

Inv. 2156

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
PENNSYLVANIA RAILROAD

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BLAIRSVILLE, PA.

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MARCH 6, 1937

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INVESTIGATION NO. 2156

SUMMARY

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Inv-2156

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| Railroad:         | Pennsylvania   |
| Date:             | March 6, 1937  |
| Location:         | Blairsville, Pa.   |
| Kind of accident: | Derailment   |
| Train involved:   | Freight  |
| Train number:     | VC-1   |
| Engine numbers:   | 4662-6905  |
| Consist:          | 79 cars and caboose  |
| Speed:            | 30-35 m.p.h.   |
| Track:            | 7° 10' curve; 0.145 percent descending grade.                |
| Time:             | 5:45 p.m.  |
| Weather:          | Clear  |
| Casualties:       | 1 killed; 1 injured.   |
| Cause:            | Not definitely determined but probably due to a broken rail. |

April , 1937.

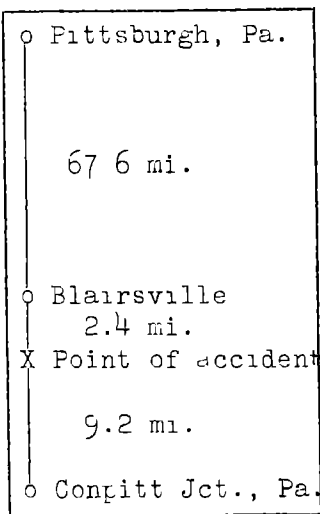
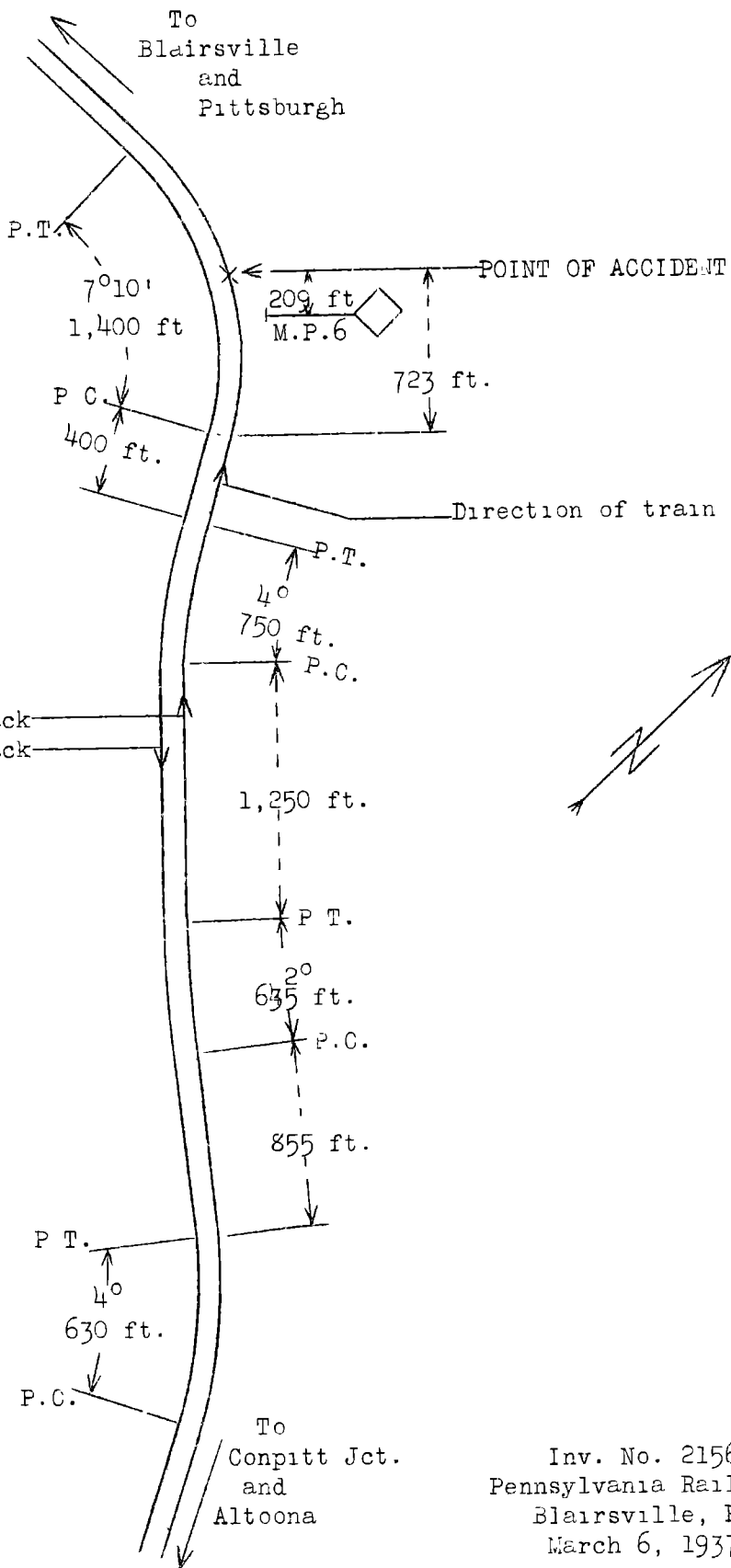
TO THE COMMISSION:

On March 6, 1937, there was a derailment of a freight train on the Pennsylvania Railroad near Blairsville, Pa., which resulted in the death of 1 employee and the injury of 1 employee.

#### Location and method of operation

This accident occurred on that part of the Conemaugh Division, which extends between Conpitt Junction and Federal Street, Pittsburgh, Pa., a distance of 79.2 miles; in the vicinity of the point of accident this is a double-track freight line, over which trains are operated by timetable, train orders and a manual block system. The accident occurred on the west-bound main track at a point approximately 2.4 miles east of the passenger station at Blairsville, and 11.6 miles west of Conpitt Junction; approaching the point of derailment from the east the track consists of numerous short curves and tangents for more than a mile, the accident occurring at approximately the center of a 7° 10' curve to the left west-bound, 1,400 feet in length. The grade for west-bound trains is 0.058 percent ascending for a distance of 2,000 feet to within 425 feet of the point of accident and is then 0.145 percent descending to and beyond the point of accident.

The track in this vicinity is laid with sawed and turned 130-pound rails of 30 and 36 foot lengths, with an average of 17 or 18 treated oak ties to the 30-foot rail length, fully tieplated, double spiked and ballasted with cinders to a depth of about 18 inches below the bottom of the ties and is well maintained. The low rail on the curve involved was laid in 1925 and the high rail was laid approximately six years ago. The elevation of the high rail is 3 $\frac{3}{4}$  inches and the gauge of the track is 4 feet 8 $\frac{1}{2}$  inches, with but slight variation from these figures. In this vicinity the right of way is on a side hill cut parallel to the north bank of the Conemaugh River; at the point of accident there is a perpendicular rock cut about 20 feet in depth on the north side of the track while on the south the bank slopes abruptly downward to the river, 55 feet below. The maximum authorized speed in this district is 45 miles per hour except on curves and over bridges, where it is restricted to 35 miles per hour.



Inv. No. 2156  
 Pennsylvania Railroad  
 Blairsville, Pa.  
 March 6, 1937

The weather was clear at the time of accident, which occurred at 5:45 p. m.

#### Description

Train VC-1, a west-bound freight train, consisted of 79 cars and a caboose, hauled by engines 4662 and 6905, coupled, and was in charge of Conductor Hassenplug and Enginemen Stauffer and McArdle. This train left Altoona at 3:30 p.m. and was operated over the Pittsburgh Division to Conpitt Junction where it entered the Conemaugh Division at 5:28 p. m., according to the train sheet, and was derailed at a point approximately 2.4 miles east of Blairsville, while traveling at a speed estimated to have been between 25 and 35 miles per hour.

The leading engine, 4662, stopped upright and in line with the track, 251 feet west of the point of derailment; the tender was derailed, but remained coupled to the engine. Engine 6905 stopped on its right side against the rock cut; the tender was derailed and its rear end was thrown to the left, blocking the east-bound main track. Both engines and tender were badly damaged. The first 25 cars were derailed within a distance of 360 feet and stopped in various positions east of the engines, 6 of them being destroyed and the balance considerably damaged; the 67th and 75th cars were slightly damaged. The west-bound track was destroyed for a distance of 460 feet, and the east-bound track was damaged for a distance of 300 feet. The employee killed was the engineman and the employee injured was the fireman of engine 6905.

#### Summary of evidence

Conductor Hassenplug stated that he received an air brake card from the car inspector at Altoona yard showing that the brakes were working on all cars. He watched the entire train as it started from the yard and saw nothing wrong, and nothing unusual was noticed en route. A stop was made at 7th Street, Altoona, and the brakes were applied and speed was reduced on the western slope of the mountain but no stop was made between Altoona and the point of accident. He estimated the speed as being between 30 and 35 miles per hour just prior to the accident and said this was the usual speed for trains running under a clear block. An emergency application of the brakes was made at the time of the accident, which occurred at 5:45 p. m., at which time the weather was clear and the visibility good.

Flagman Dougherty stated that prior to the accident he was in the caboose keeping a look-out ahead, and saw nothing wrong, nor did he notice any severe slack action in the train at any point. He estimated the speed to have been between 30 and 35 miles per hour, and considered this to be about normal speed when running under a clear signal. The first intimation he had of danger was when the train stopped suddenly. He immediately started back to protect the train, and at that time saw no marks on the ties or rails to indicate the cause of the trouble.

Head Brakeman Muirhead stated that he was in the brakeman's cabin on the tender of lead engine 4662. The train was making a normal run, the speed being about 30 or 35 miles per hour, and he noticed no slack action, nor anything unusual about the handling of the train, or the riding qualities of the tender. Water was taken at Wilmore water pan located about 35 or 38 miles east of the point of derailment and the water scoop appeared to work properly at that time, the tender being filled to within 3 inches of the top. The engines had been shut off and the train was drifting; approaching the curve on which the derailment occurred; the first intimation he had of anything wrong was when the train was rounding the curve, at which time he heard a decided snap, and the front end of the tender immediately started to bump and seemed to go toward the north; the engine stopped in about 5 or 6 car lengths. Insofar as he knew the brakes were not applied previous to the accident and he was of the opinion that the tender was derailed prior to the engine.

Engineman Stauffer, of engine 4662, stated that he had operated trains over the Conemaugh Division since 1913. He had made an inspection of engine 4662 at Altoona roundhouse before leaving. He said that at times trouble is experienced with wedges sticking on this type of engine, but no such trouble was encountered on this trip and the mechanical condition of the engine had nothing to do with the cause of the accident. Before leaving Altoona the air brakes were tested and he was given a card by the car inspectors showing that brakes on all cars were working. He noticed no slack action, the train handled properly and the air brakes worked properly when used descending the western slope. A normal run was being made and the speed approaching the point of accident was about 30 miles per hour; his engine was shut off, but the second engine was working steam. He was looking ahead, but saw or heard nothing unusual. The first intimation he had of any damage to his train was when the engine started to bounce around, but he did not apply the air brakes until he was positive that the engine was

derailed, although he stated at that time the train line was broken. He was of the opinion that the tender was derailed first and said that the engine did not run over 300 feet after the accident occurred, which was at 5:45 p. m.

Fireman Lynch, of engine 4662, substantially corroborated, and added nothing of importance to the statement made by Engineman Stauffer.

Fireman Rutherford, of engine 6905, who was severely injured, stated that he was on the fireman's seat box when the accident occurred, prior to which he and Engineman McArdle had discussed the speed of the train, which they estimated to be between 25 and 30 miles per hour.

Road Foreman of Engines Longstreth inspected both engines, 4662 and 6905, after they were re-railed and as they were being moved he found that the boxes moved freely, there being no evidence of the wedges sticking.

The last crew to pass over the track prior to the accident, at about 4:30 p. m., noticed nothing wrong with track conditions in that vicinity.

Track Supervisor Critchfield arrived at the scene of the accident about 6:25 p. m. and found 2 rails with fresh breaks. One of these rails was broken entirely in two, the east portion measuring 20' 8" in length along the rail head and 21' along the rail base; the west portion measured 14'  $\frac{1}{2}$ " along the head and 14'  $5\frac{1}{2}$ " along the base; this latter portion also had a piece  $4\frac{1}{2}$ " long broken out of the west end; this break started slightly below the end bolt hole and extended up through the rail head. The rail immediately adjoining on the west had a piece about 4" long and  $\frac{5}{8}$ " deep broken out of the end of the ball and there was a chunk broken out of the rail base. There was no evidence of any defects or transverse fissures in these rails. He said that the west-bound track was entirely torn out for a distance of about 500 feet westward from the east end of the wreck equipment and the east-bound track was somewhat damaged for a distance of about 300 feet in the same vicinity. On making an inspection of the track he found some light marks on the ties for a distance of about one-half mile east, and also for a short distance west of the point of accident, but he did not consider these marks as having any connection with the derailment. He stated that, due to the ties being demolished in the vicinity of the point of accident, no flange marks could be found. A daily inspection of the track is made by either the track foreman or one of the trackmen, and the track foreman's last

inspection showed that the gauge and elevation were checked March 3 on this portion of the track, and were found to be in proper condition. Track Supervisor Critchfield said that he personally walked over the west-bound track in this vicinity on February 27, and had ridden over the east-bound track on a freight train on March 3, and considered the tracks to be in good condition. The work of installing heavy-duty tie plates on the high rail of this curve was completed last January, and during this work the bolts were all tightened on this portion of the track. A rail detector car had been run over this track 4 or 5 years ago, and no trouble had been experienced with broken rails on this curve, but within the past 6 or 8 months 3 rails broken through the bolt holes had been discovered about  $1\frac{1}{2}$  miles farther east, some of which were new breaks.

The Commission's inspectors made an inspection of engines 4662 and 6905, and also examined the inspection reports of these engines; both engines were found to be in tram, the wheel treads and flanges were in good condition, and the driving-box, trailer and engine truck lateral and clearance were within the prescribed limits, with the exception of the forward engine truck boxes of engine 6905, The forward braces and the frame of this truck had been struck by the rear tender-truck of engine 4662, springing the boxes against the wheels. It was also found that the wedges of the R-2 and R-4 driving wheels of engine 6905 were up snug, but could be readily placed in proper position by ordinary adjustment. The bracket bolts supporting the water scoop under the tender of engine 4662, remained secure but bore distinct marks of heavy blows, and fresh breaks appeared where a portion of the scoop was missing. The rear tender truck of this engine was not under the tender after the derailment, and the side bearing clearance could not be taken. It was also found that the right rear side-bearing block was missing. The bottom of the spring plank of this truck showed a diagonal indentation extending from a point about 7 inches to the left of the center, across and through the face, into the side flanges; this mark appeared to have been caused by the spring plank coming in contact with the base of an overturned rail.

F.G.E.X. 37023, the leading car of the train, was equipped with A. R. A., type 29, integral cast steel trucks, and an examination of their construction and of the gauge, tread and flanges of the wheels, indicated they were in good condition and bore no noticeable markings of any character.

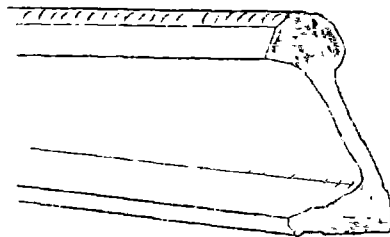
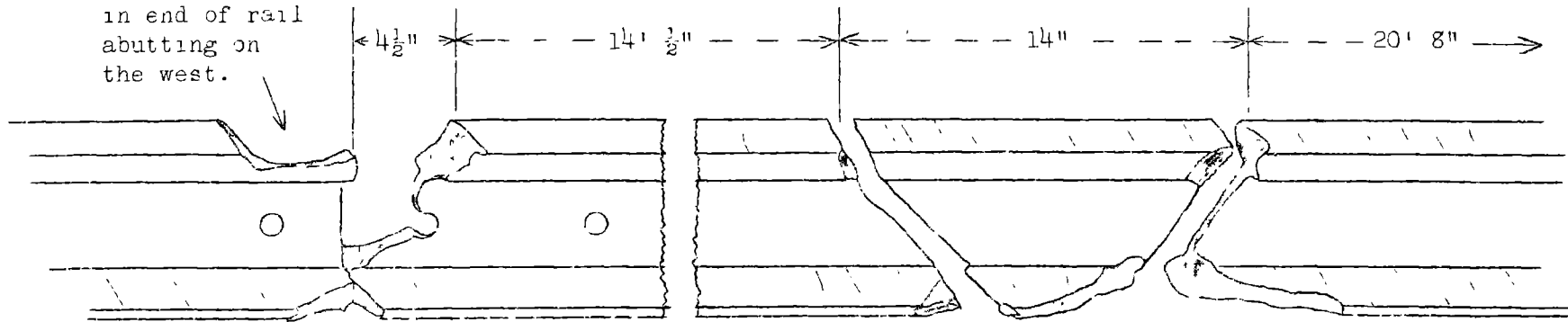


An examination of the west-bound track for a distance of approximately two miles east of the point of accident revealed no indication that any part of the equipment of the train involved had been dragging. The track construction was found to be substantially as stated by Track Supervisor Critchfield and was in good condition for the speed permitted and the traffic it supported. At the point of accident the south rail remained in position under engine 4662 and tender, and also under the forward end of engine 6905; the north rail was turned over, beginning at the forward truck of the tender of the leading engine and extending eastward. At a point 241 feet east of the front end of engine 4662, a piece 14 inches in length was broken out of the ball of the north rail, this break extending nearly perpendicular through the rail head and tapering through the web in a V shape manner toward the base, at an angle of about  $45^{\circ}$ ; a longitudinal piece was broken from each side of the base of this broken portion, leaving the base  $5\frac{3}{4}$  inches long, and 3 inches wide directly under the center of the ball. The gauge side of the ball on the receiving end of this piece bore a flattened mark as though made by a blow and there was a similar mark on the receiving end of the ball of the adjacent section of the rail west of the break. The portion of the rail east of this break was 20 feet 8 inches in length and the portion west of the break was 14 feet  $\frac{1}{2}$  inch in length. A triangular piece  $4\frac{1}{2}$  inches in length was broken off the west end of this rail, the break extending diagonally downward through the ball and the end bolt hole, to the upper side of the base; the angle bars were missing from this end of the rail. The ball of this rail showed a flange wear of  $1\frac{5}{8}$  inches. A piece 4 inches in length was also broken from the ball of the receiving end of the abutting rail on the west. All of these breaks appeared to be new and there was no visible evidence of flaws. The broken rails were 130-pound, Carnegie steel rails, rolled in 1925 and after being sawed and turned, were placed in service in this track in 1930 or 1931.

#### Discussion

There was no evidence disclosed in this investigation to indicate that the condition of the equipment contributed in any way to the cause of the accident, nor was there any evidence of excessive speed. Track Supervisor Critchfield stated that at least three rails had been found broken through the bolt holes within the past 6 or 8 months, at a point about  $1\frac{1}{2}$  miles east of the point of accident, and in most instances these breaks were old fractures. While it is impossible to determine whether the two rails found broken after the accident were the result, or the cause

Showing break  
in end of rail  
abutting on  
the west.



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Showing worn  
condition of  
rail head;  
flange wear,  $1\frac{5}{8}''$ .

of the accident, one of these rails had a triangular shaped piece broken out of the end and extending through the bolt hole. The similarity between this fracture and those found in other rails a short distance to the east within recent months strongly indicates the possibility of a broken rail being the cause of the accident. The statement of Head Brakeman Muirhead, who was in the shelter cabin on the tender of the leading engine, was to the effect that he heard a very pronounced snap beneath the engine, and almost immediately the tender became derailed toward the right and ran for a distance of 5 or 6 car lengths before the engine stopped. The estimated distance the engine traveled after the derailment occurred was corroborated by Engineman Stauffer. The broken rail was later placed in its approximate former location which was at a point 241 feet east of the forward end of the leading engine and close to, if not at, the actual point of derailment. A close inspection was made for flange marks, or other distinctive markings on the ball of this rail, but none was found. This would indicate that after the wheels of the leading engine had passed over the initial point of derailment the eastern section of the rail, which may or may not have been previously broken, overturned or was pushed outward sufficiently to allow the wheels to pass through the opening to the outside of the rail. Whether or not the rail overturned, separated, or broke, is a matter of conjecture. As this rail was turned and re-laid on this curve in 1930 or 1931 and had  $1 \frac{5}{8}$  inches flange wear, this left the rail greatly weakened, and it appears probable that the lateral thrust of two heavy locomotives moving on the  $7^{\circ} 10'$  curve at a speed of 30 or 35 miles per hour, resulted in the failure of this rail.

#### Conclusion

The cause of this accident was not definitely determined; it is believed, however, to have been due to a broken rail.

Respectfully submitted,

W. J. PATTERSON,

Director.