

1979

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN  
ACCIDENT ON THE LOUISVILLE & NASHVILLE RAILROAD AT  
JEMISON, ALA., ON APRIL 14, 1935.

June 24, 1935.

To the Commission:

On April 14, 1935, there was a derailment of a freight train on the Louisville & Nashville Railroad at Jemison, Ala., which resulted in the death of 1 trespasser, and the injury of 1 employee and 2 trespassers.

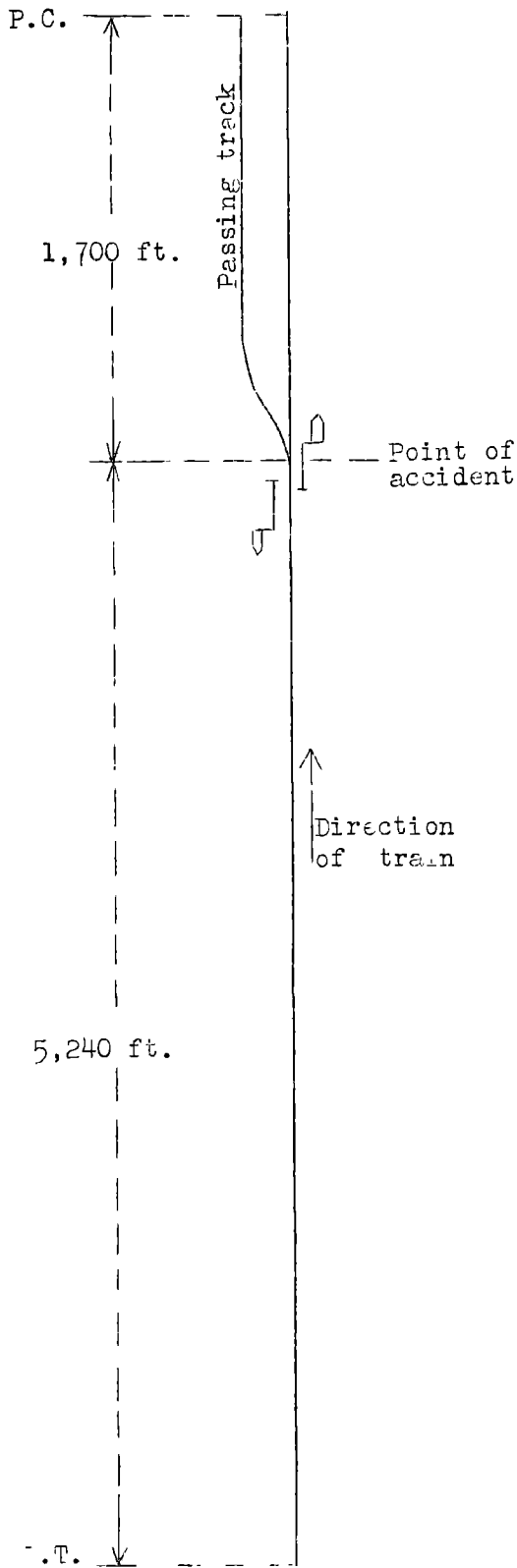
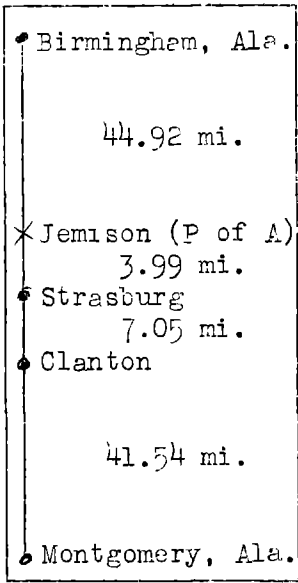
Location and method of operation

This accident occurred on that part of the Birmingham Division which extends between Birmingham and Montgomery, Ala., a distance of 97.50 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by time table, train orders, and an automatic block-signal system. This accident occurred at the south switch of the northward passing track at Jemison, a facing-point switch for north-bound trains, located approximately 3,900 feet south of the passenger station; approaching this point from the south the track is tangent for 5,240 feet, while the grade for some distance is generally descending and is 0.49 percent at the point of accident.

The passing track is on the west side of the main track, with the switch stand on the same side; this stand is a Weir 180° high stand, with adjustable throw, and the connecting rod is of the adjustable clevis type, 6 feet long and  $1\frac{1}{4}$  inches in diameter, with the end of the rod threaded into the clevis and fitted with a lock nut; the opposite end of the clevis is bolted to the head rod. The stand is connected with a derail, and the switch points are so adjusted that when over  $\frac{3}{16}$  inch from the stock rail the automatic block signals will be actuated; signal 436.2, governing the approach of the north-bound trains, is located 18 feet south of the switch.

The track is laid with 100-pound rails, 39 feet in length, with an average of 22 creosoted ties to the rail length, fully tieplated, single spiked, and ballasted with slag to a depth of 18 inches; the track is well maintained.

The weather was clear at the time of the accident, which occurred about 5:40 a.m.



Inv. No. 1979  
 Louisville & Nashville R.R.  
 Jemison, Ala.  
 April 14, 1935

### Description

Train No. 70, a north-bound second-class freight train, consisted of 39 cars and a caboose, hauled by engine 1782, and was in charge of Conductor Montgomery and Engineman Maybin. This train passed Clanton, 11.04 miles south of Jemison, the last open telegraph office, at 5:02 a.m., 3 hours and 17 minutes late, and at Strasburg, 3.99 miles south of Jemison, it took siding for Train No. 59. After the arrival of that train, Train No. 70 proceeded, and was derailed at the south switch at Jemison while traveling at an estimated speed of between 30 and 35 miles per hour.

The engine stopped on the main track with the rear end 523 feet north of the switch points, and was not derailed, but the tender was derailed to the west and stopped diagonally across the track, upright and still coupled to the engine. The first 22 cars were derailed, 13 being destroyed by fire which broke out in the wreckage. The employee injured was the flagman of Train No. 70.

### Summary of evidence

Engineman Maybin stated that the automatic signals approaching the point of accident were in clear position and there was nothing unusual about the riding of the engine before or when it passed over the switch, and his first knowledge of anything wrong was when he felt the tender give a jerk and he applied the brakes at once, but by that time the train was derailed and on fire; he estimated the speed to have been between 30 and 35 miles per hour. Engineman Maybin examined the engine and tender and after the tender was rerailed he again examined it, but was unable to find anything wrong. Subsequently he observed that the switch was lined for the passing track and the switch stand set for the main track, and there were marks on the ties to the guard rail at the frog; the connecting rod at the stand was broken, there being a fresh break on top and an old break underneath. The statements of the fireman and head brakeman practically corroborated those of the engineman.

Conductor Montgomery was riding on the left side of the caboose cupola and saw the block signals in clear position; he estimated the speed of his train at 30 or 35 miles per hour just before it came to an abrupt stop, at 5:40 a.m., and said he did not make an examination to determine the cause of the accident.

Roadmaster Shields arrived at the scene about 8:40 a.m., and by that time part of the switch had been removed, but he saw a mark on the lug between the stock rail and switch point and also a mark on the joint at the heel of the switch; the ties on this side also were heavily marked, and there was every indication that the west wheels had passed between the stock rail and the switch point. On examining the connecting rod he found it had been broken, and there was an old defect or fracture which covered fully 60 percent of the area at the bottom of the rod. The fracture was located at about the third from the last thread on the rod, where the clevis was applied, and was flush with the nut. The ties, rails and switch in general were in good shape and nothing about the track but the broken rod could have been involved. He further stated that the switch stand was of the old-style Weir 180 type, with the connecting rod pulling against the stock rail with sufficient force to have caused the points to spring back more than 3/16 inch when the rod broke, although the derail connected with the switch might have helped to hold the points in place. This rod was covered with grease to offset corrosion due to brine dripping from cars, weather, etc., and the location of the defect would have made it very difficult to discover unless the rod were thoroughly cleaned. Roadmaster Shields further stated that he had about 25 switches with this particular type of connecting rod; they had been in service some 10 or 11 years and he had never known one to break previous to this occasion. It is his practice to make inspections quarterly, as well as from time to time when going over the road, but he does not remove the rods for examination.

Division Engineer Wendling made a close examination of the tender and was of the opinion that it had nothing to do with the cause of derailment. On examination of the switch and parts he found them to be in good condition with the exception of the rod in question, which had been broken as described by the roadmaster. The switch was so adjusted that a 3/16-inch opening would operate the signal and he said that had this rod broken in advance of the approach of Train No. 70, the signals would have been at stop. The rod was defective for upward of 75 percent of its area, this defect consisting of an old break, of a progressive nature, showing several different lines of separations of material, similar to a transverse fissure in a rail. The defect was on the lower side of the rod and in his opinion the engine broke the rod in passing over the switch and when the points opened the tender became derailed; he found no marks on the rod to indicate that it had been struck by anything.

Engineer Maintenance of Way Watt stated that in his opinion the break was caused by a progressive fracture and that the load of the engine on the switch points increased the tension on

the rod to the point where it failed. He did not think an ordinary inspection would have detected the crack, as it was on the under side of the rod, and was of the opinion it would have been necessary to test the rod to destruction to determine its condition.

Signal Supervisor Rhudy stated that he passed over the switch on April 11; the switch appeared to be all right and he did not make a thorough inspection at that time. The opening of the switch points was adjusted to 3/16 inch and it was his opinion that when the connecting rod broke, the point opened sufficiently to actuate the signal. Signal Maintainer Robinson last inspected the switch on April 12, but found no defects in the connection or points. Section Foreman Price stated he operated and inspected the switch points, stock rails and connecting rod on April 12 and 13, but found nothing to indicate there was anything wrong.

Engine Carpenters Brown and Ellard, Engine Inspector Whetstone, and Roundhouse Foreman McDermott inspected engine 1782 upon its arrival at Boyles, near Birmingham, but found no defects that could have contributed to the accident.

#### Discussion

Examination of the switch at which this accident occurred indicated that the points had opened under the train, resulting in its derailment. The connecting rod, which was of the adjustable clevis type, was found to have been broken at a point flush with the nut on the end to which the clevis was attached, and it was evident that the breaking of this connecting rod resulted from an old crack which developed on the under side of the rod and became extended until it covered about 75 percent of the cross-sectional area. This switch was interconnected with the automatic block-signal system and various witnesses stated that had the rod broken prior to the arrival of the train, it would have caused the signals to assume the stop position; according to the members of the crew, however, the signals were in the clear position, thus confirming the opinion that the connecting rod broke as the engine was passing over the switch.

#### Conclusions

This accident was caused by a split switch, due to the points opening under the train as the result of a broken connecting rod.

Respectfully submitted,

W. J. PATTERSON,

Director.