

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
DETROIT, JACKSON & CHICAGO RAILWAY NEAR CHELSEA,

MICHIGAN, ON JULY 30, 1918.

September 23, 1918.

On July 30, 1918, there was a head-end collision between a passenger train and an extra freight train on the Detroit, Jackson & Chicago Railway near Chelsea, Michigan, resulting in the death of 15 persons and the injury of 80 persons. After investigation, the Chief of the Bureau of Safety reports as follows:-

The Detroit, Jackson and Chicago Railway is an electric road extending between Jackson and Addison, Michigan; it belongs to the system of interurban roads controlled by the Detroit United Lines. It is a single track line, running generally in an east and west direction, upon which trains are operated by schedule and the dispatching system, train orders being transmitted by telephone. Block signals are not used on that portion of the line where this accident occurred.

On the date of the accident eastbound train No. 178 was run in two sections. The first section of this train, consisting of motor car 7791, left Jackson at 7.08 p.m., nine minutes late, carrying green flags for a second section, consisting of motor car 7776, which left Jackson nine minutes later, or at 7.18 p.m. First 178 was in charge of Conductor Kidwell and Motorman Rose, and second 178 was in charge of Conductor English and Motorman Taylor.

Upon arrival at Frisco, 15.41 miles east of Jackson, about 7.35 p.m. Motorman Rose of first 176 removed the green flags from the front end of car 7791 and substituted green lights therefor. Upon arriving at Chelsea, about 7 miles further east, first 176 met westbound extra 1936, which was standing at that station, with the crew engaged in loading and unloading freight. Whistle signals calling attention to a following section were sounded by Motorman Rose which were answered properly by Motorman Flake of extra 1936, and after discharging and receiving passengers, which occupied about two minutes, first 176 proceeded towards its destination.

Second 176 left Jackson nine minutes later than the first section with the following order in possession of Conductor English and Motorman Taylor:

"Run second Sec. Tr. 176 from Jackson to Addison. Meet Tr. 173, Car 7521 at Frisco. Meet Tr. 175 Car 7796 at Warsaw."

Upon arrival at Frisco, the following order was received:

"Train No. 176, Car 7776, at Frisco. Meet Tr. No. 173, Car. 7521 at Hoppe instead of Frisco."

After meeting train No. 173 at Hoppe, 2.37 miles east of Frisco, second 176 proceeded and collided with westbound extra 1936 near a local stop known as Heffner, about one mile west of Chelsea, at about 8.00 p.m. Train No. 176 is a limited train, stopping only at the principal stations en route; it was running at an estimated speed of 50 to 55 miles per hour, which was reduced to 25 or 30 miles per hour at the

time of the collision. There were no speed restrictions in force on that portion of the road where the accident occurred.

The force of the collision drove car 1938 back about 50 feet, shoved the front truck back about 3 feet from its proper position under the body of the car, and crushed in the front end, and forward portion of the roof. Car 7776 was telescoped about 20 feet of its length by car 1938, which was the heavier and more solidly constructed car. Both cars remained upright on the track and none of the wheels was derailed. At the time of the accident the weather was clear.

Approaching the point of collision from the east there is a 3° curve to the left, <sup>curve</sup> 440 feet long, followed by a tangent about 1148 feet long to the point of collision. Approaching from the west there is about 3 miles of straight track followed by a 1° 5' curve to the right about 1258 feet long. The collision occurred near the point of tangent at the east end of this curve. The grade at the point and for several hundred feet in either direction, is practically level. A short distance east of the point of collision there is a cut 200 feet long and about 4 feet deep. The rise of ground through which this cut passes is covered with a grove of trees on the south side of the track; on account of these trees the motormen on the colliding trains had their view limited to a distance of about 500 feet.

Westbound freight extra, car 1936, in charge of Conductor Buck and Motorman Fiske, left Ann Arbor at 6.18 p.m. and arrived at Chelsea about 7 p.m. While standing at that station with the crew engaged in loading and unloading freight first 176 arrived and the customary whistle signals calling attention to a following section were properly exchanged by the motormen of the two trains. Neither Conductor Buck nor Motorman Fiske actually saw first 176 upon its arrival, but both heard and understood the whistle signal sounded by the motorman of first 176, and were fully advised of the fact that a second section was following.

Extra 1936 left Ann Arbor with an order to meet an eastbound extra at Grasse Lake, a station 11.42 miles west of Chelsea, and upon completing the work of loading and unloading freight at Chelsea, Conductor Buck called the dispatcher and informed him that his train was ready to leave, and was told by the dispatcher that his orders were good. Extra 1936 thereupon left Chelsea about 7.55 p.m. without waiting for the arrival of second 176, colliding with that train about 5 minutes later, while moving at an estimated speed of about 10 miles per hour.

Conductor Buck of extra 1936 stated that his train left Ann Arbor with the following order:

"Run extra Ann Arbor to Jackson. Meet extra east, Car 1947, at Grass Lake."

He said his train arrived at Chelsea about 7 p.m. and while

he was engaged in loading and unloading freight the first section of train 176 passed; he did not see the train at that time, as he stood inside his car, but he knew it passed because it whistled signals for a following section, and he answered them from his car. Train No. 176 is due at Chelsea at 7.45, and Conductor Buck said the first section passed about on time; he thought he heard the first section pulling out, but did not see it go, and when he got out of his car he saw a car leaving and as he did not see any green flags on it he was positive it was the second section. He then called the dispatcher and told him his train was ready to leave and the dispatcher informed him that his orders were good, after which his train left Chelsea about 7.55 p.m. He did not have any conversation with Motorman Fiske about train 176 before his train left, as he was positive in his own mind that the second section had gone. He said his train had proceeded about a mile west of Chelsea, and was running as fast as the car could go, about 40 miles an hour, when the motorman reversed; the car reduced speed rapidly and was going about 10 miles an hour when the collision occurred.

Motorman Fiske stated that his train arrived at Chelsea about 7 o'clock, and while engaged in loading freight train 176 passed eastbound. He did not see the train, but knew it was carrying signals for a following section, as it blew signals and he answered them. He kept on loading freight and it appeared to him that the second section was close behind

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the first one. He said they finished their work about 7.53 or '54, after which Conductor Buck called up the dispatcher and found out that their orders were good, after which they left, about 7.55. He did not consult with the conductor as to whether or not the second section of train 176 had gone, as he was certain in his own mind that it had gone. He said his train had proceeded about a mile and a half west from Chelsea when the second section of train 176 was met; his view was obstructed by the grove of trees on the south side of the track, and the approaching car was within 500 feet when he first saw it; he immediately shut off the power and reversed, and the cars came together just as he jumped. He estimated the speed of his car previous to the collision at about 25 miles per hour, as he did not think it would run faster than that. The sun had not gone down at the time of the collision, and was shining at an angle in his face.

Motorman Rose of first 176 stated that his car left Jackson carrying green flags as signals for a following section; at Francisco siding he removed the flags and substituted green lamps for them. It was not yet sunset when he made this change but he considered it near enough to justify the change. When he whistled to the extra at Chelsea his signal was answered properly. In his judgment his train did not stop at Chelsea to exceed 2 minutes, and nothing occurred which would cause him to think the crew of extra 1936 might mistake his car for the second section.

Conductor Kidwell of first 176 stated that his motorman changed the signals from flags to lights at Francisco about 7.35 p.m. It was not yet sunset, but he did not think it was too early to substitute lamps for flags, as he thought it would be sundown by the time his train arrived at Chelsea and the lights could be seen more distinctly than flags. He said his car did not remain at Chelsea more than two minutes,—just long enough to load and unload passengers—and as his motorman's whistle signals were answered properly by the crew of the extra, he knew that they were advised of the following section.

Motorman Taylor of second 176 stated that his car left Jackson with an order to meet train 173 at Frisco and train 175 at Warsaw. When his train arrived at Frisco train 173 was not there and upon calling the dispatcher, he got an order to meet 173 at Hoppe instead of Frisco. After leaving Hoppe his car was running at top speed, about 55 miles per hour. He could not see the extra coming until it emerged from behind the trees on the south side of the track, just as his car turned the curve; he immediately threw off his power and reversed. The car had slowed down to a speed of 25 or 30 miles per hour at the time of the collision.

Conductor English of second 176 said his car was running 50 miles per hour after leaving Hoppe, and the speed had not been greatly reduced at the time of the accident. He said the sun was still up, and was shining just over the

top of the trees, making it hard to see from a train running against the sun. In his opinion it was too early to change the classification signals from flags to lamps. The weather was very clear and bright.

Train Dispatcher Peppler stated that when Conductor Buck called him from Chelsea and said that his train was ready to leave, he told him that the order which had been given him at Ann Arbor was still good. There was nothing said about train 176, and he did not know whether the second section of that train had passed Chelsea or not. He considered Conductor Buck and Motorman Fiske to be competent men; they were strictly responsible for the meet, and he did not think it reasonable for Conductor Buck to assume that the second section had gone. He should have been absolutely sure or had something on them before moving his train.

This accident was caused by westbound extra 1936 occupying the main track without authority on the time of regular eastbound train 176, for which Conductor Buck and Motorman Fiske were responsible. It was the obvious duty of these employees to be absolutely certain that the second section of train 176 had passed Chelsea before permitting their train to depart from that station. Rule 230 of the operating rules of this road reads as follows:-

"Trainmen must know when meeting or passing trains that the trains met or passed are the trains that should be met or passed at that point."

Contributing to the accident was the failure of Con-



ductor Kidwell and Motorman Rose to observe the requirements of Rule 87, relating to the display of signals, which reads as follows:-

"Night signals are to be displayed from sunset to sunrise. When weather or other conditions obscure day signals, night signals must be used in addition."

Night signals were substituted for day signals on the first section of train 178 at 7.35 p.m., before sundown, and at a time when the evidence indicates the weather was clear and bright. Had the green flags been allowed to remain in place it is probable that Conductor Buck would have observed them when he saw car 7791 leaving Chelsea, and would not have been misled into thinking it was the second section of the train.

Rule 105 of the operating rules of this road reads as follows:-

"Two green flags by day or two green lights by night displayed on the front end of a train, in places provided for that purpose, denote that the train is being followed by another running on the same schedule, and entitled to the same schedule rights as the train carrying the signals."

It is to be noted that this rule requires flags to be used by day only, whereas it has been found necessary on steam railroads generally, as noted in the standard code of train rules of the American Railway Association, to require lights to be displayed at night in addition to the day signals. When substitution of night for day signals is permitted it frequently happens, as in this case, that the substitution is made at the most convenient instead of the proper time; the

safer practice is the display of flags continuously and lights in addition during the required period.

The brackets provided for holding classification signals on the cars involved in this accident were located on the ends of the cars about four inches from the sides, and provide for holding either flags or lamps, but not both together. Signal lamps placed in the brackets project slightly beyond the side of the car and show lights only to the front and side.

Car 7776, which was running as second 176, was a wooden car, not equipped with anti-telescoping devices. In order to use it with low platform cars two channel irons reinforced with 3 x 1/2 x 4" angle iron were applied under the platform 18 inches apart, and covered over the end with 1/4" x 10" sheet steel to form an additional buffer. This car weighed 58,400 pounds and was 49'9" long over buffers. The vertical depth of buffer was 8" and from top of rail to bottom of buffer the distance was 41".

Car 1938 was a steel underframe car with buffer beams measuring 9" in vertical depth with bottom 43" from top of rail. This car weighed 84,180 pounds and was 50' long. The large casualty list was greatly contributed to by the comparatively light construction of car 7776, which permitted it to be telescoped by the heavier car of the freight train. Had this car been of all steel or steel underframe construction, it is believed the casualties would have been fewer.

Conductor Buck and Motorman Fiske were experienced

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and competent employees; they had been on duty eight hours at the time of the accident.

J.O.T.