

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3610
THE NEW YORK, NEW HAVEN AND HARTFORD
RAILROAD COMPANY
IN RE ACCIDENT
AT STAMFORD, CONN., ON
JANUARY 28, 1955

SUMMARY

Date: January 28, 1955

Railroad. New York, New Haven and Hartford

Location: Stamford, Conn.

Kind of accident: Collision

Equipment involved: Out of electrically : Passenger train
propelled passen-
ger units

Train number: : N50

Consists 2 electrically : 2 electrically
propelled passen- propelled
ger units passenger
units

Estimated speeds Standing . Undetermined

Operation Interlocking

Tracks: Five; tangent, 0.2 percent descending
grade eastward

Weather: Clear

Time: 8:12 p. m.

Casualties. 36 injured

Cause. Improperly lined route through an
interlocking and failure to control
speed of train as required by signal
indication

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3610

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY

March 4, 1955

Accident at Stamford, Conn., on January 28, 1955, caused
by an improperly lined route through an interlocking
and failure to control speed of train as required
by signal indication.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

On January 28, 1955, there was a collision between a
passenger train and standing passenger-train equipment on
the New York, New Haven and Hartford Railroad at Stamford,
Conn., which resulted in the injury of 55 passengers and 3
train-service employees. This accident was investigated in
conjunction with a representative of the Connecticut Public
Utilities Commission.

¹

Under authority of section 17 (2) of the Interstate Com-
merce Act the above-entitled proceeding was referred by the
Commission to Commissioner Clarke for consideration and
disposition.

Interlocking Limit
Track 5 ↑

To New Canaan, Conn. ↑

2,000
ft.

Tangent

PASSENGER WILKS

To Boston, Mass. ↑

Signal Station
38

Point of
Accident
Interlocking Limit --- 176 ft. 226 ft.
Track 7

Switch 19 ↓

210
ft.

3 (L) ↓

New Canaan, Conn.
7.80 mi.
Stamford, Conn.
(Point of Accident)

Tangent
80
ft.

1,700+
ft.

P.T. X
begin curve

34 ft.

P.C. X

200 ft.

Main Track 5 X
70 ft.

Stamford ↓

To New York, N. Y. ↓

Report No. 3610
New York, New Haven and Hartford R.R. Co.
Stamford, Conn.
January 28, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the New Haven Division extending between Stamford and New Canaan, Conn., 7.86 miles, a single-track line over which trains are operated by timetable, train orders, and a manual block-signal system. A catenary system is provided for the electric propulsion of trains. In the vicinity of Stamford the New Canaan line parallels that portion of the division designated as the Shore Line on the north. The main tracks of the Shore Line from north to south are designated as tracks Nos. 3 and 1, westward, and tracks Nos. 2 and 4, eastward. A station for passenger traffic at Stamford is located on the north side of the Shore Line adjacent to track No. 3. In the vicinity of the point of accident two tracks designated from north to south as tracks Nos. 7 and 5 parallel track No. 3 on the north, and yard tracks parallel track No. 4 on the south. Track No. 5 terminates at a point immediately east of the station building, and the west end of this track is used as a station track. A platform for passenger traffic extends eastward between tracks Nos. 5 and 3 a distance of approximately 350 feet from the station. Track No. 7 diverges from track No. 5 and extends eastward from switch 19, located 1,199 feet east of the west end of that track. Switch 19, which is facing-point for east-bound movements, is power-operated and is controlled from Signal Station 38, located immediately south of the yard tracks on the south side of the Shore Line tracks and approximately 1,700 feet east of the Stamford station. Passenger trains on the New Canaan line which originate or terminate at Stamford use track No. 5 for movements to and from the station. Track No. 7 is used for the storage of equipment. The accident occurred on track No. 7 at a point 1,495 feet east of the station and 226 feet east of switch 19. From the west on track No. 5 there are, in succession, a tangent 250 feet in length, a reverse curve, having a maximum curvature of $5^{\circ}20'$, 145 feet, and a tangent 804 feet to switch 19 and a considerable distance eastward. The grade for east-bound trains is 0.2 percent descending at the point of accident.

Interlocking signal 6L, governing east-bound movements on track No. 5, is located 436 feet west of the point of accident. This signal is of the dwarf semaphore type and displays two aspects. The aspect applicable to this investigation and the corresponding indication and name are as follows:

<u>Signal</u>	<u>Night Aspect</u>	<u>Indication</u>	<u>Name</u>
6L	Yellow	Proceed at restricted speed within interlocking limits.	Restricting signal.

The signal displays yellow as its most favorable aspect. This aspect is displayed when the route is lined either for movement on track No. 5 or for movement from track No. 5 to track No. 7, provided the route is unoccupied within interlocking limits. At the time of the accident the controlling circuits were so arranged that when a movement passed the signal while the signal was displaying an aspect to proceed, the indication of the signal changed to Stop. If the lever controlling the signal remained in position to cause the signal to display an aspect to proceed, the indication of the signal automatically changed to Proceed-at-restricted-speed when the movement cleared interlocking limits.

Interlocking limits at Signal Station 38 extend between signal 6L and a point 2,210 feet east of the signal on track No. 5, and between switch 19 and a point 176 feet east of the switch on track No. 7. The interlocking is of the electric type. The control machine is located on the second floor of the interlocking station and is provided with 44 working levers. Visual indicators on a track model board in the interlocking station show track occupancy of each track section by the illumination of two red lights. When a track section is unoccupied the lights are extinguished. A white indicator light at each signal lever is illuminated when the signal controlled by that lever displays an aspect to proceed.

This carrier's operating rules read in part as follows:

DEFINITIONS.

RESTRICTED SPEED.--A speed not exceeding 15 miles per hour prepared to stop short of train, engine, obstruction, or switch not properly lined and to look out for broken rail.

611. Unless otherwise provided, signals must be kept in the position displaying the most restrictive indication, except when displayed for an immediate movement.

614. Unless otherwise provided, a signal must be restored so as to display the most restrictive indication as soon as the train or engine for which it was cleared, has passed it.

The maximum authorized speed for passenger trains between Stamford and New Canaan is 40 miles per hour.

Description of Accident

About 8:09 p. m., No. N45, a west-bound first-class passenger train, arrived at Stamford and stopped at the station platform at the west end of track No. 5. It consisted of four electrically propelled passenger-train units of lightweight steel construction. The rear two units were unoccupied, and immediately after the train stopped they were detached. These units were then moved eastward. They were being operated from the control compartment at the east end of unit 4464, which was at the forward end in the direction of movement. These units passed signal 6L, which indicated Proceed-at-restricted-speed, were diverted to track No. 7 at switch 19, and stopped immediately west of equipment stored on that track. The west end of the westward unit which had been detached from the train was 226 feet east of switch 19 and 50 feet east of the east limit of the interlocking. A few seconds later the west end of this equipment was struck by No. N50.

No. N50, an east-bound first-class passenger train en route from Stamford to New Canaan, consisted, from east to west, of an electrically propelled passenger-baggage unit and an electrically propelled passenger unit. The equipment and the crew of this train had arrived at Stamford on No. N45. On the eastward trip the train was being operated from the control compartment at the baggage end of unit 4672, the first unit of the train. This train departed from Stamford at 8 11 p. m., 11 minutes late, passed signal 6L, which indicated Proceed-at-restricted-speed, was diverted from the intended route on track No. 5 and entered track No. 7 at switch 19, and while moving at an undetermined speed it collided with the west end of the equipment last routed to that track.

None of the equipment was derailed. The two units which were last placed on track No. 7 were forced against the equipment previously placed on that track. The west end of the equipment detached from No. N45 and the east end of the first unit of No. N50 were considerably damaged, and the second unit of No. N50 was somewhat damaged.

The engineer, the conductor, and the flagman of No. N50 were injured.

The weather was clear at the time of the accident, which occurred about 8:12 p. m.

The units involved are equipped with D-22-ME type electro-pneumatic brake equipment. A safety-control feature which operates in conjunction with the controller is provided. If downward pressure against spring tension on the controller handle is released, the handle returns automatically to "Off" position, power to the traction motors is cut off, and an emergency application of the brakes is initiated. The units are not equipped with speed recording or indicating devices.

Discussion

No. N45 and No. N50 regularly are operated by the same crew. Equipment which arrives in No. N45, due at Stamford at 7:52 p. m., is dispatched in No. N50, scheduled to depart from that point at 8 p. m. On the day of the accident No. N45 arrived at Stamford 17 minutes late. Immediately after it arrived the rear two units were detached from the train and moved eastward. Both the vestibule lights and the interior lights of these units were lighted. Signal 6L indicated Proceed-at-restricted-speed, and this equipment was routed to track No. 7 at switch 19. The engineer who operated this equipment said that the collision occurred a few seconds after the units had been stopped preparatory to being coupled to other equipment stored on track No. 7.

Immediately after No. N45 arrived at Stamford the engineer cut out the brake valve and control apparatus at the west end of the train. He then proceeded through the two units which remained at the platform to the control compartment at the east end of unit 4762 and cut in the brake valve and control apparatus in preparation for the eastward movement as No. N50. He said that the two units at the east end of train No. N45 had been removed before he reached the control compartment of unit 4762. After the passengers of the arriving train had been discharged the conductor proceeded to the station. After he had registered the arrival of No. N45 and the departure of No. N50 he returned to the train and gave the engineer a signal to proceed. According to the dispatcher's record of the movement of trains No. N50 departed from Stamford at 8:11 p. m., 11 minutes late. The engineer said that an initial terminal train-brake test was not made before the train departed from Stamford.

As this train was approaching the point where the accident occurred the engineer was alone in the control compartment at the front of the first unit. The conductor and the flagman were in the rear unit. The brakes functioned properly when a running test was made soon after the train departed from the station. The headlight, which had been lighted brightly, was dimmed because of an approaching train. Signal 6L indicated Proceed-at-restricted-speed. The engineer said that the controller was in series position, and he estimated that the speed was 10 to 13 miles per hour. Switch 19 appeared to him to be lined for movement on track No. 5. When the train was diverted to track No. 7 at this switch he released the handle of the controller to effect an emergency application of the brakes. He observed the units which had entered track No. 7 immediately ahead of his train and left the control compartment before the collision occurred. The other members of the crew said that the speed appeared to be normal after the train departed from the station. They estimated that it was not in excess of 15 miles per hour when the brakes became applied in emergency immediately before the accident occurred.

The operator in charge of Signal Station 38 said that he instructed the leverman as to the movement of the rear two units of No. N45 which were to be removed from the train and routed to track No. 7. He said that this was a routine movement of daily occurrence and he did not consider it necessary to give the leverman further instructions as to the movement of No. N50, a regular train. After No. N45 arrived at Stamford the operator was seated at his desk facing northward with the interlocking machine and model board at his back. He said that because of a train passing on the Shore Line tracks he did not see the units enter track No. 7. The leverman said that immediately after No. N45 arrived at the station he lined the route for the movement of the rear two units to track No. 7. At the time the two units entered track No. 7 he was engaged in arranging for other movements, and he did not notice that the units were moving through the interlocking. He did not restore the lever controlling signal 6L to normal position, and when the two units cleared the interlocking limits the indication of signal 6L automatically changed from Stop to Proceed-at-restricted-speed. Until the collision occurred the leverman was not aware that No. N50 had followed the units into track No. 7. The signal supervisor said that when he arrived at the scene of the accident about 30 minutes after it occurred he found switch 19 lined for movement to track No. 7 and switch lever No. 19 in reverse position. He said that signal lever No. 6 had been restored to normal position and signal 6L then indicated Stop.

On January 31, 1955, tests were conducted on track No. 5 at Stamford with two electrically propelled units of the type here involved. In one test the units, under full application of power, attained a speed of approximately 40 to 45 miles per hour in a distance of 1,035 feet. The engineer then released the handle of the controller to effect an emergency application of the brakes, and the train was stopped in a distance of 642 feet. This test was repeated with similar results. In a third test the train was stopped by a service application from the same approximate speed in a distance of 692 feet. A safety-control application made at a speed of approximately 15 miles per hour stopped the train in a distance of 50 feet. From the results of these tests, it appears that No. N50 passed switch 19 at a speed considerably in excess of 15 miles per hour, the maximum speed authorized by the signal indication under which the train was being operated.

The equipment of No. N50 was tested at the Van Nest Shops of the carrier on January 29, 1955. Because the units could not be energized an electric locomotive was coupled to them to charge the air brake system. The brakes were then tested, and they functioned properly. The safety-control feature was tested and it functioned as intended. The brake piston travel of the left No. 1 brake cylinder of the second unit was 5-1/8 inches. All others were within the maximum of 5 inches proscribed by the carrier, and no defective condition of the brake apparatus was found.

The rules of this carrier provide that, unless otherwise provided, a signal must be restored to display its most restrictive aspect as soon as the train or engine for which it was cleared has passed it. In the instant case signal 6L indicated Proceed-at-restricted-speed for the movement of the units removed from No. N45. The signal lever was not restored to normal position after the units passed the signal, and when the units cleared the interlocking limits a yellow aspect was again displayed by the signal and was accepted by the engineer of No. N50. This indication required that the speed of No. N50 be restricted to 15 miles per hour and be so controlled that the train could be stopped short of another train or a switch not properly lined. Switch 19 was not properly lined for the intended movement, and No. N50 proceeded through the interlocking and struck the equipment on track No. 7.

Since the accident occurred the carrier has arranged to change the controlling circuits of signal 6L so that after the signal has been caused to indicate Stop by occupancy of a track section within the route governed, the signal will continue to indicate Stop until the leverman has restored the controlling lever to normal position and again placed it in position to cause the signal to display an aspect to proceed.

Cause

This accident was caused by an improperly lined route through an interlocking and failure to control speed of train as required by signal indication.

Dated at Washington, D. C., this fourth day of March, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,

Secretary.