

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 PHILADELPHIA, PA., ON SEPTEMBER 29, 1925.

December 31, 1925.

To the Commission:

On September 29, 1925, there was a derailment of a Central Railroad of New Jersey freight train on the tracks of the Baltimore & Ohio Railroad at Philadelphia, Pa., resulting in the death of one employee and the injury of one employee.

Location and method of operation

This accident occurred on the Baltimore Division, East End, extending between Park Junction, in Philadelphia, Pa., and Camden Station, in Baltimore, Md., a distance of 97.5 miles, this being a double-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. The accident occurred at the west end of the draw span of Bridge No. 89-C, which spans the Schuylkill River, approaching this point from the west the track is tangent for more than 1 mile, while the grade for eastbound trains descending, varying from 0.57 to 1.44 per cent, being at its minimum for a distance of about 875 feet west of the bridge and level across the bridge. Bridge 89-C is a steel drawbridge, about 800 feet in length, with heavy girders at each side and across the top. The west end of the draw span swings open toward the south, and is located about 190 feet east of the west end of the bridge, the bridge operator's tower is located on the top of the central part of the draw span. Home signal 9310 governs eastbound movements over the bridge; it is of the three-arm, upper-quadrant type, and is located 703 feet west of the point of accident, there is a derail on the south rail of the eastbound track at a point 62 feet east of this signal. Signal 9310, the derail, and the draw span are so arranged as to work in conjunction with each other, the draw can not be opened until the bridge operator has restored signal 9310 to the stop position and has operated the two-minute time release. Eastwick Crossing, a railroad crossing at grade, is located about 925 feet west of signal 9310.

The weather was clear at the time of the accident which occurred at about 4.50 p.m.

Description

Eastbound freight train No. 94-B consisted of 70 cars and a caboose, hauled by engine 904, and was in charge of Conductor Riddle and Engineman Dunn. This was a Central Railroad of New Jersey train, manned by employees of that railroad. Approaching Eastwick crossing stop signals were received from the ground switchman, the interlocking at this crossing being out of order on account of reconstruction work which was being done, and the train was brought to a stop before reaching the crossing. Shortly afterwards a proceed signal was given by the switchman and the train proceeded over the crossing at a low rate of speed, passed signal 9310, which was displaying a stop indication, struck the derail and knocked it off the rail, entered upon Bridge 89-C and on reaching the west end of the open draw span, which had almost been restored to its normal position at the time the engine reached it, was derailed while traveling at a speed estimated to have been between 10 and 15 miles an hour.

The wheels on the right side of engine 904 entered upon the draw span on the gauge side of the south rail, ran diagonally toward the left and dropped off of the ties on the north side of the track, the engine turning over and coming to rest on its left side with its head end just beyond the center of the draw span, fouling the westbound track, about 175 feet beyond the west end of the draw span; four of the cars in the train were also derailed, and considerably damaged. The employee killed was the engineman.

Summary of evidence

Fireman Gregson stated that when approaching Eastwick crossing, Engineman Dunn remarked that he did not think the water pump was working properly, and the fireman replied that he thought it was, but not being certain he put on the injector. Engineman Dunn then said he thought the valve at the front end of the engine was open and asked Fireman Gregson if he would close it and the fireman said that he would. Fireman Gregson called Engineman Dunn's attention to the stop signals of the ground switchman, given by hand with a red flag, and the engineman said that he saw them, and then sounded the engine whistle acknowledging them. When the train was brought to a stop at this point the engineman got down on the ground, proceeded to the front end of the engine and closed the valve, without the fireman knowing it. Later Fireman Gregson got down on the ground and went to the front end of the engine, climbed up on the pilot, tried the valve and found it was closed, and he said it was while he was so engaged that the

train started. Fireman Gregson then came back over the running board and climbed in the cab window. As he got in the cab he saw two large lumps of coal running down from the coal pile into the conveyor, and not wanting them to get into the conveyor he put one lump in the fire box by hand, turned around with his back to the fire-box door, and was engaged in picking up the second lump when Engineman Dunn crossed over to the fireman's side of the cab, passing between him and the fire box, and the first Fireman Gregson knew of anything wrong was when the accident occurred; he had heard the brakes being applied, but at the time thought this was for the purpose of stopping at RG tower, a short distance east of the bridge. Immediately after the accident Fireman Gregson went to the assistance of Engineman Dunn, who was still alive at this time, and said to him, "Pop, did you have the board", and the engineman replied, "I took the signal but I didn't have the draw". When questioned as to what he thought Engineman Dunn meant by this statement Fireman Gregson said that he did not know whether he meant the hand signal at Eastwick crossing or the indication at Home signal 9310. Fireman Gregson said he did not see the indication of signal 9310 or feel any jar when the engine encountered the derail just east of that signal. It also appeared from his statements that no trouble with the air brakes had been experienced at any time.

Head Brakeman Mill stated that after receiving the proceed signal and departing from Eastwick crossing, Engineman Dunn told him to see where the fireman was, and accordingly he crossed over to the left side of the cab, looked out, and saw the fireman coming back toward the cab on the running board. Head Brakeman Mill crossed over to the engineman's side of the cab, just as the engine was going on the bridge, and he said that at this time Engineman Dunn crossed over to the fireman's side of the cab, and climbed down on the steps. The fireman then asked him what the trouble was and the engineman told them to jump. He further stated that he did not see either the indication displayed at signal 9310 or the open draw span, did not feel the engine strike the derail, and did not hear the brakes apply just prior to the occurrence of the accident.

Conductor Riddle and Flagman Barry were unaware of anything wrong until the accident occurred, at which time the conductor was near the rear of the train, walking over the train toward the engine. Conductor Riddle said that the air brakes had been tested and worked properly, but that he did not know whether or not they were applied just prior to the accident. He went to the head end of the train immediately after the accident and at this time Engineman Dunn said, "I took the signal". When questioned as to what he thought Engineman

Dunn meant, Conductor Riddle said that in his opinion the engineman meant the hand proceed signal given with a green flag by the ground switchman at Eastwick crossing. Conductor Riddle further stated, however, that the hand signal of the ground switchman had no bearing whatever on movements over the drawbridge, having to do only with movements over the crossing. After the accident he observed that signal 9310 displayed a stop indication. The statements of Flagman Barry brought out no additional facts of importance except that he was positive the brakes did not apply in emergency at the time the accident occurred.

Bridge Operator Barnes stated that a tug boat blew for the draw about 4.35 p.m., at which time train No. 94-B was in the block, therefore he delayed the tug boat for a few minutes; signal 9310 was then displaying a proceed indication while the deraill was off the rail. As the train stopped at Eastwick crossing, however, he placed signal 9310 in the stop position, with the deraill on the rail, this being done before train No. 94-B departed from Eastwick crossing, and then operated the time release and began to open the draw. When the draw had opened about 5 feet he saw the bridge watchman waving violently, at which time the engine of train No. 94-B had about reached the bridge, and he immediately reversed the motor in an attempt to close the draw but did not succeed in doing so before the engine reached the draw span.

Bridge Watchman Andrews who was near the western end of the bridge, stated that his attention was first attracted to train No. 94-B when he saw it pass signal 9310, which was displaying a stop indication; the draw span was being opened at this time and he at once began to wave violent stop signals to the engine crew these signals not being answered in any way. The deraill was on the rail and he saw the engine rock when it struck it, and he said that immediately afterwards he saw someone moving around on the right side of the cab.

Road Foreman of Engines Soutman stated that he arrived at the scene of the accident 1 1/2 hours after its occurrence and examination of the engine at this time disclosed that the throttle was closed, the reverse lever in full forward motion, the automatic brake valve in the emergency position and the independent brake valve in the service position.

A test of the air pump and appliances for operating the train brake system on engine 904, made after the accident, disclosed them to be in proper working order, while a test of the air brakes on the cars in the train

which were not derailed disclosed that, with the exception of those on three cars, all the brakes were in proper condition.

The derail which was located east of signal 9510 was a Hayes derail, model HP-5; it was held in place by a pipe-line connection with a mechanical coupler located at the western end of the draw span. Examination of the derail indicated that it had been on the rail, but it only bore one wheel mark, which did not extend entirely across the face of the derail, and apparently the pony-truck wheel had pushed it off the rail. The derail was not broken or damaged in any way, nor were the pipe connections damaged. Examination of the mechanical coupler, however, indicated that it had been subjected to a severe strain and there was a mark indicating that the stop had pulled over the top of the bar and moved it a distance of 6 inches. When found it was in reverse position, which would be the position when the derail was off the rail, and apparently the failure of the derail to function properly was due to the failure of the mechanical coupler to withstand the excessive strain placed upon it. Signal Supervisor Penrod said there was very little lost motion either at the derail location or in the connections and when asked to account for a lateral thrust which could move the derail off the track against the resistance of the pipe line and coupler he said he thought there would be enough lost motion in the pony-truck wheel to allow that wheel to raise to a certain extent on coming in contact with the derail, and, with a great deal of the weight off the derail, the forward movement of the engine would exert a heavy pressure on the derail in a lateral direction, sufficient to push it to one side.

Conclusions

This accident was caused by the failure of Engineman Dunn properly to observe and obey signal indications.

It was daylight and the weather was clear at the time of the accident and a clear view could be had of signal 9510, the derail, and the draw span, while there apparently was nothing about the condition of the engine to distract Engineman Dunn's attention, and in addition, Bridge Watchman Andrews waved violent stop signals to the train from the western end of the bridge. The evidence also was to the effect that Engineman Dunn was in full possession of his faculties just prior to the accident, and under all these circumstances it is impossible to offer any explanation as to why he failed to bring his train to a stop.

Had Fireman Gregson and Head Brakeman Will been on the alert and maintained a lookout ahead when approaching the bridge, they could have taken action toward bringing the train to a stop, probably in time to have prevented the accident.

The reason the derail located east of signal 9310 failed to function properly was not definitely ascertained; it was found that the mechanical coupler at the end of the draw span had failed to hold, and it is possible this can be accounted for by the explanation advanced by Signal Supervisor Penrod, namely, the presence of less than the normal amount of weight in proportion to the amount of lateral thrust, resulting in a strain being shifted to the connections which was sufficient to overcome the resistance offered by the mechanical coupler. In this particular case, however, even had this derailing device functioned as intended, the only result would have been that the train would have been derailed before reaching the bridge instead of after reaching the bridge.

With the exception of the head brakeman, all of the employees involved were experienced men, at the time of the accident they had been on duty about 2 1/2 hours after about 10 hours off duty.

Respectfully submitted,

W. P. BORLAND

Director.