INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2501

THE LOUISVILLE & NASHVILLE RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR AGAWAM, KY., ON

MAY 8, 1941

SUMMARY

Railroad:	Louisville & Nashville	
Date:	May 8, 1941	
Location:	Agawam, Ky.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	72	: 42
Engine numbers:	1445-1892	: 1978
Consist:	119 cars and caboose	: 26 cars and caboose
Speed:	12-15 m. p. h.	: 20-25 m. p. h.
Operation:	Timetable and train orders	
Track:	Single; 4° left curve; 0.26 percent ascending grade northward	
Weather:	Cloudy	
Time:	11:30 p. m.	
Casualties:	2 killed; 2 injured	
Cause:	Accident caused by failure to provide proper flag protection for preceding train	
Recommendation:	That consideration be given to establishment of a suitable block system	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2501

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

THE LOUISVILLE & NASHVILLE RAILROAD COMPANY

June 30, 1941

Accident near Agawam, Ky., on May 8, 1941, caused by failure to provide proper flag protection for preceding train.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On May 8, 1941, there was a rear-end collision between two freight trains on the Louisville & Nashville Railroad near Agawam, Ky., which resulted in the death of two employees and the injury of two employees.

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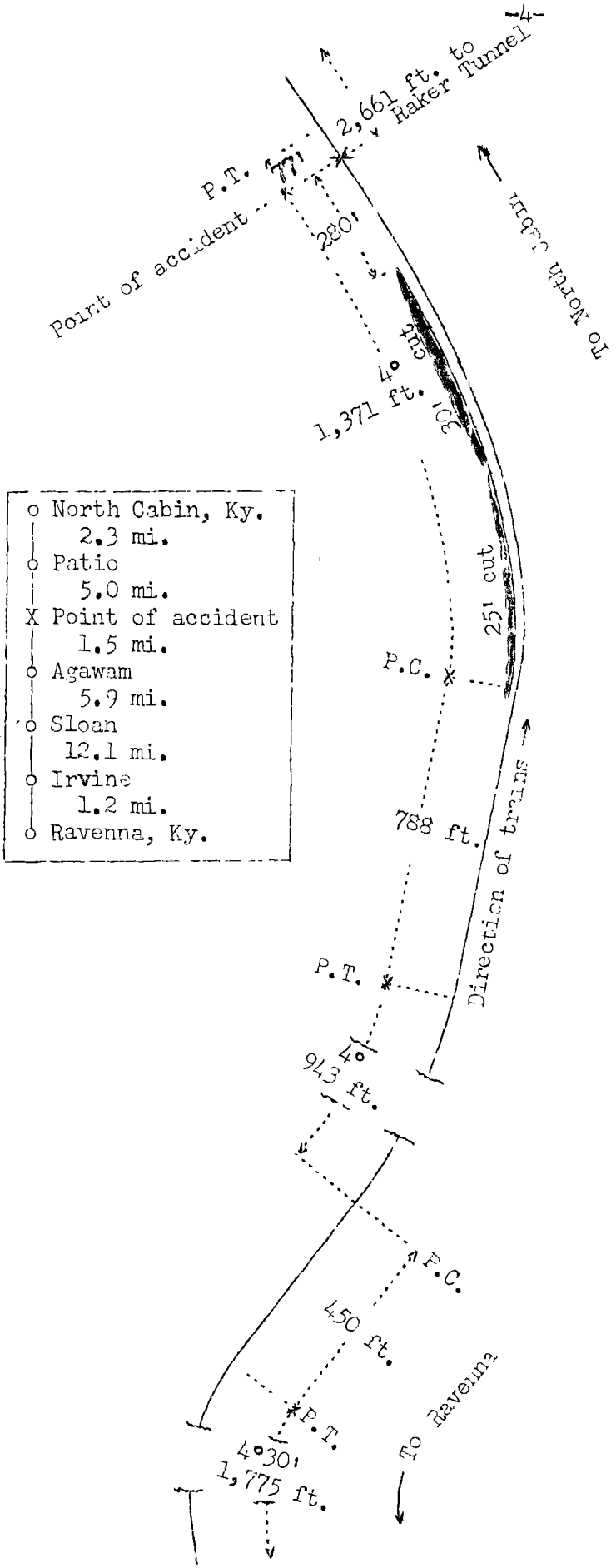
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2501
Louisville & Nashville Railroad
Agawam, Ky.
May 8, 1941

Location and Method of Operation

This accident occurred on that part of the Eastern Kentucky Division which extends between Ravenna and North Cabin, Ky., a distance of 28 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; no form of block system is in use. The accident occurred at a point 1.5 miles north of Agawam. As the point of accident is approached from the south there are, in succession, a 4°30' curve to the right 1,775 feet in length, a tangent 450 feet, a 4° curve to the left 943 feet, a tangent 788 feet, and a 4° curve to the left 1,371 feet to the point of accident and 77 feet beyond. The last-mentioned 4° curve is laid in a series of hillside cuts which vary between 25 and 30 feet in depth on the inside of the curve and extend throughout a distance of 1,091 feet. The northern end of the most northerly cut is 280 feet south of the point where the accident occurred. A fill about 25 feet in height extends between the southern end of this cut and the point where the accident occurred. Throughout a distance of 1 mile immediately south of the point of accident the grade for north-bound trains varies between 0.19 and 0.80 percent ascending and is 0.26 percent at the point of accident. Because of the cuts and the track curvature, the view of the point where the accident occurred, from the left side of a north-bound engine, is restricted to a distance of 600 feet, and from the right side, 140 feet.

Rules for the Government of the Transportation Department read in whole or in part as follows:

> DEFINITIONS.
>
> Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.
>
> 11. A train finding a fusee burning red on or near its track must stop and extinguish the fusee, and then proceed at restricted speed. When burning yellow, it is a Restricted-Speed signal. * * *
>
> 15. The explosion of one torpedo is a signal to stop; the explosion of two torpedoes, not more than 200 feet apart, is a signal to proceed at restricted speed. * * *

99 (d). 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. By night, or by day, when the view is obscured, lighted fusees must be thrown off at proper intervals.

* * *

99 (k). Conductors and enginemen are responsible for the protection of their trains.

163. Unless some form of block signals is used, light engines, or freight trains with light tonnage must not exceed the usual speed of full tonnage trains over portions of the road where the view is not clear, * * *.

In the vicinity of the point of accident the maximum authorized speed for north-bound freight trains is 30 miles per hour.

The weather was cloudy at the time of the accident, which occurred about 11:30 p. m.

Description

No. 78, a north-bound second-class freight train, with Conductor McHargue and Enginemen O'Neill and Bradford in charge, consisted of engines 1445 and 1892, 119 cars of coal, and a caboose. This train departed from Irvine, 18 miles south of Agawam, the last open office, at 9:50 p. m., according to the train sheet, 3 hours 5 minutes late, stopped at Sloan, 5.9 miles south of Agawam, according to statements of the crew, to take water, then departed about 10:45 p. m., 3 hours 15 minutes late, passed Agawam at 11:17 p. m., 3 hours 27 minutes late, and, at a point about 1.5 miles beyond, while moving at a speed estimated as 12 to 15 miles per hour, its rear end was struck by No. 42.

No. 42, a north-bound second-class freight train, with Conductor Rodgers and Engineman Harris in charge, consisted of engine 1878, 24 loaded and 2 empty cars and a caboose. This train departed from Irvine at 10:45 p. m., according to the train sheet, 10 minutes late, passed Agawam at 11:27 p. m., according to statements of the crew, 7 minutes late, and, while moving at a speed estimated as 20 to 25 miles per hour, collided with the rear end of No. 78.

The caboose of No. 78 was demolished and the wreckage stopped to the left of the track beyond the point of collision. The rear two cars telescoped each other and were badly damaged. The engine of No. 42 stopped 215 feet beyond the point of collision; the smoke-box was badly damaged. The fourth to the fourteenth cars, inclusive, were derailed and stopped, badly damaged, in various positions across the track and on each side of it. The fifth to the thirteenth cars, inclusive, were destroyed by fire.

The employees killed were the conductor of No. 78 and the fireman of No. 42, and the employees injured were the flagman of No. 78 and the front brakeman of No. 42.

Summary of Evidence

Engineman O'Neill, of the first engine of No. 78, stated that at Irvine a terminal air-brake test was made and the brakes functioned properly en route. No. 78 departed from Irvine at 9:50 p. m. At Sloan both engines were detached from the train, water was taken, the flagman was recalled, and the train departed about 10:40 or 10:45 p. m. Because of the length of his train and the track curvature, he could not see any signal given at the rear of his train; however, it is customary to proceed as if a signal had been given. Between Sloan and the point where the accident occurred the maximum speed was about 15 miles per hour. At Agawam his engine passed the south siding-switch at 11:15 p. m. He said that in this instance the usual running time for a full-tonnage train was made. The first he knew of anything being wrong was when the air brakes became applied in emergency, and the train stopped in a distance of 3 car lengths. The weather was cloudy at the time of the accident, which occurred about 11:30 p. m. At Irvine the conductor appeared normal.

Fireman Botkin, of the first engine of No. 78, corroborated the statement of Engineman O'Neill in all essential details. In his opinion the speed of his train was 12 to 15 miles per hour at the time of the accident. In this instance No. 78 made the usual running time for a full-tonnage train between Irvine and Agawam.

Conductor Sams, assigned to helper service, stated that he was on the first engine of No. 78. After No. 78 departed from Sloan he looked toward the rear at frequent intervals but did not observe any reflection of a lighted fusee. Because smoke from both engines hung close to the ground, the view toward the rear was somewhat restricted. The weather was cloudy at the time of the accident, which occurred about 11:30 p. m.

Engineman Bradford, of the second engine of No. 78, stated that at Agawam his engine passed the north siding-switch at 11:17 p. m. and the accident occurred when his engine was at a point 2.44 miles farther north at 11:30 p. m. The average speed throughout this distance was about 11 miles per hour. In this instance the speed was about the same as that usually attained by a full-tonnage train in this territory. En route between Sloan and the point where the accident occurred he looked toward the rear of his train at points where a caboose usually can be seen; however, he did not see either the marker lamp of the caboose or the reflection of a lighted fusee.

The statements of Fireman Hudson, of the second engine of No. 78, and Front Brakeman Wagner added nothing of importance.

Flagman Parker, of No. 78, stated that when his train stopped at Sloan he proceeded to the rear to provide flag protection. He was aware that No. 42 was following his train closely. Being recalled, he placed two torpedoes on the rail and left a lighted red fusee. After his train departed from Sloan the conductor said he would look out for following trains while the flagman made out the reports. The flagman was occupied with clerical duties inside the caboose and did not observe No. 42 approaching until just an instant before the engine struck the caboose. When No. 78 passed Agawam the conductor was on the rear platform but the flagman did not observe if any lighted fusee was dropped off. The flagman did not know where the conductor was stationed at the time of the accident. An ample supply of fusees and torpedoes was on the caboose.

Engineman Harris, of No. 42, stated that at Irvine a terminal air-brake test was made and the brakes functioned properly en route. As his train was approaching Sloan the speed was about 30 miles per hour and two torpedoes were exploded. He made a 10-pound brake-pipe reduction and speed was reduced to about 15 miles per hour. Reaching a point north of Sloan where the view was unrestricted, he released the brakes and the maximum authorized speed of 30 miles per hour was resumed. At Agawam his engine passed the south siding-switch at 11:27 p.m. About 40 car lengths south of Agawam he sounded the engine whistle signal for the station, then sounded the road-crossing signal for a crossing near the station, and at the north siding-switch at Agawam he sounded the station signal for a tunnel located 5,512 feet south of the point where the accident occurred. As his train was approaching the point where the accident occurred the speed was 30 miles per hour, the headlight was lighted brightly, and the fireman, the front brakeman and he were maintaining a lookout ahead from their usual positions in the cab. The first the engineman knew of anything being wrong was when

both the fireman and the front brakeman called a warning and jumped from the engine. The engineman immediately applied the air brakes in emergency and closed the throttle, but the distance was insufficient for stopping short of the train ahead. Because of the curve to the left he was unable to see the rear end of the preceding train until his engine was about 100 feet from it. He observed that the marker lamp on the right side was lighted but he was unable to see the marker lamp on the left side. No. 78 was moving slowly and the speed of his own train was reduced to 22 or 25 miles per hour at the time of the accident, which occurred about 11:31 p.m. Prior to the collision he did not see either the conductor or the flagman of No. 78. En route between Sloan and the point where the accident occurred he did not see any lighted fusee. He thought that he had complied with the requirements of Rule 163.

Front Brakeman De Rossette, of No. 42, stated that south of Sloan two torpedoes on the right rail were exploded and his train moved at restricted speed until his engine reached a point from which there was an unrestricted view ahead; then, since no preceding train was in view, normal speed was resumed. No. 42 passed Sloan at 11:13 or 11:14 p.m. and Agawam at 11:27 p.m. Between Sloan and the point where the accident occurred no burning fusee was observed. As his train was approaching the point where the accident occurred, the speed was about 25 or 30 miles per hour, and the fireman and he were on the left seatbox maintaining a lookout ahead. Because of track curvature and the high bank inside the curve, the view ahead was materially restricted. The front brakeman looked toward the rear of his train to see if there were any overheated journals and the first he knew of anything being wrong was when the fireman called a warning. The front brakeman then looked ahead and saw the caboose of No. 78 about 6 or 7 car lengths distant. Both marker lamps were lighted, the rear door was closed, and no member of the crew was in sight. After the warning was called the engineman immediately applied the brakes in emergency. The front brakeman said that the speed was reduced to about 20 miles per hour when he jumped just before the collision occurred. In his opinion, had any flag protection been provided by the crew of No. 78 the accident would have been averted.

Conductor Rodgers, of No. 42, stated that his train passed Sloan about 11:13 p.m. and Agawam about 11:27 p.m.

Flagman McDaniels, of No. 42, stated that en route he was maintaining a lookout ahead from the caboose cupola. At Sloan when the speed of his train was reduced he dropped off a lighted yellow fusee. He did not observe the reflection of any lighted fusee dropped from a preceding train. He estimated that the speed of his train was about 25 miles per hour when the brakes were applied in emergency just prior to the accident. After the accident occurred he proceeded to the rear to provide flag

protection and did not find any evidence of a burned fusee that might have been dropped recently.

Car Inspectors Hale and Winkler, at Ravenna, stated that they conducted the terminal air-brake test of No. 42. Each brake applied and released properly. The brake-cylinder piston-travel of each car was within the prescribed limits.

Machinist Sparks stated that he tested the air-brake equipment of engine 1878 before it departed from Ravenna. The equipment was in safe and suitable condition for service.

Machinist Warford stated that after the accident occurred he inspected engine 1878. The air-brake equipment functioned properly, and the driving-wheel brake-cylinder piston-travel was within the prescribed limits. The foundation brake gear was in serviceable condition. There were slid flat spots on the driving-wheel tires that ranged between 1/2 inch and 1-1/2 inches in length.

Assistant Superintendent Sparks stated employees are instructed that when torpedoes are exploded a train should run at restricted speed a sufficient distance for a preceding train to begin to move after its flagman has been recalled, unless the way is seen or known to be clear. He said that a train, moving under circumstances in which it might be overtaken by another train, was required to provide flag protection.

According to data furnished by the carrier, the average daily movement over the territory involved is 23.5 trains.

Between Irvine and Patio, a distance of 24.5 miles, there are 59 curves, of which 10 are 3°, 2 are 3°30', and 36 are from 4° to 6°30'.

Discussion

According to the evidence, No. 78 was moving at a speed of 12 or 15 miles per hour when its rear end was struck by No. 42, which was moving at a speed of 20 or 25 miles per hour. Both trains were second-class and at the time of the accident No. 78 was nearly 3 hours 30 minutes late and No. 42 about 7 minutes late. It was dark and the weather was cloudy. The accident occurred on a 4° curve to the left. Because of track curvature and an embankment on the inside of the curve, the rear end of the preceding train could not be seen, just before the accident occurred, from the left side of the engine of the following train more than 250 feet, and from the right side more than about 100 feet.

The rules required that when a train is moving under circumstances in which it may be overtaken by another train the flagman must take necessary action to insure full protection for his train and when the view is obscured he must throw off lighted fusees at proper intervals. The preceding train was moving throughout the last 8 miles in a manner in which it might be overtaken by another train, as its average speed was 11 miles per hour and its schedule time was an average of about 18 miles per hour. According to the statement of the flagman, he was engaged in clerical work and the conductor assumed the duties of flagman. A few minutes before the accident occurred, the flagman observed his conductor on the rear platform of the caboose but he did not observe the conductor drop any lighted fusee. According to the statements of the crew of the following train, they did not see a lighted fusee at any point, and the only flagging signal was the explosion of two torpedoes about 8 miles south of the point where the accident occurred. Why the conductor of the preceding train did not throw off lighted fusees at proper intervals is not known as he was killed in the accident. The rules of this railroad provide for the use of yellow fusees as well as red fusees. If fusees of either kind had been used by the crew of the preceding train, it is probable the accident would have been averted.

The rule pertaining to the operation of light engines and freight trains with light tonnage in territory where no block system is in use does not provide any definite speed as the usual speed of full-tonnage trains. In this case, No. 78, a full-tonnage train, was being operated at a speed about 7 miles per hour lower than the average schedule speed, and, at the time of the accident, No. 42, a light-tonnage train, was being operated at a speed 4 to 7 miles per hour higher than the average schedule speed of No. 42, but not as high as the maximum authorized speed; however, there was nothing disclosed in the investigation to indicate that the employees involved had been given a definite interpretation of this rule.

Since the average daily movement over the territory involved is nearly 24 trains and only a small portion of the track is tangent, additional protection such as would be furnished by a suitable block system appears warranted.

Cause

It is found that this accident was caused by failure to provide proper flag protection for the preceding train.

Recommendation

It is recommended that the Louisville & Nashville Railroad Company give consideration to the installation of a suitable block system on the line here under consideration.

Dated at Washington, D.C., this thirtieth day of June, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.