INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2658

THE DELAWARE AND HUDSON RAILROAD CORPORATION

REPORT IN RE ACCIDENT

NEAR SOUTH SCHENECTADY, N. Y., ON

DECEMBER 9, 1942

SUMMARY

Railroad:	Delaware and Hudson	
Date:	December 9, 1942	
Location:	South Schenectady, N. Y.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 1513 North	: Extra 1508 North
Engine numbers:	1513	: 1508
Consist:	65 cars, caboose	: 62 cars, caboose
Speed:	Standing	: 20 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system	
Track:	Double; 4° right curve; 0.74 percent descending grade northward	
Weather:	Cloudy	
Time:	About 4:19 p. m.	
Casualties:	1 killed; 2 injured	
Cause:	Accident caused by failure properly to control speed of following train in accordance with automatic block-signal indications and flagman's signals	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2658

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

THE DELAWARE AND HUDSON RAILROAD CORPORATION.

January 28, 1943.

Accident near South Schenectady, N. Y., on December 9, 1942, caused by failure properly to control the speed of a following train in accordance with automatic block-signal indications and flagman's signals.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 9, 1942, there was a rear-end collision between two freight trains on the line of the Delaware and Hudson Railroad Corporation near South Schenectady, N. Y., which resulted in the death of one employee and the injury of two employees.

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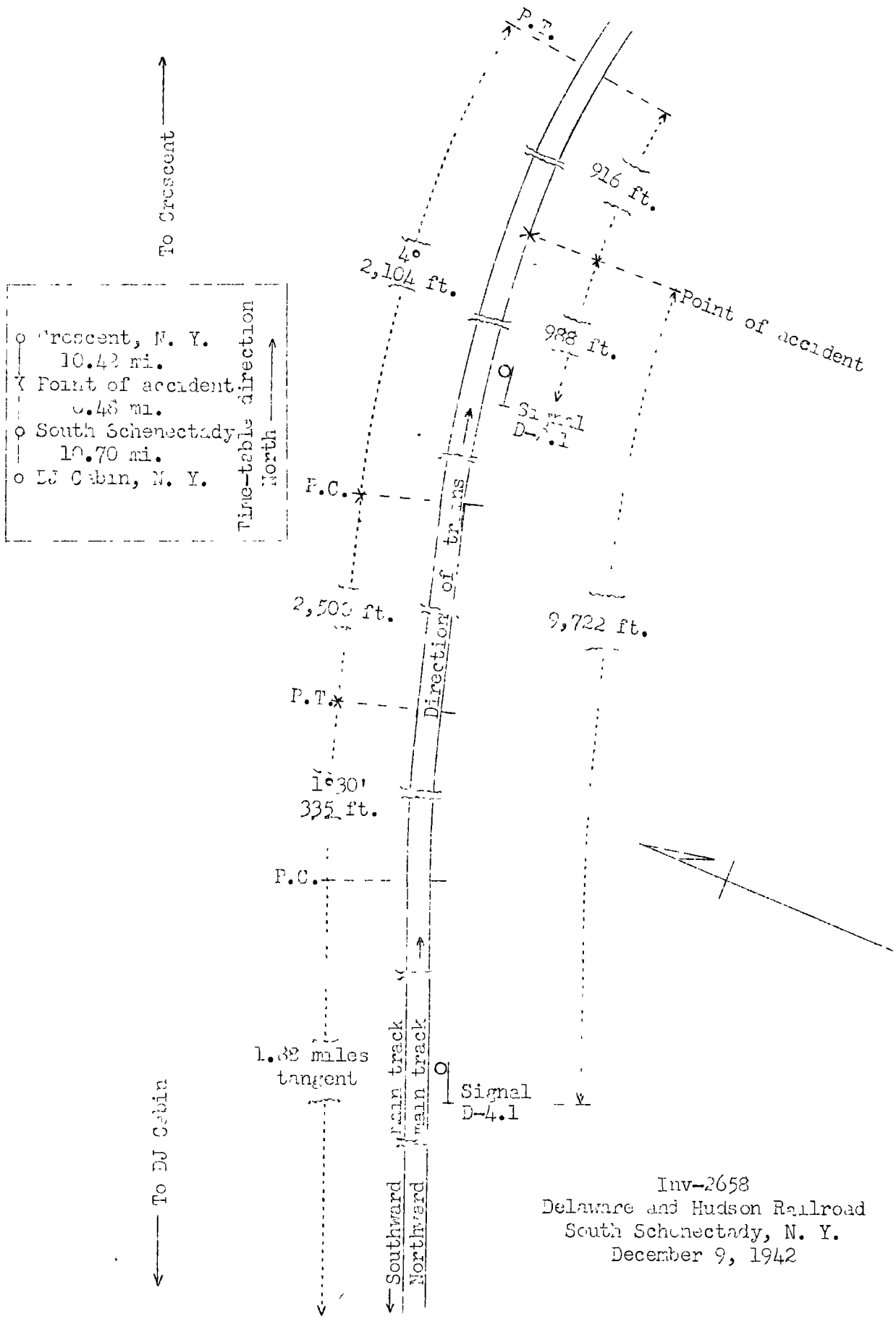
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2658
Delaware and Hudson Railroad
South Schenectady, N. Y.
December 9, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Susquehanna Division which extends between DJ Cabin, near Delanson, and Crescent, N. Y., a distance of 21.6 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the northward main track at a point 0.48 mile north of the station at South Schenectady. Approaching from the south there are, in succession, a tangent 1.88 miles in length, a $1^{\circ}30'$ curve to the right 555 feet, a tangent 2,500 feet and a 4° curve to the right 1,188 feet to the point of accident and 916 feet beyond. The grade for north-bound trains varies between 0.63 and 0.96 percent descending throughout a distance of 11.03 miles south of the point of accident, and is 0.74 percent descending at that point.

Signals D-4.1 and D-2.1, which govern north-bound movements on the northward main track, are located, respectively, 9,722 and 988 feet south of the point of accident. These signals are of the automatic, three-indication, color-light type, and are approach lighted. The involved aspects and corresponding indications are as follows:

Aspect	Indication
Yellow	Proceed prepared to stop at next signal
Red	Stop and proceed with caution to next signal

Operating rules read in part as follows:

99. When a train stops or is delayed, under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection, * * *.

* * *

Time-table special instructions read in part as follows:

BLOCK AND INTERLOCKING SIGNALS

12. * * *

(c) Trains making stop at light signals must stop at least fifty (50) feet in rear of signal.

* * *

In the vicinity of the point of accident, the maximum authorized speed for freight trains is 45 miles per hour.

Description of Accident

Extra 1518 North, a north-bound freight train, consisted of engine 1518, 55 loaded cars and a caboose. After a terminal air-brake test was made, this train departed from Oneonta, 66.2 miles south of South Schenectady, at 2 p. m., according to the dispatcher's record of movement of trains, departed from DJ Cabin, 10.7 miles south of South Schenectady, at 3:56 p. m., and as a result of the train parting because of a defective coupler at the front end of the fiftieth car, this train stopped at 4:15 p. m., with its rear end 988 feet north of signal D-2.1. About 4 minutes later the rear end was struck by Extra 1508 North.

Extra 1508 North, a north-bound freight train, consisted of engine 1508, 59 loaded and 3 empty cars and a caboose. After a terminal air-brake test was made, this train departed from Oneonta at 1:48 p. m., according to the dispatcher's record of movement of trains. At DA Cabin, 39.3 miles south of South Schenectady, a running test of the brakes was made, the brakes were used to control the speed at various points en route and they functioned properly. Brake-pipe pressure of 85 pounds was being maintained. This train departed from DJ Cabin at 4:01 p. m., passed signal D-4.1, which displayed yellow, passed signal D-2.1, which displayed red, and while moving at an estimated speed of 20 miles per hour it collided with the rear end of Extra 1518 North.

From the right side of a north-bound engine the view of the point where the accident occurred is restricted to about 600 feet, and from the left side, to about 300 feet, because of a cut, trees and track curvature.

The caboose and the rear three cars of Extra 1518 were derailed. The rear three cars were demolished, and the caboose and fourth rear car were badly damaged. Engine 1508 was derailed but remained upright and in line with the track, with the front end 120 feet north of the point of collision. The front end and the cab were demolished. The tender was derailed to the right and stopped, badly damaged, at an angle of 30 degrees to the track. The first 17 cars were derailed, 7 were destroyed and the remainder were badly damaged. The eighteenth car was badly damaged.

It was cloudy and snow covered the ground at the time of the accident, which occurred about 4:19 p. m.

The employee killed was the engineer of Extra 1508, and the employees injured were the fireman and the front brakeman of Extra 1508.

Data

After the accident, the brakes of the rear 45 cars of Extra 1508 were tested. A 20-pound brake-pipe reduction was made. The brake-cylinder piston travel varied between 5-1/2 and 11 inches. Two cars had excessive piston travel, one of which had 10 inches and the other 11 inches. Of these cars, 20 were equipped with AB valves, 24 with K-2 triple valves and 1 with

a K-1 triple valve. The brake-pipe leakage was 3 pounds per minute.

The investigation disclosed that the front coupler of the fiftieth car of Extra 1508 dropped out as a result of the coupler-shank key working loose after the retaining key was lost out.

Signal Data

In tests made after the accident, signals D-4.1 and D-2.1 functioned as intended.

Discussion

The rules governing operation on the line involved provide that 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. Under the rules governing operation in automatic block-signal territory a yellow aspect requires a train to be prepared to stop at least 50 feet short of the next signal. A red aspect requires a train to stop short of that signal and then to proceed with caution through the block expecting to find a train in the block. All the surviving employees understood these requirements.

Because of a defective coupler, Extra 1513 North stopped abruptly about 4:15 p. m., with the rear end standing at a point 988 feet north of signal D-2.1. About 4 minutes later the rear end of this train was struck by Extra 1508 North.

As Extra 1508 was approaching the point where the accident occurred the speed was about 45 miles per hour, and the members of the crew on the engine were maintaining a lookout ahead. The fireman was somewhat confused and could not remember details immediately preceding the accident; however, he thought that signal D-4.1 displayed yellow for his train. The front brakeman was positive that signal D-2.1 displayed yellow. The fireman and the front brakeman said that when the engine reached a point about 3,000 feet south of signal D-2.1 the engineer called its indication as being red and immediately afterward sounded the engine-whistle signal in acknowledgment of flagging signals. The engineer remarked that the train was being flagged and soon afterward moved the brake valve to emergency position and opened the sander valve, then told the fireman and the front brakeman to jump. When the engine was about 300 feet south of the preceding train the fireman jumped, at which point the speed was about 20 miles per hour. The front brakeman said that as his train was approaching the point where the accident occurred, he was standing in the gangway behind the engineer and observed the brake-pipe pressure at intervals. When the engine was about 3,000 feet south of signal D-4.1, the engineer made a 6-pound brake-pipe reduction, then made a further reduction at this signal, and at a point 3,000 feet south of signal D-2.1 a third reduction was made. These reductions totaled about 35 pounds. Soon after the third reduction was completed an emergency application was made. The front

brakeman said also that he has often observed the engineer involved control the speed of northward trains between signals D-4.1 and D-2.1 displaying, respectively, yellow and red, and in no previous instance did a train pass signal D-2.1. In his opinion, if the engineer had made a 20-pound brake-pipe reduction at signal D-4.1 in this instance, the train would have stopped short of signal D-2.1. The middle brakeman said that he observed from the cupola of the caboose that signal D-4.1 displayed yellow for his train. At that time the speed was about 45 miles per hour, and the gauge in the caboose indicated that a 20-pound reduction had been made. The conductor said that after the first brake-pipe reduction was made the train moved about 4,500 feet before a further reduction was indicated. The two reductions decreased the speed to about 30 miles per hour. The conductor and the middle brakeman said they were apprehensive that their train would not be stopped short of signal D-2.1, and when the engine was about 3,000 feet south of signal D-2.1 the gauge indicated that the brake-pipe pressure was fully depleted. The brakes of this train had been tested and had controlled the speed properly at all points where used prior to the accident. Since the engineer was killed in the accident, it could not be determined why proper action was not taken to control the speed in accordance with signal indications and flagging signals.

When Extra 1518 stopped, the flagman was required to proceed to the rear a sufficient distance to provide adequate protection. The flagman said that just prior to the time his train stopped north of signal D-2.1, he was in the cupola of the caboose and the speed was about 40 miles per hour. About 1,500 feet south of the point of accident he observed that the brakes were applied in emergency and that the train was separated into two portions. He expected the rear portion of the train to collide with the front portion. He remained in the cupola until the rear portion stopped, then started back to provide flag protection. His train had passed Extra 1508 North at DJ Cabin, about 11 miles south of the point of accident, and he expected Extra 1508 to follow his train closely. He had reached a point about 900 feet to the rear of his train when he saw Extra 1508 approaching at a point about 3,000 feet farther south. He gave stop signals with a red flag and these signals were immediately acknowledged by two short blasts of the engine whistle.

Cause

It is found that this accident was caused by failure properly to control the speed of a following train in accordance with automatic block-signal indications and flagman's signals.

Dated at Washington, D. C., this twenty-eighth day of January, 1943.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.