INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

WABASH RAILWAY

DEFIANCE, OHIO

JANUARY 14, 1939

INVESTIGATION NO. 2323

SUMMARY

Inv-2323

Railway:	Wabash
Date:	January 14, 1939
Location:	Defiance, Ohio
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	12
Engine number:	617
Consist:	4 cars
Speed:	15-30 m.p.h.
Operation:	Timetable, train orders and manual block system
Track:	Tangent; 0.307 percent grade ascending eastward.
Weather:	Hazy
Time:	5:30 a.m.
Casualties:	2 injured
Cause:	Open switch

Inv-2323

February 21, 1939

To the Commission:

On January 14, 1939, there was a derailment of a passenger train on the Wabash Railway near Defiance, Ohio, which resulted in the injury of two employees.

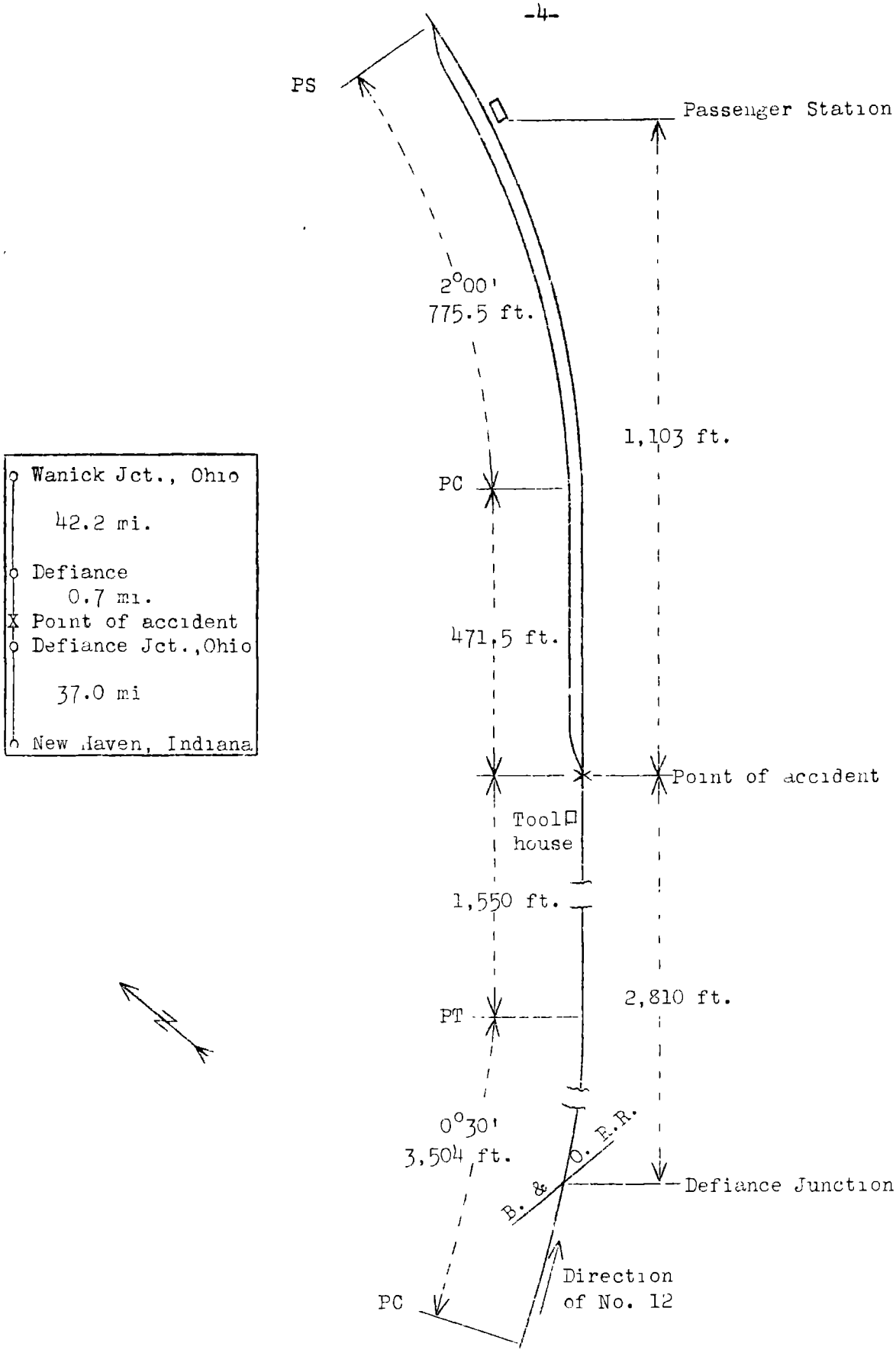
Location and Method of Operation

This accident occurred on that part of the Montpelier Division designated as the Fifth District which extends between Wanick Junction, Ohio, and New Haven, Ind., a distance of 79.9 miles. In the 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. A siding, 1,247 feet in length, known as the north passing track, leads off through a No. 9 turnout and parallels the main track on the north side. The accident occurred at the west switch of this siding which is located 1,103 feet west of the depot. Approaching from the west there is a $0^{\circ}30'$ curve to the left 3,504 feet in length, followed by a tangent which extends 1,550 feet to the point of accident and about 472 feet beyond. The grade is slightly descending for east-bound trains, being 0.307 percent at the point of accident.

The west switch stand, located on the right side of the track, the center of which is 45 inches from the gage side of the rail, is of the ground-throw Economy type, with 33-inch rod having a $4\frac{1}{2}$-inch throw, and is equipped with a Handlan R. & G. combined switch lamp, 28 inches in height from the top of the head-block, and each of its four sides has a disc-shaped target $10\frac{1}{2}$ inches in diameter, in the center of which is a lens 5 inches in diameter. Night aspects are green for main track and red for siding movements. The lamp is oil-burning and maintained to burn continuously.

The main track structure consists of 80-pound A.S.C.E. rail, 31 feet in length, laid on an average of 18 red oak ties to the rail length; it is single-spiked, fully tie-plated, ballasted with cinders to a depth of 12 inches below the ties and is well maintained.

The maximum authorized speed for passenger trains is 50 miles per hour, except at Defiance Junction crossing, 2,810 feet west of the point of derailment, where the speed is restricted to 20 miles per hour.



Inv. No. 2323
Wabash Railway
Defiance, Ohio
Jan. 14, 1939

Rules 27 and 630 of the book of operating rules and rule 2125 of the book of maintenance-of-way rules read as follows:

> 27. A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as the most restrictive indication that can be given by that signal, and the fact reported to the proper official. Conductors and enginemen using a switch where the switch light is imperfectly displayed or absent, must also, if practicable, correct or replace the light.
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> 630. Enginemen will keep a constant and vigilant lookout; carefully note the position of all switches and signals; ***
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> 2125. Main line switches must not be thrown to accommodate the movement of track cars, unless absolutely necessary. When necessary to use the switch, handling of same must be observed by another employe, especially designated, who shall indicate verbally to person who actually handled switch that same is left in proper position and locked for normal main line use. The Foreman in charge is responsible for handling of all switches. It is the duty of every employe to carefully observe the handling of switches and report any irregularity to Foreman in charge of gang.

The weather was hazy at the time of the accident, which occurred about 5:30 a.m.

Description

No. 12, an east-bound passenger train, consisted of one mail car, one baggage car, one coach and one Pullman sleeper, in the order named, all of all-steel construction, hauled by engine 617, of the 4-4-2 type, and was in charge of Conductor Morris and Engineman Frysinger. This train departed from New Haven, 37.7 miles west of Defiance, at 4:31 a.m., according to the train sheet, 19 minutes late, passed Defiance Junction at 5:30 a.m., 16 minutes late, and was derailed at the west switch while traveling at a speed variously estimated to have been between 15 and 30 miles per hour.

Engine 617, considerably damaged, stopped on its left side parallel to and on the siding with its pilot 304 feet east of the switch. The tender, slightly damaged, remained coupled to and in line with the locomotive and leaned at an angle of about 45 degrees to the north; the first and second cars were derailed and considerably damaged, but remained in upright positions and in line with the siding; the third car and the front truck of the fourth car entered the siding but were neither derailed nor

damaged. The employees injured were the engineman and the fireman.

Summary of Evidence

Engineman Frysinger of No. 12, the train involved in this accident, was also the engineman of No. 13, a west-bound passenger train which passed Defiance Junction at 8:49 p.m., January 13, and was the last train operated over this switch prior to the accident. He stated that on arrival at Defiance on No. 13 the usual stop of from 2 to 4 minutes was made, during which time he could not recall whether he looked at any switches; however, upon departing he looked ahead and saw nothing wrong; he did not see a red light and assumed that the switches were properly lined; when informed at this investigation that the west switch had been run through by No. 13, he stated that he noted nothing unusual and he did not know that his train had run through the switch. It was snowing at this time but the visibility of switch lights and signals, in his opinion, was sufficient for safety at any time, as he was thoroughly familiar with the track lay out. He stated that on No. 12 on January 14 the air brakes functioned properly en route. Approaching Defiance Junction he saw the signals and reduced speed to 18 or 20 miles per hour for the railroad crossing; he used a drifting throttle until he reached a point about 300 feet west of the siding and then applied the brakes preparatory to making the station stop. The speed of the train had not been materially reduced when he felt the engine enter the turnout and he applied the air brakes in emergency, and the train stopped in about two car lengths. The weather was hazy and foggy at times, the view being from 5 to 10 car lengths. He always looks for green lights, and while he did not observe this particular one he thought that had the lamp been lit and displaying a red aspect he would have seen it in time to stop before entering the siding. After the accident he observed that the switch light was not burning and the lamp was cold.

Fireman Myers stated that when leaving Defiance on No. 13 on January 13 he was engaged in firing and did not observe the indications of the switch lights; the engineman did not say anything to him about any lights being extinguished and he did not notice anything out of the ordinary when passing over the west switch of the siding. He was familiar with this territory. He stated he was on the left seatbox of the engine when approaching Defiance Junction on No. 12 and they passed over the crossing at a speed of about 20 miles per hour, then the speed was increased to about 30 miles per hour without the engine working steam. At a point approximately 300 feet west of the switch the engineman applied the brakes for the station stop; the engine entered the siding and turned over. He stated that when they were close to the switch he saw that the light was not burning but he did not call

the engineman's attention to it. The weather was hazy but he could see switch lights about 500 or 600 feet distant. After the accident he found that the switch was lined for the siding with the open lock lying on the ground.

Fireman Kiefer stated that he was on the front of the left seatbox of the engine of No. 12, for the purpose of learning the road, and he observed the signals at the crossing and the yard switch lights; also from a distance of about 500 or 600 feet he observed that the light on the west switch of the siding was not burning, but he did not call attention to it and could give no reason for failing to call it to the attention of either the fireman or the engineman. He estimated the speed to have been about 18 miles per hour over the crossing and about 18 or 20 miles per hour when the engine entered the siding. He stated an application of the air brakes had been made about 400 feet west of the switch and an emergency application was made when the engine became derailed. The weather was not stormy and there was nothing that obstructed his view of the switch lights.

Conductor Slusher, of No. 13, on January 13, stated that he did not observe any switches in Defiance yard. He said that it was snowing hard and signals could be seen only about five car lengths. He did not hear or see anything unusual when passing over this switch.

Brakeman Burden, of No. 13, on January 13, stated that when leaving Defiance he went to the rear of the third car, looked from the south side and saw one switch light burning about ½ mile west of the station. When the train passed over the west switch he did not hear any unusual noise.

Conductor Morris, of No. 12, estimated that when passing over the crossing the speed of his train was about 20 to 25 miles per hour and this speed was maintained to within about 15 or 20 car lengths west of the switch where the brakes were applied and the train came to a sudden stop. There was no fog to obstruct his vision of other yard switches. About 30 minutes after the derailment he made an examination of this switch and found it lined for the siding; the lamp was not burning and was cold.

Brakeman Young, of No. 12, stated that after the accident he got off on the south side, practically at the switch, and found its lamp was not burning. He stated it was foggy and he could see signals or switch lights a distance of only three or four car lengths, although on his way back to flag he experienced no difficulty in seeing the switch lights in the yard.

Section Foreman Emley, who has been stationed at this point about 5 or 6 years, stated that on the afternoon of the day

previous to the accident he and a section laborer had received supplies consisting of one drum of coal oil, one keg of spikes, one keg of bolts and a small can of motor oil, from train No. 71 and loaded them on a push-car on the siding. At 2 p.m., after the departure of No. 70 and No. 71, they shoved the car to the west switch and he lined the switch for the main track; they pushed the car westward to the car-house where the supplies were placed. They then became engaged in other duties and he said that so far as he knew he did not line the switch back for the main track after using it. Before stopping work for the day he returned to the car-house to lock it, at which time he passed the west switch but did not observe its position. He stated that he had been examined several times on maintenance-of-way rules; he was familiar with Rule 2125, which he said he violated by throwing the switch; he also said he failed to line it back immediately after using it and did not check its position with the section laborer. His reason for not lifting the push-car over the switch, which he thought probably could have been done, was that the supplies were heavy and the section laborer was not very good at lifting; he attributed his failure to restore the switch to normal position to forgetting to do so. He did not observe whether the lamp, which was serviced January 10, was burning at the time he used the switch, and he did not observe the aspect or the position of the switch at any time prior to going home that night. It was his opinion that the accident was caused by the train running into the open switch at a rate of speed too high to take the turnout.

The statement of Section Laborer Cooper corroborated that of the section foreman in all details, and he stated that he had previously been designated by the section foreman to check the handling of main track switches, but in this instance he forgot to comply with Rule 2125 with which he was familiar. He likewise failed to observe whether the lamp was burning, and stated that he and the section foreman were the last to use this switch. He arrived at the scene of the accident about 6:40 a.m., and observed the switch was lined for the siding at that time.

Division Engineer Bennett stated that he arrived at the scene of the accident at 7:45 a.m., and found the right switch point was open ½ inch; the No. 1 and the No. 2 rods were not bent; the switch stand and the throw-lug were neither bent nor broken; the switch points bore no flange marks and were in good condition although the indications were that the switch had been run through. The first flange marks on the ties were 27 feet 9 inches from the point of the switch, between the south rail of the main track and the south rail of the turnout, and between the north rail of the main track and the north rail of the turnout. From a point 102 feet east of the point of switch the siding was torn up a distance of 188 feet and beginning at the heel of the

frog of the siding approximately 100 feet of the north rail of the main track was torn out.

Master Mechanic Rieck stated that he made an inspection of engine 617 at the scene of the accident and found the throttle closed, the brake valve in emergency position and the reverse lever set in forward motion at 30 percent cut off; his examination also disclosed that all flanges on the engine and the tender were in good condition. In tests made two days subsequent to the accident he found the brake equipment to be in good condition, and found no condition about the engine that would have contributed to the derailment.

Road Foreman of Engines Lesley also inspected the engine at the scene of the accident and found it to be as described by the master mechanic. He stated that the sand lever valve was in forward motion.

Superintendent Johnston stated that he arrived at the scene of the accident at 10:30 a.m. He conducted a test to determine what effect the pulling of cars through the switch set for the siding would have on the points. This was done without any serious damage to the switch or the points, indicating that it was possible for a train to run through without breaking any parts of the switch. The left switch point was bent and rolled to the north due to the stress placed upon it when the train ran through the switch, after which the points were open about 2½ inches, although when the switch was jarred the points partially closed so that the gap was only about ½ inch. When the wreck train pulled through the switch the stand and lamp vibrated considerably which in his opinion could have extinguished the light. His inspection of the lamp indicated that the fount was about half full of oil, and there was no defective condition about the stand that would contribute to the accident.

Observations of the Commission's Inspectors

On the evening of January 15, the Commission's inspectors in company with officials of the railway made visual tests under approximately the same weather conditions as prevailed on the evening of January 13, and found that it was possible to see plainly the switch lights at the west end of the yard and siding a distance of 1,171 feet from the engineman's side of a westbound train. Similar tests were made from the west end of the yard and it was noted at points 1,865 and 1,555 feet west of the west switch that the fireman and the engineman, respectively, could see this switch light.

Discussion

According to the evidence the west switch leading to the

siding in question had been last used by the section foreman and a section laborer in moving a push-car which contained supplies to the car-house, about 350 feet west of the switch. The switch was unlocked by the section foreman, lined for the main track and was not restored to its normal position or checked by either of these employees at that time as required by maintenance-of-way Rule 2125 with which they were familiar. At this time neither of them observed whether the light was burning and no further attention was given to the switch before leaving the property. The lamp had been serviced three days before, and after the accident the fount was half full of oil.

It was developed that the switch had been run through in a trailing movement by No. 13 about 8:49 p.m., January 13; this was the only train movement through this territory after the departure of No. 70 at 2 p.m., the same date, until the arrival of No. 12 at 5:30 a.m., January 14. Approaching from the east the engineman of a west-bound train had a clear view of this switch to the west a distance of at least 1,171 feet, and while standing at the station at Defiance it could be plainly seen from his side of the engine. It is possible that the light on the switch was not burning at the time No. 13 passed this point; had it been lighted and displaying a red aspect it is probable the attention of the engineman would have been attracted, although he stated he saw nothing wrong when departing from the station and did not know that his train had run through the switch. The fireman was attending to the fire at the time of leaving Defiance and saw nothing wrong and neither he nor any member of the train crew heard any unusual noise when passing over the switch.

The same engine crew was on No. 12 the following morning. The fireman and a fireman learning the road were on the left seatbox of the engine approaching this point and when within a short distance of the switch they observed that the light was not burning but they did not say anything to the engineman about it. It was also possible for the engineman to have seen the switch from a distance of 1,555 feet but evidently he did not look for it in time to prevent the train from taking the siding. There was considerable discrepancy in the statements of the various employees relative to weather conditions and at what distances they were able to distinguish signals and switch lights, but tests made subsequently, during weather conditions similar to those prevailing during the evening of January 13, developed that switch lights could be seen for distances of from approximately 1,100 to 1,800 feet. The speed of the train, which had been reduced to comply with a speed restriction, had not been increased materially at the time the fireman, who was learning the road, observed that the lamp was not burning; had the attention of the engineman been called to the unlighted lamp or had the engineman observed the switch-lamp when it was first possible for him to see it, he could no doubt have stopped the train before

entering the siding. The rules required the employees to regard a signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, as the most restrictive indication that can be given by that signal.

Conclusion

This accident was caused by an open switch.

Respectfully submitted,

W. J. PATTERSON,

Director.