

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

CHICAGO & NORTH WESTERN RAILWAY

EVANSTON, ILL.

July 2, 1937

INVESTIGATION NO. 2185

SUMMARY

INV-2185

Railroad: Chicago & North Western
Date: July 2, 1937
Location: Evanston, Ill.
Kind of accident: Rear-end collision
Trains involved: Passenger : Passenger
Train numbers: First No. 211 : Second No. 211
Engine numbers 1556-1540 : 1544
Consist: 12 cars : 11 cars
Speed: Just pulling away : 8-20 m.p.h.
from station
Track: 2° left curve; grade 0.192 percent
ascending westward.
Weather: Clear, daylight.
Time: 6:20 p.m.
Casualties: 214 injured.
Cause: Failure properly to observe and obey
automatic block signal indications.

August 5 ,1937.

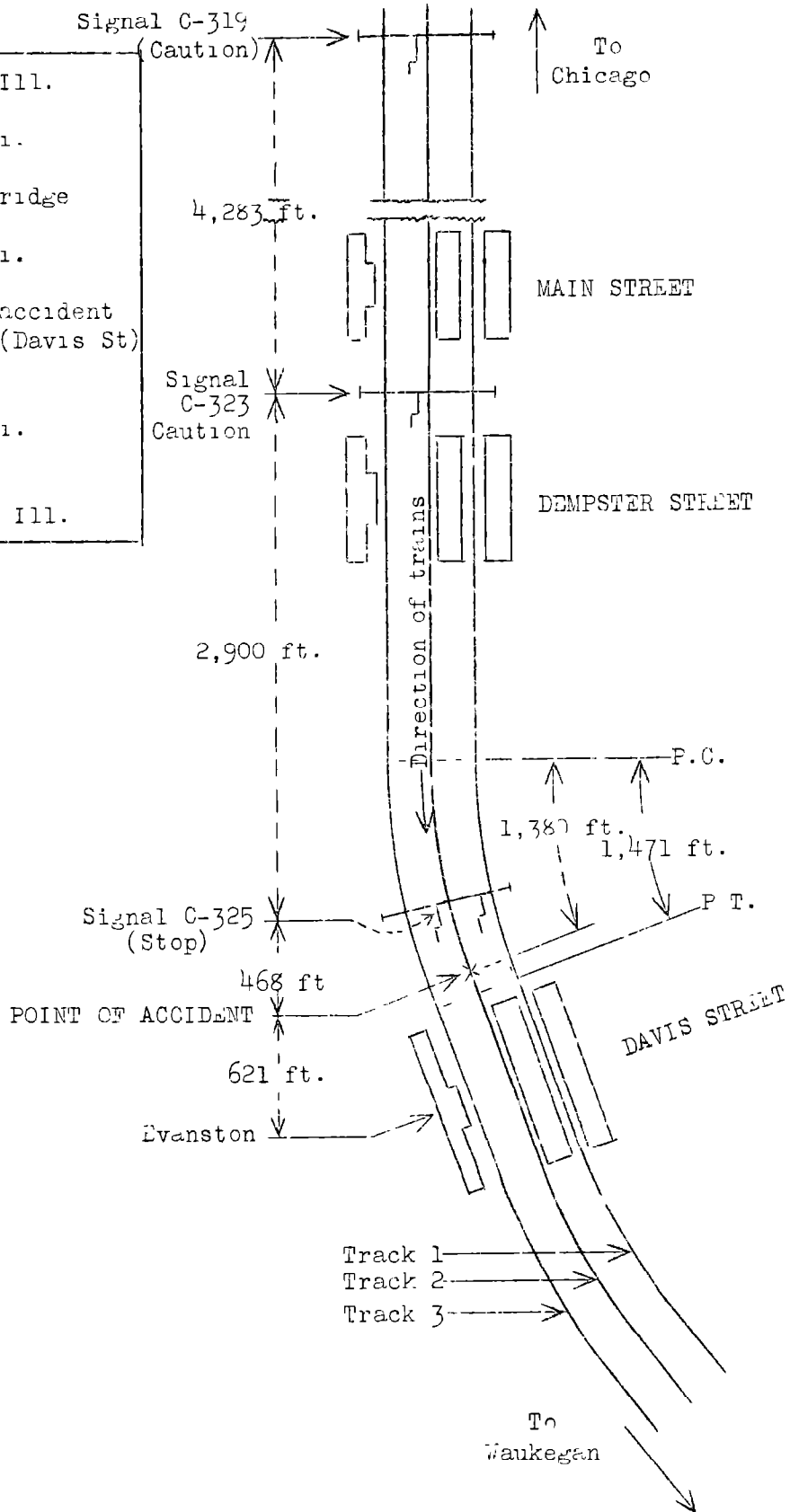
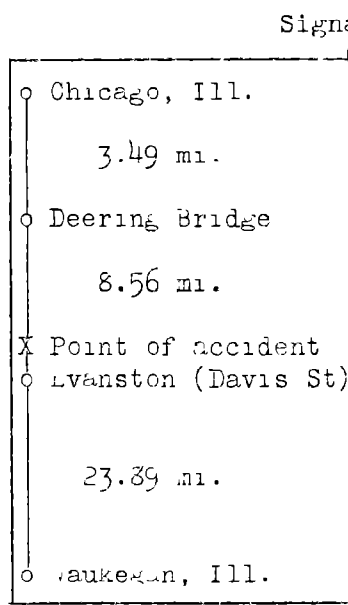
To the Commission:

On July 2, 1937, there was a rear-end collision between two passenger trains on the Chicago & North Western Railway at Evenston, Ill., which resulted in the injury of 196 passengers, 14 dining car employees, 1 Pullman employee, and 3 railway employees. This accident was investigated in conjunction with the Illinois Commerce Commission

Location and method of operation.

This accident occurred on Subdivision 1 of the Wisconsin Division, which extends between Chicago and Waukegan, Ill., a distance of 35.94 miles; in the vicinity of the point of accident this is a 3-track line, over which trains are operated by timetable, train orders, and an automatic block-signal system. Timetable directions are used in this report. The tracks are numbered from south to north; track 1, westward movements; track 2, the center track, both westward and eastward movements; track 3, eastward movements. The accident occurred on track 2 at a point about 600 feet east of the passenger station at Davis Street, and 468 feet west of signal C-325. Approaching this point from the east track 2 is tangent for approximately 1.82 miles, followed by a 2° curve to the left 1,471 feet in length; the accident occurred on this curve at a point 1,380 feet from its eastern end. The grade is slightly undulating, being 0.192 percent ascending westward at the point of accident.

The automatic block signals are of the 3-position, upper-quadrant, semaphore type, electrically lighted, mounted on signal bridges spanning the tracks. Track 2 is signalled for movements in each direction. The signals involved are signals C-325, C-323 and C-319, located 468 feet, 3,368 feet and 7,651 feet, respectively, east of the point of accident. When signal C-325 displays a stop indication, which was the case in this instance, signals C-323 and C-319 display approach indications, requiring that the engineman be prepared to stop at next signal and train exceeding 30 miles per hour must at once reduce to that speed.



Inv. No. 2185
Chicago & North Western Ry.
Evanston, Ill.
July 2, 1937

The rear of a train standing at the point of accident could be seen from the engineman's side of an approaching west-bound engine for a distance of 330 feet, and from the fireman's side for 1,260 feet. The stop indication of signal C-325 could be seen through the front windows from both sides of the cab, for a distance of 5,400 feet, and this indication was continuously visible from a point 4,330 feet east of the signal until the signal was reached.

The weather was clear and the sun was shining at the time of the accident, which occurred about 6:20 p.m.

Description

Train First No. 211, a west-bound passenger train, consisted of 1 baggage car, 5 Pullman sleeping cars, 1 diner, 4 Pullman sleeping cars and 1 lounge car, in the order named, all-steel equipment, hauled by engines 1556 and 1540, coupled, and was in charge of Conductor Vebber and Enginemen Miller and Toomey. This train left Chicago at 6 p.m., according to the train sheet, on time, passed Deering bridge, the last reporting station, 3.49 miles west of Chicago, at 6:08 p.m., and on reaching Evanston, 8.56 miles beyond, made a station stop, at 6:18 p.m., according to members of the crew, 2 minutes ahead of time. Passengers were taken aboard and the train had just started away from the station when the rear end was struck by the second section.

Train Second No. 211, a west-bound passenger train, consisted of 2 baggage cars, 1 chair car, 1 coach, 1 smoker, 3 coaches, 1 chair car, 1 parlor car and 1 lounge car, in the order named, all-steel equipment, hauled by engine 1544, and was in charge of Engineman Schermerhorn and Fireman Steiner. This train left Chicago at 6:04 p.m., according to the train sheet, 4 minutes behind the first section, passed Deering bridge at 6:11 p.m., 3 minutes behind it, passed signals C-319 and C-323, both of which were displaying approach or caution indications, passed signal C-325, which was displaying a stop indication, and collided with Train First No. 211 while traveling at a speed variously estimated to have been between 8 and 20 miles per hour.

None of the equipment in either train was derailed; the rear car of the first section was considerably damaged, and nine other cars in that train were slightly damaged. Engine

1544 and nine cars of the second section were also damaged to some extent. The railway employees injured were the conductor and brakeman of Train First No. 211, and the helper-conductor of Train Second No. 211.

Summary of evidence.

Flagman McCosker, of Train First No. 211, stated that he knew Train No. 211 was running in two sections. When his train made the regular stop at Davis Street Station, Evanston, he immediately got off with full flagging equipment, crossed the tracks behind his train as the curve was in favor of the fireman of the following train, and remained on the ground at the rear of his train until it was ready to depart. He said that it was not customary when making a regular station stop for the flagman to place torpedoes on the track and that the rules did not require it. He saw the semaphore arm of signal C-325 displaying a stop indication behind his own train while it stood at Davis Street. The station work was completed in about $1\frac{1}{2}$ or 2 minutes and just as his train was ready to depart he heard the following train approaching. He immediately ran back, giving stop signals with a red flag, but these were not answered and when he had reached a point about 150 or 180 feet behind his train he stepped off the track on the fireman's side, and the following train passed him at a speed of about 15 to 18 miles per hour and the collision occurred. The fireman jumped from the engine when near him.

Statements of Enginemen Miller and Toomey, Firemen Kauffman and Withers, Conductor Vobber and Brakeman Klein, of Train First No. 211, were to the effect that they were not aware of anything wrong until the collision occurred, at which time their own train had moved forward scarcely one coach length. Brakeman Klein was looking out from the vestibule of the second car and saw the following train approaching, but thought that it was on the adjacent track.

Engineman Schermerhorn, of Train Second No. 211, stated that the air brakes were tested and he made a running test leaving the terminal at Chicago; the brakes worked properly en route. He saw the first section of the train leave the terminal a few minutes ahead of his own train, knew that it was only a short distance ahead, and that Davis Street, Evanston, was a scheduled stop for Train No. 211. Signals C-319 and C-323 both displayed caution indications, and he understood that the rules required him to operate his train prepared to stop at the next signal and to reduce speed not to

exceed 30 miles per hour. It was daylight and the sun was shining, and he knew from the two caution signal-indications passed that his train was overtaking the first section. When approaching these two signals he had eased off on the throttle sufficiently, he thought, to permit the indications to clear or to assure that he would be able to stop before reaching the next signal. At no place had his train exceeded a speed of 45 miles per hour. He first applied the brakes, making a 15-pound service reduction, at Dempster Street station, located 1,650 feet east of signal C-325, saying that he was acquainted with the location of the signal and knew at the time his engine passed signals C-319 and C-323 that signal C-325 was then displaying a stop indication. He thought that at the time he applied the brakes at Dempster Street, the fireman called a red indication, on signal C-325 on the curve ahead, the view being more favorable from fireman's side, and he estimated the speed at that time to have been about 30 or 35 miles per hour. Engineman Schormerhorn said that he kept the air brakes applied and later on Fireman Steiner informed him that the stop indication of signal C-325 had cleared. The engineman therefore permitted the train to continue at the same speed but with the air brakes still applied, and made no further effort to stop at signal C-325, as the application in effect was sufficient to make the station stop at Davis Street. He then stood up and leaned out of the cab window in order to verify the indication of the signal which the fireman said had "cleared up". When about five car lengths from signal C-325 he saw that it was displaying a stop indication, and also saw the rear end of the train ahead, at which time the speed of his own train was about 20 or 25 miles per hour. He immediately moved the brake valve to emergency position, no release having been made since the first service application, and opened the sanders, but it was then too late to avert the accident. Both he and the fireman jumped just prior to the collision, and the engineman estimated the speed to have been about 8 or 10 miles per hour when it occurred. He saw the flagman of the first section on the platform at the rear end of that train, which train apparently had just started to pull away from the station. Engineman Schormerhorn stated that he had obtained his proper rest and that he was in normal physical and mental condition prior to starting the trip involved. It was customary for him to rely upon his fireman to call signal indications. He said that possibly he had misjudged the speed of his train, due probably to the fact that he had made only one trip in passenger service this year, and that it might have been considerably greater than 30 miles per hour when approaching

signal C-325. He thought that he must have had in mind making the station stop. He attributed his failure to stop as being due to the fact that the fireman had told him that the indication of signal C-325 had cleared.

Engineman Schermerhorn is 51 years old; he was employed as fireman on September 20, 1907, being promoted to engineman on September 6, 1912. He was last examined on the book of rules on February 6, 1935, and last underwent physical examination on February 22, 1937. This was his first trip over this portion of the road in passenger service during the year 1937, having completed an eastward trip earlier in the day and being on the return trip westward when the accident occurred.

A compilation of Engineman Schermerhorn's passenger service between Milwaukee and Chicago for the period January 1, 1927, to July 2, 1937, is as follows:

YEAR	NUMBER OF ONE-WAY TRIPS
1927	10
1928	17
1929	15
1930	14
1931	21
1932	0
1933	2
1934	0
1935	16
1936	11
1937	1 (Was on return trip when acci- dent occurred.)

Fireman Steiner, of Train Second No. 211, stated that he had had proper rest prior to the trip involved and was in normal condition in every respect. He knew that Evanston was a regular stop for all sections of Train No. 211. Approaching Evanston, he observed and called the caution indications displayed by signals C-319 and C-323, also the stop indication of signal C-325, which the engineman repeated, and then the engineman applied the brakes; the fireman did not notice any release of the brakes having been made. During most of this time he was riding on the seat box and the speed of the train was about 35 or 40 miles per hour. After calling the stop indication of signal C-325 and observing that the track ahead was unoccupied as far as the signal bridge, Fireman Steiner got down on the deck and put in a fire. Upon returning to his seat box he observed

the signal governing movements on track 1 to his left, which was located on the same signal bridge as signal C-325 governing movements on the track his own train was using. He called the indication of the signal he had erroneously observed, which was displaying a caution indication, momentarily overlooking the fact that it did not govern the movement of his train at which time he was about 10 or 15 car lengths from the signal, but immediately after doing so he discovered his error and at the same time saw the rear end of the train ahead and called to his engineman to stop. The engineman then immediately applied the brakes in emergency, following which they both jumped while the train was moving about 10 or 12 miles per hour. Fireman Steiner is 36 years old; he entered the service as fireman on October 20, 1922. He was last examined on the book of rules on November 2, 1929, and last underwent physical examination on April 29, 1936.

Statements of Conductor Dugran, Helper-Conductor Ring, Baggage man Miller and Brakemen Gallup and Winn, who were on Train Second No. 211, were similar to those of the engineman and fireman as to what transpired, except that the conductor, who was in the fourth car, said that he noticed the train reduce speed from a brake application at about Main Street, then the brakes were released, and an emergency application was made immediately prior to the accident. Estimates of the speed at the time of the collision, made by these employees, ranged from 10 to 20 miles per hour. Brakeman Winn made the terminal air brake test about 15 minutes prior to departure from Chicago station, at which time there were two engines coupled to the train. He gave the prescribed communicating whistle signal from the head car, then walked to the rear of the train and observed that the brake was set on each car, following which he gave the communicating whistle signal from the rear end to release brakes; he then walked to the head end and observed that the brake was released on each car. He stated that he then notified Engineman Schermerhorn that the brakes were all right, but said nothing to the lead engineman. About 5 minutes prior to departure he observed that the lead engine had been cut off the train; however, no further air brake test was made. He did not know that when a train was double-headed the brakes were controlled from the leading engine. It did not occur to him that cutting off the lead engine resulted in a change in the make-up of the train, and at that time he did not know that under the requirements of the rules this necessitated making a terminal test of the air brakes after the make-up was changed. Since the investigation, however, he understood that this was required.

Discussion

Engineman Schermerhorn was making his first trip in passenger service over this portion of the road during the year 1937, having completed an eastward trip from Milwaukee to Chicago earlier in the day and being on the return trip when the accident occurred. He saw the first section of the train leave Chicago and knew that it was only a short distance ahead; also he knew that Davis Street station, Evanston, was a regular stop for all sections of Train No. 211. Visibility was good and he saw the caution indications displayed by signals C-319 and C-323 and fully understood that he was required to reduce speed to 30 miles per hour and be prepared to stop at the next signal, and he also knew that his train was overtaking the first section. The air brakes worked properly en route. He thought that he eased off on the throttle sufficiently approaching the two caution signal indications to allow enough time for the indications to clear up or to enable his train to be stopped before reaching the next signal. He knew that signal C-325 was displaying a stop indication and said that both he and the fireman called the indication, the curve being in favor of the fireman. Engineman Schermerhorn said that he made a 15-pound brake pipe reduction at Dempster Street station, located 1,650 feet east of signal C-325, and estimated the speed to have been about 30 or 35 miles per hour at the time. He claimed that he kept the brakes applied, but he did not take advantage of the reserve braking power available in order to stop at signal C-325 as the fireman informed him that the stop indication had cleared up. The engineman said that he customarily relied upon his fireman to call signal indications; however, he claimed that he stood up and leaned out of the cab window in order to verify the indication himself. When about five car lengths from signal C-325, at which time the speed was about 20 or 25 miles per hour, he saw the signal displaying a stop indication and immediately moved the brake valve from service to emergency position, and opened the sanders, but it was then too late to avert the accident and his engine ran by signal C-325 a distance of 468 feet and collided with the rear end of the first section which was just pulling away from Davis Street station, Evanston. The fireman did not notice any release made of the brakes prior to the accident, but the conductor, who was in the fourth car, said that the brakes were released after the service application was made, following which they were applied in emergency. Vision tests disclosed that signal C-325 could have been seen through the front window on

the engineman's side of the cab, continuously for a distance of 4,380 feet. Left-handed running is used on this railroad and the fireman said that after he and the engineman first called the stop indication of signal C-325 to each other, he observed that the track was unoccupied as far as the signal bridge and then got off the seat box and worked on the fire. When he got back on his seat box he mistook the indication of the signal governing movements on westward track 1 on his left, for the signal over track 2 upon which his own train was running, and in error he called the caution indication of the signal he had observed, when about 10 or 15 coach lengths from it. Immediately after so doing he saw the stop indication displayed by signal C-325, realized his mistake and at the same time saw the rear end of the first section and called to the engineman to stop, but it was too late to avert the accident. Engineman Schermerhorn said that as he had made only one trip in passenger service this year, he must have underestimated the speed and that it must have been considerably more than 30 miles per hour when approaching signal C-325. He thought he had in mind making the station stop at Evanston, and believed the accident would not have occurred had the track been tangent, attributing his failure to stop as being due to the fact that the fireman misinformed him regarding the signal indication.

This accident is of the type which automatic train control or cab signal devices are designed to prevent; had either of these systems been in use, it is probable that the accident might have been prevented. During the thirty-day period immediately preceding the date of this accident there was an average movement of approximately 110 passenger trains per day in this territory. In view of this volume of traffic and the circumstances in this case, the carrier should give careful consideration to the question of whether additional protection should be provided on this portion of its line.

Conclusions

This accident was caused by failure properly to observe and obey automatic block signal indications.

Respectfully submitted,

W. J. PATTERSON,

Director.