



Assessment of the Response from Transport Canada to Rail Safety Recommendation R04-01

Implementation of Technologies and/or Methods of Train Control Related to In-Train Forces

Background

On 06 October 2001, at approximately 1630 Atlantic daylight time, Canadian National (CN) freight train No. M-306-31-05, travelling eastward towards Moncton, New Brunswick, derailed 15 cars after striking an automobile on a farm crossing at Mile 178.67 of the Napadogan Subdivision, in the township of Drummond, New Brunswick. Seven of the derailed cars were tank cars carrying liquefied petroleum gas. One of the tank cars suffered damage to the top protective housing and fittings, causing a release of butane. Nine cars and approximately 1000 feet of track were destroyed. There were no injuries.

Because of the track profile and train configuration, the emergency brake application from the head end caused excessive run-in, which generated high buff forces. These buff forces, combined with the curvature of the track, generated high lateral forces that exceeded the resistance of the track structure and derailed the 88th car to the 101st car. The Board identified a safety deficiency related to the use of emergency brakes by the locomotive crews when brake initiation is not performed consistently from both ends of the train, resulting in higher In-Train buff forces and a greater risk of derailment.

Board Recommendation R04-01

CN had equipped a limited number of locomotives with an end-of-train system that automatically initiates synchronous braking from the head end and tail end of trains. However, the Board indicated concern that this technology would not be retrofitted across the balance of the Canadian rail industry's locomotive fleet, resulting in a continued risk in emergency situation with long freight trains.

The Board recommended that:

Transport Canada encourage the railway companies to implement technologies and/or methods of train control to assure that In-Train forces generated during emergency braking are consistent with safe train operation.

R04-01

Response to R04-01

In its reply, Transport Canada (TC) accepted the Board's recommendation. TC has informed its stakeholders of the recommendation, including railway companies, the Railway Association of Canada, railway labour organizations and the provinces.

CN has been testing a new technology end-of-train (EOT) system that provides both emergency and service brake applications. CN has adopted the technology and converted 165 locomotives and 198 EOT units to their new design. Approximately 500 road locomotives will be so equipped by the end of 2006. Canadian Pacific Railway (CPR) has also been adopting the new technology and has converted 94 per cent of its locomotives. All newly purchased road locomotives will be equipped with the new technology.

TC will continue to encourage the railway companies to implement the new technologies that are being developed and tested, and that contribute to safer train operations.

Board Assessment of Response to R04-01

It is clear that the industry is taking action to reduce the identified safety deficiency, as the industry is continuing to equip its fleets of locomotives and tail-end devices with the new technology.

The action taken by TC will lead to a reduction in the safety deficiency.

TC accepted the Board's recommendation and has encouraged the railway companies to implement technologies to assure that In-Train forces generated during braking are minimized, and provided TSB with the information.

TC's response to recommendation R04-01 is assessed as **Fully Satisfactory**.

Next TSB Action

TSB staff will monitor the level of industry implementation and use of this new technology.

This deficiency file is **Closed**.