INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2984

THE PENNSYLVANIA RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR COATESVILLE, IND., ON

APRIL 13, 1946

SUMMARY

Railroad:	Pennsylvania	
Date:	April 13, 1946	
Location:	Coatesville, Ind.	
Kind of accident:	Collision	
Equipment involved:	Spreader-ditcher car	: Passenger train
Train number:		: 27
Engine number:		: 5378
Consist:	Spreader-ditcher car 497404	: 10 cars
Estimated speed:	25 m. p. h.	: Standing
Operation:	Signal indications	
Track:	Single; tangent; 0.646 percent ascending grade eastward	
Weather:	Clear	
Time:	8:25 a. m.	
Casualties:	1 killed	
Cause:	Spreader-ditcher car moving out of control, as a result of inefficient hand-brake equipment	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2984

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

THE PENNSYLVANIA RAILROAD COMPANY

May 14, 1946.

Accident near Coatesville, Ind., on April 13, 1946, caused by a spreader-ditcher car moving out of control, as a result of inefficient hand-brake equipment.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On April 13, 1946, there was a collision between a spreader-ditcher car moving out of cortrol and a standing passenger train on the Pennsylvania Railroad near Coatesville, Ind., which resulted in the death of one person carried under contract.

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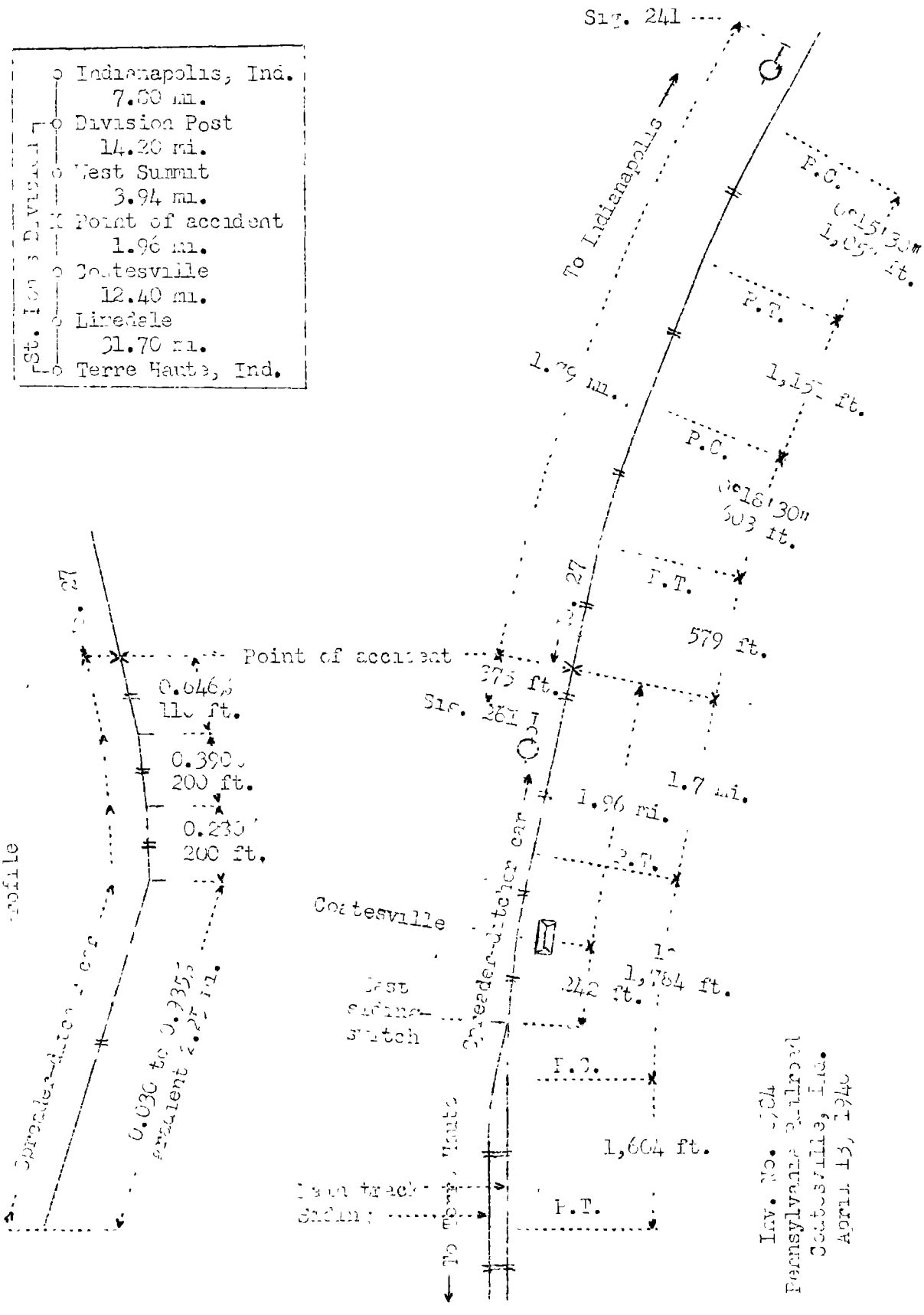
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 4134
Pennsylvania Railroad
Coatesville, Ind.
April 15, 1940

Location of Accident and Method of Operation

This accident occurred on that part of the St. Louis Division extending between Terre Haute and Division Post, near Indianapolis, Ind., 64.2 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by signal indications. At Coatesville, 44.1 miles east of Terre Haute, a siding about 1 mile in length parallels the main track on the north. The east switch of this siding is 242 feet west of the station. The accident occurred on the main track 2.01 miles east of the east siding-switch. From the west on the main track there are, in succession, a tangent 1,604 feet in length, a 1° curve to the right 1,764 feet and a tangent 1.7 miles to the point of accident. From the east there are, in succession, a 0°15'30" curve to the left 1,053 feet in length, a tangent 1,151 feet, a 0°18'30" curve to the left 603 feet and a tangent 579 feet to the point of accident. The grade for east-bound movements varies between 0.030 and 0.935 percent descending 2.25 miles, then it is ascending, successively, 0.280 percent 200 feet, 0.390 percent 200 feet and 0.646 percent 110 feet to the point of accident.

Automatic signals 241 and 261, governing west-bound movements are, respectively, 1.79 miles east and 375 feet west of the point of accident. The involved aspects and corresponding indications and names of these signals are as follows:

Signal	Aspect	Indication	Name
241	Three white lights in vertical position	Proceed.	Clear.
261	Three white lights in horizontal position over one white marker light	Stop; then proceed at Restricted speed.	Stop-and-proceed.

The east siding-switch at Coatesville and other siding-switches and signals located adjacent to the siding-switches, in the territory involved, are controlled by an interlocking machine at Limedale, 12.4 miles west of Coatesville. The interlocking machine is provided with visual indicators, and the controlling circuits are arranged to indicate the movement of trains within this territory.

Operating rules read in part as follows:

> 103d. Flying switches (or swinging of cars) should be avoided if possible. * * *

Rules governing the inspection of hand-brake equipment of cars read in part as follows:

Inspection at Terminals

* * *

52. Inspection and Repairs of Hand Brake Connections--All parts and connections of the hand brake should be carefully examined and any necessary changes and repairs made.

* * *

The maximum authorized speed for the passenger train involved was 70 miles per hour.

Description of Accident

Work Extra 3449, an east-bound work train, consisting of engine 3449, a caboose and spreader-ditcher car 497404, in the order named, stopped into clear on the siding at Coatesville at 8:02 a. m. About 16 minutes later, during switching operations, the spreader-ditcher car moved out of control from the siding to the main track through the east switch, and was moving at an estimated speed of 25 miles per hour when it collided with No. 27 at a point 2.01 miles east of the east siding-switch.

No. 27, a west-bound passenger train, consisted of five express cars, one baggage-mail car, two mail cars, one passenger-baggage car and one coach, in the order named. All cars were of steel construction. This train departed from Indianapolis, 25.94 miles east of the point of accident, at 7:20 a. m., 10 minutes late, passed West Summit, 3.94 miles east of the point of accident, at 8:15 a. m., passed signal 241, which displayed proceed, and stopped at 8:24 a. m. 375 feet east of signal 261, which displayed stop-and-proceed. About 1 minute later the engine was struck by the runaway spreader-ditcher car.

The spreader-ditcher car and the front end of the engine of No. 27 were considerably damaged.

The weather was clear at the time of the accident, which occurred about 8:25 a. m.

P. R. R. 497404, a spreader-ditcher car, was built in 1929, and is of steel construction. The car is equipped with air operated side-wings, ditcher-wings and nose-plow. It is about 44 feet in length and weighs about 131,000 pounds. It is provided with two conventional four-wheel trucks and one brake-shoe for each wheel. The hand-brake equipment is of the plate-A type, as shown in the United States Safety-Appliance Standards, and has a 2-1/4 inch winding-drum at the lower end of the brake shaft. A 7/16-inch brake-chain is connected

directly to the hand-brake rod. This rod extends through the underframe members, and is connected to a hand-brake lever, which is located vertically between the sills of the car. This lever is provided with 3 brake-pin holes, one near each end and one 11-1/2 inches above the lower end. The hole at the upper end is 18-1/2 inches above the intermediate hole. The fulcrum is in a bracket at the lowest hole. The brake-chain rod is connected to the top hole of this lever. From the intermediate hole a connection with a chain extends to the cylinder-lever of the foundation brake-rigging at the point where the push rod of the brake-cylinder is connected. The hand-brake lever operates as a second-class lever to multiply the power applied by turning the brake-shaft. This car was last repaired at Fort Wayne, Ind., October 31, 1945, at which time the brake-equipment was adjusted. Inspection by members of the mechanical force was made at Terre Haute on February 7, 1946, and no defective condition of the hand-brake equipment was found. The air-brake equipment of Work Extra 3449 was tested by members of the train and engine crew before the train departed from Terre Haute on the day of the accident.

Discussion

The investigation disclosed that while the crew of Work Extra 3449 was engaged in making a flying switch-movement with spreader-ditcher car 497404 and engine 3449 at Coatesville, the spreader-ditcher car moved eastward out of control from the siding to the main track through the east switch and proceeded on the main track to a point about 2 miles eastward where it collided with No. 27, a west-bound passenger train. Trains are operated in this territory by signal indications, and the interlocked switches and signals are controlled from the interlocking at Limedale, 12.4 miles west of Coatesville. When the accident occurred the route was lined for No. 27 to proceed on the main track, and this train had passed West Summit, 3.94 miles east of Coatesville, where the last interlocked signal governing west-bound movements is located, about 3 minutes prior to the time the spreader-ditcher car fouled the controlling track circuits. Therefore, it was not possible for the operator at Limedale to place any signal in stop position to control the movement of No. 27 after he was informed that the runaway car was occupying the main track. The first the enginemen of No. 27 were aware of anything being wrong was when they observed signal 261 displaying a stop-and-proceed indication. Then the engineer made a service brake-pipe reduction. Soon afterward, the enginemen saw the approaching spreader-ditcher car and the engineer made a further brake-pipe reduction. No. 27 had just stopped with the engine 375 feet east of signal 261 when the collision occurred.

The conductor of Work Extra 3449 was on the spreader-ditcher car when the switching movement was being made. He

attempted to stop the car by operating the hand brake with the aid of a brake club. However, he was unable to control the movement by the use of the hand brake, and as the car proceeded on the descending grade the speed gradually increased. He remained on the runaway car until it was within about 600 feet of the point where the accident occurred. No member of the crew of Work Extra 3449 had inspected the hand-brake equipment of the spreader-ditcher car or had tested its efficiency prior to the accident.

Examination after the accident disclosed that the upper portion of the vertical lever came into contact with a cross-member of the underframe of the car to such extent that an effective application of the brake shoes against the car wheels was prevented, and the hand brake was inefficient.

Cause

It is found that this accident was caused by a spreader-ditcher car moving out of control, as a result of inefficient hand-brake equipment.

Dated at Washington, D. C., this fourteenth day of May, 1946.

By the Commission, Commissioner Patterson.

W. P. BARTEL,
Secretary.

(SEAL)