Inv-2305

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

BALTIMORE AND OHIO RAILROAD

TRENTON, OHIO

OCTOBER 31, 1938

INVESTIGATION NO. 2305

SUMMARY

Inv-2305

Railroad:	Baltimore & Ohio
Date:	October 31, 1938
Location:	Trenton, Ohio
Kind of accident:	Collision
Equipment involved:	Passenger train : gasoline tank truck
Train number:	54
Engine number:	5042
Consist:	6 cars : tractor hauling tank trailer
Speed:	55-60 m.p.h. : 4 m.p.h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Double track; tangent; 0.24 percent descending grade for north-bound trains
Highway:	Tangent one-half mile; crosses the tracks at an angle of 60°
Weather:	Clear
Time:	1:30 p.m.
Casualties:	3 killed
Cause:	Truck being driven upon railroad crossing at grade in front of approaching train.

December 8, 1938.

To the Commission:

On October 31, 1938, there was a collision between a passenger train and a gasoline tank-truck at a highway grade crossing on the Baltimore & Ohio Railroad at Trenton, Ohio, which resulted in the death of the driver of the truck and two railroad employees. The investigation of this accident was made in conjunction with a representative of the Public Utilities Commission of Ohio.

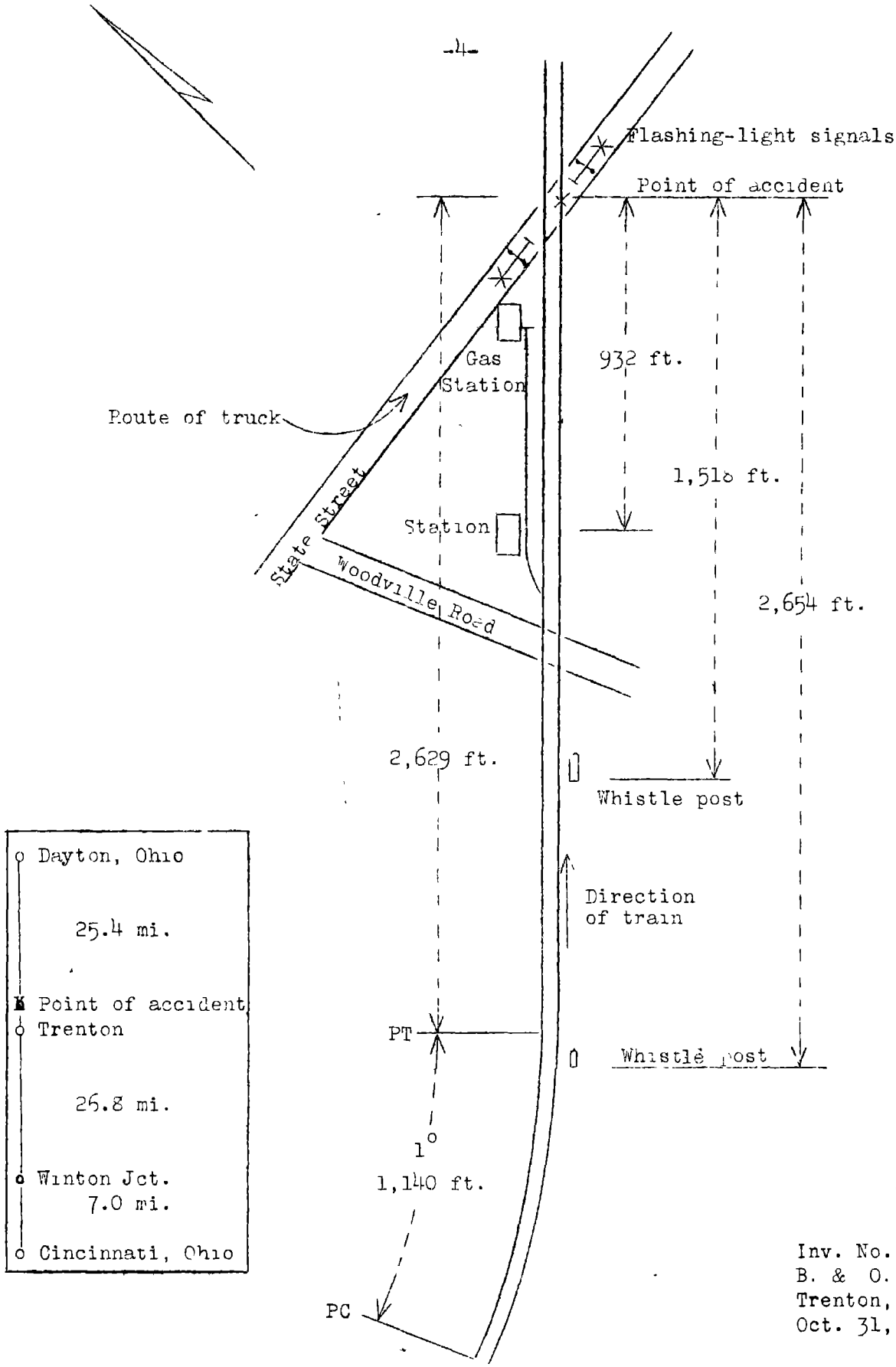
Location and method of operation

This accident occurred on that part of the Toledo Division designated as the First Sub-Division which extends between Winton Junction and Dayton, Ohio, a distance of 52.2 miles. This is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the northward track at State Street crossing, located 932 feet north of the passenger station at Trenton. Approaching from the south there is a 1° curve to the left 1,140 feet in length, followed by 2,629 feet of tangent track to the point of accident and some distance beyond. The grade for north-bound trains is 0.24 percent descending at the point of accident.

State Street forms part of State Route No. 73; it extends east and west and crosses the main track at an angle of 60°; it is tangent a distance of one-half mile on each side of the tracks, and a clear view of the crossing is had approaching from either direction. The street is constructed of bituminous material and is 43½ feet wide at the crossing; the crossing is of amlesite material with planks on each side of the rails; it is practically level and in good condition.

The crossing is protected by two automatic flashing-light signals, one on each side of the crossing, located in the center of the street and approximately 20 feet from the nearest rail. Each signal mast is 15.7 feet in height and is set in a concrete base. The flashing signal has two lights, one on each side of the mast, 6½ feet above the ground; a standard cross-bar sign, bearing the words "RAILROAD CROSSING", is located 6 feet above the lights; a small red reflector is located on the mast about 3½ feet above the ground. The northward track circuit controlling the flashing-light signals extends 2,695 feet south of the crossing. The signals are not equipped with warning bells.

The view of approaching north-bound trains had by the driver of an east-bound vehicle was obstructed by a building located 88 feet south of the center line of State Street and



Inv. No. 2305
B. & O. R.R
Trenton, Ohio
Oct. 31, 1938

32 feet west of the center line of the northward track. A greasing rack was located between the building and the tracks, and a telephone pole was located near the south curb 25 feet from the nearest rail; on clearing this pole, however, a clear view of the tracks southward could be had a distance of 3,330 feet; the range of vision then was gradually increased to a distance of 3,660 feet when a few feet from the southward track.

Whistle posts for north-bound trains are located 2,654 feet and 1,518 feet, respectively, south of the crossing at State Street. Woodville Road crossing is located 1,170 feet south of State Street.

Section 12,533 of the Ohio General Code provides in part that all drivers of motor propelled vehicles transporting inflammable liquids in bulk are required to stop at all railroad crossings, then look and listen before crossing. Such stops must be made not more than 50 feet, and not less than 10 feet from the nearest rail of the crossing, and at the point where the clearest view of an approaching train, locomotive or cars can be had.

The maximum authorized speed for passenger trains in the vicinity of the point of accident was 60 miles per hour.

The weather was clear at the time of the accident, which occurred about 1:30 p.m.

Description

No. 54, a north-bound passenger train, consisted of one baggage car, one mail car, one combination baggage and passenger car, one coach, one cafe car, and one Pullman chair car, in the order named, all of steel construction, hauled by engine 5042, of the 4-6-2 type, and was in charge of Conductor Sheets and Engineman Kopp. This train departed from Cincinnati, Ohio, 33.8 miles south of Trenton, at 12:42 p.m., according to the train sheet, 15 minutes late, passed New River Junction, 5.8 miles from Trenton, at 1:24 p.m., 10 minutes late, and when passing through Trenton struck a gasoline motor-truck at State Street crossing while traveling at a speed estimated to have been between 55 and 60 miles per hour.

The motor truck involved was a 1937 model, 6 cylinder, 1½-ton White tractor, equipped with an enclosed cab constructed of steel, hauling a Davis semi-trailer, which was equipped with a two-compartment gasoline tank loaded with 4,000 gallons of gasoline. There were two auxiliary tanks attached to the sides of the tractor, each having a capacity of 22 gallons, and both were filled before starting on the trip involved. The gasoline in these auxiliary tanks is used for operating the vehicle. The

total length of tractor and trailer was 33 feet 8 inches. The rear axle of the tractor and the two axles of the trailer were equipped with dual wheels; all wheels were equipped with Westinghouse air brakes. The light weights of the truck and the trailer were 7,340 pounds and 9,600 pounds, respectively. The truck was owned by the Petroleum Transit Corporation of Detroit, Mich., and was being driven by Harry Keefer. It left Cleves, Ohio, approximately 15 miles west of Cincinnati, at 11:25 a.m., and was en route to Dayton; it proceeded eastward on State Street, stopped for the crossing and while moving over the northward track at a speed of about 4 miles per hour the trailer was struck by No. 54.

The tractor and the trailer were thrown clear of the tracks and stopped 40 feet east of the northward track and near the north curb of State Street. The flashing-light signal east of the tracks and both the tractor and trailer were demolished; the gasoline tank was torn from the trailer and thrown approximately 84 feet north of the crossing into a ditch to the right of and parallel with the northward track. The tank exploded, spraying burning gasoline over both main tracks a distance of 300 feet. The train passed through the flames and stopped with the engine 2,541 feet north of the crossing; it was not derailed. The front end of the engine was slightly damaged; the pilot was torn from its location and as the engine passed over it the brake rigging apparently was torn from under the engine and the tender and the air hose between the engine and the tender and between the tender and first car were struck and disconnected. The interior of the engine cab was destroyed by fire, and the vestibule curtains and the sides of the cars were burned and scorched. The employees killed were the engineman and the fireman.

Summary of evidence

Conductor Sheets stated that the air brakes were tested at Cincinnati and functioned properly en route. He was in the fifth car and the train was traveling at a speed of about 60 miles per hour when he saw a flash and felt a shock, which he thought was caused by the air brakes becoming applied in emergency. He was unable to say whether the crossing whistle signal had been sounded for State Street. Approximately 50 minutes after the accident he observed that the flashing-light signals on the west side of the track were operating.

Baggageman Anderson estimated the speed of the train to have been between 55 and 60 miles per hour when he heard the explosion; the train passed through flames and the air brakes became applied in emergency. He heard the crossing whistle signal sounded as they approached State Street crossing.

Flagman Fain stated that he heard the engineman sound the whistle signal for the two crossings at Trenton. He thought that the air brakes became applied in emergency about the time of the collision, as the brakes were applied when they passed through the flames.

Yard Clerk Sheeran stated that he was in the third car of No. 54 when he heard the crossing whistle signal sounded, followed by short blasts and about that time he felt the air brakes being applied in emergency, at which time he thought the car in which he was riding was about 150 feet south of the crossing. After the train stopped he immediately went to the engine, and after assisting in putting out some of the fire, he entered the cab, closed the throttle, shut off the engine bell, but left the brake valve in emergency position, the same position in which he found it.

Signal Maintainer McNutt, Signal Helper Talmadge, Section Foreman Doyle and Section Laborer Doyle were installing a new switch on the southward track at a point about 200 feet north of the crossing and witnessed the approach of the train and the truck to the crossing. Signal Maintainer McNutt stated that he saw the truck stop about 20 feet west of the southward main track; the truck driver looked in both directions and then continued slowly upon the crossing; the truck appeared to hesitate as the front end reached the southward track, and at that time the crossing whistle signal was being sounded by the engineman, followed by successive short blasts when the train was about 400 or 500 feet from the crossing; the engine bell was also ringing as the train approached the crossing. The truck continued upon the northward track at a speed of about 4 miles per hour and was struck by the train near the center of the tank. About 1 hour prior to the occurrence of the accident Signal Maintainer McNutt had observed that the flashing-light signals were operating for No. 86, and about 10 or 15 minutes after the accident he again observed that the west flashing-light signal was operating. In the performance of their work in installing the switch, the circuits controlling the flashing-light signals were not affected in any way.

Section Foreman Doyle added that he heard the crossing whistle signal sounded on the engine of No. 54 when it was about one-half mile south of the crossing, and when the train was about 250 feet from the crossing there was a succession of short blasts. Laborer Doyle stated that it appeared to him as though the truck were going to stop on the southward track, but it continued to the northward track; Signal Helper Talmadge, however, stated that it appeared to him that the truck did stop on the southward track before it continued to the northward track.

Raymond Willis, an eye-witness of the accident, stated that he was standing facing State Street at the door of a gasoline service station, located in the southwest corner of the crossing, when he saw the truck moving slowly eastward on State Street. He waved to the driver and the driver waved back, and he observed that the right cab window of the truck was closed. The flashing lights were operating as the truck approached and the truck stopped with its front end about even with the flashing lights. The truck then moved forward and almost stopped on the southward track but continued to the northward track where it was struck near the rear end of the trailer. He saw the truck driver lean forward when the stop was made and also when the truck almost stopped on the southward track; there was nothing to obstruct the driver's view when he stopped at the flashing lights as the truck had passed the service station, and he should have seen the approaching train. Willis heard the whistle signals sounded for both crossings and the whistle was wide open as it neared the crossing.

Clarence Gingrich stated that he was standing near the northward mail crane, located approximately 800 feet south of State Street crossing and witnessed the occurrence of the accident. He heard the crossing whistle signals sounded for both crossings and the last blast on the whistle was shrill and prolonged until the train reached the crossing.

Clifford Burns stated that he was in the yard of the second house east of the crossing on State Street and his attention was called to the train by the continuous whistling. It seemed to him that the truck driver did not notice the approach of the train as he continued to move upon the crossing at the same speed and was still moving when it was struck by the train.

Engineman Jackson, of the Pennsylvania Railroad, who lives near State Street crossing, stated that on hearing the explosion he ran over to the crossing, observed the west flashing-light signal working, and noticed that there was nothing to obstruct the view of the truck driver after passing the service station.

Division Engineer Chamberlain stated that he was on No. 55 when it was flagged by Baggageman Anderson, of No. 54, as it approached Trenton about 1:40 p.m. He observed the damage and inspected the track. Portions of brake rigging and the pilot were scattered along the track; the ties were heavily marked from a point 200 feet north of the crossing to the point where the train stopped, indicating that portions of the equipment had been dragging underneath the engine; it was his opinion that some portion of this equipment tore off the steam hose and disconnected the air hose and signal lines between the tender and first car, causing the air brakes to be applied in emergency.

Fireman Good, of No. 55, stated that his engine stopped opposite the engine of No. 54 and he immediately boarded the cab of that engine. He found the throttle half open, the automatic brake valve in emergency position and the independent brake valve in running position.

Signal Supervisor Dryden stated that a check made during the early spring indicated that the flashing-light signals at State Street crossing gave 30 seconds warning for their fastest trains on the northward track. Weekly tests are made of flashing-light signals, and those at State Street were last inspected on October 24, 1938. On October 28 he observed that the signals involved operated properly for a north-bound train.

Dispatcher Kitson, of the branch station of the Petroleum Transit Corporation, at Cleves, Ohio, stated that Harry Keefer had been employed by that firm since May 4, 1937; he was considered a safe driver and had a clear record, and had had more than 10 years experience as a driver. He held chauffer's license No. 163558, issued by the State of Ohio Highway Commission. All drivers are required to take physical examinations at the time they are employed and if they are off duty for two or more days at any time they are required to take physical examinations before they can return to work. Driver Keefer went on duty on the day of the accident at 11:25 a.m., after having been off duty since 10:20 p.m., October 28.

The trucks are inspected weekly when they are not in use on Saturday afternoons or Sundays. The truck involved had not been in the shop for repairs during the past 6 months.

Observations of Commission's Inspectors

An examination by the Commission's inspectors, together with the railroad officials, of the controlling wires and other apparatus of the flashing-light signals revealed that there were no defects.

A check of motor-vehicle traffic at State Street crossing for a 24-hour period showed a total of 1,450 vehicles, of which 341 were trucks. It was noted, during this check, that the average loaded truck after stopping for the crossing used from 8 to 12 seconds to clear the tracks. Very few vehicles stopped, however, depending on the flashing-light signals regardless of their view of the approach of trains from either direction.

Train movements covering a 30-day period show an average daily movement of 22.2 trains.

Discussion

The evidence indicates that the flashing-light signals were operating, that the crossing whistle-signal was sounded by No. 54, that the weather was clear, and that there was nothing to obstruct the view southward of the truck driver after clearing a telephone pole located near the street curb 25 feet from the nearest rail. The Ohio General Code requires that all drivers of motor vehicles transporting inflammable liquids stop at all railroad crossings not more than 50 feet and not less than 10 feet from the nearest rail of the crossing and at the point where the clearest view of an approaching train can be had. Eye-witnesses saw the truck stop with its front end about opposite the flashing-light signal, approximately 20 feet from the nearest rail, and taking into consideration the angle at which the street crosses the tracks, the truck driver's view should have cleared the telephone pole and he should have seen the approaching train. The truck moved forward slowly, however, upon the crossing and almost stopped on the southward track before proceeding to the northward track; the driver may have seen the approaching train at that time, but thought that he could clear the tracks. Why he failed to obey the flashing-light signal is not known, as he was killed in the accident.

Vehicles transporting inflammables present a greater hazard than other vehicles at highway grade crossings because of the character of the lading. This is the fourth accident, wherein a motor vehicle carrying inflammables was struck by a train at a highway grade crossing, that has been investigated by this Bureau in the past nine months. There were 11 persons killed and 8 injured in these accidents; 8 of those killed were burned to death. Owners and operators of motor vehicles carrying inflammables should take necessary measures to prevent their drivers taking chances at highway grade crossings.

Conclusion

This accident was caused by a gasoline tank-truck being driven upon a railroad crossing at grade directly in front of an approaching passenger train.

Respectfully submitted,

W. J. PATTERSON

Director.