

INTERSTATE COMMERCE COMMISSION

**REPORT OF THE CHIEF INSPECTOR OF SAFETY APPLIANCES ON THE ACCIDENT
TO THE PENNSYLVANIA RAILROAD SPECIAL, TRAIN No. 28, AT FORT
WAYNE, IND., ON AUGUST 13, 1911.**

On August 14, 1911, the Pennsylvania Lines West of Pittsburgh reported by wire an accident to the Pennsylvania Special, east bound, known as train No. 28, at Fort Wayne, Ind. Inspectors Smith, Coutts, and Archer were at once assigned to investigate the accident and arrived at the place of the accident the following morning before much of the wreckage had been cleared up and before the bodies of the killed employees had been recovered. The chairman of the Indiana Railroad Commission wired us that they intended to investigate the accident and requested that our inspectors work jointly with the State inspectors in making an investigation, and our inspectors were so instructed. On account of the serious injury to Fireman Bolyard and Engineman Malone the inspectors were unable to secure any statement from them. For this reason the Indiana Railroad Commission ordered a continuation of the investigation at Indianapolis on September 7, 1911, which I personally attended and where I assisted in taking of testimony. Commissioner Payne and Chief Inspector Scott, of the State Commission, secured the testimony of Engineman Malone on September 13 in the hospital at Fort Wayne. The entire investigation of the accident was conducted jointly with the Railroad Commission of Indiana.

Train No. 28, drawn by engines 7029 and 7480, consisted of one parlor baggage car, one dining car, three sleeping cars, one compartment dining car, and one compartment observation car. All of these cars had wide vestibules and were of steel construction, with the exception of the dining car, which was of wooden construction, equipped with steel non-telescoping ends. Train No. 28 left Chicago, its western terminus, at 2.45 p. m., double header. It makes 10 stops between Chicago and Fort Wayne, Ind., and is scheduled to cover the 124 miles on the division between Clarke, Ind., and Fort Wayne, Ind., in 120 minutes. On account of having three engine failures between Chicago and Winona Lake, they were delayed about one hour and ten minutes. Fort Wayne is the regular terminal for engines and engine crews on this train. Engines 7029 and 7480, in charge of Engineman Malone and Engineman Burger, respectively, both of whom were regularly assigned to run between Fort Wayne, Ind., and Crestline, Ohio, were ready at Fort Wayne to proceed east with the train on its arrival, and, on account of their being ready and convenient, were ordered by the assistant trainmaster to go west, meet the train, and bring it forward. These engines met the train at Winona Lake, a station about 38 miles west from Fort Wayne, where they were coupled to the train.

The fireman on engine 7480 coupled the engines to the train at Winona Lake and also coupled the air hose between the tender of the rear engine and the train. After the engines were coupled to the train, the conductor told the engineman on the head engine to apply the air, and states that he saw that it applied on the first car.

The brakeman states that he noticed that the air applied on the forward trucks of the first car and the rear trucks of the tender of the rear engine, while the fireman who coupled the engines to the train states that he gave the engineer on the head engine a signal to apply the air and saw that it applied on the first trucks of the second car of the train. The testimony of Engineman Malone in regard to the above is as follows:

- Q. Mr. Malone, will you give us your statement in connection with the accident to No. 28, from the time you were ordered out to pick up No. 28?
- A. We were standing down there and the depot master came down and told us to back out. I asked him for a pilot, and he said all right. I told him I would put a little oil on the engine and then would back down to the office. Mr. Richardson was there at the office and I asked him for a pilot; he said we didn't need any, so I started. We went to the Junction and crossed over to No. 2 track. We went to Winona Lake and coupled up; we tried the air; they whistled once and I released and the conductor gave me a signal to go. Coming about Hadley I said to the fireman (he had been on the west end a little while previously to that time): "What do you know about this track?" He said, "It is all right to Broadway and 15 miles an hour from therein." I shut off a quarter of a mile west of Junction office and I tried the air coming down there and it seemingly worked; after we crossed the bridge, I could not state just where, but I put the brake on again and left it on until I saw this bad piece of track; then I put the air on in emergency and that is all I know about it.
- Q. Were you perfectly satisfied that your air was in working order before you left Winona Lake?
- A. I cannot say as to that because our instructions were to release the brakes as quick as possible and be ready to go. We never hold the brakes on after the first signal.
- Q. Did you get an emergency application after you crossed the bridge?
- A. I didn't put the emergency on until I saw this bad place; then everything was ended in a second, I suppose, I can't say how long; I can't say whether the emergency acted or not; I suppose it did.

The testimony of these witnesses as to what air tests were made after coupling the engines to the train, as well as to what was required by the rules, is very conflicting:

That portion of rule No. 4, page 8, relative to road tests, in the Air Brake and Train Air Signal Instructions of the Pennsylvania Railroad, Lines West, reads as follows:

When between terminal points a train has been parted for any reason, after it has been coupled again, the engineman, upon receiving the proper signal, will make a full-service application of the brakes for test, being careful to note that the brake valve discharges the proper amount of air from the brake pipe; the trainman

stationed at the rear portion of train, upon seeing that the brakes are applied properly will signal for the release of same, which, if the lat or takes place, will indicate that no angle cocks in the brake pipe have been left closed.

Should it be necessary to make additional applications of the brakes, on account of defects found while passing along the train, inspectors or trainmen shall communicate to the engineman by means of a signal, given as follows: A hand, flag, or lamp swung horizontally above the head when train is standing.

In freight service, the signal for the release of brakes, when testing them, will be as follows: A hand, flag, or lamp held at arm's length above the head, when train is standing.

In passenger service, the signal for the release as well as the reapplication of brake, when testing them, will be four blasts of the air signal whistle, which, for the release of brakes, must be given by pulling the signal cord on the rear car. In no case must a train be started until one of the trainmen or inspectors has gone forward and notified the engineman as to the condition of the brakes, the number of cars in train, and the number of brakes operative.

This rule was in no way complied with. On many railroads in passenger-train service when engines on trains are changed at terminals or on the road, for the purpose of the enginemen having certain knowledge of the working conditions of the air brake, they are required by rule to make a running test or service application of the air brake after the train has attained a speed of from 12 to 15 miles per hour, and while using steam on the engine. The Pennsylvania Railroad, Lines West, does not require this test, and for this reason no such running test was made on this train. Had this test been made it would have assured the engineman in charge of the train as to the working condition of the air brakes. It is certain that an account of the failure to make any test of the air brakes, as required by the rules, after attaching these engines to the train at Winona Lake, no one has any positive knowledge as to whether or not this train had air brakes in such working condition as would control the speed of the train. The further statement of Engineman Malone that his instructions relative to air tests were that he should release the air upon receiving the first signal whistle, certainly demands that the Pennsylvania Railroad require by rule that enginemen on passenger trains make a running test of the air brakes.

The train left Winona Lake at 6:11 p.m. and ran the distance of 36 miles to the point of accident in 33 minutes, being derailed at 6:44 p.m. at a temporary standard No. 10 crossover leading from track No. 2 to track No. 1, about 1,000 feet east of St. Mary's River Bridge, Fort Wayne, Ind. This establishes the high speed at which the train was running at the time of the accident, which is verified by the statement of Engineman Malone and the direct testimony of eyewitnesses.

After derailment, train No. 28 fouled west-bound freight train extra 9090, consisting of 40 loaded cars and 1 empty car, which was moving slowly westward on track No. 3. As a result the first three cars of train No. 28 went down an embankment into Swinney Park, the

fourth car was partially down the embankment, the fifth car remained right side up at the top of the embankment, and the sixth and seventh cars were not derailed. Three engines were badly demolished, engines 9193 and 7029 being turned almost completely around. The accident resulted in the death of the engineer on the freight extra and the engineer on the rear engine, the fireman on the head engine, and the baggageman on train No. 22, the serious injury of 1 engineer and 2 firemen, injuries to 11 dining-car employees, 5 Pullman employees, 2 railroad postal clerks and 36 passengers.

The main line of the Pennsylvania Railroad, Lines West, passing through Fort Wayne, at the place of accident, is on a fill varying from 10 to 15 feet in height, carrying two parallel tracks, which run across St. Marys River on a steel girder bridge, and extends in a straight line east, with a $2\frac{1}{2}$ degree curve approaching the bridge from the west. The view approaching the place of accident is not obscured in any manner. The tracks at this point are laid with 65-pound steel rails, rock blasted, in good condition and well maintained.

Prior to 6 a. m., August 3, at the place of accident, east-bound trains were handled on track No. 2 up to and across St. Marys River Bridge, where they were diverted by a No. 20 turnout to track No. 4, and a speed of 40 miles per hour was permitted by time-card rule when using these tracks. West-bound trains were handled on track No. 3 up to the No. 10 turnout, located about 600 feet east of St. Marys River Bridge, where they were diverted to track No. 1, and the speed restriction by bulletin was 10 miles per hour. On account of the track elevation work, tracks Nos. 2 and 4 were not in service for train movement from the place of accident east after 6 a. m., August 3, and this necessitated a change in train operation and all east-bound traffic was handled on track No. 2 to the place of accident, where it was diverted to track No. 1, no change being necessary for the handling of west-bound traffic. For the purpose of diverting trains from track No. 2 to track No. 1, east bound, a standard No. 10 crossover was located about 1,000 feet east of St. Marys River Bridge. The tracks at the place where the crossover leading from No. 2 track to No. 1 track is located are on a tangent which extends westward more than 1,000 feet to the St. Marys River Bridge.

The superintendent of this division states that their method of handling track changes is by general-order bulletins, posted in the bulletin book a sufficient time before the change is made, so that each employee running will have an opportunity of examining the order before going out on any trip which may overlap the time at which the general order becomes effective. Where track changes necessitate reduced speed, and the point at which speed is reduced is in any way obscured or difficult to locate, such place is marked by a green board, with the word "slow" painted upon it. Slow boards were used upon the order of the superintendent after consultation with the division engineer. No slow board or other signal was in use at this place to indicate to approaching engineers that slow speed was necessary.

The danger of this method of governing track changes and issuing orders requiring slow speed by bulletins posted in the bulletin books, where engineers are supposed to sign them, even though they do not work on the division where the orders apply, is clearly brought out in the testimony of Engineman Malone, who testified in part as follows:

Q. Do you remember signing general order 86?

A. I signed all the orders.

Q. Do you think that that order misled you about the condition of the track?

A. No, I don't really believe it did; I didn't know anything about the track; when you are assigned to one division we often read the orders and don't pay any attention to them if they are on the division which we don't run on.

Upon this statement of the fact, it would appear that as a matter of safety, where track conditions require reduced speed, that such instructions should be given engineers and train crews as would insure their being received and thoroughly understood, so that they could not be overlooked. In this case no one had knowledge that the engineman in charge of this train had signed general orders Nos. 83 and 86 until after the accident. The use of train orders, copies of which should be delivered to the engineman and conductor in charge of the train, instead of such general orders, should be required.

The track-elevation work through Fort Wayne had been in progress for some time, and from time to time general orders changing routes for trains and giving instructions as to speed have been issued. Several of these orders were issued within a period of 60 days immediately preceding the accident. These orders are placed upon the bulletin books for employees to sign before going out upon their trips, but investigation shows that the employees may go out on duty without having signed such orders, and until the matter is checked up the officials have no knowledge as to whether or not these general orders have been signed.

The crossover where the accident occurred was placed in operation July 22, 1910, and used for switching movement, not being used as a crossover for high-speed trains until August 3, 1911. On August 1, 1911, general order No. 83 was issued, restricting speed to 10 miles per hour when using this crossover, and placed on the bulletin book of the Pennsylvania Railroad, Line West, at Fort Wayne engine house, and was signed by Engineman P. Malone at 6 a. m. August 2, and by Engineman K. G. Burger at 3:30 p. m. August 3. This order reads as follows:

General Order No. 83. August 1, 1911.

To All trainmen and others interested, Western Division:

Effective 8 a. m. Thursday, August 3, 1911, eastward current of traffic, St. Marys River to Fairfield Avenue, Fort Wayne, will follow route outlined in attached diagram.

Block signal to right of No. 2 track, junction, will control eastward trains using route described.

Trains will not exceed a speed of 10 miles per hour through crossover just east of St. Marys River and 15 miles per hour from this crossover to Fairfield Avenue.

W. M. Wardrop, Supt.

On August 12, the day immediately preceding this accident, general order No. 86 was issued and signed by Enginemen Malone and Engineman Burger at about 3:30 p.m. on the day of the accident. This order reads as follows:

Superintendent's Office,
August 12, 1911.

General Order No. 86.

To all trainmen and others interested, Western Division:

Effective 9:01 a.m., Monday, August 14, current of traffic eastward and westward between Fairfield Avenue and St. Marys River Fort Wayne, will follow routes outlined on attached diagram.

Trains in either direction will reduce speed to 15 miles per hour between Fairfield Avenue and College Street, Fort Wayne, excepting over trestle at Broadway, where speed limit is 5 miles per hour. Main tracks west of College Street, Fort Wayne, are safe for scheduled speed.

W. M. Wardrop, Supt.

General order No. 83 was the only notice given to employees that this crossover was in service and that slow speed would be required, and general order No. 86, which was signed by Enginemen Malone and Burger just prior to going out on this trip, changed the routes to be used and permitted the use of scheduled speed at the place of accident at 9 o'clock the morning after the accident. Prior to the issuance of general order No. 83 there were no speed restrictions over this track east bound at the place of accident, except that the time card required speed to be reduced to 40 miles per hour or less for trains using the turnout leading from track No. 2 to track No. 4.

Trains on this division of the Pennsylvania Railroad, Lines West, between Clarke Station, west, and Junction, east, are governed by automatic block signals, and no train orders are issued in ordinary train operation. Train movements are authorized by the position of signals, which indicate to the approaching engineman whether or not he can proceed at regular speed, at caution, or stop. On account of the track-elevation work under construction, the automatic block signals were not used between Junction and "FY" tower, a block station east of Fort Wayne passenger station, so that trains were governed by manual block-signal rules between these stations. Train No. 28, on arrival at Junction, received a clear block signal, which was an indication to the engineman that the block was clear for his train, and the only notice he had as to the requirement of slow speed at the crossover leading from track No. 2 to track No. 1 was general order No. 83. This crossover was not governed by any signals which would indicate to an approaching train that reduced speed would be required when crossing over from track No. 2 to track No. 1. The engineman, Malone and Burger, on train No. 28, were regularly assigned on the eastern division between Fort Wayne, Ind., and Crestline,

Ohio. Engineman Malone, on engine 7029, who was handling the air on the front engine, had not been on duty on the western division since November 5, 1909, and Engineman Burger, on engine 7480, had not been on that division since September 26, 1910. These enginemen, being regularly assigned to the eastern division, were not familiar with the track conditions and changes occurring on the western division, and the only information they had as to the speed requirements at the place of accident was the general order they had signed at the Fort Wayne engine house some 10 days prior to the accident.

The entire equipment of the train, with the exception of the dining car, was of all-steel construction. The dining car was equipped with nontelelescoping ends. The speed of this train was so great and the impact of the colliding engines so terrific that the head engine on No. 28, as well as the freight engine which they fouled on track No. 3, was turned entirely around. Several of the six-wheel trucks were torn from the cars in No. 28 and buried entirely in the rock ballast of the road bed, while three of the cars on this train were torn entirely from their trucks and landed at the foot of the embankment.

Had the cars on this train been of the wooden construction commonly used, they would undoubtedly have been crushed to pieces and telescoped by the impact, causing a frightful loss of life. To the all-steel equipment can undoubtedly be attributed the fact that not a passenger lost his life and only one was seriously injured.

The figures given in the following table show the number of killed and injured in other accidents recently investigated, in which wooden cars composed the equipment. These figures are taken from the monthly accident reports made to the Commission by the railroads.

Railroad	Date	Location	Kind	Type of Train
	: 1911 :	:	:	:
Pennsylvania	: Apr. 29 :	: Martins Creek, Pa. :	: Derailment :	: Passenger :
New York, New Haven & Hartford	: Jul. 11 :	: Bridgeport, Conn. :	: do :	: do :
Seaboard Air Line	: Jul. 27 :	: Hamlet, N. C. :	: Head-on : collision :	: Passenger and : freight. :
Bangor & Aroostook	: Jul. 28 :	: Grindstone, Me. :	: do :	: Passenger and : passenger. :
Lehigh Valley	: Aug. 25 :	: Manchester, N. Y. :	: Derailment :	: Passenger. :
Penna. Lines	: Aug. 13 :	: Fort Wayne, Ind. :	: Derailment : and colli- : sion after : derailment :	: Passenger and : freight. :

Railroad	Passengers		Employees		Speed: Miles	Character of Equipment.
	Killed	Injured	Killed	Injured		
Pennsylvania	8	99	4	8	50	Wooden; wide vestibule.
New York, New Haven & Hartford.	11	50	3	4	60	do
Seaboard Air Line	11	262	None	5	30	Wooden, open platform.
Bangor & Arrostock	5	40	4	2	25	do
Lehigh Valley	27	59	1	4	25	Wooden, wide vestibule.
Penna Lines	None	57	4	4	65	Steel *

*In this train there was a modern wooden dining car, equipped with wide vestibules and nontelelescoping ends.

This investigation develops the following facts:

The accident was caused by train attempting to pass over a No. 10 cross-over from one track to another at a high rate of speed, probably about 65 miles per hour. The engineman in control of the train, being regularly assigned to another division, was unfamiliar with the track over which he was running, and for that reason failed to observe general order No. 83, which required that speed over this crossover should be reduced to 10 miles per hour or less.

The signals and rules governing reduced speed at this crossover were not adequate to provide proper safety and prevent accidents of this character for the following reasons:

1. Train movements over this division were by signal indications, and no signal was provided to indicate the reduced speed required at this crossover.

2. There was no official knowledge that employees signed the general orders posted in the bulletin books requiring reduced speed prior to going out on their trains, although in this case it was found after the accident that the engineman in control of the train had signed this bulletin some 10 days before the accident occurred.

3. There was no slow board used to indicate to approaching trains that slow speed was required, although it was the practice to occasionally use such slow boards.

The air-brake tests required by rule were not adequate to provide that certain knowledge of air-brake conditions which enginemen in charge of passenger trains should at all times possess, and in this instance the provisions of the rule were not properly complied with by the employees in charge of this train.

The engineman in control of the train was required to handle this high-speed passenger train over tracks with which he stated he was not familiar and over which he had not run for more than 21 months.

As a preventive of such accidents it is recommended that:

1. In all cases where the track is not safe for high speed, notice of the slow speed required shall be given to engineers by train orders and slow boards shall be installed to indicate to the approaching train the location of the place where the slow speed is required.

2. On Passenger trains, in order that engineers may at all times possess certain knowledge as to the condition of the air brakes, in addition to the terminal tests, running tests shall be required.

3. Engineers shall not be required or permitted to handle passenger trains over tracks with which they are not familiar, except when accompanied by a pilot who is familiar with the tracks.

The foregoing findings of fact and recommendations are fully concurred in by the Indiana Railroad Commission.

It is further recommended that, in order to provide the safety to which the traveling public is entitled the substitution of all-steel equipment for wooden equipment in high-speed passenger service shall be required at the earliest practicable date.

The recommendations submitted with the report on the recent accident at Bridgeport, Conn., also apply to this accident. They are as follows:

1. In all cases where accidents are likely to occur through the non-observance by engineers of any rule or signal calculated to insure safety, automatic train-control apparatus shall be provided to insure that trains will be brought to a stop in case the rules are not properly observed.

2. In the absence of such automatic control apparatus, on tracks where high-speed trains are run switches should not be set to divert a high-speed train from one track to another at a crossover which is not safe for high speed until after the train has been brought to a stop.

Respectfully,

Chief Inspector of Safety Appliances