INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE CENTRAL RAILROAD OF NEW JERSEY AT WEST CARTERET, N. J., ON JANUARY 23, 1935.

March 13, 1935.

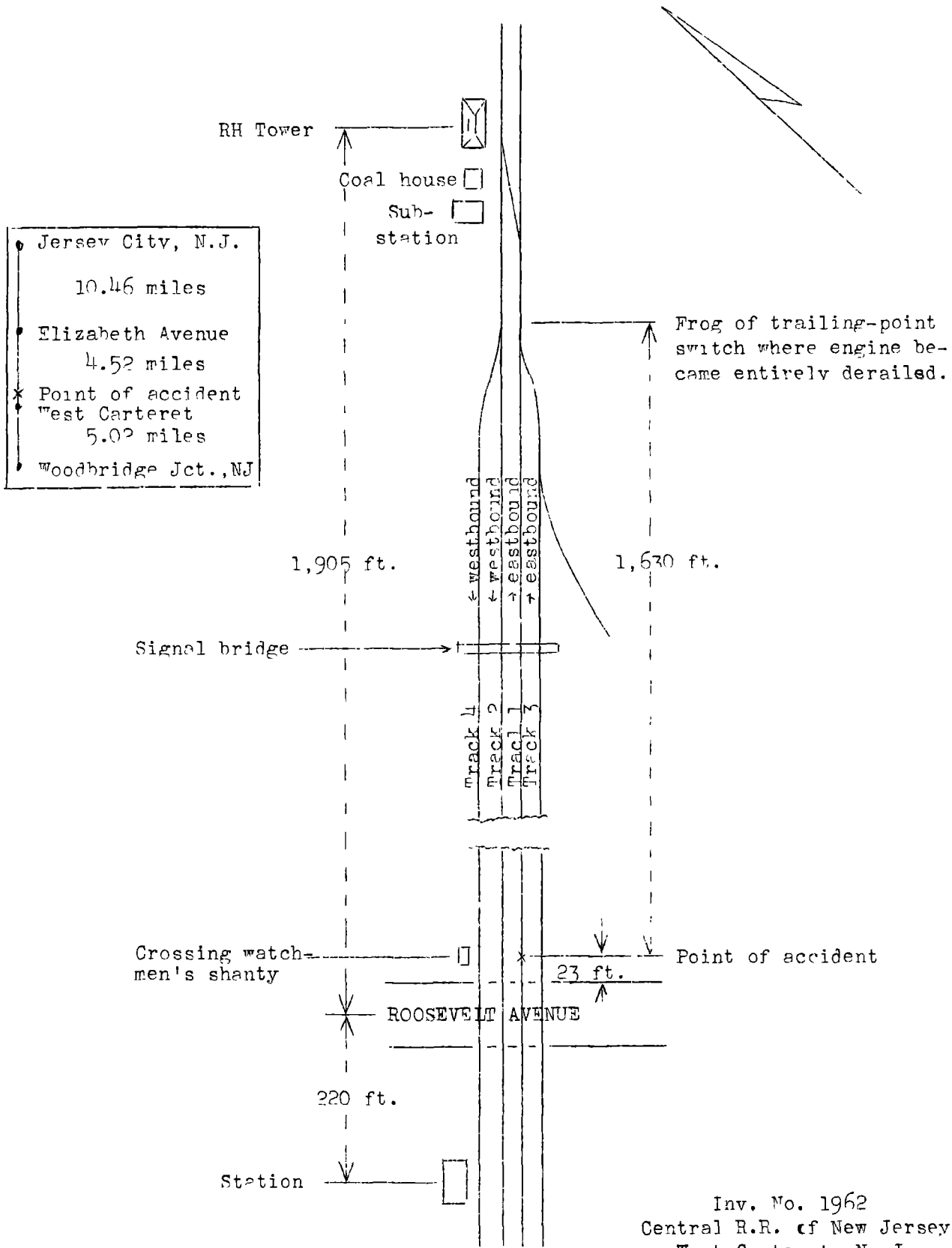
To the Commission:

On January 23, 1935, there was a derailment of a passenger train on the Central Railroad of New Jersey at West Carteret, N. J., which resulted in the death of 1 employee, and the injury of 28 passengers, 1 express messenger, 1 mail clerk, and 1 employee. This accident was investigated in conjunction with representatives of the New Jersey Board of Public Utility Commissioners.

Location and method of operation

This accident occurred on the Perth Amboy Branch of the Central Division, extending between Woodbridge Junction and Elizabeth Avenue, a distance of 9.54 miles. In the vicinity of the point of accident this is a 4-track line which merges into a 2-track line near RH interlocking tower, which is located 2,125 feet east of the station at West Carteret; trains are operated by timetable, train orders, and an automatic block-signal system, supplemented by an automatic cab-signal system. The four tracks are numbered from south to north, 3, 1, 2 and 4, and the initial derailment occurred on track 1 at a point 23 feet east of a highway crossing known as Roosevelt Avenue, the final derailment occurring about 1,630 feet farther east at the switch connecting track 3 with track 1, at the east end of the 4-track line. Approaching the point of accident from the west, the tracks are tangent for more than 2 miles, the tangent extending for some distance beyond this point. The grade is slightly ascending to a point ¼ mile west of the station, from which point it is then 0.56 percent descending to and beyond the final point of derailment.

The track is laid with 130-pound rails, 39 feet in length with 21 or 22 ties to the rail length, fully tieplated, single-spiked, and ballasted with stone to a depth of 8 inches; the track was well maintained. In the vicinity of Roosevelt Avenue the tracks are laid in a slight cut, and in the vicinity of RH Tower the tracks are on a fill, having a maximum height of 12 feet. The maximum speed for passenger trains is 70 miles per hour.



Inv. No. 1962
Central R.R. of New Jersey
West Carteret, N. J.
January 23, 1935

Roosevelt Avenue crosses the tracks 220 feet east of the station and is approximately 25 feet in width; it is constructed of broken stone with tarvia binder and the crossing was in good condition. This highway is a main thoroughfare between Rahway and Carteret and there is considerable traffic over the crossing, a large percentage of it consisting of heavy trucks serving chemical and oil industries of Carteret.

There was a severe snow storm with high winds at the time of the accident, which occurred about 7:27 p. m.

Description

Train No. 3322, an east-bound passenger train, consisted of 1 mail and express car, 1 combination baggage and passenger car, and 5 coaches, all of steel construction, hauled by engine 771, and was in charge of Conductor Conahan and Engineman Seip. This train left Woodbridge Junction at 7:18 p. m., according to the train sheet, 1 hour and 55 minutes late, passed Port Reading on track 1 at 7:22 p. m., and on passing through West Carteret was derailed while traveling at a speed estimated to have been between 30 and 45 miles per hour.

The engine truck was derailed immediately east of the crossing and traveled a distance of approximately 1,630 feet to the switch where the engine became entirely derailed to the left, crossed over track 2, struck and destroyed a power sub-station and coal house, and then was diverted back to the right, stopping on track 2, leaning to the right at an angle of 40°; the tender stopped at the foot of the embankment on the right side of the tracks, completely overturned. The first car continued beyond the engine, sideswiping the engine as it passed, and stopped on its right side down the embankment just beyond the tender. The second car was derailed but remained upright in general line with the track, and the front truck of the third car also was derailed. The employee killed was the engineman and the employee injured was the fireman.

Summary of evidence

Fireman Freilinger stated that on passing over the highway crossing at West Carteret it appeared from the action of the engine that it had struck snow and ice, but after passing the crossing the engine and tender rode all right and he observed that the cab-signal indication was green. He then went to the tender to get down some coal and was so occupied when he heard a terrific grinding noise, the engine lurched to the left,

and he was knocked unconscious. Steam was being used when passing over the crossing but after that he did not know what action was taken, although he estimated the speed at the time of the accident to have been between 40 and 45 miles per hour; at the time the engine lurched, however, there seemed to be an emergency application of the brakes but he did not know whether it was made by the engineman or a member of the train crew, or was a result of the derailment. The brakes had been given a terminal test at Bay Head Junction, the initial terminal, and they functioned properly en route.

Conductor Conahan stated that he was in the baggage end of the second car when he felt a shock as though the train was going to stop and then it surged ahead and both he and Brakeman Berry reached for the emergency cord, which broke as they pulled it. He estimated the speed to have been about 30 miles per hour at the time of the accident, basing his estimate on the time they left Woodbridge Junction and the time the accident occurred, which he thought was about 7:30 p. m. The engineman was operating the train carefully on account of the snow storm, and the train had been delayed considerably en route. After the accident he observed that the snow was 2 or 3 inches higher than the rails and that the crossing was covered with snow and ice. Brakeman Berry, as well as a conductor who was deadheading, estimated the speed at 30 or 35 miles per hour, while Flagman Feuchter thought it was between 25 and 30 miles per hour. Flagman Feuchter also stated that on going back to flag the snow was up to his knees and in order to place torpedoes he had to clean the snow from the rails. When he reached the crossing the gateman was shoveling snow from the tracks; the rails of tracks 1 and 2 were clear but the snow on tracks 3 and 4 had not been cleaned off and he thought it was 4 or 5 inches over the tops of the rails.

Crossing Watchman Hager, on duty at Roosevelt Avenue crossing, stated that from the time he went on duty at 2:30 p. m. up to the time of the accident he was busy constantly in shoveling snow from the crossing on account of the storm and heavy vehicular traffic, and it was necessary to drag the broad end of the pick along the rails frequently in order to keep the flangeways clear. There was considerable traffic over this crossing, the watchman having counted over 200 motor vehicles one evening between the hours of 5 and 6 p. m., and on the day of the accident traffic was being detoured over Roosevelt Avenue from another highway which had become blocked by snow drifts, thus making the traffic over the crossing unusally heavy. The snow had drifted on the highway north of the crossing with the result that there was only one-way traffic over the crossing, although the crossing itself was clear. Crossing Watchman Hager stated

that it had been impossible for him to keep all the tracks clear, and that he spent all of his time in cleaning tracks 1 and 2, stating that he would go from one to the other, and that as soon as he could get one track clear the other would be covered with snow. About one-half hour before the occurrence of the accident a truck became stalled in the snow just south of the crossing, tying up traffic for 10 or 15 minutes, and during that time he had an opportunity to clean the flangeways and shovel the snow from between the tracks. When traffic was resumed, from 50 to 100 cars, trucks and buses were waiting to cross, preventing him from working on the crossing before the arrival of Train No. 3322, and 25 or more vehicles still were waiting to cross when he lowered the gates for the passage of the train, having been warned of its approach by the bell indicator. He was standing in the doorway of his shanty when the train passed at a lower rate of speed than usual, about 30 miles per hour, and he noticed nothing unusual as it passed over the crossing. He also stated that the engineman was still sounding the crossing whistle signal up to the time the train reached the crossing. There had been three west-bound trains over the crossing about 7 p. m., prior to the time the highway traffic was tied up, but he did not remember when the last east-bound train had passed through. Section Laborer Deckler, who had charge of a gang of men at the tower, came to the crossing about 5 p. m., and on seeing the snow piled up the section laborer said he would send a man to help the watchman, but no one arrived until after the occurrence of the accident; while there the section laborer noted the flangeways and told the crossing watchman that they were safe for the passage of a train.

Towerman Healey, on duty at RH interlocking tower, stated that while the storm was very bad, he had no difficulty in operating the switches and signals as he had a force of about eight men working on them, keeping them free from snow. When Train No. 3322 was reported at Port Reading, he cleared the signal on track 1 and the indicator in his tower showed it clear, the route already being set up for this movement. He observed Train No. 3322 approaching, and after it passed under the signal bridge and was east of the derail he noticed a flickering movement of the headlight as though the engine was swaying; the engine then lurched to the left, and realizing the danger he went to the east end of the tower, the next thing he heard being a crash when the engine struck the power sub-station and knocked down the steps leading to the tower. He estimated the speed of the train to have been 25 or 30 miles per hour. Towerman Healey stated that all levers of his machine were

in proper position for the movement being made and remained in that position until checked by the signal engineer after the accident.

Signal Maintainer Buydos stated that about 1½ hours before the occurrence of the accident a movement was made from an extension track to track 1 and after this movement the switches were thoroughly cleaned and burned with hydrocarbon so as to close them tightly for track 1. He personally supervised this work and saw that the derail on the east-bound track was closed and in safe position for the movement of east-bound trains. Maintainer Buydos was in the tower at the time of the accident, saw the approaching train, and thought it started to swerve about the time it reached the frog of the switch connecting track 3 with track 1. After the accident, on checking the position of the switches to see that they corresponded with the levers in the tower, he found this switch practically demolished, but on the others the plungers were locked and the derails tightly set.

Laborer Deckler stated that at the time of the accident he was working on the switches at RH interlocking tower with 2 experienced men, together with 5 inexperienced men who had been sent by the foreman about 4:30 p. m. He had been on snow duty himself since the morning of the previous day and the last time he had been to Roosevelt Avenue crossing was about 4 p. m. the day of the accident, at which time he found it in good condition; the gateman was cleaning the flanges and he told the gateman that as soon as he had an opportunity he would give him some help. The five inexperienced men were not of much use, however, and were not dressed to work outside in the storm, and he was still working at RH interlocking at the time of the accident.

Engineer of Maintenance of Way Mapes stated that he arrived at the scene about 11:20 p. m. and at that time the snow was about 3 inches above the tops of the rails and had a total depth of from 13 to 15 inches. It was necessary to clean the ties of snow to locate the marks of derailment. The first marks were found on the spikes on the north or left side of each rail, beginning about 23 feet east of the crossing. The mark on the outside of the left rail appeared to be a flange mark while the mark on the gauge side of the right rail appeared to have been made by the tread of a wheel, and there was nothing on top of the rails to indicate where wheels had crossed. These marks then continued along the left side of each rail, from 6 to 12 inches from the rails, to the switch connecting track 3 with track 1, where the derailed wheels were diverted to the north. The marks indicated that up to this point there had been only one pair of wheels derailed, the lead pair, but at the frog of the

switch the marks indicated that the rear pair of wheels of this truck were binding, pulling up metal on the guard-rail side of the frog flangeway and shearing off the flow metal along the gauge side of the rail opposite the frog; beyond this point the track was torn up. Measurements at the point of accident and for 12 rail lengths west thereof showed a uniform gauge and but slight inequalities in the cross level. At the time of his examination of the track on the night of the accident the snow was packed hard on the crossing between the rails and between the tracks, rounding up to a height of 3 or 4 inches. There were no flange marks west of the crossing.

Mechanical Engineer Rink stated that he found the engine truck demolished, with various parts scattered in the wreckage. The rear axle was badly bent and one wheel pushed in on the axle, with a portion of the wheel hub broken out. The condition of the wheel seat was bright, however, indicating a good fit, and it was his opinion that the wheel had been knocked loose as a result of the accident. Examination made by Assistant Superintendent of Motive Power Becherer disclosed that neither the four engine-truck wheels nor the driving wheels would take the 15/16 inch gauge. The center plates on engine and engine truck were in good condition, and the center pin was in place on the engine; the engine itself was in good mechinical condition, and on finding nothing defective about it he concluded that the derailment was caused by snow and ice packed on the rails at the crossing.

Inspection of the track by the Commission's inspectors disclosed marks on the track as previously described, and inspection of the engine did not reveal any defects which could have contributed to the accident.

Discussion

There was a severe snow storm at the time of the accident accompanied by a strong wind; the crossing watchman had worked steadily in keeping the tracks clear at the crossing. Due to the drifting snow, however, the highway had become partly blocked on the north side of the crossing, resulting in highway traffic moving in one direction only for a time, and about half an hour before the arrival of Train No. 3322 a truck had become stalled in the snow just south of the crossing, blocking all vehicular traffic for a period of 10 or 15 minutes. This gave the crossing watchman an opportunity to work on the crossing without interruption, but when traffic was resumed it was of such proportions that the watchman did not again have an opportunity to work on the crossing before he lowered the gates for the passage of Train No. 3322; from the evidence it appears that the snow had become packed on the rails

to such an extent that the lead pair of engine-truck wheels became derailed. The train then traveled a distance of approximately 1,630 feet before the engine finally became entirely derailed at a trailing-point switch. The fireman noticed an unusual motion of the engine as though it had struck snow and ice, but after passing over the crossing the engine and tender rode all right and he was unaware of anything wrong until the final derailment.

Conclusions

This accident was caused by snow being packed on the track at a highway crossing.

Respectfully submitted,

W. J. PATTERSON

Director.