INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE LEHIGH VALLEY RAILROAD NEAR MOUNTAIN TOP, PA., ON FEBRUARY 16, 1926

May 4, 1926

To the Commission:

On February 16, 1926, there was a derailment of an express train on the Lehigh Valley Railroad near Mountain Top, Pa., which resulted in the death of one employee and the injury of five express messengers and one employee.

Location and method of operation

This accident occurred on that part of the Wyoming Division extending between Penn Haven Junction and Pansom, Pa., a distance of 58.3 miles, the accident occurring on the single-track portion of the division extending between Mountain Top and Conway, Pa., a distance of 11.2 miles over which trains are operated by time-table, train orders, and an electric train-staff system. The alinement is a succession of curves and short tangents, the accident occurred on an 8° curve to the right, 663 feet in length, at a point about 425 feet from its receiving end. The grade is 1.8125 per cent descending for a distance of several miles. There are speed-limit signs on the engineman's side of the track at the beginning of each of the various curves, specifying the maximum speed allowed on the particular curve in question, these speeds vary between 35 and 45 miles an hour.

The track is laid with 136-pound rails, 33 feet in length, laid in 1924 with an average of 20 ties to the rail-length, tie-plated, double-spiked, and ballasted with about 12 inches of crushed stone. The gauge on the curve on which the accident occurred varied between 4 feet 8⅝ inches and 4 feet 9 inches, while the elevation was practically uniform at 6¼ inches. The track was maintained in excellent condition.

The weather was clear at the time of the accident, which occurred at about 8.02 a.m.

Description

Westbound express train No. 19 consisted of 13 baggage and express cars and 1 combination baggage car and coach, hauled by engine 2025, and was in charge of Conductor Johnson and Enginemen Graham. A stop was made at Mountain Top for the purpose of cutting off a helper engine and the train departed from that point at approximately 5.55 a. m., five minutes late, being derailed at a point 3.7 miles west of Mountain Top while traveling at a high rate of speed.

The engine came to rest on its left side about 40 feet from the track and about 250 feet beyond the first marks of derailment, while the tender cistern was torn from its frame and lay between the engine and the track. The first car came to rest on the roadbed in an upright position in general line with the track, with its head end about 450 feet beyond the point of derailment. The second car was parallel with the first car but went about 35 feet farther to the west. The third car went down the embankment on the right side of the track, at right angles to the same, clear of the track and about 370 feet west of the point of derailment. The fourth car went to the left and came to rest partly over the engine, parallel to the track and about 45 feet distant from the same. The fifth car went to the right and came to rest alongside the third car. The sixth car came to rest opposite the second car, nearly at right angles to the track, with the seventh car on top of it. The eighth, ninth and tenth cars were also derailed to the left, but remained upright. Of the 10 cars which were entirely derailed, 8 of them came to rest beyond the engine, and 5 of these 8 cars were demolished. The employee killed was the engineman.

Summary of evidence

On account of injuries received by him in the accident no interview was had with Fireman Heath until April 7. At that time he stated that the engine had been in good working order but he did not remember whether the train had a helper while ascending the grade approaching Mountain Top, nor did he recall that after the helper had been cut off and the train had started down the grade west of Mountain Top, it had been necessary for the engineman to stop the train to enable the helper engine to clear the main track. Fireman Heath stated that a running test of the air brakes

was made at a point about one-half mile beyond Mountain Top and while he did not know how many air-brake applications were made en route toward the point of accident, he said that there was an application at the curve nearly 1 mile west of Mountain Top in addition to other applications which he could not remember. Fireman Heath said he did not think the speed had been excessive although he was unable to make any estimate as to how fast the train was traveling, nor did he remember the time at which it left Mountain Top.

Conductor Johnson stated that after the helper engine had been cut off at Mountain Top a test was made to see that the air was working through to the rear car. Flagman Simmons was standing on the ground to observe the application of the brakes and on being told that the brakes had applied, the conductor signaled the engineman to release the brakes and then gave him a signal to proceed. The helper engine did not get into clear quickly enough, however, and after moving about a car-length the train had to be brought to a stop. The train proceeded after the helper engine had cleared the main track, and Conductor Johnson said that when it had traveled a distance about equal to the length of the train a running air-brake test was made, while two other air-brake applications were made en route toward the point of accident, the last application apparently being about one train-length in advance of the point at which he felt the first shock of the derailment. Conductor Johnson did not know at what speed his train was running nor did he ascertain the cause of the accident. At first he made definite statements as to the time the train left Mountain Top and the time at which the accident occurred, but subsequently said that he did not have definite information on this point.

Flagman Simmons said a running test was made when the train was about one-quarter of a mile beyond the tower at Mountain Top. When the train had traveled an additional distance of about 1 mile there was a second application and shortly afterwards a third application, the accident occurring just after the last-mentioned application had been released. Flagman Simmons further stated that he looked at the track when on his way back to protect the rear of the train by flag after the occurrence of the accident, but did not notice anything to indicate that there had been any dragging equipment.

Brakeman McHale, who was also riding in the rear car, thought the running test was made at a point about one-quarter mile beyond Mountain Top, at which time the speed of the train was about 15 or 20 miles an hour, and that a second application was made after the train had traveled an additional distance of about 1 mile, this second application being made when the train was traveling a speed of 30 or 40 miles an hour and having the effect of reducing the speed to 20 or 25 miles an hour. Brakeman McHale further stated that he thought a third application was made when the train was about a train-length from the point of accident, which occurred very shortly after the brakes had been released. He did not make any examination of the track for the purpose of ascertaining the cause of the accident.

Baggagemaster Spencer, who was also riding in the rear car, said the brakes were applied after the train gained headway on the descending grade and he expressed the opinion that altogether there were three applications, each of which was made when the train was running at a speed of about 30 miles and hour. He did not notice anything wrong immediately prior to the occurrence of the accident, his first knowledge of danger being when there was a shock which threw him to the floor of the car.

Telegraph and Telephone Foreman Bauchspes, who was riding as a passenger in the rear car of train No. 19 at the time of the accident, stated that in his opinion three applications of the air brakes were made after the running test. He did not pay any attention to the speed of the train as it descended the grade nor did he know at what time the train left Mountain Top or the time at which the accident occurred.

When the Commission's inspectors first reached the scene of the accident they were furnished with statements which had been obtained from the various members of the crew. These statements were remarkably uniform as to the time the train left Mountain Top, the time at which the accident occurred, the manner of making the standing air-brake test, the making of the running test after the train had departed from Mountain Top, the number of air-brake applications made and the location of the train at the time of these various applications, and the speed of the train at various points approaching the point of accident. Had all of these

statements been correct the train would have been perfectly handled as it descended the mountain. When recalled for further questioning the answers of these employees were not satisfactory, and after some discussion they were again recalled and upon being more closely questioned they admitted that they did not know at what time the train left Mountain Top or at what time the accident occurred, in fact, most of the information obtained from them seemed to be of a negative character.

Careful examination of the engine could not be made at the scene of the accident, but after it had been removed to the shops it was given a thorough examination and nothing was found with respect to the wheels, brake rigging, etc., which in any way could have caused the accident. Careful examination and measurements made of the track also failed to disclose anything which could have caused the accident. It appeared that the first marks of derailment were on the heads of a few spikes and on one rail anchor on the outside of the high rail, such as might have been made by a wheel which was not carrying very much weight There was nothing on the ball of the rail, on the angle bars and bolts, or on the ties indicating a derailment. At a point 30 feet west of these first marks the ends of several ties on the outside of the high rail were crushed, and about three rail-lengths farther westward the track was torn up for a considerable distance. Apparently the engine had turned over on its left side very abruptly, accounting for the absence of wheel marks on the rails. The examination of the wreckage also indicated that after turning over the engine retained sufficient momentum to slide along for a considerable distance, digging deeply into the frozen ground. A part of the left cab seat was found 15 feet in front of the engine and 62 feet to the left of it, the rest of this cab seat was found 38 feet in back of the engine. The left side of the cab was found 73 feet in back of the engine, while the stoker engine and air-compressor were found at points 92 feet in back of the engine.

The equipment in train No. 19 had been inspected at Mauch Chunk, at which point the helper engine had been attached to the train. This inspection developed nothing wrong with the equipment while the air-brake test which was also made at that time indicated that the brakes were working properly.

Conclusions

This accident is believed to have been due to excessive speed, for which Engineman Graham is responsible.

Careful examination of the track and equipment failed to disclose the presence of anything which could have contributed to the cause of the accident, while there was ample evidence to indicate that the air brakes were in working order and that the train did not run away on the heavy descending grade. On the other hand, the marks which were found on the track and the condition of the wreckage clearly indicated that the train was running at a very high rate of speed at the time of the accident. The elevation of the curve, according to the recommended practice of the American Railway Engineering Association, was ample for a speed of 35 miles an hour and there is little doubt but that this rate of speed was being greatly exceeded and that this excessive rate of speed was the cause of the accident.

The employees involved were experienced men, at the time of the accident they had been on duty about 4½ hours after more than 19 hours off duty.

Respectfully submitted,

W P BORLAND,

Director.