassessment of Response to R01-04 (September 2010)

Since TC continues to work on this issue, but no change is immediately forthcoming, the Board reassesses the response to this recommendation to remain as having **Satisfactory Intent**.

Additional Response to R01-04 (December 2011)

TSB has been advised by TC that the new Track Safety Rules were approved on 25 November 2011 and will be effective on 25 May 2012. SUBPART F - INSPECTION, 6.1 (c), of the new rules, prescribe that a classified yard must be categorized based on frequency of track use, volume of traffic and risk associated with the movement of trains and equipment. Criteria for inspection frequency and practices are prescribed for each of four categories.

Board Reassessment of Response to R01-04 (February 2012)

A review of the new Track Safety Rules indicates that new requirements have been prescribed for maintenance standards and practices to address the level of risks in heavy tonnage "other than main tracks". In consideration that new rules have been established, the Board reassesses the response to this recommendation as **Fully Satisfactory**.

Next TSB Action

This deficiency file is assigned a **Closed** status.