INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2463

THE SOUTHERN RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT PINE GROVE, GA., ON

NOVEMBER 17, 1940

SUMMARY

Railroad:	Southern
Date:	November 17, 1940
Location:	Pine Grove, Ga.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	7
Engine number	1248
Consist:	8 cars
Speed:	40-45 m. p. h.
Operation:	Timetable and train orders
Track:	Single; tangent; level
Weather:	Clear
Time:	2:45 a. m.
Casualties:	2 killed; 5 injured
Cause:	Accident caused by left switch point of turnout to left being in position for entry to siding and right point being in position for movement on main line, because of broken switch rod

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2463

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE SOUTHERN RAILWAY COMPANY

January 16, 1941.

Accident at Pine Grove, Ga., on November 17, 1940, caused by left switch of turnout to left being in position for entry to siding and right point being in position for movement on main line, because of broken switch rod.

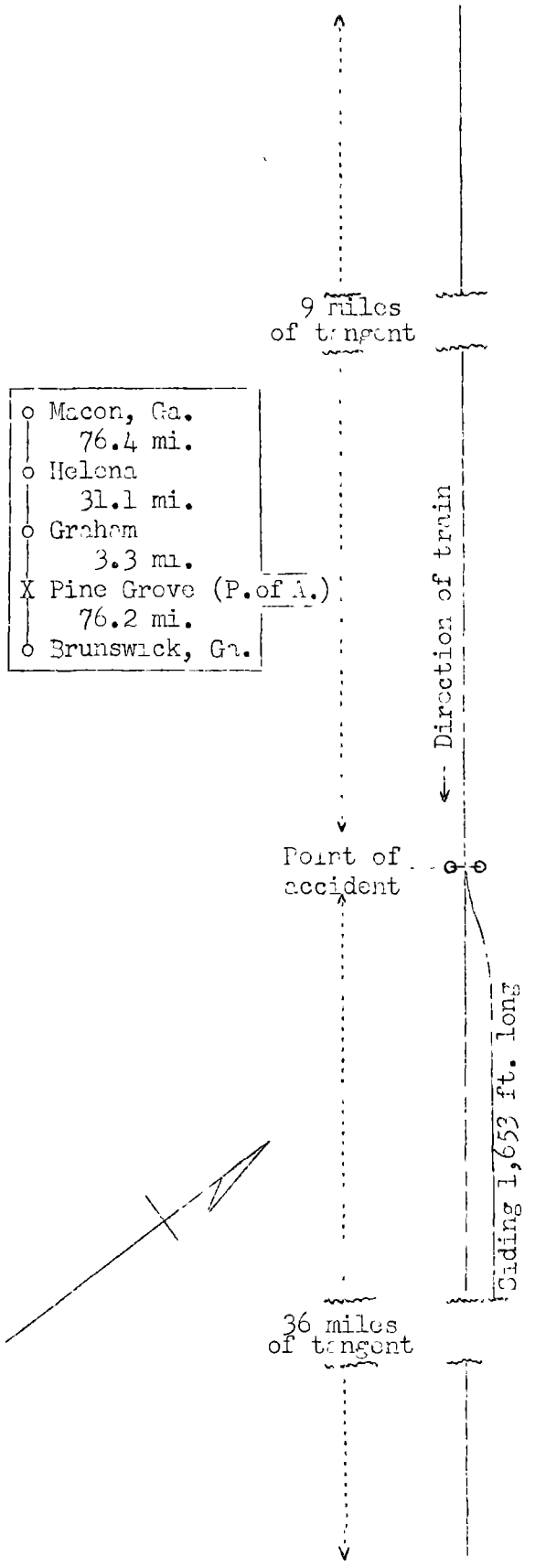
REPORT OF THE COMMISSION[1]

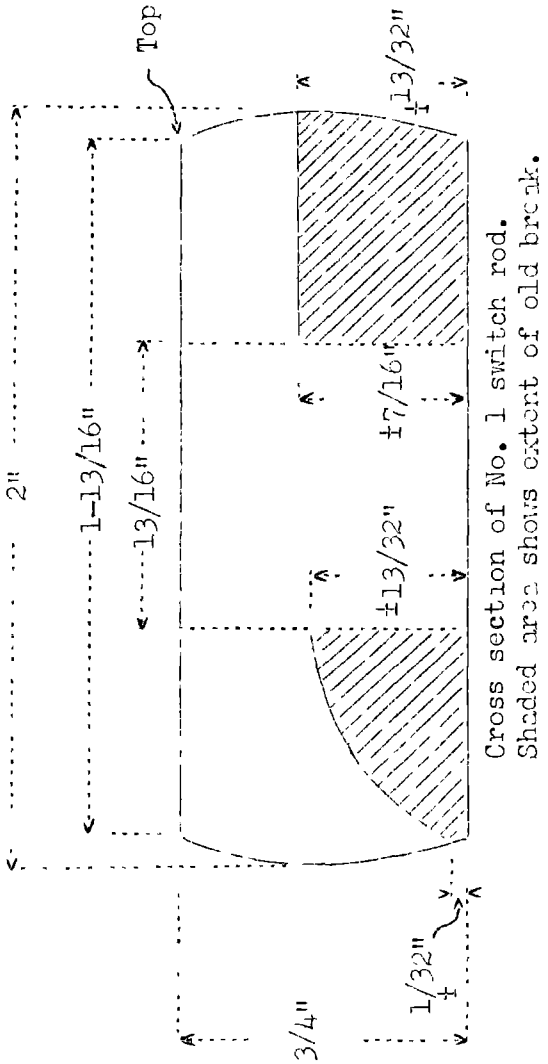
PATTERSON, Commissioner:

On November 17, 1940, there was a derailment of a passenger train on the Southern Railway at Pine Grove, Ga., which resulted in the death of two employees, and the injury of two passengers and three railway-mail clerks.

---

[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.





Cross section of No. 1 switch rod.
Shaded area shows extent of old break.

Inv. No. 2463
Southern Railway
Pine Grove, Ga.
November 17, 1940

Location and Method of Operation

This accident occurred on that part of the Atlanta Division which extends between Macon and Brunswick, Ga., a distance of 187 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders; there is no block system in use. Time-table directions are north and south. At Pine Grove a siding 1,653 feet in length parallels the main track on the east. Entry to the siding at the north switch is made through a No. 10 turnout to the left; the derailment occurred about 23 feet south of the switch points. As the point of accident is approached from the north the track is tangent 9 miles to the switch involved and 36 miles beyond. At the switch the grade is level.

The main-track structure consists of 75-pound A. S. C. E. rail, 33 feet in length, laid on an average of 20 or 21 cypress ties to the rail length; it is single-spiked, fully tieplated ballasted with cinders to a depth of 8 inches, and is well maintained. A gage rod is provided 4 inches north of the switch points. The switch structure consists of 75-pound rail, two 15-foot switch points, 10 switch plates under each point, and 7 rail braces on each side; within the first 110 feet of the turnout there are 69 cypress ties, fully tieplated. The switch points are connected by two switch rods 3/4 inch thick and 2 inches wide; the rods are about 20 inches apart. Holes 13/16 inch in diameter are provided at each end for joining with the switch-rail clips.

The switch-stand involved is of the New Century, ground-throw type, and is located 4 feet 4 inches east of the east rail of the main track. An intermediate switch-target spindle, equipped with two targets and an unlighted lamp, is located 7 feet 7/8 inch west of the west rail of the main track. When the switch is lined for the main track a white circular target is displayed and the lamp displays a standard green lens; when the switch is lined for movement to the siding a red target 14 inches wide and 32 inches long is displayed and the lamp displays a red reflex lens. The centers of the lenses and the centers of the targets are, respectively, 10 feet and 8 feet 2-5/16 inches above the tops of the ties.

According to the timetable, the minimum running time for first-class trains between Graham and Pine Grove, a distance of 3.3 miles, is 4 minutes, or an average of 49.5 miles per hour.

The weather was clear at the time of the accident, which occurred at 2:45 a. m.

Description

No. 7, a first-class south-bound passenger train, with Conductor Slappey and Engineman Mercer in charge, consisted of engine 1248, of the 4-6-2 type, one storage-mail car, one mail car, one baggage-express car, two coaches, and three Pullman sleeping cars, in the order named; all cars were of steel construction. This train departed from Macon, 110.8 miles north of Pine Grove, at 11:33 p. m., according to the train sheet, 13 minutes late, departed from Helena, 34.4 miles north of Pine Grove, and the last open office, at 1:42 a. m., 22 minutes late, and, while moving at a speed estimated at 40 to 45 miles per hour, was derailed at the north siding-switch at Pine Grove.

Engine 1248 was derailed and stopped on its left side on the siding parallel to the main track, with its front end 315 feet beyond the switch points; the engine cab was crushed. The tender was derailed and stopped on its left side east of the engine and at right angles to it. The first car was derailed and stopped, bottom up, against the engine cab and across the main track and the siding. The second car was derailed and stopped against the first car and parallel to it, and leaned at an angle of 45 degrees. The third and the fourth cars were derailed and stopped on the siding; the third car leaned eastward at an angle of 45 degrees and the fourth car leaned eastward at an angle of 5 degrees. The front truck of the fifth car was derailed but the car remained upright.

The employees killed were the engineman and the fireman.

Summary of Evidence

Conductor Slappey stated that at Macon an air-brake test was made and the brakes functioned properly en route. When the train approached Pine Grove he was in the sixth car and the speed was about 45 miles per hour. The train gave three lurches, then stopped. The weather was clear at the time of the accident, which occurred at 2:45 a. m. In his opinion the brakes were not applied in emergency until after the derailment occurred. He examined the switch and found the throwing lever in proper position for the switch to be lined for the main track; however, the right switch-point was against the right stock-rail and the left switch-point was fully open. The switch target was turned so that it displayed almost all of its red aspect and only a small portion of its white aspect.

Baggagemaster Overstreet stated that he was in the third car and the speed was about 40 miles per hour at the time of the

accident, which occurred at 2:45 a. m. The remainder of his statement corroborated that of Conductor Slappey.

Flagman Robinson stated that a terminal air-brake test was made at Macon, a running test was made soon after the train left that point, and the brakes functioned properly en route. Immediately after the accident occurred he proceeded back to provide flag protection and found no indication of dragging equipment.

The statement of Train Porter Huff added nothing of importance.

Supervisor Murphy stated that he had been employed in his present capacity in this territory for 20 years. About 1 hour after the accident occurred he examined the switch involved and found the switch lever latched in position for movement on the main track; the lock was in place. The right switch-point was against the right stock-rail, and the left switch-point was open about 5 inches. The switch target was turned to display a red aspect. As a result of the derailment the switch points and the turnout rails as far as the frog were overturned toward the center of the track; the clips on the switch rods were broken. Examination of the No. 1 switch rod revealed an old fracture in the bottom of the rod at the left clip; the fracture consisted of about one-fourth of the cross-sectional area of the rod and was located so that it was concealed by the clip. The only manner in which the defect could have been discovered would be by disengaging the switch rod from the clip. The switch rod did not show excessive wear. In his opinion the derailment was caused by the broken switch rod. He said that section foremen are required to inspect all main-track switches and their appurtenances each week and to file weekly inspection reports of their condition. This inspection covers the operation, cleaning and oiling of all main-track switches and examination of switch points, guard rails, switch-stands, switch-stand ties, switch bolts and switch latches to determine that all bolts are tight, cotter keys are in place, spikes are driven tightly, and that switches are equipped with switch locks. The inspection report of main-track switches for the territory involved was filed by the section foreman on November 16, 1940; no exception was taken to the condition of any main-track switch. Supervisor Murphy said that he inspects and tests all switches in his territory twice monthly. He knew of instances wherein switch rods were replaced because of wear but this is the first instance he had known of a switch rod failing.

Section Foreman Weaver stated that he had been employed in his present capacity for 16 years and had been assigned to the section involved for 2-1/2 years. On November 13 he made the last weekly inspection of the switch involved, and finding no defect he filed the required inspection report accordingly. On November 16 he made a casual observation of the switch and its appurtenances but observed nothing wrong; he did not operate the switch. Previously he had never found a switch rod with defective metal.

Roadmaster Gates stated that the first indication of derailment was a light flange mark on top of the base of the lead rail of the turnout at a point 23 feet south of the switch point; a spike head 13 inches beyond this point was marked, and from this point southward light flange marks appeared on the switch ties to the place where the track was torn up. Apparently the engine-truck wheels were the first to become derailed and to mark the ties. There was a mark on the left switch-point which apparently resulted from being struck by some object; however, there was no indication that the switch had been run through. Examination of the track a distance of 1 mile in each direction from the switch failed to disclose any indication of dragging equipment.

Master Mechanic Gary stated that he arrived at the scene of the accident about 7:30 a. m. and examined engine 1248. The throttle was closed, the brake valve was in emergency position, and the reverse lever was in position for forward motion; however, he attached no particular significance to the position of these levers as they might have been disturbed in removing employees from the cab. The lateral in the engine-truck wheels and the driving wheels was within the prescribed limits and all wheel flanges were of good contour. The engine-truck center-castings were in suitable condition for service. He was of the opinion that when the engine-truck wheels were derailed the air brakes were applied by the Wright Little Watchman device with which the engine is equipped. In his opinion the engine crew had no knowledge of anything being wrong until the engine truck was derailed.

Engineman Williams and Fireman Bazemore, of No. 8, a north-bound passenger train, which consisted of an engine and 8 cars, stated that their train, moving at a speed of about 45 or 50 miles per hour, passed over the switch involved at 12:52 a. m., or 1 hour 53 minutes prior to the occurrence of the accident. They did not observe any unusual or defective condition of the switch.

According to data furnished by the railroad, about 33 percent of the fracture of the switch rod involved was an old break.

Observations of the Commission's Inspectors

The Commission's inspectors observed that the end of the No. 1 switch rod was broken through the center of the left bolt-hole. About 1/4 of the fracture was corroded and worn, indicating that it was an old flaw. The bolt hole showed practically no wear and the other portion of the switch rod was of sound metal. There was a well defined flange mark on the outside portion of the base of the lead rail of the turnout at a point 23 feet 3 inches south of the switch point.

Discussion

According to the evidence, No. 7 was moving at a speed of 40 or 45 miles per hour when it became derailed at the north siding-switch at Pine Grove. No condition of the engine, the cars, or the track north of the switch involved that might have contributed to the cause of the derailment was disclosed. There was no indication that the switch had been run through.

Subsequent to the accident, examination disclosed that the throwing lever of the switch was latched in position for movement on the main track. The target was turned in such manner that it displayed almost all its red aspect toward the north. The right switch-point was against the stock rail and the left point was open about 5 inches. The No. 1 switch rod was broken through the bolt hole where the left clip is joined; a considerable portion of this fracture was an old break.

Apparently both switch points were a sufficient distance from the stock rails to permit the wheels of the engine to move on the stock rails some distance beyond the switch points, as both points were turned toward the center of the track and as the first mark of derailment was on the outside of the base of the right turnout-rail at a point 23 feet 3 inches south of the right switch-point. The distance between the right stock-rail and the right turnout-rail at the first mark of derailment was about 9-1/4 inches and the distance between the two stock rails at this mark was about 5 feet 5-3/4 inches. Undoubtedly the first mark of derailment was made when the right front engine-truck wheel dropped inside the right stock-rail because of excessive gage, as the distance between the outside surfaces of companion engine-truck wheels was about 5 feet 4-3/8 inches and the distance between these two rails was 5 feet 5-3/4 inches.

During the process of derailment the switch points apparently were shifted to the right and the target was turned during this process, since it was joined to the right point by the No. 1 switch rod. As the engineman and the fireman were killed in the accident, it is not known what aspect the switch lamp displayed as the train approached, but it is probable that the target was not turned sufficiently to show a red aspect for the approaching train as the track was tangent for several miles, the weather was clear, and no action was taken on the engine to stop the train before the engine passed the switch points. The last train prior to No. 7 to pass the switch involved was a north-bound passenger train, which passed this point about 1 hour 53 minutes before the accident occurred; the crew of this train observed no defective condition of the switch. All switches are inspected by a supervisor twice monthly and by the section foreman once each week. On the day the accident occurred the section foreman inspected the switch involved and found no defective condition. Neither the roadmaster nor the section foreman knew of any other switch having become defective in the same manner as the one involved.

Cause

It is found that this accident was caused by the left switch point of a turnout to the left being in position for entry to the siding and the right point being in position for movement on main line, because of a broken switch rod.

Dated at Washington, D. C., this sixteenth day of January, 1941.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

SEAL

Secretary.