

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2802
THE BALTIMORE & OHIO RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR COCHRAN'S MILL, PA., ON
JUNE 13, 1944

SUMMARY

Railroad: Baltimore & Ohio

Date: June 13, 1944

Location: Cochran's Mill, Pa.

Kind of accident: Derailment

Train involved: Freight

Train number: 87

Engine number: 7134

Consist: 31 cars, caboose

Estimated speed: 25 m. p. h.

Operation: Automatic block-signal system

Track: Double; tangent; 0.07 percent
ascending grade westward

Weather: Clear

Time: 10:50 p. m.

Casualties: 1 killed; 2 injured

Cause: Binding of boiler-bearing sliding-
plates of engine, as a result of
improper distribution of spring-
borne weight

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2802

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

THE BALTIMORE & OHIO RAILROAD COMPANY

August 10, 1944.

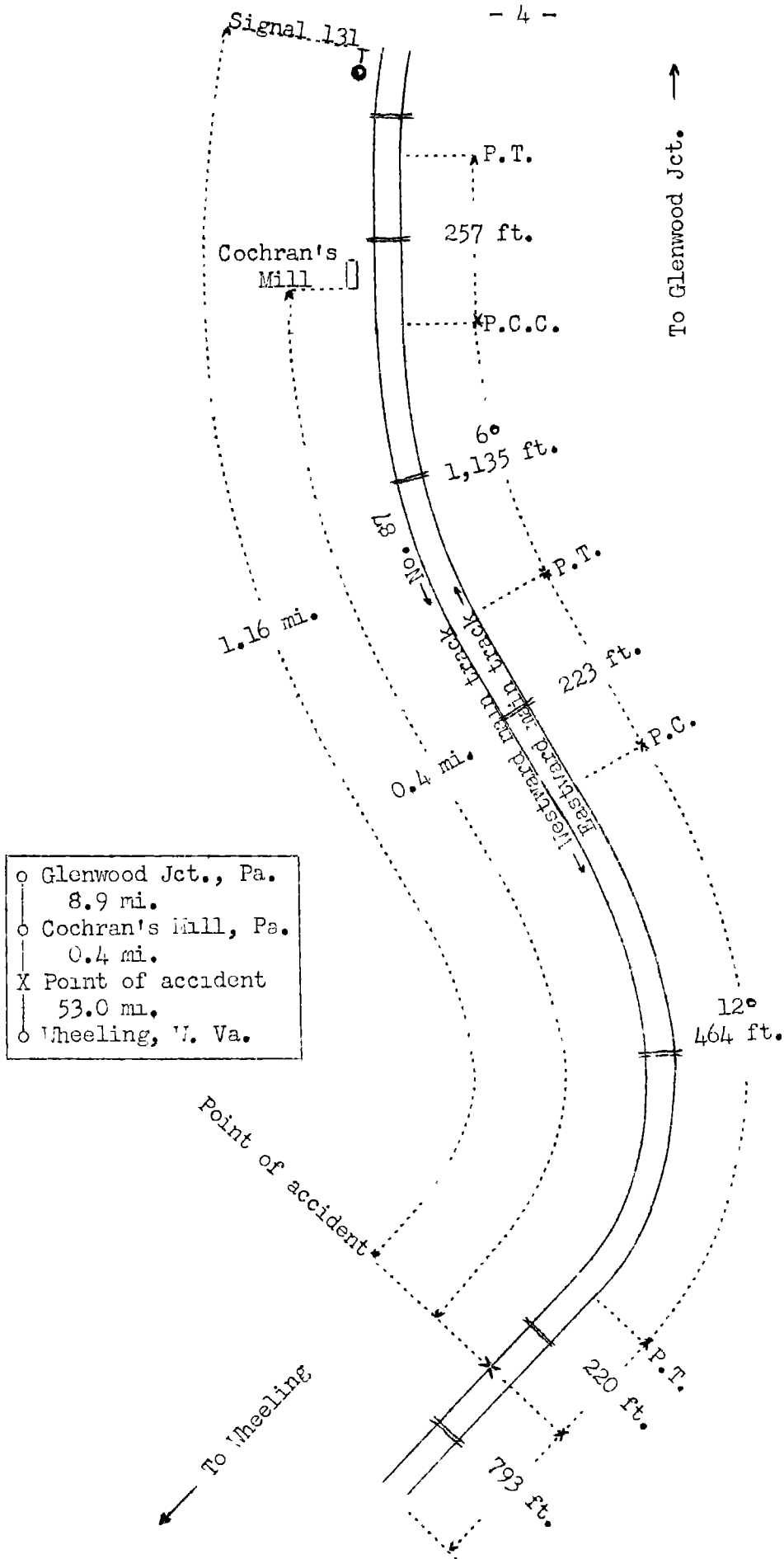
Accident near Cochran's Mill, Pa., on June 13, 1944, caused
by the binding of the boiler-bearing sliding-plates
of engine, as a result of improper distribution of
the spring-borne weight.

REPORT OF THE COMMISSION¹

PATTERSON, Chairman:

On June 13, 1944, there was a derailment of a freight train on the Baltimore & Ohio Railroad near Cochran's Mill, Pa., which resulted in the death of one employee and the injury of two employees.

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



- o Glenwood Jct., Pa.
8.9 mi.
- o Cochran's Mill, Pa.
0.4 mi.
- X Point of accident
53.0 mi.
- o Wheeling, W. Va.

Inv-2802
Baltimore & Ohio Railroad
Cochran's Mill, Pa.
June 13, 1944

Location of Accident and Method of Operation

This accident occurred on that part of the Pittsburgh Division designated as the W. & P. Sub-Division and extending westward from Glenwood Jct., Pa., to Wheeling, W. Va., 62.3 miles. In the vicinity of the point of accident this was a double-track line over which trains moving with the current of traffic were operated by an automatic block-signal system, the indications of which superseded time-table superiority. The accident occurred on the westward main track 9.3 miles west of Glenwood Jct., at a point 0.4 mile west of the station at Cochran's Mill. From the east there were, in succession, a tangent 257 feet in length, a compound curve to the left 1,135 feet, the maximum curvature of which was 6° , a tangent 223 feet, a 12° curve to the right 464 feet and a tangent 220 feet to the point of accident and 793 feet beyond. The grade for west-bound trains was, successively, 0.28 percent descending 4,075 feet, 0.82 percent ascending 1,075 feet, and 0.07 percent ascending 557 feet to the point of accident and 1,493 feet beyond.

The track structure consisted of 100-pound rail, 39 feet in length, laid in 1930 on 22 treated ties to the rail length. It was fully tieplated, double-spiked inside and single-spiked outside, provided with 6 rail anchors per rail length, and was ballasted with slag and cinders to a depth of 2 feet.

Automatic signal 131, governing west-bound movements on the westward main track, was located 1.16 miles east of the point of accident.

The maximum authorized speed for freight trains was 30 miles per hour, and on the curve involved, 25 miles per hour.

Description of Accident

No. 87, a west-bound third-class freight train, consisting of engine 7134, 31 cars and a caboose, departed from Glenwood Jct., the last open office, at 10:18 p. m., passed signal 151, which displayed proceed, and while moving at an estimated speed of 25 miles per hour the engine and the first 10 cars were derailed.

The engine and tender stopped on their right sides, north of the track and parallel to it, with the front end of the engine about 170 feet west of the point of accident, and were badly damaged. The first 10 cars were considerably damaged.

It was clear at the time of the accident, which occurred about 10:50 p. m.

The engineer was killed. The fireman and the front brakeman were injured.

Engine 7134 was a single expansion articulated mallet engine of the 2-8-8-0 type. The total weight of the engine in working order was 484,400 pounds, normally distributed as follows:

Engine truck	25,000 pounds
No. 1 driving wheels	57,700 "
No. 2 " "	57,400 "
No. 3 " "	58,000 "
No. 4 " "	57,700 "
No. 5 " "	57,200 "
No. 6 " "	57,700 "
No. 7 " "	57,100 "
No. 8 " "	56,600 "

The diameters of the engine-truck wheels and the driving wheels were, respectively, 33 inches and 58 inches. The tender was of the Vanderbilt type and was equipped with four-wheel trucks. Its capacity was 18,000 gallons of water and 36,000 pounds of coal. The weight of the tender loaded was 262,000 pounds. The wheelbase of each driving unit was 15 feet 6 inches long. The distance between the center of the engine truck and the center of the No. 1 driving wheels was 9 feet 2 inches. The distance between the two driving-wheel units was 10 feet 2 inches. The total length of the engine wheelbase was 41 feet 2 inches, and the total length of the engine and tender was 108 feet 7-7/8 inches. The boiler was supported upon the front unit of driving wheels by two boiler-bearing sliding-plates. The No. 1 sliding-plates were located between the No. 2 and the No. 3 pairs of driving wheels, and the No. 2 sliding-plates were between the No. 3 and the No. 4 pairs of driving wheels. The No. 1 bearing consisted of a brass sliding-plate attached to a saddle, which was secured to the boiler. Grooves 1/4 inch by 1/4 inch were provided to permit the flow of oil over the bearing surface. A lower plate of boiler steel was attached to a transverse frame tie-brace. The two driving-wheel units were connected by an articulated hinged casting secured by a pivot pin. The last Class 3 repairs were completed on January 12, 1943.

Discussion

No. 87 was moving at a speed of about 25 miles per hour when the engine and the first 10 cars were derailed on tangent track 220 feet west of the western end of a 12° curve to the right. The maximum authorized speed on the curve was 25 miles per hour. The engine overturned to the right and stopped about 170 feet west of the point of derailment. There was no indication of dragging equipment, defective track, or of any obstruction having been on the track.

The fireman and the front brakeman said that east of the tangent on which the derailment occurred no unusual condition of the engine was observed, but when the engine entered the tangent track an unusual movement of the engine was observed, and then the derailment occurred. It could not be determined when the engineer first became aware of anything being wrong as he was killed in the accident.

Examination disclosed that throughout a distance of approximately 220 feet immediately east of the point of derailment the track had been forced out of normal alignment from 1/4 inch to 6 inches. There were indications that both rails had been canted outward, and there were light marks on the gage side of each rail. At the point of derailment the south rail was broken at a point 5 feet 10-1/2 inches from the receiving end. The break in the rail was new and there was no indication of defective metal. West of the broken rail the track was torn up to the point where the engine stopped. Examination of the engine disclosed that the upper sliding-plate of the No. 1 boiler-bearing was broken. The break was 6 inches from the left end of the plate. It was an old break and both pieces of the plate remained attached to the saddle casting. The No. 1 sliding-plates bore evidence that friction between them had been abnormally high. It could not be definitely determined to what extent the plates were lubricated, as the plates became covered with soil when the engine was derailed. The soil had absorbed some oil. The running gear of the engine was in good condition, the wheels were not out of gage, and there was no excessive lateral motion. Records of the carrier indicated that during a period of eight days immediately prior to the accident the defective condition of the boiler-bearing sliding-plate was reported by engineers to the mechanical forces. On the day previous to the accident other defective conditions were reported, among which were broken leaves in the left No. 2 and the right No. 1 driving-wheel springs, and the spring-borne weight of the front portion of the engine being improperly distributed in such manner that the engine frame fouled the engine-truck frame. The investigation disclosed that reports made by the mechanical forces indicated certain measures had been taken to correct the condition which caused the spring-borne weight of the front portion of the engine to be improperly distributed. Apparently the measures which were reported to have been taken to correct this defective condition were not adequate, for the reason that when the engine moved from the sharp curve to the right to tangent track the front driving-unit remained inclined to the right and it

failed to tram in accordance with tangent track, as a result of the binding of the No. 1 boiler-bearing sliding-plates. With the front driving-wheel unit in this inclined position the right front driving wheel bore heavily against the right rail and the left rear driving wheel bore heavily against the left rail. As a result, a wedging effect was created, and the rails were canted outward and the track was otherwise distorted to the point where the left rail broke under the strain. Then the derailment occurred at the point where the rail became broken.

Cause

It is found that this accident was caused by the binding of the boiler-bearing sliding-plates of engine, as a result of improper distribution of the spring-borne weight.

Dated at Washington, D. C., this tenth day of August, 1944.

By the Commission, Chairman Patterson.

W. F. BARTEL,

(SEAL)

Secretary.