INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2963

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR OAKLAND, KY., ON

JANUARY 1, 1946

SUMMARY

Railroad:	Louisville and Nashville	
Date:	January 1, 1946	
Location:	Oakland, Ky.	
Kind of accident:	Collision	
Trains involved:	Passenger	: Freight
Train numbers:	15	: 59
Engine numbers:	242	: 1870
Consist:	7 cars	: 61 cars, caboose
Estimated speed:	10 m. p. h.	: Standing
Operation:	Timetable, train orders and automatic block-signal system	
Track:	Single; tangent; vertical curve	
Weather:	Cloudy	
Time:	5:55 p. m.	
Casualties:	13 injured	
Cause:	Passenger train moving out of control on descending grade, as a result of damaged air-brake equipment on engine and inefficient hand-brake equipment on cars	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2963

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

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

March 26, 1946.

Accident near Oakland, Ky., on January 1, 1946, caused by passenger train moving out of control on a descending grade, as a result of damaged air-brake equipment on engine and inefficient hand-brake equipment on cars.

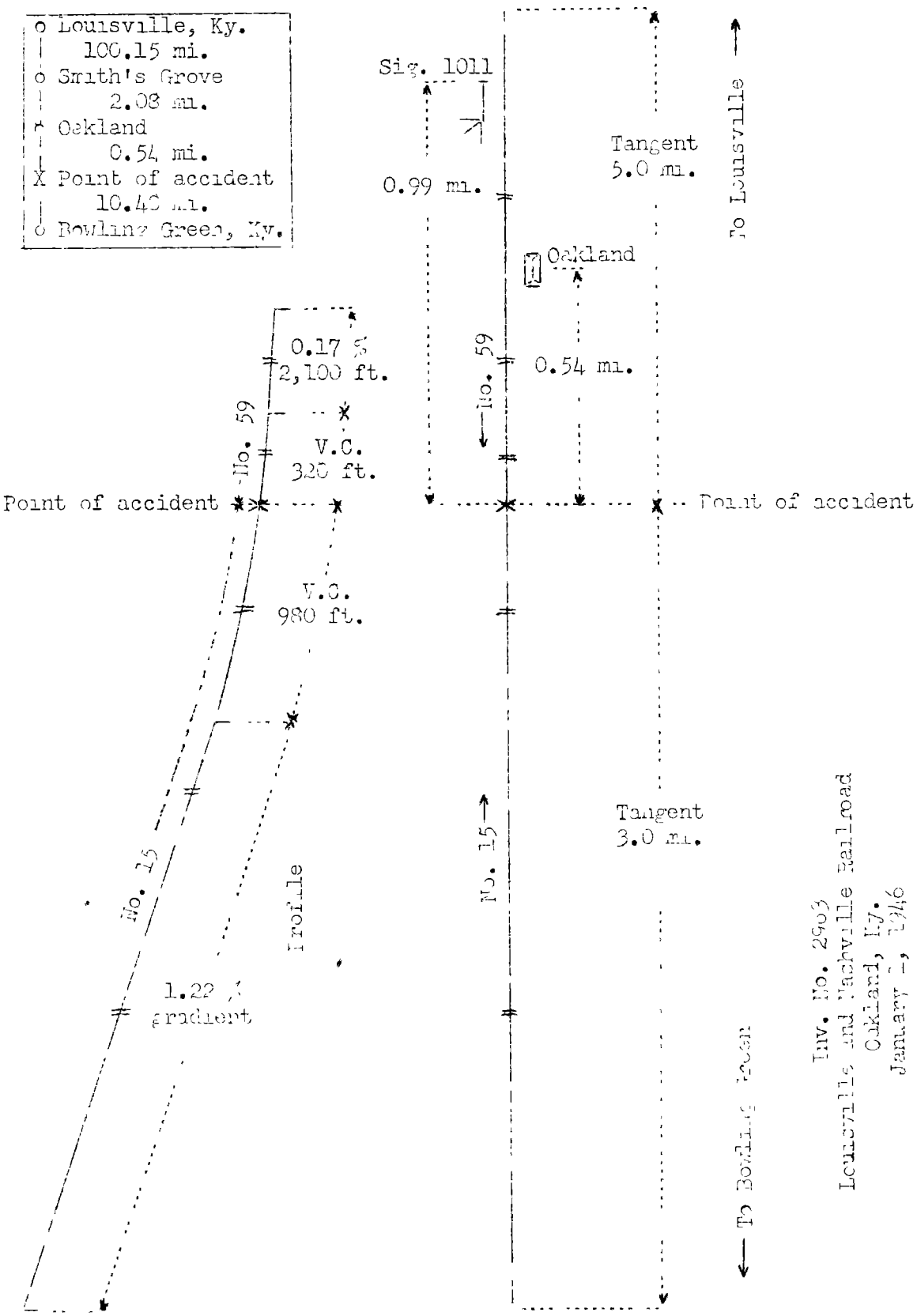
REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On January 1, 1946, there was a collision between a passenger train moving out of control in backward motion on a descending grade and a standing freight train on the Louisville and Nashville Railroad near Oakland, Ky., which resulted in the injury of 10 passengers, 2 dining-car employees and 1 train porter.

---

[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.


Louisville, Ky.
100.15 mi.
Smith's Grove
2.08 mi.
Oakland
0.54 mi.
Point of accident
10.40 mi.
Bowling Green, Ky.
Sig. 1011
0.99 mi.
Tangent
5.0 mi.
To Louisville
Oakland
0.54 mi.
No. 59
0.17 %
2,100 ft.
V.C.
320 ft.
No. 59
Point of accident
Point of accident
V.C.
980 ft.
No. 15
Tangent
3.0 mi.
No. 15
Profile
1.22 %
gradient
To Bowling Green
Inv. No. 2903
Louisville and Nashville Railroad
Oakland, Ky.
January 7, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Louisville Division extending between Louisville and Bowling Green, Ky., 113.25 miles, a single-track line in the vicinity of the point of accident, over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the main track 102.77 miles south of Louisville, at a point 0.54 mile south of the station at Oakland. The main track is tangent throughout a distance of about 5 miles north of the point of accident and about 3 miles southward. The grade for south-bound trains is 0.17 percent ascending 2,100 feet, then there is a vertical curve 320 feet to the point of accident and 980 feet southward, which is followed by a 1.32-percent ascending grade about 1,150 feet.

Automatic signal 1011, governing south-bound movements, is 0.99 mile north of the point of accident. The involved night aspect and corresponding indication and name of this signal are as follows:

Aspect	Indication	Name
RED	STOP; THEN PROCEED IN ACCORDANCE WITH RULE 509 (B).	STOP AND PROCEED.

Operating rules read 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.

19. The following signals will be displayed to the rear of every train, as markers, to indicate the rear of the train:

* * *

* * * markers, showing * * * red to the rear.

* * *

93. 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. * * *

509 (B). When a train is stopped by a Stop and Proceed signal it may proceed at once at restricted speed.

Special rules governing the use of the train-brake system provide that when a train is stopped on a heavy grade under circumstances in which the efficiency of the air-brake system may become impaired, a sufficient number of hand brakes must be applied to hold the train.

The maximum authorized speed for the passenger train was 70 miles per hour and for the freight train, 45 miles per hour.

Description of Accident

No. 15, a south-bound first-class passenger train, consisted of engine 242, one passenger-baggage-dormitory car, two coaches, one dining car, two coaches and one observation-lunch car, in the order named. All cars were of steel construction. This train departed from Louisville at 3:26 p. m., 1 hour 30 minutes late, passed Smith's Grove, the last open office, 2.08 miles north of Oakland, at 5:21 p. m., 1 hour 32 minutes late, passed Oakland and while moving at a speed of 65 miles per hour the left guide yoke and the left main rod became broken. This train stopped about 5:24 p. m. on a 1.22-percent ascending grade, with the rear end standing about 0.75 mile south of the station at Oakland and 1.8 miles south of signal 1011. About 5:55 p. m. this train started to move northward out of control, and was moving at an estimated speed of 10 miles per hour when it collided with No. 59 at a point 0.99 mile south of signal 1011.

No. 59, a south-bound second-class freight train, consisting of engine 1870, 61 cars and a caboose, passed Smith's Grove at 5:32 p. m., 5 hours 56 minutes late, stopped at signal 1011, which displayed stop-then-proceed, stopped about 100 feet south of the station at Oakland, in response to signals given by the flagman of No. 15, proceeded southward about 2,750 feet and had just stopped when its engine was struck by the rear end of No. 15.

The rear end of the rear car of No. 15 was demolished about 12 feet. The center sill was bent, and the interior of the car was badly damaged. The front end of the engine of No. 59 was badly damaged.

The weather was cloudy and it was dark at the time of the accident, which occurred about 5:55 p. m.

Engine 242 is of the 4-6-2 type and was last inspected at Louisville at 9:15 p. m., December 31, 1945. This engine is provided with No. 6-ET equipment and one cross-compound air compressor. At the time of the accident, the air-brake regulating

devices were adjusted to supply brake-pipe pressure of 110 pounds and main-reservoir pressure of 130 pounds.

The cars of No. 15 are owned by the Pennsylvania Railroad Company and at the time of the accident were assigned to interline service between Chicago, Ill., and Miami, Fla. These cars are equipped with four-wheel trucks having foundation brake gear of the clasp type on all wheels. The journals are equipped with roller bearings. The air-brake equipment consists of a D-22 control valve on each car, and a brake cylinder mounted on each side of each truck. The hand-brake equipment of each car has gears adjacent to the brake wheel, which is mounted in vertical position. When actuated by the air-brake system, braking pressure is applied on all wheels, but when the hand-brake is operated pressure is applied on the wheels of one truck only. The air brakes of these cars were last inspected at Louisville about 3:24 p. m., January 1, 1948.

Discussion

As No. 15 was approaching Oakland the speed was about 65 miles per hour. Soon after the train passed Oakland, the fireman heard an unusual noise at the front of the engine and called a warning to the engineer. The engineer immediately moved the brake valve to emergency position and closed the throttle. The train stopped about 4,600 feet south of the point where the fireman warned the engineer. Examination of the engine disclosed that the left guide yoke had broken. About 55 percent of this break was an old fracture. As a result of the failure of the guide yoke, the left main rod, other reciprocating parts on the left side of the engine, the air end of the air compressor and the compressor discharge pipe to the main reservoir were broken. Because of the damage to these parts and the loss of air pressure, the engine and tender brakes were inoperative. The train was standing on a 1.22 percent descending grade southward. The engineer placed a coal pick on the rail back of the left No. 3 driving wheel, and the conductor applied the hand brakes on the first and second cars. These employees thought the hand brakes and the obstruction on the rail were sufficient to prevent movement of the train. However, about 30 minutes later, the train started to move backward out of control on the descending grade. The reverse gear of the engine was in position for forward movement, and when the train started to move the engineer opened the throttle in an attempt to stop the movement. However, this failed to stop the train and the speed of No. 15 was about 10 miles per hour when it struck No. 59. At the time of the collision the enginemen of No. 15 were on the engine, the conductor was in the vicinity of a telephone, located about 1.2 miles south of the point of accident, where he had gone to communicate with the train dispatcher, and the flagman was on the engine of No. 59.

Prior to departure of this train from Louisville, the air brakes of No. 15 had been tested and the employees who made the test said the brakes functioned properly at that time. The engine had been inspected by members of the mechanical force at Louisville, and they reported the engine to be safe and suitable for service. However, in an inspection report of this engine, dated at Louisville on December 25, 1945, a crack in the left side of the left guide yoke was reported, but there was nothing disclosed in the investigation to show that repairs to the guide yoke had been made prior to the accident.

No. 59 stopped at signal 1011, which displayed stop-then-proceed, proceeded about 1,000 feet, then stopped in response to signals given by the flagman of No. 15, who boarded the engine of No. 59 at that point. At that time the enginemen of No. 59 could see the lighted red marker lamps of No. 15 about 5,000 feet distant. No. 59 again proceeded southward, and had moved about 4,000 feet at a speed of about 10 miles per hour when the enginemen observed that No. 15 was moving northward and that the rear end of the train was only a short distance south of their engine. The engineer immediately moved the brake valve to emergency position, and No. 59 had just stopped when the collision occurred.

On the day of the accident, the Pennsylvania Railroad delivered the cars of No. 15 to the Louisville and Nashville Railroad at Union Station, Louisville, Ky., at 3:19 p. m. An air-brake test was made and the mechanical forces reported to the crew that the train air-brake system functioned properly. No test was made of the hand brakes. After the accident, tests of the air-brake systems of the six undamaged cars disclosed that following an emergency application, the brakes of three cars remained applied in excess of 45 minutes, one released in 30 minutes, one released in 10 minutes, and one was inoperative. The brake of the car which released in 10 minutes did not apply with sufficient force to cause the brake shoes to be tight against the wheels. Tests of the hand brakes of the cars involved disclosed that the hand brake of the first car could not be applied because the brake rod fouled the body bolster. The brake shoes could not be moved closer than 1 inch from the wheels. The hand brake of the second car was inefficient because of improper adjustment of the foundation gear. When the hand brake had been operated the brake shoes at two locations were 3/4 inch away from the wheels. The hand brake of the third car was inefficient as a result of rusted gears and a twisted chain which fouled the gear housing. When this brake was operated the brake shoes at two locations were 3/4 inch away from the wheels and at the other two locations they could easily be moved away from the wheels. One spoke in the brake wheel was broken. The hand brake of the fourth car was inoperative because the brake chain fouled the rib of the center-sill.

The hand brake of the fifth car could not be applied by one man, but was applied by the full exertion of two men. After full exertion by one man the brake shoes were 1/8 inch from the wheels. The hand brake of the sixth car could not be applied without the aid of a bar and then only after 2 minutes of exertion by one man. The seventh car was so badly damaged in the accident that the hand brake could not be tested until repairs had been made. After repairs were made, the hand brake operated properly.

The rules of this carrier require that a sufficient number of hand brakes must be applied to hold a train standing on a heavy grade when the train-brake system becomes impaired. The hand brakes of only two cars of No. 15 were placed in application position after an emergency application of the train air brakes had been made, which was the most favorable condition possible for hand brakes to be fully applied. The employees concerned thought this action would prevent movement of the train. However, these hand brakes as well as the hand brakes of the other cars, with the possible exception of the seventh car, were later found to be either inefficient or inoperative. Under the Safety Appliance Acts all passenger-train cars are required to be equipped with efficient hand brakes. The movement of these cars without an efficient hand brake on each car was in violation of these Acts.

Cause

It is found that this accident was caused by a passenger train moving out of control on a descending grade, as a result of damaged air-brake equipment on engine and inefficient hand-brake equipment on cars.

Dated at Washington, D. C., this twenty-sixth day of March, 1943.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.