

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING
AN ACCIDENT ON THE PENNSYLVANIA RAILROAD AT DEANS,
N. J., ON JANUARY 3, 1934.

March 7, 1934.

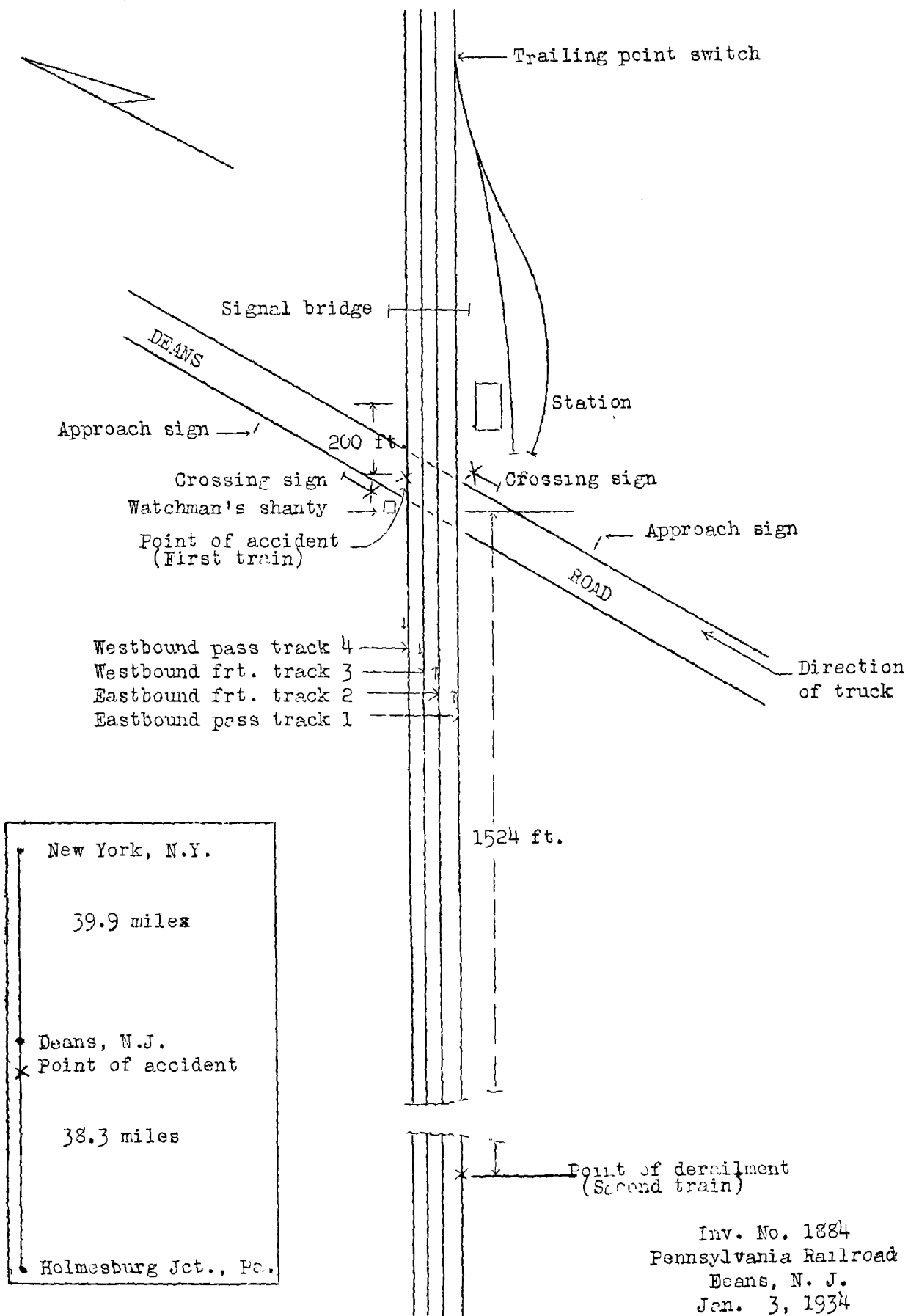
To the Commission:

On January 3, 1934, there was a collision between a passenger train and a motor truck at a grade crossing on the Pennsylvania Railroad at Deans, N. J., followed by the derailment of a passenger train running in the opposite direction on an adjacent track, as a result of striking the wreckage; this accident resulted in the death of one employee and the driver of the truck.

Location and method of operation

This accident occurred on that part of the New York Division which extends between New York, N. Y., and Holmesburg Junction, near Philadelphia, Pa., a distance of 78.2 miles. This is a four-track line over which trains are operated by time table, train orders, and an automatic block and cab-signal system. The tracks numbered from south to north are 1, east-bound passenger; 2, east-bound freight; 3, west-bound freight, and 4, west-bound passenger. The collision occurred on track 4 at a point 200 feet west of the station at Deans, where Deans Road crosses the tracks at an angle of 60° , while a passenger train running on track 1 was derailed at a point 1,524 feet west of the crossing. Approaching the crossing from the east the track is tangent for a distance of 4 miles, this tangent extending a distance of 2,500 feet beyond the crossing. Approaching the crossing from either direction the grade is slightly ascending, the crossing being located in about the center of a vertical curve 800 feet in length.

Deans Road is an improved highway and runs practically north and south; the crossing is of bituminous construction and is well maintained. Approaching the crossing from the south the grade is slightly ascending. A standard railway crossing sign of the cross-bar type is located on each side of the crossing, and in addition an approach sign is located on each side about 300 feet from the crossing, warning drivers of vehicles that



they are approaching a railroad crossing. At the time of the accident, a crossing watchman was on duty at this crossing, his shanty being located at the northwest angle of the crossing.

An approaching west-bound train on track 4 can be seen for a distance of more than 1 mile by the driver of a north-bound vehicle when 100 feet from the crossing, the view being the same until he has reached a point within 50 feet from the crossing, where his view is restricted by the station, located east of the highway and south of the tracks, until a point 30 feet from the crossing is reached, where the view is unobstructed for 1,313 feet. At a point 15 feet from the crossing the view extends for more than 1 mile and it is unlimited when 5 feet from the crossing.

The weather was clear at the time of the accident, which occurred at 4:29 p. m.

Description

West-bound passenger train no. 31, known as the "Spirit of St. Louis", consisted of 1 postal car, 1 baggage car, 1 combination baggage car and coach, 1 coach, 2 Pullman sleeping cars, 1 lounge car, 1 dining car, 3 Pullman sleeping cars, and 1 lounge car, all of steel construction and in the order named, hauled by electric engine 4772, and was in charge of Conductor Kind and Engineman Bollinger. This train departed from New York City at 3:40 p. m., on time, passed CN Block Station, 5.75 miles east of Deans, at 4:24 p. m., three minutes late, and struck a motor truck at Deans Road crossing while traveling on track 4 at a speed of 60 or 65 miles per hour.

The motor truck involved was a Brockway truck, 1929 model, registered in the name of Nathan Wallad of Newark, N. J., and was being driven by Joseph Wallad of Irvington, N. J. It had a net weight of 8,050 pounds, with an allowable gross weight of 21,000 pounds, and was loaded with 220 bushel baskets of apples, the estimated weight of the load being 11,000 pounds. This truck approached the crossing at a speed estimated by eyewitnesses to have been between 35 and 45 miles per hour, no attempt being made to stop or reduce speed until it reached track 3; the driver then started to turn to the left, just before the truck was struck by train no. 31.

East-bound passenger train no. 1072 consisted of 1 combination car, 3 coaches and 3 parlor cars, all of steel construction, hauled by steam engine 1984, and was in charge

of Conductor Boulton and Engineman Moran. This train, running on track 1, passed Monmouth Junction, 2.5 miles west of Deans, at 4:36 p. m., 2 minutes late, and on approaching Deans Road crossing was derailed by striking wreckage from the truck while traveling at a speed estimated to have been 60 or 65 miles per hour.

The truck and its contents were demolished and scattered over the right of way. Electric engine 4772 and the first four cars in train no. 31 stopped at a point 3,075 feet beyond the crossing, with the front end of the engine pushed inward and pinning the engineman in the cab. The train broke in two between the fourth and fifth cars, the rear portion stopping about 900 feet behind the front portion; none of the equipment in this train was derailed. Engine 1984, of train no. 1072, was partly derailed at a point 1,524 feet west of the crossing and stopped at a point 1,314 feet east of the crossing. The employee killed was the engineman of train no. 31.

Summary of evidence

It appeared from the statements of Helper Taylor, of train no. 31, that after leaving Newark he went to the rear end of the electric engine to attend to the boiler and was there at the time of the accident. On approaching the crossing at Deans he heard the engineman sound the usual crossing signal, and just as the last blast was sounded he heard the crash and the brakes were applied in emergency. He was thrown around in the motor and after recovering himself he got off the rear of the engine, went to the front end along the right side and saw that it was covered with wreckage and the engineman was pinned in the cab; at that time train no. 1072 was passing on track 1. He then boarded his engine and removed some of the wreckage from the engineman but it was impossible to get him out, and he said it was just after he got off the engine the second time that he saw Baggageman Gormley and asked him to call a doctor. Helper Taylor noticed the close clearance of the engine with the adjacent track due to bulging on the left side, but at no time did he attempt to provide flag protection. Helper Taylor's condition at the time he was questioned was such that his answers were not at all clear.

Baggageman Gormley, of train no. 31, was riding in the third car from the engine and heard the engineman sound the whistle signal for the crossing, the last blast being unusually long, as though the engineman had observed something unusual; this was followed by the impact and an emergency application of the brakes. When the train stopped he immediately got off on the right side of the car and looked at his watch at which

time it was 4:31 p. m., and went to the head end of the train with the intention of providing flag protection, but as he walked around the front of the engine he saw Helper Taylor standing on track 3 and Helper Taylor asked him to see if he could get a doctor. He then went back through the cars looking for a doctor, and as he could not find one he continued on back to where the conductor was standing at the telephone east of the crossing. He gave the conductor a general idea of what had occurred, and then retraced his steps to the head end of the train and stationed himself on track 3, protecting that track as he thought it was fouled by the engine of his train. Baggage man Gormley said that he did not see train no. 1072 pass on track 1 and thought it must have done so while he was going through the cars looking for a doctor. He further stated that when Helper Taylor asked him to get a doctor the helper did not appear to be in a dazed condition, but was normal, and while he did not have any definite understanding with Taylor about providing flag protection, he said that the helper was a qualified man and he thought it was all right to leave him in charge, although he admitted that it was his duty to protect his train. He thought it was not more than 2 minutes from the time he got off the train to the time he first talked with Helper Taylor. He later made a comment to the helper about not stopping train no. 1072, and the helper said the train had gone by while he was standing there, the helper not offering any excuses for his failure to flag the train.

Conductor Kind, of train no. 31, stated that as soon as the train stopped he got off of the ninth car and immediately went back to the crossing. On tracks 3 and 4 there were apples, baskets and parts of the truck, but on looking westward from the crossing on tracks 1 and 2 he could see nothing in the way of obstructions on those tracks; the weather was clear and the visibility was good, and he said he could see for a distance of about one-half mile. Conductor Kind also said he could see some one standing on track 2 near the head end of the train whom he assumed was providing flag protection at that end, while his flagman was protecting the tracks at the rear end, and although the rule required him to flag all tracks in case of a break-in-two he said he could see nothing on tracks 1 and 2 and therefore did not think that it was necessary to stop a train under such circumstances. Conductor Kind then went back to the telephone east of the crossing and was at that point when train no. 1072 was derailed. Conductor Kind stated that the brakes on his train had been tested before leaving New York, and functioned properly en route.

Flagman Snyder, of train no. 31, stated that after flagging train no. 69 and also a freight train on track 3, he went back to the crossing and was clearing the tracks of the baskets and pieces of lumber when he saw train no. 1072 approaching; it was about opposite the rear portion of his train, with fire flying from the wheels under the engine, and he flagged the train with his red lamp but did not know whether or not his signal was seen; he was standing in the center of track 3, and as the train passed him it appeared to him that the engine truck was off the rails.

Crossing Watchman Vara, who was on duty at the time of the accident, stated that about 4:30 p. m. he received a signal in his shanty of the approaching train on track 4 from the east. With his red flag, stop sign and whistle he walked to the center of the road on the north side of the tracks, and saw a truck approaching from each direction. The truck from the north was not traveling very fast and stopped north of the crossing, but the truck from the south was approaching at a speed of 40 or 45 miles per hour. He waved his flag and stop sign and blew his whistle, but the driver paid no attention to his signals, and when the watchman saw that the driver was not going to stop he got out of way. The watchman also said that when the truck was between tracks 3 and 4 the driver started to turn the wheels to the left, as if to avoid the accident.

Roderick Troise, an eyewitness, stated that he and his wife were riding in his Chevrolet truck and as they approached the crossing from the north the watchman was protecting it. He stopped his truck and had been standing there about 30 seconds when he saw a truck approaching from the opposite direction. When the truck was on the tracks it slowed down and the watchman tried to stop him. Mr. Troise heard the whistle sounded by the approaching train and said the driver of the truck appeared to become nervous, looked in both directions, tried to make a left turn, and put on the hand brake just as the train struck the truck. Just before the collision Mr. Troise put his own truck in reverse gear and backed away as he saw what was going to happen and was afraid the truck would be knocked against him, and when he saw the truck turn left he thought it was going to run into him. The statements of Mrs. Troise were practically the same as those of her husband.

Nicholas Vara, 20-year old son of the crossing watchman, stated that he was walking along Deans Road toward the tracks when the truck involved passed him and he thought it was traveling about 35 miles per hour.

Engineman Moran, of train no. 1072, stated that he was operating his train at a speed of 30 or 35 miles per hour and on approaching Deans his fireman called his attention to train no. 31 standing on track 4 and he crossed over to the fireman's side and saw what appeared to him to be an open-end car. He stepped right back to his own side, and the first indication he had of anything wrong was when he felt his engine rise. He made a 20 or 25 brake-pipe reduction and then the engine seemed to settle down and he thought it was all right until it struck the switch east of the crossing when he saw the pilot turn to the left and he knew that the engine was on the ground. He then applied the brakes in emergency and the engine rolled along about six car lengths before stopping; after stopping he was told by the fireman that the latter had seen an automobile tire on the left rail before the engine struck it. Engineman Moran stated that the signal east of the crossing displayed a clear indication, his cab signal was clear, and he did not see obstructions of any kind on track 1 or track 2 and at no time did he see anyone flagging him. When his train stopped he looked over the engine and found a 7 or 8-inch shoe of an automobile tire hanging on the driving brake beam, which in his opinion was the cause of the derailment of his engine. Engineman Moran further stated that the visibility was good and that he had not yet turned on his headlight.

Fireman Armstrong, of train no. 1072, stated that he saw the wrecked train standing on track 4 as they approached it and called it to the engineman's attention, after which the engineman sounded the whistle signal for the crossing. Fireman Armstrong then was looking ahead from his seat box and did not notice that the train on track 4 was broken in two, but when close to the crossing he saw an automobile tire lying on the left rail just in front of his engine. The engine was raised as it passed over this tire and the engineman applied the air brakes; after passing the crossing the engine seemed to settle down and everything seemed to be all right until they reached the switch leading to a spur track, and then he knew that the engine was derailed; the engineman then applied the air brakes in emergency. Fireman Armstrong said that he did not see anyone flagging his train at any time, and that he did not mention to the engineman that he had seen the tire until after the train had stopped.

Master Mechanic Bickley arrived at the scene of the accident before the wreckage had been removed, and found both pantographs on electric engine 4772 down in locked position and properly grounded; the controller was about half way open, judging from its position, although he could not see the

notches nor could he observe the condition of the brake valve account of the debris over it. The front end of the electric engine from the deck plate to the roof was crushed in at an angle of about 45°, with the top resting against the front bulkhead, and the air pipes at the front end of the engine were broken in a manner that would cause an emergency application of the air brakes. The engineman had not been removed and was sitting on his seat box in an apparently normal position with his left hand resting on the controller handle, pinned in by the front end of the engine and appurtenances in the cab, and could not be removed until the front end was pulled outward by the wrecking-derrick. Master Mechanic Bickley accounted for the fact that the pantograph was down by saying that an overload condition such as would be created by the controller being partly open with the pantograph up and the train slowing down with the brakes applied in emergency, would automatically increase the current consumption, which in turn would operate the pneumatic pantograph-lowering cylinders, causing them to lower the pantograph and lock it automatically, and it was his opinion that the circumstances surrounding the accident were sufficient to bring about this result. Master Mechanic Bickley examined the broken coupler knuckle at the west end of the fifth car, found it was a new defect, and concluded that power remaining on the engine for a time with the brakes to the rear of the train dragging caused the knuckle to break and resulted in the train parting.

Conclusions

This accident was caused by a motor truck being driven upon a grade crossing directly in front of an approaching passenger train.

At the time of the accident the crossing involved was being protected by a crossing watchman who stood in the center of the highway on the north side of the tracks displaying his stop sign and red flag, and sounding his whistle. A south-bound vehicle came to the crossing and stopped, but the truck involved approached the crossing at a high rate of speed and apparently the driver either did not see the watchman or else he entirely disregarded the warnings, and also failed to hear the whistle of the train, for he appeared to make no attempt to reduce the speed of his truck until he reached the third track of the four-track crossing, at which time he seemed to become aware of the approaching train and attempted to turn to the left, and also reached for the hand brake. This crossing is situated in open, level country and there was nothing to interfere with the driver's view of the watchman; his view of the approaching train was obscured for a very

short distance when he was passing the station, but he had a clear view for more than 1 mile just before and also after passing the station and could have seen the approaching train had he maintained a proper lookout. As the driver of the truck was killed no reason can be given for his failure to observe necessary precautions when approaching this crossing.

The evidence indicates that there was an interval of about 10 minutes from the time of the collision to the time of arrival of east-bound Train No. 1072, yet this train was not afforded proper flag protection. It was the duty of Helper Taylor to see that the tracks west of the point of accident were protected, but he made no attempt to flag train No. 1072, and when Baggageman Gormley came up to the head end of the train with the intention of flagging, Helper Taylor asked him to see if he could find a doctor; the result was that the baggageman also made no attempt to provide flag protection.

Train No. 31 was being hauled by an electric engine and the impact with the truck resulted in the front end of this electric engine being pushed inward, fatally injuring the engineman. The cabs of these electric engines, constructed of 3/32 inch aluminum alloy plates, are located at the extreme ends. They provide sufficient room to accommodate members of the engine crew when in their respective positions, but in the event these employees want to get out of the cab quickly they would encounter delay because of the fact that first they would have to turn their seats forward and then open the doors immediately behind the seats which lead to the narrow passageways on either side of the motors, the only other exit being a centrally-located door opening to the end platform. The cab construction does not provide adequate protection for employees in an accident of this character. This phase of the matter was inquired into and the Commission's inspectors were informed that the accident had demonstrated to the company that heavy objects struck by these electric engines while moving at high speed could be thrown high enough to cause serious damage to the cab ends, and that the mechanical engineering department was considering what could be done structurally toward increasing the ability to resist such impacts. In the case of an impending accident similar to the one here under investigation it is probable the engine crew would not have time enough to get out of the cab before the accident occurred, and these cabs should be strengthened, by heavy steel plating and bracing or in such other manner as may appear advisable after thorough investigation, so as to provide a greater degree of protection for the members of the engine crew.

Respectfully submitted,
W J. PATTERSON,