

RAILWAY OCCURRENCE REPORT

DERAILMENT

**CANADIAN NATIONAL
FREIGHT TRAIN NO. A-428-21-10
MILE 187.95, SAINT-MAURICE SUBDIVISION
DIX, QUEBEC
10 MARCH 1996**

REPORT NUMBER R96D0035

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 10 March 1996, at approximately 1145 eastern standard time (EST), Canadian National (CN) freight train No. A-428-21-10 (the train) derailed 27 cars near Dix, Quebec, at Mile 187.95 of the Saint-Maurice Subdivision. Four of the derailed cars were residue cars; two of which last contained gasoline and the other two last contained diesel fuel. There was no release of product. There were no injuries.

Ce rapport est également disponible en français.

Other Factual Information

The train was travelling eastward from Senneterre, Quebec (Mile 257.2), destined for Fitzpatrick, Quebec (Mile 0.0). As the train approached Mile 187.95 of the Saint-Maurice Subdivision, it experienced a train-initiated emergency brake application. The train crew heard a loud bang on the north side of the train and felt the locomotive lurch to the north. After conducting the necessary emergency procedures, the crew determined that 27 cars (the 9th to the 35th inclusive) had derailed. The first eight derailed cars remained upright and connected as they passed over a bridge located approximately 400 feet east of Mile 187.95. The seventh derailed car came to rest on the bridge. The bridge deck was found destroyed and the girders sustained extensive damage.

The train, powered by 3 locomotives, was hauling 76 cars. It was approximately 4,526 feet in length and weighed about 7,394 tons.

In the derailment area, the subdivision is a single main track. The authorized timetable speed is 50 mph for passenger trains and 40 mph for freight trains. Traffic in this area is controlled by the Occupancy Control System (OCS) authorized by the Canadian Rail Operating Rules (CROR) and is supervised by the rail traffic controller (RTC) located in Montreal, Quebec.

The event recorder data indicated that the train experienced a train-initiated emergency brake application while it was travelling at approximately 39 mph, with the throttle in the No. 7 position and the train brakes released.

The track structure consisted of 100-pound continuous welded rail, manufactured in 1949 and laid in 1968. The rail was anchored every third tie, with 11-inch tie plates and secured with four spikes per tie on hardwood ties. The ballast consisted of a mixture of crushed rock and Noranda mine slag.

The track was last inspected on 08 March 1996 by a track supervisor in a Hi-rail vehicle; no irregularities were noted. A track geometry car evaluated this location on 14 November 1995 with no exceptions noted. The rail was tested by an ultrasonic rail flaw detection car on 24 October 1995; no defects were identified. A post-derailment examination did not find any irregularities in the track geometry north or south of the destroyed track.

The derailment occurred in a narrow rock cut. The derailed cars had come to rest with 4 loaded gondola cars (the 23rd to the 26th car) dug into the subgrade and the 28th and 29th cars piled on top of the gondola cars. The ore concentrate, from the gondola cars, had spilled over the subgrade and covered the track structure.

The Board would have expected to find key track infrastructure components and pieces of rail underneath the gondola cars, but an extensive search of the area and the derailment debris failed to locate this physical evidence. There is no reason to believe that

the infrastructure was deliberately removed from the accident site, but it may have been inadvertently removed as part of the derailment clean-up.

The temperature was minus two degrees Celsius and the skies were clear.

Analysis

The train was operated in accordance with company instructions and government safety standards.

There was no evidence of equipment defects that could have contributed to the derailment.

It is likely that the unrecovered track infrastructure components and pieces of rail may have produced the necessary evidence to support a probable cause to the derailment.

The cause of this occurrence could not be determined.

Findings

1. The train was operated in accordance with company instructions and government safety standards.
2. There was no evidence of equipment defects that could have contributed to the derailment.
3. The unrecovered track components and pieces of rail may have offered a link to the cause of the derailment.

Causes and Contributing Factors

In the course of the Board's investigation, it became clear that key infrastructure components and pieces of rail were missing from the scene of the occurrence. The inability of the Board to thoroughly examine all of the relevant physical evidence has precluded the Board from determining the cause of this occurrence.

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 22 January 1997.