

INV. 320

JANUARY 31, 1916.

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE SOUTHERN RAILWAY AT NORTH SHIPMAN, VA.,
DECEMBER 31, 1915.

On December 31, 1915, there was a head-end collision between a passenger train and a freight train on the Southern Railway at North Shipman, Va., which resulted in the death of one employee of an express company, and injury to 6 passengers and 7 employees.

The accident occurred on the Washington Division of the Southern Railway at the north end of a section of double track, about 3 miles in length. This part of the Washington Division was originally single track, but double track is now in the process of construction, several short sections of which have already been completed. The movement of trains is governed by time-table, train orders, and a manual block signal system.

Northbound freight train No. 76, en route from Monroe, Va., to Alexandria, Va., consisted of engine 4603, 32 loaded, 6 empty cars and a caboose. It was in charge of Conductor Lamm and Engineman Angel and left Monroe at 10:00 p.m. It passed Arlington, the last open telegraph office, about 5 miles south of North Shipman, at 10:36 p.m. It stopped at Shipman, about 4 miles north, took water, then proceeded to North Shipman where it arrived at 11:27, and stopped clear of the end of the double track to await the arrival of superior southbound train No. 31.

Southbound passenger train No. 31, en route from Washington, D. C. to Jacksonville, Fla., consisted of engine 1338, deadhead Pullman sleeping car Evergreen, express car 479, combina-

tion passenger-baggage 644, coach 1511, and Pullman sleeping cars, Stony Point, Wellford, Turnbank and Truxton. The Pullman sleeping cars and the coach were of all-steel construction, while the remaining cars were of wooden construction. The train was in charge of Conductor Small and Engineman Bruce, left Washington at 7:19 p.m., 10 minutes late, and passed Barrett, the last open telegraph office, about 7 miles north of North Shipman at 11:30 p.m. As the train approached the block station at the end of the double track at North Shipman, the block signal was in the stop position. The engineman sounded the whistle and as the signal still remained in the stop position, closed the throttle, and made an application of the brakes. A few seconds later he sounded a second blast, whereupon the signal cleared, the brakes were released and the train proceeded, and upon reaching the switch at the end of double track, it having been left open, the train took the crossover leading to the northbound track, and while running at a speed of about 35 miles per hour, collided with No. 76 at 11:45 p.m. At the time of the accident the weather was cloudy.

Pullman sleeping car Evergreen was driven backward and forced from its track and telescoped express car 479, completely demolishing it. The locomotives were slightly damaged as were also several freight cars in train 76.

In the vicinity of the accident the track is tangent for over a mile in each direction, and there is a grade of .77% descending southward. The telegraph office and block station is located on the west side of the main track, and about 75 feet southwest of the switch stand which governs the switch at the end of the double track. The block signal is a two-arm signal, one arm on

each side of the mast, placed directly over the block office, and at night displays red for stop and white for proceed. The switch stand governing the end of double track is located on the east side of the main track. It is known as the New Centruy switch and is of the dwarf type provided with six-inch disk banners having a total spread of 14 inches. The switch lamp is mounted on a staff above the banner and is provided with 4-inch lenses, which are about 36 inches above the ties, and displays red for stop and white for proceed. The switch is hand-thrown and is operated by the operator at the block station, its normal position being for southbound trains, and when in such position, displays a white indication.

Engineman Angel, of train No. 76, stated that his train stopped at the water tank about 1-1/2 miles south of North Shipman, took a supply of water, proceeded to North Shipman, and stopped on the northbound track, about one and one-half car lengths south of the clearance point. As soon as the train stopped, he cut out the electric headlight; got off the engine, did some work on the front end, after which he returned to the engine and was sitting upon the engineman's seat eating lunch when the collision occurred. He stated that he did not at any time notice the position of the switch and had no warning of the impending collision.

Brakeman Baker, of train No. 76, stated that upon arrival of his train at North Shipman, the block being red, he went to the telegraph office to see if there were any further orders. When he entered the office, both Operators Claiborne and Biggs were present. Shortly after his arrival, about 11:35, Operator Claiborne, the operator then going off duty, put on his overcoat, lighted his lantern and left the office, making the remark to Operator Biggs

"Everything is all right." He stated that he heard train 31 whistle for the block signal, and at that time he asked Operator Biggs if the switch was all right, to which Biggs replied "It is." Train 31 whistled for the signal the second time, after which Operator Biggs pulled the block lever, causing the signal to go to the clear position. Brakeman Baker stated that he did not see Operator Biggs look at the switch at the time he asked him about its position.

Engineman Bruce, of train 31, stated that when his train approached North Shipman, he sounded the whistle for the block signal, the signal, however, remaining in the stop position. He closed his throttle, moved the reverse lever forward and made a service application of the brakes. He again sounded the whistle for the signal and a moment later it changed to the proceed position. He then released the brake, returned the reverse lever to its original position, and opened the throttle. He did not see the switch indication and was not aware that it was not in the proper position until his engine started to leave the main track. He immediately made an emergency application of the brakes, opened the sander and tried to reverse his engine, but was unable to stop in time to avoid the collision. Engineman Bruce stated that as he approached North Shipman, his attention was fixed on the block signal, it being in the stop position, and consequently he did not see the switch light. He also stated that had the switch light ~~been~~ been on the right side of the track, he could not help but have seen it when looking at the block signal. He also said that repairs had recently been made on the engine, which caused the reverse lever to work hard and made it necessary for him to have the assistance of the fireman to move it in each instance and that may have helped

withdrew his attention from noticing the position of the switch. Engineman Bruce further stated that his train was under control until the block signal was cleared and had the signal remained in the stop position his train would have stopped before passing the signal.

General Rule 98 reads as follows:

"Trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, prepared to stop, unless the switches and signals are right and the track is clear."

Engineman Bruce stated further that it was his understanding that this rule applies to trains passing from double to single track, but that it does not apply to trains passing from single to double track. He assumed that when the signal was cleared the main track switch was properly set.

Fireman Noble, of train 31, stated that he did not notice the position of the switch as he was assisting Engineman Bruce with the reverse lever.

Conductor Small, of train 11, stated that at the time the collision occurred, his train was running about 35 miles per hour. It is his understanding that rule 98 applies to trains entering double track from single, as well as to trains entering single track from double. Conductor Small stated that about half an hour after the accident he made an examination of the switch and found it set for the northbound track; the lamp was lighted and displayed red.

Operator Claiborne stated that shortly after southbound extra 4503 passed his station at 11:05 p.m., he opened the switch for No. 76 to pull out. At that time he could see the headlight of No. 76 where it was taking water, and expected that it would

proceed to the next station north to meet No. 31. It was 10 or 15 minutes after this that he learned that the train was to remain at North Shipman. He stated that when Operator Biggs, who was to relieve him at midnight, arrived, Biggs said, "As long as I am here you might as well go." He replied, "Everything is all right," but overlooked the fact that he had already set the switch for No. 76 and had not restored it to normal position. He left the office about 11:35 or 11:40 and started to walk to Shipman, and had proceeded about half the length of No. 76 when the collision occurred. He then realized that he had left the switch open. Operator Claiborne further stated that the operator at North Shipman was required to handle the switch in order to avoid delay to trains and that it was customary to set the switch for a northbound train as soon as it entered the block in the rear.

Operator Biggs stated that the night of the accident was the second night he had worked at North Shipman and on that night he arrived at the office about 11:35 p.m.; he placed his lunch on the table, picked up a letter addressed to him and stood talking to Brakeman Baker. He stated that when Operator Claiborne got up from his chair he asked him if No. 31 had passed Barrett, to which he replied, "Yes, she is in the block; everything is all right." Shortly afterward he sat down in the chair and as he did so he looked out of the window and in the distance saw the reflection of No. 31's headlight. After two or three minutes No. 31 whistled for the signal, whereupon he turned around expecting to find Claiborne there, but discovered that he had gone. He stated that he then looked at the block sheet, saw that it was all right for No. 31 to proceed, and remembering the remark of Claiborne, "That everything

was all right," cleared the signal for No. 31. He stated further that just before clearing the signal he looked out of the window, saw the headlight of No. 31 quite near and also glanced at the switch light which displayed a white indication. Just at that time Drakeman Baker asked "How is the switch," to which he replied, "The switch is all right." He did not realize that anything was wrong until he saw the fire flying from the engine; it was then too late to take any action. Operator Biggs stated that he was under the impression that Operator Claiborne was still on duty as no written transfer had been made to him as required by the rules. He further stated that shortly after the accident he examined the switch, found it set for the northbound track and the switch lamp displaying red. He stated that it is his belief that the electric headlight on the locomotive of train 31 caused the switch light to appear white as he looked at it from his office window.

In an effort to definitely determine the effect of an electric headlight upon the indication of the switch light, several tests were made at North Shipman on the night of January 6th, under conditions similar to those existing on December 31st, using a locomotive equipped with the same type of electric headlight as the one on train 31. These tests proved conclusively that the electric headlight had no effect on the indication given by the switch light, and it was admitted by Operator Biggs, who was present at the tests, that it was impossible for the electric headlight to cause the red switch light to appear white, as stated by him.

At the time these tests were being conducted, Operator Biggs called attention to the condition of the switch and its position with reference to the office. As previously stated, the switch

stand is located about 75 feet northeast from the office and at an angle of about 30 degrees. With the switch lamp in the normal position, it is possible to see the front and at the same time part of the side indications from the office window, but under ordinary conditions, the side indication is not visible to such an extent as to easily mislead one as to the position of the switch.

Examination of the switch lamp disclosed the fact that it was wired to the switch stand, but owing to a loose set screw in the socket, under force applied by hand, the lamp could be turned independently of the switch stand, through an arc of about 45 degrees and when turned in such position the side lens would be almost in the direct line of vision of a person looking out of the office window. Several tests were made with a view to ascertaining whether or not the switch lamp could be moved to this improper position by the throwing of the switch. The switch was operated repeatedly with force, and under varying conditions, but in no instance did the lamp turn substantially from its proper position.

In addition to the above tests, tests were made to determine the efficiency of the light on the switch at North Shipman. It was found that by bringing the train to a stop the red light could be seen a distance of 625 feet, either with the electric headlight burning or extinguished, but from an engine in motion it could be seen only a distance of 625 feet with the headlight burning and the switch stand could not be seen until it had been almost reached.

At the time these tests were being made, Operator Biggs stated that when he examined the switch stand shortly after the accident, he found the lamp turned from its normal position so that the side lens was visible from the office window. He stated that

no mention was made of this fact at the investigation held two days previous to the tests, as he was not questioned specifically upon that point.

Operator De Witt stated that he was employed at North Shipman about October 4, 1915, and at that time he discovered the defective condition of the set screw on the switch socket and reported it to Signal Supervisor Benton. He stated that the switch was in the same condition on the day of the tests as when first reported by him.

The direct cause of this accident was the failure of Operator Claiborne to close the switch at North Shipman at the end of the double track upon learning that train No. 76 was to remain at his station for No. 31. He also failed to notify relieving Operator Biggs that the switch was open.

Contributing to the cause of this accident was the failure of Operator Biggs to know the position of the switch before assuming charge of the office or seeing the block signal for train No. 31.

General Rule 364, relating to the duties of engineers, reads as follows:

"They will be held accountable for passing a switch which is not in the right position for them. The absence of switch lights should be taken as a danger signal in accordance with General Rules."

A proper observance of this rule, and of Rule 98, required that in the event of Engineer Bruce being unable to see the switch light on approaching North Shipman, he should have reduced speed, or stopped if necessary, in order to determine the position of the switch before passing it. However, in this connection, it is noted from the

statements of Engineman Bruce and Fireman Noble, that their attention was momentarily taken from observing conditions ahead, by both being compelled to join in moving the reverse lever of engine 1338, and that that may have had a bearing on their failure to observe the switch indication.

It would seem to be the better practice in the installation of facing point switches, to place the switch indication on the side of the engineman of the approaching train and in this instance, if the switch indication had been so placed, it is believed that a much safer operating condition would have resulted. If this switch indication had been so located, the view of the operator at North Shipman would have been almost in direct line with the switch lamp and it is believed that notwithstanding the loose condition of the light on the staff, he could not have made an error in noting its indication.

Superintendent Magoon stated that a high switch stand had formerly been in use at this point, but on account of confusion with the block signal, a low stand had been substituted. There appears no substantial reason, however, why the switch indication should not have been located on the opposite side of the track, and in order to provide proper safety its location should be changed.

The defective and loose condition of the lamp upon the switch should not be permitted; especially is this true, since it appears to have been properly reported about 3 months prior to the occurrence of this accident.

All of the employees involved in this accident are experienced men. At the time of the accident Operator Claiborne had been on duty about 7 hours 40 minutes; Operator Siggs about 10 minutes, and Engineman Bruce 5 hours and 42 minutes.