

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2928
THE BALTIMORE AND OHIO RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR CLARKSBURG, W. VA., ON
SEPTEMBER 5, 1945

SUMMARY

Railroad: Baltimore and Ohio
Date: September 5, 1945
Location: Clarksburg, W. Va.
Kind of accident: Side collision
Trains involved: Passenger : Passenger
Train numbers: Passenger Extra : 1
5113 East
Engine numbers: 5113 : Diesel-electric
units 63A and 63B
Consist: 5 cars : 13 cars
Estimated speed: 20 m. p. h. : 27 m. p. h.
Operation: Signal indications; interlocking
Track: Double and single; tangent; 1.21
percent descending grade westward
Weather: Clear
Time: 1:13 a. m.
Casualties: 32 injured
Cause: Failure properly to control speed
of No. 1 in accordance with
interlocking signal indication

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2928

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

THE BALTIMORE AND OHIO RAILROAD COMPANY

December 26, 1945.

Accident near Clarksburg, W. Va., on September 5, 1945,
caused by failure properly to control the speed of
No. 1 in accordance with interlocking signal indi-
cation.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

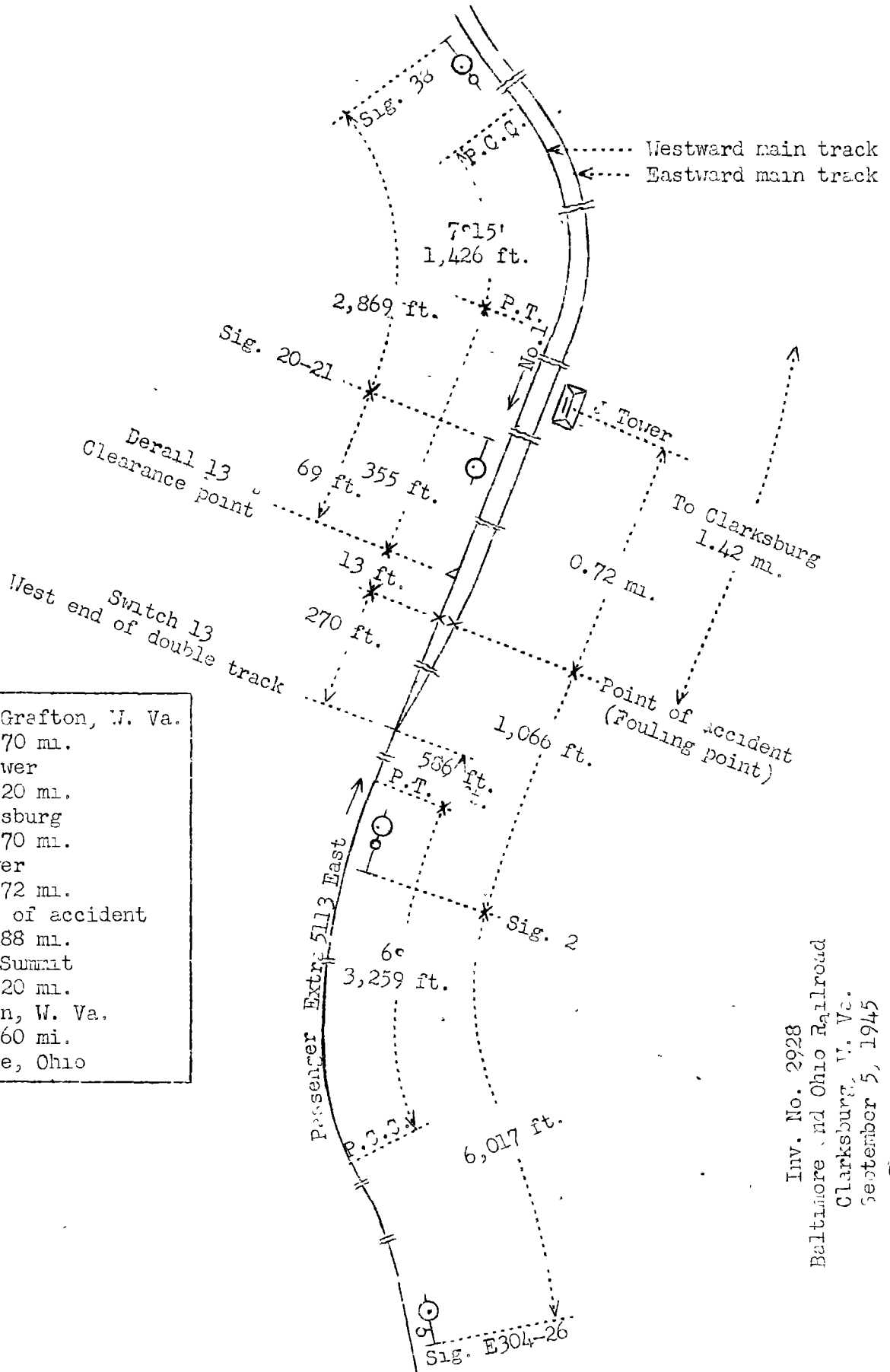
On September 5, 1945, there was a side collision between two passenger trains on the Baltimore and Ohio Railroad near Clarksburg, W. Va., which resulted in the injury of 26 passengers, 1 Diesel-engine maintainer and 5 train-service employees.

¹Under 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.

To East Grafton →

← To Belpre

○	East Grafton, W. Va.	23.70 mi.
○	MO Tower	1.20 mi.
○	Clarksburg	0.70 mi.
○	J Tower	0.72 mi.
X	Point of accident	5.88 mi.
○	Wolf Summit	72.20 mi.
○	Camden, W. Va.	2.60 mi.
○	Belpre, Ohio	



Inv. No. 2928
 Baltimore and Ohio Railroad
 Clarksburg, W. Va.
 September 5, 1945

Location of Accident and Method of Operation

This accident occurred on the Grafton and Belpre Sub-Division, which extends between Belpre, Ohio, and East Grafton, W. Va., 107 miles. Between Camden and J Tower, respectively, 79.5 miles and 0.7 mile west of Clarksburg, this is a single-track line over which trains are operated by signal indications, and between J Tower and MO Tower, 1.2 miles east of Clarksburg, it is a double-track line over which trains moving with the current of traffic are operated by signal indications. The switch at the west end of the double track at J Tower is designated as switch 13 and is 0.75 mile west of the tower. The clearance point at the west end of double track is 283 feet east of switch 13. There is a derail of the lift-block type, designated as derail 13, on the north rail of the westward main track at the clearance point. The accident occurred within interlocking limits, 0.72 mile west of J Tower, at the fouling point of the eastward and the westward main tracks, 13 feet west of the clearance point and 270 feet east of switch 13. From the west there are, in succession, a compound curve to the right 3,259 feet in length, the maximum curvature of which is 6° , a tangent 586 feet to switch 13, and a turnout to the right 270 feet to the point of accident. From the east there is a compound curve to the right 1,426 feet in length, the maximum curvature of which is $7^{\circ}15'$, which is followed by a tangent 368 feet to the point of accident. Throughout a distance of 3,994 feet immediately east of the point of accident the grade varies between 0.73 and 1.47 percent descending westward, and is 1.21 percent at the point of accident. The grade for east-bound trains is ascending, successively, 0.48 percent 500 feet, 0.27 percent 600 feet and 1.21 percent 306 feet to the point of accident.

Automatic signal E304-26 and semi-automatic signal 2, governing east-bound movements, are, respectively, 1.35 miles and 1,066 feet west of the point of accident. Semi-automatic signals 38 and 20-21, governing west-bound movements on the westward main track, are, respectively, 2,951 feet and 82 feet east of the point of accident. These signals are of the color-position-light type, and are approach lighted. The involved aspects and corresponding indications and names of these signals are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
E304-26	White light on arm to left of mast over two green lights in vertical position	Proceed approaching next signal at medium speed.	Approach Medium.
2	Two yellow lights in diagonal position to the right over white light	Proceed at medium speed, preparing to stop at next signal * * *	Medium Approach.
38	White light over two yellow lights in diagonal position to the right	Proceed, preparing to stop at next signal, and be governed by indication displayed by that signal. Train exceeding medium speed must at once reduce to that speed.	Approach.
20-21	Two red lights in horizontal position	Stop.	Stop.

The interlocking at J Tower is of the mechanical type. The machine consists of 25 working levers in a 44-lever frame. Route approach, mechanical and indication locking are provided. Time releases in connection with approach locking are provided. The controlling circuits are so arranged that when the route is lined for movement from the single track to the eastward main track through switch 13, signal E304-26 displays proceed-approaching-next-signal-at-medium-speed, signal 2 displays proceed-at-medium-speed-preparing-to-stop-at-next-signal, signal 38 displays proceed-preparing-to-stop-at-next-signal, signal 20-21 displays stop, and derail 13 is in derailing position.

Operating rules read in part as follows:

34. All members of train and engine crews will, when practicable, communicate to each other the indication of each signal affecting the movement of their train or engine.

98. Trains must approach the end of two or more tracks, * * * prepared to stop, unless the switches are properly lined, signals indicate proceed and track is clear. * * *

SPEED RESTRICTIONS.

Normal Speed--The maximum speed permitted by timetables for main track movements.

Medium Speed--One-half the normal speed, not to exceed thirty (30) miles per hour.

* * *

663. Trains or engines must not pass an interlocking stop-signal without receiving a Clearance Card Form A, or hand signals. * * *

The maximum authorized speed for the east-bound train moving through the turnout of switch 13 was 25 miles per hour, and for the west-bound train 45 miles per hour.

Description of Accident

Passenger Extra 5113 East, an east-bound passenger train, consisted of engine 5113, two tourist sleeping cars, one baggage car, one tourist sleeping car and one Pullman sleeping car, in the order named. All cars were of steel construction. This train passed Wolf Summit, the last open office, 6.6 miles west of J Tower, at 12:58 a. m., passed signal E304-26, which displayed proceed-approaching-next-signal-at-medium-speed, passed signal 2, which displayed proceed-at-medium-speed-preparing-to-stop-at-next-signal, and while it was moving from the single track to the eastward main track through switch 13 at an estimated speed of 20 miles per hour the first car was struck by No. 1.

No. 1, a west-bound first-class passenger train, consisted of Diesel-electric units 63A and 63B, one mail car, five coaches, one dining car and six Pullman sleeping cars, in the order named. All cars were of steel construction. This train departed from the station at Clarksburg at 1:09 a. m., 4 minutes late, passed signal 38, which displayed proceed-preparing-to-stop-at-next-signal, passed signal 20-21, which displayed stop, struck derail 13 and tore it loose from its fastenings, and while moving on the westward main track at a speed of 27 miles per hour, as indicated by the tape of the speed recorder, it struck Passenger Extra 5113 East.

The second to the fifth cars, inclusive, of Passenger Extra 5113 were derailed and badly damaged. The first car was slightly damaged. The first Diesel-electric unit of No. 1 was derailed to the right, became separated from the second unit, stopped about 20 feet north of the track down an embankment, with the front end about 360 feet west of the point of accident, and leaned to the north at an angle of 30 degrees. The front end was badly damaged. The second unit and the first, second and third cars were derailed, but remained upright and in line with the track. This equipment was more or less damaged.

Derail 13 was found at a point 6 feet north of the center-line of the track and 166 feet west of its normal location.

The weather was clear at the time of the accident, which occurred about 1:13 a. m.

The engineer, the fireman and the baggageman of No. 1, and the conductor and the flagman of Passenger Extra 5113 East were injured.

Discussion

The rules governing operation on this line provide that a train receiving a proceed-preparing-to-stop-at-next-signal indication must proceed prepared to stop short of the next signal. A train must stop short of an interlocking signal displaying stop, and must not pass the signal until an indication permitting the train to proceed is displayed or proper authority from the leverman has been received. All trains must approach the end of double track prepared to stop unless the signals indicate proceed, the switches are properly lined and the track is clear.

The investigation disclosed that about 12:55 a. m. the operator-leverman at J Tower lined the route for No. 122, an east-bound passenger train, which preceded Passenger Extra 5113 East from Wolf Summit, and Passenger Extra 5113 East to proceed from the single track to the eastward main track through switch 13. Signal E304-26 displayed proceed-at-medium-speed and signal 2 displayed proceed-preparing-to-stop-at-next-signal for No. 122 and Passenger Extra 5113 East, and signal 38 displayed proceed-preparing-to-stop-at-next-signal and signal 20-21 displayed stop for No. 1. Deraill 13 was in derailing position.

As Passenger Extra 5113 was approaching switch 13, the speed was about 20 miles per hour, the headlight was lighted and the enginemen were maintaining a lookout ahead. These employees called the indications displayed by signals E304-26 and 2. The first they were aware of anything being wrong was when their engine entered the turnout and they saw No. 1 approaching at an excessive speed. Then the engineer of Passenger Extra 5113 moved the throttle to full open position in an attempt to increase the speed of his train sufficiently for it to clear the turnout.

No. 1 stopped at the station at Clarksburg at 1:04 a. m. At that time the front of the engine was about 300 feet east of signal 38, and this signal was displaying a proceed-preparing-to-stop-at-next-signal indication. At 1:09 a. m., when No. 1 started from the station, signal 38 still displayed that indication, and the engine crew, the conductor and the flagman saw the indication. The engineer said that when the engine was about 150 feet east of signal 38 he thought the indication changed to proceed and he called that indication to the fireman, then opened the controller lever to the fourth notch. The fireman said that he acknowledged the proceed indication called by the engineer but did not observe what indication signal 38 displayed at that time, as he was engaged in adjusting the wicks of the flagging lanterns. As No. 1 was approaching J Tower the speed was about 29 miles per hour, as indicated by the tape of the speed recorder. When the engine was about 700 feet east of signal 20-21 the fireman observed that this signal displayed stop,

and called the indication. The engineer did not immediately respond, and the fireman again called the indication several times. The engineer said he did not hear the fireman, and the first he was aware of anything being wrong was when he saw the operator-leverman giving stop signals with a lighted red lantern. Then the engineer immediately placed the brake valve in emergency position. However, the speed of the train was not materially reduced prior to the accident, and the engineer thought that an emergency application was not obtained. The fireman said that the exhaust sounded as though a service brake-pipe reduction was made. Members of the train crew thought that a service application of the brakes occurred several seconds before the accident occurred. The brakes of this train had been tested and had functioned properly en route. In tests after the accident there was no condition found that would prevent the proper application of the train brakes. Examination of the tape of the speed recorder disclosed that the speed of No. 1 was reduced from 29 to 27 miles per hour within a distance of about 600 feet immediately east of the point of accident.

The controlling circuits of the interlocking are so arranged that when switch 13 is lined for movement from the single track to the eastward main track, or when the single track within a distance of 6.6 miles immediately west of switch 13 is occupied, signal 38 displays proceed-preparing-to-stop-at-next-signal and signal 20-21 displays stop. No. 122 preceded Passenger Extra 5113 East into the controlling circuit not less than 15 minutes before the accident occurred, and Passenger Extra 5113 occupied the circuit before No. 122 cleared the circuit. In tests after the accident the interlocking functioned properly, and there was no condition disclosed that would permit signal 38 to display for No. 1 any indication less restrictive than proceed-preparing-to-stop-at-next signal.

Cause

It is found that this accident was caused by failure properly to control the speed of No. 1 in accordance with interlocking signal indication.

Dated at Washington, D. C., this twenty-sixth day of December, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.