INTERSTATE COMMERCE COMMISSION

REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ATLANTIC CITY RAILROAD AT WINSLOW JUNCTION, N J, ON JULY 2, 1922

JULY 26, 1922

TO THE COMMISSION

On July 2 1922, there was a derailment of a passenger train on the Atlantic City Railroad at Winslow Junction, N J, which resulted in the death of 3 passengers, 3 employees and 1 Pullman porter, and the injury of 84 passengers and 5 employees This accident was investigated in conjunction with representatives of the New Jersey Board of Public Utility Commissioners, and the county prosecutor of Camden County

LOCATION AND METHOD OF OPERATION

The main line of this railroad extends between Camden and Atlantic City, N J, a distance of 55 5 miles, and is a double-track line over which trains are operated by time-table, train orders, and an automatic block-signal system, the signals are of the inclosed-disk, home-and-distant type, normally displaying stop indications, red, yellow, and green being used for stop, caution, and proceed, respectively At Winslow Junction, where the Cape May line branches off, the switches and signals are controlled by a mechanical interlocking plant operated from WA tower which is located on the east side of the main tracks 300 feet north of the point of the switch leading to the Cape May branch The interlocking signals, which are of the semaphore type, are merely route signals, the automatic signal circuits being carried through the interlocking plant, and the automatic signals being placed on the same masts with and under the interlocking signals A form of approach locking is in use which locks the derails in advance of the home signals, but does not lock the facing-point switches

Approaching Winslow Junction from the north, the main track is tangent for about 2 miles A No 15 frog is used where the Cape May branch diverges to the right from the southbound main track and beyond this frog there is a curve to the right of 6° 30′, on which the accident occurred The grade is slightly descending,

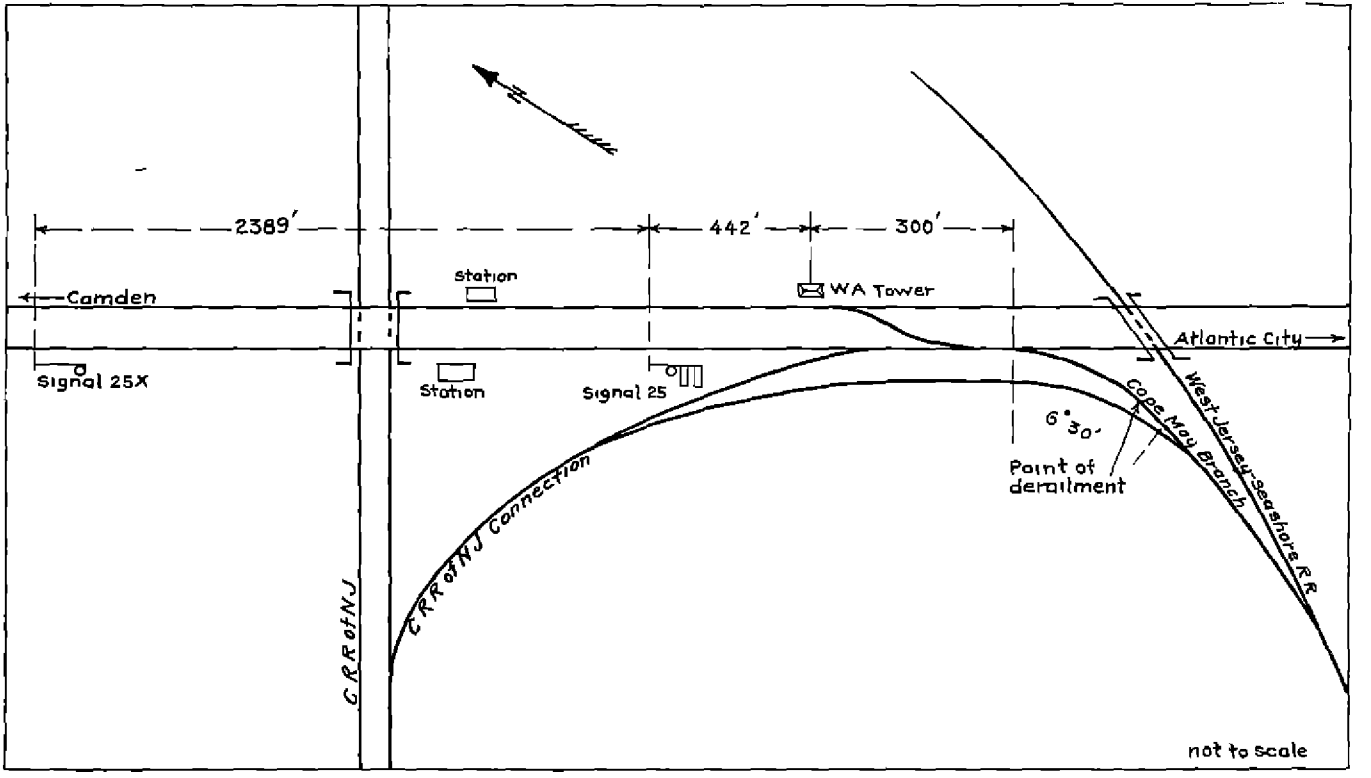

DIAGRAM SHOWING RELATIVE LOCATION OF TRACKS AND SIGNALS INVOLVED

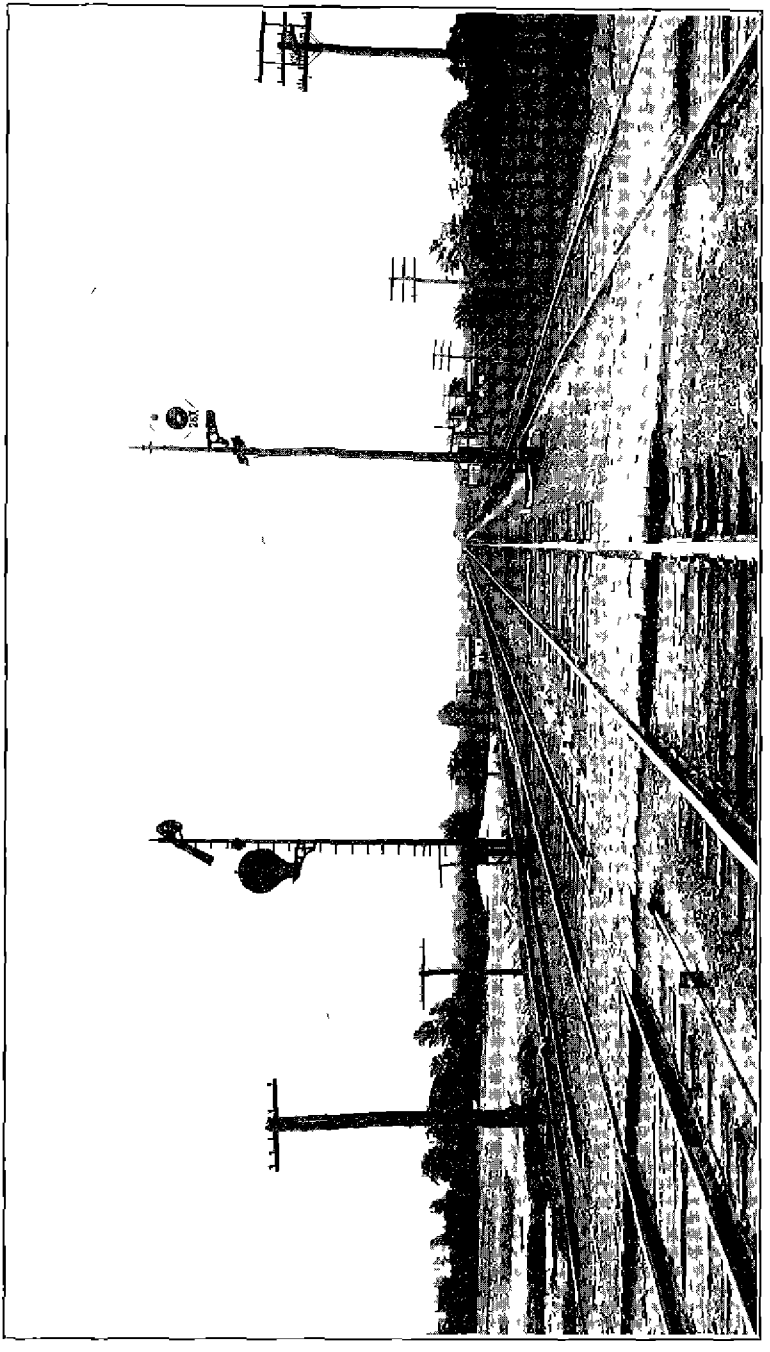

FIG NO 1—VIEW APPROACHING WINSLOW JUNCTION DISTANT SIGNAL 25X IN FOREGROUND

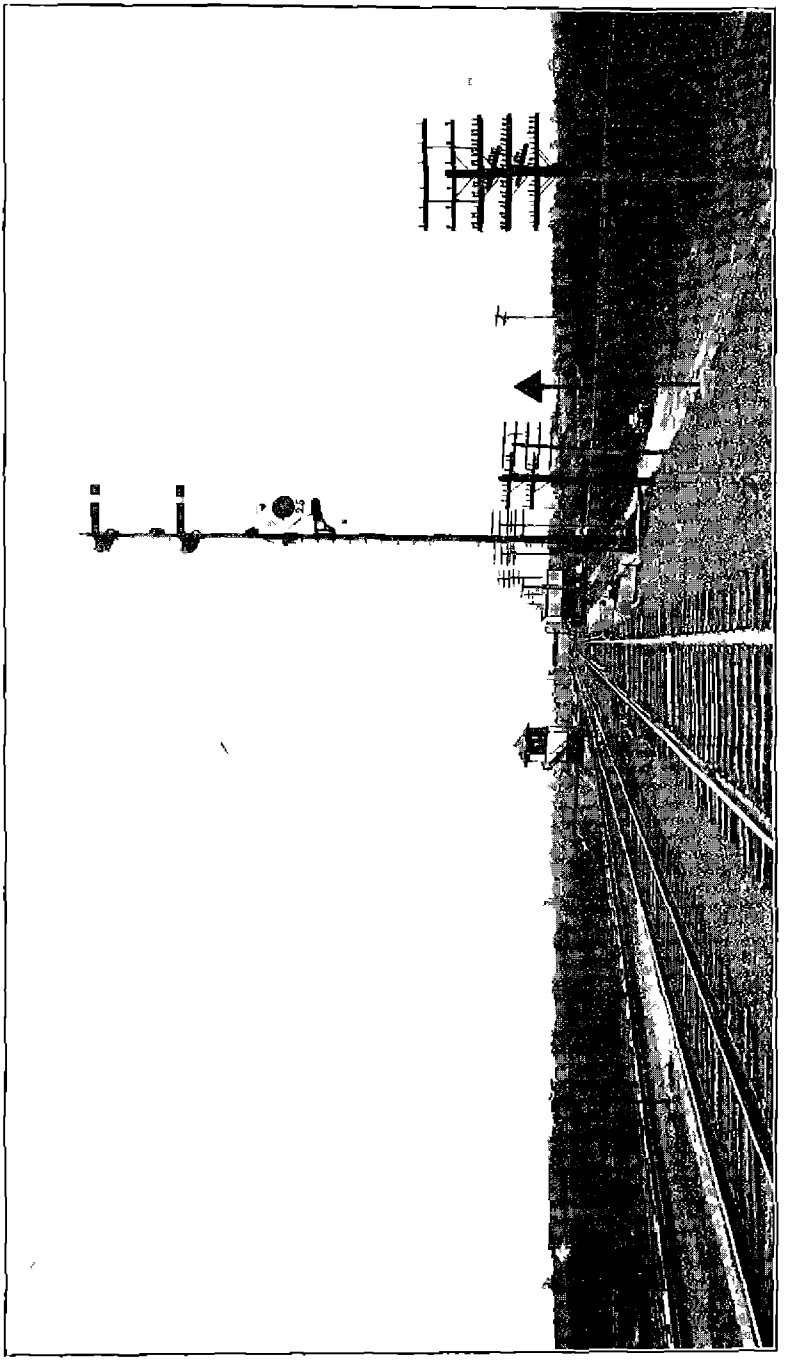

FIG NO 2—SOUTHBOUND INTERLOCKING AND HOME AUTOMATIC SIGNALS WA TOWER ON LEFT

then 0 5 per cent ascending for a distance of about 1,600 feet, and then it varies from level to 0 5 per cent descending for a distance of about 1,900 feet The track is laid with 90 and 100 pound rails, with an average of 18 ties to the rail length On tangents the majority of the ties are of pine, oak being used on curves, and the track is ballasted principally with stone The rails are mostly double spiked on the gauge side, and on both sides of the outside rails on curves The general maintenance was good It was raining at the time of the accident, which occurred at 11 28 p m

Approaching Winslow Junction from the north, the first signal involved is distant signal 25–X, 3,131 feet from the Cape May switch This signal is an automatic signal of the disk type, displaying a distant indication for signal 25 Home signal 25 is located 742 feet north of the switch, and is also of the disk type, it is mounted on the same mast with and under the two interlocking signals The top arm of the interlocking signals, signal 48, governs the high-speed route to Atlantic City, and the bottom arm, signal 47, the diverging route to Cape May When the high-speed route is set up and the block is clear, signal 48 displays a green indication, signal 47 red, and the automatic signal green, while the distant signal also displays a green indication, when the diverging route is set up and the block on the diverging route is clear, as was the case just prior to this accident, signal 48 displays a red indication, signal 47 and the automatic signal display green indications, and the distant signal a yellow, or caution, indication

DESCRIPTION

Southbound passenger train No 33 consisted of 1 coach, 1 Pullman parlor car, 3 coaches, and 1 combination passenger and baggage car, in the order named, all cars were of steel construction with the exception of the parlor car, which was of steel-underframe construction This train was hauled by engine 349, of the double-cab type, in charge of Conductor Nace and Engineman Wescott, and was en route to Atlantic City It left Camden at 10 55 p m, five minutes late, and passed Willamstown Junction, the last reporting station, 7 7 miles from Winslow Junction, at 11 21 p m, 12 minutes late The route at Winslow Junction was set up for a movement to the Cape May branch, and train No 33 entered the switch and had reached a point on the branch about 245 feet beyond the switch point when it was derailed while traveling at a speed of about 70 miles an hour

The entire train was derailed, the engine and the first four cars going down the embankment on the outside of the curve and coming to rest on the track of the West Jersey & Sea Shore Railroad, which

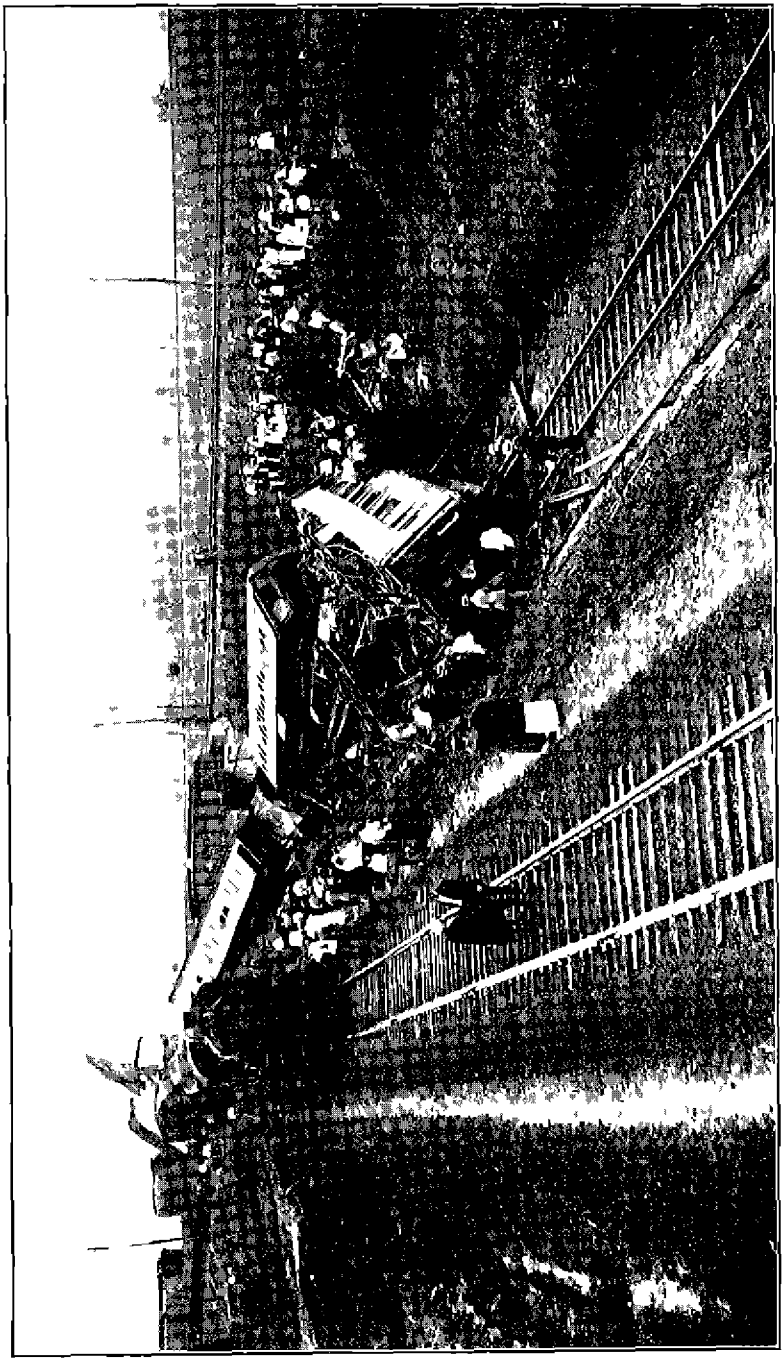

FIG NO 3.--GENERAL VIEW OF WRECKAGE

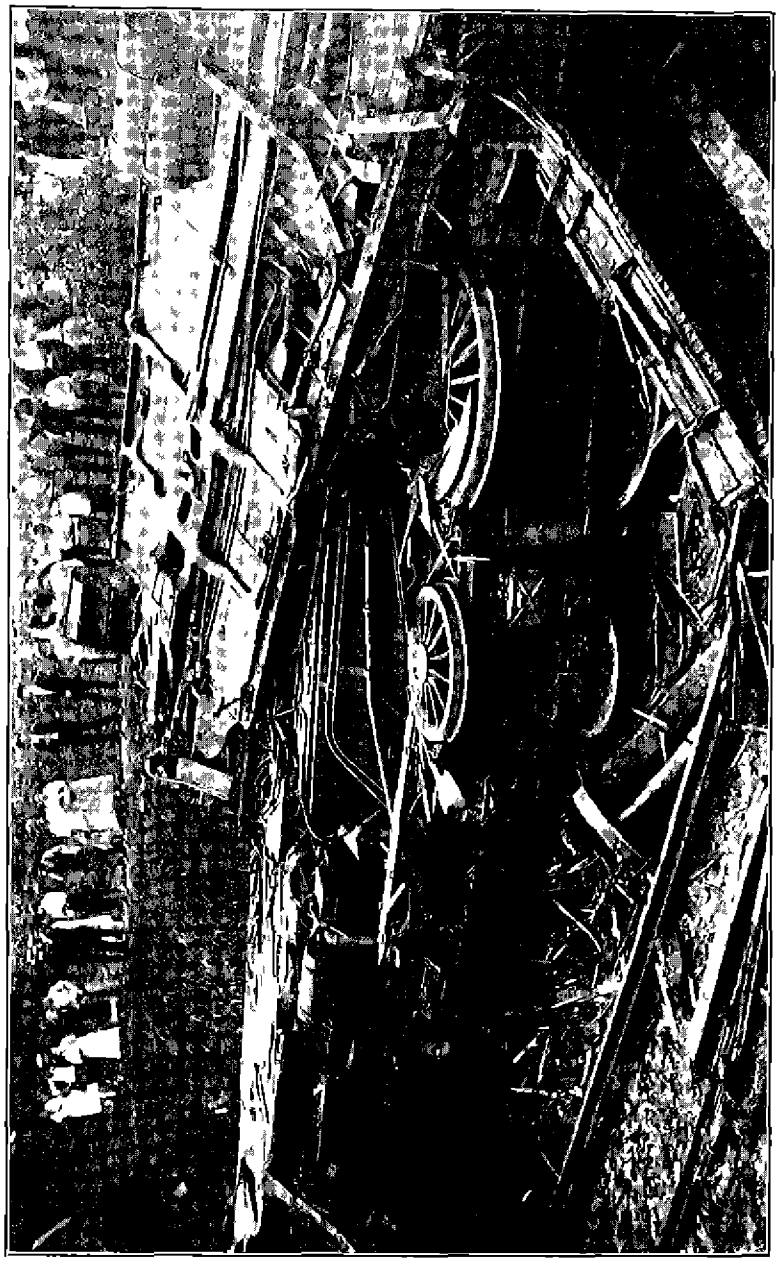

FIG NO 4—ENGINE 349 WITH TENDER, PULLMAN PARLOR CAR ON TOP OF ENGINE

runs nearly parallel with the Cape May branch at this point The engine, tender, and first car remained coupled together and came to rest on their left sides in a badly damaged condition The parlor car came to rest nearly bottom up, on top of the engine, and was very badly damaged The third car was on its left side on top of the first car, and the fourth car nearly on its left side directly behind the first and third cars The two remaining cars went part way down the embankment, but did not turn over and were not seriously damaged The employees killed were the engineman, fireman, and conductor

SUMMARY OF EVIDENCE

Examination of the track showed that the point of derailment was on the left side of the Cape May track at the fifth rail south of the frog of the switch leading to this track, the rail having been torn out and the angle-bar bolts at the receiving end broken, as well as all but one of the bolts in the delivering end of the fourth rail, this latter rail remained in place, with the spikes showing evidence of the outward strain which had been placed on them as the train rounded the curve

None of the surviving members of the crew of train No 33 was in position to give any information concerning the events leading up to the accident, except that they said there was no application of the air brakes prior to the derailment of the train The employees making these statements were Baggage Master Fisher and Brakemen Miller and Lindsey, also Engineman Bakley and Towerman Mitchell, who were riding as passengers

At about 11 10 on the night of the accident, when train No 491, a local freight train en route to Cape May, had completed work at Winslow Junction and was standing on Hays branch, a stub-end siding located on the west side of the main tracks, the switch connecting with the southbound main track being about 500 feet north of signal 25–X, Conductor Archut telephoned Towerman De Walt, located at WA tower, that train No 491 was ready to depart, and arranged to follow train No 33, which is due at Winslow Junction at 11 17 p m After giving this information to the members of the crew, and telling them to wait for train No 33, Conductor Archut went inside the caboose, where he remained until extra 120 passed Extra 120 consisted of empty passenger equipment en route to Atlantic City Conductor Archut thought this extra was train No 33, and when his train did not pull out of the siding, he got off to look at the signals, on finding that they indicated the route was lined for a movement to Cape May, with the distant signal displaying a caution indication, he started forward to find out the reason for not departing, but Flagman Bacon called his attention to the reflec-

tion of the headlight on a train coming around the curve at Blue Anchor, about 2 miles in the rear, which proved to be train No 33 Conductor Archut stated that extra 120 passed his train at 11 17 p m, and train No 33 passed six or seven minutes later, moving at a speed estimated by him to have been 65 or 70 miles an hour

Brakeman Walker went up into the cupola of the caboose just after extra 120 passed and also saw the route lined for a movement to Cape May, although he was not positive he noticed the indication of the distant signal, this was about five minutes before train No 33 passed, and he did not again look at the signal indications

The engineman, fireman, and two brakemen of the crew of train No 491 were at the head end of their train when extra 120 and train No 33 passed All of them saw the classification lights on extra 120, but none of them noticed what route was lined up for train No 33

Members of the crew of train No 491 stated that signals could be clearly distinguished for a considerable distance, notwithstanding the rain, also that they did not hear the engineman of train No 33 sound the whistle at any time, either in answer to proceed signals given by the flagman and also by one of the brakemen at the head end of the train, for a road crossing near the distant signal, or for the route through the interlocking plant Some of them also said the engine was still working steam as it passed them

Shortly after arranging for train No 491 to leave after train No 33 had passed, Towerman DeWalt was telephoning and he said he was so engaged at the time extra 120 passed, and although he turned quickly he did not identify the train, but as he said he had been previously informed train No 33 would be two minutes late at Winslow Junction, and as it was 11 18 p m when extra 120 passed, one minute later than the schedule time for No 33, he thought it was train No 33 He then lined the switch and cleared the signal for the movement of train No 491 over the diverging route to Cape May, signal 48, governing the high-speed route to Atlantic City, being restored to normal or stop position, and signal 47, governing the diverging route, being cleared After this route had been set up, he reported to the dispatcher that train No 33 had passed at 11 18 p m and said he received an O K to this report He then engaged in other work and later thought about train No 491, and on looking northward saw a headlight which he thought belonged to that train, he then turned his attention to other duties and when he again looked toward the siding he saw two headlights, and he said that before he realized what was happening train No 33 was passing the tower He was unable to say definitely whether or not the brakes were applied at that time

Dispatcher Eagan said he told Towerman De Walt that train No 33 would be six minutes late, and that he said nothing about its being two minutes late He also stated that when Towerman De Walt reported train No 33 as having passed at 11 18 p m he noticed the mistake and replied, "That is extra 120", however, he did not make any further inquiry or talk with the towerman to see that he understood the situation

Copy Operator Keefe, on duty in the office with Dispatcher Eagan, verified the dispatcher's statements about telling some one that train No 33 would be six minutes late, and also that he told Towerman De Walt that the train he reported was not train No 33, but extra 120

Towerman De Barr, second trick towerman at Winslow Junction, on duty from 2 p m until 10 p m, said he reached the tower at about 1 a m, and on examining the levers found levers 47 and 48 in normal or stop position, lever 15, locking the main-line switch to Cape May, was reversed, and lever 14 was also reversed, lever 14 operates the switch and also the switch where the Central Railroad of New Jersey connection joins with the Cape May branch just south of where train No 33 was derailed, lever 13, however, which locks the last-mentioned switch, was in normal position Under this arrangement the route to Cape May was not entirely set up, or lever 13 would also have been reversed, and Towerman De Barr said he was unable to determine what movement Towerman De Walt had endeavored to set up, whether he was changing from the Cape May route to the Atlantic City route or vice versa In either event, however, the set-up would have to be completed before either signal 47 or signal 48 could be cleared Towerman De Walt said that immediately after the accident he found he could move lever 13, and then knew it was broken This was the only lever he moved, and he said he left it in the position to which he moved it Signal Engineer Yocum said that on his arrival he was told by one of his men that he had to release lock 13 in order to get the route through to Atlantic City, and that he released the lock by putting the battery directly on the coil Lever 13 could not have been moved without unlocking this lock unless the lever was broken, as Towerman De Walt said he thought was the case, and on examining the lever, Signal Engineer Yocum found it broken in the tower, and also where the track was damaged by the accident

Master Mechanic Stohlberger said that on examining engine 349 at the scene of the accident he found the throttle and reverse lever had been considerably damaged, but the link block was set for a one-eighth or one-fourth inch cut-off, the proper position for high speed

Engineman Wescott had an excellent reputation as an engineman, and nothing was developed to indicate that he had not been in good health prior to the occurrence of the accident

CONCLUSIONS

This accident was caused by failure of Engineman Wescott of train No 33 to be governed by automatic and interlocking signal indications, which resulted in train No 33 taking the diverging route at a high rate of speed and being derailed due to the outer rail of the curve giving way

The evidence is conclusive that at least five minutes prior to the approach of train No 33 the route was lined for the Cape May branch and the corresponding signals displayed Train No 33 was en route to Atlantic City, and with the route to Cape May set up when this train approached, the engineman should have been governed by the signal indications and have reduced speed or brought his train to a stop until the proper route for his train had been lined up

The investigation disclosed that Engineman Wescott apparently failed to shut off steam, did not acknowledge proceed signals given by brakemen at the rear end and head end of train No 491, did not whistle for the crossing near the distant signal, and did not sound one long blast on the whistle required to be sounded when approaching junctions, and customarily sounded at this particular point to call for the high-speed route to Atlantic City His train was on straight track and the signals could be seen for a distance of 1½ miles In view of Engineman Wescott's death as a result of this accident his failure to perform his duties in this case remains unexplained

The signals involved in this accident had been in use for many years, and the interlocking plant was not fully equipped with modern appliances While the approach locking was not complete and the arrangement was such that it was possible for the towerman to change the route through the plant after the approaching train has passed the distant signal, there was no evidence whatever that this was done, and the towerman was very positive in his statements that he did not move any of the operating levers after setting up the route to the Cape May branch several minutes before the accident occurred

Towerman DeWalt contributed to this accident only by mistaking extra 120 for train No 33 and setting up the diverging route before train No 33 approached This mistake on the part of the towerman could of itself result only in delay to train No 33 Under these conditions the signals were intended to provide

protection against such an accident as occurred in this instance, and this accident would have been averted if the engineman of train No 33 had observed and been governed by the signal indications

This accident again calls attention to the need for automatic train-control devices which will operate to stop a train in case the engineman for any reason fails to observe or be governed by restrictive signal indications Had an adequate automatic train-control system been in use at this point, this accident would undoubtedly have been prevented, notwithstanding the failure of the engineman to heed the signal indications and control his train accordingly

Engineman Wescott was employed as a fireman in 1906 and promoted to engineman in 1909, Towerman DeWalt had been employed as towerman at this point nearly 24 years The records of both of these employees were clear At the time of the accident the engine crew of train No 33 had been on duty about 1 hour and 40 minutes, and the train crew about 1 hour, previous to which these employees had been off duty 13 hours or more, the towerman had been on duty about 1½ hours, previous to which he had been off duty 16 hours

Respectfully submitted

W P BORLAND,
Chief, Bureau of Safety

WASHINGTON GOVERNMENT PRINTING OFFICE 1922