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INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE PENNSYLVANIA RAILROAD AT TYRONE, Pa.,
ON DECEMBER 24, 1932.

February 11, 1933

To the Commission:

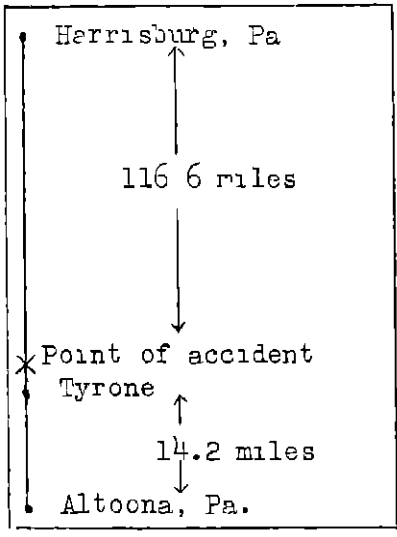
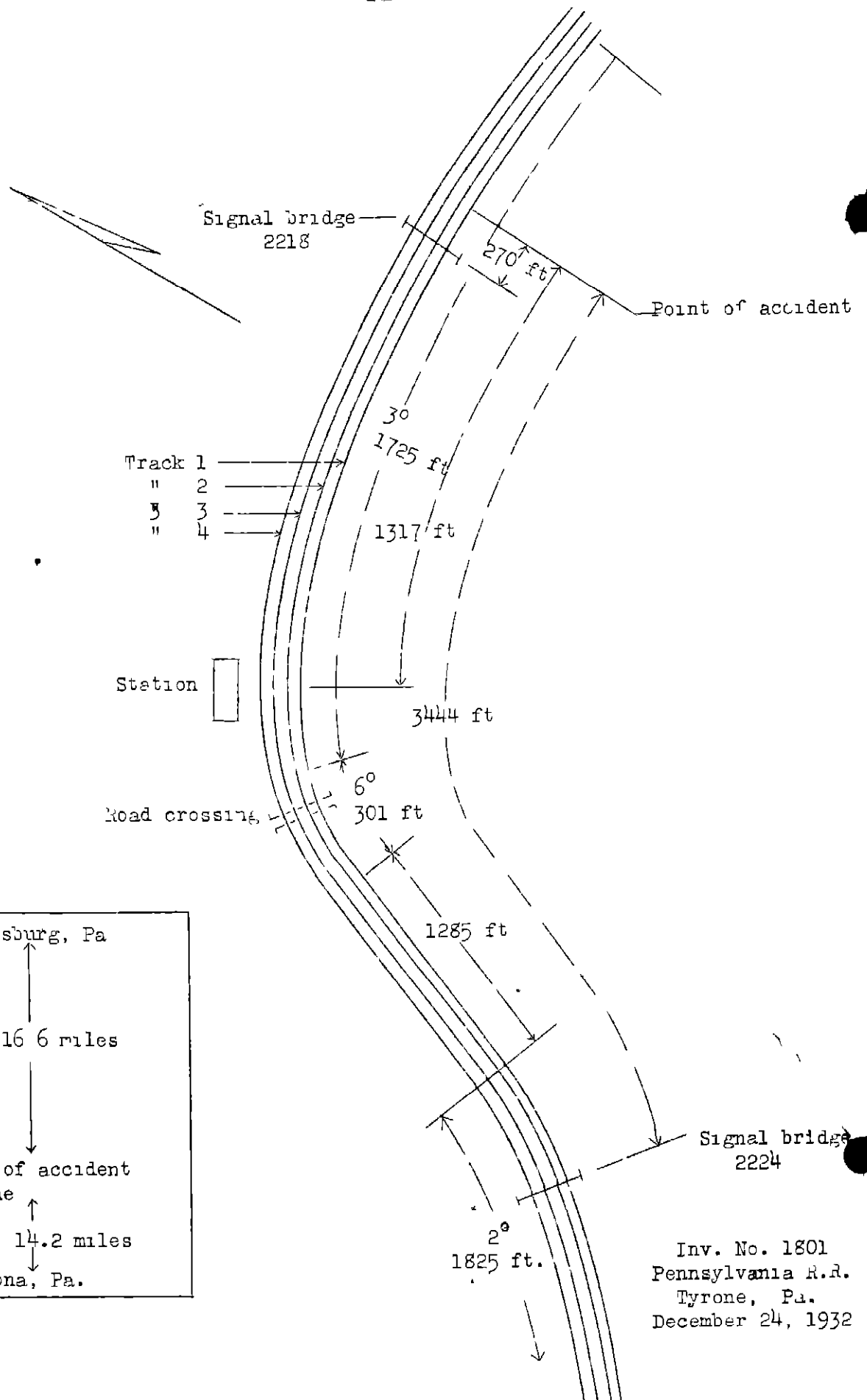
On December 24, 1932, there was a rear-end collision between two freight trains on the Pennsylvania Railroad at Tyrone, Pa., which resulted in the injury of one employee.

Location and method of operation

This accident occurred on that part of the Middle Division which extends between BO Block Station, near Altoona, Pa., and Banks, west of Harrisburg, Pa., a distance of 123.1 miles. In the immediate vicinity of the point of accident this is a four-track line over which trains are operated by time-table, train orders, an automatic block-signal system, and an automatic train-stop and cab-signal system of the continuous coder type. The tracks are designated from south to north as follows: 1, eastbound freight, 2, eastbound passenger; 3 westbound passenger, and 4, westbound freight. The accident occurred on track 1, at a point about 1,380 feet east of the station at Tyrone. Approaching this point from the west, there are 1,285 feet of tangent, followed by a compound curve to the right consisting of a curvature of 6° for a distance of 301 feet and 3° for 1,725 feet, the accident occurring on this latter part of the compound curve approximately 425 feet from its eastern end. The grade is generally descending for eastbound trains, having a maximum of 0.53 per cent and an average of 0.4 per cent.

The signals involved are mounted on signal bridges 2224 and 2218, located 3,444 feet and 270 feet, respectively, west of the point of accident, the eastbound signal on bridge 2218 is the distant signal to the home signal at Forge interlocking which is 1 mile east of Tyrone. The signals are of the position-light type. The maximum authorized speed for the trains involved in the territory from Altoona to the point of accident is 25 miles per hour.

The weather was cloudy at the time of the accident, which occurred about 12.39 p.m.



Inv. No. 1801
 Pennsylvania R.R.
 Tyrone, Pa.
 December 24, 1932

Description

Eastbound freight train extra 6906 consisted of 77 loaded cars, 4 empty cars and a caboose, hauled by engine 6906, and was in charge of Conductor Lusk and Engineman Sweger. This train departed from Antis, at the east end of Altoona Yard, at 11.49 a.m., passed Grazier, 1.2 miles west of Tyrone, at 12.10 p.m., stopped at signal bridge 2218, and then proceeded and made a second stop about 12.35 p.m. at the home signal at Forge interlocking, with the caboose standing at a point about 270 feet east of signal bridge 2218, and while standing at this point the rear of the train was struck by extra 6919.

Eastbound freight train extra 6919 consisted of 111 loaded cars and a caboose, hauled by engine 6919, and was in charge of Conductor Walker and Engineman Hockenberry. This train departed from Antis at 12.13 p.m., passed Grazier at 12.36 p.m., and collided with extra 6906 while traveling at a speed of about 4 miles per hour.

The caboose and four rear cars in extra 6906 were derailed and badly damaged, the caboose being demolished. Engine 6919 stopped in line with track 1 in an upright position, partially derailed to the south, the front end of the engine was badly damaged. Excepting the thirty-third car in extra 6919, none of the remaining equipment in either train was derailed or damaged. The employee injured was the fireman of extra 6919.

Summary of evidence.

Conductor Lusk, of extra 6906, stated that when the first stop was made at Tyrone the caboose stood about 4 car-lengths west of a road crossing or about 670 feet west of the station, and the flagman went back immediately. The train pulled ahead slowly about three or four minutes later and Conductor Lusk went to the rear of the caboose to look for the flagman, the flagman had returned but had left a fusee on the track. The next stop was made with the caboose standing about six or seven car-lengths east of signal bridge 2218. The flagman got off promptly and went back to the signal bridge to telephone, after which he gave the conductor information as to eastbound scheduled trains and then continued back to flag. Conductor Lusk walked eastward along his train, he heard a train approaching and thought it was train No. 54, he then heard the whistle sounded for the road crossing and heard torpedoes explode and when he was about six or seven car-lengths from his caboose he heard a second pair of torpedoes explode and on looking back he saw the extra train about three car-lengths from the rear of his own train.

Flagman Roath, of extra 6906, stated that when the first stop was made he put down torpedoes at a point about 800 feet from the rear of his train, he also left a fusee and returned to his train. When the second stop was made he put down two torpedoes just east of signal bridge 2218, and after telephoning he walked on back practically to the east end of the station platform. He heard a train approaching, heard the whistle sounded for the road crossing and also the explosion of the first set of torpedoes. When the train came in sight it was about 20 car-lengths from him and was traveling at a speed of 18 or 20 miles per hour, he flagged it and the engineer answered his flag immediately. When the train passed him the speed appeared to be about 12 or 15 miles per hour and as it was being reduced very slowly he realized that it probably would not stop before colliding with his own train, so he continued on back to protect track 2, as train No. 54 was then due at that point. After the accident he talked with the engineer and asked him if he had given him proper protection, the engineer answered "plenty, but the brakes would not hold".

Engineman Hockenberry, of extra 6919, stated that he received an approach indication at signal bridge 2224, and as his engine passed under the signal bridge he operated the acknowledging lever of the automatic train-stop device, the train was traveling at a speed of 18 or 20 miles per hour, and shortly after passing the signal, or when about 10 car-lengths west of the road crossing, he made a 10 or 15 pound brake-pipe reduction and thought it would be sufficient, but the brakes did not seem to take hold and he then applied them in emergency, at which time the engine was in the vicinity of the station at Tyrone. The brakes were taking hold gradually, but the weight of the train was pushing it ahead, and when he saw that it was not going to stop he got off, at which time his engine was about five or six car-lengths from the train ahead and was traveling at a speed of 3 or 4 miles per hour. Engineman Hockenberry further stated that before leaving Antis the brakes were reported to him as operating properly on the terminal test. The gauges registered 70 pounds pressure in the train line and 110 pounds in the main reservoir, and he made the usual road test just before leaving, while the leakage showed not more than $1\frac{1}{2}$ or 2 pounds per minute. He first used the brakes in the vicinity of Bellwood, 2.8 miles from Antis, for the purpose of setting the retainers, having instructed the brakeman to turn up 15 retainers, and he also made a 5 or 6-pound brake-pipe reduction in the vicinity of Tipton and again at Grazier, releasing the brakes after each reduction, and had no reason to believe that the brakes were not in proper working order. After the accident Engineman Hockenberry was on the relief engine which handled the train eastward, and in trying out the brakes at various points it was developed that there was no question as to their holding power. Engineman Hockenberry also expressed the opinion that in view of the condition of the rail and the weather, he did not begin braking soon enough or hard enough.

Fireman Shaw and Head Brakeman Haverstein, of extra 3919, stated that when about 15 car-lengths from signal bridge 2224 they both called the approach indication, but the engineer did not call it until he could see it, when the engine had practically reached the signal. When the cab whistle sounded the engineer operated the acknowledging lever of the train-stop device and shortly afterwards started to apply the brakes. As the engine approached the road crossing, exploding torpedoes, Brakeman Haverstein got off the seatbox and stepped to the gangway and on seeing the stop signal ahead he warned the engineer and the engineer applied the brakes in emergency but the speed did not seem to be reduced. When Brakeman Haverstein was on the step preparatory to jumping off he saw the flagman about 6 or 8 car-lengths ahead and about 20 car-lengths from the rear of the standing train.

Conductor Walker and Rear Brakeman Fleck, of extra 6919, stated that on leaving Altoona the gauge in the caboose registered 70 pounds pressure, they felt an air-brake application in the vicinity of Tipton, apparently for the purpose of controlling the train. Conductor Walker stated that when the rear end of the train was in the vicinity of Grazier he saw the air gauge drop to 50 pounds and later on it dropped to zero. The train was traveling at a speed of about 2 miles per hour when he felt a surge and the train came to a stop.

Following the accident, the thirty-third car in extra 3919 was set out at Tyrone, due to damaged end sills, and engine 6965, of the same class as engine 6919, was coupled to the train and a terminal air-brake test was made by Master Mechanic Leach. The gauges on engine 6965 showed a pressure of 100 pounds in the main reservoir and 70 pounds in the train line. A 15-pound brake-pipe reduction was made and a leakage test for a period of 1 minute showed a leakage of $1\frac{1}{2}$ pounds per minute, a further reduction of 5 pounds was then made, making a total of 20 pounds. The brakes were then examined by car inspectors and all were found to be applied, and when the brakes were released each car was again examined and each brake was found released. The piston travel was found to be within the prescribed limits. Engine 6965 then hauled the train to Harrisburg and Road Foreman of Engines Trumpower said four tests of the air brakes were made approaching signals en route and each time the brakes functioned properly. The first test was made in territory with the grade and curvature approximately the same as approaching the point of accident, and with the train traveling at a speed of 22 miles per hour, no retaining valves being in service, an initial reduction of 6 pounds was made and then increased in two stages to 12 pounds and the train came to a stop in 2,870 feet. The other tests consisted of greater brake-pipe reductions with the train traveling at different speeds with various grades and curvatures; each time the brakes functioned as intended.

Conclusions

This accident was caused by the failure of Engineman Hockenberry, of extra 6919, properly to obey signal indications.

Special time-table instruction D-2005 provides that a train must not exceed one-half its maximum authorized speed when passing an approach signal indication, and that where the signal can not be seen a sufficient distance to reduce to that speed at the signal, the speed should be so reduced as soon as proper handling of the train will permit. The evidence indicates, however, that Engineman Hockenberry was operating his train at a speed of 18 or 30 miles per hour on passing the approach signal indication on bridge 2224, that he forestalled an application of the brakes by means of the automatic train-stop device, that the engine exploded torpedoes at a point probably 800 feet east of the signal, and that Engineman Hockenberry did not apply the brakes until he had reached a point approximately 1,200 feet beyond the signal, when he made a brake-pipe reduction of 10 or 15 pounds. He moved the brake-valve to emergency position when somewhere in the vicinity of the station at Tyrone, or approximately 1,040 feet from signal 2218, which was displaying a stop indication, but it was too late to stop his train before passing this signal and colliding with extra 6906. Terminal air-brake tests made both before and after the occurrence of the accident, as well as tests made en route from Tyrone toward Harrisburg after the accident, clearly showed that the air brakes in this train were in good working order.

Attention has been called in previous accident investigation reports to the necessity of taking immediate action at the caution or approach signal location toward bringing trains under control, and the special time-table instructions of this railroad in substance provide for such a procedure. The rigid observance and enforcement of rules of this character should result in a train being brought under such control as to make it a simple matter to stop if necessary before passing the next signal, and the danger of the occurrence of such accidents as the one here involved would be materially lessened.

Respectfully submitted,

W. P. BORLAND,

Director.