

RAILWAY OCCURRENCE REPORT

RUNAWAY CARS

CANADIAN NATIONAL TRAIN NO. 130-13
MILE 0.0, PELLETIER SUBDIVISION
EDMUNDSTON, NEW BRUNSWICK
14 DECEMBER 1995

REPORT NUMBER R95M0072

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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Summary

On 14 December 1995, at approximately 2030 Atlantic standard time (AST), the conductor on eastward Canadian National (CN) freight train No. 130-13 (train 130) detached the locomotive consist from their train in Edmundston Yard in Edmundston, New Brunswick, to add an additional locomotive. Approximately 50 minutes later, the rail cars rolled westward, uncontrolled, for about 4,800 feet through the main track switch at Mile 1.70 of the Pelletier Subdivision and came to a stop with approximately 15 cars standing on the main track. There were no injuries.

Ce rapport est également disponible en français.

Other Factual Information

Train 130 was destined for Moncton, New Brunswick, from Taschereau Yard, Montreal, Quebec. On arrival at Edmundston, the train consisted of 3 locomotives, 60 loaded and 6 empty freight cars. There were no dangerous goods in the consist. The crew consisted of a locomotive engineer and a conductor. Both were qualified for their respective positions and met fitness and rest requirements established to ensure the safe operation of trains.

When train 130 stopped on track EA-34, which is adjacent to the main track in Edmundston Yard, a full brake application was made on the train. In consideration of the difficulty in walking in the heavy snow conditions in the yard, the conductor detrained and the train was pulled ahead and the brakes were re-applied in a full service application. The conductor then closed the angle cocks between the trailing locomotive and the lead car and uncoupled the locomotives from the cars. He did not open the angle cock on the lead car after the full service brake application was made on the train. Hand brakes were not applied on the cars. The locomotives were then moved to the fuel stand where the incoming crew members completed their tour of duty.

The outgoing crew assumed control of the locomotive consist and proceeded to track EA-15 where they coupled onto the additional locomotive. Difficulty was encountered in performing a brake test on the outgoing locomotive consist due to airflow problems on the additional locomotive, requiring their attention for more than one hour.

During this time, the unattended freight cars rolled westward on the 0.25 per cent descending grade through the dual control switch at the west end of track EA-34 and came to a stop with about 15 cars standing on the main track. The switch was slightly damaged. There was no device in place at the west end of track EA-34 to prevent the runaway cars from entering the main track. No level crossings or other railway switches were negotiated by the runaway cars.

Traffic on the Pelletier Subdivision is governed by the Centralized Traffic Control (CTC) system of the Canadian Rail Operating Rules (CROR) and supervised by a rail traffic controller (RTC) located in Montreal.

At approximately 2120, the RTC noticed that freight train No. 132-13 (train 132), proceeding eastward on the Pelletier Subdivision, received a stop signal indication at Albertine, Mile 7.4. The RTC suspected that the stop signal was caused by debris in the switch points at the west end of track EA-34 which had been used by train 130 to enter the Edmundston Yard. He then issued a CROR Rule 564 authorizing train 132 to pass the stop signal and proceed via the main track to Edmundston. The train proceeded, at restricted speed, to about Mile 2 where the cars from train 130 were discovered standing on the main track. The crew members on train 132 were able to bring their train to a stop before reaching the cars.

Restricted speed is defined as “a speed that will permit stopping within one-half the range of vision of equipment, also prepared to stop short of a switch not properly lined and in no case exceeding SLOW SPEED.” Slow speed is “a speed not exceeding fifteen miles per hour.”

The signal maintainer and track maintenance foreman were called at home and advised of the signal being displayed and the fact that there may be a problem with the switch at the west end of track EA-34. When they

arrived at the site, they discovered that the rear portion of train 130 had travelled through the dual control switch and was foul of the main track.

Inspection of the runaway cars by the crew on train 132 revealed that the angle cock was in the closed position on the lead car and that the brakes had released on the cars. No hand brakes were applied.

CROR Rule 112 states: "Unless otherwise directed by special instructions, a sufficient number of hand brakes must be applied on equipment left at any point to prevent it from moving"

CN had re-issued General Operating Instruction (GOI) 7.2(k) on 14 August 1995 to train crews, which states:

Whenever a locomotive is detached from equipment, such equipment must be left with the angle cock fully opened and the air brakes applied in emergency or full service. If a full service application is used, the angle cock on the equipment to be left, must not be closed until the application is completed. The angle cock must then be opened slowly.

CN informed TSB that CROR Rule 112 applies when cars are left standing unattended and is not superseded in any circumstance by GOI 7.2(k).

The conductor stated that he had read this instruction while working previously at Joffre, Quebec, and understood his responsibilities.

This instruction is designed to prevent and counteract a work practice known as "bottling the air" where crews leave cars standing unattended with the brake pipe charged. Closing the angle cocks between the locomotive consist and the train before the service brake is completed however, can create a pressure wave in the brake pipe. Such a pressure wave can activate the quick release feature in the individual car's brake system (which can react to as little as a 1 ½ pound pressure differential) and propagate a brake release throughout the train. Closing the angle cocks can also result in brake release as a result of stabilization of pressure gradients within the brake pipe after the angle cock is closed.

Ensuring that the brake application is completed before the angle cocks are closed prevents an unintentional release of the air brakes. By slowly opening the angle cock on the lead car after train separation and releasing the pressure the brake pipe cannot propagate a release signal and a full service brake application is ensured. To open the angle cock quickly and fully would trigger an emergency application.

Some four months before this occurrence, on 23 August 1995, CN issued instructions to its Train Service Managers instructing them to meet with train crews and discuss CROR Rule 112 and GOI 7.2(k) to prevent the occurrence of runaway equipment. Train crew members operating out of Rivière-du-Loup, Quebec, including the conductor on train 130, had not yet been counselled relative to this instruction.

The conductor on train 130 stated that this was his first trip into Edmundston in about five years as he had been working in wayfreight service at Rivière-du-Loup. In that area, a considerable amount of switching was performed and he was in the habit of closing the angle cock on the lead car when switching so that the air in the train line would not escape. This procedure was used to speed-up the operation and prevent an emergency brake

application on cars left standing because a considerable amount of time is required to re-charge the air brake system when it goes into emergency.

When the train arrived in Edmundston, there was light snow falling with variable winds. The temperature was minus 15 degrees Celsius.

Analysis

In all likelihood, the conductor closed the angle cocks between the locomotives and the first car before the brake pipe had fully exhausted after the train had been moved ahead and a second brake application made. A pressure wave was created in the brake pipe and the brakes released on the train. The angle cock on the lead car was then not opened as required to counteract this phenomenon.

No hand brakes were applied and had they been applied in accordance with CROR Rule 112, the “bottling of the air” would not really be of concern as the hand brakes would prevent the cars from moving if the air brakes released.

There would seem to be a recurring problem with train crews’ adherence to the instructions. Despite notices posted in the bulletin book alerting train crews of incidences of runaway equipment at other locations as a result of using improper procedures, they apparently still do not fully appreciate the consequences that can result from leaving cars standing secured air brakes with the brake pipe charged.

The Manager of Train Services (MTS) had met with nearly all train crew members in his territory to review and explain proper work methods and to ensure that they were being applied; however, the conductor on train 130 had not been contacted at the time of the occurrence. Although the conductor stated that he understood his responsibilities, the fact that he was one of the persons who had not been contacted by the Manager of Train Services before the occurrence may have been a contributing factor. This is not a criticism CN or the MTS as such programs take time.

The RTC did not suspect that the display of a light on his CTC panel was a result of runaway cars fouling the main track. The light could have been caused by a broken rail, broken bond wire, vandalism, or debris in track switch points. The issuance of a CROR Rule 564 to train 132, restricting its speed to a maximum of 15 mph to the next signal, was the normal procedure to be taken by the RTC. Had the uncontrolled cars not entered the main track in time to cause the signal at Albertine to display a stop indication before train 132 passed it, the train crew would not have been in possession of a Rule 564 and probably would have been approaching the switch at the west end of track EA-34 at a much greater speed than 15 mph. This could have resulted in a collision with the runaway cars.

A device at the west end of track EA-34 to stop the cars from entering the main track probably could have prevented this occurrence.

The unintended and unexpected movement of unattended rail cars could have disastrous consequences at level crossings, loading docks, or couplings with other equipment.

Findings

1. The air brakes on the train were inadvertently released when the angle cocks between the locomotive consist and the first car were closed before the brake pipe had fully vented.
2. The proper procedures for securing cars when uncoupled from locomotives were not complied with.
3. The outgoing crew on train 130, working on the locomotive consist, were unaware that the cars of their train had moved until informed by the crew on train 132.
4. At the time of the occurrence, the conductor on train 130 had not yet been contacted by the Manager of Train Services in regard to the CN bulletin issued on 25 August 1995.
5. There was no device at the west end of track EA-34 to prevent runaway cars from entering the main track.
6. The RTC acted in accordance with normal railway practices.

Causes and Contributing Factors

The train brakes were inadvertently released when one of the angle cocks between the locomotive consist and the first car was closed before the locomotive equalizing reservoir had exhausted. The cars were not properly secured when the locomotives were uncoupled which resulted in the cars moving uncontrolled on a descending grade.

Safety Action Taken

In August 1996, derails were installed at both ends of track EA-34. At the same time, CN modified the application of CROR Rule 112 to reduce uncertainty as to its interpretation. Special instructions were issued requiring the testing of hand brakes to ensure their effectiveness before leaving equipment, and specifying the minimum number of hand brakes to be applied to secure a draft of cars. For example, 1 car requires 1 hand brake, and 2 to 19 cars require 2 hand brakes.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benoît Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 23 April 1997.