

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE  
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
PENNSYLVANIA RAILROAD AT FRANKFORD JUNCTION, PA.,  
ON JANUARY 7, 1929.

March 23, 1929.

To the Commission:

On January 7, 1929, there was a collision between two light engines on the Pennsylvania Railroad at Frankford Junction, Pa., resulting in the death of one employee and the injury of five employees.

Location and method of operation

This accident occurred on the Philadelphia Terminal Division of the Eastern Region, in the vicinity of "FJ" block station, located 9.3 miles east of Philadelphia, this is a four-track line over which trains are operated by time-table, train orders and an automatic block-signal system. The tracks are numbered from south to north, 1, 2, 3 and 4, the accident occurring on track 3, the westbound inward freight track, at a point 150 feet east of the inward home signal bridge at "FJ" interlocking station. Approaching the point of accident from the east the track is tangent for more than 1 mile, followed by a  $1^{\circ} 44'$  curve to the left 1,985 feet in length, the accident occurring on this curve at a point 572 feet from its eastern end.

"FJ" interlocking station is equipped with a 48-lever Saxby and Farmer mechanical machine and is located south of the tracks at a point about 750 feet west of the inward home signal bridge, which bridge spans the tracks and defines the eastern interlocking limits at this point. Frankford Junction yard is also located south of the tracks and west of "FJ" interlocking station. The switches controlled from "FJ" are equipped with facing-point locks and the switch levers are electrically locked by route locking circuits; the inward home signal is semi-automatic and this signal and the other signals involved are of the position-light type. The inward home signal is located on the inward home signal bridge; automatic block signal 103-N is located 4,604 feet east of the inward home signal, while automatic block signal 111-N is located 4,795 feet farther east. When a stop indication is displayed on the inward home signal, an approach indication is displayed on automatic block signal 103-N. The inward home signal is approach-locked and when a westbound train on track 3 passes signal 111-N the operator at "FJ" interlocking station is apprised of the fact by an indicator light

in the cabin being extinguished, the light remaining out until the train has passed the inward home signal.

The weather was clear at the time of the accident, which occurred at about 3.37 a.m.

#### Description

Light engine 3607, headed east, in charge of Conductor Campbell and Engineman Eggeling, after having disposed of its train of freight cars and caboose in Frankford Junction yard, and after the route had been lined accordingly, headed out of the yard and through several crossovers to westbound inward freight track 3, thence eastward against the current of traffic a distance of about 825 feet, where it was brought to a stop with the front end of the engine 150 feet east of the inward home signal bridge, just beyond the insulated track joints. The route was then changed for a movement westward on track 3, with the current of traffic, it being intended to make a back-up movement to the engine house, but while standing at this point preparing to start the contemplated back-up movement the front end of the engine was struck by light engine 3839.

Light engine 3839, headed west, in charge of Engineman Langreder, passed "HG" block station, 3.8 miles east of "FJ" block station, at about 3.31 a.m., passed signal 103-N, which was displaying an approach indication, approached the inward home signal, which at first displayed a stop indication but shortly afterwards this stop indication was changed to clear, and just before reaching this signal location light engine 3839 collided with light engine 3607 while traveling at a speed estimated to have been about 18 miles per hour.

Neither engine was derailed but both had their front ends considerably damaged. The employee killed was the conductor of engine 3607.

#### Summary of evidence.

Engineman Eggeling, of light engine 3607, stated that at the time his engine headed out of Frankford Junction yard he fully expected that it would be crossed over to track 2, the eastbound outward freight track, but on definitely realizing that the route had been lined for his engine to cross over to track 3, the westbound inward freight track, he reduced speed and then brought the engine to a stop west of the inward home signal bridge, remaining at this point less than one minute. According to his statement Conductor Campbell and Brakeman Tracey then got off the engine, the conductor proceeding toward the telephone box located north of the tracks at the inward home signal bridge and the flagman starting out to protect by flag. Operator Quinn,

stationed at "FJ", then sounded two blasts on the tower whistle and Engineman Eggeling took this signal to mean to hurry up the movement eastward against the current of traffic into automatic block signal territory and just beyond the inward home signal bridge in order to then make the contemplated back-up movement westward with the current of traffic. Engineman Eggeling did not proceed as soon as the two blasts were given but waited to give the flagman time to afford protection, before starting the engineman saw a red lamp and a white lamp some distance away, between tracks 2 and 3, and he thought these lanterns were being carried by his own flagman. Thinking that flag protection was being afforded Engineman Eggeling then moved the engine eastward on track 3 just far enough to clear the signal bridge, bringing it to a stop about two engine-lengths from where the red and white lanterns were located, after which he looked up at the signal bridge and observed a proceed indication displayed for the intended back-up movement westward with the current of traffic on track 3. Just as he turned to reverse the engine he saw the headlight of light engine 3839 but could not realize that it was approaching on the same track; then he made a move to reverse his engine and at this time he definitely realized that engine 3839 was on the same track and that a collision was imminent. He had time only to shout a warning of danger and brace himself before the collision occurred. Engineman Eggeling further stated that he did not get any signal from the flagman to proceed against the current of traffic on track 3 and that in his estimation proper flag protection was not afforded for the intended movement. It also appeared from his statements that he did not have permission from the signalman to enter automatic block-signal territory, nor did he wait for the conductor to return from the telephone to ascertain whether such permission had been obtained, but proceeded eastward on hearing the two blasts sounded on the tower whistle, which he thought indicated that the signalman wanted the movement to be made, especially as the flagman had started out to protect the contemplated movement. He said that it was not the practice when making a movement against the current of traffic, such as was done on this occasion, to be called personally to the telephone or tower and told that it was all right to proceed, but merely to be given a hand lantern signal, a signal from the tower whistle, or some other such signal, and had the tower whistle not been sounded he would not have moved his engine eastward against the current of traffic.

Brakeman Tracey, of engine 3607, stated that after his engine moved out of the yard it was brought to a stop on track 3 at a point about four or five car-lengths west of the inward home signal bridge. Brakeman Tracey then

got off on the engineman's side and walked to the head end of the engine with a white lantern, picked up a red lantern and started to walk eastward toward the signal bridge. After he had proceeded about one car-length two blasts were sounded on the tower whistle and then his engine followed and overtook him, whereupon he boarded the step at the front end of the engine, set the red lantern down, and remained on the step until the engine was brought to a stop just east of the signal bridge. Brakeman Tracey kept the white lantern in his hand and turned around to pick up the red lantern but on looking eastward he saw engine 3839 approaching, about four or five car-lengths distant. He immediately waved stop signals with his white lantern, shouted, and then ran across to track 4 out of the way. Brakeman Tracey further stated that at the time his engine was brought to a stop on track 3 west of the signal bridge the conductor got off the engine on the fireman's side and started toward the telephone box and that he never saw the conductor again prior to the accident. Brakeman Tracey understood that flag protection should be afforded before a train enters automatic block-signal territory against the current of traffic but said that he did not take action toward bringing his engine to a stop when it followed and overtook him as he was of the opinion that everything was all right when the two blasts were sounded on the tower whistle.

Engineman Langreder, of engine 3839, stated that signal 103-N was displaying an approach indication as his engine passed under it at a speed of about 25 miles per hour. Speed was then reduced to about 15 miles per hour and when approaching the home signal he observed that it was displaying a stop indication. The indication of the home signal was afterwards changed, however, and he said that on reaching a point about 2,000 feet east of it the fireman called "clear", then he saw the clear indication displayed, repeated it to the fireman, and began to work steam. Engineman Langreder was watching the home signal and did not see engine 3607 or any lights on it, although Engineman Eggeling had said the headlight was burning dimly, nor did he see the flagman or the conductor of that engine prior to the accident, and he was unaware of anything wrong until the collision occurred, at which time the throttle of his engine was open slightly and the engine was moving at a speed of about 18 miles per hour.

Operator Quinn, on duty at "FJ" interlocking station, stated that he had worked at "FJ" for five nights previous to his present assignment and prior to that he had worked there on March 7, 8, and 9, 1928, he had also worked at various other block stations. Before engine 3607 departed from Frankford Junction yard Conductor Campbell telephoned and reported that it was ready to proceed to the engine house. Operator Quinn told the conductor that the engine would be

headed out on track 3, and the Conductor said that he would again telephone from the signal bridge. Shortly afterwards engine 3607 moved from the yard and was brought to a stop on track 3 at a point west of the signal bridge, Conductor Campbell then telephoned and requested permission to go east of the home signal, against the current of traffic and into automatic block-signal territory, and Operator Quinn gave permission for the movement to be made, saying nothing to the conductor about engine 3839 having already passed "HG" block station. He then sounded two blasts on the tower whistle for the purpose of hurrying the movement, and he said he felt that a crew within the limits of his tower would move upon being given such a signal provided the movement was made under rule governing the particular movement. Operator Quinn knew full well that engine 3839 had passed "HG" block station at the time he gave permission for engine 3607 to move eastward against the current of traffic and into automatic block-signal territory, but thought the automatic signals would protect engine 3607, and that the movement would also be governed by rule 505c which requires a crew to afford flag protection when making a movement such as was being made by engine 3607.

Operator Hawthorne, stationed at "HG" block station, stated that engine 3839 passed that point on track 3 at 3.31 a.m. He had no knowledge of the movement of light engine 3607 against the current of traffic at "FJ" on track 3.

Statement of members of the crew of train BF-10, which was standing on track 2 with its rear end near the <sup>toward</sup> home signal bridge, corroborated in substance the statements of Engineman Eggeling and Brakeman Tracey, of engine 3607, as to what transpired at "FJ" immediately prior to the occurrence of the accident.

A check of the operation of signal control and approach locking circuits in connection with movements on track 3 at "FJ" interlocking station, made subsequent to the accident, disclosed the equipment to be in good condition and adjustment and to be functioning properly.

#### Conclusions

This accident was caused by the action of Operator Quinn, stationed at "FJ" interlocking station, in giving permission for a movement to be made against the current of traffic and into automatic block-signal territory when he knew a train had already passed the last block office and by the failure of Engineman Eggeling, of engine 3607, to ascertain whether such permission had been obtained and to know definitely whether proper flag protection was being afforded before starting the movement. Brakeman Tracey, of engine 3607, is also at fault for his failure to take action toward bringing his engine to a stop and to have it remain until flag protection was afforded.

Rule 505c of the operating department of this railroad reads as follows:

A train having passed beyond the limits of a block, must not back into that block without orders from the Superintendent, except that while shifting at an interlocking station movements may be made against the current of traffic beyond the home-signal by permission of signalman and under protection as prescribed by Rule 99. Signalman must not give permission for such movement when there is a train between the point where the move is to be made and the next block station in the rear where a signalman is located, or if permission has been given for a train to enter the block at the rear.

Operator Quinn knew that light engine 3839 had passed "HG", the next block station in the rear, when he gave permission for the movement to be made against the current of traffic; regardless of this fact, however, he sounded two blasts on the tower whistle in order to have the movement hurried, being of the impression that the automatic signals would protect engine 3607 and thinking that the crew would afford protection as required by rule 505c. Had he complied with the requirements of rule 505c as it related to his own duties, however, instead of depending on some one else to comply with the rule, the accident could have been averted.

Engineman Eggeling started the movement eastward against the current of traffic beyond the limits of "FJ" interlocking station and into automatic block-signal territory upon hearing the two blasts sounded on the tower whistle, not waiting to find out whether Conductor Campbell had obtained permission from the operator to make the movement or definitely ascertaining whether proper flag protection was being afforded, neither did he receive a signal for the movement from any member of his crew. As a matter of fact the towerman had authorized the making of the movement in question but Engineman Eggeling did not know of this fact; in either event, however, it was incumbent on him to know beyond any doubt that he had sufficient flag protection before starting the movement, and then to move only upon signal from some member of his crew.

Brakeman Tracey failed to have his engine brought to a stop until he had time to afford proper flag protection for the movement being made, saying that he was of the opinion everything was all right when the two blasts were sounded on the tower whistle. Proper attention to his duties on the part of Brakeman Tracey would also have made it possible to prevent the accident.

The employees responsible were experienced men and at the time of the accident none of them had been on duty contrary to any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.