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U. S. Interstate Commerce Commission,

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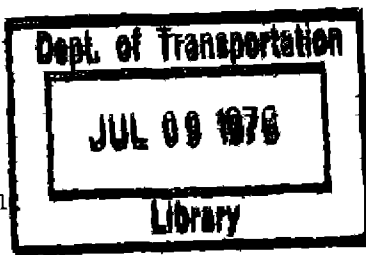
Case No. 1251

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INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN  
RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED  
ON THE PENNSYLVANIA RAILROAD AT KLADDER, PA.,  
ON MARCH 3, 1926.



March 25, 1926.

To the Commission:

On March 3, 1926, there was a derailment of a passenger train on the Pennsylvania Railroad at Kladder, Pa., resulting in the death of one employec and one other person, and the injury of eight passengers, one employee, and one other person.

Location and method of operation

This accident occurred on the Morrison's Cove Branch of the Middle Division, extending between Henrietta and Hollidaysburg, Pa., a distance of 19.5 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, and a manual block-signal system. The accident occurred at a point about 400 feet south of the station at Kladder, approaching this point from the south the track is tangent for a considerable distance, followed by a compound curve to the right which begins 960 feet south of the station and extends to a point beyond the station, the curvature is 6° at the initial point of derailment. The grade is slightly descending for north-bound trains. The track is laid with 100-pound rails, 33 feet in length, with about 18 ties to the rail-length, single-spiked, tie-plated on curves, and ballasted with cinders.

At a point approximately 135 feet south of the station shelter at Kladder there is a switch which leads off the main track toward the east or right to a spur track about 525 feet in length, this is a trailing-point switch for north-bound trains. At the time of the accident there were five freight cars standing on the spar, these

cars, proceeding northward, being as follows one gondola car, three hopper cars, and one box car. The center car stood directly opposite the initial point of derailment.

The weather was partly cloudy at the time of the accident, which occurred at about 4.57 p. m.

#### Description

Northbound passenger train No. 6373 consisted of two coaches, one combination mail and baggage car, one express car, and one milk car, in the order named, hauled by engine 3004, and was in charge of Conductor Cassna and Enginemen Lowe. This train departed from Brookes Mills, 2.1 miles from Kladder, at 4.53 p. m., according to the train sheet, on time, and on reaching a point just south of the station shelter at Kladder was derailed while traveling at a speed estimated to have been between 25 and 38 miles an hour.

Engine 3004 was derailed to the left and came to rest on its right side, west of and at right angles to the track, just south of the station shelter; the tender was east of and fouling the track, north of the station. The first car was diagonally across the track, opposite the tender, while the following three cars were also derailed. The station shelter was demolished. The employee killed was the engineman.

#### Summary of evidence

Approximately 265 feet south of the point of the switch on the spur track, directly opposite the center car of the cut of freight cars that stood on the spur track, a fire-box arch brick, broken and pulverized, was found outside the west or high rail of the curve. There was an indentation at this point in the end of a tie and on the frozen ground just outside the high rail, apparently made by an arch brick being forced downward. At a point 1.7 feet farther north there were abrasions on the gauge side of this rail, extending for a distance of 19.3 feet, at which point the first flange mark appeared on the outside of the high rail, directly opposite which there were corresponding marks on the gauge side of the low or east rail, these marks being from 8 to 12 inches to the left of each rail and continuing for a distance of about 204 feet to the frog of the switch, at which point the wing of the spring frog was broken off at the north end, while

the track was torn up and badly damaged for an additional distance of about 180 feet.

Fireman Shover stated that he noticed nothing wrong with the riding qualities of the engine or any rough spots in the track just prior to the accident; he said that Engineman Lowe had informed him that engine 3004 was the best engine on this run. Approaching the curve on which the accident occurred the speed was about 30 or 35 miles an hour and Fireman Shover thought the air brakes were applied on entering the curve but did not remember whether or not they were released prior to the derailment or if steam was being worked at the time of the accident, at which time he estimated the speed to have been about 25 miles an hour. The first he knew of anything wrong was on seeing the front end of the engine rise and then sway from side to side, he thought that the engine truck was the first to be derailed. None of the other members of the crew was aware of anything wrong until the derailment occurred, they recalled the air-brake application made when approaching the curve, and said there was no indication of excessive speed.

Measurements of the track ~~xxxx~~ taken at every rail joint, the joints being staggered, for a distance of 11 rail joints south of where the arch brick was found, and also for a distance of 4 rail joints north thereof, disclosed the gauge, superelevation, and alignment to be generally in good condition.

The engine truck of engine 3004 was practically demolished in the accident, the axles were bent and one wheel was found to have been forced off its seat a distance of about 1 1/8 inches, there were marks on the inside of the rim indicating that it had received a severe blow. The engine truck wheel which was found to have been forced off its seat was placed in a machine and pressed off the axle, it required a pressure of 55 tons to start it and then the pressure was taken at every 1/2 inch, and at 2 inches it still required a pressure of 50 tons. There was nothing developed to indicate that this wheel was loose prior to the derailment, nor was anything found to indicate that there was any defective condition of the engine which could have contributed to the derailment.

Fire-box cinders were being unloaded from the cut of freight cars standing on the spur track and some arch bricks were mixed with the cinders,

these arch bricks measured about 10" x 12" x 3½". Tests of pieces of arch bricks similar to those picked up at the point of accident were made at Altoona, to develop the amount of pressure necessary to crush them. One piece 10" x 11½" x 3½" when placed on edge in the testing machine withstood a steady pressure which reached a maximum of 93,530 pounds before crushing, while another piece 9" x 10" and varying in thickness from 2¾" to 3½" when placed flat in the testing machine withstood a steady pressure up to 178,580 pounds before crushing, on the other hand these fire-box arch bricks are brittle and break readily from a sharp heavy blow.

#### Conclusions

This accident is believed to have been caused by the fact that the left leading wheel of the engine truck struck a fire-box arch brick which fouled the high rail of the curve.

Apparently an arch brick from the cinders that were being unloaded from the cut of freight cars standing on the spur track had fouled the outside rail of the curve in such manner as to have been struck by the engine truck wheel, causing it to climb the rail and resulting in the deraiment of the train.

All of the employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BOFLAND

Director.