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 WARREN, PA , ON DECEMBER 30, 1927

January 31, 1928.

To the Commission:

On December 30, 1927, there was a derailment of a passenger train on the Pennsylvania Railroad at Warren, Pa , resulting in the death of two employees and the injury of one passenger and one express messenger This accident was investigated in conjunction with a representative of the Public Service Commission of Pennsylvania.

Location and method of operation

This accident occurred on that part of the Renovo Division extending between Erie and Kane, Pa., a distance of 94 miles, in the vicinity of the point of accident this is a double-track line, over which trains are operated by time-table, train orders and a manual block signal system The accident occurred within the yard limits of Warren, at a point 174 feet east of the west yard-limit board of 162 feet east of FN Block Station in about the center of a highway crossing, known as Wilers crossing, at this point a Pennsylvania state highway, route No. 88, crosses both tracks from northwest to southeast, at an angle of about 45°. At a point 190 feet east of the point of accident there is a facing-point switch for eastbound trains, this switch leading off the eastbound main track toward the south to what is known as Gisholt siding. Approaching the point of accident from the west the track is tangent for a distance of 1,520 feet, followed by a 1° 55' curve to the left 2,550 feet in length, the accident occurring on this curve at a point about 60 feet from its western end, just east of where the spiral begins. The grade is practically level.

The track is laid with 100-pound rails, which are of varying lengths in the immediate vicinity of the crossing, with 18 ties to the 33-foot rail-length, single spiked, tie-plated and ballasted with cinders. The highway crossing over the tracks is filled in with fine

crushed slag, mixed with an oil binder. Each running rail is protected by two guard rails extending over the crossing, an inner guard rail and an outside guard rail, these guard rails are 85-pound rails. The distance between the south running rail of the eastbound track and the inner guard rail is 2-5/8 inches, and the top of the inner guard rail is 3/8 inch below the top of the running rail. This flangeway is filled in with the same mixture of slag and oil binder as is used in other parts of the crossing, this filling extending upward to a point just below the head of the running rail.

There was a light snow falling at the time of the accident, which occurred at about 9.25 a.m.

Description

Eastbound passenger train No. 8970 consisted of one express car, one mail car, one combination car, and one coach, all of steel construction, hauled by engine 3005, of the 4-4-2 type, and was in charge of Conductor McDonald and Engineman Metzgar. This train left Irvington, 4.6 miles west of FN Block Station, at 9.19 a.m., 14 minutes late, and was derailed at Wilers crossing while traveling at a speed estimated to have been between 35 and 40 miles per hour.

Only the leading engine-truck wheels were derailed at the crossing, but when they encountered the facing-point switch leading to the siding the engine became entirely derailed, coming to rest down a slight embankment on the outside of the curve, in an upright position, but headed westward, the tender came to rest diagonally across the main tracks, upright and headed in a northeasterly direction. The first three cars were derailed to the south but remained upright and in general line with the track. The last car was not derailed and came to a stop on the eastbound main track with its rear end just east of the switch points. The employees killed were the engineman and fireman.

Summary of evidence

None of the surviving members of the crew was aware of anything wrong prior to the accident. Conductor McDonald stated that he was sitting in the rear end of the third car when he felt a shock as though the train had struck something, after which it came to a sudden stop. Conductor McDonald said that the crossing

signal was sounded and that the engineman shut off steam, as was the regular practice, before the crossing was reached, the conductor did not feel any application made of the air brakes and estimated the speed at the time of the accident to have been 35 or 40 miles per hour. Conductor McDonald further stated that a light snow was falling and that there were about 4 or 5 inches of snow on the ground, but there did not seem to be much snow around the rails. Conductor McDonald looked around to see if he could find out where the engine left the track, the switch point was damaged but he did not see any marks of derailment in the snow west of the switch, and on going back as far as the tower west of the crossing, he saw a mark on the rail but did not think it appeared to be a new mark, while the snow on the crossing was well swept off. Baggagemaster Rickard was also riding in the third car, and his statements as to what transpired prior to the accident practically coincided with those of Conductor McDonald. The statements of Brakeman Buckowing also agreed in substance with those of the conductor as to the way the train was handled approaching Warren. Brakeman Buckowing estimated the speed to have been about 40 or 45 miles per hour approaching FN tower but said that it had been reduced some before the accident occurred. On going back to protect the train by flag he noticed that the north switch point at the switch leading to the siding was damaged, but outside of that he saw no marks of derailment or dragging equipment in the fresh snow. The snow was about 6 or 8 inches in depth but the crossing was cleaned off.

Operator Hulings, on duty at FN Block Station, located on the north side of the main tracks a few feet west of the crossing, stated that at about the time the engine reached the crossing, there appeared to be a circle of fire, about 6 feet in diameter, flying from one of the driving wheels. He continued watching the train and when the crash occurred the operator thought that the boiler had exploded, as he saw the engine derail, steam escaping, and a streak of blue flame shooting about 50 or 75 feet abowe the engine, and on the impulse of the moment he immediately reported to the dispatcher accordingly. Afterwards he learned that the blue flame was caused by steam coming in contact with the high tension wires, the derailed engine having broken off a pole which supported the wires, while the safety valve on the engine had been knocked off and permitted steam to escape freely from the boiler.

Crossing Watchman Tomaino, stationed at the crossing, stated that he had worked at this crossing for seven years. On the morning of the accident he went to work at 6.45 a m , at which time it was dark, and consequently he used a lantern while cleaning off the crossing with a broom and shovel Crossing Watchman Tomaino said that he cleaned out the flangeway of the south rail of the eastbound track and that he did not see any obstruction in the flangeway.

Section Foreman Delaney arrived at the scene of the accident about one-half hour after its occurrence, and he immediately endeavored to ascertain its cause He saw the damaged switch point and on going back to the crossing he cleaned off what little snow was then in the flangeway of the south rail of the eastbound track and saw the top part of a rivet which appeared to be imbedded in the flangeway, with the head of the rivet sloping toward the east At the time this rivet was found there had been no train movements over the crossing since the accident, nor had any of the cars in train No. 8970 been moved back over the crossing. Section Foreman Delaney said that if the rivet had been lying loose in the flangeway at the time Crossing Watchman Tomaino cleaned the crossing, then the crossing watchman should have found the rivet, but if the rivet had been imbedded to the extent that it was when found after the accident then it could not have been found by merely cleaning the flangeway with a broom. Section Foreman Delaney said that he also found a very small piece of pipe in the flangeway of the north rail of the eastbound track, at a point 1 foot 11½ inches east of where the rivet was found in the opposite flangeway, but this piece of pipe apparently had been there for some time and was flush with the flangeway and he did not take it out Section Foreman Delaney was of the opinion that the accident was caused by the engine-truck wheel striking the rivet.

Supervisor Hubley arrived at the scene of the accident about 15 or 20 minutes after its occurrence, and examined the track as far west at FN tower He did not see any wheel marks in the snow, but there were indications that metal of some kind had come in contact with the rail between the switch and the crossing and there was a fresh mark on a splice bar on the south side of the south running rail at the crossing, while the guard rail was marked where something had slid down off of it. The rivet which was found in the flangeway plainly showed that it had been struck recently, the mark being very bright The piece of pipe found by the section foreman in the flangeway of the opposite or north rail was deeply

imbedded, as though it had been there a long time. Supervisor Hubley was of the opinion that the rivet dropped off of a car in some passing freight train and that it was then knocked into the flangeway by an automobile moving over the crossing shortly before train No 8970 approached.

The Commission's inspectors made an inspection of the track subsequent to the accident Starting at the crossing and proceeding eastward, light marks were found on angle-bar bolts, spike heads and the ends of the ties on the south side of the south rail, while the north switch point was battered, indicating that it had been struck by a wheel tread. From this point eastward to the frog of the switch the ties were badly scarred and east of the frog the track was torn up for a distance of approximately 200 feet. The marks between the crossing and the switch were of such a nature as to indicate that only the lead pair of engine-truck wheels was derailed until the switch was encountered, at which point the final derailment occurred. The undisturbed track in the immediate vicinity of the derailment and for a considerable distance west thereof was maintained in good condition. The rivet which was found lodged in the flangeway was a coupler-yoke rivet and the new indentations on the end and head of it had been made by a wheel flange. Inspection of the engine disclosed that there had been no boiler explosion, as was first reported by Operator Hulings, while the engine-truck and driving wheels were in good condition as to flange and tread wear, and careful inspection and measurements failed to disclose any defects about the engine or track which would have caused the accident.

Conclusions

This accident apparently was caused by a coupler-yoke rivet becoming lodged in the flangeway of the track at a point where the tracks are crossed by a public highway.

It seems probable that the rivet had dropped from a car in some passing freight train and that in some manner it became lodged in the flangeway on the gauge side of the south rail prior to the arrival of train No. 8970, and that the right forward wheel of the engine truck then struck the rivet, causing the lead pair of engine-truck wheels to become derailed and resulting in the engine and cars becoming entirely derailed on encountering the facing-point switch The last train to pass on the eastbound track was a freight train estimated by Operator Hulings to have consisted of about 75 cars, this train passed the tower at 6.45 a m.

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 BORLAND,

Director.