RAILROAD ACCIDENT INVESTIGATION

Report No 3825

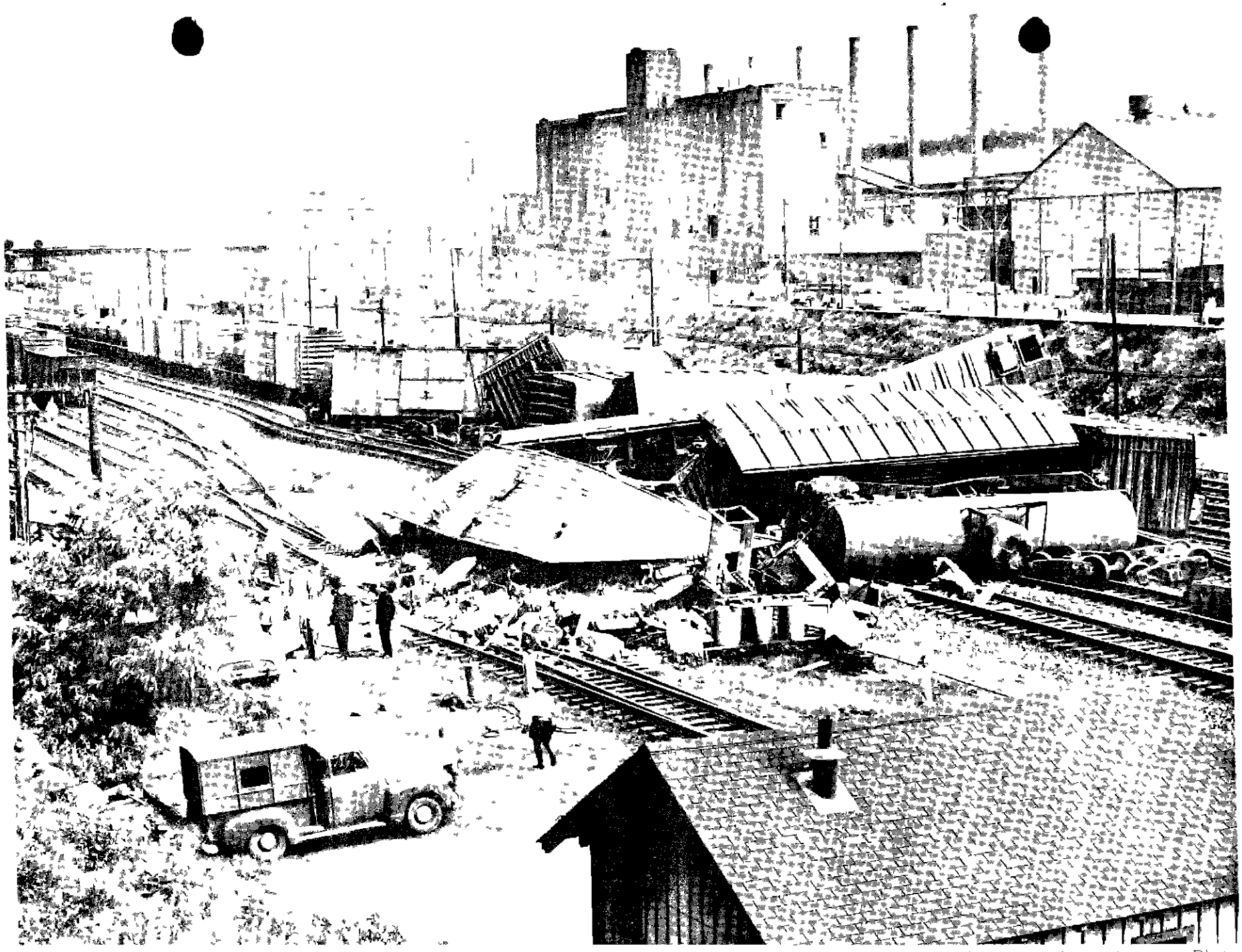
THE PENNSYLVANIA RAILROAD COMPANY

JOHNSTOWN, PA

SEPTEMBER 30, 1958

INTERSTATE COMMERCE COMMISSION

Washington



Johnstown Tribune - Democrat Photo

SUMMARY

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DATE	September 30, 1958
RAILROAD	Pennsylvania
LOCATION	Johnstown, Pa
KIND OF ACCIDENT	Derailment
TRAIN INVOLVED	Freight
TRAIN NUMBER	Extra 7065 West
LOCOMOTIVE NUMBER	Diesel-electric units 7065, 7173, and 7055
CONSIST	98 cars, caboose
SPEED	42 m p h
OPERATION	Signal indications
TRACK	Four, tangent, 0 58 percent descending grade westward
WEATHER	Clear
TIME	11 27 a m
CASUALTIES	1 killed, 2 injured
CAUSE	Loose wheel

INTERSTATE COMMERCE COMMISSION

REPORT NO 3825

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

THE PENNSYLVANIA RAILROAD COMPANY

February 27, 1959

Accident at Johnstown, Pa , on September 30, 1958, caused by a loose wheel

REPORT OF THE COMMISSION[1]

FREAS, Commissioner

On September 30, 1958, there was a derailment of a freight train on the Pennsylvania Railroad at Johnstown, Pa , which resulted in the death of 1 operator, and the injury of 1 operator and 1 signal maintainer

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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 Freas for consideration and disposition

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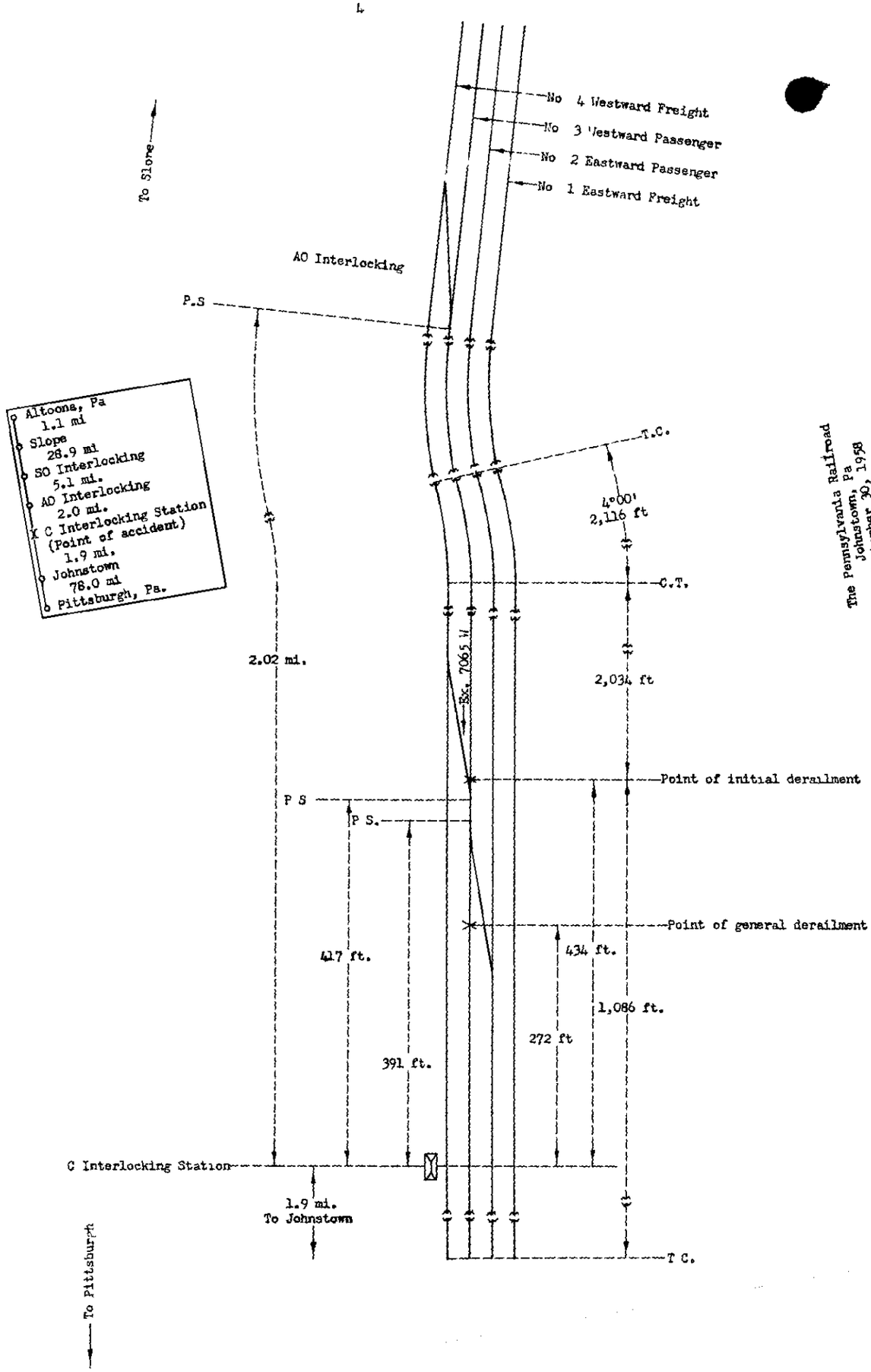

The Pennsylvania Railroad
Johnstown, Pa
September 30, 1958

Location of Accident and Method of Operation

This accident occurred on that part of the Pittsburgh Region extending between Slope, near Altoona, and Pittsburgh, Pa , 115 9 miles In the vicinity of the point of accident this is a 4-track line over which trains moving with the current of traffic on tracks Nos 1, 2, and 4, and in either direction on track No 3, are operated by signal indications From south to north the main tracks are designated as No 1, eastward freight, No 2, eastward passenger, No 3, westward passenger, and No 4, westward freight C Interlocking Station is located a short distance north of track No 4, 36 0 miles west of Slope, and 1 9 miles east of the station at Johnstown, Pa At C interlocking the west switch of a crossover connecting tracks Nos 3 and 4 is located 417 feet east of the interlocking station This switch is trailing-point for westbound movements on track No 3 The east switch of a crossover connecting tracks Nos 2 and 3 is located 391 feet east of the interlocking station This switch is facing-point for westbound movements on track No 3 AO interlocking is remotely controlled from C Interlocking Station Within interlocking limits at AO a crossover connects tracks Nos 3 and 4 The west switch of this crossover, which is trailing-point for westbound movements on track No 3, is located 2 02 miles east of C Interlocking Station The initial derailment occurred on track No 3 at a point 434 feet east of C Interlocking Station The general derailment occurred at a point 272 feet east of C Interlocking Station From the east there are, in succession, a compound curve to the right, having a maximum curvature of 4°00′, 2,116 feet in length, and a tangent 2,034 feet to the point of initial derailment and 1,086 feet westward The grade in the vicinity of the point of accident is 0 58 percent descending westward

The structure of track No 3 in the vicinity of the point of accident consists of 155-pound rail, 39 feet in length, laid new in 1948 on an average of 23 treated ties to the rail length It is fully tieplated with double-shoulder tie plates, double-spiked, and is provided with 6-hole, 36-inch joint bars, and an average of 16 rail anchors per rail It is ballasted with crushed stone to a depth of 18 inches below the bottoms of the ties

This carrier's operating rules read in part as follows

Observation of Trains for Defects

76 * * *

Engine and train crews as frequently as opportunity permits must observe engines and cars in their train, moving and standing, to detect any conditions that might interfere with the safe movement of trains

* * *

The maximum authorized speed for freight trains in the vicinity of the point of accident is 45 miles per hour

Description of Accident

Extra 7065 West, a westbound freight train, consisted of diesel-electric units 7065, 7173, and 7055, coupled in multiple-unit control, 98 cars, and a caboose This train passed Slope at 10 16 a m , passed SO Interlocking Station, the last open office, 28 9 miles west of Slope, at 11 19 a m , and while moving on track No 3 at a speed of 42 miles per hour, as indicated by the tape of the speed-recording device, the left front wheel of the rear truck of the 65th car became derailed at a point 434 feet east of C Interlocking Station and 1 98 miles east of the station at Johnstown The rear truck of the 65th car, and the 66th to the 81st cars, inclusive, became derailed at a point 162 feet farther westward

The locomotive of Extra 7065 West stopped with the front end approximately 4,300 feet west of the point of general derailment Separations occurred at each end of the 66th to the 81st cars, inclusive The derailed cars stopped in various positions on or near the track structure Sixteen of these cars were heavily damaged and one was slightly damaged C Interlocking Station was struck by derailed cars and was demolished

The operator who was killed, and the operator and signal maintainer who were injured, were in C Interlocking Station when the accident occurred

The weather was clear at the time of the accident, which occurred about 11 27 a m

The 65th car of Extra 7065 West was PRR 178840, an all-steel hopper, built in August 1916 It is 44 feet 6 inches in length The trucks are of the 4-wheel type and are spaced 32 feet between centers The wheelbase of each truck is 5 feet 8 inches The trucks are provided with 6-inch by 11-inch journals, 33-inch multiple-wear wrought-steel wheels, cast-steel side frames, and cast-steel journal boxes The lightweight, nominal capacity, and load limit are, respectively, 50,500 pounds, 140,000 pounds, and 159,500 pounds When the accident occurred the car was loaded with iron ore, and the weight of the lading was 154,000 pounds

The locomotive of Extra 7065 West was provided with two-way radio-telephone equipment

Discussion

As Extra 7065 West was approaching the point where the accident occurred the speed was 42 miles per hour The enginemen were in the control compartment of the first diesel-electric unit, the front brakeman was in the control compartment of the third unit, and the conductor and the flagman were in the caboose The brakes of this train had been tested and had functioned properly when used en route The engineer said that he made an observation of the train when it was approximately 2 miles east of C interlocking The flagman said that he made observations as the train moved on the curves immediately east and west of AO interlocking, and the front brakeman said that he made an observation of the train immediately before the general derailment occurred None of these employees observed anything to indicate defective equipment The engineer said that when the locomotive was about 600 feet west of C Interlocking Station a voice on the radio-telephone instructed the crew of the train moving on track No 4 to stop the train because of a broken wheel The engineer immediately inquired by use of the radio-telephone whether the train referred to was Extra 7065 West moving on track No 3 He said that before he received a reply the brakes of the train became applied in emergency The flagman said that when the caboose was about 3,300 feet east of C interlocking he observed a man standing north of the main tracks giving stop signals, and he so informed the conductor The conductor immediately proceeded to the caboose emergency brake valve and operated it He said that he was not certain whether the brakes became applied in emergency as a result of the operation of the valve or the general derailment

Examination of the track structure after the accident occurred disclosed that the gage side of the north switch rail of the west switch of the trailing-point crossover at C interlocking was heavily abraided beginning at a point 17 feet east of the point-of-switch, indicating that a wheel had derailed to the south West of the point-of-switch to the point-of-switch of the east switch of the facing-point crossover a flange mark appeared on tieplates and rail anchors south of the north rail

A flange mark was found on the head of the south rail beginning at a point 12 feet west of the point-of-switch of the trailing-point crossover, indicating that a wheel had derailed to the south at that location Marks on the track structure indicated that the derailed pair of wheels then moved along the south sides of the north switch and closure rails, and the south stock rail of the east turnout of the facing-point crossover, breaking the north closure rail at the frog Beginning at a point approximately 30 feet west of the point of frog, the main track was destroyed throughout a distance of approximately 300 feet Examination of the track structure east of the point of initial derailment disclosed that the east end of the south wing rail of the turnout frog of the trailing-point crossover at AO interlocking bore a batter mark, and the north side of the wing rail was abraided Marks on the track structure immediately north of the south rail indicated that a wheel had derailed on a curve at a point 4,815 feet east of the point of initial derailment, and that the wheel had rerailed at the south guard rail of the trailing-point crossover at C interlocking This wheel then had derailed at a point 65 feet east of the point of initial derailment, and had rerailed at the heel casting of the south switch rail of the west turnout of the trailing-point crossover at C interlocking

Examination of the equipment after the accident occurred disclosed that the right front wheel of the rear truck of PRR 178840, at location L-3, had moved inward on the axle The inside gauge of the flanges was found to be 50-5/8 inches, indicating that the wheel had moved inward a distance of approximately 2-1/2 inches The wheel seat and the black collar were scored and worn, indicating that the wheel had been rotating on the axle There was no indication of oil seepage on the inside of the wheel hub and plate, however, the wheel bore was coated with oil throughout a distance of 2-3/4 inches from the outside of the hub There was no excessive wear on either wheel It required 105 tons pressure to break the mate wheel fit on the axle, and 70 tons pressure to remove the wheel from the axle The bore of the mate wheel was coated with oil throughout a distance of 4 inches from the outside of the hub Measurements of diameter taken at 3 points on the wheel seat indicated a taper of 0 007 inch in excess of that permitted by the Association of American Railroads Mandatory Rules Governing Wheel Shop Practice

The wheels involved in the accident were mounted at the carrier's shop at Pitcairn, Pa , in March 1923 The carrier was unable to locate the wheel fit pressure diagrams showing pressures required to mount these wheels

The investigation disclosed that PRR 178840 was loaded with iron ore on the Canton Railroad at Baltimore, Md , on September 24, and was delivered in interchange to the Pennsylvania Railroad at Baltimore on September 25 This car was the 26th car of a cut of 44 cars placed on the interchange track During switching operations the cut of cars was moved northward from the interchange track Shortly afterward, a car inspector observed that the west rail of the interchange track had been displaced westward and that there were flange marks on the ties on the gage side of this rail These flange marks and a batter mark on the south end of the west guard rail of a trailing-point crossover indicated that a wheel had become derailed to the east, that it had moved throughout a distance of approximately 1,000 feet, and that it had rerailed at the guard rail

Examination of the cars of the cut of cars removed from the interchange track disclosed that the outside face of the rim of the L-3 wheel of PRR 178840 was scored, apparently from contact with the head of a rail No other wheels of the equipment involved showed indications of being derailed This car was placed in the car shop at Baltimore on September 26 and the truck containing the No 3 wheels was removed A supervisor inspected the truck but failed to check the gauge of the No 3 wheels as required by the rules of the carrier when wheels are involved in a derailment He said that he did not observe anything to indicate a loose wheel or bent axle The truck was replaced and the car was moved in a train from Baltimore to Enola, near Harrisburg, Pa It was assembled in Extra 7065 West at that point The car was inspected at Enola and Altoona, and no exceptions were taken

It is probable that the L-3 wheel of PRR 178840 was loose when the derailment occurred at Baltimore and this defective condition would have been found if the wheels had been properly inspected at the car shop at Baltimore

Cause

This accident was caused by a loose wheel

Dated at Washington, D C , this twenty-seventh day of day of February, 1959

By the Commission, Commissioner Freas

(Seal)

Harold D McCoy,

Secretary