

## INTERSTATE COMMERCE COMMISSION.

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REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ILLINOIS CENTRAL RAILROAD AT DANIEL BOONE, KY., ON AUGUST 24, 1922.

September 14, 1922.

To the Commission:

On August 24, 1922, there was a head-end collision between two freight trains on the Illinois Central Railroad at Daniel Boone, Ky., which resulted in the death of 3 employees and 1 trespasser, and the injury of 5 employees and 1 person carried under contract.

Location and method of operation.

This accident occurred on that part of the Kentucky Division extending between Central City and Paducah, Ky., a distance of 98.11 miles. This is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use in the vicinity of the point of accident. Approaching the point of accident from the north, the track is tangent for a distance of 1,255 feet, followed by a 4-degree curve to the right, 773 feet in length, the accident occurring at about the center of this curve. Approaching the curve from the south, the track is tangent for about 2,200 feet. For half a mile or more on either side of the point of accident the grade is descending for southbound trains, varying from 0.46 to 0.91 per cent. The point of accident is 1/2 mile south of Daniel Boone station and nearly 1 mile north of the north switch at St. Charles, it is nearly 1-1/4 miles from the north switch to the station at St. Charles. The weather was clear at the time of the accident which occurred at about 5.08 p.m.

Description.

Southbound third-class freight train No. 197 consisted of 15 cars and a caboose, hauled by engine 932, and was in charge of Conductor Beaver and Engineman Walker. On arriving at Nortonville, nearly 4 miles north of Daniel Boone, the crew received train order No. 102, form 19, which read in part as follows:

"No. 176 Eng. 1513 wait at St. Charles until 5.15 p.m. for No. 197 Eng. 932."

Southbound passenger train No. 101 passed Nortonville at 4.52 p.m., and train No. 197, according to the operator, departed at about 4.55 p.m.; it stopped about 3 minutes at Daniel Boone, and had attained a speed of about 25 miles an hour, intending to go to St. Charles for train No. 176, when it collided with that train.

Northbound second-class freight train No. 176 consisted of 32 cars and a caboose, hauled by engine 1513, and was in charge of Conductor McDowell and Engineman Crain. At St. Charles the crew received a copy of train order No. 102, previously referred to, written on form 31. Passenger train No. 101 left St. Charles at 5.03 p.m., and as soon as it passed, train No. 176 backed out of the siding and proceeded toward Daniel Boone, colliding with train No. 197 while traveling at a speed estimated to have been about 25 miles an hour.

Both engines remained upright, with only the leading trucks derailed, but were considerably damaged. Three cars of train No. 197 were demolished, and two others damaged. In train No. 176, four cars were demolished and five others damaged. The employees killed were the conductor and a brakeman of train No. 197, and a brakeman of train No. 176.

#### Summary of evidence.

Under the operating rules of this railroad, at meeting points between trains of different classes the inferior train must clear the superior train at least 5 minutes. Train No. 197, therefore, should have been into clear at St. Charles not later than 5.10 p.m. Train No. 197 left Nortonville close behind train No. 101, the operator thought it was about 4.55 p.m., the fireman said it was 4.54 p.m., while the engineman and flagman said it was immediately after the departure of train No. 101. The stop at Daniel Boone was made for the purpose of taking on coal and unloading some freight, and the train departed from there at a time estimated by the crew to have been 5.07 or 5.08 p.m., with time enough to reach the north switch at St. Charles, nearly 1-1/2 miles distant, before the departure of train No. 176, but without sufficient time to clear the main line 5 minutes before the time stated in order No. 102, as required by the rules.

Train No. 176 was backed out on the main track as soon as train No. 101 left St. Charles, and according to the operator proceeded at about 5.06 or 5.08 p.m. Engineman Crain said several minutes were consumed in backing out of the siding, and that he operated his train at a speed of about 10 miles an hour to the north switch, a distance of nearly 6,500 feet beyond the station, his train passing the switch at 5.15 p.m., the time specified in

the wait order. Flagman Brandon said it was 5.12 p.m. when his train started to back out of the passing track, Conductor McDowell said it passed the north switch at 5.14 or 5.15 p.m., while Elagman Smith thought it passed the switch at 5.15 p.m. The Flagman later said he was 60 car-lengths south of the switch when he looked at his watch, while in another statement he said he was some where near the switch and that the time was 5.14 p.m. Neither of the operators at Nortonville and St. Charles was able to say when the trains actually departed, the switches being some distance beyond the stations.

Two employees of the Sterling Coal Co., near the point of collision, heard the sound of the impact and looked at their watches, which were of reliable manufacture, one of them showed the time to be 5.10 p.m., while the other showed it to be 5.11 p.m. Conductor Ward, of southbound extra 2989, was at St. Charles when train No. 176 departed, and according to his statement it backed out of the passing track as soon as train No. 101 left, proceeded rapidly and should have passed the north switch at about 5.07 p.m.

When the watches of Brakeman Carr and Conductor Beaver were removed from their bodies, it was found that the brakeman's watch, after having passed through the hands of several people, showed the time to be between 5.15 and 5.16, while the conductor's watch had stopped between 5.07 and 5.08. Examination of the watches, however, showed that the brakeman's watch would run when placed in a certain position, but the hands of the conductor's watch were crushed into the dial, and the back of the case was crushed to such an extent as to preclude any possibility of its having been changed after the accident.

#### Conclusions.

This accident was caused by the failure of the crew of train No. 176 to wait at St. Charles until 5.15 p.m., as required by train order No. 102. A contributing cause was the attempt of the crew of train No. 197 to reach St. Charles without sufficient time to clear train No. 176 the 5 minutes required by the rules.

The weight of evidence indicates that train No. 176 backed out upon the main track at St. Charles as soon as train No. 101 passed that point, at 5.02 p.m., and then proceeded toward Nortonville without waiting until 5.15 p.m. for train No. 197. The evidence indicates that the crew of train No. 197 were running on short time; they also ignored the requirements of rule 91, which reads as follows:

"Unless some form of block signals is used, trains in the same direction must keep at least ten minutes apart, except in closing up at stations. #

Had this rule been observed train No. 197 clearly would not have had time to reach St. Charles for train No. 176.

In this connection, attention is also called to the fact that the departing times of these trains, as entered by the operators at Nortonville and St. Charles, are erroneous. The operator at Nortonville entered the departing time of train No. 197 as 5.02 p.m., 10 minutes after train No. 101 passed, and said it was the practice to make such entries in the territory where rule 91 applies. The operator at St. Charles showed train No. 176 as departing at 5.15 p.m., making this entry while the train was backing out of the passing track, acting on the supposition that the train would not pass the north switch until that time.

This investigation discloses that there was an utter disregard for the rules as far as time was concerned by practically all the employees involved in this accident. The crew of train No. 176 left St. Charles without waiting for the time stated in train order No. 102 to expire, the operator took the time of departure for granted without even waiting for the train to go before entering it on his record; the crew of train No. 197 were running without sufficient time against an opposing train and utterly disregarded the rule requiring trains in the same direction to keep at least 10 minutes apart, the operator at Nortonville entered up the departure of train No. 197 as 10 minutes after the departure of train No. 101 without regard to the actual time of leaving. It is apparent from the nature and multiplicity of these violations of the rules that they are not of uncommon occurrence. Proper supervision on the part of operating officials could scarcely have failed to disclose the existence of such conditions.

It is also noted that the conductor of train No. 176 did not personally deliver train order No. 102 to his engineman, as required by rules, but entrusted it to the conductor of another train for delivery.

The circumstances attending this accident present an extreme case of lax operating conditions which develop under the train-order system of operation, and if future accidents of this character are to be avoided, measures should be taken to insure that the operating rules are adhered to. Had an adequate block-signal system been in use, and the rules governing its operation observed by all concerned, this accident undoubtedly would not have occurred.

The fireman of train No. 176 was an inexperienced man and the conductor of train No. 197 had been promoted to the position of conductor only five days prior to the accident, the other employees were experienced men.

The crew of train No. 176 had been on duty less than 5 hours, after about 22 hours off duty. The crew of train No. 197 had been on duty nearly 10 hours, after more than 9 hours off duty.

Respectfully submitted,

W. P. Borland,

Chief, Bureau of Safety.