

**RAILWAY OCCURRENCE REPORT**

**DERAILMENT**

**CN NORTH AMERICA  
TRAIN NO. 306-05  
MILE 107.4, NAPADOGAN SUBDIVISION  
NAPADOGAN, NEW BRUNSWICK  
06 APRIL 1995**

**REPORT NUMBER R95M0027**

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**

At approximately 1700 Atlantic daylight time (ADT), CN North America (CN) eastward freight train No. 306-05 derailed eight freight cars at Napadogan, New Brunswick, Mile 107.4 of the Napadogan Subdivision. Two of the derailed cars were tank cars loaded with caustic soda. There was no release of product. There were no injuries.

*Ce rapport est également disponible en français.*

### Other Factual Information

CN freight train No. 306-05 departed Taschereau Yard, Montreal, Quebec, travelling eastward, destined for Moncton, New Brunswick, moving onto the Napadogan Subdivision at Edmundston, New Brunswick (Mile 219.2). As the train entered the siding at Mile 107.4, it experienced a train-initiated emergency brake application. After conducting the necessary emergency procedures, the crew determined that eight cars, the first through the eighth car in the train, had derailed. The derailed cars remained upright and foul of the track. Three of the derailed cars sustained minor damage. Approximately 400 feet of track was destroyed.

The train, powered by 3 locomotives, was hauling 51 loaded cars and 15 empty cars. It was approximately 4,200 feet in length and weighed about 6,100 tons.

A siding track, designated as EG-01, runs parallel and north of the main track beginning at Mile 107.4. Siding track EG-04 diverges from track EG-01 approximately 500 feet east of Mile 107.4 and siding track EG-03 similarly extends northward from EG-01 at a point approximately 150 feet east of the switch for track EG-04.

Wheel flange marks were evident on the north rail of siding track EG-04 just beyond the diverging route from siding track EG-01. The south rail then showed impact damage. Severe tie damage was then evident on siding track EG-01 for approximately 150 feet eastward to siding track switch EG-03 where the switch and track were torn out and displaced.

Ten consecutive changes of more than one inch in cross-level were noted on siding track EG-01 between the main track switch and the turnout for siding track EG-04. The rail joints were also observed to be low and the track alignment was noted to be irregular.

The siding had been inspected by the track maintenance supervisor on 03 April 1995, and no exceptions were noted.

Event recorder data indicated that the train experienced a train-initiated emergency brake application while it was travelling at a recorded speed of 15 mph with the throttle in the No. 5 position.

Train movements in this area are governed by the Centralized Traffic Control System authorized by the Canadian Rail Operating Rules and

supervised by a rail traffic controller in Montreal. The authorized speed on track other than the main track is 15 mph.

The CN General Operating Instruction 3.2 9) indicates that loaded covered hopper cars, while operating on other than the main track, must not be operated in excess of 10 mph. The instruction further indicates that such cars are susceptible to oscillation within the speed range of 15 mph to 23 mph. The speed restriction is not referenced in the train consist. The crew had not realized that their train included several covered hopper cars.

Car UMP 253034, the third car from the locomotive consist, was a loaded covered hopper car. The L-1 wheel was displaying gouge marks. No evidence of pre-derailment equipment defects was found on any of the derailed rail cars.

### **Analysis**

The train was operated at a speed exceeding that which was required when moving a loaded covered hopper car on other than the main track. Operating at 15 mph rendered the car susceptible to oscillation.

The irregular track conditions preceding the turnout for track EG-04 coupled with the loaded covered hopper car travelling within its critical speed likely resulted in the car oscillating. The marks on the north rail and the ties on siding track EG-04 and the gouge marks on the L-1 wheel of car UMP 253034 indicate that the noted wheel climbed the rail and followed the diverging EG-04 siding before the truck was pulled over to track EG-01. The truck continued derailed along track EG-01 until it struck and destroyed siding switch EG-03 and the track east of this switch. The resulting derailment forces and damaged track caused the preceding two cars and following five cars to derail.

The train consist did not include any reference to the speed restriction for loaded covered hopper cars. It is possible that such a reference may have alerted the crew to the special requirements for their train on entering the siding.

### **Findings**

1. The train was being operated in excess of the speed prescribed by CN General Operating Instructions for handling loaded covered

hopper cars which tend to oscillate at speeds between 15 mph and 23 mph.

2. Loaded covered hopper car UMP 253034 experienced severe oscillation after exiting the main track, leading to the wheel climb derailment of the L-1 wheel at the EG-04 switch.
3. The derailed wheel followed the diverging route derailing the truck which was then pulled in a derailed condition along siding track EG-01.
4. The derailed truck struck and destroyed the EG-03 switch and track east of this point derailing the preceding two cars and following five cars.
5. The speed restriction for this type of car was not included on the train consist.

#### **Causes and Contributing Factors**

The train was moved off the main track at a speed in excess of the maximum prescribed for the loaded covered hopper cars in the consist. Track irregularities induced oscillations and a wheel climb derailment of covered hopper car UMP 253034 destroying the track and derailing seven other cars.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, Benoît Bouchard, and members Maurice Harquail and W.A. Tadros, authorized the release of this report on 14 August 1996.*