

May 14, 1912.

IN RE INVESTIGATION OF ACCIDENT ON THE DETROIT,
JACKSON & CHICAGO RAILWAY, APRIL 15, 1912.

On April 15, 1912, there was a head end collision between two passenger trains on the Detroit, Jackson & Chicago (electric) Railway, near Dexter, Michigan, resulting in the death of two passengers and the injury of twenty-eight passengers and two employes.

This accident was reported by telegraph by the Detroit, Jackson & Chicago Railway Company on April 15, 1912, and after investigation the Chief Inspector of Safety Appliances reports as follows:

The Detroit, Jackson & Chicago Railway is an electric road and is single track where the accident occurred. The block signal system is not used; trains are operated by the timetable and train order system, meeting points being fixed by the timetable and, when necessary, changed by train orders. The single train order system is used, each crew receiving a separate order which contains only such information as pertains to the movement of its train.

Telephone booths are located at passing sidings. In each telephone booth there is a machine on the top of which is presented a train order blank; upon this the conductor writes the train order as it is given by the dispatcher and after the order has been filled out, repeated by the motorman, signed, and authorized by the dispatcher, a crank is turned, the original and one copy being unrolled for the crew, a third copy passing into the lower part of the machine which is locked and keys for which are in possession of the chief dispatcher and assistant superintendent. The dispatcher's copy of the order is written in pencil on a printed form, and when the order has been given and approved his copy is torn off from a pad and placed on a file.

When it becomes necessary for a train crew to receive orders, the conductor and motorman go into a booth, the conductor calls the dispatcher, gives his station, train number and name, and asks for orders. The dispatcher then gives the order to the conductor, writing down each word on a pad as he speaks it into the transmitter and the conductor writing it down on his form at the same time. The motorman then takes the telephone and reads to the dispatcher the order as written by the conductor, giving his time to the dispatcher; the conductor and motorman both sign the order and if it is satisfactory the dispatcher says "O. K.". While the motorman is repeating the order the dispatcher underscores each word on his copy as the motorman pronounces it. In transmitting and repeating the order figures are not duplicated in words and station names are pronounced and not spelled.

The trains involved in this accident were No. 108, north-bound, operated by Conductor Balsom and Motorman Clark, due to leave Detroit at 2:10 p.m., and No. 109, south-bound operated by Conductor Clark and Motorman Madnutt, due to leave Jackson at 3:10 p.m., each train consisting of one combination smoking car and coach. The regular meeting point for these trains fixed by the timetable is Dexter. On the date of the accident, however, train No. 109 left Jackson at 3:20 p.m., ten minutes late, and the dispatcher desired to change the meeting point from Dexter to Fink which is the next siding, 2.89 miles north of Dexter. Dispatcher Cain stated that he therefore issued the following order to train No. 109 at Jackson, 28 miles north of the point where the order was to be executed:

Order No. 161 to C. & M. Train No. 109 Car No. 7295 at Jackson. Meet train No. 42 Car No. 7769 at Clio. Meet train No. 108 Car No. 33 at Fink. Run second section train No. 109 Ann Arbor to Addison. Meet train No. 222 Car No. unknown at Waterman. Call at Ypsilanti. Completed at 3:14 p.m.

The order as received by the crew of train No. 109 reads as follows:

Order No. 161 to C. & M. Train No. 109 Car No. 7295 at Jackson. Meet train No. 42 car No. 7769 at Clio. Meet train No. 108 car No. 33 at Bates. Run second section train No. 109 Ann Arbor to Addison. Meet train No. 222 Car No. unknown at Waterman. Call at Ypsilanti. Completed at 3:14 p.m.

Train No. 108 left Detroit at 2:10 p. m., for Jackson. At Dunn, a station about thirty miles north of Detroit, the following order was received:

Order No. 165 to C. & M. Train No. 108 Car No. 33 at Dunn. Run second section Train No. 108 Dunn to Ann Arbor. Meet train No. 109 Car No. 7295 at Fink. Completed at 3:21 p.m.

This resulted in a lap order, the crew of train No. 108 holding an order making Fink the meeting point and the crew of train No. 109 holding an order making Bates the meeting point, Bates being a siding about eleven miles south of Fink. The trains collided at 4:04 p.m. The speed of train No. 108 was approximately fifteen miles per hour and of train No. 109 approximately thirty miles per hour at the time of the collision. Near the point where the accident occurred there are a number of slight curves and grades but the view is

comparatively good. At the time of the accident smoke from burning grass in a field adjoining the right-of-way was blowing across the track, and bright sunlight was shining directly in the eyes of the motorman of train No. 108. The motormen did not see the approaching trains until it was too late to stop; after applying the brakes, both motormen jumped from their cars.

The front platforms of both cars were crushed, allowing the car bodies to come together, but they were not telescoped. Most of the injuries were caused by passengers being thrown against the car seats and by flying glass.

The telephone circuit used for the transmission of train orders is 45 miles in length. Seven telephones are continuously out in on this circuit, and eighteen telephones located in booths may be out in as occasion requires. In an investigation of the telephones used on this circuit it was found that the transmission was very distinct.

There are two dispatching circuits, one from Ypsilanti to Jackson and one from Jackson to Detroit, one dispatcher directing the movement of trains on both of these sections. The second-trick dispatcher who was on duty at the time of this accident begins work at two p. m. and goes off duty at 9:30 p.m. During this period he controls the movement of trains on about 102 miles of single track where there are 52 passing sidings and upon which are operated during this period about 60 regular trains and three or four extra freight trains. On Friday, Saturday, Sunday and Monday, eight of these trains are run in two sections, between Addison and Ann Arbor, a distance of about 33 miles. During this period the train dispatcher has an assistant who keeps the train sheet.

At the time of the accident the employes involved had been on duty periods ranging from one to seven hours, and all of them had had sufficient time off duty before beginning work on the day of the accident. The records of all the men involved were good, although it is noted that on a previous occasion Dispatcher Cain had issued a lap order.

The cause of this accident was a lay order. Whether it was the result of a mistake in issuing, transmitting or receiving the order it is impossible to say. The records of the dispatcher show that he sent an order naming Fink as the meeting point, while the order held by the crew shows Bates as the meeting point, and any attempt to fix the responsibility for the accident resolves itself into a question of veracity between the men involved.

This accident shows clearly the inherent weaknesses of the train dispatching system used on this road. Accidents of this character will continue to occur until some adequate form of block signal system is adopted.