

RAILROAD ACCIDENT INVESTIGATION

Report No. 4115

THE NEW YORK CENTRAL RAILROAD COMPANY

HARBOR CREEK (CP 79), PA.

APRIL 28, 1967

Department of Transportation
Federal Railroad Administration
Washington

Summary

DATE:	April 28, 1967	
RAILROAD:	New York Central	
LOCATION:	Harbor Creek (CP 79), Pa	
KIND OF ACCIDENT:	Derailment and collision	
TRAINS INVOLVED:	Mail and Express	Freight
TRAINS NUMBERS:	23	Extra 1688 East
LOCOMOTIVE NUMBERS:	Diesel-electric units 4074, 4113, 4065	Diesel-elec- tric units 1688, 7418, 5919, 5787
CONSISTS:	45 cars	135 cars, caboose
SPEEDS:	80 m.p.h.	25 m p.h.
OPERATION:	Signal indications	
TRACKS:	Double; tangent; level	
WEATHER:	Clear	
TIME:	6:19 p.m.	
CASUALTIES:	3 injured	
CAUSE:	Broken-wheel, and derailed equipment obstructing an adjacent track immediately in front of an approaching train.	

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
RAILROAD SAFETY BOARD

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Synopsis

On April 28, 1967, cars of a westbound New York Central Railroad mail and express train derailed near Harbor Creek (CP 79), Pa., and were struck by an eastbound freight train moving on the adjacent main track. Three train-service employees were injured.

The accident was caused by a broken wheel, and derailed equipment obstructing an adjacent track immediately in front of an approaching train.

Location and Method of Operation

The accident occurred on that part of the Lake Division of the New York Central Railroad extending between Athol Springs, N.Y., and Erie, Pa., a distance of 77.7 miles. In the accident area this is a double-track line over which trains operate in either direction on both main tracks by signal indications of a traffic control system, supplemented by an automatic train stop system. From the north, the main tracks are designated as No. 1 and No. 2. At CP 79, Harbor Creek, Pa., 7.9 miles east of Erie, two adjoining crossovers connect tracks No. 1 and No. 2, as shown in the sketch appended to this report. The west switch of the east crossover is trailing point for westbound trains on track No. 1 and is 165 feet east of CP 79.

The initial derailment occurred on track No. 1, 3,239 feet east of CP 79. The general derailment occurred 2,919 feet west of the initial derailment point, at the west switch of the east crossover at CP 79, and the collision occurred 1,750 feet farther westward.

Controlled signal 792E, governing eastbound movements on track No. 2, is 1,160 feet west of the general derailment point.

Details concerning the tracks, trains involved, damages and other factors are set forth in the appendix.

Description and Discussion

No. 23, a westbound first-class mail and express train consisting of 3 diesel-electric units and 45 cars, left Buffalo, N. Y., 8.2 miles east of Athol Springs, at 4:45 p.m., 45 minutes late. About 6:19 p.m., while moving on track No. 1, it approached CP 79 at 80 miles per hour, as indicated by the speed-recording tape. At the same time, Extra 1688 East, an eastbound freight train, was also approaching this point on track No. 2.

As No. 23 was moving westward on track No. 1, the front wheels of the front truck of the 31st car derailed 3,239 feet east of CP 79. Shortly thereafter, while the train continued westward at unreduced speed, the derailed wheels struck the west turnout of the east crossover at CP 79, and the front truck of the 32nd car, and both trucks of the 33rd car and the 37th to 45th cars, inclusive, also derailed, causing separations in the train. The 31st, 32nd, 33rd, and 37th to 41st cars, inclusive, derailed to the south and remained upright on and in line with the structure of track No. 1. The remaining derailed cars stopped in various positions on or near the structure of both main tracks in the vicinity of the crossovers at CP 79. While No. 23 was stopping as a result of the separations caused by the derailment, the front of the 32nd car was struck on the south side by Extra 1688 East, 1,750 feet west of the general derailment point. Immediately afterward, some of the other derailed cars of No. 23 that remained upright on and in line with the structure of track No. 1 were also struck or scraped on their south sides by Extra 1688 East. None of the crew members of No. 23 was aware of anything being wrong before the train brakes applied in emergency as a result of the separations caused by the general derailment.

The engineer, fireman and swing brakeman of Extra 1688 East were injured.

Extra 1688 East, an eastbound freight train consisting of 4 diesel-electric units, 135 cars and a caboose left Erie, at 4:40 p.m., on the day of the accident. About 1 hour 39 minutes later, while moving eastward on track No. 2 at 25 miles per hour, as indicated by the speed-recording tape, it neared CP 79 and controlled signal 792E, which displayed a clear aspect. At the same time, No. 23 was also approaching CP 79 from the east on track No. 1. As the trains approached each other the engineers dimmed their respective headlights. Immediately after the locomotives passed, the engineer and fireman of Extra 1688 East saw that cars in the consist of No. 23 had derailed and that derailed equipment was fouling track No. 2. At the same time, the swing brakeman, who was in the control compartment of the 2nd diesel-electric unit of Extra 1688 East, also saw the derailed cars bouncing on the structure of track No. 1 and called a warning over the radio-telephone. Immediately afterward, before the speed of Extra 1688 East was

reduced, the locomotive struck the front and side of the 32nd car of No 23. The locomotive and cars to the rear then struck or scraped other derailed equipment of No 23 that had remained upright on and in line with the structure of the adjacent track. Extra 1688 East stopped with the front end 936 feet east of the collision point and short of where derailed cars of No 23 had stopped in various positions across or foul of track No. 2 in the vicinity of the crossovers at CP 79. The engineer of Extra 1688 East said that he had applied the brakes of his train in emergency, but could not recall whether he had done so before or after the collision.

Examination of the structure of track No 1 throughout a considerable distance east of the initial derailment point disclosed no evidence of dragging equipment or of an obstruction having been on the track, nor was there any evidence that a defective track condition contributed to the cause of the accident.

Examination of the equipment of No 23 after the accident disclosed that a large section of the front wheel on the north side of the front truck of the 31st car, a baggage-express car, was broken (see photos). Two large pieces of the broken off section of the wheel were found on the north side of track No. 1, 1.2 miles east of the initial derailment point. One of the pieces was $34\frac{1}{2}$ inches in length along the flange and $6\text{-}\frac{3}{8}$ inches deep through the flange and rim, and into the plate. The other piece was about 8 inches in length along the flange and $4\text{-}\frac{3}{8}$ inches deep. That part of the broken wheel remaining on the axle disclosed no evidence of the wheel having been loose or having turned on the axle wheel seat. Flange and tread wear were within limits of wear prescribed by standards of the Association of American Railroads. There was no evidence of slid flat wheels.

Laboratory analysis of the broken wheel disclosed that the steel met the chemical requirements of AAR Specification M-208-66 for cast carbon steel wheels. It also disclosed that the rim of the wheel had been overheated due to braking action and that there were numerous thermal cracks in the tread. At one end of a broken off piece, a progressive fracture, $\frac{7}{8}$ inch wide and $1\text{-}\frac{3}{4}$ inches long, appeared in the plate and rim. It originated at a thermal crack in the outer tread. Adjacent to the progressive fracture, a secondary fracture consisting of both old and new break, 1 inch wide and 3 inches long, also appeared in the rim and plate. It also originated at a crack in the outer tread and progressed into the rim and plate.

Examination of track No. 1 disclosed batter marks on top of the north rail east of the initial derailment point. At the initial derailment point, wheel marks appeared on a spike and a tie on the gage side of the south rail, indicating that a pair of wheels, apparently the front wheels of the front truck of the 31st car of No. 23, had derailed at this point. Four feet farther westward, a 2-inch gouge mark appeared on the gage side of the top of the south rail.

and an 8-inch gouge mark appeared on the field side of the top of the north rail. Westward from this point, a pair of wheel marks extended along the ties on the gage side of the south rail, and the field side of the north rail, to the west turnout of the west crossover at CP 79, where the general derailment occurred.

The track structure was destroyed or heavily damaged a considerable distance east and west of the general derailment point.

Findings

It is evident that the accident was caused by a broken wheel of the 31st car of No. 23, resulting in derailment of this car and following cars and derailed equipment fouling the adjacent main track immediately in front of an approaching freight train

Cause

This accident was caused by a broken wheel, and derailed equipment obstructing an adjacent track immediately in front of an approaching train.

Dated at Washington, D. C., this 31st
day of August 1967.
By the Federal Railroad Administration,
Railroad Safety Board.

Bette E. Holt
Acting Executive Secretary

(SEAL)

Appendix

Tracks

The main tracks are tangent and the grade is practically level a considerable distance east and west of the accident area

Trains Involved

No. 23 consisted of car-body type diesel-electric units 4074, 4113 and 4065, coupled in multiple-unit control, 27 baggage-express cars, 16 piggyback flat cars and 2 coaches. The cars were of all-steel construction. Prior to departure from Buffalo, the equipment of this train was inspected by mechanical department employees and no exceptions were taken. The train brakes were tested and found to be functioning properly. As the train approached the accident point, the engineer and fireman were in the control compartment at the front of the first diesel-electric unit. The conductor and brakeman were in a coach near the middle of the train, and the flagman was in the coach at the rear end.

The 31st car of No. 23 was E-L 506, an all-steel baggage-express car, built in 1931. It was 64 feet 7 inches over buffers and weighed 119,000 pounds. The trucks were of the 4-wheel straight-equalizer type. The front truck had cast steel one-wear wheels, class CS-1, 36 inches in diameter with 5½-inch by 10-inch friction journals. The wheels were manufactured in 1963 in accordance with AAR Specification M-108. The truck centers were 45 feet apart. The wheel base of each truck was 8 feet. At the time of the accident, the car was loaded with U. S. mail weighing approximately 26,000 pounds.

Extra 1688 East consisted of car-body type diesel-electric unit 1688 and road-switcher type diesel-electric units 7418, 5919 and 5787, coupled in multiple-unit control, 135 cars and a caboose. As this train approached the accident point, the engineer and fireman were in the control compartment at the front of the first diesel-electric unit. The front brakeman and swing brakeman were in the control compartment of the second unit. The conductor and flagman were in the caboose. The train brakes had been tested and had functioned properly when used en route.

Damages

No. 23 stopped with the front end 1.9 miles west of the collision point. The 31st, 32nd, 33rd and 37th to 45th cars, inclusive, were derailed. Separations occurred at the east ends of the 31st, 35th, 37th and 41st cars, and at both ends of the 42nd to 44th cars, inclusive. Of the 11 derailed cars, 1 was destroyed, 6 were considerably damaged, and 4 were slightly damaged.

Extra 1688 East stopped with the front end 936 feet east of the collision point. The 4 diesel-electric units and first 3 cars were derailed. They stopped upright on

and in line with the structure of track No 2 The four diesel-electric units were considerably damaged, and the three derailed cars were slightly damaged.

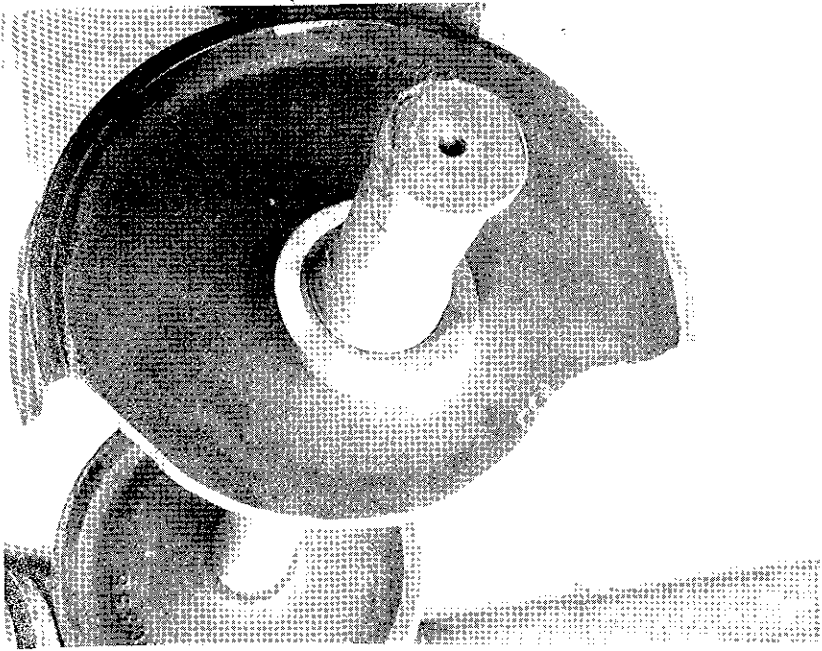
Other Factors

The accident occurred at 6:19 p m , in clear weather

The maximum authorized speed for the mail and express train and the freight train involved in the accident area was 80 and 40 miles per hour, respectively

According to their daily time returns, the engineer and flagman of No 23 had been on duty, respectively, 7 hours 9 minutes and 7 hours 4 minutes in the aggregate after having been off duty in excess of 34 hours The fireman had been continuously on duty 3 hours 4 minutes, after having been off duty 37 hours 30 minutes The conductor and brakeman had been continuously on duty 2 hours 49 minutes, after having been off duty 12 hours 20 minutes and 36 hours, respectively

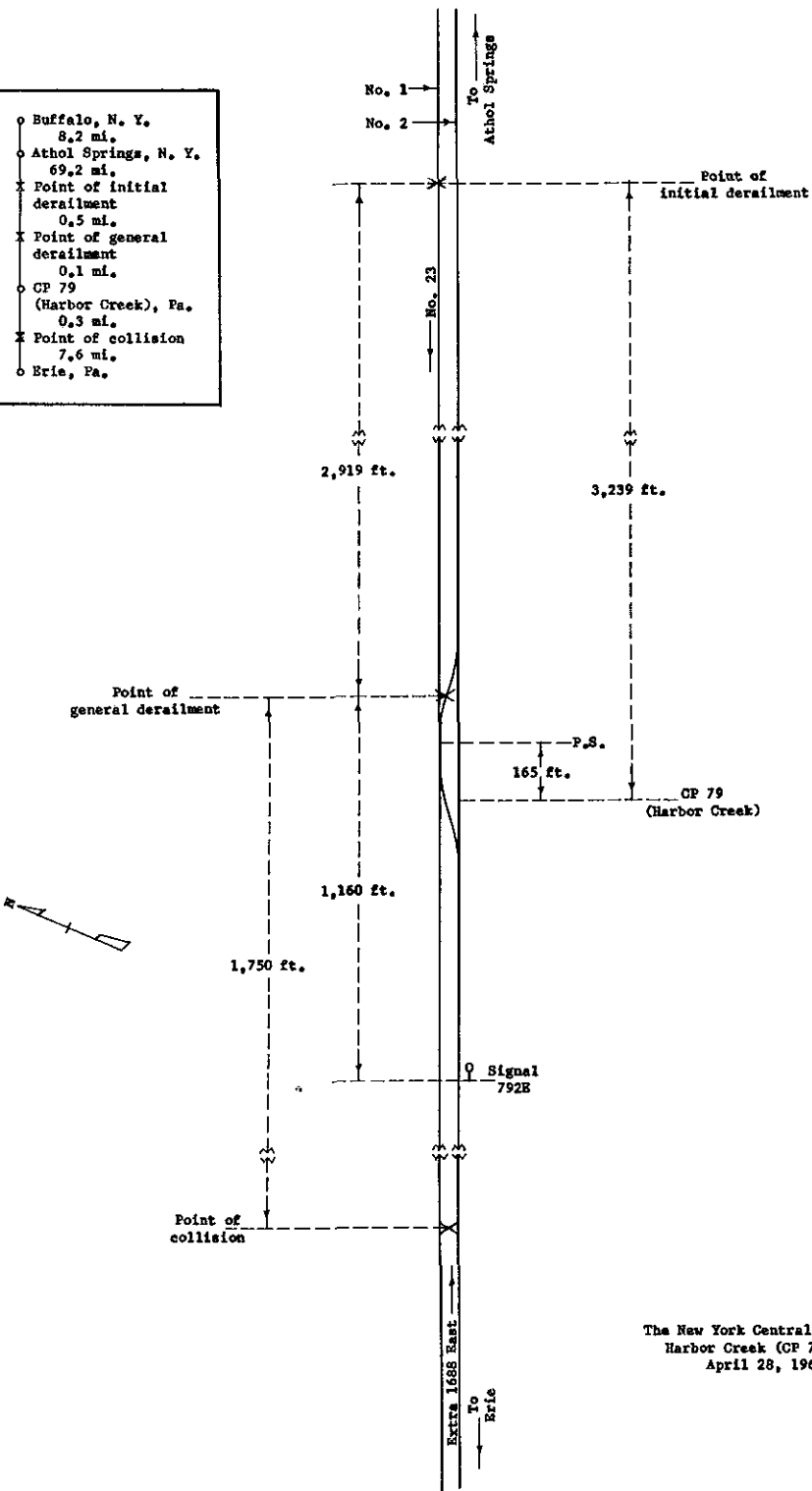
The engineman and swing brakeman of Extra 1688 East had been on duty 7 hours 39 minutes and 4 hours 44 minutes in the aggregate after having been off duty 15 hours 50 minutes and 24 hours 5 minutes, respectively The conductor, brakeman and flagman had been continuously on duty 11 hours 19 minutes, after having been off duty 13 hours 40 minutes.



Front wheel on north side of
front truck of 31st car



- Buffalo, N. Y.
8.2 mi.
- Athol Springs, N. Y.
69.2 mi.
- X Point of initial
derailment
0.5 mi.
- X Point of general
derailment
0.1 mi.
- CP 79
(Harbor Creek), Pa.
0.3 mi.
- X Point of collision
7.6 mi.
- Erie, Pa.



The New York Central Railroad
Harbor Creek (CP 79), Pa.
April 28, 1967