

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE PENNSYLVANIA RAILROAD AT WILMINGTON, DEL., ON APRIL 14, 1933.

June 23, 1933.

To the Commission:

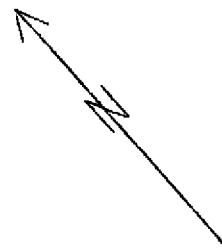
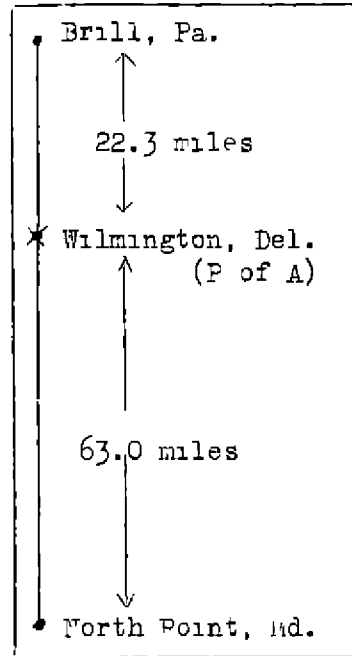
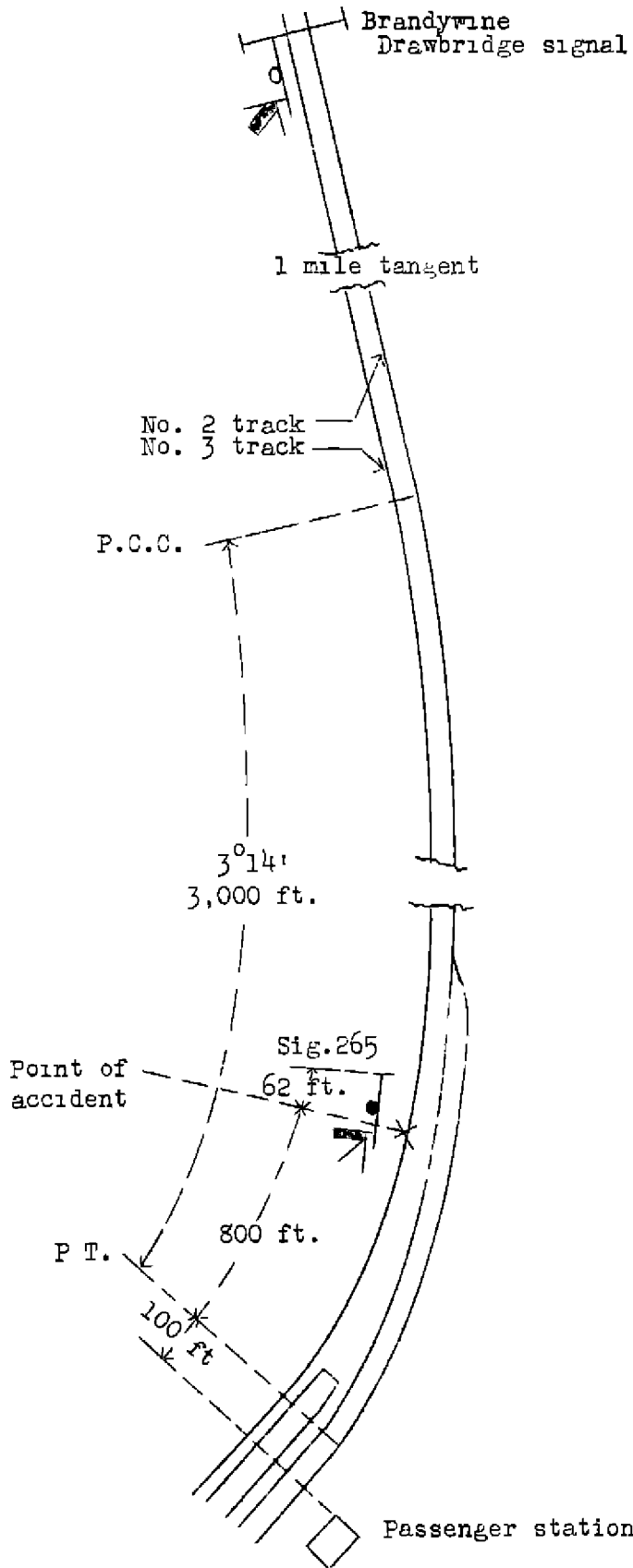
On April 14, 1933, there was a rear-end collision between two passenger trains on the Pennsylvania Railroad at Wilmington, Del., which resulted in the injury of 15 passengers and 1 employee.

Location and method of operation

This accident occurred on that part of the Maryland Division extending between North Point, near Baltimore, Md., and Brill, near Philadelphia, Pa., a distance of 85.3 miles; in the vicinity of the point of accident this is a double-track line over which trains are operated by time table, train orders, and an automatic block and cab-signal system. The accident occurred approximately 900 feet north of the station at Wilmington; approaching this point from the north, the track is tangent for a distance of about 1 mile, followed by a compound curve to the right approximately 3,000 feet in length, the maximum curvature of which is  $3^{\circ} 14'$ , the accident occurring on this curve about 2,200 feet from its northern end, where the curvature is  $2^{\circ} 30'$ . The grade at the point of accident is 0.131 per cent ascending for southbound trains.

The signals involved are signals 265 and the Brandywine drawbridge signal, located about 62 feet and 3,982 feet, respectively, north of the point of accident; signal 265 is mounted on a mast and the Brandywine signal is mounted on a signal bridge. These signals are of the position-light type, and indicate proceed, approach, or stop. Signal 265 can be seen from a southbound train a distance of about 1,800 feet. The maximum speed permitted for southbound trains on the curve on which the accident occurred is 30 miles per hour.

The weather was clear at the time of the accident, which occurred about 12:15 p.m.



Inv. No. 1818  
 Pennsylvania R.R.  
 Wilmington, Del.  
 April 14, 1933

### Description

Southbound passenger train No. 115 consisted of 1 postal storage car, 1 combination baggage and passenger car, 4 coaches, 3 sleeping cars, 1 dining car, 4 parlor cars, 1 observation parlor car, and 1 coach, all of steel construction and in the order named, hauled into Wilmington by electric engine 4708, and was in charge of Conductor Nolan and Engineman Sanford. At Wilmington the electric engine was replaced by steam engines 5399 and 5366 and the train was then in charge of Conductor Nolan and Enginemen Burch and Johnson. The train arrived at Wilmington at 12:08 p.m., and started to leave that point at 12:15 p.m., 21 minutes late, but had moved only about one car length when it was struck by train No. 4919.

Southbound local passenger train No. 4919 consisted of electric multiple unit coaches 637 and 634, of steel construction and in the order named, and was in charge of Conductor Miles and Engineman McGrogan. This train passed Landlith, 1.4 miles north of Wilmington, at 12.14 p.m., 3 minutes late, passed the Brandywine drawbridge signal, which was displaying an approach indication, passed signal 265, which was displaying a stop indication, and collided with the rear end of train No. 115, 62 feet beyond the signal while traveling at a speed variously estimated to have been between 5 and 15 miles per hour.

None of the equipment was derailed and train No. 115 was not damaged, although the leading car in train No. 4919 was considerably damaged and the rear car sustained slight damage. The employee injured was the conductor of train No. 4919.

### Summary of evidence

Conductor Nolan, of train No. 115, who was on the station platform when his train started, noticed a slight jar which he thought at the time was due to the second engine starting to work steam. The train then stopped and when the station master, who went back to the rear of the train, gave a signal to proceed, the train departed without his learning that an accident had occurred until some time later.

Flagman O'Connell, of train No. 115, stated that while the train was standing at the station the rear car was approximately  $1\frac{1}{2}$  car lengths south of signal 265. He got off to protect but did not go back north of the signal and as soon as he heard the brakes release he returned to the rear of the train, which he boarded when the train started. After closing the trap door he looked back from the side door and then observed the electric train approaching; he gave a stop signal with his

flag but did not hear his signals acknowledged. He said that his own train had not moved more than  $\frac{1}{2}$  car length before the collision occurred, and he thought the approaching train was traveling at a speed of about 15 miles per hour at the time of the accident.

Engineman McGrogan, of train No. 4919, stated that the brakes were tested before the train left Philadelphia, the initial terminal, and the car inspector reported them to be in proper working order, while he experienced no difficulty in making numerous station stops en route, except at one station where he ran by a short distance, but he attributed this to not applying the brakes soon enough; he also tested the cab signals prior to departure, found them in good condition, and they functioned properly during the trip. The train passed Landlith under a clear signal indication at a speed of 65 miles per hour, and on approaching the Brandywine drawbridge signal he found it displaying an approach indication and he reduced speed with an 8 or 10-pound application to about one-half the maximum authorized speed, as required by the rules, or approximately 32.5 miles per hour. The train then drifted and the speed was down to about 20 miles per hour while rounding the curve; he observed signal 265 displaying a stop indication when approximately 1,300 feet distant and he made a 20-pound brake-pipe reduction, but as the brakes did not seem to hold he made another reduction of 10 pounds, holding the brake-valve handle in lap position after both reductions. The train continued as though the wheels were sliding, and when it reached a point about three car lengths from the signal he moved the brake valve to emergency position, after which the train appeared to travel faster; he estimated the speed at the time of the accident at 5 miles per hour. In a later statement Engineman McGrogan said he was of the opinion that he was complying with the rules if he moved at one-half the maximum authorized speed while approaching signal 265, and estimated the speed at the time he first applied the brakes at not more than 12 or 15 miles per hour. He also said he saw the signal before seeing the train ahead, and that he answered the flagman's stop signal.

Conductor Miles, of train No. 4919, stated that he noticed no irregularities with the operation of the train en route. He felt an application of the brakes before crossing the Brandywine drawbridge and again while approaching the station at Wilmington and thought the latter application was for the purpose of making the usual station stop. He was standing in the front end of the rear car preparatory to assisting passengers at the station when the collision occurred, and estimated the speed of the train to have been 15 miles per hour.

Neither Baggage man Lyons nor Brakeman Thompson, of train No. 4919, paid particular attention to the handling of the train approaching Wilmington, although Baggage man Lyons felt a brake application in the vicinity of Brandywine drawbridge and Brakeman Thompson thought that the speed was being reduced at the time of the accident and estimated that the train was traveling about 15 miles per hour at that time.

Station Master Roach, who was on duty at Wilmington at the time of the accident, was standing on the station platform near the head end of train No. 115 when it started to move; he observed a slight jar, following which he heard a communicating signal to stop. He then went back to the rear of the train and saw what had occurred; the trains involved were standing about two car lengths apart, the head end of train No. 4919 being a few feet south of signal 265, and after inquiring of the flagman if anyone was injured he signaled the crew of train No. 115 to proceed.

Car Inspector Murphy stated that he assisted in making the air-brake test on train No. 4919 at the initial terminal; he examined all brake equipment and found it to be in proper working order. Master Mechanic Steens stated that after the accident the equipment of train No. 4919 was carefully inspected and no condition was found concerning the brakes or any other part of the equipment that could have contributed to the cause of the accident; there was no evidence of flat wheels.

Engineer Maintenance of Way Graham said that several hours after the accident he examined the track from a point approximately 1,800 feet north of signal 265 and did not notice any marks which would indicate that wheels had been sliding, neither were there any indications of grease or water on the ball of the rail.

On April 18, after repairs had been made to the brake apparatus on the equipment which comprised train No. 4919 on the day of the accident, a test run was made with the same equipment, in charge of Engineman McGrogan. The train left Bellevue, 4.6 miles north of Wilmington, at about the same time and with the signals arranged as they were when train No. 4919 approached and passed them on the day of the accident. The engineman was instructed to endeavor to duplicate in the operation of the test train the way he handled the train on the day of the accident. The train passed Edge Moor, 2.8 miles north of Wilmington, at approximately 60 miles per hour and the power was shut off between 800 feet and 1,000 feet south of that point and was not again applied until after the train stopped. The signal immediately north of Brandywine drawbridge was displaying an approach indication and the speed of the train was reduced before passing that signal by

a brake application of 10 pounds, after which the brakes were released. Approaching signal 265, which was displaying a stop indication, an 8-pound reduction was made which brought the train to a stop before it reached the signal.

#### Conclusions

This accident was caused by the failure of Engineman McGrogan, of train No. 4919, to operate his train under proper control approaching a stop signal.

Engineman McGrogan said he had no difficulty in making the 13 station stops and reducing speed at other points en route until his train approached signal 265, which was displaying a stop indication; upon reaching a point approximately 1,500 feet north of this signal and while traveling at a speed which he estimated to have been 20 miles per hour, or less, he observed that the signal was displaying a stop indication and then made a 20-pound brake-pipe reduction. As this did not take proper hold he made a further reduction of 10 pounds, which also failed properly to reduce the speed, and when the train had almost reached the signal he applied the brakes in emergency, without having previously released them, but this application appeared to have no effect, his train passing the signal and colliding with train No. 115; he thought there might have been grease or water on the rails. Neither the conductor nor the brakeman of train No. 4919, however, noticed any unusual handling of the train approaching Wilmington, speed being reduced in the usual manner preparatory to making the station stop, and their first knowledge of anything wrong was when the collision occurred. An inspection of the equipment revealed no defects that would cause the brakes to fail, nor was there any indication that the wheels had been sliding.

Tests made subsequent to the accident with the equipment of train No. 4919 and with the same engineman in charge, clearly demonstrated that the train could be stopped short of the point of accident by service applications of 10 pounds or less when approaching the two signals involved, these being considerably lighter brake applications than Engineman McGrogan stated he made prior to the accident.

Respectfully submitted,

W. P. BORLAND,

Director.