

# I. C. C. Report on Winslow Junction Accident

## Failure of Engineman to Note that Wrong Route Was Lined Up at Interlocking Plant Results in Bad Derailment

**T**HE failure of the engineman to be governed by automatic and interlocking signal indications resulted in the serious derailment of a passenger train on the Atlantic City Railroad at Winslow Junction, N. J., on July 2, 1922. This accident resulted in the death of 3 passengers, 3 employees, and 1 Pullman porter, and injury to 84 passengers and 5 employees. An ab-



View of Wreckage on West Jersey & Seashore Tracks

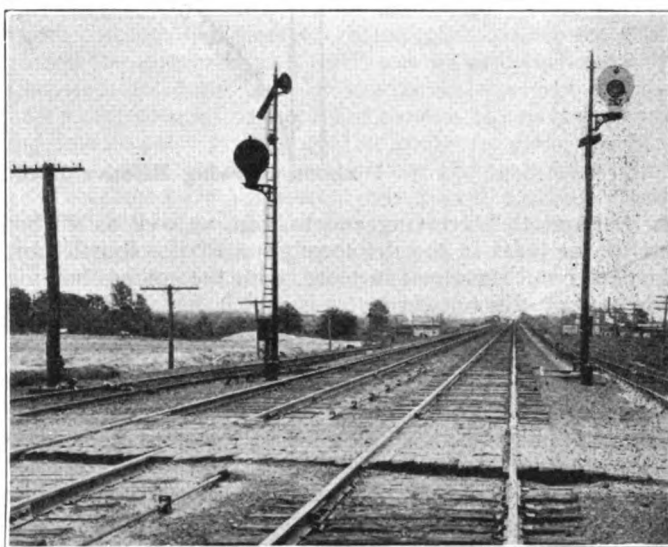
stract of the report of the chief of the Bureau of Safety in reference to this accident is given below.

"The main line of this railroad extends between Camden, N. J., and Atlantic City, 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 enclosed-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 ft. 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 switch.

"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 deg. 30 min. on which the accident occurred. The grade is slightly descending, then 0.5 per cent ascending for a distance of about 1,600 ft. and then it varies from level to 0.5 per

cent descending for a distance of about 1,900 ft. The track is laid with 90 and 100 lb. 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 gage side, and on both sides of the outside rail 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 ft. 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 ft. 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,



View Approaching Winslow Junction, Southbound Distant Signal 25X in Foreground

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 min. late, and passed Williamstown Junction, the last reporting station, 7.7 miles from Winslow Junction, at 11:21 p. m., 12 min. 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 ft. beyond the switch point when it was derailed while traveling at a speed of about 70 m. p. h.

"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, which runs nearly parallel with the Cape May branch at this point. 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-

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 reflection 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 m. p. h.

"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

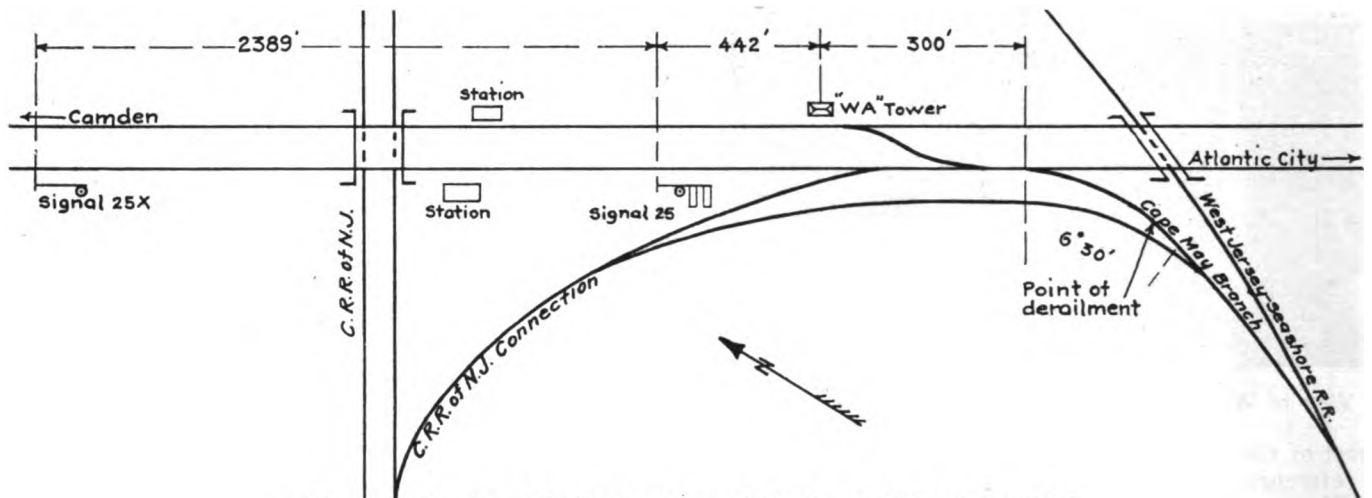


Diagram Showing Relative Location of Tracks and Signal Involved

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.

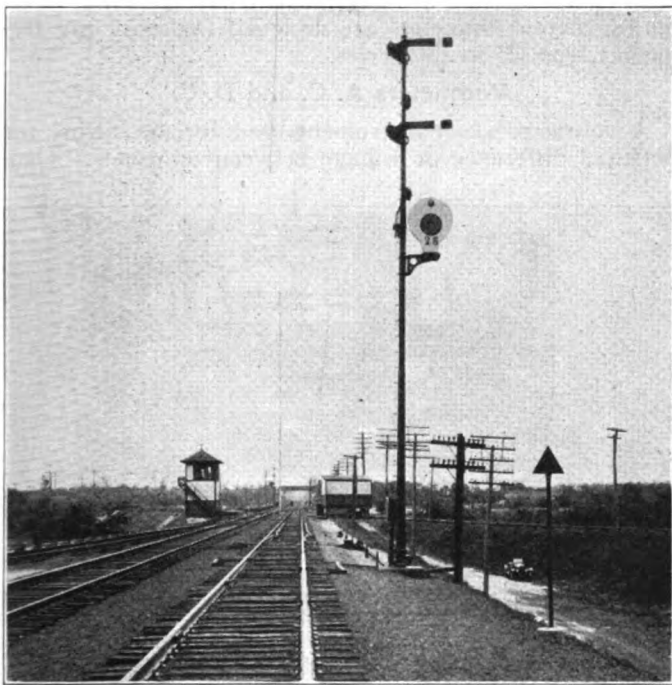
"At about 11:10 on the night of the accident, when train No. 491, a local freight train en route to Cape May, had completed work at Winslow Junction and was standing on Hays branch, a stub-end siding located on the west side of the main tracks, the switch connecting with the southbound main track being about 500 ft. 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

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.

"Dispatcher Eagan said he told Towerman De Walt that train No. 33 would be 6 min. late, and that he said nothing about its being 2 min. 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.

"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



Southbound Interlocking Signal, Second Arm Governs Diverging Route, Home Automatic Signal 25 on Same Mast

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 engine-

man, 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 5 min. 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 1.5 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 De Walt 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.

**Insulating and Soldering.**—A catalogue supplement describing insulating and soldering compounds and announcing the extension of that line of products has been issued by the Westinghouse Electric & Manufacturing Company. The publication is known as 5-A, Supplement No. 2. The materials discussed in the supplement are baking and air-drying varnishes, insulating compounds, finishing materials, including paints, enamels, lacquers, etc., insulating glue, soldering flux, and lubricating oil.