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INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE BALTIMORE & OHIO RAILROAD AT FOLEY, PA., ON SEPTEMBER 2, 1926.

October 27, 1926.

To the Commission:

On September 2, 1926, there was a head-end collision between a passenger train and a freight train on the Baltimore and Ohio Railroad at Foley, Pa., resulting in the death of three employees, and the injury of one passenger and three employees.

Location and method of operation

This accident occurred on the Main Line Sub-division of the Connellsville Division, extending between Cumberland, Md., and Connellsville, Pa., a distance of 92.4 miles; this is a double-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. There is an additional track for westbound slow-speed trains extending from Foley tower westward for a distance of 10 miles. The tracks west of Foley tower are numbered, from north to south, 3, 1 and 2; tracks 3 and 1 are normally used for westbound trains, while track 2 is used for eastbound trains. Opposite the tower there is a crossover connecting tracks 1 and 2. The accident occurred on track 1 at a point 301.5 feet east of the tower; approaching this point from the east the track is tangent for a distance of 795 feet, followed by a compound curve to the right 1,112 feet in length, the accident occurring on this curve at a point 924 feet from its eastern end. On account of an embankment on the inside of the curve the view of the point of accident from the engineman's side of a westbound train is restricted to about 500 feet. The grade is ascending for some distance, and is 1.24 per cent at the point of accident. Approaching from the west the track is tangent for a distance of 2,176 feet, followed by the curve on which the accident occurred, while the grade is descending for seven miles.

The signals involved in this accident are a dwarf signal located 535.5 feet west of the tower, which governs movements against the current of traffic on track 1, and a westbound automatic distant signal and a home interlocking signal, located 6,933 feet and 140 feet, respectively, east of the tower at Foley, these signals governing train movements with the current of traffic on track 1. Both the automatic distant and home

interlocking signals are of the three-position upper-quadrant semaphore type, night indications of which are red for stop, yellow for caution and green for proceed. Night indications of the dwarf signals are purple for stop and yellow for proceed at slow speed prepared to stop. Approach locking is provided and when a high-speed route has been given, a train entering upon the circuit locks the route so that it can not be changed until the signals governing that route have been changed to the stop position and a two-minute time release mechanism has been operated.

The weather was cloudy and slightly foggy at the time of the accident, which occurred at about 11.58 p.m.

Description

Westbound passenger train No. 7 consisted of one express car, one baggage car, two coaches and five Pullman cars, hauled by engines 5056 and 6050, and was in charge of Conductor Swarner and Enginemen Collins and Ellison. It left Cumberland, 21.7 miles east of Foley Tower, at 11.21 p.m., on time, passed Hyndman, 7.8 miles east of Foley, and at the distant signal approaching Foley the crew received an indication which authorized their train to approach the home signal at restricted speed and indicated that the route through the interlocking plant was lined for a movement from track 1 to track 3. The train had nearly reached the home signal, traveling at a speed estimated to have been between 15 and 25 miles an hour, when it collided with extra 6222.

Eastbound freight train No. 92, operating from Connellsville to Cumberland, at the time of the accident was being operated as extra 6222, it consisted of 83 cars, 1 dead engine and a caboose, and was in charge of Conductor Beal and Engineman Lincoln. This train left Greene Junction, Pa., 69 miles west of Foley, at 7.05 p.m., and at Philson, 4.6 miles west of Foley, the crew received a copy of train order No. 472, Form 19, reading as follows:

> "Extra 6222 east has right over opposing trains on number one 1 track Philson to crossover switches FO Tower".

Extra 6222 left Philson at 11.47 p.m., according to the train sheet, running against the current of traffic on track 1, passed the stop indication of the dwarf signal governing reverse movements on track 1, passed the crossover, and collided with train No. 7 while traveling at a speed estimated at from 4 to 5 miles an hour.

The engine truck and forward driving wheels of engine 6222 were derailed, the fourth car in this train was demolished and the dead engine was slightly damaged. Engine 5056 was derailed and considerably damaged; while its tender was crushed between the two engines. The cistern of the tender of engine 5050 was torn from its frame at the rear end and was thrown across track 2, while the tender trucks were derailed. The express car and the forward truck of the baggage car were also derailed. The employees killed were the engineman, fireman, and a flagman, who were riding on the leading engine of train No. 7.

Summary of evidence.

Engineman Kincaid, of extra 6222, stated that before his train left Greene Junction a retaining valve test was made, that several stops were made while en route and that in every case the brakes worked perfectly, adding that he never had a better train to handle. His train was crossed over to track 1 at Hallson and he received train-order authority to proceed on that track to Foley; he understood the order and knew he should have been prepared to stop clear of the dwarf signal west of Foley tower. Upon coming in sight of the signal, which is located on the engineman's side of a train moving against the current of traffic, the fireman called the indication as caution, but Engineman Kincaid did not answer him as he wanted to be certain that the signal was in the caution position. When about six car-lengths from the signal he decided that it showed yellow, and then released the brakes, at which time the brake-pipe pressure was between 75 and 80 pounds. When passing the signal, however, he looked down at it and saw that it was in the stop position, showing purple; his train was then traveling at a speed of about 8 miles an hour, and he said he immediately applied the brakes in emergency and opened the sanders, but on account of having released the brakes just prior to this time the train line had not fully recharged and he only got a quick service application. He then applied the independent brake and estimated the speed of his train at the time of collision had been reduced to 5 miles an hour. He said that when approaching the dwarf signal his train was under control and that he could have stopped it at the signal had he not released the brakes due to misreading the signal indication. Engineman Kincaid further stated that he had made many trips eastward on track 1 and had had no difficulty in reading this particular signal indication, but on this trip it appeared to show yellow. After the accident he went back to the approximate point where he misread the signal and it still appeared yellow to him.

Fireman Constantine, of extra 6222, stated that several stops had been made before his train arrived at

Foley and that the train was easily handled. As they came into view of the dwarf signal he thought it displayed yellow, and notified the engineman to that effect; the latter did not report the caution indication, but very shortly afterwards he placed the brake valve in the emergency position in the endeavor to stop the train. After the collision occurred Fireman Constantine went back and climbed up on one of the cars of his train to the height of an engine cab and from there the signal showed a tinge of yellow. Upon examining the signal it appeared to him that the lens did not focus with the light, that it did not show a rich purple as the lens was too low causing the light to shine through the edge of it. Flagman Constantine further stated that at the time he called the signal to the engineman his train was traveling about 6 or 8 miles an hour and he estimated the speed at the time of the collision at 4 or 5 miles an hour.

Brakeman Shubeck, of extra 6222, who was riding on the sixth car from the engine, stated that just before the accident occurred he noticed some one giving stop signals and at about the same time he saw the headlight of the approaching train. He then laid down on the car and held fast as he felt quite certain that his train would collide with train No. 7. The statements of Conductor Beal, who was riding in the caboose, and Flagman Farquhar, who was riding on a car about 65 cars from the engine, added nothing of importance concerning events leading up to the accident as they were unaware of anything wrong until the accident occurred. After the accident all three of these employees clearly saw the dwarf signal displaying purple.

Engineman Ellison, of the second engine of train No. 7, stated that at the distant signal approaching Foley tower his train received a clear restricting signal which indicated that it was to enter on track 3 at Foley. Shortly afterwards he noticed some one at the western end of the curve giving a stop signal with a white lantern, that party also having a red lantern at the time. He felt a jerk in the train as though the brakes had been applied in emergency from the leading engine, his train was running about 30 miles an hour at the time, but the speed was reduced to about 15 or 18 miles an hour when the collision occurred. The statements of the train crew of train No. 7 brought out no additional facts of importance.

Conductor Dietrich, of eastbound freight extra 7148, whose train was standing on the passing track at Foley when the collision occurred, stated that he noticed extra 6222 approaching on track 1 with the headlight burning brightly and expected that train to stop before it reached the dwarf signal, which was in the stop position, and he saw the switches were lined for train No. 7 to go in on track 3. Extra 6222 passed the signal and at about the time it fouled the switch leading to track 3 Con-

ductor Dietrich saw the westbound home signal go to the stop position, and lighted a fusee and started towards train No. 7 giving that train stop signals. Those signals apparently were seen by the engineman of the leading engine as when the engine passed him he saw sparks flying from the brake shoes, which indicated that the brakes were applied. He estimated the speed of train No. 7 at the time of the accident at about 20 miles an hour.

Operator Harclerode, who was on duty at Foley Tower at the time of the collision, stated that he had received train order No. 432, previously quoted, addressed to all trains west at FO Tower. Extra 6222 and train No. 7 both entered the circuit at about the same time, and he received instructions from the dispatcher to hold extra 6222 and to let No. 7 proceed on track 3; he then lined the switches for such movement. He fully expected extra 6222 to stop at the dwarf signal, but upon observing that train continuing past the signal he called to Conductor Dietrich to flag train No. 7 while he himself started to flag extra 6222 with a white light. Operator Harclerode further stated he did not have any indicator in his tower to tell the position of the dwarf signal, but if it had been in any other than the stop position he would have been unable to line the switches for track 3. He said that he had never received any complaints from train crews that this signal did not show its indications properly.

Signal Maintainers Kelly and Goodwin stated they arrived at the scene of accident shortly after it occurred, they both inspected the dwarf signal west of the crossover at Foley Tower and found it in the stop position, showing a purple light. They removed the signal, under seal, and shipped it to the office of the superintendent at Connellsville for inspection.

The Commission's inspectors, as well as several officials and employees of the railroad company, viewed this dwarf signal and all agreed that it showed a purple color when in the stop position. One of the officials at the scene of the accident, who was a passenger on train No. 7, thought it showed yellow, but a test of his eyes showed he was color blind to some extent. The purple roundel was removed from the casing and was sent to the Corning Glass Works for photometric tests to develop whether or not in this particular roundel there was any possibility of yellow light being displayed. After tests were made by that firm they reported that the roundel transmitted no yellow light.

Conclusions.

This accident was caused by the failure of Engineman Kincaid and Fireman Constantine, of extra 6222, properly to observe and obey signal indications.

Engineman Kincaid admitted that the collision was caused by the misreading of the stop indication of the dwarf signal, but offered no adequate explanation for the error. In fact, he said that when looking at the signal after the accident it still appeared to show a tinge of yellow, although as a matter of fact it was standing in the stop position with only the purple lens over the signal lamp. Engineman Kincaid was given a color test subsequent to the accident and the examiner said his color perception was not defective.

Engineman Kincaid said his train had been very easy to handle, from the standpoint of braking, and that he could stop almost at will. Under these circumstances, it is difficult to explain why, when he placed the brake valve in the emergency position with a pressure of 75 or 80 pounds still remaining in the brake pipe out of a maximum of 90 pounds, he was able only to reduce the speed of his train from 8 miles an hour at the dwarf signal to 4 or 5 miles an hour when colliding with train No. 7 at a point more than 800 feet beyond the signal. Either the speed of his train approaching FO tower was much higher than was estimated, or else both he and the fireman failed entirely to observe the indication of the dwarf signal, thinking only of the crossover movement to track 2, and did not notice that there was anything wrong until they saw that their engine was continuing on track 1 instead of heading through the crossover.

The employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service laws.

Respectfully submitted,

W. P. Borland,

Director.