

In Re: Investigation of an accident which occurred
at the intersection of the tracks of the
Hocking Valley Railway and the
Baltimore & Ohio Railroad,
near Fostoria, Ohio, on
June 15, 1916.

On June 15, 1916, a freight train on the Hocking Valley Railway collided with an express train on the Baltimore & Ohio Railroad, at the intersection of those railways at grade, near Fostoria, Ohio, which resulted in the death of one express messenger, and the injury of one express messenger. After investigation of this accident this Chief of the Division of Safety reports as follows:

The Toledo Division of the Hocking Valley Railway, upon which this accident occurred, is a single-track line extending between Toledo and Columbus, Ohio, a distance of 122.7 miles. Train movements over this division are governed by time-table and train orders, supplemented by a manual block signal system. At the point of accident and for several miles to the south, the track is straight. Approaching from a distance of approximately five miles south of the point of collision, there is a descending grade varying from .33% to .08%, up to a point 3,800 feet from the point of collision. The track is then level for 3,000 feet, followed by a descending grade of 5 feet to the mile, or one-tenth of one per cent for the remaining distance of 800 feet to the point of the accident.

The east end of the Chicago Division of the Balti-

more & Ohio Railroad, also involved in this accident, is a double-track line extending from Garrett, Ind., to Chicago Junction, Ohio, a distance of 128 miles. A portion of this division is equipped with an automatic block signal system, but in the vicinity of where the accident occurred, train movements are protected by the manual block signal system.

The point of collision, where the tracks intersect at grade, known on the time-table of the Hocking Valley Railway as "B. & O. Crossing," located one mile south of the station of that railway at Fostoria. On the time-table of the Baltimore & Ohio Railroad, it is known as "H. V. Crossing," and is located one-half mile east of the Fostoria station of that railroad.

East bound express train No. 14, consisted of 11 baggage and express cars, hauled by locomotive 1436, and was in charge of Conductor Hollinger and Engineman Mitchell. This train left Garrett, Ind., at 4:31 a.m., 36 minutes late; at Deshler, Ohio, 65.6 miles east of Garrett, two cars were set out and one taken on. The train passed Fostoria tower, about 4,000 feet west of the point of accident, at 7:06 a. m., 26 minutes late, stopped at the N. Y. C. & St. L. Crossing, and then proceeded to a stop board located 200 feet west of Hocking Valley Crossing, where it came to a stop. The crossing signal displayed a proceed

indication for Baltimore & Ohio trains; the train started and was pulling over the crossing wien, at about 7:10 a. m., the fourth car in the train was struck by a freight train running on the Hocking Valley Railway.

Northbound Hocking Valley freight train second No. 65, consisted of 61 loaded cars, hauled by locomotive 157, was in charge of Conductor Jones and Engineman Michael, and left Mound Street Yard, Columbus, at 10:15 p. m., June 14th. At Delaware, Ohio, 63.5 miles south of Baltimore & Ohio Crossing, the seventh car in the train was set out. The last stop prior to reaching the point of accident was made at Carey, Ohio, 13.8 miles therefrom, where the forty-fourth car in the train was set out. The train left Carey at 6:27 a. m., June 15th, and collided with Baltimore & Ohio train No. 14 on the Baltimore & Ohio Crossing, while running at a speed of about eight or ten miles an hour.

Locomotive 157 ran entirely through train No. 14, demolishing the fourth and fifth cars in that train, a baggage car and a refrigerator express car, both of which were of wooden construction; it came to rest on its right side at an angle of about 45 degrees just north of the Baltimore & Ohio tracks. The three cars immediately following locomotive 157 were destroyed, while the fourth car was slightly damaged. The weather at the time of the accident was clear.

The crossing on which this accident occurred is protected by a railroad crossing board target, governing eastbound and westbound train movements on the Baltimore & Ohio Railroad and northbound and southbound movements on the Hocking Valley Railway. Fixed stop boards are also located on either side, 200 feet from the crossing, and there are stationary warning boards one mile from the crossing. None of the warning or stop boards are equipped with lights.

In regard to the operation of trains where the tracks of two railroads intersect at grade, the laws of the State of Ohio provide that, unless the crossing is protected by some approved method of interlocking,

"All trains or engines passing over such tracks shall come to a full stop, not nearer than two hundred feet, nor further than eight hundred feet from the crossing, * * *

Rule 98 of the Hocking Valley Railway reads as follows:

"Trains must approach the end of double track junctions, railroad crossings at grade and drawbridges, prepared to stop, unless the switches and signals are right and the track is clear. Where required by law, train must stop."

Conductor Hollinger, of Baltimore & Ohio train No. 14, stated that when his train came to a stop about 200 feet from Hocking Valley Crossing, he was looking out of a north window of the third car from the rear, and saw the crossing board in the 45-degree position, which authorized his train to proceed. When his train had started he

looked out of a south window of the car and saw Hocking Valley train 2nd No. 65 about three car lengths from his train. He stated that he thought the speed of train 2nd No. 65 was about 12 miles an hour when he first saw it, and that the speed of his train at the time of the accident was about 6 miles an hour. Conductor Hollinger stated that from the point where his train stopped, 200 feet west of the crossing, the view of the Hocking Valley tracks to the south was obstructed by a building occupied by a glass works, and by a wye filled with cars. He further stated that he knew of no instance in which either a Baltimore & Ohio or a Hocking Valley train has failed to come to a stop before passing over this crossing.

Engineman Michael, of Hocking Valley train 2nd No. 65, stated that before leaving Columbus his train was examined by an air brake inspector, who reported to him that all the brakes were in good working order, and he himself found the brakes on the engine in good condition. He said that on this trip, prior to approaching Baltimore & Ohio crossing, he did not at any time experience any difficulty in stopping his train. He stated that, beginning at Alveda, 6.7 miles south of Baltimore & Ohio crossing, the speed of his train was about 30 miles an hour until within about $2\frac{1}{2}$ miles of the point of accident, where he shut off steam. His train then drifted along,

and when about three-quarters of a mile from the crossing he applied the brakes, making a 10-pound reduction, at which time the speed was 25 miles an hour, and he could then see the crossing board at Baltimore & Ohio crossing, it being in the diagonal position, or against his train. He said that when the first application was made the brakes were working properly, as this application reduced the speed of the train to 15 miles an hour. He did not release the brakes, and when about three-eighths of a mile from the crossing he made a second reduction of about 10 pounds but received only a short brake pipe exhaust. He stated that he then made an emergency application of the brakes, sounded one long blast of the whistle calling for brakes, repeated it, and, hoping that the operator might change the route and clear the crossing signal for him, he sounded four blasts of the whistle, calling for that signal, at which time his locomotive was within about 1,000 feet of the crossing. He said that he also applied the independent air brake, but did not open the sander, as he did not think it was in working condition, having on a previous occasion on this trip discovered that while the right side furnished a little sand the left side did not furnish any at all. He said that he thought there might have been a small stone lodged in the pipe, although he made no effort to determine the nature of the trouble.

He said he did not reverse the engine as the rules of the company forbade reversing the engine. He thought his train was about 600 feet from the crossing when he first saw train No. 14 on it, and said he was unable to stop his train, but remained on the engine, which ran through train No. 14. Engineman Michael further stated that when his train had come to a stop after the collision, he got out of the wreckage, started back along his train, unaccompanied, to learn, if possible, the reason for the failure of the air brakes to work properly, and, on the west side of the head end of about the thirteenth car from the locomotive, he found an angle cock turned, it being about five-eighths closed. He thought it must have been turned during the interval between the first and second applications of the brakes, as they had responded properly upon the first reduction. He said that the conductor was the first of the crew to reach him and, referring to the turned angle cock, he remarked to the conductor that that was the source of trouble, but the latter replied that there was plenty of air on the caboose. Engineman Michael stated that he had always fully complied with the rule requiring all trains to stop at all track intersections at grade, which were not protected by an interlocking plant, that he was thoroughly acquainted with the line, and that, in this

instance, had all the brakes in the train been working properly, the brake applications which he made would have brought the train to a stop before reaching the stop board, 200 feet from the crossing. He also stated that, while the relative positions of the crossing signals are different at various places on the Toledo Division, he has never been confused as to their proper indication. He said that, although he was not certain, he thought the speed of his train at the time of the collision was about six miles an hour. Engineer Michael stated that he thought the cause of his failure to stop his train before colliding with train No. 14 was the angle cock being turned, and that, while he did not know who turned it, he was told by members of his crew that a man employed at the glass works, a short distance from the scene of the accident, had noticed a man riding on the train about 12 or 14 cars from the head end.

Conductor Jones, of train 2nd No. 65, stated that his train left Mound Street Yard, Columbus, thirty minutes late, on account of the train not being ready; the air brakes in the train were working properly, and the air gauge in the caboose showed a pressure of 70 pounds. He stated that when his train was about $2\frac{1}{2}$ miles from Baltimore & Ohio Crossing he looked at the air gauge and found that it indicated a pressure of 70 pounds,

the speed of the train at that time being about 25 miles an hour. When about one-half mile from the crossing he again looked at the gauge which then indicated 50 pounds pressure; the speed of the train was about 15 miles an hour, and the air brakes seemed to be holding properly. He said that he was not certain whether or not he had heard the engineman sound the whistle, and that the train was traveling at a speed of 6 or 8 miles an hour when there was a jar, whereupon he looked at the gauge, saw that it had dropped to zero; thinking the train had broken in two, he got off the caboose, it being then 7:10 a. m., and looking forward saw the wreckage. He then returned to the caboose, secured an accident report blank, and started forward along the train. He said that when about 15 car lengths from the head end of the train he met the engineman and fireman, and the former showed him an angle cock, of the plain type, on the twelfth car in the train, about five-eighths closed. He stated that the only trouble that had been experienced with the brakes on this trip was a broken union on this car which caused an emergency application of the brakes. He had cut out the brakes on this car at Delaware, and at Carey he cut out the brakes on the forty-fourth car in the train on account of the brakes sticking. When his train was approaching B. & O. Crossing, therefore, he was not at all apprehensive

as to the ability of the engineman to stop his train before reaching the crossing, although it did occur to him that his train was running somewhat faster than it should. Conductor Jones further stated that at different times during this trip he had seen a man, whom he recognized as a former brakeman, riding on the train, but paid no attention to him; he was also told that an employee of the glass works had seen a man about 12 or 15 cars from the engine. He stated that, even with the angle cock turned, he did not think it possible that the 50 pounds of air, which was the amount of pressure indicated about one-half mile south of the crossing, would leak off in so short a period of time. Conductor Jones said that after the accident he found the brakes applied, on the rear portion of the train, all the air brake pistons being out as far as possible, and that the train line was not broken except where the cars were derailed. He also stated that he did not know any cause for this accident.

Fireman Janette, of train 2nd No. 65, stated that his engineman shut off steam about two miles from Baltimore & Ohio Crossing, and confirmed the statement of the engineman in regard to the place and nature of the brake applications made approaching the crossing, although he did not know whether or not he used the independent

air brake. He said he noticed that the air pump was working when the first application of the brakes was made approaching the crossing, and that on this trip he had at different times noticed that the gauge showed a pressure of 90 and 70 pounds. He also corroborated the statement of the engineman as to the whistle signals sounded, calling for the crossing signal, but said that he did not think the engineman had whistled for brakes. He thought the speed of Baltimore & Ohio train No. 14 was about eight miles an hour when he first saw it, at which time his train was about 500 feet from the crossing. Fireman Janette stated that he was familiar with the rule requiring trains to stop when approaching crossings, and said that, while some trains do not come to a full stop, but "barely creep along," the majority of them come to a full stop. He said that the speed of his train was about six miles an hour at the time of collision, and that he got off the engine just before it occurred. He further stated that after the accident he started back along the train, a short distance behind the engineman, and when the latter told him about the turned angle cock he was about one car length from him. He said the engineman had not been in between the cars there, and that he did not attempt to operate the angle cock, as the engineman did not want it to be touched, but he thought it was about five-eighths closed.

Flagman Cooley, of train 2nd No. 65, stated that approaching Baltimore & Ohio Crossing he had been riding in the cupola of the caboose, and at frequent intervals looked at the air gauge. He said that usually when the air brakes are applied there is considerable shock in the caboose, but that he noticed none approaching Baltimore & Ohio Crossing, although he could feel the slack of the train being taken up and, judging from the air gauge, said the air brakes must have been working. He did not hear any whistle signal being sounded and his first intimation of the collision was when the train came to a sudden stop. He looked at the air gauge and saw the indicator needle drop to zero. After the accident he and the conductor started forward along the train, found all the air brake pistons out, met the engineman fifteen car lengths from the head end of the train, and he told them that he had found a turned angle cock. He did not recall what the conductor said in reply, but remembered that he had inferred from it that he did not think it possible, in view of the fact that the pistons were all out. Flagman Cooley said that at one point on this trip he had seen a man riding on the train, and after the accident an employee of the glass works told him that he had seen a man riding on about the twelfth car in the train. He further stated that the

speed of his train was six or eight miles at the time of accident, and that Engineman Michael has always brought his train to a full stop at all crossings, although when the crossing board is clear, some trains do not stop entirely, but proceed over the crossing slowly.

During the investigation of this accident a test was made of a charged train line; Engineman Michael turned an angle cock to a position similar to that in which he claimed to have found the one turned in his train on the day of the accident. The same type of angle cock, known as the plain angle cock, was used in this test, and it was demonstrated that with the angle cock turned in this position communication in brake pipe was entirely cut off.

The inference to be drawn from the statements of Engineman Michael is that the angle cock on the twelfth car in the train was closed during the intervals between the first and second reductions, cutting off brake pipe communication and rendering inoperative the brakes on the remainder of the cars in the rear; this prevented the brake application from taking effect when approaching Baltimore & Ohio Crossing, and created a condition which made it impossible for him to bring his train to a stop.

However, had the angle cock been turned before the accident occurred to the position indicated by Engine-

man Michael the brake pipe on the rear end of the train would have been cut off and the air would have leaked off gradually. But statements of the two employees on the caboose are positive that the air gauge showed a pressure of 70 pounds before and 50 pounds after the brakes had been applied, and that when the collision occurred the pressure dropped to zero, obviously due to the breaking of the train line ahead of the twelfth car. This would not have been possible had the brake pipe on the rear end of the train been cut off by a closed angle cock on the twelfth car. But even if this angle cock had been closed there can be no question but that if the air brakes on the twelve cars next to the locomotive had been used properly, in view of the fact that the grade for a distance of five miles was practically level, the train could have been brought to a stop before over-running the crossing.

This accident was caused by the failure of Engineman Michael to bring the speed of his train under control a sufficient distance from the Baltimore & Ohio Crossing to enable him to bring it to a stop in time to avert the collision.

Engineman Michael entered the service of the Hocking Valley Railway as fireman July 17, 1906, was promoted to engineman May 15, 1910, and had an excellent record.

At the time of the accident the crew of train
2nd No. 65 had been on duty 10 hours.