

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2483
THE PIEDMONT & NORTHERN RAILWAY COMPANY
REPORT IN RE ACCIDENT
NEAR FAIRMONT, S. C., ON
FEBRUARY 21, 1941

SUMMARY

Railroad: Piedmont & Northern
Date: February 21, 1941
Location: Fairmont, S. C.
Kind of accident: Rear-end collision
Trains involved: Freight : Passenger
Train numbers: 47 : 5
Engine numbers: 5610 : Motor 350
Consist: 18 cars, caboose : 2 cars
Speed: Standing : 30-40 m. p. h.
Operation: Timetable and train orders
Track: Single; 3° right curve; 0.83 percent
ascending grade southward
Weather: Clear
Time: 1:47 p. m.
Casualties: 1 killed; 30 injured
Cause: Accident caused by failure properly
to control speed of following train
after it had been flagged

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2483

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

THE PIEDMONT & NORTHERN RAILWAY COMPANY

April 12, 1941

Accident near Fairmont, S. C., on February 21, 1941, caused by
failure properly to control speed of following train after
it had been flagged.

REPORT OF THE COMMISSION¹

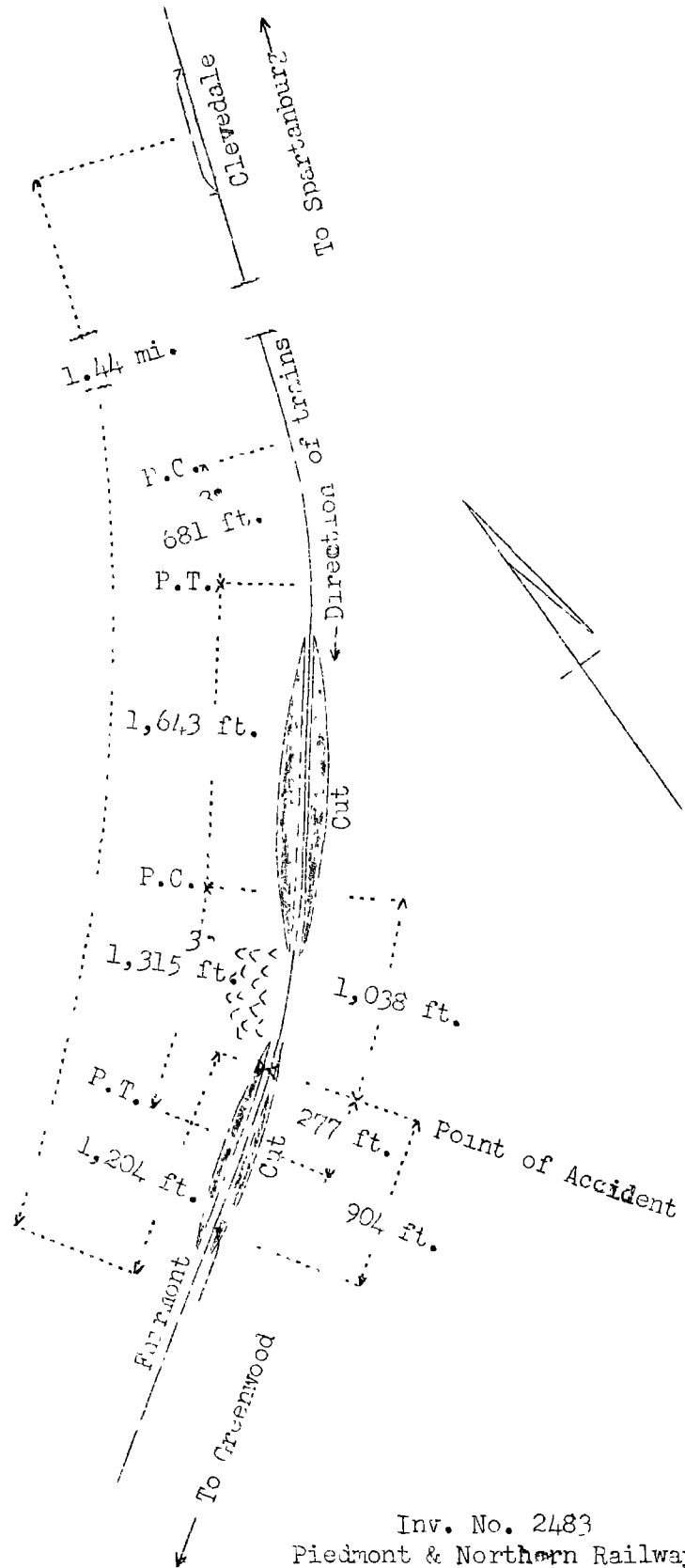
PATTERSON, Commissioner:

On February 21, 1941, there was a rear-end collision
between a freight train and a passenger train on the Piedmont
& Northern Railway near Fairmont, S. C., which resulted in the
death of 1 employee, and the injury of 26 passengers, 1 express
messenger, 2 employees off duty, and 1 train-service employee.

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Under authority of section 17 (2) of the Interstate Com-
merce Act the above-entitled proceeding was referred by the Com-
mission to Commissioner Patterson for consideration and dispo-
sition.

○	Spartanburg, S. C.
	2.20 mi.
○	Saxon
	2.80 mi.
○	Calvert
	1.60 mi.
○	Clevedale
	1.44 mi.
X	Fairmont (P. of A.)
	2.16 mi.
○	Thorp
	78.70 mi.
○	Greenwood, S. C.



Inv. No. 2483
 Piedmont & Northern Railway
 Fairmont, S. C.
 February 21, 1941

Location and Method of Operation

This accident occurred on that part of the South Carolina Division which extends between Spartanburg and Greenwood, S. C., a distance of 38.9 miles. The line is equipped with an overhead catenary system for electric propulsion of trains. 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. At Fairmont a spur track parallels the main track on the east; the switch is facing-point for south-bound trains and is located 300 feet north of the station. The accident occurred 904 feet north of this switch. As the point of accident is approached from the north there are, in succession, a 3° curve to the right 861 feet in length, a tangent 1,643 feet, and a 3° curve to the right 1,038 feet to the point of accident and 277 feet beyond. The grade for south-bound trains varies between 0.83 and 1 percent ascending a distance of 2,935 feet and is 0.83 percent at the point of accident.

At its northern end the curve involved extends a distance of 518 feet in a cut which is 30 feet deep, 27 feet wide at the level of the rail, and 95 feet wide at the top. This cut is followed by a low fill 300 feet long, and then a cut 9 feet deep and 1,244 feet long. The accident occurred at a point 220 feet south of the northern end of the latter cut. Between the two cuts there is a clump of trees west of the track. Because of the cuts, the track curvature and the growth of trees on the inside of the curve, the view from the cab of a south-bound motor-car at the point where the accident occurred is restricted to 570 feet.

Rules and Regulations for the Government of the Operating Department read in whole or in part as follows:

40. An inferior train must clear the time of a superior train, in the same direction, not less than five minutes; but must be clear at the time a first-class train, in the same direction, is due to leave the next station in the rear where time is shown.

* * *

41. A train failing to clear the main track by the time required by rule, must be protected as prescribed by Rule 52.

52. When a train stops, or is delayed, under circumstances, in which it may be overtaken by another train, * * * the Rear Brakeman or Conductor must immediately go back with danger signals to stop any train moving in the same direction. At a point three-fourths of a mile from the rear of his train he must place one torpedo on the rail on the Motorman's side; he must then continue to go back to a point one mile from the rear of his train, and place two torpedoes on the Motorman's side, ten yards apart (one rail length), when he may return to a point three-fourths of a mile from the rear of his train, where he must remain until an approaching train has been stopped, or he is recalled by the whistle of his motor. When he comes in he will leave two torpedoes on the rail, and plant a lighted fusee on the track, at night or when conditions require it.

When a train is within sight or hearing, or a passenger train is due within ten (10) minutes, the flagman must remain until such train has been stopped, and will then proceed thereon until his train is overtaken.

Bulletin No. 87, dated September 25, 1934, reads in part as follows:

" * * * the meaning of 'under control'. Be able to stop within one-half the distance of your vision."

* * *

In the vicinity of the point of accident the maximum authorized speed for passenger trains is 50 miles per hour.

The weather was clear at the time of the accident, which occurred at 1:47 p. m.

Description

No. 47, a south-bound second-class freight train, with Conductor Hairston and Motorman Tibbs in charge, consisted at the time of the accident of electric engine 5610, 14 loaded and 4 empty cars and a caboose. This train departed from Spartanburg, 8.04 miles north of Fairmont, at 1 p. m., according to the train sheet, 30 minutes late, and stopped at Clevedale, 1.44 miles north of Fairmont, about 1:23 p. m., according to statements of

the crew. After two cars were added, the train departed from Clevedale about 1:35 p. m., 35 minutes late and 8 minutes ahead of the schedule time of No. 5. A flagman was left at Clevedale and No. 47 proceeded southward, stopped at Fairmont where one car was added, and while it was stopped, with its rear end standing 904 feet north of the spur-track switch, the rear end was struck by No. 5.

No. 5, a south-bound first-class passenger train, with Conductor Burriss and Motorman Thackston in charge, consisted of combination passenger-baggage unit No. 350, which was provided with electric-traction motors, and a trailer-coach unit; both units were of steel construction. This train departed from Spartanburg at 1:30 p. m., according to the train sheet, on time, stopped at Saxon, 2.2 miles beyond, to receive a passenger, stopped about 3/4 mile north of Clevedale in response to the signals of the flagman of No. 47, stopped at Clevedale about 1:43 p. m. to land and to receive passengers, then departed, and, while moving at a speed estimated at 30 to 40 miles per hour, collided with the rear end of No. 47.

The steel caboose of No. 47 was telescoped by motor 350 a distance of 8-1/2 or 9 feet, the side sheets and the framework were badly distorted and about one-half of the center-sill was broken from the body of the caboose. The rear truck was detached and pushed under the front end of the caboose. The rear end of the car ahead of the caboose was damaged and its rear truck was derailed.

The front end of motor 350 was crushed inward. The side sheets on the right side back of the motorman's window were buckled outward. The front end-posts and the front-truck bolster were broken. The front truck was derailed, detached and shoved under the center of the caboose. The center-sill was bent downward about 2 inches at the center of the car and upward at the rear end of the car.

The employee killed was the motorman of No. 5 and the employee injured was the flagman of No. 47.

Summary of Evidence

Motorman Tibbs, of No. 47, stated that at Clevedale he sounded the whistle signal for the flagman to protect the rear of the train. At 1:35 p. m., when No. 47 was ready to depart from Clevedale, the flagman was not recalled, as No. 5 was due to leave Calvert, 1.6 miles north of Clevedale, at 1:40 p. m. and Clevedale at 1:43 p. m.; this was in accordance with the rule which prescribes that a flagman must remain behind to

afford protection when a passenger train is due within 10 minutes. When No. 47 departed from Clevedale the engineer observed the flagman standing about 0.8 mile north of Clevedale. No. 47 stopped at Fairmont about 1:40 p. m., where one car was added to the train. The brakes on the train had not been released when the engineer looked back and saw No. 5 approaching in the cut. He estimated that the speed of No. 5 was at least 40 miles per hour when it struck the caboose. He was last examined on the operating rules in 1940. He understood that after a train is stopped by a flagman's signals and the crew is informed of a preceding train, the following train is required to proceed under control and to be prepared to stop short of the preceding train.

Conductor Harrston, of No. 47, stated that the flagman was left at Clevedale to provide protection because the time was insufficient for No. 47 to proceed to Fairmont, to add one car to the train at that point, to go to Tucapau, 2.16 miles south of Fairmont, and to clear the schedule time of No. 5 not less than 5 minutes, as prescribed by Rule 40. Tucapau was the first siding south of Calvert long enough to contain his train. At Fairmont he was at the front end of the train. After a car was added but before the brakes on the train had been released, the conductor observed No. 5 moving rapidly on the curve north of Fairmont. The weather was clear at the time of the accident, which occurred at 1:47 p. m. He said that it was customary for an inferior train to leave its flagman to provide protection while it proceeded ahead of a superior train to the first siding long enough to contain the preceding train. He was last examined on the operating rules in 1940. He understood that after a superior train has been flagged and the crew is informed of a preceding inferior train, the superior train is required to move under control and to be prepared to stop short of the preceding train.

The statement of Front Brakeman Sanders, of No. 47, added nothing of importance.

Flagman Campbell, of No. 47, stated that his train stopped at Clevedale about 1:20 or 1:25 p. m. and the motorman sounded the whistle signal for the flagman to proceed to the rear to provide flag protection. The train departed from Clevedale about 1:35 or 1:36 p. m. The whistle signal was not sounded for him to return to the train; however, if it had been sounded he would not have returned since No. 5 was due at Clevedale at 1:43 p. m. He flagged No. 5, boarded the motor, and informed the motorman the time that No. 47 had departed from Clevedale. No. 5 then proceeded, stopped at Clevedale and soon departed. The flagman remained in the front end of the motor with the motorman, and both maintained a lookout ahead for No. 47. As No. 5 approached the point where the accident occurred, the speed was

about 30 or 35 miles per hour on the tangent north of the curve involved. The flagman was somewhat concerned but he did not say anything when the motorman did not reduce speed before the train entered the curve. As the train rounded the curve, the flagman observed the caboose about 600 feet distant and called a warning. The motorman immediately closed the controller and applied the air brakes. The flagman did not observe if the brakes were applied in service or emergency; however, the brake application seemed to be effective. When No. 5 was about 300 feet north of the caboose the motorman told the flagman that the train would not stop short of the caboose and that he should move out of the way. The speed was about 30 miles per hour when the collision occurred. En route from Clevedale nothing occurred to distract the motorman's attention from the proper performance of his duties; the motorman appeared normal. The flagman had no information concerning stops that No. 47 would make and he did not suggest to the motorman any point where No. 47 might be overtaken. The flagman said that after No. 5 stopped north of Clevedale and the motorman was informed of a preceding inferior train, the motorman was required to operate the following train under control and to be prepared to stop within one-half the range of vision until the preceding train was overtaken. The flagman was last examined on the operating rules on April 20, 1932. In rules classes employees are instructed that when an inferior train in the same direction is unable to clear the time of a following superior train 5 minutes the flagman must remain behind his train, flag the following train, inform the crew concerning the preceding train, and ride the following train until it overtakes the preceding inferior train. All employees are instructed to operate a following train prepared to stop within one-half the range of vision. In his opinion the motorman of No. 5 failed to control the speed of his train properly after it had been flagged.

Conductor Burriss, of No. 5, stated that the brakes were tested that morning before the train departed from Greenwood, S. C., on the north-bound trip on No. 4; the brakes functioned properly en route. When his train was approaching Clevedale he was in the control compartment with the motorman. About 1/2 mile north of Clevedale, No. 5 stopped in response to the signals of the flagman of No. 47. The flagman boarded No. 5 but the conductor did not hear the information the flagman gave the motorman; however, it was not unusual for No. 5 to be stopped by a flagman in that vicinity because of a preceding inferior train failing to clear the time of No. 3. No. 5 departed from Clevedale about 1:44 p. m. En route from Clevedale to the point where the accident occurred, the conductor was busy collecting fares and did not observe the speed of the train until he felt the air brakes become applied in emergency; at this time the speed of No. 5 was 30 or 35 miles per hour. He looked ahead,

observed that the caboose of No. 47 was 400 to 500 feet distant, and realized that a collision was imminent. The accident occurred between 1:45 and 1:47 p. m. He said that the motorman involved was not assigned regularly to No. 5; however, the motorman was frequently assigned to No. 5 during the absence of the regular motorman and this was the third consecutive day he had been assigned to this schedule. He said that after No. 5 stopped north of Clevedale in response to the stop signals of the flagman of No. 47, the motorman was required to operate No. 5 under control and to be prepared to stop the train within one-half the range of vision until No. 47 was overtaken.

Express Messenger Riddick, of No. 5, estimated the speed of No. 5 as 50 to 55 miles per hour when the accident occurred.

Car Inspector White, at Spartanburg, stated that he renewed two brake shoes on motor 350 but did not make a terminal air-brake test of No. 5 before it departed; however, he operated the train from the pit to the passenger station and the air brakes functioned properly.

Air Brake Inspector Davis, at Greenville shops, stated that on February 7, 1941, motor 350 was given the prescribed inspection and the air-brake equipment functioned properly at that time. After the accident he inspected car 350 and found that the air-brake equipment was damaged as follows: The independent brake-valve was broken and the handle was missing; the automatic brake-valve handle was in lap position, but no significance could be attached to this as it could have been disturbed subsequent to the accident. Tests made subsequent to the accident disclosed that the distributing valve, the automatic brake-valve and the air-regulating devices performed their functions properly. There was no defective condition of the air-brake equipment existing prior to the accident that could have interfered with the stopping of No. 5.

Roadmaster Holshouser stated that he examined the track within 2-5/4 hours after the accident occurred. The rails were dry, and there was no indication of sand having been used within a distance of 600 feet north of the point of accident; there were no burns on the rails from sliding wheels.

Motorman Clement, assigned regularly for the past 3 years to trains operating on schedules Nos. 4 and 5, stated that motor 350 and a trailer-coach could be stopped in the vicinity of the point of accident from a speed of 60 miles per hour by a 20-pound brake-pipe reduction in 800 or 1,000 feet; speed could be reduced by a 20-pound reduction from 60 to 30 miles per hour in 300 feet. He had never had occasion to make an emergency application of the brakes. He had last operated motor 350 and a trailer-coach on February 18, 1941.

Motorman White, who was not involved in the accident, stated that employees are instructed to operate trains under control so that they can be stopped within one-half the range of vision after they have been flagged.

General Manager Hogan stated that after No. 5 stopped north of Clevedale in response to the signals of the flagman of No. 47 the motorman was required to operate No. 5 under control and to be prepared to stop within one-half the range of his vision until No. 47 was overtaken, and during the interim no additional flag protection for No. 47 was required or expected to be provided. He said the meaning of "under control" was understood by all employees concerned. The motorman of No. 5 was familiar with work of No. 47.

According to data furnished by the railroad, motor 350 is 34 feet 5-3/4 inches in length over buffers, and weighs 145,700 pounds. The front-end corner posts were steel channels 4 inches wide with 1-3/4-inch flanges; the front-end door posts were steel channels 5 inches wide with 1-3/4-inch flanges. The side sills were of angle construction, 1/4 inch by 3-1/2 inches by 5 inches, and Zee construction, 3 inches by 3 inches by 4 inches. The coversills were two steel channels 9 inches wide with 2-1/2-inch flanges; cover-plates were provided at top and bottom. There were intermediate I-beam sills 10 inches high and 6 inches wide, with a web 1/4 inch thick. The end and the side sheets were 1/8-inch metal; the inside walls were 20-gage metal. The front-end door was covered by 20-gage metal. The car was powered by four electric motors. EL-type brake equipment was provided; air-regulating devices were adjusted to provide brake-pipe pressure of 70 pounds and main reservoir pressure of 90 and 110 pounds. The last periodic inspection was on February 7, 1941, at which time all brake equipment performed its functions properly. Trailer car 401 was equipped with a P-2 control valve.

Discussion

According to the evidence, while No. 47, a second-class freight train, was standing on the main track at Fairmont, its rear end was struck by No. 5, a first-class passenger train, which was moving at a speed of 30 or 35 miles per hour. The accident occurred at 1:47 p. m.

No. 5 was due to leave Clevedale, 1.41 miles north of Fairmont, at 1:45 p. m. No. 47 departed from Clevedale at 1:36 p. m. Under the rules, No. 47 was required to clear the time of No. 5 not less than 5 minutes, or to be in the clear at the time No. 5 was due to leave Clevedale. There was no point where No. 47 could clear until it reached Tucapau, 2.16 miles south of Fairmont; therefore, flag protection was required until No. 47

could clear at Tucapau. In compliance with a provision of the flagging rule requiring flag protection when a passenger train is due within 10 minutes, the flagman of No. 47 was left at a point 3/4 mile north of Cleveale. The flagman stopped No. 5, boarded the motor, informed the motorman concerning No. 47 and remained in the motorman's compartment, intending to remain there until his train was overtaken.

Under the rules, after a train has been flagged and the crew has been informed concerning a preceding train, the motorman is required to operate his train under control and to be prepared to stop within one-half his range of vision until the preceding train is overtaken. According to statements of the flagman and surviving members of the crew of No. 5, the speed of No. 5 was about 30 or 35 miles per hour when it was on the curve north of Fairmont, where curve, curvature and trees restricted visibility to about 250 feet. The flagman observed the rear end of his train standing in the cut and warned the motorman, who immediately began to stop his train but too late to avert the accident. It was the understanding of the general manager, all surviving members of both crews involved and several employees not involved in the accident that after a train has been flagged and the crew has been informed concerning a preceding train, the following train is required to move under control and to be prepared to stop within one-half the range of vision until the preceding train is overtaken. The motorman involved was familiar with the work of No. 47 and he had served for more than 28 years as motorman on this line; therefore, it is reasonable to assume that he understood the rules involved in this accident. Why he failed to control the speed of his train in this instance could not be ascertained, as he was killed in the accident.

Cause

It is found that this accident was caused by failure properly to control the speed of the following train after it had been flagged.

Dated at Washington, D. C., this twelfth day of April, 1941.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SIAL)

Secretary.