

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE
PENNSYLVANIA RAILROAD

IRVINETON, PA.

SEPTEMBER 9, 1940

INVESTIGATION NO. 2446

SUMMARY

Inv-2446

Railroad: Pennsylvania
Date: September 9, 1940
Location: Irvineton, Pa.
Kind of accident: Derailment
Train involved: Freight
Train number: Extra 4469 West
Engine number: 4469
Consist: 66 cars and caboose
Speed: 25-30 m. p. h.
Operation: Timetable, train orders
and manual block system
Track: Single; tangent; 0.51 percent
ascending grade westward
Time: 5:17 a. m.
Weather: Clear and dark
Casualties: 2 killed; 1 injured
Cause: Failure to observe that movement
was being made on a siding in-
stead of the main track.

October 19, 1940.

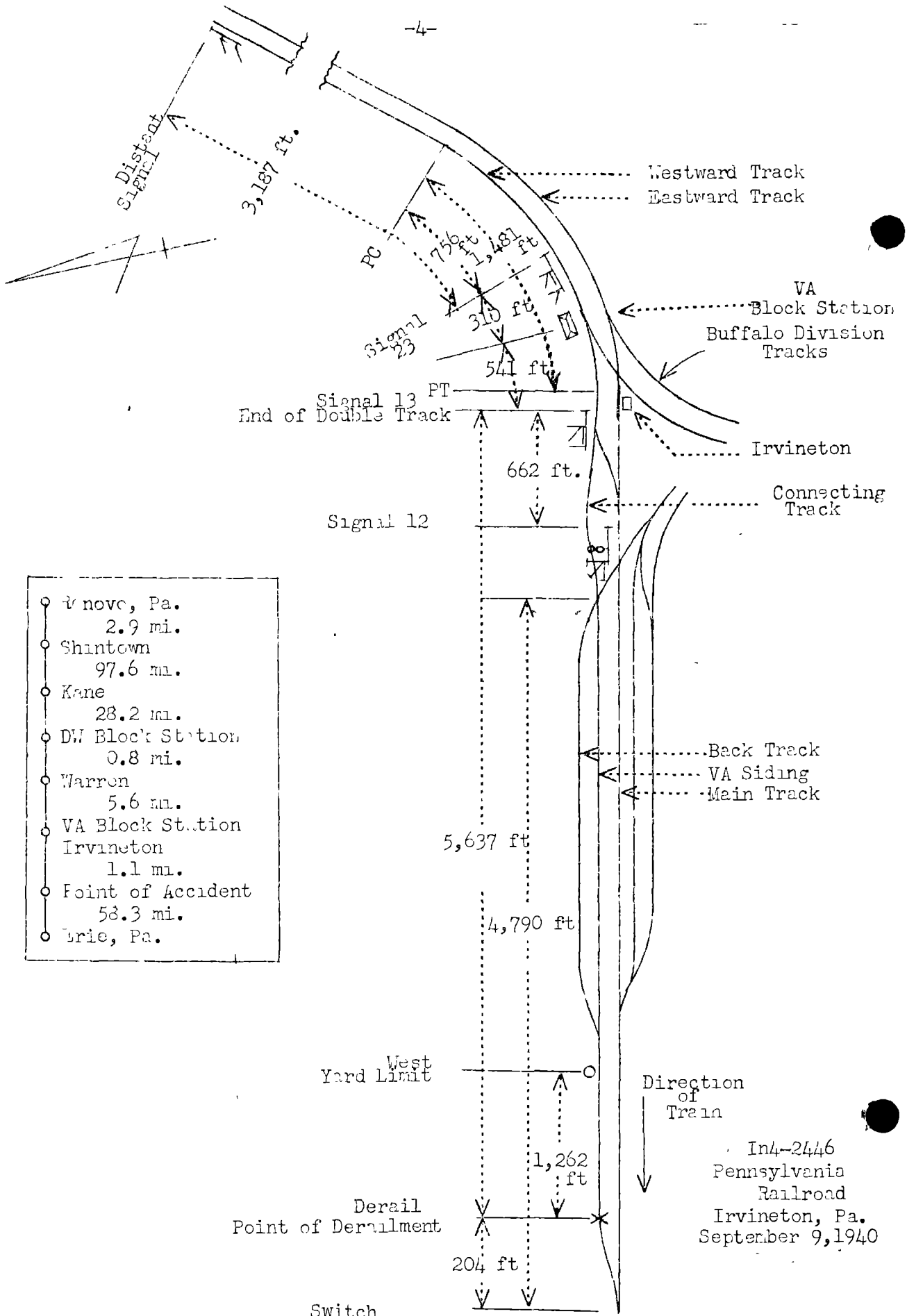
To the Commission:

On September 9, 1940, there was a derailment of a freight train on the Pennsylvania Railroad at Irvineton, Pa., which resulted in the death of two employees and the injury of one employee.

Location and Method of Operation

This accident occurred on that part of the Renovo Division which extends between Shintown and Erie, Pa., a distance of 191.3 miles. In the immediate vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and a manual block system. Between Warren, 5.6 miles east of Irvineton, and Irvineton this is a double-track line. VA Tower is located on the north side of the main tracks and 841 feet east of the end of the double track. At the end of the double track there is a facing-point cross-over, which is controlled from VA Tower and connects the eastward and the westward main tracks. A connecting track 1,583 feet in length extends westward from the end of the double-track line and parallels the single-track line on the north. The west end of the connecting track joins the east end of a siding 4,790 feet in length, known as VA siding, which parallels the single-track line on the north. A second cross-over, which is facing-point for westward movements on the main track, is located at the east end of the siding and connects the main track and the connecting track. The accident occurred on the siding at a derail located 204 feet east of the west siding-switch. As the point of accident is approached from the east there is a 3° curve to the right 1,841 feet in length, which is followed by a tangent 5,763 feet in length to the point of accident. The grade for west-bound trains is, successively, 0.22 percent ascending a distance of 903 feet, 0.53 percent ascending 1,794 feet, 0.17 percent ascending 898 feet, and 0.51 percent ascending 44 feet to the point of accident and some distance beyond.

The interlocking signals involved and governing movements on the westward main track are a distant signal and home signal 23 located, respectively, 4,038 feet and 851 feet east of the end of double track and home signal 13 located at the end of double track. These signals are of the 2-arm, upper quadrant, semaphore type. The aspects and corresponding indications and names are as follows:



○	Uniontown, Pa.	2.9 mi.
○	Shintown	97.6 mi.
○	Kane	28.2 mi.
○	DW Block Station	0.8 mi.
○	Warren	5.6 mi.
○	VA Block Station	1.1 mi.
○	Point of Accident	53.3 mi.
○	Erie, Pa.	

In4-2446
 Pennsylvania
 Railroad
 Irvineton, Pa.
 September 9, 1940

Signals	Aspect	Indication	Name
23 and 13	Red over- yellow	Proceed at not exceeding 15 miles per hour with cau- tion prepared to stop short of train or obstruction.	Caution-slow- speed-Signal
23	Yellow- over- red	A train exceeding one-half its maximum authorized speed here must at once re- duce to not exceeding that speed. Approach next signal prepared to stop.	Approach- Signal
23 and Distant	Yellow- over- green	Approach next signal at not exceeding one-half the speed authorized for passenger trains at next signal, but not exceeding 30 miles per hour.	Approach- Restricting- Signal
15	Red- over- green	Proceed. Within interlock- ing limits, a train must not exceed one-half the speed authorized for passenger trains, but not exceeding 30 miles per hour.	Clear- Restricting- Signal
23 and 13	Red- over- red	Stop.	Stop-Signal
Distant	Yellow- over- yellow	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.	Caution- Signal

The westward manual block signal, signal 12, is located between the main track and the connecting track at a point 362 feet west of signal 13. It is a 1-arm, 3-position, upper quadrant, sema-
phore signal; it has a double marker and is mechanically operated from VA Tower. The aspects and indications displayed by this signal are as follows:

Aspect	Indication	Name
Red- over- two horizontal reds	Stop	Stop-Signal
Yellow- over- two horizontal reds	For passenger trains stop and report in accordance with Rule 362 or 462. For other trains proceed with caution prepared to stop short of train or obstruction.	Permissive- Block-Signal
Green- over- two horizontal reds	Proceed-Manual or con- trolled manual block clear	Clear-Block- Signal

When the route is lined for movement from the westward main track to the single-track line and signal 12 is displaying a proceed indication, signal 13 displays a clear-restricting indication. When the route is lined for movement from the westward main track to the connecting track, signal 13 displays a caution-slow-speed indication which is an all-route indication.

The derail involved is of the Freeland throw-type; it is mounted on the north rail of the siding and is pipe connected to the main track switch at the west end of the siding. It is equipped with an electrically lighted lamp which displays a purple aspect for an approaching train when the derail is set in derailing position. The lamp is located 4 feet 2 inches from the gage side of the north rail; the center of its lens, which is 5 inches in diameter, is 16 inches above the top of the rail.

Transportation Rules of the Operating Department are as follows:

90a. Trains using a siding must proceed with caution, expecting to find it occupied by other trains, and on a siding used by trains in both directions, must run expecting to meet opposing trains.

93. (Single Track.) * * * Extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear.

* * *

326. * * *

When a train enters a siding at a block station, clearing a block at a switch operated by the signalman, the conductor or engineman is not required to report clear.

Special instructions of the current timetable are as follows:

D2001. * * *

Extra trains within single track yard limits --- 12 miles per hour.

D2308. Clearance card, Form K, authorizing a train to pass one or more unattended block stations without stopping, is annulled when train clears the main track and reports clear of block.

Brake and Train Air Signal Instructions provided as follows:

10-b. At point where motive power or engine crew or train crew is changed, tests of the train brake system must be made as follows:

After the brake system on a freight train is charged to not less than 5 lbs. below the standard pressure for that train, * * *, a fifteen pound service reduction must be made upon proper request or signal, brake pipe leakage noted as indicated by the brake pipe gauge (which must not exceed 7 lbs. per minute), after which the reduction must be increased to 20 lbs. Then an examination of the train brakes must be made to determine if brakes are applied in service application on each car. When this examination has been completed, proper release signal must be given and each brake examined to see that it releases properly.

* * *

The west yard-limit board is located 1,262 feet east of the point of accident. The rear portion of the train was within yard limits when the accident occurred.

The maximum authorized speed for the train involved was 12 miles per hour within single-track yard limits.

It was dark and the weather was clear at the time of the accident, which occurred about 5:17 a. m.

Description

Extra 4469, Symbol W-5, a west-bound freight train, with Conductor Gray and Engineman Johnson in charge, consisted of engine 4169, 54 loaded and 12 empty cars, and a caboose. This train departed from Kane, 34.6 miles east of Irvineton, at 3:45 a. m., according to the train sheet, passed DW block station, 6.4 miles east of Irvineton, at 4:33 a. m., passed VA Tower at 5:15 a. m., and, while moving at a speed estimated at 25 to 30 miles per hour, was derailed at the derail at the west end of VA siding.

The engine was derailed and stopped on its right side at a point 153 feet west of the derail and practically parallel to the main track. The engine truck and cab were broken; the steam pipes at the steam turret on top of the firebox roof sheet were badly damaged; the right back washout cap was disconnected. The tender frame remained coupled to the engine and stopped on its right side with the rear end on the siding. The cistern was torn loose from the frame and stopped on its right side parallel to the frame. The first two cars were crushed against the tender cistern and were badly damaged. The next five cars were derailed, stopped at various angles and fouled the main track and the siding.

The employees killed were the engineman and the front brakeman, and the employee injured was the fireman.

Summary of Evidence

Fireman Ulrich, of Extra 4469, stated that the air brakes were tested before the train left Kane and they functioned properly en route. The air brakes on the cars added to the train at Warren were tested. When his train was approaching Irvineton the distant signal was displaying a caution indication. He was stationed in the right gangway preparing to catch train orders at VA Tower and did not observe the indication displayed by signal 25. The headlight was dimmed. The speed of his train was 7 or 8 miles per hour when his engine passed signal 13, which was displaying a caution-slow-speed indication. Signal 12 was displaying a proceed indication which he called to the engineman who replied affirmatively. The fireman, after handling the train orders to the engineman, was adjusting the stoker jet valves when the engineman opened the throttle while reading the train orders. The fireman did not observe that his train passed to the right of signal 12. The train had attained a speed of 25 to 30 miles per hour when at a short distance he observed the purple aspect of the derail light. He immediately called a warning to the engineman but the derailment occurred so soon afterward that he did not

know whether the engineman had time to take action to stop the train. The fireman said that there was no difference in the manner in which the engine rode and he was unaware that his train was not moving on the main track until he saw the derail light. It was dark and slightly foggy at the time the accident occurred. He had made only three round trips over this district and was not familiar with either the physical characteristics of the line or the signal installation in the vicinity of VA Tower. He said that if block signal 12 had been displaying a stop indication he would have called to his engineman to stop the train. At that time he was not aware that it was necessary to cross over to enter the main track. He said the engineman was normal and had sounded the whistle just prior to the time of the accident. The front brakeman was in the booth on top of the tender.

Conductor Gray, of Extra 4469, stated that a road test of the air brakes was made at Kane but an examination of each brake was not made to determine whether it applied and released. When his train was approaching Irvineton he was engaged in clerical duties in the caboose; his flagman received train orders from the operator at VA Tower, which point his train passed at a speed of about 15 miles per hour. The flagman read the orders to him and said that a proceed manual-block indication was displayed. The conductor stated that in addition to the train orders and a message he received a clearance message on overdue trains and a Clearance Card, Form K, authorizing his train to pass the next two unattended block stations in advance as though a proceed indication was displayed. He did not realize that his train was on the siding until after the accident occurred. He thought the speed of his train at the time of the accident was about 30 miles per hour. It was dark and the weather was clear. He said the siding was as well maintained as the main track.

Flagman Holland, of Extra 4469, stated that his train was nearly stopped at VA Tower when the engineman acknowledged the train order signal; then the speed was gradually increased. He caught the orders and immediately after the caboose passed the tower he observed signal 12 displaying a proceed indication. He went inside the caboose and told the conductor they had received a proceed indication. He read the orders to the conductor, and had just finished reading them when the accident occurred. He said that when he saw the proceed indication he got the impression his train was routed to the main track and he did not realize the train was on the siding until after the accident occurred.

Operator Bloom, on duty at VA Tower, stated that the train dispatcher informed him that Extra 4469 would have cars to set off on the back track and since entrance to the back track is made from the siding he lined the route for Extra 4469 to enter the siding. He said that signal 23 was displaying an approach

indication, signal 13 a caution-slow-speed indication, and the manual-block signal a stop indication. He said that in addition to train orders and a message he delivered a clearance message and a Clearance Card, Form K, to Extra 4469 authorizing it to pass the next two unattended block stations as though a proceed indication was displayed. He said that he was not confused and he knew that Extra 1368 was in the block behind Extra 4469. The switch had been lined to the main track and he reversed it to line the route for Extra 4469 to enter the siding. He said he had not operated block signal 12 since he came on duty at 11:45 p. m. He knew of no rule that prohibited him from delivering a Clearance Card, Form K, regarding the condition of unattended blocks in advance, to a train entering the siding. He intended, when the crew asked for the block at the west end of the siding, to instruct them orally that the clearance card they held was valid. He thought this procedure would be in accordance with time-table special instruction D2308. He did not put any information on the block sheet in regard to the block authority issued by the clearance card as it was not customary to do so when a train was given block authority through to the next open office. The last movement on the single track prior to the time of the accident was an east-bound train at 12:01 a. m. This train had moved from the single track to the eastward main track. He did not know how or when the switch had been changed, but was positive it was lined for movement from the westward main track to the single track when he started to line the route for Extra 4469. He had not marked the information on his block sheet but was positive the dispatcher had told him that Extra 4469, not Extra 1368, had cars to set off. He said he had worked at VA Tower approximately 3 weeks and was familiar with the interlocking at that point.

Train Dispatcher James stated that the crew of Extra 1368 had instructions to set off their train of 39 cars at Irvineton. He informed the operator at VA Tower that Extra 1368 would set their train off on the back track at Irvineton. He did not know what time this information was given to the operator but thought it was given immediately after the instructions were sent to Extra 1368 at 12:59 a. m. He was positive he had not said that Extra 4469 had cars to set off at Irvineton.

Signal Inspector McSparrin stated that he arrived at VA Tower at 9:40 a. m. and made an inspection of the interlocking shortly afterward. The signals for each route lined functioned as intended.

Discussion

According to the evidence, home signal 13, located 541 feet west of VA Tower, displayed caution-slow-speed, which required the train to reduce speed to not exceeding 15 miles per hour and to proceed prepared to stop short of train or obstruction. The train was moving at a speed of 7 or 8 miles per hour when it passed this signal. Apparently no member of the train crew observed that instead of the route being lined for the train to move through the crossover from the westward main track to the single track, the route was lined for the train to proceed into the connecting track and thence into the siding. Speed was increased to 25 or 30 miles per hour when the fireman observed a short distance ahead that the derail at the west end of the siding was set against the train; this observation was made too late to stop the train short of the derail.

The fireman was the only surviving member of the crew at the front end. He said he was not aware that the train was on the siding until he saw the signal indicating the position of the derail and that he had not worked in this territory sufficiently to become familiar with the arrangement of tracks and signals. The conductor and the flagmen were not aware that their train was on the siding until after the accident occurred. The fireman and the flagman were positive that the manual-block signal displayed proceed; the operator was positive that it displayed stop. The train involved was not required to stop at Irvineton but the operator understood that it would set off its cars on the back track, which is connected to the siding, and therefore he routed the train to the connecting track and thence to the siding; however, the dispatcher said he told the operator that Extra 1568, a following train, would set off its cars on the back track at Irvineton. The operator delivered to the crew Clearance, Form K, which authorized the train to pass the first two unattended block stations as though proceed signals were displayed. Under the rules, a Clearance, Form K, which is in the possession of the crew of a train when it enters a siding is annulled; therefore, the fact that this crew received a Clearance, Form K, might have led them to believe that their train was being routed on the main track. The operator delivered this form so that when the crew called on the telephone at the west end of the siding for block authority he would tell them that the Form K delivered by him was valid; he did not think this procedure was contrary to the rules.

Since the indication at home signal 13 was caution-slow-speed, which was an all-route indication, it should have warned the crew that possibly their train was entering the connecting track. In addition, the crew could have seen that there was a track to the left of the track occupied by their train and that the manual-block signal was to the left of their train.

More than half of the train was in yard limits when the accident occurred. The rules required that the train be operated at a speed not in excess of 12 miles per hour in yard limits; since the crew thought their train was on the main track, the speed should have been controlled in accordance with the yard-limit rule. If the speed had been so controlled, it is possible that the signal at the west end of the siding would have been seen in time to avert the accident.

The investigation disclosed that the air brakes of the train involved were not tested at Kane, 34.6 miles east of Irvine-ton and the point where crews were changed, in accordance with the rules of the carrier; however, it does not appear that the failure to make proper brake test had any bearing on the accident as the derailment occurred before any brake action could take place.

Conclusion

This accident was caused by failure to observe that the movement was being made on a siding instead of the main track.

Respectfully submitted,

S. N. MILLS,

Director.