

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: January 10, 1980

Forwarded to:

Honorable John M. Sullivan
Administrator
Federal Railroad Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-79-82 through R-79-85

On July 31, 1979, Union Pacific Railroad Company freight train No. GRX 31 derailed at Granite, Wyoming. The train was moving on main track No. 2 at 75 mph when the second and third locomotive units derailed and overturned in a 3°05.8' curve, separated from the lead locomotive unit, destroyed the track, and caused the following 81 freight cars to derail. Two locomotive units were damaged heavily, 80 freight cars were destroyed, and 2 overpass bridges of Interstate 80 were damaged extensively. Total damage was estimated at \$5 million. ^{1/}

After cresting Sherman Hill, the engineer was not able to control the speed of the train. An engineer working in Granite Yard observed the train passing him at an estimated speed of 65 mph with brakes applied on only three locomotive units and the first six cars. The Safety Board believes that a closed angle cock existed in the trainline which prevented the passage of air and an application of the train brakes from the lead locomotive unit beyond the sixth car.

The removal of the brake pipe flow indicators from UPRR locomotives eliminated a tool the engineer had to inform him about the air flow in the brake pipe. With proper monitoring of the brake pipe flow indicator during the application and release of the automatic brake, the Safety Board believes that the engineer may have detected a blockage in the air brake system and could have corrected it before descending Sherman Hill.

^{1/} For more detailed information, read "Railroad Accident Report-Derailment of Union Pacific Railroad Freight Train at Granite, Wyoming, July 31, 1979" (NTSB-RAR-79-12).

UPRR rules hold the conductor and engineer equally responsible for the safety of the train and for compliance with the rules. The railroad also requires that other crewmembers take immediate action to stop the train, using the emergency brake valve, if necessary, if the speed of the train must be reduced and the engineer and conductor fail to do so. As the train descended Sherman Hill, the train attained a speed of 40 mph within 6 miles and 50 mph within 8 miles. The speed continued to increase to 60 mph and then to 75 mph, 15 miles below the top of Sherman Hill. Tests conducted after the derailment indicated that if the conductor or flagman had applied the train brakes in emergency from the caboose, even when the train was traveling at 60 mph - 40 mph over the authorized speed - the train would have stopped.

During the investigation, the conductor appeared to be confused on the proper allowable speed for the train. He stated that he thought the allowable speed was 30 mph instead of 20 mph. The flagman stated that he knew that the maximum speed requirements for the train was 20 mph on Sherman Hill and that he knew the train was exceeding the 20-mph speed limit when it descended Sherman Hill but he did not become concerned with the excessive speed and said nothing to the conductor. The Safety Board believes that the failure of the crewmembers to understand and apply the rules indicates a lack of monitoring by UPRR supervisors of crew compliance with the train operating rules.

Observations made of car inspectors performing brake tests at Rawlins following the accident disclosed that they drove alongside the train in a motorized vehicle at a speed too fast to check the angle cock handles and brake valve cutout cock handles. They were unable to observe the brake cylinders mounted in the brake beams or on the opposite side of the car. The vehicle was driven on a road which ended about six cars behind the locomotive. No one was observed making inspections of the cars beyond the road. After interviewing the car inspector who performed the air brake test on GRX 31 and his supervisor, it was obvious that the employees were not trained thoroughly in their duties nor did the supervisors require them to perform the air brake test in accordance with Federal Power Brake Regulations, 49 CFR Part 232.

As a result of its investigation of this accident, the National Transportation Safety Board recommends that the Federal Railroad Administration:

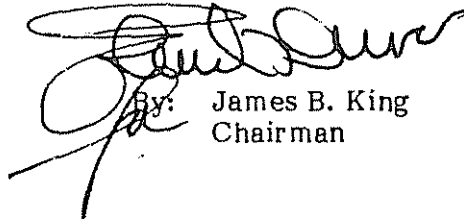
Enforce the requirements for testing train brakes in accordance with the Federal Power Brake Regulations, 49 CFR Part 232, on the Union Pacific Railroad. (Class II, Priority Action) (R-79-82)

Issue regulations to require railroads to establish a system for regular instruction and testing of employee's knowledge of the operating rules. (Class II, Priority Action) (R-79-83)

Review the monitoring system for rule compliance on the Union Pacific Railroad to insure that their supervision can adequately enforce the rules to provide a safe and efficient operation. (Class II, Priority Action) (R-79-84)

Study the feasibility of requiring locomotives to be equipped with brake pipe flow indicators to enable engineers to measure trainline air flow. (Class II, Priority Action) (R-79-85)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in the above recommendations.



By: James B. King
Chairman