

**EMERGENCY ORDERS NO. 18
EOT Devices**

[4910-06]

**DEPARTMENT OF TRANSPORTATION
Federal Railroad Administration**

**[FRA Emergency Order No. 18,
Notice No. 1]**

**Atchison, Topeka, and Santa Fe Railway Company;
Burlington Northern Santa Fe Railroad**

**Emergency Order Requiring
Capability to Initiate Emergency Application
of Air Brakes from the Head End and Rear of Trains**

The Federal Railroad Administration (FRA) of the United States Department of Transportation (DOT) has determined that public safety compels issuance of this Emergency Order requiring that all westward trains operated by the Atchison, Topeka, and Santa Fe Railway Company (ATSF) on the Cajon Subdivision, between Barstow milepost 745.9 and Baseline milepost 79.9, have the capability to initiate an emergency application of the air brakes from both the head and rear of the train. ATSF recently merged with the Burlington Northern Railroad to form Burlington Northern Santa Fe. To the extent this new entity's activities have an effect on the train operations in question, it is covered by this order.

Authority

Authority to enforce Federal railroad safety laws has been delegated by the Secretary of Transportation to the Federal Railroad Administrator. 49 CFR § 1.49. Railroads are subject to FRA's safety jurisdiction under the Federal railroad safety laws. 49 U.S.C. §§ 20101, 20103. FRA is authorized to issue emergency orders where an unsafe condition or

practice "causes an emergency situation involving a hazard of death or personal injury." 49 U.S.C. § 20104. These orders may immediately impose such "restrictions and prohibitions . . . that may be necessary to abate the situation." (*Ibid.*)

Background

ATSF's line of railroad between Barstow and Los Angeles, California, consists of double main track which passes through the San Bernardino Mountains via "Cajon Pass." The route for westward moving trains involves a steady climb from Barstow to Summit, California, a distance of approximately 55 miles. At Summit, the line begins a descent westward with a more than 3 percent grade on one track and a more than 2 percent grade on the other track. The descent for eastward trains is not nearly as severe. Trains in this area operate by authority of a centralized traffic control system managed by ATSF train dispatchers. The Union Pacific Railroad (UP) also operates its trains through this same corridor via a trackage rights agreement with ATSF. The Southern Pacific Railroad operates trains through Cajon Pass, but on a right-of-way separate from that of ATSF.

On December 14, 1994, a westbound Santa Fe intermodal freight train operating between Barstow and San Bernardino, California collided with the rear end of a UP unit coal train resulting in the serious injury of two crew members and total estimated damages in excess of \$4 million. Investigation of the accident revealed that an apparent blockage or restriction of the trainline (i.e., the connected system of metal pipes and flexible air hoses that runs end-to-end through the train) inhibited the normal brake pipe air flow resulting in incomplete train braking. After investigation of this incident, the National Transportation Safety Board (NTSB) concluded that, had the train been equipped with a two-way end-of-

train device (EOT), the collision could have been avoided because the engineer could have initiated an emergency brake application from the rear of the train. A two-way EOT provides the engineer with information on the status of brake pressure at the rear of the train and permits the locomotive crew to initiate, via telemetry, an emergency brake application from the rear of the train forward. This permits the application of effective braking force even if there is blockage somewhere on the trainline.

On December 15, 1995, based on the conclusions reached above, the NTSB recommended that FRA separate the two-way end-of-train device provisions of its 1994 proposed rule on power brakes from the rest of the proposal, and immediately conclude the end-of-train device rulemaking so as to require the devices on all cabooseless trains. FRA had independently decided to take separate action on the EOT provisions, and has so informed NTSB. NTSB also recommended to all major railroads that, pending completion of FRA's final rule, those railroads implement the use of two-way EOTs on all cabooseless trains by March 31, 1996.

Subsequent to the December 1994 accident, Santa Fe worked with the railroad safety staff of the California Public Utilities Commission (PUC) to voluntarily implement various changes in its operations, which included a plan to commence equipping trains with two-way end-of-train devices. Measures implemented by Santa Fe following the accident included changes in its rules of operations to provide for use of manned helper locomotives on certain westward moving trains; issuing instructions to maximize the use of the track with a lesser grade; issuing instructions to avoid stopping trains on a descending grade and avoid allowing

following trains in the next block to the rear of westward moving trains; and appointing an operating officer to focus exclusively on train operations through Cajon Pass.

On February 1, 1996, westward ATSF freight train HBALT-131 derailed on a descending 3 percent grade at milepost 60.7, approximately 4 miles west of Summit and 20 miles east of San Bernardino. The derailment occurred when the train entered a more than 7 degree curve at a speed estimated to be in excess of 50 mph (maximum operating speed at that location is 25 mph). The incident resulted in fatal injuries to the conductor and brakeman, serious injury to the engineer, and the derailment of 45 of 49 cars and all four locomotives. The train consist included hazardous material cars that subsequently caught fire. Area residents were evacuated and highways were closed, including Interstate 15. The NTSB is heading the investigation. FRA is providing expert assistance in the investigation. Although investigation of this accident is currently in progress, it appears as though it could have been avoided had the train been equipped with a means for the train crew to have effected an emergency brake application from the rear of the train. Although the train was equipped with a two-way EOT device, it appears that it was not "armed," i.e., that it was not activated in such a way that it could have been used to effect an emergency application from the rear of the train. At this early juncture, it appears that a contributory cause of this incident may have been a blocked brake pipe.

Based on its investigatory efforts, FRA has reason to believe that ATSF's procedures for ensuring the safe passage of trains through Cajon Pass are presently inadequate to protect public and employee safety. Although FRA believes the accidents described above are reason enough to warrant that conclusion, FRA is also concerned about other indications that ATSF

has not been taking appropriate actions to prevent such accidents. FRA has reason to believe that ATSF has not consistently followed its own protocols for operations through Cajon Pass designed to prevent such accidents and is not consistently taking proper preventive actions at Barstow, such as ensuring, during pre-departure inspections, that EOTs have been properly activated to permit brake application from the rear of the train. This additional evidence of inadequate practices on the part of ATSF underscores the need for immediate action to prevent a recurrence.

Finding and Order

FRA concludes that ATSF's current operation of freight trains on the Cajon Subdivision, between Barstow milepost 745.9 and Baseline milepost 79.9, poses an imminent and unacceptable threat to public safety. I find that the unsafe conditions discussed above create an emergency situation involving a hazard of death or injury to persons. Accordingly, pursuant to the authority of 49 U.S.C. § 20104, delegated to me by the Secretary of Transportation (49 CFR § 1.49), it is hereby ordered that, on all of ATSF's westward freight trains operating through Cajon Pass:

(1) ATSF must ensure that it is possible for the train crew to effect an emergency brake application from the rear of the train by at least one of the following methods:

(A) Use of a two-way end-of-train device that has been tested, is functioning, and is armed (activated) to permit a brake application from the rear. When this method is used:

- ATSF must determine, after all other required brake inspections and before the train departs Barstow, that the EOT is functioning in two-way operation by testing the device's ability to effectuate an emergency application; and
- The person making this determination must document in writing (the railroad may prescribe a form for this purpose) that the device is functioning in two-way operation and its battery is fully charged. That person must sign the form and ensure that it is kept in the cab of the locomotive with the daily inspection form; OR

(B) Use of an occupied helper locomotive at the end of the train. If this method is used:

- The helper locomotive engineer will initiate and maintain two-way voice radio communication with the engineer on the head end of the train; this contact shall be verified just prior to passing Summit. If there is a loss of communication prior to passing Summit, the helper locomotive engineer and the head-end engineer will act immediately to stop the train until voice communication is resumed. If there is a loss of communication once the descent has begun beyond Summit, the helper locomotive engineer and the head-end engineer will act to stop the train if the train has reached a predetermined rate of speed that indicates the need for emergency braking.
- The dynamic brakes must be tested, cut in, and known to be functioning by both the helper engineer and the head end engineer;

- The brake pipe of the helper locomotive must be connected and cut in to the train line and tested to ensure operation; and
- Trains will be stopped when helpers are cut in or cut off from trains being assisted; OR

(C) Use of an occupied caboose at the end of the train with a tested, functioning brake valve capable of initiating an emergency brake application from the caboose. If this method is used:

- The train service employee in the caboose and the engineer on the head end of the train will establish and maintain two-way voice radio communication and respond appropriately to the loss of such communication in the same manner as prescribed for helper locomotives, above; OR

(D) Use of a radio-controlled locomotive in the rear third of the train under continuous control of the engineer in the head end by means of telemetry, but only if such radio-controlled locomotive is capable of initiating an emergency application on command from the lead locomotive.

(2) Once such a train has received the required brake test at Barstow, ATSF must test the emergency braking capacity of the train by initiating an emergency application of the brakes and determining that the emergency application propagates throughout the train.

Where no EOT device is used, this determination must be made by visual observation that the brakes have set on the rear car. Where an EOT device is used, this determination is made by seeing that the brake pipe pressure drops rapidly to zero.

(3) ATSF shall immediately report to the Emergency Response Center (1-800-424-0201) any incidents involving loss of braking control over the affected territory.

Relief

ATSF may obtain relief from this order by demonstrating to FRA that, through compliance with this order and any additional measures ATSF may adopt on its own or through partnership efforts described below, it is consistently sending trains westward from Barstow with fully functioning air brake systems that can be successfully operated in emergency application from the rear of the train through use of one of the methods described above. At a minimum, FRA will require a showing that, for a period of 180 consecutive days, there has been no violation of this order. Following such a 180-day period, ATSF may request in writing to the Administrator that FRA rescind this order. At that time, FRA will take into account both evidence indicating compliance with this order and any other information it has gathered concerning ATSF's relevant practices that may affect the safety of train operations at Cajon Pass.

FRA will, at any time, consider requests by ATSF to exclude certain train operations from the scope of this order based on satisfactory demonstration that those operations can be safely performed using other procedures. However, all aspects of this order apply to all westward trains departing Barstow unless and until written special approval is granted permitting other procedures for specific train operations. The Associate Administrator for Safety is authorized to issue such special approvals without amending this order.

Effective Safety Partnerships

Over the past year, FRA has been encouraged by the formation of various partnerships involving FRA, major railroads, and affected labor organizations in collaborative actions to improve railroad safety. FRA is ready to work in partnership with ATSF and the affected labor organizations to improve the safety of operations in the Cajon Pass area in the same way that such partnerships have improved safety across the industry.

Penalties

Any violation of this order shall subject the person committing the violation to a civil penalty of up to \$20,000. 49 U.S.C. §§ 21301. FRA may, through the Attorney General, also seek injunctive relief to enforce this order. 49 U.S.C. § 20112.

Effective Date and Notice to Affected Persons

This order shall take effect at 12:01 a.m (PST) on February 8, 1996, and apply to all westward trains leaving Barstow on or after that time. Notice of this Order will be provided by publishing it in the Federal Register. Copies of this Emergency Order will be sent by mail or facsimile prior to publication to the Vice President-Operations of ATSF, counsel for ATSF, officials of interested labor organizations, the California PUC, and the Association of American Railroads.

Review

Opportunity for formal review of this Emergency Order will be provided in accordance with 49 U.S.C. § 20104(b) and section 554 of Title 5 of the United States Code.

Administrative procedures governing such review are found at 49 CFR Part 211. See 49 CFR §§ 211.47, 211.71, 211.73, 211.75, and 211.77.

Issued in Washington, D.C. on FEB 6 1996



Dolene M. Molitoris

Administrator