

Inv-2453

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
PENNSYLVANIA RAILROAD

MILLBROOK, OHIO

OCTOBER 10, 1940

INVESTIGATION NO. 2453

SUMMARY

Inv-2453

Railroad: Pennsylvania
Date: October 10, 1940
Location: Millbrook, Ohio
Kind of accident: Rear-end collision
Trains involved: Freight : Pusher engine : Freight
Train numbers: Extra 6842 : Extra 6913 : Extra 6862
Engine numbers: 6842 : 6913 : 6862
Consist: 50 cars, : engine : 66 cars,
caboose caboose
Speed: 4-10 m.p.h. : just started : 20-40 m.p.h.
Operation: Automatic block system
Track: Four; tangent; 0.14 percent descending
grade westward
Weather: Dense fog
Time: 7:47 a.m.
Casualties: 3 injured
Cause: Failure to provide adequate flag protec-
tion for Extra 6913, and failure to operate
Extra 6862 in accordance with signal indi-
cations.

To the Commission:

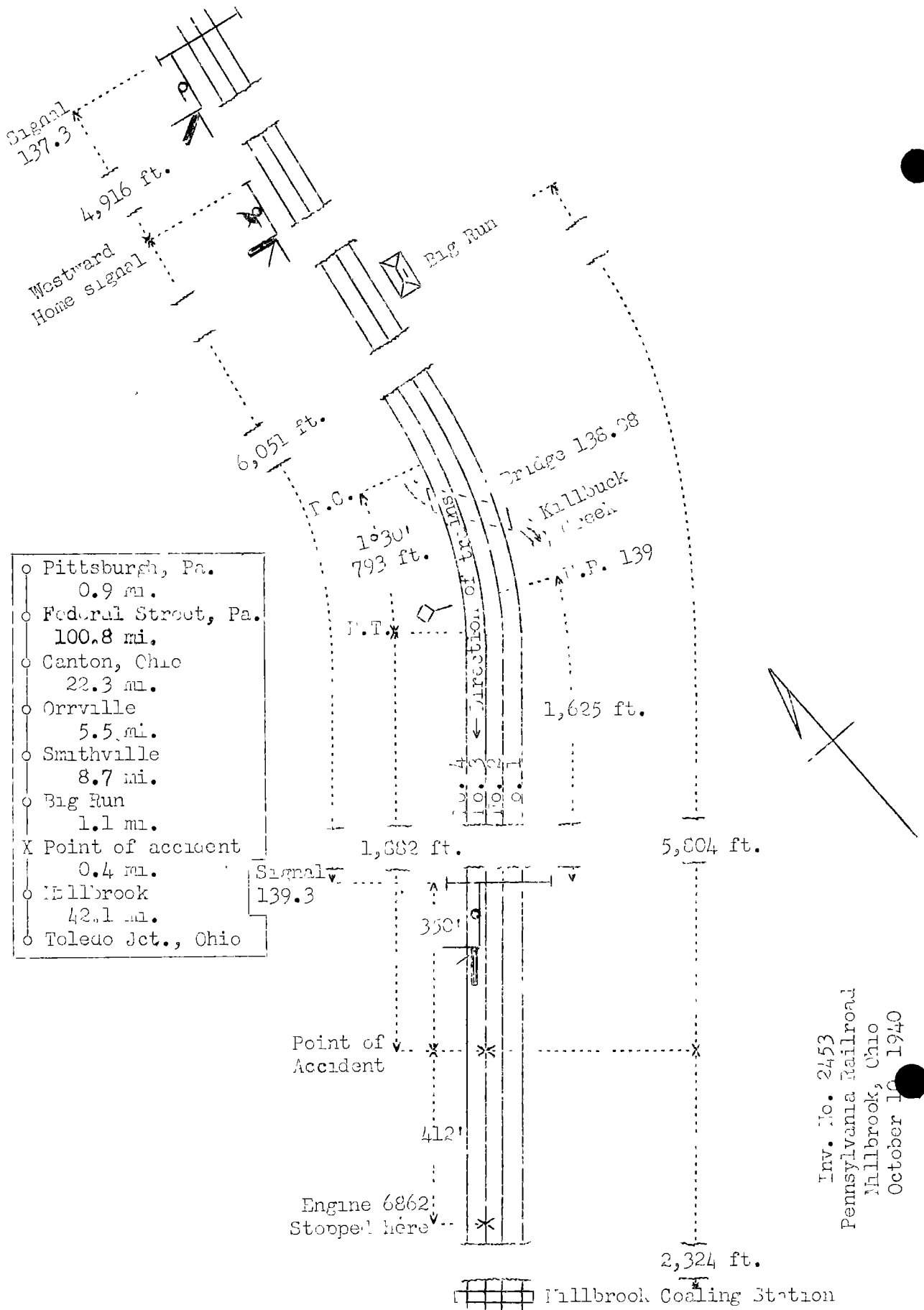
On October 10, 1940, there was a rear-end collision between a pusher engine and a freight train and in turn the pusher engine was shoved into the rear end of another freight train on the Pennsylvania Railroad at Millbrook, Ohio, which resulted in the injury of three employees.

Location and Method of Operation

This accident occurred on that part of the Eastern Division which extends between Federal Street, Pittsburgh, Pa., and Toledo Jct., Ohio, a distance of 180.9 miles. In the immediate vicinity of the point of accident this is a four-track line over which trains moving with the current of traffic are operated by an automatic block-signal system, the indications of which supersede time-table superiority. The main tracks from south to north are: No. 1, eastward freight track; No. 2, eastward passenger track; No. 3, westward passenger track; and No. 4, westward freight track. The accident occurred on track No. 3 at a point 5,804 feet west of Big Run interlocking tower and 2,324 feet east of Millbrook coaling station. As the point of accident is approached from the east there are, in succession, a tangent 14,923 feet in length, a 1°30' curve to the right 793 feet in length, and a tangent extending 1,882 feet to the point of accident and 1/2 mile beyond. The grade is level a distance of 4,000 feet and then is 0.14 percent descending westward a distance of 2,050 feet to the point of accident.

Approach signal 137.3, the westward home interlocking signal at Big Run, and signal 139.3 are located, respectively, 11,317, 6,401, and 304 feet east of the point of accident; these signals are of the position-light type. Signals 137.3 and 139.3 are automatic and are located on signal bridges; the home interlocking signal is mounted on a mast to the right of track No. 3. Signal 137.3 and the home signal are 2-unit and signal 139.3 is 1-unit. The involved indications, names, and corresponding rule numbers are as follows:

Indication	Name	Rule No.
Stop.	Stop-signal.	275.
Stop-then proceed in accordance with rule * * * 660.	Stop-and-proceed signal.	276.



- Pittsburgh, Pa.
0.9 mi.
- Federal Street, Pa.
100.8 mi.
- Canton, Ohio
22.3 mi.
- Orrville
5.5 mi.
- Smithville
8.7 mi.
- Big Run
1.1 mi.
- X Point of accident
0.4 mi.
- Millbrook
42.1 mi.
- Toledo Jct., Ohio

Inv. No. 2453
 Pennsylvania Railroad
 Millbrook, Ohio
 October 10, 1940

Millbrook Coaling Station

Indication	Name	Rule No.
A train exceeding one-half its maximum authorized speed here must at once reduce to not exceeding that speed. Approach next signal prepared to stop.	Approach-signal.	283.
Proceed.	Clear-signal.	286.

When signal 139.3 displays stop-and-proceed, the westward home signal displays approach, and signal 137.3 displays proceed.

Rules of the operating department read in whole or in part as follows:

27. A train or engine finding a signal imperfectly displayed, or no signal at a place where a signal is usually shown, must regard it as the most restrictive indication that can be given by that signal for that train or engine, * * *

When light failures in a Position-light signal do not prevent correct reading of the signal, it will not be regarded as an imperfectly displayed signal.

* * *

34. Immediately upon seeing a Fixed-signal affecting the movement of their train, the engineman and fireman must, and when practicable the trainmen will, call its indication by name to each other.

99. 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.

When signal * * * has been given to the flagman and safety to the train will permit, he may return. When the conditions require he will leave the torpedoes and a lighted fusee.

* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be

necessary to insure full protection. By night, or by day when the view is obscured, lighted fuseses must be thrown off at proper intervals.

When day signals cannot be plainly seen, owing to weather or other conditions, night signals must also be used.

Conductors and enginemen are responsible for the protection of their trains.

Flagman's signals:

Day signals--A red flag,
Torpedoes and
Fuseses

Night signals--A red light,
A white light,
Torpedoes and
Fuseses.

The maximum authorized speed for freight trains is 50 miles per hour; however, freight trains using track No. 3 are restricted to 45 miles per hour when they pass signal 137.3.

There was a dense fog at the time of the accident, which occurred about 7:47 a.m.

Description

Extra 6842, symbol ST-1, a west-bound freight train, with Conductor LaRew and Engineman Gochnauer in charge, consisted of engine 6842, 34 loaded and 16 empty cars and a caoose. This train departed from Stark Yard, Canton, Ohio, 38.7 miles east of Big Run, at 4:57 a.m., passed Big Run at 7:18 a.m., and stopped on track No. 3, with the rear end standing 5,804 feet west of the tower at Big Run, to take coal. Obtaining coal, Extra 6842 departed at 7:45 a.m. and, while moving at a speed variously estimated between 4 and 10 miles per hour, was struck by Extra 6913 West.

Extra 6913 West, ⁱⁿ /pusher service, consisted of engine 6913, and was in charge of Engineman Miller. This train departed from Smithville, 8.7 miles east of Big Run, at 7:11 a.m., according to the train sheet, passed Big Run at 7:29 a.m., and coupled to the rear of Extra 6842 to assist that train. Soon afterward the stoker became inoperative and engine 6913 was detached, moved backward, and stopped about 350 feet west of signal 139.3. Engine 6913 stood at that point a short time and had just started westward when it was struck by Extra 6862. Engine 6913 was shoved forward and it collided with the rear end of Extra 6842.

Extra 6862, symbol PF-3, a west-bound freight train, with Conductor Kennedy and Engineman Gasquoine in charge, consisted at the time of accident of 54 loaded and 12 empty cars and a caboose. This train departed from Pitcairn, Pa., 153.7 miles east of Big Run, at 9:32 p.m., according to the train sheet, stopped at M. & C. Jct. at 6:50 a.m. to set off cars, departed from that point at 7:07 a.m., passed Big Run at 7:45 a.m., passed the home signal which was displaying approach, passed signal 139.3 which was displaying stop-and-proceed, and, while moving at a speed variously estimated between 20 and 40 miles per hour, collided with the rear end of engine 6913 and shoved that engine a distance of 412 feet into the rear of Extra 6842.

The steel caboose of Extra 6842 was crushed and derailed but remained upright. The third and the fourth cars ahead of the caboose were damaged; the seventeenth car ahead of the caboose was derailed and it fouled track No. 4. The frame of engine 6913 was broken in front of the right and left cylinders; the engine-truck frame and the cab were badly damaged. The engine truck was derailed, and the Nos. 1, 2 and 3 pairs of driving wheels were raised above the rails 6 inches, 2 inches, and 1/2 inch, respectively. The tender cistern was torn loose from the frame and moved forward 4 feet. The frame of engine 6862 was broken in front of the right and the left cylinders. The engine truck was derailed and its frame broken. The No. 1 pair of driving wheels was raised about 1 inch above the rails. The tender was badly damaged. The first five cars in this train were derailed and stopped, badly damaged, across the four tracks. The sixth and the seventh cars were damaged but not derailed.

The employees injured were the conductor of Extra 6842 and the engineman and the fireman of Extra 6913.

Summary of Evidence

Engineman Gochnauer, of Extra 6842, stated that at Stark Yard the air brakes were tested and they functioned properly en route. When his train was approaching the point where the accident occurred fog restricted vision ahead to about 3 or 4 car lengths; it was difficult to see signal indications. The three signals involved displayed proceed for his train and all lights were lighted. He and the fireman called the signal indications to each other. The engineman said that the train was stopped about 2 car lengths east of Millbrook coaling station at 7:20 a.m.; then the engine was detached, coal was taken, and the engine was recoupled to the train. He thought a pusher engine was coupled to the rear of his train; therefore, an air-brake test was made and then he sounded the whistle signal for

the flagman to return. Receiving no proceed whistle signal from the rear he again sounded the signal for the flagman to return and heard a proceed whistle signal at the rear of his train. His train proceeded about 12 car lengths and the speed was about 8 or 10 miles per hour when the air brakes became applied in emergency as a result of the accident, which occurred about 7:45 a.m.

Fireman Yount, of Extra 6842, corroborated the statement of Engineman Gochnauer.

The statement of Front Brakeman Tant, of Extra 6842, added nothing of importance.

Conductor LaRew, of Extra 6842, stated that when his train stopped at Millbrook his caboose stood about 600 feet west of signal 139.3. Because of fog, visibility was restricted to about 60 feet. Engine 6913 was coupled to the rear of the caboose, but because of stoker trouble it was detached and moved backward about 10 or 12 feet to the rear of the caboose. After engine 6842 was recoupled to the train an air-brake test was made, and the whistle of engine 6913 was sounded for his train to proceed. His train had proceeded about 6 or 7 car lengths and was moving at a speed of about 4 or 5 miles per hour when the accident occurred.

Flagman Watkins, of Extra 6842, stated that when his train stopped at Millbrook he proceeded to the rear to provide flag protection. As his train passed signal 139.3 he observed that it displayed stop-and-proceed and that all lights were lighted for that indication. Because the fog restricted visibility he did not know exactly how far he had proceeded to the rear of his train; however, he did not proceed as far as the west end of the curve located 1,532 feet east of signal 139.3. He placed one torpedo on the rail, proceeded about 1 or 2 car lengths west of it, and waited until he heard Extra 6913 approaching. He flagged that train with a lighted fusee and just before he boarded the engine he saw its flagman alight. Extra 6913 continued at a low rate of speed and stopped at signal 139.3, then proceeded west of that signal. He coupled it to the caboose of Extra 6842 and took down the markers from the caboose. About 5 minutes later engine 6913 was detached and moved backward a short distance. When the whistle of engine 6842 was sounded for the flagman to return, the whistle of engine 6913 was sounded for Extra 6842 to proceed. The flagman said that after his train had moved several car lengths he heard two torpedoes explode, also the noise of a following train, which sounded as if it was approaching rapidly. He called a warning to the conductor and jumped just after.

Extra 6862 struck engine 6913, which had just started to move westward. He said that when an engine is coupled to the rear of a train the flagman for that engine is required to furnish flag protection.

Engineman Miller, of Extra 6913, stated that when his engine approached Big Run, signal 137.3 displayed proceed and the westward home signal displayed approach. When his engine was near milepost 139, located 1,625 feet east of signal 139.3, his flagman alighted to furnish flag protection. The engineman said that after his train proceeded westward a short distance he was flagged by the flagman of Extra 6842. The engineman said that signal 139.3 was displaying stop-and-proceed, and all lights for that indication were lighted. He complied with the signal indication, then after his train moved several car lengths it was coupled to the caboose of Extra 6842. Soon afterward the stoker became inoperative and engine 6913 was moved backward a short distance. As his flagman had been recalled by signal from the whistle of engine 6842 the engineman of engine 6913 sounded a proceed engine-whistle signal. The flagman returned and was standing about 10 feet to the rear of the tender when Extra 6842 began to move. At that time two torpedoes were exploded to the rear and the flagman lighted a fusee and started to run to the rear. The engineman thought the flagman reached a point east of signal 139.3. The engineman started engine 6913 forward and the wheels had made only a few revolutions when it was struck by Extra 6862 and driven forward about 5 or 6 car lengths into the caboose of Extra 6842. He estimated that the speed of Extra 6862 was 35 or 40 miles per hour at the time it struck his engine. The engineman said that had the flagman remained at milepost 139 the distance would have been sufficient in which to stop a train moving at a speed of 40 miles per hour. He said that he did not depend upon signal indications to take the place of flag protection. He understood that when sufficient lights are lighted on a position-light-type signal so that its indication can be read correctly, it is not an imperfectly displayed signal. When his train passed the signals involved all lights necessary to display the indication were lighted. Because of fog his view of signals in the vicinity of Big Run was restricted to about 100 feet. He said that he did not sound the whistle signal for his flagman again to furnish flag protection after being recalled the first time as he expected to follow Extra 6842 immediately.

Fireman Laughlin, of Extra 6913, corroborated the statement of Engineman Miller.

Flagman Christie, of Extra 6913, stated that when his train was approaching Millbrook he dropped off a lighted 5-minute fusee just after his train passed over bridge 138.88, located 2,151 feet east of signal 139.3. He alighted from the engine near milepost 139, proceeded eastward toward the bridge, placed two torpedoes on the rail, and then proceeded westward toward his train. He heard the whistle signal sounded for him to return to his train and left a lighted 5-minute fusee between milepost 139 and signal 139.3; 4 or 5 fusees remained in his possession. As he passed signal 139.3 he observed that it was displaying stop-and-proceed and all lights for that indication were lighted. The markers on the tender of engine 6913 were lighted and displayed red to the rear. When he arrived at his engine he observed that it was detached from Extra 6842, which was moving. He immediately started eastward again to furnish flag protection but had proceeded only about 3 or 4 car lengths to the rear of his engine when he was again recalled. He heard Extra 6862 approaching, and said that steam was still being worked when the torpedoes were exploded. When Extra 6862 passed him, it was moving at a speed of about 40 miles per hour and the headlight was burning. The flagman said he was not depending upon signal indications to provide flag protection. He thought a distance of 20 car lengths to the rear of a train was sufficient distance for a flagman to proceed in clear weather; however, during fog or storm a flagman should proceed a greater distance. In this instance he said that the fusee which he left was a sufficient distance to the rear to furnish adequate protection provided the following train was operated under control. When told that after the accident two fresh fusee butts had been found, one opposite milepost 139 and the other at a point 15 feet east of signal 139.3, he denied any knowledge of the one near signal 139.3. He said that he was not instructed to furnish flag protection nor was a whistle signal sounded for him to furnish flag protection. Since he was using 5-minute fusees, he thought that in this instance, because of the fog, he should have left more lighted fusees as he proceeded toward his train.

Engineman Gasquoine, of Extra 6862, stated that a terminal air-brake test was made at Pitcairn, brakes of cars added to the train at three points subsequent to the initial test were tested, and the brakes functioned properly en route. As his train approached Big Run the fog was so dense that signal indications could not be seen until the front of the engine was almost at the signal. There was nothing about the condition of the engine to distract his attention. He was seated in his usual position maintaining a lookout ahead. Signal 137.3 displayed proceed, and he and the fireman called the indication to each other. The engineman said that only one light

was burning in the top unit of the westward home signal. He thought it was the top light and accepted it as being a proceed indication; he understood that if one light of a position-light signal was lighted and its location with respect to one of the possible indications could be plainly seen, that signal was not imperfectly displayed. The fireman informed him that he did not see the signal indication and the engineman replied that it was displaying proceed; however, the engineman was confident that he saw the signal properly, therefore he did not think it necessary to reduce speed. When the train passed Big Run tower the speed was about 40 miles per hour, and just after the engine passed bridge 138.98 he made a brake-pipe reduction of 5 or 7 pounds, preparing to stop for Millbrook coaling station. Near signal 139.3 one torpedo was exploded and the speed of the train was about 50 or 35 miles per hour; at the same time he saw the reflection from a lighted red fusee, located about 5 car lengths east of the signal bridge, the flagman of Extra 6913 standing just east of the signal bridge, and signal 139.3 displaying stop-and-proceed. The fireman pulled a warning, and the engineman immediately moved the brake valve to emergency position, opened the sander valve and reversed the engine, but it was then too late to avert the accident. The engineman estimated that the speed of his train was 20 miles per hour when it struck engine 6913 at a point about 8 car lengths west of signal 139.3. He said that under the rules applicable to flag protection should have been provided by the crew of Extra 6913. He had operated over this territory for a number of years and had never seen the westward home signal improperly displayed. He said that he obtained sufficient rest prior to reporting for duty at Pitcairn at 7:35 p.m., October 9, that he was in good physical condition, and that he felt alert en route. He was last examined on operating rules on July 26, 1937. His understanding of Rule 27 was that a signal was not imperfectly displayed unless all lights were extinguished; however, he said that because of the fog he misread the indication displayed by the westward home signal, and he attributed the cause of the accident partly to his failure to read the indication properly.

Fireman Garberish, of Extra 6362, stated that as his train approached the point where the accident occurred the speed was 40 miles per hour. He was on the left side of the cab maintaining a lookout ahead. Distant signal 137.3 displayed proceed, and he and the engineman called the indication. Because of the fog, the fireman did not see the indication of the westward home signal at Big Run and he so informed the engineman; however, the engineman told him that a proceed indication was displayed. The first knowledge the fireman had of anything being wrong was when he saw the reflection from a lighted fusee, located 3 or 4 car lengths east of signal 139.3, and almost

simultaneously two torpedoes were exploded. He called a warning and saw signal 139.3 displaying stop-and-proceed; the engineman applied the air brakes in emergency, opened the sand valve and reversed the engine. The fireman estimated the speed of his train at 35 miles per hour when his train struck engine 6913. He did not see the flagman. When it is intended to stop a train of similar tonnage at Millbrook coaling station, enginemen usually start braking in the immediate vicinity of signal 139.3. He said the engineman appeared normal.

The statement of Front Brakeman Swanson, of Extra 6862, who was in the brakeman's shelter on the tender at the time of the accident, added nothing of importance.

Conductor Kennedy, of Extra 6862, stated that the air brakes functioned properly en route. When his train approached Big Run he was in the caboose and the speed was about 30 or 35 miles per hour. He felt the brakes being applied in service and then immediately in emergency; however, after the impact the caboose gauge indicated 30 pounds brake-pipe pressure. After the accident occurred he proceeded immediately to the front of his train, met the flagman of Extra 3913 at a point about 18 car lengths east of the point of accident, and observed that signal 139.3 was displaying stop-and-proceed. He last saw his engineman and fireman at Stark Yard and they appeared normal.

The statement of Flagman Pierson, of Extra 6862, did not develop anything further of importance.

Signal Maintainer Zimmerman stated that he last inspected signal 139.3 on October 3, signal 137.3 on October 5, and the westward home signal on October 9, and found them to be functioning properly.

Operator Hartshorne, at Big Run, stated that when Extra 6862 passed the tower it was moving about 30 or 35 miles per hour. He exchanged signals with the members of the crew on the caboose. At that time fog restricted visibility to about 100 feet. The operator said that after each train, Extras 6842, 6913, and 6862, passed the signal he reversed the control-lever switch for the home signal; this action resulted in the signal displaying proper indications for the block in advance instead of remaining at the normal stop position.

Telegraph and Signal Inspector Laser stated that he arrived at the scene of the accident about 9:15 a.m. A detailed check of all signal equipment involved was made and the signals were found to be functioning properly. Observation of the

signals as trains passed them was made during a 24-hour period. These signals functioned properly, all bulbs lighted as intended and no condition of the signal apparatus was found that would have contributed to the accident.

Assistant Road Foreman of Engines Welton stated that he arrived at the scene of the accident about 9 a.m. and examining track No. 3 he found the end of a burned fusee sticking by its spike in a tie outside the north rail at a point 15 feet east of signal 139.3; another burned-out fusee was found opposite milepost 139. These fusees were burned completely, the ashes remained on the ties, and the spikes were not rusted; all these conditions indicated that the fusees had been used recently. It could not be determined where the torpedoes had been exploded. He examined engine 6862 and found the throttle closed, the automatic brake valve in emergency position, and the reverse lever in position for backward motion. On engine 6913 the throttle was closed, the brake valve in running position, and the reverse lever in position for forward motion. He said that a train similar to Extra 6862 could be stopped on level track from a speed of 40 miles per hour by a service brake application in 2,200 feet and by an emergency application in 1,200 feet.

Superintendent Rex stated that employees are instructed that a minimum of two lights is required to display an indication on a position-light-type signal; if only one light is lighted the signal must be obeyed in its most restrictive indication. He said that flagmen are required to furnish flag protection a distance sufficient to stop a following train. It is mandatory for a flagman to place torpedoes and, when necessary, to display lighted fusees. When recalled a flagman must leave the torpedoes and, if necessary, lighted fusees.

Observations of the Commission's Inspectors

During the evening of October 10 and the early morning hours of October 11, at which time a dense fog prevailed in the vicinity of the point of accident, the Commission's inspectors observed that the reflection of burning fusees could be seen 600 to 800 feet distant. The signals involved were observed as many trains passed them, and because of the various movements, the signals at one time or another displayed each indication that possibly could be displayed. In each instance the signals functioned properly and all lights were lighted.

Discussion

According to the evidence, Extra 6842 stopped on track No. 5 to take coal and its rear end was standing about 350 or 400 feet west of signal 139.3. Extra 6913, a pusher engine, then was coupled to the rear to assist Extra 6842 westward. Soon afterward engine 6913 was detached because its stoker became inoperative and it moved backward about 10 or 12 feet. According to the rules, after Extra 6913 coupled to the rear of Extra 6842, the flagman of the pusher engine, not the flagman of the first train, was required to furnish rear-end protection. According to his statement, the flagman of the pusher engine dropped a lighted fusee at a point about 2,500 feet east of the point where the rear of his train stopped, then alighted and placed two torpedoes on the rail about 2,000 feet to the rear of the point where the rear end of his train stopped, and he stood at that location about 10 minutes until recalled. Being recalled he left another lighted fusee somewhere between points 1,375 and 530 feet east of the point where the accident occurred; because the fog impaired visibility he was confused as to location and could not place definitely the point where this latter fusee was placed. When he reached engine 6913 he found that it was detached from Extra 6842 and, keeping a train approaching from the rear, he lighted a fusee and started toward the approaching train, but reached a point only 3 or 4 car lengths to the rear of his train when Extra 6862 passed him at a speed of about 40 miles per hour. According to the statements of the engineer and the fireman of Extra 6862, the lighted fusee was placed on track No. 3 about 5 to 6 car lengths east of signal 139.3. The fireman said that two torpedoes were exploded in the vicinity of signal 139.3; the engineer said that one torpedo only was exploded. After the accident, the remains of two badly burned fusees were found in ties of track No. 3 at points 1,625 and 15 feet east of signal 139.3. According to the assistant road foreman of engines, a train similar to Extra 6862 could be stopped from a speed of 40 miles per hour on level track by a service brake-application within a distance of 2,200 feet. Since the flagman was not more than 1,375 feet to the rear of his train at any time, it follows that adequate flag protection was not being provided. Apparently the first fusee placed by the flagman was located about 500 feet east of the farthest point at which he flagged, and it had burned out before Extra 6862 passed that point. The road foreman of engines estimated that Extra 6862 could have been stopped within a distance of 1,200 feet by an emergency application of the brakes; therefore, it is probable the accident would have been averted if the flagman had placed burning fusees at intervals during his return to his train. The engineer of engine 6913 said that he did not signal his flagman to furnish flag protection because he expected to follow Extra 6842 immediately. Had he signalled for

flag protection after his engine was detached, probably his flagman would have become aware that some extraordinary movement was in progress and would have been more alert to furnish adequate protection.

According to the statement of the engineman of Extra 6862, all but one of the lights of the westward home signal at Big Run were extinguished and he misread the one light as indicating proceed. The fireman of Extra 6862 did not see the westward home signal and informed his engineman accordingly; however, the engineman replied that it indicated proceed. The engineman thought at first if only one light of a position-light-type signal was lighted and its location as to indication could be read, the signal was not imperfectly displayed. The superintendent said that a minimum of two lights is required to display an indication, and when a position-light signal displays only one light that signal must be obeyed in its most restrictive indication. The preponderance of evidence indicates that the westward home signal displayed an approach indication for Extra 6862. The engineman of Extra 6913 passed this signal 16 minutes before Extra 6862 and at that time the westward home signal displayed an approach indication under the same condition of block occupancy ahead; at that time all lights for that indication were lighted. Tests subsequent to the accident disclosed that the signals involved displayed proper indications and there was no defective light. Had the engineman of Extra 6862 regarded the home signal as displaying its most restrictive indication, which would have been stop, undoubtedly this accident would have been averted.

Conclusion

This accident was caused by failure to provide adequate flag protection for Extra 6913, and by failure to operate Extra 6862 in accordance with signal indications.

Respectfully submitted,

S. N. MILLS,

Director.