



## REASSESSMENT OF THE RESPONSES FROM TRANSPORT CANADA TO RAIL SAFETY RECOMMENDATION R98-02 - R97H0008

### SECUREMENT OF HIGHWAY TRAILERS

#### Background

On 13 August 1997, a highway trailer loaded on a platform, on a westbound Canadian Pacific Railway (CPR) freight train (the Iron Highway) became loose and shifted over the side of the platform beyond allowable railway clearance. While the train was proceeding under a public highway overpass for County Road No. 44, at Mile 102.9 of the Winchester Subdivision, the overhanging trailer struck the bridge support columns. The trailer was extensively damaged, and the highway overpass was closed for several days. No dangerous goods were involved and there were no injuries.

CPR leased this prototype inter-modal platform train from CSX Intermodal Incorporated and contracted the terminal operations and maintenance with Rail Term, a private contractor. The Iron Highway does not meet all the requirements of the Association of American Railroads (AAR) interchange rules, that is, air brake rules and safety appliances, and has required an exemption from some requirements of Transport Canada's regulations to operate in Canada.

The Board determined that the trailer became unsecured due to an improperly locked hitch that went unidentified during pre-departure inspections because employees did not possess the necessary information to recognize that a slightly protruding or damaged lock indicator pin could render a locking mechanism ineffective.

Contributing factors were the design of the LP-9 hitch locking mechanism, and management's and employees' inexperience in working with the Iron Highway technology.

#### Discussion

The locking mechanism of these automatic LP-9 hitch assemblies is designed to self-unlock through movement of the plunger, spring, and lock indicator pin mechanism. Unintentional operation of the self-unlocking mechanism can occur if the plunger is not fully engaged, the spring is broken, or the pin is bent, and any of these deficiencies may still remain undetected during the inspection processes. Although similar lock mechanisms are used on other types of hitches (AAR-approved LP-3), the vast majority are used in combination with a secondary locking mechanism. The industry's "Standard Operating Procedures for Intermodal Securement" (SOP) as defined by the AAR, effective 01 August 1998, and accepted by the railway industry, considers that a hitch missing a secondary locking mechanism is to be treated as a securement defect. Considering the high speed at which the Iron Highway operates and the

potential weight of the equipment, proper securement of the highway trailers is critical to safe operation.

CPR has taken measures which have included training as well as enhancing procedures and inspections. Inspection of the visible portion of the lock indicator pin has been improved by enhancing the conspicuity of the pin, painting it bright yellow to contrast against a black background. The Board, acknowledging the safety actions and initiatives taken by the industry in response to this occurrence, believed that these measures would somewhat reduce but not eliminate the risks associated with this equipment, and consequently, on 19 January 1999, the Board recommended that:

The Department of Transport assess the trailer securement system and related safety inspections of the Iron Highway to ensure that the risks associated with the securement of highway trailers are appropriately addressed.

R98-02

### **Response to R98-02 (16 April 1999)**

Transport Canada (TC) advised that it has accepted this TSB recommendation and that TC Rail Safety inspectors have monitored the safety actions and initiatives taken by the industry in response to this occurrence. TC also advised that employees of Rail Term have developed a proposed auxiliary hitch locking mechanism to ensure that the LP-9 hitch device is secured and locked properly. However, it is only a concept at this time, and any modification to the existing hitch design requires the approval of the owners (CSX) and Trinity Industries (the manufacturers of the LP-9 hitch assemblies).

### **Board Assessment of Response to R98-02 (18 May 1999)**

Notwithstanding the initiatives undertaken, until such time as the proposed auxiliary hitch locking mechanism is installed (or some other safety measure not yet identified is taken) to ensure that a trailer will not become disengaged while en route, the risk associated with the use of the existing LP-9 automatic hitches remains. Therefore, the response to TSB Recommendation R98-02 is considered to be **Satisfactory Intent**.

### **Board Reassessment of Deficiency file status R98-02 (16 September 2010)**

The entire Iron Highway train has been removed from service in Canada and returned to its owner in the United States. Any further action would be the responsibility of a third party outside the direct influence of this recommendation. This is an alternative course of action that has effectively addressed the safety deficiency. Therefore, the response to recommendation R98-02 is reassessed as **Fully Satisfactory**.

### **Next TSB Action**

This deficiency file is **Closed**.