

Inv-2213

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
PENNSYLVANIA RAILROAD

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LENOVER, PA.

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OCTOBER 24, 1957

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INVESTIGATION NO. 2213

SUMMARY

Inv-2213

Railroad: Pennsylvania

Date: October 24, 1937

Location: Lenover, Pa.

Kind of accident: Rear-end collision

Trains involved: Work train : Work Train

Train numbers: Work Extra 1714 : Work Extra 1957

Engine numbers: 1714 : 1957

Consist: 7 cars, hauled by : 7 cars, pushed by  
engine backing up : engine backing up

Speed: Standing : 7-15 m.p.h.

Track: 0°30' right curve 1,076 feet, followed  
by 1,050 feet tangent to point of  
accident and beyond.

Weather: Clear

Time: 3:52 p.m.; dark.

Casualties: 1 killed; 13 injured

Cause: Failure to afford proper rear-end  
protection for standing train. Failure  
of crew of following train to maintain  
proper lookout when proceeding into  
an occupied block under caution-slow-  
speed signal indication.

November 30, 1937

To the Commission:

On October 24, 1937, there was a rear-end collision between two work trains on the Pennsylvania Railroad at Lenover, Pa., which resulted in the death of 1 railroad employee, and the injury of 1 railroad employee and 12 construction company employees. This accident was investigated in conjunction with a representative of the Pennsylvania Public Utility Commission.

#### Location and method of operation

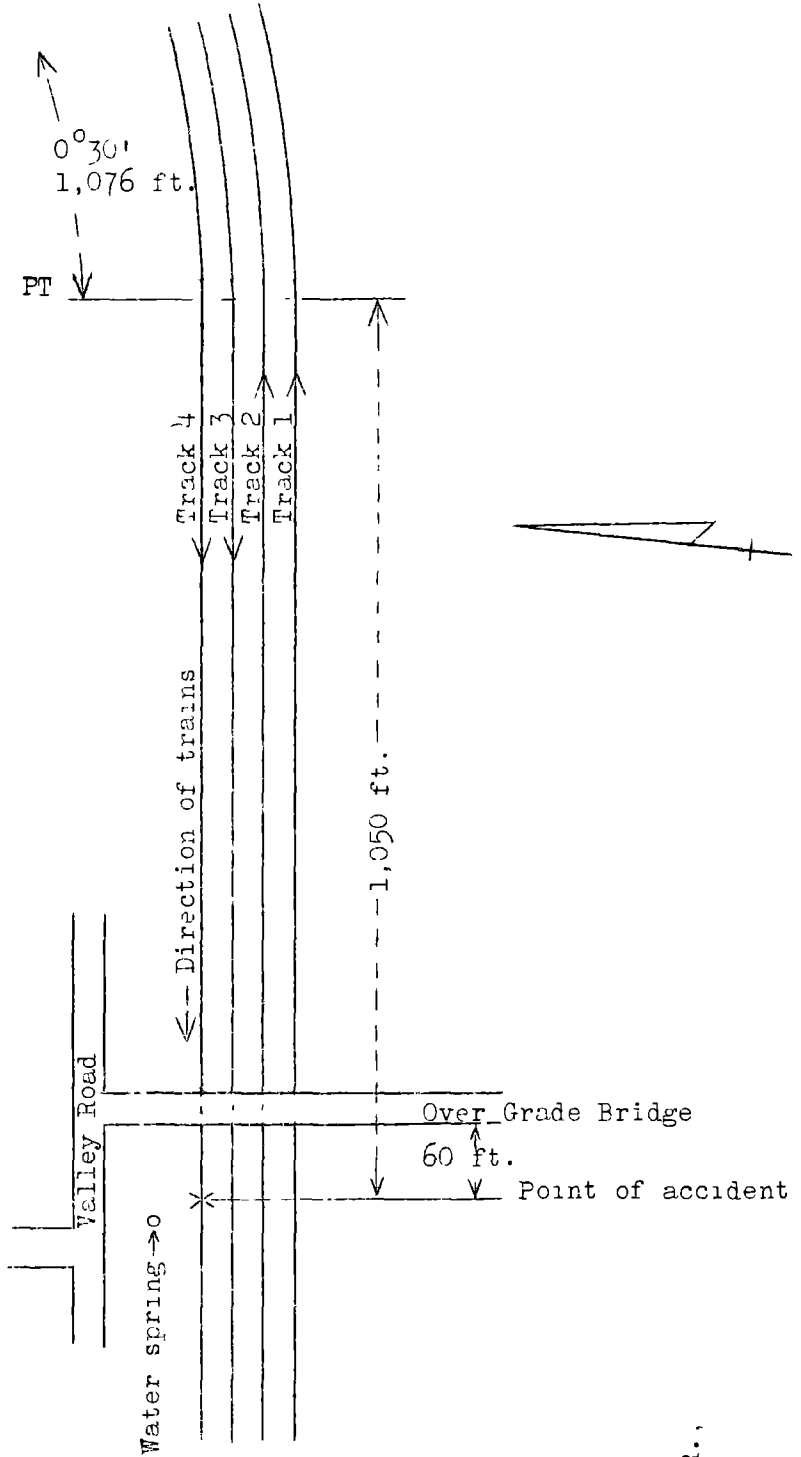
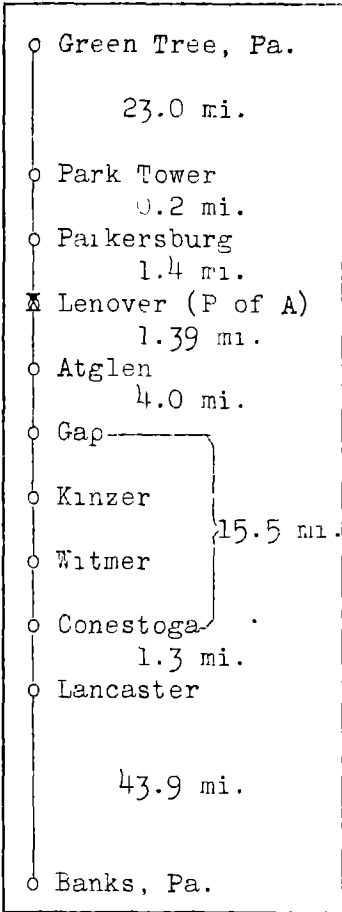
This accident occurred on that part of the Philadelphia Division which extends between Green Tree and Banks, Pa., a distance of 90.7 miles; in the vicinity of the point of accident this is a 4-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The tracks, numbered from south to north, are 1, eastward passenger; 2, eastward freight; 3, westward freight; 4, westward passenger. The accident occurred on track 4, opposite a spring at which work trains frequently replenish their water supply. Approaching this point from the east there is a  $0^{\circ}30'$  curve to the right 1,076 feet, followed by 1,050 feet of tangent which extends to the point of accident and beyond. The grade is 0.52 percent descending westward.

Electrification of this portion of the division was in progress, and work trains manned by Pennsylvania Railroad employees were used by contractors installing the overhead catenary system. An overhead highway bridge crosses the tracks at a point about 60 feet east of the point of accident, and the spring is located about 75 feet west of this bridge and 25 feet north of the tracks. Work trains stop at this and other springs daily to secure a supply of drinking water for the construction men.

The weather was clear and it was dark at the time of the accident, which occurred about 8:52 p.m.

#### Description

Work Extra 1714, consisting of 1 gondola car, 4 tower cars, 1 material car, and 1 riding car, in the order named, hauled by engine 1714, headed east and backing up, was in charge of Conductor Henry and Engineman Morrison. This train entered track 4 just east of Park block station at 8:40 p.m., according to the train sheet and after moving westward a distance of approximately 1.6



Inv. No. 2213  
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 Lenover, Pa.  
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miles stopped opposite the spring at Lenover at about 8:46 p.m. While standing at this point, engaged in taking on a supply of drinking water, it was struck by Work Extra 1957.

Work Extra 1957, consisting of 1 gondola car, 4 tower cars, 1 material car, and 1 riding car, pushed by engine 1957, also headed east and backing up, the riding car being the leading unit in the train, was in charge of Conductor Mumma and Engineman Shipp. This train moved westward from Park Tower at 8:47 p.m., according to the train sheet, and collided with Work Extra 1714 while traveling at a speed estimated to have been between 7 and 15 miles per hour.

The riding car, the material car and one tower car in Work Extra 1957 and the riding car in Work Extra 1714 were destroyed. The railroad employee killed was the brakeman of Work Extra 1957, and the railroad employee injured was the flagman of that train.

#### Summary of evidence

Conductor Henry, of Work Extra 1714, stated that both he and Conductor Mumma of Extra 1957 were in Park Tower at the same time and that Conductor Mumma, whose train was to follow his, knew that the leading train would stop at Lenover for a supply of drinking water. He also stated that his train was not equipped with proper marker lights so that it was necessary to use red lanterns on the rear of the train. He saw the flagman preparing the white and red lamps before departing from Park Tower and although he noticed only one red light he assumed that the flagman had proper equipment, and that he would properly protect the rear of the train. Conductor Henry and Brakeman Hill were on the engine en route to Lenover and during the trip to that point the engineman was instructed regarding the moves to be made including the intention to stop for water at Lenover. They arrived at Lenover at about 8:46 p.m. and had been standing at that point 6 minutes when the accident occurred. It was some time after the accident when he saw Flagman Shriver and at that time the flagman had a lighted fusee and a white lantern. The air brakes were tested by the brakemen and were working properly. Only the independent brake was applied when the accident occurred.

Statements of Engineman Morrison and Fireman Cassels were similar to those of Conductor Henry. Engineman Morrison saw the flagman going behind the train with a white lantern after the stop was made at Lenover, but did not see him after that.

Brakeman Hill stated that in making the air brake test prior to leaving Park Tower he inspected only five of the seven cars in the train. While standing at Lenover he was on the fireman's seat box looking back along the train for signals and just before the collision he saw someone giving stop signals with a lighted white lantern on the north side of track 4, apparently in the track ditch, about 10 or 15 car lengths east of the rear end of their train. He did not notice any fusee. He further stated that prior to leaving Park Tower he was at the rear of the train and saw two lighted red lanterns on the floor just inside the door of the rear car.

Flagman Shriver, of Work Extra 1714, stated that he did not see his conductor at any time while at Park Tower. He and Brakeman Hill made an air brake test at that place and found all brakes operating. His train was not equipped with regulation markers so that he was forced to use the two red lanterns which he had as marker substitutes; he attached one on each side of the rear end of the riding car, using wire hooks to secure them to the ladders and hand holds. In addition to the red lights he had three white lights and plenty of fusees and torpedoes. He did not know that his train was to be followed closely by another train or that it was to stop at the spring at Lenover for drinking water; however, the slowing down of the train approaching the spring warned him that it was going to stop but he did not drop off a lighted fusee. After the stop had been made he immediately took a white lantern and the red lantern from the south side of the riding car and started back to flag. He went back without delay and when he had reached a point about 2 or 3 car lengths from the rear of his train he saw the following train approaching at a distance of about 20 to 25 car lengths. Although he gave stop signals continuously he did not receive any response and the train passed him at a speed of about 20 to 25 miles per hour. When the leading car of Work Extra 1957 passed him there was no one on the front end and the door was closed. At that time he was back about 6 or 7 car lengths, and he did not notice any sign of a brake application or any reduction in speed prior to the collision. When the following train stopped he was directly opposite its engine. He estimated that his train had been standing about 3 minutes at the time of the accident. There was a white electric light on the front end of the leading car of the following train. He did not drop off a fusee because he thought he could flag anything that came along. After he started back and saw the following train coming he did not have time to light a fusee or put down torpedoes.

Flagman Foster, of Work Extra 1957, stated that he had been in the service about five months, and had performed the duties of

a flagman about once a week since September 14, 1937. Although he knew some of the duties of a flagman, he had not been examined on the operating rules. Neither he nor Brakeman Ennis was a qualified flagman, and each had so informed Conductor Mumma at Thorndale, where he went on duty at 6:52 p.m. The leading end of the riding car was equipped with a back-up whistle and an air-brake valve located outside of the car; the doors at both ends of the riding car had windows in them and a lighted white electric light without a reflector was hung inside of the car in such manner to show through the window of the door on the leading end. The air brakes were tested by Brakeman Ennis prior to leaving Parkesburg. Although nothing was said to him about Work Extra 1714 having left Parkesburg on track 4 ahead of his train, he noticed that it was gone and he knew that it was going westward on track 4. When his train first entered the main track at Park Tower, Flagman Foster was on the leading end and had occasion to use both the back-up air valve and the air whistle and both operated satisfactorily. At the station platform at Parkesburg, Brakeman Ennis relieved him and took up his station at the front door which was open at the time. Flagman Foster gathered up his belongings and adjusted his lanterns and then started back through the riding car, intending to work his way back to the engine and be in position to afford rear end protection for his train. He did not again see Brakeman Ennis, nor did he look toward the west end of the car. He heard the front door being closed but did not know whether the brakeman rode inside or outside at the leading end; judging from the position of his lantern and cap after the collision it seemed that he must have been outside. He estimated the speed at about 12 or 13 miles per hour at the time of collision. He did not hear any warning of danger called by the brakeman or the back-up whistle sounded, nor did he feel any air brake application made prior to the accident. About 5 minutes after the accident Flagman Foster saw Flagman Shriver, of Work Extra 1714 walking up and down the track; at that time Shriver had only one white lantern.

Conductor Mumma, of Work Extra 1957, stated that this was his first trip on a wire train. He was in Park Tower but did not recall having any conversation with Conductor Henry of Work Extra 1714 and did not know that Work Extra 1714 was going to stop at Lenover. Before departing from Park Tower the conductor told both Brakeman Ennis and Flagman Foster to stay at the front end while the train was being rushed, and that their train would follow Work Extra 1714 on track 4 to Kinder. As the train left Park Tower he saw both the brakeman and the flagman standing in the west doorway with the door open and the electric light burning. Between Park Tower and the point of accident the conductor was on the engine, and during that time he gave the engineman information regarding the moves they were about to make. The engineman and

fireman were on their respective sides of the cab, looking westward out of the open side windows, and the conductor was in the gangway. While descending the grade at a speed of about 15 miles per hour the fireman shouted a warning to the engineman that there was a flagman ahead; the conductor immediately looked out from the engineman's side, but as he did not see anything there he crossed over to the fireman's side. In the meantime the engineman applied the air brakes in emergency and the speed was reduced materially before the collision occurred. He got off the south side of the engine immediately after the accident and saw Flagman Shriver with lighted lanterns standing on track 3 about opposite the rear end of the tender.

Engineman Shipp stated that he received a caution-slow-speed indication at Park Tower and that he maintained a constant lookout westward from the open window on his side of the cab. While descending the grade the speed was 12 or 13 miles per hour and he was working a light throttle when the fireman called a warning. At the same time he saw what appeared to be the spark of a fusee being scratched just before igniting, but it was tossed away without flaring; a white light also appeared, both seemingly from the front end of his own train. At the first warning he applied the brakes in emergency but the collision occurred before any great reduction in the speed had been accomplished. Immediately after the accident he dismounted from the engine cab and at that time he saw the flagman of the train ahead with only a white lantern standing near the tender of engine 1957. At no time did the engineman see the flagman with a red lantern. The statement of Fireman LeCates of Work Extra 1957 agreed with that of Engineman Shipp except that he could not recall what lanterns were in the possession of the flagman of Work Extra 1714 just after the accident. Operator Lugar stated that Conductor Henry and Conductor Murma were in his office together about five minutes before Work Extra 1714 departed. The instructions were for Work Extra 1714 to run on track 4 to Kinzer where they were to let Work Extra 1957 pass. The operator was satisfied that both conductors understood these instructions but did not hear any conversation between the two conductors about stopping at Lenover. Work Extra 1714 departed at 8:40 p.m., and Work Extra 1957 at 8:47 p.m.

Statements of various construction employees, on both trains, were to the effect that the flagman of Work Extra 1714 started back when the train stopped for water at Lenover; one stated that the flagman had both red and white lanterns with him, but others said that he had only a white lantern. The statement of J. A. Mulligan, who was in the leading car of Work Extra 1957, indicated that the brakeman on that car had been



standing inside the door, looking through the window, until a very short time before the collision. Three construction company employees from Work Extra 1714 who were on the ground stated that just before the collision a man on the front end of the leading car of Work Extra 1957 was giving stop signals with a lighted white lantern. One employee stated that he heard air escaping from the approaching train when it was under the highway bridge.

#### Observations by the Commission's inspectors.

There was no obstruction in the immediate vicinity of the point of accident to interfere with the view of men on the leading car of a train backing up on track 4, and the rear end of a train standing at the point of accident could be seen from a point 1,300 feet away by a person stationed on the front end of the leading car of an approaching westward train, or by the fireman in the cab on the left side of an engine backing up.

#### Discussion

. Under rule 99, it is required that when a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fuses. Under rule 103 it is required that when cars are pushed by an engine, a trainman must take a conspicuous position on the front of the leading car. When trains are frequently pushed, a back-up hose equipped with brake valve and alarm whistle must be used. When so equipped and engine man so advised, they are relieved from stopping when signals cannot be seen from leading car.

At Park Tower Work Extra 1957 received a caution-slow-speed-signal indication which required that train to proceed with caution at a speed not in excess of 15 miles per hour prepared to stop short of train or obstruction. No other signal indications were received between Park Tower and the point of accident. The evidence indicates that a speed not in excess of 15 miles per hour was maintained between these points.

Conductor Henry, of Work Extra 1714, stated that his train had been standing 6 minutes before it was struck and this statement is in line with that of Operator Lugar that Work Extra 1714 left Park Tower at 8:40 p.m. and Work Extra 1957 left there at 8:47 p.m.

The position of the flagman of Work Extra 1714 is established by his own statement as well as by the statements of others, as less than 10 car lengths from the rear of his train, and the flagman admitted that he had not placed any torpedoes or lighted any fuses prior to the accident, attributing his failure to do so to lack of time. His estimate of the time which elapsed between the stopping of his train and the collision was 2 or 3 minutes, during which time he went back as far as he could. There was some difference of opinion regarding the flagging equipment carried by the flagman, some witnesses corroborating the statement of the flagman that he had both red and white lanterns with him while others stated that he had only a white lantern.

Flagman Foster, of Work Extra 1957, stated that his train was equipped with back-up air valve and whistle and that leaving Park Tower both of these devices were operative; he also stated that Brakeman Ennis had charge of the leading end during the movement which resulted in the collision.

Flagman Shriver stated that there was no rider on the head end of the leading car of Work Extra 1957 when it passed him and his statement is supported by one of the contractor's employees on Work Extra 1957 who stated that Brakeman Ennis rode inside of the car until just before the collision when he went out upon the front platform. There is evidence that after Brakeman Ennis moved to the front platform he gave stop signals and opened the back-up air valve, but his signals were given from such a position as to be invisible to the engine crew. A view of the standing train could be had by a person on the leading end of Work Extra 1957 for 1,300 feet.

The employment records of Brakemen Foster and Ennis of Work Extra 1957 show limited service in the capacity of brakeman, and Brakeman Foster stated that both he and Brakeman Ennis informed their conductor that they were not qualified flagmen; nevertheless, Conductor Murra permitted these men to handle the leading end of the train between Park Tower and the point of accident while he rode on the engine at the rear of the train.

Rule 19 reads in part as follows:-

The following signals shall be displayed, one on each side of the rear of every train as markers to indicate the rear of the train. On passenger tracks with the current of traffic, yellow to the front end side and red to the rear.

Flagman Shriver stated that his train was not equipped with the marker lights required by the above cited rule and as a consequence he was forced to use the only two red lanterns he had as rear-end lights.

#### Conclusion

This accident was caused by failure properly to protect the rear end of Work Extra 1714, and by failure of the crew of Work Extra 1957 to maintain a proper lookout ahead when proceeding into an occupied block under a caution-slow-speed signal indication.

Respectfully submitted,

W. J. PATTERSON,

Director.