

R-373

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: September 15, 1981

Forwarded to:

Honorable Robert W. Blanchette
Administrator
Federal Railroad Administration
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-81-94 and -95

About 2:29 p.m., P.s.t., on November 17, 1980, Union Pacific Railroad Company (UP) work train Extra 3119 West ran out of control while descending a long 2.20-percent grade, overtook, and struck the rear of UP freight train Extra 8044 West (2 VAN-16) on the UP's single main track near Kelso, California. Three train crewmembers were killed and one crewmember was injured. The locomotive unit of Extra 3119 West, the caboose of Extra 8044 West, and 23 freight cars were destroyed. Total damage was estimated at \$1,200,000. ^{1/}

Extra 3119 West was an expedited 2,245-ton work train consisting of 20 carloads of treated crossties, a single locomotive unit, and a caboose. The 3,000-hp SD40 diesel-electric locomotive unit was equipped with extended-range dynamic braking and a 26-C locomotive brake valve with a pressure-maintaining feature. However, the dynamic braking feature was inoperative and it was necessary to rely entirely on the train's air brake system to balance the downward grade force on UP's 17-mile, 2.20-percent grade between Cima and Kelso, California. The crew set up retainers as required before leaving Cima, and the engineer attempted to stabilize speed at the maximum 15 mph provided for by the timetable in this situation. However, the investigation established that 13 or more of the 21 cars in the train did not have fully-effective brakes. Inasmuch as 14 to 15 fully-effective car brakes in full service were required to balance grade force at 15 mph, the engineer was never able to control the train's speed on the grade.

When the engineer notified the dispatcher that he had not been able to control speed by repeated reductions of brakepipe pressure, the conductor became alarmed and applied the brakes in emergency from the caboose. The Safety Board believes that this did not transmit to the locomotive and that the engineer was unaware that an emergency application had been made. As a result, the pressure-maintaining feature began restoring air pressure to the brakepipe and a partial release of the brakes occurred. With virtually all retardation lost, the train ultimately ran out of control and attained a speed of about 118 mph when it struck the rear of Extra 8044 West about 4 1/2 miles west of Kelso.

^{1/} For more detailed information, read: Railroad Accident Report—"Rear-end Collision of Union Pacific Railroad Company Trains Extra 3119 West and Extra 8044 West (2-VAN-16), near Kelso, California, November 17, 1980" (NTSB-RAR-81-7).

Had the locomotive unit been equipped with a brakepipe flow indicator, the engineer probably would have realized that an emergency application had occurred and would have had time to nullify the action of the pressure-maintaining feature. Without the flow indicator, the engineer may not have recognized that a drop in brakepipe pressure had occurred, and even if he had, he would have had no way of knowing whether an emergency or service application had been made.

The investigation of this accident established that: (1) Extra 3119 West did not receive a proper air brake inspection and test at Las Vegas, where it was originated; (2) the general car foreman at Las Vegas had issued written instructions to the car inspectors that no expedited train would require more than 15 minutes for inspection and testing; (3) the 20 tie cars in Extra 3119 West had moved 1,260 miles from a UP timber treating plant to Las Vegas and should have received the required inspection and testing at least three times en route to Las Vegas; (4) 20 of the surviving 35 UP class F-70-1 tie cars were assembled for test purposes after the accident, and of these, 6 had ineffective brakes and 10 had partially-effective brakes when they arrived at Las Vegas; and (5) UP continues to dispatch trains with defective braking systems between Las Vegas and Yermo without making the proper tests and repairs.

The Safety Board believes that present Union Pacific policy does not foster compliance with their air brake rules and the Federal Power Brake Regulations and that this policy has resulted in a succession of accidents involving runaway or hard-to-control trains on the railroad's mountain grades. The Safety Board's investigation of a runaway train which resulted in a derailment on Sherman Hill near Granite, Wyoming, on July 31, 1979, ^{2/} developed that this train had not received a proper brake test and that the required brake tests and inspections at its point of origin did not comply with the requirements of 49 CFR 232. The Safety Board recommended that UP instruct its employees who make train inspections and tests in what the regulations require and establish procedures to insure that the tests are conducted properly. Subsequent accident investigations have not shown improvement in the manner in which UP tests its trains.

The Safety Board also believes that the Federal Railroad Administration (FRA) is not enforcing the Federal Power Brake Regulations on the Union Pacific. An FRA spokesman was present when the car inspector admitted making an improper brake test and inspection on Extra 3119 West during the Safety Board's deposition proceedings at Las Vegas on February 19, 1981, and FRA inspectors also detected the defects in the tie cars that were assembled for the postaccident test train at Las Vegas. In addition, the FRA's Office of Safety has received the United Transportation Union's formal complaint of the operation of UP Extra 3493 East with a defective brake system on February 19, 1981. Further, following the Granite investigation, the Safety Board recommended that the FRA enforce the Federal Power Brake Regulations on the UP (Recommendation R-79-82). The FRA responded that there is a strong enforcement program for monitoring compliance with the regulations, but also that the FRA considers the best means of achieving compliance to be a continuous and vigorous training program based on the individual railroad's unique conditions. The response did not state whether the UP had such a training program or whether FRA was monitoring UP's compliance as recommended. On June 3, 1980, the Safety Board replied that the response was unacceptable because the FRA did not regulate training and that the FRA's statement did not indicate that there had been any improvement in compliance on the UP. Further, the Safety Board requested

^{2/} "Railroad Accident Report—Derailment of Union Pacific Railroad Freight Train at Granite, Wyoming, July 31, 1979" (NTSB-RAR-79-12)

that the FRA advise as to what had been done to improve UP's compliance with the Federal Power Brake Regulations. To date the FRA has not responded to this letter.

The Safety Board understands that the FRA is considering relaxing the requirements of the Federal Power Brake Regulations as related to the initial terminal inspection and testing of train air brake systems and intends to publish a Notice of Proposed Rulemaking toward that end. This accident, as well as others that have occurred on the Union Pacific during the past 2 years, is a strong indication that a compelling need still exists for minimal inspection and testing requirements at all locations where trains are originated as provided for in the original 1958 law. Indeed, the advent of higher axle loadings and the increasing number of high-tonnage bulk trains being operated over the long and steep grades in the West have produced a need for stricter and more comprehensive enforcement of the regulations than ever before. The FRA should make no revisions or modifications to the power brake regulations which will adversely affect the safety of train operations.

Therefore, as a result of its investigation of this accident, the National Transportation Safety Board reiterates the following recommendations made to 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. (Recommendation R-79-82)

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

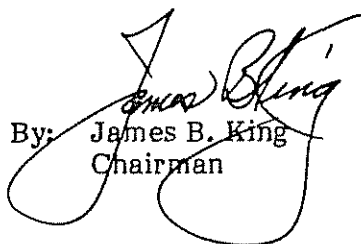
Study the feasibility of requiring locomotives to be equipped with brakepipe flow indicators to enable engineers to measure trainline air flow. (Recommendation R-79-85)

In addition, the Safety Board recommends that the Federal Railroad Administration:

Conduct a safety review of the Union Pacific Railroad Company to determine that compliance with Federal Power Brake Regulations (49 CFR 232) is enforced effectively at Las Vegas, Nevada, Yermo, California, and other initial terminal points, and provide the Safety Board with a report of the findings. (Class II, Priority Action) (R-81-94)

Retain the minimal requirements of the Federal Power Brake Regulations (49 CFR 232) for the inspection and testing of trains at the points where they are originated. (Class II, Priority Action) (R-81-95)

DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in these recommendations. KING, Chairman, did not participate.

By: 
James B. King
Chairman