

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED AT A
CROSSOVER CONNECTING THE DAVENPORT, ROCK ISLAND &
NORTH-WESTERN RAILWAY WITH THE CHICAGO & NORTH
WESTERN RAILWAY AT CLINTON, IOWA, ON MAY 15, 1931.

July 2, 1931.

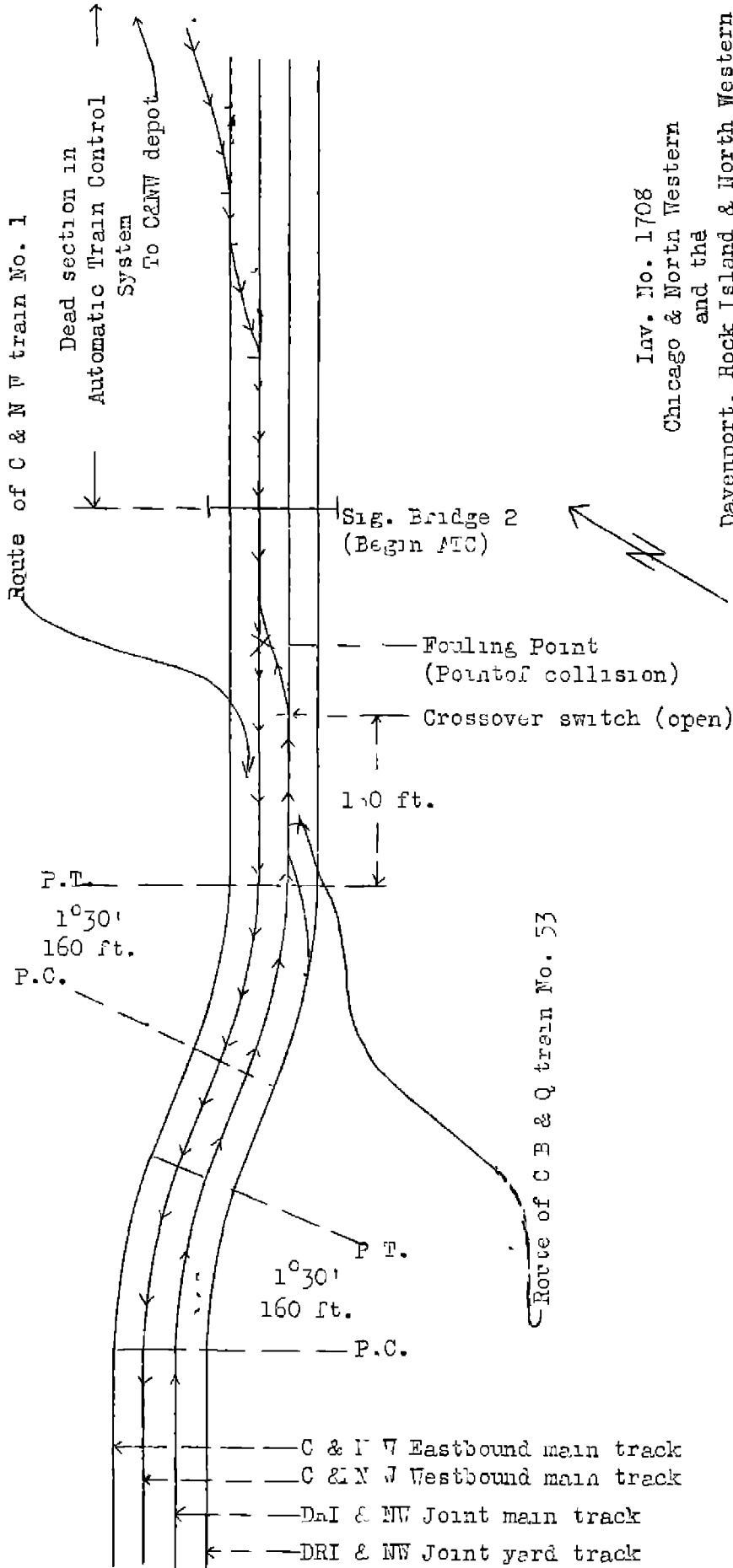
To the Commission:

On May 15, 1931, there was a side collision between a Chicago, Burlington & Quincy Railroad passenger train moving over the track of the Davenport, Rock Island & North-Western Railway, and a Chicago & North Western Railway passenger train moving over its own track, at Clinton, Iowa, which resulted in the injury of 11 passengers, 1 Pullman porter and 1 dining-car waiter.

Location and method of operation

This accident occurred near Fifteenth Avenue, Clinton, at a crossover which connects Subdivision 1 of the Iowa Division of the C&NWRy with the DRI&NWRy; trains of the CB&QRR operate over the DRI&NWRy under the rules of the latter-named road. In the vicinity of the point of accident the DRI&N Ry is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use, while the C&NWRy is a double-track line, left-hand running, over which trains are operated by time-table, train orders, and an automatic train-control system of the 2-speed continuous type, with two-indication visual cab signals; there were no wayside signals involved in the movement of the C&NWRy train. The accident occurred within yard limits, at a point about 2,000 feet west of the C&NWRy depot, at the west switch of the crossover, a facing-point switch for eastbound trains on the DRI&NWRy, over which track the CB&QRR train was moving at the time. Approaching the crossover from the west on the DRI&NWRy, the track is tangent for a considerable distance and then there is a 1° 30' curve to the right 160 feet in length, 100 feet of tangent, and a 1° 30' curve to the left 160 feet in length, following which the track is tangent for a distance of about 150 feet to the west switch of the crossover. Approaching the crossover from the east on the C&NWRy, the tracks bear gradually toward the left until a point just east of the crossover is reached, about at signal bridge 2, located 62 feet east of the east switch of the crossover, from which point they parallel the DRI&NWRy track on the north. The grade is practically level.

C. & N.W. YARD



Inv. No. 1708
 Chicago & North Western
 and the
 Davenport, Rock Island & North Western
 Clinton, Iowa
 May 15, 1931

The crossover is 192 feet in length; the switchstand of the west switch is of the Ramapo low automatic type, style 20-B, with banner and lamp, and is located between the DRI&NWRy track and the westbound track of the C&NWRy, and connected with the C&NWRy train-control system. The banner is 14 inches long and 6 inches wide, its center being 9 inches above the top of the rails; it is a dull red color. The center of the lamp is 21 inches above the rails. From the fireman's side of the cab of an eastbound engine on the DRI&NWRy track, it is difficult to see the dull red color of the banner, not only on account of the banner being so close to the ground, but because the view was also obstructed by a switch indicator 7 feet from it and by another switchstand of the same type 53 feet distant to the west, both being almost in line with the crossover switchstand; the view also was obscured by the westbound C&NWRy train involved moving in the opposite direction on the adjacent track around the curves. Trailing-point movements can be made through the west switch of the crossover when it is closed; the switchstand was equipped with a bar lock, with a DRI&NWRy switch lock on one end and a C&NWRy switch lock on the other end.

There is a dead section in the track circuits of the C&NWRy automatic train-control system that extends from the C&NWRy depot westwardly to signal bridge 2; an engine on this dead section receives a slow-speed cab signal indication, restricting speed to 17 miles per hour. With the west switch of the crossover on the DRI&NWRy track open, but with the east switch on the C&NWRy westbound track closed, such as was the case in this instance, the slow-speed indication does not change as the engine enters upon the track circuits of the automatic train-control system at signal bridge 2, but continues to be displayed until a point is reached on the westbound track of the C&NWRy about 1,300 feet west of the crossover; the engineman would not necessarily know just what caused the slow-speed indication to be displayed, but in the event the speed was increased to 20 miles per hour the air brakes would automatically apply and bring the train to a stop.

The weather was clear at the time of the accident, which occurred about 1.57 p.m.

Description

Westbound C&NWRy passenger train No. 1 consisted of 1 baggage car, 1 Pullman sleeping car, 1 dining car, 4 Pullman sleeping cars, and 1 observation car, in the order named, all of steel construction, hauled by engine

1622, and was in charge of Conductor Knight and Engineman Mansfield. This train left the C&NWRy depot at 1.52 p.m., according to the train sheet, seven minutes late, passed over the dead section in the automatic train-control track circuits under a slow-speed cab signal indication, entered train-control territory at signal bridge 2, at which point the slow-speed indication remained unchanged, due to the west switch of the crossover being open, and was passing the crossover at a speed estimated to have been between 12 and 18 miles per hour when the seventh and eighth cars in the train were struck on the south side by CB&QRR train No. 53.

CB&QRR passenger train No. 53, operating over the DRI&NWRy track as eastbound train No. 4, consisted of 1 combination dynamo, baggage and express car, 1 coach, and 1 Pullman sleeping car, in the order named, hauled by engine 2583, and was in charge of Conductor Hill and Engineman Linsley. This train left Camanche, 5.3 miles west of Clinton, at 1.47 p.m., according to the record, 12 minutes late, and on approaching Clinton it entered the west switch of the crossover and cornered the rear portion of C&NWRy train No. 1 while traveling at a speed estimated to have been reduced from 15 or 20 miles per hour to about 3 to 5 miles per hour.

CB&Q engine 2583 was not derailed and it was but slightly damaged. The rear vestibule of the seventh car in C&NWRy train No. 1 was also only slightly damaged, but the side was torn out of the eighth car for about two-thirds of its length and the car was turned over on its right side on the eastbound track, opposite the crossover.

Summary of evidence

Fireman Eckermann, of CB&QRR train No. 53, stated that his train was moving through the yard at a speed of about 20 miles per hour and that he was sitting on his seat box, maintaining a lookout ahead. Approaching the west switch of the crossover, his train started to pass the C&NWRy train, traveling in the opposite direction, but owing to the curve he could not see the position of the west crossover switch until his engine got beyond the curve, or when about 100 feet west of the switch, and then he saw by the switch points that the switch was open. Fireman Eckermann shouted a warning of danger and Engineman Linsley immediately applied the air brakes in emergency, speed being reduced to about 3 miles per hour by the time the engine struck the rear portion of the C&NWRy train. Engineman Linsley estimated the speed of his train to have been about 18 to 20 miles per hour when the fireman shouted a warning of danger, about 150 feet west of

the switch, and said that as a result of the emergency air-brake application which he made, his train had been brought almost to a stop. Shortly after the accident he inspected the west switch and found it locked with both locks, and lined for the crossover. Statements of Conductor Hill and Flagman Thompson developed nothing additional of importance.

Members of the crew of C&NWRy train No. 1 were unaware of anything wrong prior to the accident. Engineman Mansfield stated that his train left the depot and passed over the dead section of the train-control track circuits under a slow-speed indication and continued to so operate until the accident occurred. Fireman Poole was putting in a fire. Conductor Knight estimated the speed of his train at the time of the accident to have been not over 15 or 18 miles per hour, and said that the train-control apparatus was cut in on his engine and that he had the train-control key in his possession at the time. Flagman Ryan estimated the speed of his train to have been between 10 and 12 miles per hour at the time of the accident.

Switch Foreman Keith, of the CMStP&PRy, stated that his crew used the crossover on two occasions on the day of the accident, at 7.55 a.m. and at 9.15 a.m., in order to make deliveries to the C&NWRy. At about 11.35 a.m. his engine passed over the west switch of the crossover twice, in order to handle some cars eastbound over the DRI&NWRy; this was a facing-point movement, thus necessitating the west switch being lined for the DRI&NWRy track at that time; his engine was not again in the vicinity of the crossover until after the accident.

Engineman Montgomery, of CMStP&PRy westbound passenger train No. 53, scheduled as DRI&NW No. 53, which consisted of a gas-electric motor car and trailer, stated that his train left the Union station at Clinton at 12.28 p.m., passing over the crossover switch involved as a trailing-point movement, on the DRI&NWRy main track. As his train approached the switch he particularly noticed that the switch points were normal, saying that he had a student motor car operator with him and that he was pointing out to the student operator the points where trouble might be anticipated, and that he called particular attention to the crossover. As his train passed he did not observe anybody at the crossover switches, although he stated that he did see the CB&QRR switch engine standing on the DRI&NWRy siding close to the crossover switch involved.

Switch Foreman Mickey, of the CB&QRR, stated that his crew last used the crossover at 10 a. m., in order to make a delivery to the C&NWRy, following which his crew did not use the crossover any more that day. After completing the delivery, he personally closed and locked the switch, leaving it properly lined for the DRI&NWRy track. At the time CMStP&PRy westbound passenger train No. 53 left Clinton passenger station, the CB&Q switch engine was standing on the freight house lead track, located east of the passenger station, and he maintained that Engineman Montgomery, of CMStP&PRy train No. 53, was mistaken in saying that this switch engine was standing on the DRI&NWRy siding, close to the crossover switch, when the passenger train passed that point. Switch Foreman Mickey stated that it has been common practice for C&NWRy switch crews to deliver transfer cars over to the DRI&NWRy yard after the departure of C&NWRy train No. 1 and prior to the departure of C&NW No. 13, which are scheduled 20 minutes apart, and that he had seen the C&NWRy switchmen over in the DRI&NWRy yard before the departure of C&NWRy train No. 1, lining up the switches to be used in such movements. On the day of the accident, however, he did not see any train or switch crew in the vicinity of the crossover after he went to the round-house at about 1 p.m. Statements of Engineman Harrison and Switchman Niesslie corroborated those of Switch Foreman Mickey, including the location of their switch engine at the time CMStP&PRy train No. 53 left Clinton passenger station.

Roundhouse and Car Foreman Rupert, of the CB&QRR, stated that he also has frequently seen C&NWRy switchmen over in the CB&QRR yard, lining switches before they made delivery and before passing of C&NWRy trains Nos. 1 and 13 and CB&QRR train No. 53, scheduled as DRI&NWRy train No. 4. He arrived at the scene of the accident about five minutes after its occurrence and said that the west switch was lined and locked for the crossover. He also stated that one or two switchmen of the C&NWRy switch crew were there when he arrived, and that the C&NWRy switch engine was in the vicinity where they usually are when ready to make a crossover movement.

Switch Foreman Leslie, of the C&NWRy, stated that his crew used the crossover about 8.30 a.m., in order to make a delivery to the CB&QRR, returning about 8.40 a.m., at which time the switches were left properly lined. He did not again use the crossover prior to the accident, saying that when the accident occurred his crew and switch engine were working in the C&NWRy yard, located on the north side of the C&NWRy main tracks, coupling up CB&QRR

transfer cars on yard track 5, about opposite, and seven tracks over from where the collision occurred. Switch Foreman Leslie said that cars are rarely delivered to the CB&QRR ahead of C&NWRy train No. 1 and CB&QRR train No. 53; also that the DRI&NW main line switch is never lined for the crossover until they are ready to make the movement and then a helper lines the switch and keeps going to protect the movement. Switchmen Noonan and Chapman gave testimony similar to that of Switch Foreman Leslie, while Engineman Brunt also said that he had never seen C&NW switchmen lining up switches in advance of the actual making of a transfer movement.

Switch Foreman Walker, of the C&NWRy, stated that he had a transfer of Clinton, Davenport and Muscatine cars to West Clinton, and that this transfer movement preceded the movement of C&NWRy train No. 1 about 40 minutes, using the same route to the C&NWRy westbound main track. On departing, and at the request of the switch tender, the crossover switches were left lined in the position in which used later for the movement of C&NWRy train No. 1, and, as a matter of fact, Switch Foreman Walker stated that he did not use the crossover switch where the accident occurred.

Switch Tender Jones, who was on duty at a switch shanty located about 1,100 feet west of the C&NWRy depot, at Thirteenth Avenue, stated that he does not handle the switches for the crossover involved, but that he does handle the switches for the next crossover to the east, between the two C&NWRy main tracks, for regular passenger train movements, although not for switching movements. At his request the switches for the route subsequently taken by C&NWRy train No. 1 were left lined by the C&NW switch crew which handled the CD&MRy westbound transfer. Switch Terder Jones stated that the CD&MRy transfer left about 1.05 p.m. and that he watched it after it reached the C&NWRy westbound main track, saying that it did not and had no occasion to use the crossover involved. At about 1.40 p.m. he was standing on the C&NWRy westbound main track at a point about 300 feet east of signal bridge 2, however, he did not notice the position of the west switch of the crossover involved, nor did he see any unauthorized person in the vicinity prior to the accident. The last transfer made by a C&NW crew, using the crossover where the accident occurred, was at 8.20 or 8.30 a.m., by Foreman Leslie's crew.

Assistant to General Manager Parish, C&NWRy, inspected the west switch of the crossover at about 6.45 p.m., accompanied by Superintendent Henry, Assistant

Superintendent Hall, Assistant General Claim Agent Adamson, and Assistant General Superintendent Byington. The switch at that time was lined up properly for the DRI&NWRy main track and locked, but he was able to throw the switch for the crossover without removing the bar, or unlocking and removing the locks; In other words, it could be thrown, in locked position, either for the main track or for the crossover, and he said Trainmaster Goodman, of the CB&QRR, was on the ground at this time and observed the switch being thrown as outlined above. Subsequent investigation by the inspectors of this Bureau confirmed the fact that this switch could be thrown manually without unlocking, and it also was found that there were three other switches of this particular type in main line service in this vicinity which could be thrown in a similar manner.

Conclusions

The direct cause of this accident was an open crossover switch.

west

The/switch of the crossover between the DRI&NWRy and the C&NWRy is connected to the automatic train-control system of the C&NWRy. As a result of this switch being open, westbound C&NWRy train No. 1, which was making a through movement on the C&NWRy, continued to receive a slow-speed cab signal indication, and the engineman was operating his train in obedience to this indication when the accident occurred. The view of the switch from the fireman's side of CB&QRR train No. 53, (DRI&NWRy train No. 4) moving eastward on the DRI&NWRy main track, was considerably obstructed by westbound C&NWRy train No. 1 moving around the curves in the opposite direction on the adjacent track, as well as by a switch indicator and another switchstand nearby. The engine crew of CB&QRR train No. 53 were on the alert, however, and saw the open facing-point crossover switch practically as soon as it was possible to have done so, with the result that the speed of their train was very considerably reduced prior to entering the crossover and colliding with the rear portion of C&NWRy train No. 1; there is no question but that the attention to duty and quick action of the CB&QRR engine crew prevented the results of this accident from being considerably more serious than was actually the case. After the accident the switch was found to be lined for the crossover and locked, but exactly when or by whom the switch was opened could not be ascertained. The last time the switch was known to have been used for a facing-point movement was about 11.35 a.m., when a CMStP&PRy

switch engine passed over it eastbound on the DRI&NWRy main track with some cars, and the last time it was used for a trailing-point movement was about 12.30 p.m., when CMStP&PRy westbound passenger train No. 53 passed over it on the DRI&NWRy, at which time the switch points were observed to be in normal position, lined for the DRI&NWRy main track. Both of these movements were subsequent to the last time the crossover itself was known to have been used by any of the switch crews of various roads working in the vicinity by a CB&Q crew about 10 a.m.

No unauthorized person was observed in the vicinity of the crossover prior to the accident, and there was no indication of malicious tampering, and under the circumstances, while it was clear that this particular type of switch could be thrown for the crossover without removing the bar or unlocking either of the two locks, yet it is not believed the type of switch had any direct bearing on the occurrence of this accident. Just how the switch came to be open, however, was not determined.

It appeared that there were four switchstands in service in this vicinity of the same type as that involved in the accident, and that all of these main line switches could be operated manually without unlocking, although considerable effort was required to do so. Subsequently it is understood that decision has been reached to substitute a rigid stand for those now in use. This elimination of main line stands which can be operated without unlocking is to be commended.

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.