INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2649

THE BALTIMORE & OHIO RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT BROOK, PA., ON

NOVEMBER 14, 1942

SUMMARY

Railroad:	Baltimore & Ohio
Date:	November 14, 1942
Location:	Brook, Pa.
Kind of accident:	Derailment
Train involved:	Freight
Train number:	Extra 6223 East
Engine numbers:	6223-6207
Consist:	95 cars, caboose
Speed:	15-18 m. p. h.
Operation:	Interlocking
Track:	Double; 1°30' curve; 0.46 percent ascending grade eastward
Weather:	Cloudy
Time:	About 9:13 a. m.
Casualties:	1 killed; 2 injured
Cause:	Accident caused by failure to operate train in accordance with interlocking signal indications

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2649

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

THE BALTIMORE & OHIO RAILROAD COMPANY

December 31, 1942.

Accident at Brook, Pa., on November 14, 1942, caused by failure to operate train in accordance with interlocking signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On November 14, 1942, there was a derailment of a freight train on the Baltimore & Ohio Railroad at Brook, Pa., which resulted in the death of one employee and the injury of two employees.

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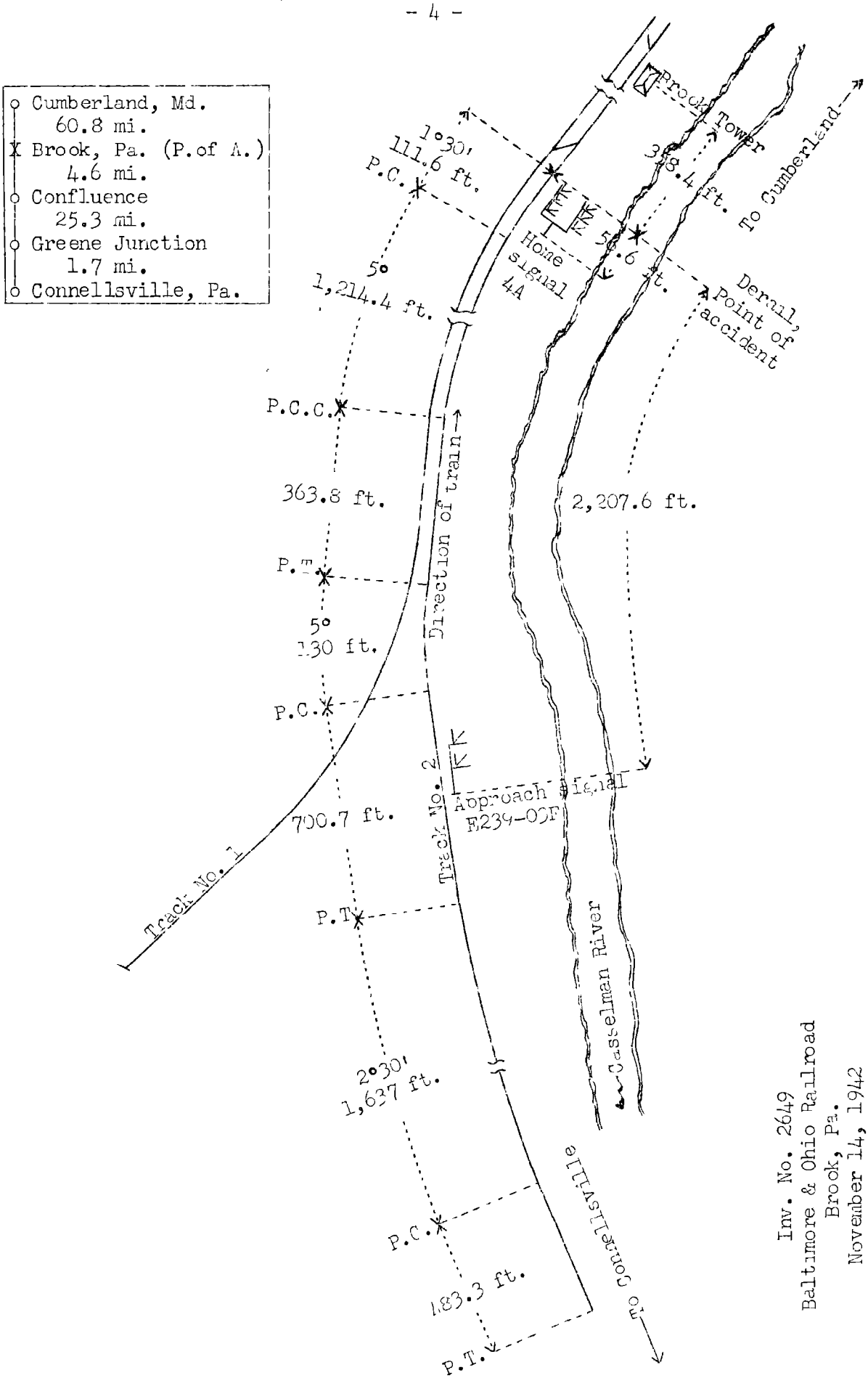
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 2649
Baltimore & Ohio Railroad
Brook, Pa.
November 14, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Pittsburgh Division designated as the Main Line Sub-Division and extending between Connellsville, Pa., and Cumberland, Md., a distance of 92.4 miles. Between Confluence and Brook, Pa., a distance of 4.6 miles, this is a double-track line. The main tracks from north to south are track 1, either-direction track, and track 2, eastward track. These tracks follow different routes. Trains moving with the current of traffic on track 2 are operated by a manual block-signal system, the indications of which supersede time-table superiority. The accident occurred within interlocking limits on track 2 at a split switch-point derail located on the south rail 358.4 feet west of the tower at Brook. Approaching from the west there are, in succession, a tangent 483.3 feet, a 2°30' curve to the right 1,637 feet, a tangent 700.7 feet, a 5° curve to the right 130 feet, a tangent 363.8 feet, a compound curve to the right extending 1,331 feet to the point of accident and some distance beyond. The maximum curvature of the last-mentioned curve is 5° and at the point of derailment the curvature is 1°30'. The grade for east-bound trains varies between 0.68 and 0.46 percent ascending throughout a distance of 1.34 miles immediately west of the point of accident and is 0.46 percent at this point.

The interlocking machine is of the electro-mechanical type and consists of 17 working levers in a 20-lever frame. Of the working levers, 14 operate 7 signals, 2 crossovers, 2 derails and 6 mechanical locks, and 3 are traffic levers. Mechanical locking of the lever-latch type is provided. Approach locking and electric switch-locking are provided throughout the interlocking. Time releases in connection with approach locking are provided. The time release for the approach locking on track 2 is set for 3 minutes 55 seconds.

Approach signal E239-03F and home signal 4A, governing east-bound movements on track 2, are located, respectively, 2,207.6 feet and 56.6 feet west of the point of accident. The involved derail is located 56.6 feet east of home signal 4A. Approach signal E239-03F is of the automatic, two-arm, three-position, upper-quadrant, semaphore type, and is continuously lighted. The involved aspect and corresponding indication and name of this signal are as follows:

Aspect	Indication	Name
Top arm, 45 degrees Bottom arm, horizontal	Proceed preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach

Home signal 4A is mounted on the right side of a bracket-mast and is of the semi-automatic, three-arm, three-position, upper-quadrant, semaphore type, and is continuously lighted. The

involved aspect and corresponding indication and name of this signal are as follows:

Aspect	Indication	Name
Top arm Middle arm } Horizontal Bottom arm	Stop	Stop

The approach and home signals normally display, respectively, approach and stop.

In the vicinity of the point of accident track 2 parallels the north bank of the Casselman River. The track is laid on a hillside cut and about 100 feet above the level of the river.

Operating rules read in part as follows:

> 34. All members of train and engine crews will, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.
>
> 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.
>
> * * *
>
> Restricted Speed--Proceed, prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.
>
> 663. Trains or engines must not pass an interlocking stop-signal without receiving a Clearance Card Form A, or hand signals. Enginemen and trainmen must not proceed on hand signals until they are fully informed of the situation; the movement must then be made at restricted speed.

The maximum authorized speed for the train involved is 30 miles per hour.

Description of Accident

Extra 6223 East, an east-bound freight train, consisted at the time of the accident of engine 6223, 85 loaded and 10 empty cars, a caboose and engine 6207, in the order named. This train

departed from Greene Junction, 29.9 miles west of Brook, at 6:54 a. m., according to the dispatcher's record of movement of trains, departed on track 2 from Confluence, the last open office, at 8:43 a. m., passed approach signal E239-03F, which displayed approach, passed home signal 4A, which displayed stop, and while moving at an estimated speed of 15 to 18 miles per hour it was derailed at the derail located 358.4 feet west of the tower at Brook.

Engine 6223 was derailed to the right and stopped, badly damaged, at a 15-degree angle to the track, with the front end of the engine down the embankment and about 215 feet east of the point of derailment. The cab was practically demolished and the main frame was bent. The tender remaining coupled to the engine was derailed and stopped on its right side with its rear end near the track. The front truck of the first car was derailed and the car was slightly damaged. The fifty-ninth to sixty-first cars, inclusive, were slightly damaged. The sixty-second car was derailed and demolished. The sixty-third car was derailed and stopped, badly damaged, north of the track, and the sixty-fourth car was slightly damaged.

It was cloudy at the time of the accident, which occurred about 9:13 a. m.

The employee killed was the engineer of engine 6223. The employees injured were the fireman of engine 6223 and the front brakeman.

Data

In tests after the accident the interlocking signals functioned as intended.

Discussion

The rules governing operation on the line involved provide that a train receiving an approach indication at the approach signal involved must at once reduce to medium speed and be prepared to stop short of the home signal. An interlocking signal displaying stop must not be passed by a train unless proper authority from the signalman has been received. Trainmen and enginemen must, when practicable, observe signals and communicate their indications to each other.

About 9:09 a. m., the operator at Brook was instructed by the train dispatcher to hold Extra 6223 East on track 2 and to route an east-bound freight train from track 1 to track 2 to proceed ahead of Extra 6223. The approach signal displayed approach and the home signal displayed stop for Extra 6223. The operator set the derail of track 2 in derailing position and lined the route for the other train in accordance with

these instructions. About 4 minutes later the operator observed Extra 6223 as it was approaching the home signal. The engine was working steam and it appeared to the operator that no effort was being made to stop the train short of the signal. The operator then went to the ground to the right of track 2 and about 415 feet east of home signal 4A and gave a stop signal with a red flag, but the signal was not acknowledged. The engine passed the home signal and was derailed at the derail.

Under the rules, the approach indication displayed by the approach signal required that the speed of the train be reduced immediately to 15 miles per hour and then be so controlled that the train could be stopped short of the home signal. The signals were functioning as intended. The brakes of this train had been tested previously and had functioned properly at all points where used en route. There was no condition of engine 6223 that distracted the attention or obscured the vision of the members of the crew on the engine. The fireman and the front brakeman understood that under the rules they were required to observe and to call signal indications, but they were in the tender delivering coal to the conveyor of the stoker and did not observe the indication displayed by either the approach signal or the home signal. The first the fireman knew of anything being wrong was when the engineer called a warning and the brakes were applied in emergency just before the derailment occurred. The front brakeman did not hear the warning. Why the engineer failed to take action to stop his train short of the home signal could not be determined, as he was killed in the accident. The conductor and the flagman, who were in the caboose, and the enginemen of engine 6207, which was coupled behind the caboose, estimated the speed of their train as 15 or 18 miles per hour when the brakes were applied in emergency. This speed had been maintained throughout a distance of about 4 miles immediately west of the point where the accident occurred. They were not aware of anything being wrong until after the derailment occurred.

Cause

It is found that this accident was caused by failure to operate train in accordance with interlocking signal indications.

Dated at Washington, D. C., this thirty-first day of December, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.