INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ILLINOIS CENTRAL RAILROAD AT BELLEVILLE, ILL., ON JANUARY 11, 1929.

April 2, 1929.

To the Commission:

On January 11, 1929, there was a derailment on the Illinois Central Railroad at Belleville, Ill., which resulted in the death of two employees and the injury of two passengers.

Location and method of operation

This accident occurred on the St. Louis District of the St. Louis Division which extends between East St. Louis and Carbondale, Ill., a distance of 91 miles, and is a double-track line over which trains are operated by time-table, train orders and an automatic block-signal system. The accident occurred on the southbound main track within Belleville yard limits at a point approximately 500 feet north of the station, approaching this point from the north there are several slight curves and tangents, followed by an 8° 15' curve to the left 500 feet in length, a short tangent of 50 feet, and then a 12° curve to the right 442 feet in length, the accident occurring on this curve near its south or leaving end. There is a descending grade southward ranging from level to a maximum of 1.62 per cent until within 450 feet of point of accident, from which point it is slightly ascending. Rule 101 of the special instructions in the current time-table restricts the speed of all trains to 15 miles per hour on the southbound main track between mile posts G-13 and G-14, between which points this accident occurred; in addition, there is a permanent slow-speed board located 221 feet north of mile post G-13 and 5,357 feet north of the point of accident, also restricting speed to 15 miles per hour.

The curve on which the accident occurred was constructed without a spiral and the elevation of the outside rail began about 30 feet north of the point of curve, rising 1/2 inch in each 33 feet to a maximum of 2 inches approximately 100 feet from the north end of the curve. A check of this superelevation made soon after the accident by the engineering department of this railroad indicated that the present elevation begins about 30 feet north of the point of curve and rises gradually to a maximum of

1 15/16 inches at a point 290 feet from the north end of the curve. The gauge on this curve varied from 4 feet 8 3/4 inches to 4 feet 9 inches. The track was built in August, 1928, and is laid with 90-pound rails, 39 feet in length, with 24 creosoted oak ties, 6 rail anchors, and 6 rail braces to the rail-length, tie-plated and ballasted with chat to a depth of 6 inches on a cinder base; the rails are double-spiked on each side. The track is maintained in good condition.

The weather was clear at the time of the accident, which occurred at about 11.36 p.m.

Description

Southbound passenger train No. 203 consisted of one express refrigerator car, one baggage and express car, two express refrigerator cars, three baggage and express cars, one combination coach, one coach and two Pullman sleeping cars, in the order named, hauled by engine 1159, and was in charge of Conductor Alcorn and Engineman Crain. All of the cars were of steel construction with the exception of the express refrigerator cars, which were of steel-underframe construction. This train passed Church, 7.8 miles north of Belleville, at 11.20 p.m., according to the train sheet, 14 minutes late, and was approaching Belleville when it was derailed while traveling at a speed estimated to have been between 25 and 45 miles per hour.

The engine, tender and first car came to rest on their left sides on the outside of the curve with the forward end of the engine approximately 245 feet south of the first mark on the track caused by the derailment. The second, third and fourth cars were derailed but remained upright diverging to the right or inside of the curve with the forward end of the second car coming to rest at a point 175 feet south of the engine and about 68 feet to the right of the track. The forward truck of the fifth car was also derailed, but the other equipment remained on the track. Several cars in the rear portion of northbound freight train No. 270, which was standing on the adjacent track, were derailed and considerably damaged when they were struck by the overturned equipment. The employees killed were the engineman and fireman of train No. 203.

Summary of evidence

Conductor Alcorn stated that at St. Louis, the initial terminal for this train, he received a clearance

card and train order B-2 which was an order limiting the speed of his train to 10 miles per hour in the immediate territory in which the derailment subsequently occurred. He delivered this order to the engineman who read it, but he did not know whether or not it was given to the fireman to read. The air brakes were tested at St. Louis and found to be working properly. Several stops were made en route and when on straight track just north of the descending grade approaching Belleville a running test of the air brakes was made. Conductor Alcorn stated that he felt no other application of the air brakes until at the time of the accident. He was in the 10th car taking up transportation and did not notice whether the station whistle signal was sounded nor did he pay particular attention to the speed of his train, although he thought it was "coming pretty fast" and in excess of the 10 miles per hour allowed by the order. He also stated that he thought it was required that the speed be restricted to 20 miles per hour between mile posts 13 and 14, instead of 15 miles as provided in the current time-table. Conductor Alcorn further stated that Engineman Crain handled the engine on the previous trip, at which time speed restriction order B-2 was in effect, and he cautioned the engineman at that time about the speed and again cautioned him on the return trip. On that previous trip it did not seem to him that the engineman handled the train in a manner different from other engineers, and he said he knew nothing as to whether or not Engineman Crain was a fast runner.

The statements of Flagman Houghawout practically corroborated those of Conductor Alcorn as to the operation of the train from St. Louis to the point of accident. He also thought the speed restriction between mile posts 13 and 14 was 20 miles per hour instead of 15 miles as provided in the current time-table. He estimated the speed at the time of the accident to have been about 25 miles per hour.

Baggageman Arnold stated that he noticed several applications of the air brakes en route and when about $1\frac{1}{4}$ miles north of Belleville, a service application was made. He knew of the speed restriction of 10 miles per hour in the vicinity of the point of accident, as required by train order B-2, but was unacquainted with the special time-table rule restricting speed in that territory. He estimated the speed at the time of the accident to have been between 25 and 30 miles per hour and thought excessive speed was the cause of the accident.

Conductor Green, of northbound freight train No. 270, stated that he heard train No. 203 approaching at a high rate of speed, he heard the whistle sounded for a public highway crossing and estimated the speed to have been from 35 to 45 miles per hour. He also stated that he thought it was the engine of this train that struck and damaged the four rear cars of his own train. Conductor Green said that he also had been cautioned by the operating officials about observing the speed restrictions in this territory.

Engineman Maxfield, of train No. 270, stated that he was on his engine when train No. 203 approached and his attention was first called to it when his fireman commented upon the high rate of speed at which it was traveling. He first observed it when it was about 700 feet north of point of derailment and he estimated its speed to have been between 40 and 45 miles per hour. He thought the brakes were applied after the engine and first four cars entered the curve as he noticed fire flying from some of the wheels. He also stated that he heard the whistle sounded for a public highway crossing.

Switchman Fields, who was at the passenger station as train No. 203 approached, stated that the speed of this train was about 35 or 40 miles per hour. His examination of the track after the accident failed to disclose any evidence to indicate that something had fallen from the train and caused it to be derailed, and it was his opinion the accident was due to excessive speed.

Fireman Skasick, who had been the regular fireman on train No. 203, stated that he madethe previous trip with Engineman Crain; they received speed restriction order B-2 and it was obeyed. There were several other speed restrictions in effect on this trip, all of these were respected and his train did not approach towns or move around curves any faster than usual. He further stated that he had frequently fired engine 1159 and that it was in good mechanical condition.

Traveling Engineer Turlay stated that he made an inspection of engine 1159 before its departure on train No. 203 on the night of January 9 and found it to be in first-class condition. He also had a conference with Engineman Crain before the train departed, at which time he cautioned him to obey all speed restrictions, explained about the re-alignment of the main tracks at Belleville, called attention to the standing restriction limiting the speed of southbound trains to 15 miles per hour approaching Belleville, and also asked if his fireman had read train

order B-2, which limited the speed to 10 miles per hour between block signal 139 and the second crossover south of the station at Belleville, to which question Engineman Crain replied that the fireman had read the order. Engineman Crain also told him that his first trip over the St. Louis District since June was the northbound trip that morning and he said he was glad the traveling engineer was going to ride with him as some of the road might seem new to him. Traveling Engineer Turlay said he rode on the right side of the engine, acting as pilot, from St. Louis to Belleville, and as Engineman Crain said he knew the road from Belleville to Cairo the traveling engineer rode in the coach from Belleville to Pinckneyville, at which point he left the train and again cautioned Engineman Crain as to speed around curves beyond that point. He further stated that he made a detailed examination of the engine after the accident and is of the opinion that no defective condition of the engine contributed to its derailment. In his opinion the cause of the derailment was due to excessive speed on the curve.

Roadmaster Jump stated that the track was constructed in July and August, 1928, and that it was in accordance with the standards adopted by the American Railway Association, it was elevated 1/2 inch per 33 feet, reaching a maximum of 2 inches approximately 100 feet in on the curve. He made a detailed examination of the equipment after the derailment and found nothing that would have contributed to the accident. The first mark of derailment was a dragging mark 34 inches from the outside of the east rail 300 feet south of the north end of the curve. There were no marks to indicate that the engine had run any distance on the ties, the first wheel mark inside of the west rail was on a rail anchor 60 feet from the dragging mark referred to above. He was of the opinion that the wheels on the low side of the curve came off the rail on reaching the curve and that the engine turned over soon after entering the curve, due to excessive speed.

A detailed inspection of the engine and cars was made and nothing was found that would have contributed to the derailment. Examination of the track disclosed that the first mark of derailment was a dragging mark 34 inches from the outside of the east rail, this mark continuing for a considerable distance parallel to this rail and then diverging eastward. The surface of this mark was covered with wooden splinters which indicated it had been made by some portion of the train constructed of this material. Twenty-nine feet south of this first mark on the ground there was a mark on a tie 17 inches from the gauge side of the east rail which appeared to have been made by a wheel flange, this mark continued for about 6 or 8 feet but there was no corresponding mark between the rails at

this point. There was then a flange mark on a rail anchor on the inside of the west rail 60 feet south of the beginning of the dragging mark. South of this rail anchor there were dim marks on the ties which paralleled the east side of each rail for a distance of about 45 feet, and beyond this point the track was torn up for a distance of about 150 feet.

Conclusions

This accident was caused by excessive speed on a sharp curve.

The evidence clearly indicates that the track was maintained in good condition, and that the elevation was more than sufficient for the speed of 10 miles per hour allowed at this particular point. It was also found upon inspection of the engine and equipment involved that there was no defective condition which could have caused the accident. On the other hand, however, the position of the wrecked equipment clearly indicated that the speed was very much in excess of the maximum speed allowed on this curve, and that the estimates of 35 to 45 miles per hour made by some of the witnesses were entirely reasonable.

On the previous trip of this train Engineman Crain had been personally instructed by Traveling Engineer Turlay as to the operation of his train over this territory and had been cautioned as to speed on curves. The evidence shows that Engineman Crain applied the air brakes approximately 1 mile from the point of accident and sounded the whistle signal for a public crossing just previous to the time of the accident, which would indicate that he was alive and capable of attending to his duties, but why he did not control the speed of his train in compliance with special time-table instructions, slow-speed board and the speed restriction order which he held, is a matter of conjecture, although it is possible the explanation can be found in his unfamiliarity with conditions as they existed at the time.

Conductor Alcorn was an experienced man in this territory and knew that Engineman Crain, although an experienced engineman, was not familiar with the territory and therefore had talked with him on the previous trip and had cautioned him about observing speed restrictions. Under these circumstances it is believed that Conductor Alcorn should have been paying particular attention to the operation of his train; certainly he should have realized that Engineman Crain was operating the train at an excessive rate of speed in territory where the speed was restricted to 15 miles per hour for a distance of 1 mile

and to 10 miles per hour in the immediate vicinity of the accident.

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.