

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C.

Railroad Accident Brief Report

LAX 96 FR 006
HEAD-ON COLLISION
UNION PACIFIC RAILROAD
NACCO, WYOMING
JANUARY 31, 1996

About 2:00 a.m., on January 31, 1996, a Union Pacific Railroad unit coal train CNAIM004-30 separated between the fourth and fifth locomotive units while the train was ascending a 1-percent grade. The train's automatic air brake system did not hold the train in place and the fifth locomotive unit and all 114 cars began an uncontrolled downhill movement. A helper locomotive en route to assist the unit train was warned of the runaway train by radio, and the crew abandoned their train.

About 2:05 a.m. the runaway train struck the helper locomotive and pushed it about 1 mile to the east switch at Nacco, Wyoming, where a general derailment of the two helper locomotive units and 66 loaded coal cars occurred. Propane gas tanks used in switch heating service were punctured during the derailment. No fire resulted. No injuries were reported on either train. Damages totaled \$8,199,246. The temperature at the time of the accident was -35 ° F and dropping.

Postaccident examination indicated the train experienced an undesired emergency brake application at about 1:47 a.m. Following the emergency brake application, the brake cylinder pressure and air reservoir pressure were lost due to leaks at the brake cylinder hose crimp fittings. The leaking allowed the emergency application of the brakes to release, thus allowing the stopped train to roll down the descending grade. The traincrew had not applied hand brakes as required by applicable operating rules.

The unit coal train was exerting near the maximum tensile strength of the couplers at the head of the train. Total tonnage of the train was 15,658 trailing tons on a 1-percent grade. This amounts to 391,450 pounds per coupler while the maximum exerted pounds on a coupler should be around 400,000 pounds. When operating this close to maximum coupler strength, any slippage of the locomotives could result in the breaking of a coupler.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this accident was the failure of the brake cylinder hose fittings to maintain air in the brake cylinder during extreme cold weather and the failure of the crew to apply the hand brakes to the separated train. Contributing to the cause of the accident was Union Pacific management dispatching trains in this territory with tonnage near the tensile strength of the couplers.

Adopted: August 18, 1998