

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE
SOUTHERN RAILWAY

PAINT ROCK, N. C.

FEBRUARY 3, 1939

INVESTIGATION NO. 2327

SUMMARY

Inv-2327

Railroad: Southern
Date: February 3, 1939.
Location: Point Rock, N. C.
Kind of accident: Derailment
Train involved: Freight
Train number: Third 50
Engine number: 5031
Consist: 47 cars, caboose
Speed: 20 to 25 m.p.h.
Operation: Timetable, train orders and automatic block-signal and automatic train-stop system.
Track: Tangent
Weather: Misty
Time: 10:25 p.m.
Casualties: 1 killed, 1 injured
Cause: Striking a rock on track and simultaneously struck by land slide.

February 28, 1939.

To the Commission:

On February 3, 1939, there was a derailment of a freight train on the Southern Railway near Paint Rock, N.C., which resulted in the death of one employee and the injury of one employee.

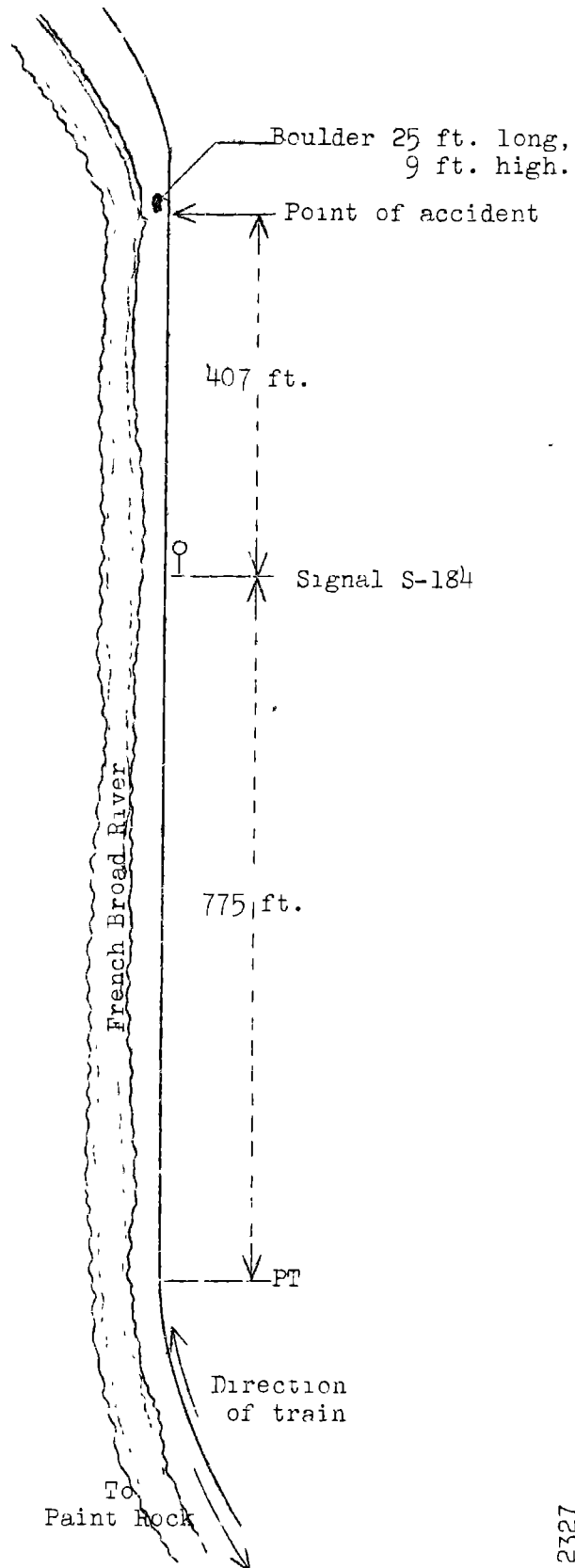
Location and Method of Operation

This accident occurred on that part of the Knoxville Division extending between Bulls Gap, Tenn., and Asheville, N.C., a distance of 92.2 miles. This is a single-track line over which trains are operated by time-table, train orders and an automatic block-signal and automatic train-stop system. The accident occurred at a point approximately one mile east of Paint Rock. Approaching from the west there is a 5° curve to the right 395 feet long, then a tangent 1,183 feet to the point of accident and 134 feet beyond. The grade is slightly undulating and practically level at the point of accident.

Color-light automatic signal S-184, approach lighted, is located 407 feet west of the point of the accident. The automatic train-stop system is the intermittent-inductive type.

The track structure consists of 100-pound rail, 39 feet long, laid on an average of 24 ties to the rail length; it is fully tieplated, single-soiked, equipped with six rail anchors to the rail length, ballasted with about two feet of limestone and is well maintained. Approaching the point of accident the track is laid along a hillside about 20 feet above and paralleling the south bank of the French Broad River. On the south side of the track a perpendicular wall of rock extends upward about 26 feet; from the crest of this wall the face of the cliff ascends at a ratio of about 3 to 4 to an elevation 106 feet above the track where the first break in the overburden of earth and broken rock appears; from this point the slope above, to the apex of the hill which is 197 feet above the track, ascends at a ratio of about 3 to 5 and is covered with vegetation. The topography of the entire slope indicates that it is subject to drainage from no adjacent area as the slope extends from the apex to the track level in three directions. At the point of the accident a bank of earth about 150 feet long, from 5 to 20 feet wide and 7 to 10 feet above the track level, had been formed between the track and the river by material which had slid off the face of the slope on the opposite side and had been cast over as it encroached upon the track. About 30 feet east of the eastern end of this bank and about 60 feet east of the point of derailment and 25 feet north of the track there is a solid limestone boulder 25 feet long and extending

o Asheville, N.C.
44.2 mi.
X Point of accident
o Paint Rock
4.0 mi.
o Wolf Creek
12.7 mi.
o Bridgeport
14.3 mi.
o Leadvale
32.3 mi.
o Bulls Gap, N.C.



Inv. No. 2327
Southern Rwy.
Paint Rock, N.C.
February 3, 1970

upward 9 feet above the rail.

The weather was misty and calm at the time of the accident, which occurred at 10:25 p.m.

Description

Third 50, an east-bound freight train, consisted of 37 cars and a caboose, hauled by engine 5031, and was in charge of Conductor Lane and Engineman Johnson. This train departed from Bridgeport, about 18 miles west of the point of accident, at 9:37 p.m., according to the train sheet, 8 hours 37 minutes late, and while traveling at an estimated speed of 20 to 25 miles per hour it struck a rock on the track and was derailed; simultaneously the engine and tender were struck by a land slide. The engine, after being derailed, was shoved toward the river by the force of the slide and in this position moved forward about 60 feet where its front end contacted the large boulder to the north of the track which prevented it being shoved into the river. After scraping its entire left side against the boulder, the engine stopped upright, badly damaged, with its rear end leaning against the boulder and its head end on the track; the tender remained upright but was badly damaged, being crushed against the engine, with its front end about 15 feet from the track and its rear end on the track. The first car was derailed and badly damaged but remained in alignment with the track; the second car was demolished; the third car was thrown forward atop and at right angles to the first car; the fourth car stopped on its side clear of the track with its front end about 20 feet and its rear end about 10 feet from the track; the fifth car stopped on its side with its front end about 10 feet from the track and its rear end on the track; the forward truck of the sixth car was derailed but remained upright.

The employee killed was the fireman and the employee injured was the engineman.

Summary of Evidence

Engineman Johnson stated that at Bulls Gap, 49 miles west of the point of accident, an air-brake test showed that the brakes were functioning properly; a brake application was made at Wolf Creek, about 5 miles from the point of accident, and the brakes functioned properly. He said there had been some rain at Bulls Gap on the morning of February 3 but not sufficient to cause any apprehension as to slides and washouts. Approaching the point of accident the mist restricted his vision somewhat and when passing signal S-184, displaying a

proceed indication, at which time the speed was about 20 miles per hour, he rose to his feet and, shielding his eyes from the light of the signal, saw a rock on the track, whereupon he applied the brakes in emergency, closed the throttle and after the shock of the impact, swung himself out of the cab window and held on until the train stopped. He estimated the speed at the time of derailment at about 15 miles per hour and thought that the slide struck about the time the train stopped.

Conductor Lane thought the weather conditions had not been such as to cause any danger of slides. He estimated the speed approaching the point of accident at 20 to 25 miles per hour.

Flagman Hendry and Brakeman Jones corroborated the testimony of Conductor Lane regarding the movement of the train. Brakeman Jones, who was in the brakeman's cabin on the tender and facing the rear of the train, estimated that the emergency application of the brakes occurred when he was about 100 feet past signal S-184 as he could plainly see the color indication of the opposite signal governing westward movements.

Dispatcher Line stated that the only slow order given Third 50 was that usually issued when there had been recent rains. He said that his weather report, received at 4:30 p.m., February 3, from the various offices on his district, did not indicate a dangerous situation, and 25 minutes prior to the derailment a west-bound train passed the point involved and reported nothing unusual.

Roadmaster Wood stated that the weather reports received on the day of the accident were not indicative of danger of slides. His observations at the point of the accident, made about four hours after it occurred, showed that a slide of about 400 or 500 yards of earth, extending over a breadth of about 75 feet and with a maximum depth to about the top of the tender cistern, had struck the side of the engine and tender and that an additional 3,000 or 4,000 yards of loose material extended upward 112 feet along the face of the slope to the break in the overburden which he estimated to be about 12 feet thick at the break. The engine moved about 85 feet from the point of derailment to the point where it stopped; he said that the course of the slide apparently had been diverted around the rock wall adjacent to and rising from the track level and he thought that most of it had come down after the engine had stopped. He stated that about a year ago the face of the slope immediately west of the point of the slide had been thoroughly cleaned of all loose material and there is no concentration of water on the slope.

Track Supervisor Hazlewood corroborated the testimony of

Roadmaster Wood relative to the weather and the physical characteristics of the slope and slide. He said that fresh breaks in this slope had been found from time to time and, since scouring the face of the slope adjacent to and west of that on which the slide occurred, he had watched this point particularly but had noted no further break in its surface. He passed that point twice on the day of the accident but saw no indication of danger. A watchman patrols the track in this vicinity whenever weather conditions seem to warrant and had done so until 4 p.m. on the day of the accident but was taken off when that precaution seemed no longer necessary.

Section Foreman Oliver stated that whenever weather conditions seem unfavorable, he has a man patrol the track where there is a possibility of slides occurring and that a watchman patrolled this territory on the day of the accident but was taken off at 4 p.m. when that precaution seemed no longer necessary, as the weather had cleared at noon. He had last been over this track on January 28 at which time he climbed the slope and inspected the hillside above the track but saw no indication of any break in the slope.

Observations of the Commission's Inspectors

The Commission's inspectors examined the hill involved and found no indication of slide possibilities other than would be present on any slope of this gradient. The terrain adjacent to it on the west had been thoroughly cleaned of all loose material and with the exception of the point where the break in the overburden occurred the entire face of the slope was not indicative of dangerous slide possibilities.

Discussion

According to the evidence the engine struck a rock and was derailed and simultaneously the engine and tender were struck by a slide from an embankment to the south of the track. The break which caused this slide occurred at an elevation 112 feet above track level. The terrain about 60 feet west of and considerably below the break had been cleaned of all loose material within the past year. A train passed over this track about 25 minutes prior to the accident and reported nothing wrong. The automatic signal immediately west of the point of accident displayed a proceed indication which would indicate that the rail was not broken by the rock which derailed the engine. Weather conditions prevented the engineman seeing this rock until approximately 300 feet from it. The evidence indicates that a patrolman is provided to watch the track in this vicinity whenever the section foreman deems it advisable and that such protection was provided until 4 p.m.

on the day of the accident when he was relieved by reason of the weather having been clear since noon.

Conclusion

This accident was caused by striking a rock on the track, simultaneously with which the engine and tender were struck by a land slide.

Respectfully submitted,

W. J. PATTERSON,

Director.