RAILWAY OCCURRENCE REPORT

QUEBEC NORTH SHORE AND LABRADOR RAILWAY
DERAILMENT
FREIGHT TRAIN NO. A-90
MILE 144.9, WACOUNA SUBDIVISION
LITTLE, QUEBEC
12 MARCH 1995

REPORT NUMBER R95Q0019

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 12 March 1995, at approximately 1725 eastern standard time, Wabush Lake Railway Company Ltd. freight train No. A-90 (the train), being handled by the Quebec North Shore and Labrador Railway (QNS & L), derailed 38 loaded ore cars near Little, Quebec, at Mile 144.9 of the QNS & L Wacouna Subdivision. No one was injured.

Ce rapport est également disponible en français.

Other Factual Information

The train was travelling southward from Ross Bay Junction, Labrador, destined for Arnaud, Quebec. As the train was entering a two-degree left-hand curve, a train-initiated emergency brake application brought the train to a stop. After conducting the necessary emergency procedures, the crew determined that 38 cars (18th to 56th cars from the head end) had derailed. The 18th to the 23rd were derailed and remained upright, and the 24th to the 56th were laying at varying angles along the right-of-way. Five cars sustained minor damage and 33 cars sustained extensive damage. Approximately 400 feet of the main track sustained minor damage and approximately 600 feet of the main track was destroyed.

The train, powered by two locomotives, was hauling 118 loaded cars of ore. It was approximately 4,200 feet in length and weighed about 11,100 tons.

In the derailment area, the subdivision was a single main track. The authorized timetable speed is 40 mph for passenger trains and 30 mph for freight trains. Traffic in this area is controlled by the Centralized Traffic Control System authorized by the Canadian Rail Operating Rules and supervised by the rail traffic controller in Sept-Îles.

The event recorder data indicated that the train experienced a train-initiated emergency brake application while it was travelling at approximately 29 mph, with the throttle in the No. 8 position and train brakes released.

A TSB computer recreation of the in-train forces that may have existed before the derailment was conducted using the Train Dynamics Analyzer software. The recreation concluded that in-train forces were not causal to the derailment.

Through the derailment area, the track structure consisted of 132-pound continuous welded rail manufactured in 1989 and laid in 1993. The rail was box-anchored every third tie, with double-shouldered tie plates and secured with four spikes per tie on hardwood ties. The ballast consisted of crushed stone, 12 inches deep.

The track was last inspected on 10 March 1995 by the assistant track supervisor in a Hi-rail vehicle; no irregularities were noted. A track geometry car evaluated this location on 28 February 1995 with no exceptions noted. The rail was tested by an ultrasonic rail flaw detection car on 24 February 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 site included a rail storage area. Identification of main track rail from stored track was not possible although several

fractured rails were examined. No rail defects were evident in the rail so identified.

An examination of the derailed cars revealed that numerous cars were equipped with 38-inch wheels and B-4 type brake beams. The B-4 type brake beams were designed for 36-inch wheels.

Westinghouse Air Brake Division Company, responsible for the manufacturing of brake beams, issued a service bulletin dated March 1969 advising users of B-4 type brake beams on 38-inch wheels that a modification was required. The bulletin explained that full contact between the brake shoe and the wheel tread would be achieved by rotating the angle of the brake beam head for B-4 type brake beams when used on 38-inch wheels. Unmodified brake beams would reduce the braking efficiency of the train.

The temperature was minus 15 degrees Celsius. The skies were clear. It was snowing lightly and the winds were calm.

Analysis

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

There was no evidence of rail or roadbed defects that could have contributed to the derailment.

Although numerous cars on the train were equipped with improper brake beams, no evidence was found to support the theory that this was causative 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. The track condition was not a factor in this derailment. No evidence of a rail fracture that could have precipitated the derailment was found.

3. Numerous derailed cars on the train were found to be equipped with brake beams designed for smaller diameter wheels; however, this condition would only reduce the braking capability and thus was not causative to the derailment.

Causes and Contributing Factors

The Board has been unable to determine the cause of this occurrence.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, John W. Stants, and members Zita Brunet and Maurice Harquail, authorized the release of this report on 07 March 1996.