Inv-2364

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

UNION PACIFIC RAILROAD

RIGBY, IDAHO

JUNE 17, 1939

INVESTIGATION NO. 2364

Summary

Inv-2364

Railroad:	Union Pacific
Date:	June 17, 1939
Location:	Rigby, Idaho
Kind of accident:	Collision at highway grade crossing
Equipment involved:	Passenger train: Gasoline tank truck
Train number:	555
Engine number:	M-70
Consist:	Motor and 1 car
Speed:	35-40 m.p.h. : 10-45 m.p.h.
Operation:	Timetable and train orders
Track:	Single; tangent; level
Highway:	Tangent; crosses track at 30 degree angle; grade ascending 1.62 percent
Weather:	Cloudy and raining
Time:	5:15 p.m.
Casualties:	1 killed, 2 injured
Cause:	Truck driven upon railroad crossing in front of an approaching train

July 25, 1939.

To the Commission:

On June 17, 1939, there was a collision between a gasoline tank truck and a passenger train on the Union Pacific Railroad at a highway grade crossing near Rigby, Idaho, resulting in the death of one employee and the injury of two passengers.

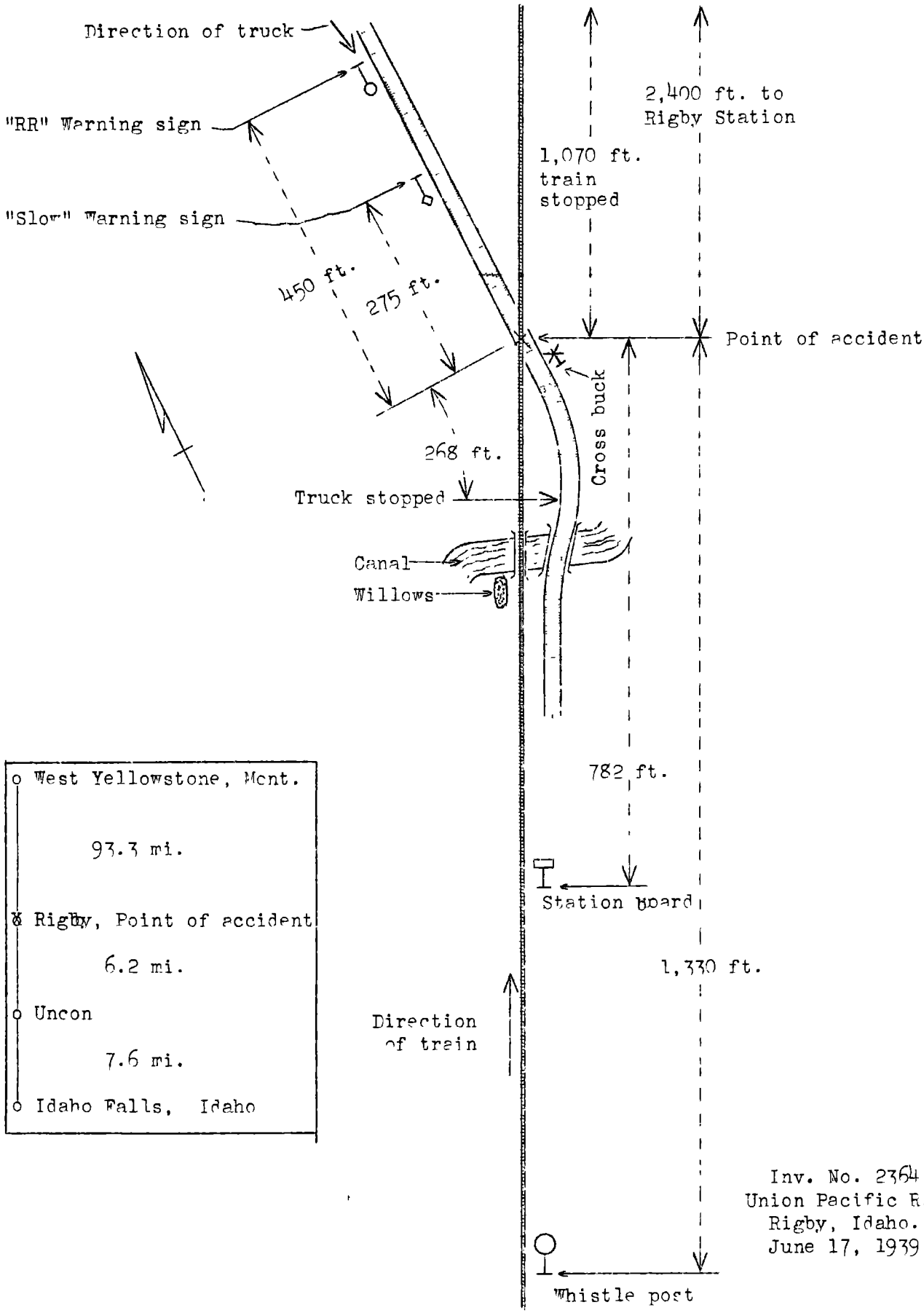
Location and Method of Operation

This accident occurred on that part of the Idaho Division designated as the Yellowstone Branch, which extends between Idaho Falls, Idaho, and West Yellowstone, Mont., a distance of 107.1 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders, no block-signal system being used.

The accident occurred at a point 2,400 feet southwest of the station at Rigby and 1,230 feet outside the city limits where U.S. Highway No. 191, known as "The Yellowstone Highway," crosses the line of the Union Pacific Railroad. The track at this point extends from southwest to northeast, but a train moving in a northeasterly direction is west-bound according to time-table direction. Approaching on the railroad from the southwest the track is tangent 12 miles to the point of accident and 5 miles beyond. The grade is level.

The highway, which extends north and south in the immediate vicinity of the point of accident, crosses the railroad at an angle of 30 degrees. Approaching from the north the highway is tangent a distance of 1,500 feet to the crossing and 50 feet beyond. The highway then curves to the right and parallels the railroad several miles. The grade is 1.62 percent ascending for southbound vehicles approaching the crossing. The highway is 20 feet in width, has 6-foot gravel shoulders on each side, and is oil-mulched. The crossing is equipped with two 75-pound rails, 60 feet in length, which provide flangeways for the running rails. The space between these rails is well paved a distance of 40.6 feet.

The crossing is protected by a Union Pacific standard cross-buck highway-crossing warning sign, which is located on a mast 15 feet in height and bears the words "RAILROAD CROSSING." It is located in the southeast corner at a point 20 feet and 23.7 feet, respectively, from the center-lines of the railroad and the highway. Approaching from the north, there are two highway markers located on the right side of the highway; one, located



Inv. No. 2364
Union Pacific R.R.
Rigby, Idaho.
June 17, 1939

450 feet north of the railroad track, is circular and bears the letters "R R." and the other, located 275 feet north of the track, is diamond shaped and bears the word "SLOW."

The railroad track is laid on a fill 2 feet in depth and is in plain view of a driver approaching from the north. A clump of willow bushes 43 feet in length, 10 feet in width, and 8 feet in height is located 702 feet south of the point of accident and 11 feet west of the track. The view of a train from the southwest had by a driver of a south-bound vehicle when 50 feet from the crossing is restricted by these bushes to a distance of 1,070 feet; but a driver looking diagonally behind these bushes could have an unlimited view to the southwest. A station whistle-board and a crossing whistle-board are located 782 feet and 1,330 feet, respectively, southwest of the crossing.

The motor vehicle laws of the state of Idaho restrict the speed of motor vehicles, loaded in excess of 10,000 pounds, to 45 miles per hour, and further restrict the speed of such vehicles at railway crossings at grade, where the view within 50 feet of such crossing is limited to 400 feet in either direction, to 15 miles per hour.

The maximum authorized speed for passenger trains in this vicinity is 50 miles per hour.

Rules 14(l) and 14(u) of the operating rules, amplified by rule 14(w) of the special time-table instructions, provide that approaching public crossings at grade, two long and two short blasts of the whistle shall be sounded, the last blast to be prolonged until reaching the crossing and the total time used to be not less than 10 seconds.

The weather was cloudy and it was raining at the time of accident which occurred at 5:15 p.m.

Description

No. 555, a west-bound passenger train according to time-table direction but moving in a northeasterly direction, consisted of gas-electric motor M-70 and a combination mail and baggage car, both of all-steel construction, and was in charge of Conductor Dilworth and Motorman Barnes. This train departed from Uncon, the last open office, 6.2 miles southwest of Rigby, at 5:09 p.m., according to the train sheet, four minutes late, and struck a gasoline tank-truck at a highway grade crossing 2,400 feet southwest of Rigby while moving at a speed estimated between 35 and 40 miles per hour.

The truck involved was a 1935, four-ton model 412-B, Diamond T tractor. It was 15 feet 6 inches in length, and was equipped with an enclosed cab and a double booster case for trailer brakes. It was hauling a semi-trailer, 21 feet in length, upon which was mounted a four compartment tank of 3,600 gallons capacity. The tractor and trailer were owned by the Husky Refining Company of Cody, Wyo., and was being driven by Arthur Hobbs of Bozeman, Mont. This truck, loaded with gasoline, was being driven southward on U.S. Highway No. 191 and, while moving over the crossing at a speed variously estimated between 10 and 45 miles per hour, was struck by No. 555.

The tractor, practically undamaged, broke loose from the trailer, continued southward and stopped 268 feet beyond the crossing. The tank became separated from the chassis of the trailer and both stopped about 25 feet east of the track; the chassis was badly bent. The tank was punctured in several places and three filling caps were knocked off. Gasoline, which was sprayed over a considerable area, became ignited and it exploded. A small frame building in the vicinity was destroyed.

The train passed through the flames and stopped 1,098 feet beyond the crossing. The motor-car was badly damaged, which probably was caused by a combination of the impact and the explosion; it was burned the entire length of the right side. Practically all the front of the motorman's compartment was demolished, the interior was badly burned, and the right sidewall was torn back a distance of 8 feet. The brake-valve and motor controls were torn loose and badly damaged. The front truck center-plate was bent and broken, and the pilot was torn loose. The employee killed was the motorman.

Summary of Evidence

Conductor Dilworth stated that a terminal air-brake test was made at Idaho Falls; a running test was made leaving that point, and the brakes functioned properly en route. Approaching Rigby he was seated in the right front seat of the smoking compartment, at which time the train was moving at a speed between 35 and 40 miles per hour. The bell was ringing and the whistle was being sounded in the usual manner, the last blast of the whistle having been prolonged. The motorman had shut off the power in anticipation of stopping at Rigby and the brakes had been applied in service application for a short time prior to an emergency application of the brakes which occurred almost simultaneously with the impact and he was knocked to the floor. The sides of the car became enveloped in flames. The train stopped some distance beyond the crossing. It was cloudy and

a misty rain was falling but he thought that visibility was not restricted to any great degree. He talked with the truck driver involved, who appeared to be normal, but obtained no information from him. He had talked to Motorman Barnes before departing from Idaho Falls and found him to be normal in every respect.

Brakeman Fife, who was in the trailer car at the time of the accident, thought that the speed of the train at the time of the accident was between 35 and 40 miles per hour.

David Hunter, of Rexburg, Idaho, whose statement was corroborated by his wife, Mary Hunter, stated that he was driving north on "The Yellowstone Highway" at the time of the accident and had stopped 50 feet south of the crossing to wait until No. 555 passed. He heard the bell ringing and the whistle being sounded for the crossing. It was raining at that time. The power had been shut off on the motor-car and he heard the brakes "screeching" as it approached the crossing at a speed of about 30 or 35 miles per hour. Looking north, he saw a southbound gasoline truck moving at a speed between 10 and 15 miles per hour, about 10 or 15 feet north of the crossing. He did not see the truck stop for the crossing. The train struck the trailer in front of the rear wheels and then an explosion followed. The tractor continued southward past him and stopped. The truck driver came back and said that he neither had heard the whistle nor had seen the train. The driver also said that his wind-shield was steamed over.

Owen Hunsaker, of Rigby, stated that at the time of the accident he was in his house, located 200 feet east of the crossing. He heard the train whistle clearly and distinctly for the crossing, the whistle being sounded throughout a distance of 1/4 mile immediately preceding the crossing. Although it had been raining at intervals all day, it was not raining at the time of the accident. He thought that visibility was good a distance of one mile. He has lived at this place about five years and has observed that very few trucks stop for the crossing.

C. M. Cardwell, of Rigby, stated that at the time of the accident he was in the Hunsaker house and heard the whistle being sounded for the crossing and the sound of the explosion followed soon thereafter. He had observed that very few trucks stop for the crossing. It was misty and raining at the time of the accident.

Dave Lemons, of Idaho Falls, stated that at the time of the accident he was in a house located about 200 feet west of the

crossing. It was raining and the wind was blowing from the south. He heard a whistle sounded and then saw the truck struck by the train.

Glen Montague, of Rigby, stated that he was in his house, located 158 feet east of the crossing, and saw the truck about 25 feet north of the crossing moving at a speed between 40 and 45 miles per hour. It did not slow down appreciably as it passed over the crossing. The whistle was being sounded loudly and the bell was ringing. The train, enveloped in flames after striking the truck, passed his house at a speed of about 25 miles per hour. After the accident he talked with the truck driver, who said that a car had splashed water on his windshield and he did not see the train approaching.

Wayne Robb, of the Idaho state police, stated that he was about one mile south of the crossing when he heard the explosion resulting from the collision. After the accident he talked with the driver who told him that he had been a driver 21 years and that he was moving at a speed of 10 or 15 miles per hour when struck by the train. The driver was normal in every respect. At the time of the accident it was raining and the wind was blowing.

E. M. Birch, of Rigby, stated that at the time of the accident he was in a building about 1/2 mile from the crossing and distinctly heard the whistle sounded for the crossing.

C. B. Rowley, mechanical foreman for the Union Pacific at Idaho Falls, stated that he had inspected motor-car M-70 before its departure from Idaho Falls on the day of the accident and it was in good condition. He had talked to Motorman Barnes who was normal in every respect. After the accident he inspected motor car M-70 and found that the front end was demolished, the engine-room had been badly burned and the right front and right side sheets of the motorman's compartment had been torn away; the brake valve was torn loose from the pipes and the handle was in emergency position and bent downward; the motor control box was torn loose; the reverse lever was in forward position and the motor control was in series position; the front truck was off center and about 10 inches forward, which indicated to him that the motor-car had struck the tank of the trailer; the pilot was missing, and the right side of the car had been burned its entire length.

Road Foreman of Engines Illingsworth stated that the motorman's view to the front, right, and left was not obscured in any way by the motor or any of its appurtenances.

Shop Superintendent Walsh stated that the engine-room of motor-car M-70 is 11 feet long, 10 feet 4 inches wide, and 7 feet 3 inches high. The floor is of 9-gauge tank steel and is riveted to the side and center sills of the underframe 48 inches above the rail. On top of this floor there is a wood deck 2 inches thick. The front wall of the cab is circular, having a 100-inch radius, and is supported by two semi-box type end-posts 7 feet 3 inches in height which are located 54 inches apart. These posts are formed of 1/4-inch tank steel and have four sides, the faces varying from 2 inches to 5-3/4 inches in width, and are fastened at the top and bottom with angle-iron gussets 5/16 inch thick which are fastened to the end-posts and the end-sill and to the top frame-work of the roof with 3-5/8 inch rivets in each leg of the angles. Two corner posts of 11-gauge material form a support to both the front and the side walls of the cab. They are set approximately 112 inches apart and 15 inches back from the extreme front face of the car. They are semi-circular in shape and extend from the sub-floor to the roof of the car and are fastened to the side sheets of the cab with two rows of 3/8-inch rivets at 3-inch centers, the rows being 8 inches apart. The side sheets extend down over the end-sill and the side-sills and are fastened with 3/8-inch rivets. The right side-wall is supported by three side-door posts located 47 inches, 71 inches, and 105 inches back of the corner post. They are made of 1/4-inch by 1-1/2-inch by 3-inch channel iron and are fastened at the top and bottom with 1/4-inch by 1-1/4-inch by 4-1/2-inch angle straps; two 3/8-inch rivets are used to fasten each leg of the angle to the side-sill and the frame-work of the roof. The side walls and front corners of the car are made of No. 11 gauge steel, riveted to the side posts in the same manner as on the corner posts. The front face of the car is covered between the end posts with a sheet of No. 9 gauge steel, 34 inches by 53 inches, which is bolted with 3/8-inch cap bolts to the end posts and the front end-sill. Above this there is a reinforcing strip 3 inches wide which forms a window sill for a clear-vision window 32 inches by 42 inches immediately above the sill. Above this window the remainder of the space is covered with No. 11 gauge steel riveted to the frame-work. The front end-sills are of 1/4-inch by 2-inch by 6-inch channel iron and are in two sections which extend from the front buffer casting to the end of the side sills and are fastened with gussets of 3/8-inch angle iron, four 5/8-inch rivets being used in each leg of the angle. These end sills are bent to conform to the radius of the front end of the motor-car.

According to data furnished by the railroad, the motorman's seatbox was 14-1/2 inches wide, 16-1/4 inches long, and 21-1/2 inches high, equipped with a back-rest, and located close to the right side and about 18 inches from the front end

of the cab. Two doors were provided for egress from the cab, one being located on the right side immediately behind the seatbox, and the other being in the rear wall of the cab or about 8 feet back of the seat. To leave the cab from his seatbox, it would be necessary for the motorman to pass through a narrow passageway between the seatbox and the motor.

Arthur Hobbs, driver of the truck involved, left the State and was not available for questioning.

Train movements covering a 30-day period showed an average daily movement of 7.56 trains.

A record of 35 efficiency tests of Motorman Barnes between January 1, 1938, and June 17, 1939, inclusive disclosed that he had been alert and efficient in each instance.

Division Superintendent Titus stated that the crossing involved in the accident has been placed in a grade-separation project. Plans have been approved and work thereon should be under way within two months after the occurrence of this accident.

Observations of the Commission's Inspectors

The Commission's inspectors observed that a driver of a south-bound motor vehicle could plainly see a train approaching from the southwest a distance of 1,070 feet and a motorman of a gas-electric car approaching from the southwest could see a south-bound motor vehicle, 50 feet from the crossing, a distance of 1,300 feet.

The inspectors observed that the right corner post, the side posts on the right side, and the sheathing across the front and 8 feet of the sheathing on the right side were torn from the fastenings at the floor and the roof.

A 24-hour traffic check disclosed that 2,228 vehicles, of which 335 were trucks, used this crossing.

Discussion

According to the evidence the proper whistle signals were being sounded, and the bell was being rung as the train approached the crossing at normal speed. Several witnesses stated that the power was shut off and the brakes were applied prior to the accident. The motor-control handle was found in series position, and as this position is used in starting only, it is indicative that the motorman did not intend to use power again until departing from Rigby station.

The driver of the truck had practically a facing view of the train approaching from the southwest; when 50 feet from the crossing he had a clear view of the immediate approach of a train a distance of 1,070 feet. One witness stated that the driver said his windshield had been splashed with water by a passing car, and another witness stated that the driver said his windshield was steamed. Approaching this crossing there were three signs in plain view to warn the driver that he was approaching a point of danger. Why he failed to heed these warnings and to hear the train approaching is not known as he declined to make an explanation.

From the manner in which the posts and the sheathing were torn from the front and the right side of the cab; it is obvious that this motor-car did not have the ability to withstand the impact shock imposed upon it when it struck the loaded trailer; it was within this space that the motorman was killed. The only protection to the front was a pilot which extended only a few inches beyond the forward part of the cab, but which did not extend above the level of the floor. It is apparent that consideration should be given toward providing motormen of motor-cars, similarly constructed, greater protection against injury in case of accidents.

This Bureau has repeatedly called attention to the hazards in connection with the transportation of explosives and inflammables on the public highways. Supervisory officials of companies engaged in transporting such lading should exert every effort to see that their drivers exercise caution at railway crossings at grade. At the time of the investigation it was disclosed that the work of eliminating this grade crossing would begin within about two months after the occurrence of this accident.

Conclusion

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

Respectfully submitted,

W. J. PATTERSON

Director.