

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
ATLANTIC COAST LINE RAILROAD NEAR AULANDER, N. C.,
ON NOVEMBER 7, 1928.

January 4, 1929.

To the Commission:

On November 7, 1928, there was a derailment of a passenger train on the Atlantic Coast Line Railroad near Aulander, N. C., which resulted in the death of one employee and the injury of three passengers and one employee.

Location and method of operation

This accident occurred on the Norfolk District of the First Division, extending between Pinner's Point, Va., and Rocky Mount, N. C., a distance of 115.8 miles, and is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The accident occurred at a facing-point switch leading to the left to what is known as Herrington Spur, located about 2 miles north of Aulander. Approaching this point from the south the track is tangent for a distance of approximately 1 mile, the grade at the point of accident is 0.10 per cent descending for northbound trains. The track is laid with 85-pound rails, 33-feet in length with 21 ties to the rail-length, and is ballasted with stone, it is maintained in good condition.

The switch at the point of accident is of the Ramapo automatic type, so designed that when set in the wrong position a train trailing through it automatically operates it to reverse position. The spindle is held by springs which require a pressure of 2,000 pounds or more on the switch connecting rod to cause an automatic operation, when the spindle has been turned part way against the pressure of these springs, the springs then assist in completing the movement, carrying the switch points and target fully to reverse position and holding them in that position.

The weather was clear at the time of the accident. which occurred at about 5 37 a m

Description

Northbound passenger train No. 42 consisted of one baggage car, two coaches and two Pullman cars, hauled by engine 223, and was in charge of Conductor Pitt and Engineman Peasley. This train departed from Rocky Mount, 48.9 miles south of Aulander, at 4.00 a m., on time, and was derailed at the switch leading to Herrington Spur while traveling at a speed estimated to have been 35 and 40 miles per hour.

The engine collided with three freight cars standing on the spur and then came to rest on its left side at right angles to the main track, the first three cars in the train were also derailed. The engine and first car were considerably damaged and the two following cars were damaged to some extent, as was also the case with the cars standing on the siding. The employee killed was the engineman.

Summary of evidence

Fireman Duke stated that when the train reached a point about 200 yards from the switch he observed from the reflection of the headlight that the switch target was displaying a green indication, he did not see the switch lamp and did not know whether it was burning, but if so it was burning only dimly. He also noticed the cars standing on the siding as well as the headlight of a train standing at the next station beyond, and a burning fusee in that vicinity. Everything appeared to be normal when approaching the switch, but upon reaching it the engine made considerable noise, struck something, and then the accident occurred. He said the engineman was blowing the whistle at the time of the accident and that there was no application of the brakes prior to its occurrence. He could give no estimate as to the speed, but said they were maintaining their scheduled running time.

Conductor Pitt stated that approaching the point of accident he was riding in the second coach and his first intimation of anything wrong was when he noticed an unusual motion of the car ahead, which was followed immediately by the derailment of the car in which he was riding. After assisting in removing the engineman from the wreckage he went to Aulander and

returned with a physician, and then made an examination of the switch to determine the cause of the accident. He found a brake shoe between the left switch point and the stock rail, and the other point was up close to the opposite rail, the target showing a red indication for the main line, the switch lamp was extinguished. He made no effort to remove the brake shoe and did not attempt to ascertain if the switch lamp had been burning prior to the accident. He estimated the speed at the time of the derailment at between 35 and 40 miles per hour and the time of its occurrence at 5.37 a. m.

The statements of Baggage man Askew, Train Porter Dudley and Flagman Rose were to the effect that after the accident they observed the switch target displaying a red indication for the main track. Porter Dudley saw the brake shoe in the switch and noticed that the switch lamp was not burning, but neither Baggage man Askew nor Flagman Rose noticed whether the lamp was burning. They made no estimate as to the speed of the train at the time of the accident.

Roadmaster Stephens, who was riding on the train at the time of the accident, stated that about 30 or 35 minutes after its occurrence he made an inspection of the switch stand and points and found they were not damaged. The switch was set for the siding, with the right point fitting against the rail, and was locked in the usual manner, showing no evidence of having been tampered with. The tie-rods had been sprung a little. He removed the lamp from the stand and found the bottom of it wet from dew while the top was dry but not warm, he said the lamp could have been extinguished by a sudden jar at the time of the accident, or by the snap of the switch when it was reversed. After having his attention called to the brake shoe, he noticed that it was then lying loosely between the left switch point and the rail, the switch being in the open or side-track position. The brake shoe was about 2 feet from the point, several pieces of metal having been knocked off from it. In making a further examination he discovered a mark on the riser block at the heel of the frog, and about 8 feet back of the left point he found a spot where rust had been scraped from the rail. It was his opinion that the brake shoe dropped or was torn from a southbound train and became lodged in the switch in such position that the switch was partly opened, which permitted the engine truck wheels of train No. 42 to straddle the points, and when the wheels encountered the shoe it was forced downward with sufficient force to open the switch completely, causing the driving wheels

to remain on the rails and enter the siding. One of the bolts was broken off the outside edge of the bridle bar, and he thought that occurred when the engine truck struck the brake shoe and forced it downward. He stated that with this type of switch the points have to be open more than two inches before the position of the target will change.

Section Foreman King stated that he passed the switch late in the preceding day and at that time he noticed nothing unusual, it was then daylight and he did not notice whether the lamp was burning. He said the stand is equipped with a 7-day lamp and is taken care of by a regular switch lamp tender.

Master Mechanic Bulluck stated that the last train to pass the point of accident prior to its occurrence was Southern Railway southbound extra 4762, running as ACL 1st No. 253, which passed that point at about 3.20 a. m. He was informed as to the cause of the accident at about 10 a. m., and immediately endeavored to locate any car at Rocky Mount with a missing brake shoe, as well as having an inspection made of the cars which had been standing on the siding, but his efforts were unsuccessful. He said it was possible, however, that such a car had left Rocky Mount yard before the search was made, although all cars, except those in Southern Railway movements, are inspected at that point and records kept of these inspections. He then communicated with the Southern Railway inspectors at Selma, the junction with that line, to ascertain if a brake shoe was missing from any of the cars that were in extra 4762, they advised that none had been noted.

General Foreman Burton stated he arrived at the scene of the accident at about 11 a. m. and was shown the brake shoe which had lodged between the switch point and stock rail. He picked up the brake shoe in two or three pieces, and a bolt from the bridle-bar which he thought had been broken off by the brake shoe. He also saw marks on the track and frog which had apparently been made by the engine truck wheels. He said he followed the engine-truck wheel-marks on the ties to the frog, and it looked as if the wheels had then jumped from the point to the heel of the frog. The engine truck was torn to pieces so that no examination of it could be made after the accident. There was no indication that the drivers left the rails before the engine turned over.

An inspection of the track after the accident disclosed a mark on the gauge side of the stock rail 11 feet north of the end of the switch point, but it is doubtful if this was made by the brake shoe. There were, however, two marks where rust and small pieces of the fin had been scraped off from the same side of this rail, one of which was 7 feet 6 inches and the other 2 feet 9 inches from the end of the switch point. There was also a mark on the outside of the left switch point 6 feet 6 inches north of the end of the point. Beginning at the mark 2 feet 9 inches from the end of the switch point, it appeared that the brake shoe had been dragged southward an additional distance of 9 inches, causing the left switch point to be forced away from the stock rail.

During this investigation, tests were made to determine the effect on a switch of placing or forcing a brake shoe in the position the brake shoe involved was thought to be prior to the accident. In the first test a brake shoe of practically the same thickness was moved along toward the point of switch, at the same time gradually opening the switch, until the shoe reached the first bridle-bar bolt, the switch-point was then open about three-quarters of an inch. The brake-shoe was then placed between the switch point and stock rail and driven along with a sledge-hammer, corresponding to the action of wheels running over it, until it again reached the bridle-bar, and the point had then been forced open about three-quarters of an inch. With the brake shoe in this position it appears that the engine truck wheels of train No. 42 straddled the switch points and when the wheel came into contact with this brake shoe sufficient pressure was exerted on the switch point and its connections to throw the switch to side-track position.

Conclusions

This accident was caused by a cocked switch, due to a brake shoe having become wedged between a switch point and the stock rail.

The evidence clearly indicated that after the brake shoe had come in contact with the stock rail and the switch point it finally wedged between the two, causing the point to be opened a sufficient distance to allow the lead truck wheels of engine 223 to be derailed, following which the switch was automatically thrown to reverse position and the driving wheels entered

the siding without being derailed. The investigation did not develop from what train this brake shoe had come, but it was apparent that it came from a car in some southbound train.

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 law.

Respectfully submitted,

W P BORLAND

Director.