

INTERSTATE COMMERCE COMMISSION.

REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE CINCINNATI, NEW ORLEANS & TEXAS PACIFIC RAILWAY, SOUTHERN RAILWAY SYSTEM, AT SADIEVILLE, KY., ON NOVEMBER 14, 1922.

Dept. of Transportation
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December 28, 1922.

To the Commission:

On November 14, 1922, there was a head-end collision between a freight train and a work train on the Cincinnati, New Orleans & Texas Pacific Railway, Southern Railway System, at Sadieville, Ky., resulting in the death of one employee and the injury of two employees.

Location and method of operation.

This accident occurred on that part of the Southwestern District extending between Cincinnati, Ohio, and Danville, Ky., a distance of 116.5 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. Eagle Creek bridge, located a short distance north of the station at Sadieville, is 832 feet in length, and approximately 50 feet in height at the point of accident, which was on the bridge about 65 feet north of its southern end. Approaching the point of accident from the south there are 2,957 feet of tangent, then a 4-degree curve to the left 1,198 feet in length, followed by 1,010 feet of tangent, the accident occurring on this tangent at a point 191 feet from its southern end. Approaching from the north there is a curve of 3° 30' to the left 2,039 feet in length, followed by the tangent on which the accident occurred. The grade is 0.5 per cent descending for southbound trains for several miles to within approximately 1,500 feet of the point of accident, from which point it is level. Owing to cuts and the curvature of the track the view of Eagle Creek bridge is limited to a distance of about 900 feet approaching from the north, and to about 300 feet approaching from the south.

The automatic signals are of the one-arm, two-position, lower-quadrant, home-and-distant type. Approaching from the north, southbound distant signal 55-9 is located about 2,000 feet from the point of accident, while the home signal is south of it; approaching from the south, northbound home signal 56-6 is located about 1,200 feet from the point of accident.

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It was raining at the time of the accident, which occurred at about 11.50 a m.

Description.

Work extra 6422 consisted of five cars and a caboose, hauled by engine 6422, and was in charge of Conductor Atkins and Engineman Waters. At Sadieville the crew received a copy of train order No. 39, Form 19, reading in part as follows:

"Work extras 6422 and 6159 will work six o'clock 600 am until eight o'clock 800 pm between Ludlow and Lexington protecting themselves. x x x At 620 am all overdue trains except No Seventy Six 76 have passed Sadieville."

Ludlow is 49.1 miles north of Hinton, while Lexington is 24.9 miles south of Sadieville. Arrangements were made with work extra 6159 to protect work extra 6422 against southbound trains at Hinton, 4.8 miles north of Sadieville, while protection against northbound trains was provided for by stationing Flagman Denham at a point about 4,000 feet south of signal 56-6, with instructions written by Conductor Atkins on a piece of plain paper, as follows:

"11/14/22.
Flagman Denham
Instructions

Drive Work Ex6422 and Work Ex 6159 in at Hinton

Atkins"

At about 11.30 a. m. work extra 6422 was working just south of Hinton, shortly after which the train proceeded toward Sadieville, passed distant signal 55-9, which was displaying a caution indication, and on reaching a point about 2,000 feet south of this signal collided with train second No. 76 while traveling at a speed estimated to have been between 4 and 8 miles an hour.

Northbound freight train second No. 76 consisted of 58 cars and a caboose, hauled by engine 6312, and was in charge of Conductor Case and Engineman Henderson. On receiving signals from Flagman Denham, this train was brought to a stop south of Sadieville at 11.44 a. m.; it was then about eight hours late. Engineman Henderson read the flagging instructions, after which the train proceeded, passed home signal 56-6, which was displaying a stop indication, without stopping, and on reaching a point about 1,000 feet north of this signal collided with work extra 6422 while traveling at a speed estimated to have been between 4 and 8 miles an hour.

The force of the impact drove the work extra backward, the engines being separated a distance of about five car lengths when the trains came to rest. Both engines were considerably damaged, while the third and sixth cars in train second No. 76 were badly damaged. The employee killed was the engineman of the work extra.

Summary of evidence.

After train second No. 76 had been flagged south of Sadieville, Flagman Denham boarded the engine and showed the flagging instructions to ~~the~~ Engineman Henderson, and after standing at this point for several minutes, the train proceeded, the engineman working only enough steam to get the train started, passed signal 56-6, which was displaying a stop indication, and had attained a speed estimated by the engineman to have been 15 miles an hour when the fireman gave him warning of the approach of the work extra and he made an emergency application of the airbrakes. Engineman Henderson thought the work extra had no right to return to Sadieville under the flagging instructions as written, except under authority of a train order, or flag protection, and, together with Fireman Hardie and Head Brakeman Burnette, expressed the opinion that under time-table rule 53, which is quoted in the conclusion of this report, his train had a right to pass signal 56-6 in the stop position and proceed under control, even though the flagman was stationed at a point estimated by the engineman to have been 75 car lengths distant from the signal; the engineman thought this distance was an extra precaution in the stationing of the flagman, and that had he been at the signal it would have been a case of short flagging. Engineman Henderson also said the flagman only protected his movement through the block governed by signal 56-6, and that on reaching the succeeding signal, if it was in the stop position, he would have had to flag through the block it governed. Conductor Case was riding in the caboose, and did not know why his train had been flagged or what indication had been displayed by signal 56-~~6~~6.

According to Conductor Atkins, of the work extra, *his* train was traveling at a speed of about 15 miles an hour, and as the rails were wet he thought the engineman might make a heavy application of the air brakes in case he should want to stop, and in order to avoid any possibility of throwing the ditcher off the train when this was done, the conductor applied the air brakes lightly by means of the conductor's valve, and he said that shortly afterwards, as the train was approaching distant signal 55-9, Engineman Waters also made an air-brake application, the result being that when the bridge was reached the speed had been reduced to about 4 or 5 miles an hour. Brakeman Ransdell said the conductor left the cupola of the caboose after having made

the light application of the air brakes and that soon afterwards he saw smoke, notified the conductor, and then opened the conductor's valve; he thought the speed was about 20 miles an hour when signal 55-9 came in sight and that it was about 4 or 5 miles an hour at the time of the collision. He estimated the distance between the point where he opened the conductor's valve and the point of collision as 10 or 15 car lengths. Fireman Haynes was working on the fire when signal 55-9 was passed and did not see its indication, and he said he did not look ahead until his engine was on the bridge, at which time he saw train second No. 76 immediately south of the bridge. He did not know anything about the brakes having been applied from the rear of the train.

Conductor Atkins said the flagman was stationed south of Sadieville for the purpose of permitting the work extra to move in and out of Sadieville whenever it was desired to do so, the reason the instructions read to drive the work extras in at Hinton being that they were more likely to be working near that station. He had not issued the flagging instructions on the prescribed form as his supply of forms had been exhausted, and he had made no effort to obtain an additional supply.

The investigation failed to disclose the exact condition of the air brakes on work extra 6422 at the time of the accident. Brakeman Ransdell said the brakes on the caboose were working, while Conductor Atkins said he thought the air was working properly except on one car, he did not however, have any definite information on the subject.

Conclusions.

This accident was caused by the failure of Engineman Henderson, of train second No. 76, properly to obey automatic block-signal indications.

Rules 46a and 53, time-table No. 31, effective September 24, 1922, read as follows:

46a "If the absolute home signal indicates 'stop' before the train enters the block, the train must stop before entering the block, send a flagman in advance immediately, wait five minutes after flagman has started, then proceed under control, following flagman at safe distance, until it reaches the next block signal.

53 "When a flagman is at a block signal with instructions to clear a following train through a block or with proper instructions on Form 895, a train so stopped and instructed may, if no other reason exists for holding it, pass the absolute block signal in stop position and proceed to the next block signal under control, and in addition sending a flagman ahead with proper signals before passing through a tunnel x x x. Instructions affecting movement of trains beyond point where flagman is stationed must be issued on Form 895 to conductors and engineman of train affected."

Engineman Henderson considered rule 53 as his authority for passing signal 56-6 in the stop position. This rule, however, would have applied only if the flagman had been stationed at the signal, and had been in possession of instructions properly addressed and on the prescribed form. As it was, Engineman Henderson should have obeyed the stop indication of the signal, and then have proceeded as authorized by rule 46a; had he stopped, sent a flagman ahead, and then followed after waiting five minutes, this accident undoubtedly would not have occurred.

There was evidence to the effect that the crew of work extra 6+23 had no right to proceed to Sadieville, but it is difficult to understand how this conclusion can be reached. The work extra was within its working limits, was being protected against southbound trains by the crew of another work extra, and had stationed a flagman south of Sadieville to protect against northbound trains, with the exception of first-class trains, which according to the flagman he was not to stop. Being thus protected in each direction, this work extra had a right to move back and forth at will between the two stations, having due regard for the other work extra and provided it cleared the time of first-class trains, and no train order or other flag protection was necessary in order to permit it to move southward to Sadieville, or to any point short of Sadieville, whenever the crew so desired. Conductor Atkins is, however, open to censure for his failure to comply with the requirement of rule 53 that instructions affecting the movement of trains beyond the point where the flagman is stationed must be issued on Form 825 to conductors and engineman of the trains affected. In this case he did not issue the instructions on the prescribed form, while they were addressed only to the flagman.

The investigation of this accident disclosed the existence of a condition similar to that found to exist in connection with the investigation of an accident which occurred on the St. Louis-San Francisco Railroad near Adamsville, Ala., on August 9, 1919. In that case a bulletin, No. 310, had been issued authorizing engineer to proceed without flag protection when stopped by a flagman stationed at a block signal, but apparently the bulletin had not been properly posted, both crews were in ignorance of it, and the rule which governed was the rule requiring trains to stop, send a flagman in advance, and follow after waiting five minutes. Although the provisions of the bulletin were not therefore directly involved in the cause of the accident, the dangerous situation created by its provisions was pointed out very plainly; the concluding paragraph of the report covering the investigation of that accident, which applies equally well to the accident here under investigation, reads as follows-

"While under the circumstances as they existed in this case the crew of extra 1736 is responsible for this accident, attention is called to the fact that had the flagman at Adamsville been stationed at signal 721.4 instead of at Adamsville station, the crew of extra 1736 would have had the right, under Bulletin No. 310, to pass this red block and proceed until either the work extra or another red block was encountered. Had this been the case, the accident undoubtedly would have occurred, without any violation of rules on the part of either of the two crews involved, and the responsibility therefor would have rested upon the officials who authorized the issuance of Bulletin No. 310, for such an arrangement would have resulted in both trains having right to the track between signal 731.4 and the succeeding northbound automatic signal. Bulletins or rules authorizing trains to pass red blocks on single-track line, under any circumstances without full flag protection are a serious detriment to safety in train operation. Immediate steps should be taken by the operating officials of the St. Louis-San Francisco Railroad to correct the dangerous situation created by the terms of Bulletin No. 310."

At the time of the accident the crew of work extra 6422 had been on duty nearly 6 hours and the crew of train second No. 76 nearly 7 hours, after off-duty periods varying from 8 1/3 to 11 hours.

Respectfully submitted,

W. P. BOPLAND,

Chief, Bureau of Safety.