INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2589

THE DENVER AND SALT LAKE RAILWAY COMPANY

REPORT IN RE ACCIDENT

NEAR AZURE, COLO., ON

MAY 25, 1942

SUMMARY

Railroad:	Denver and Salt Lake	
Date:	May 25, 1942	
Location:	Azure, Colo.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 3616 West	: Extra 1505 West
Engine numbers:	3616	: 1505
Consist:	46 cars, caboose	: 29 cars, caboose
Speed:	Standing	: 20 m. p. h.
Operation:	Timetable and train orders	
Track:	Single; 7°48' curve; 0.733 percent descending grade westward	
Weather:	Clear	
Time:	About 4:45 a. m.	
Casualties:	4 killed; 1 injured	
Cause:	Accident caused by failure to provide protection for preceding train	
Recommendation:	That the Denver and Salt Lake Railway Company establish an adequate block-signal system on the line involved in this accident	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2589

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE DENVER AND SALT LAKE RAILWAY COMPANY

July 10, 1942.

Accident near Azure, Colo., on May 25, 1942, caused by failure to provide protection for preceding train.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On May 25, 1942, there was a rear-end collision between two freight trains on the Denver and Salt Lake Railway near Azure, Colo., which resulted in the death of one person carried under contract and three employees, and the injury of one employee.

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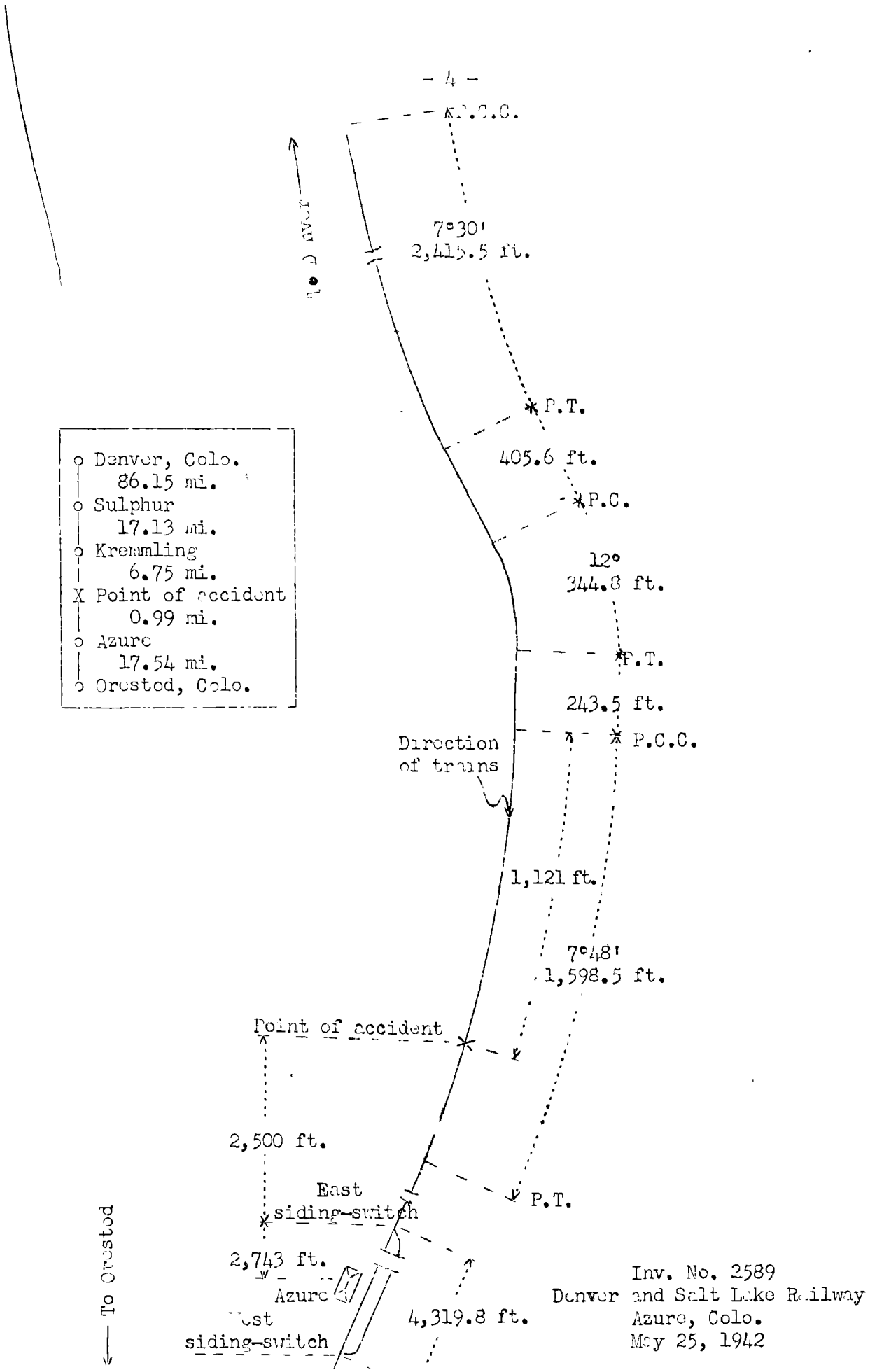
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 2589
Denver and Salt Lake Railway
Azure, Colo.
May 25, 1942

Location of Accident and Method of Operation

This accident occurred on that part of Subdivision 1 which extends between Denver and Orestod, Colo., a distance of 128.56 miles. This is a single-track line, and between Winter Park and Orestod, a distance of 71.7 miles, trains are operated by timetable and train orders only. Trains of the Denver & Rio Grande Western Railroad, hereinafter referred to as the D. & R. G. W., are operated over this portion of the Denver and Salt Lake Railway, hereinafter referred to as the D. & S. L. At Azure a siding 4,319.8 feet in length parallels the main track on the south. The east switch of this siding is located 2,743 feet east of the station. The accident occurred on the main track at a point 2,500 feet east of the east siding-switch. As the point of accident is approached from the east there is a series of curves and tangents followed, in succession, by a compound curve to the left 2,415.5 feet in length, the maximum curvature of which is 7°30', a tangent 405.6 feet, a 12° curve to the right 344.8 feet, a tangent 243.5 feet, and a compound curve to the right 1,598.5 feet, the maximum curvature of which is 7°48'. The accident occurred on the last-mentioned curve at a point 1,121 feet west of its eastern end where the curvature is 7°48'. The grade for west-bound trains varies between 0.59 and 1.00 percent descending a distance of 7,000 feet to the point of accident and is 0.733 percent at the point of accident.

Operating rules read in part as follows:

14. ENGINE WHISTLE SIGNALS

Note--The signals prescribed are illustrated by "o" for short sounds; "___" for longer sounds. * * *

* * *

(c) ___ooo Flagman protect rear of train.

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees. * * *.

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* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals.

* * *

In the immediate vicinity of the point of accident the maximum authorized speed for freight trains is 25 miles per hour, and on the curve on which the accident occurred, 18 miles per hour.

Description of Accident

Extra 3616 West, a west-bound D. & R. G. W. freight train, consisted of engine 3616, 46 loaded cars and a caboose. This train departed from Sulphur, 24.87 miles east of Azure, at 3:15 a. m., according to the dispatcher's record of movement of trains, passed Kremmling, 7.74 miles east of Azure and the last open office, at 4:23 a. m., and stopped with the caboose standing at a point 2,500 feet east of the east siding-switch at Azure about 4:42 a. m. About 3 minutes later the caboose was struck by Extra 1505 West.

Extra 1505 West, a west-bound D. & R. G. W. freight train, consisted of engine 1505, 29 loaded cars and a caboose. This train departed from Sulphur at 3:35 a. m., according to the dispatcher's record of movement of trains, passed Kremmling at 4:28 a. m., and while moving at an estimated speed of 20 miles per hour it collided with the caboose of Extra 3616 West. The brakes of Extra 1505 had functioned properly at all points where used en route.

In the vicinity of the point of accident the track is laid in a canyon and parallels the north bank of the Colorado River. Because of track curvature and rock cliffs, the view of the point of accident from either side of an approaching west-bound engine is restricted to a distance of about 240 feet.

The force of the impact moved Extra 3616 forward about 40 feet. The caboose of Extra 3616 West was demolished. The car ahead of the caboose was badly damaged. The second car ahead of the caboose was demolished and the debris stopped in the river. The third and fourth cars ahead of the caboose were derailed and badly damaged. Engine 1505 was derailed to the south and stopped, considerably damaged, upright and parallel to the track.

It was clear and day was breaking at the time of the accident, which occurred about 4:45 a. m.

The employees killed were the conductor and the flagman of Extra 3616 West and the fireman of Extra 1505 West. The employee injured was the engineer of Extra 1505 West.

Data

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 19.83 trains.

Discussion

The rules governing operation on the line involved provide that when a train is moving under circumstances in which it may be overtaken by another train the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection. All surviving members of both crews involved understood these requirements.

Extra 3616 West stopped on the main track at Azure about 4:42 a. m., with the engine standing about 115 feet east of the east siding-switch. About 3 minutes later, as this train was starting to enter the siding, its rear end was struck by Extra 1505 West. The engineer of Extra 3616 stated that when his train was closely approaching Azure he did not sound the engine whistle signal for the flagman to provide flag protection because it had not been the practice to sound the signal when a train was stopping to enter a siding. He said that an engine whistle signal could not be heard at the rear of a long freight train in the territory involved because of the canyon, the tunnels and the noise made by the river.

The engineer of Extra 1505 stated that as his train was approaching Azure the speed was about 25 miles per hour and the enginemen and the front brakeman were maintaining a lookout ahead. The view of the track ahead was obscured because of track curvature and the rock cliffs. No torpedo was exploded and there was no indication of a preceding train until the engine of Extra 1505 reached a point about 240 feet east of the point where the accident occurred. The engineer observed the caboose of the preceding train, and immediately moved the brake valve to emergency position, placed the reverse lever in position for backward motion and opened the sander valve and the throttle, but the distance was insufficient for stopping short of the preceding train. The speed of Extra 1505 was about 20 miles per hour at the time of the collision. What action the conductor and the flagman of Extra 3616 took to provide flag protection for their train could not be determined, as they were killed in the accident. No remnant of a recently burned fusee

was found in the vicinity. Had adequate flag protection been provided by the crew of Extra 3816 it is probable this accident would have been averted.

Between Winter Park and Orested, trains are operated by timetable and train orders only. This carrier has an automatic block-signal system on the line between Fox Jct., near Denver, and Winter Park, a distance of 55.36 miles. The western end of this signal installation is located 54.16 miles east of Azure. If an adequate block system had been in use in the territory involved, the crew of the following train would have received definite information that the preceding train was a short distance ahead, and this accident would have been averted.

In connection with this investigation, information was obtained concerning five additional collisions between trains and five derailments, during the past two years, on the line involved in this accident, which probably would have been prevented had an automatic block-signal system been in use. In addition, there were fifteen accidents resulting from trains striking rock slides or rocks which had fallen upon the track. In one of these rock-slide accidents, which occurred February 24, 1941, at Gore, about 2 miles east of Azure, and which was investigated by the Commission, a freight train struck a rock slide and was derailed. One employee was killed and the line was blocked for several hours. Another serious accident of this character occurred on April 23, 1942, when the engine of an east-bound freight train struck a rock on the track. The engine and several cars were derailed at the entrance to a tunnel, a portion of the tunnel collapsed, one employee was injured and the line was blocked 4 days. If an automatic block-signal system were in use between Winter Park and Orested, slide-detector devices could be installed to operate in conjunction with it to give warning of rock slides and fallen rocks.

Cause

It is found that this accident was caused by failure to provide protection for the preceding train.

Recommendation

The Denver and Salt Lake Railway Company should establish an adequate block-signal system on the line involved in this accident. A rule to show cause why it should not do so will be served on said carrier.

Dated at Washington, D. C., this tenth day of July, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL,
Secretary.

(SEAL)