

Inv-2080

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

SOUTHERN RAILWAY

PEAK, TENN.

JULY 11, 1936

INVESTIGATION NO. 2080

SUMMARY

Railroad: Southern
Date: July 11, 1936
Location: Peak, Tenn.
Kind of accident: Rear-end collision
Trains involved: Freight : Helper engine : Freight
Train numbers: Extra 2509 : 4628 : Extra 2507
Engine numbers: 2509 : 4628 : 2507
Consist: 47 cars, cabooses : Light engine : 37 cars,
cabooses
Speed: Standing : Standing : 15 m.p.h.
Track: 4°30' curve, deep cut; 1 percent descending
grade
Weather: Clear
Time: 1:45 p.m.
Casualties: 2 killed; 1 injured
Cause: Failure of helper engine crew to provide
proper rear end protection.

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August 21, 1936

To the Commission;

On July 11, 1936, there was a rear-end collision between a freight train and a helper engine, which shoved the helper engine into the rear of a preceding freight train, on the Southern Railway near Peak, Tenn., resulting in the death of two employees and the injury of one employee.

Location and method of operation

This accident occurred on that part of the Knoxville Division extending between Knoxville and Oakdale, Tenn., a distance of 55.2 miles; in the vicinity of the point of accident this 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 on a fill at a point 2,209 feet west of the west switch of the passing track at Peak; approaching this point from the east, beginning at the west switch of the passing track, the track is tangent for a distance of 420 feet, followed by a 5° curve to the right 700 feet in length, then tangent for 790 feet, and a $4^{\circ}30'$ curve to the right 1,675 feet in length, the accident occurring on this last mentioned curve at a point 299 feet from its eastern end. The grade for west-bound trains in this vicinity is descending, varying from 0.9 to 1.4 percent, being 1 percent at the point of accident.

Just east of the point of accident there are several cuts and fills. The accident occurred on a 16-foot fill; a rock cut, known as Slate Cut, located immediately east of the fill upon which the accident occurred is 336 feet in length, with a maximum depth of 65 feet. Owing to this cut and the curvature of the track, the view of the helper engine which was standing at the point of accident was restricted, from the engineman's side of the following freight train, to a distance of 292 feet.

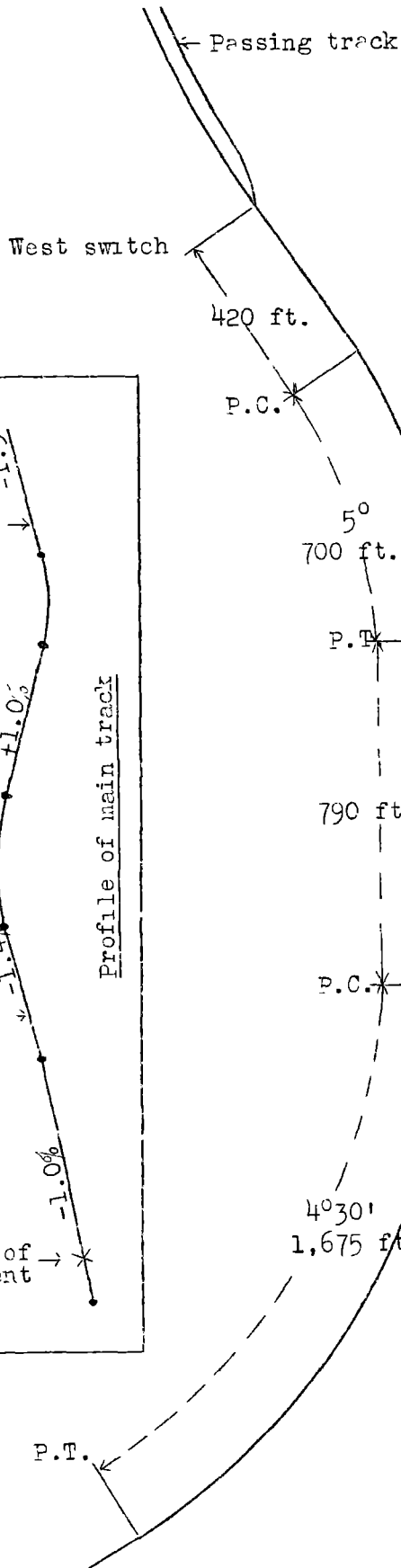
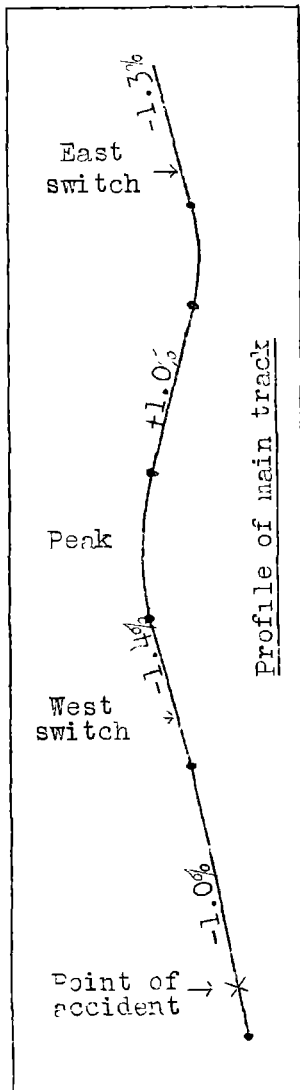
The weather was clear at the time of the accident, which occurred about 1:45 p.m.

Description

Extra 2509, a west-bound freight train, consisted of 38 cars and a caboose, hauled by engine 2509, on departing from Knoxville at 11:40 a.m., according to the train sheet, and was in charge of Conductor Yarnell and Engineman Gallagher. This train was assisted from Coster, 2 miles west of Knoxville, to Chestnut Ridge, a distance of 13.6 miles, by pusher engine

Inv. No. 2080
Southern Railway
Peak, Tenn.
July 11, 1936

o	Knoxville, Tenn.
	2.0 mi.
o	Coster
	11.4 mi.
o	Heiskell
	2.2 mi.
o	Chestnut Ridge
	1.9 mi.
o	Peak
X	(Point of accident)
	37.7 mi.
o	Oakdale, Tenn.



4628, in charge of Conductor Barnett and Engineman Crawford; the helper was cut off at Chestnut Ridge, and followed Extra 2509. Extra 2509 left Heiskell, the last open office, 2.2 miles east of Chestnut Ridge, at 12:55 p.m., according to the train sheet, and at Peak, a closed station, 1.9 miles west of Chestnut Ridge, 9 cars were picked up and the train departed from that point with 47 cars and a caboose at about 1:40 p.m., according to the conductor. While rounding the curve through Slate Cut torpedoes were exploded, and on reaching a point about $\frac{1}{4}$ mile beyond, the train was stopped by a flagman. Helper engine 4628 stopped about one car length behind the caboose of Extra 2509 and after standing at this point about $1\frac{1}{2}$ minutes it was struck by Extra 2507 and driven into the caboose of Extra 2509.

Extra 2507, a west-bound freight train, consisted of 37 cars and a caboose, hauled by engine 2507, and was in charge of Conductor Harmon and Engineman Ward. This train left Knoxville at 12:25 p.m., according to the train sheet, left Heiskell, the last open office, 4.1 miles east of Peak, at 1:31 p.m., and at a point about 1,500 feet to 2,000 feet east of Peak, two torpedoes were exploded and the engineman reduced speed to approximately 8 miles per hour, following which he released the brakes and the train attained a speed of about 15 miles per hour upon passing through Slate Cut, and collided with helper engine 4628 standing just west of the cut.

The force of the impact completely demolished the caboose of Extra 2509, while the car ahead of it was damaged and knocked off its trucks; the left rear tender wheel of engine 4628 was derailed, and the engine stopped about 100 feet west of the point of collision, considerably damaged. Engine 2507 was not derailed and was but slightly damaged. The employees killed were the flagman of Extra 2509 and the conductor of helper engine 4628; the employee injured was the fireman of Extra 2507.

Summary of evidence

Engineman Gallagher, and Conductor Yarnell, of Extra 2509 stated that their train met an east-bound train at Chestnut Ridge, then proceeded to Peak where 9 cars were picked up. Conductor Yarnell rode on the engine after picking up the cars at Peak, while Head Brakeman Summers rode on top of the cars. While rounding the curve in Slate Cut the engine ran over torpedoes and about $\frac{1}{4}$ mile beyond this point the train was stopped by the flagman of a work train. After standing at this point, with the brakes applied from 2 to 4 minutes, the engineman heard an exhaust from the air brake system; he made a full release and found that there was no air in the train line, and thought the difficulty was due to a burst air hose as he had

felt no jar. The first knowledge those on the engine had of the real trouble was brought to them by a boy who notified them of the accident.

Engineman Crawford and Fireman Benson, of helper engine 4628, stated that when their engine stopped behind Extra 2509 while the cars were picked up at Peak, Conductor Barnett went back to flag, following which he was recalled and returned to the engine. Helper engine 4628 closely followed Extra 2509 from Peak, moving under full control expecting to find the freight train ahead at any point, and on seeing it stopped on the descending grade just west of Slate Cut and the flagman at the rear of the caboose, the helper engine was brought to a stop about one car length behind it. Conductor Barnett got off the helper engine with a flag in his hand, and the engineman and the fireman, assuming that he went back to flag, paid no further attention to where he went. Engineman Crawford was working on the injector at the time, and the fireman, after getting a drink of water, got upon his seat box. It developed, however, that the conductor went forward to the caboose of Extra 2509, instead of going back to flag, and after the accident his body and that of the flagman of Extra 2509, were found in the wreckage. Engineman Crawford did not whistle out a flag or mention rear end protection when his engine stopped behind Extra 2509, as he thought the stop would be momentary. After standing about $1\frac{1}{2}$ minutes he observed the following train approaching at a speed of 20 or 25 miles per hour, about 4 or 5 car lengths away. Engineman Crawford understood that it was his duty, as well as that of the conductor, to know that proper rear end protection was afforded to his engine. He and Fireman Benson each stated that Conductor Barnett appeared normal in every respect on this trip. Fireman Benson said that the engineman of Extra 2507, had no opportunity whatever to see the helper engine standing just west of Slate Cut.

Engineman Ward and Fireman Grissom, of Extra 2507, stated that their engine exploded two torpedoes about 1,500 or 2,000 feet east of Peak. The passing track at Peak is 2,959 feet in length. Engineman Ward made about a 10-pound brake pipe reduction on encountering the torpedoes, then made a further reduction of 10 pounds, the brakes functioned properly and the speed was reduced to about 8 miles per hour at the east switch. He then released the brakes and opened the throttle sufficiently to pull the forward portion of the train over a rise in the grade which extended to within about 1,200 feet of the west switch, and then permitted the train to drift down the hill; when the engine passed the west switch the speed was about 10 or 12 miles per hour. While passing through Slate Cut at a speed of about 15 miles per hour he saw the rear end of helper

engine 4628 standing about 4 or 5 car lengths ahead whereupon he immediately applied the air brakes in emergency and although they took proper effect, the distance was too short within which to stop before colliding. Between Peak and the point of accident no fuses, torpedoes or flag were encountered. When the two torpedoes were exploded east of Peak the engineman thought that a flag would be overtaken in the vicinity of Peak, saying that he understood the explosion of two torpedoes was a signal to reduce speed. Fireman Grissom said that on leaving Heiskell, they had no orders regarding Extra 2509 or helper engine 4628 ahead. The air brakes were tested and worked properly. Statements of Head Brakeman Blevins, who was in the cabin on the engine tank, and those of Conductor Harmon and Flagman Fallin, who were on the caboose, developed nothing additional of importance.

Discussion

Under the rules, when a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection; when a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying a lighted fusee. When recalled and safety to the train will permit, he may return. Both the conductor and engineman are responsible for the safety of the train and the observance of the rules. Unless some form of block signal is used, trains in the same direction must keep at least ten minutes apart, except in closing up at stations.

Extra 2509 left Peak about 1:40 p.m., and shortly thereafter torpedoes were encountered and the train stopped on the descending grade just west of Slate Cut and picked up a flagman. Helper engine 4628 stopped on the 4°30' curve about one car length behind Extra 2509, just west of Slate Cut, in a location where it was obscured from view from a following train. Conductor Barnett then got off with a flag, and Engineman Crawford, being engaged with the injectors, assumed that he went back to protect and paid no further attention to where the conductor went. However, instead of going back, Conductor Barnett went forward to the caboose of Extra 2509; Engineman Crawford took no action toward seeing that rear end protection was afforded his engine when it stopped, as he thought the stop would be of short duration.

When Extra 2507 exploded the two torpedoes about 1,500 or 2,000 feet east of Peak, Engineman Ward immediately reduced

speed, thinking that a flag would be encountered near Peak. He had no orders regarding Extra 2509 and engine 4628 ahead, and his own train left Heiskell, the last open office, 36 minutes behind Extra 2509. In view of the circumstances it appears that Engineman Ward was operating his train under control, and had he been properly flagged by the crew of engine 4628 he could have stopped his train without incident.

This accident once more calls attention to the inadequacy of the time-interval system of spacing trains, which has been discussed in several previous reports issued by this Bureau. Under such a system the movements of trains are restricted only at open offices, at which point trains moving in the same direction are required to be spaced 10 minutes apart. Under this system of operation, trains which are delayed or have work to perform between open offices, as in this case, may easily be overtaken by following trains even though there may have been a considerable interval between their times of departure from an open office.

For a period of 30 days prior to this accident there was an average daily movement of 29 trains over this district; these trains are operated over heavy grades, around sharp curves and through deep cuts. In view of these facts and the inadequacy of the time-interval system of spacing trains, the officials of this railroad should give careful consideration to the need for the additional protection which could be afforded by installing a block-signal system on this district.

Conclusion

This accident was caused by the failure of the crew of helper engine 4628 to provide adequate rear end protection for their train.

Respectfully submitted,

W. J. PATTERSON,

Director.