INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3225

RICHMOND, FREDERICKSBURG AND POTOMAC
RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT MILFORD, VA., ON

JANUARY 10, 1949

SUMMARY

Railroad:	Richmond, Fredericksburg and Potomac
Date:	January 10, 1949
Location:	Milford, Va.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	46
Engine number:	617
Consist:	16 cars
Estimated speed:	70 m. p. h.
Operation:	Automatic block-signal, train-control and cab-signal systems
Track:	Double; tangent; 0.18 percent ascending grade northward
Weather:	Clear
Time:	9:18 a. m.
Casualties:	80 injured
Cause:	Obstruction on track

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3225

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

RICHMOND, FREDERICKSBURG AND POTOMAC
RAILROAD COMPANY

March 15, 1949

Accident at Milford, Va., on January 10, 1949, caused by an obstruction on the track.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On January 10, 1949, there was a derailment of a passenger train on the Richmond, Fredericksburg and Potomac Railroad at Milford, Va., which resulted in the injury of 57 passengers, 3 Pullman employees, and 20 dining-car employees.

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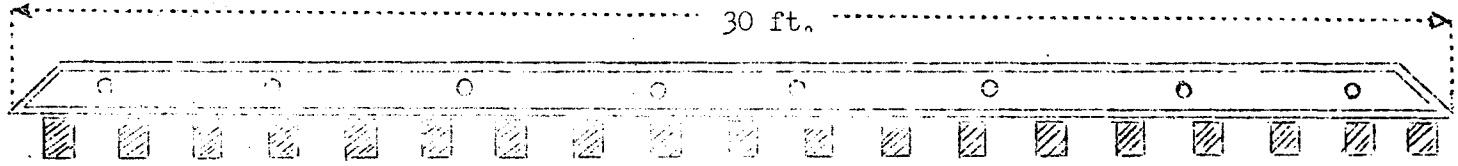
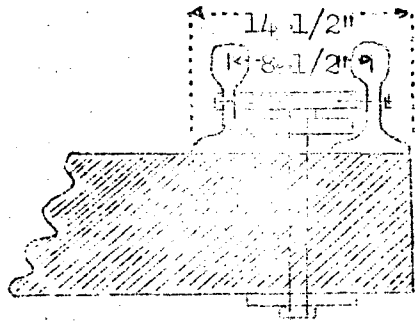
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.

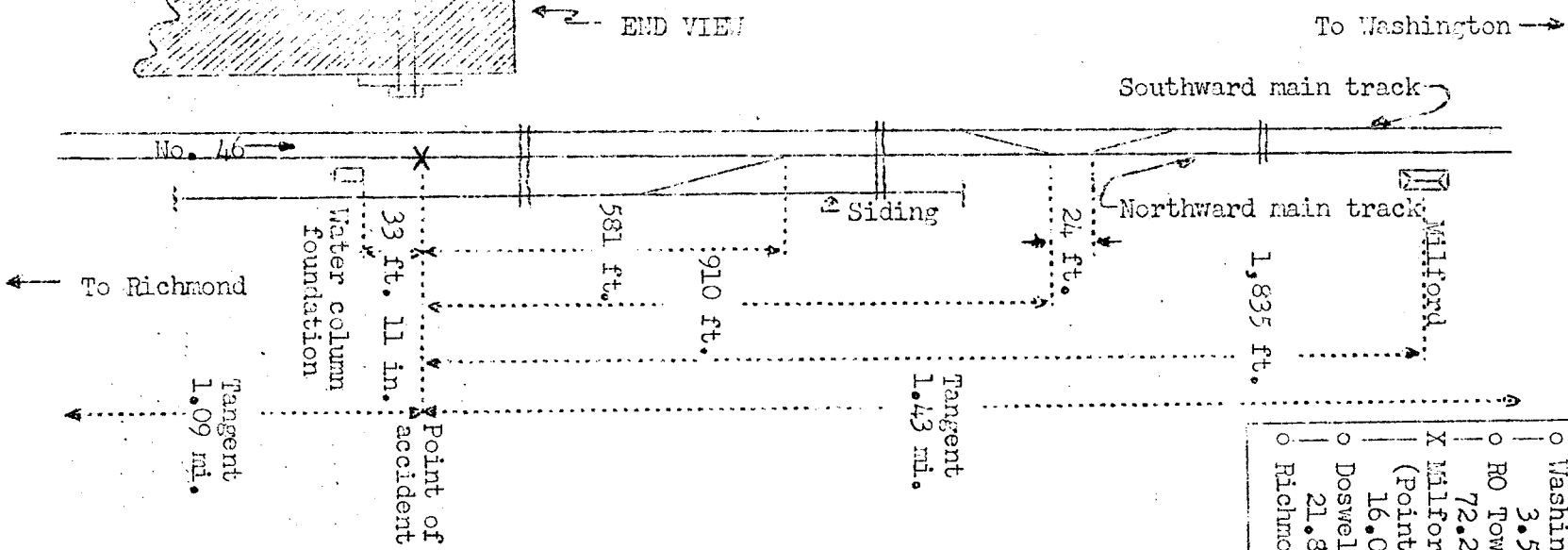


SIDE VIEW

Sketch showing construction of stringer



END VIEW



Inv. No. 3225
Richmond, Fredericksburg and Potomac Railroad
Milford, Va.
January 10, 1949

Location of Accident and Method of Operation

This railroad extends between Richmond, Va., and a point near RO Tower, located 3.5 miles south of the station at Washington, D. C., 110 miles. This is a double-track line, over which trains moving with the current of traffic are operated by an automatic block-signal system, supplemented by an automatic train-control system of the two-speed continuous-inductive type, and a three-indication cab-signal system. The accident occurred on the northward main track, 37.5 miles north of Richmond, at a point 1,835 feet south of the station at Milford. The main tracks are tangent throughout a distance of 1.09 miles south of the point of accident and 1.43 miles northward. The grade is 0.18 percent ascending northward. In the vicinity of the point of accident a siding parallels the northward main track on the east. The distance between the center-line of the northward main track and the center-line of the siding is 17 feet. A trailing-point switch of a crossover between the siding and the northward main track and a trailing-point switch of a crossover between the main tracks are located in the northward main track, respectively, 581 feet and 910 feet north of the point of accident. A facing-point switch of a crossover between the main tracks is located in the northward main track 24 feet north of the more northerly trailing-point switch. At a point 33 feet 11 inches south of the point of accident, the foundation of a water column had recently been constructed between the siding and the northward main track.

The structure of the northward main track consists of 131-pound rail, 39 feet in length, laid new in 1934 on an average of 23 treated ties to the rail length. It is fully tieplated with double-shoulder tieplates, and is provided with 6-hole 100-percent joint bars 32 inches in length, and 7 rail anchors per rail length. It is ballasted with crushed stone to a depth of 18 inches under the ties.

The maximum authorized speed for passenger trains is 70 miles per hour.

Description of Accident

No. 46, a north-bound first-class passenger train, consisted of engine 617, one combination dormitory-baggage car, four sleeping cars, one dining car, five sleeping cars, one dining car, and four sleeping cars, in the order named. All cars were of all-steel construction. The sixth, seventh, ninth, eleventh, twelfth and fifteenth cars were equipped with tight-lock couplers. This train departed from Richmond at 8:35 a. m., on time, passed Doswell, the last open office, 16 miles south of Milford, at 9:04 a. m., 4 minutes late, and

while it was moving on the northward main track at an estimated speed of 70 miles per hour the front truck of the first car was derailed 1,835 feet south of Milford, and the seventh to the fourteenth cars, inclusive, were derailed at a switch 910 feet north of the initial point of derailment. Separations occurred between the engine and the first car, between the ninth and tenth cars, between the tenth and eleventh cars, and between the eleventh and twelfth cars. The engine stopped 2,940 feet north of the point of accident and 350 feet north of the north end of the first car. The first eight cars stopped upright on the track. The rear truck of the ninth car was derailed. The south end of the ninth car stopped 1,855 feet north of the point of accident. The tenth to the thirteenth cars, inclusive, stopped in various positions east of the northward main track, with the north end of the tenth car 470 feet south of the south end of the ninth car. The tenth car stopped on its right side, and the twelfth car leaned toward the east at an angle of about 45 degrees. The derailed equipment was considerably damaged.

The weather was clear at the time of the accident, which occurred at 9:18 a. m.

Discussion

No. 46 was moving on tangent track at an estimated speed of about 70 miles per hour, in territory where the maximum authorized speed was 70 miles per hour, when the front truck of the first car and the seventh to the fourteenth cars, inclusive, were derailed. Prior to the time of the accident the engine and the cars of the train had been riding smoothly.

As No. 46 was approaching the point where the accident occurred the enginemen were maintaining a lookout ahead from the cab of the engine. The brakes of this train had been tested and had functioned properly where used en route. The northward signal governing movements into the block in which the accident occurred indicated Clear. The enginemen saw a force of workmen near the east rail of the northward main track about 1,800 feet south of the station at Milford. When the engine was about 500 feet south of them, the engineer sounded the engine whistle. These men, however, remained on or near the track until the engine was within 100 feet of them. After the engine passed the workmen, the engineer looked southward and discovered that the first car was derailed. He immediately closed the throttle and placed the brake valve in the emergency position. A few seconds later he again looked back and saw escaping steam at the rear of the tender. He then realized that a separation had occurred between the tender and the first car, and he then opened the throttle and released the independent brake. The baggageman, who was riding in the front of the first car, was not aware of anything being wrong until after that car was derailed. The other members of the

train crew were in the last car and were not aware of anything being wrong until the brakes were applied in emergency.

Examination after the accident disclosed that No. 46 had struck an obstruction on the track. The obstruction consisted of two parallel pieces of 130-pound rail, about 30 feet in length, bolted together with 8 one-inch bolts distributed evenly. The rails were spaced 8-1/2 inches between rail-centers with pipe sleeves over the bolts. A triangular section of the web, 18 inches in length, was cut away from each end of each rail and the head was bent downward to the base to form a ramp at each end. This pair of rails weighed approximately 2,600 pounds. These rails were broken into several pieces, most of which were recovered. The largest piece, consisting of 17 feet 3 inches of each rail, was found between the northward main track and the siding and about 50 feet north of the point of derailment. The north end was embedded in the ballast under the west ends of the ties of the siding. The south end was near the northward main track. The second largest piece, consisting of one rail 9 feet 10 inches in length, was found 28 feet east of the northward main track and about 350 feet north of the point of derailment. A third piece, consisting of one rail 9 feet in length, was found on the northward main track and about 820 feet north of the point of derailment. Smaller pieces of the rail were found at various locations throughout a distance of about 900 feet north of the point of derailment.

The first mark on the track structure was an irregular mark on the head of the east rail at the point where the rails were struck. A flange mark first appeared on the top of a tie at a point 22 feet 8 inches farther north. Flange marks then appeared on the ties 910 feet northward to a trailing-point switch. This switch and the track immediately north of the switch were destroyed. Examination of the engine disclosed a mark on the lower edge of the right end of the pilot, the outside pedestal binder-bolts on the right side of the trailer truck were bent backward, and the housing of the automatic train-control loop receiver, located at the rear of the tender, was cracked. The clearance of the pilot above the level of the tops of the rails was 5-5/8 inches. The minimum clearance of the pedestal binder-bolts was 3-1/4 inches, and the clearance of the automatic train-control receiver was 5 inches above the level of the tops of the rails. The track south of the point of accident was in normal alinement and there was no indication of dragging equipment.

The investigation disclosed that construction of a water-column between the northward main track and the siding about 1,800 feet south of the station at Milford was in progress on the day of the accident. The foundation for the column had been constructed. Water mains were located west of the tracks. A trench had been dug under the main tracks for the

pipe that connected the water mains to the water column. The rails involved in the accident were used as a stringer over the trench and outside the east rail of the northward main track to support the track structure. A similar stringer was used outside the west rail of this track. The stringer outside the east rail was placed on the tops of the ties and was clamped to the ties with eighteen clamps. Each clamp consisted of two 1-inch steel plates, 14-1/2 inches by 7 inches, one of which was placed under the ties and the other between the two rails on the upper side of the base, and they were bolted together with two 1-inch by 12-1/2-inch bolts. The pipe line was laid in the trench, then the trench was filled on January 7. On the day of the accident a force consisting of a foreman and four workmen were engaged in removing the stringers from the ties. The stringer on the west side of the track was unclamped and removed. Then the clamps were removed from the stringer on the east side of the track. The south end of the stringer was near the water-column foundation, and this stringer was moved northward on the ties a distance of about 10 feet to clear the foundation. This movement was effected by prying with bars against the spacer bolts. When No. 46 was about 3,000 feet south of the point where the derailment occurred, the workmen attempted to pry the stringer off the ends of the ties. The level of the ballast between the northward main track and the siding was about 12 inches below the tops of the ties in the northward main track. The north end of the stringer was pried eastward off the ties to the ballast, but the stringer became lodged against the ties near its center. In this position, the south end was above and near the east running rail, and was in position to be struck by the pilot, the pedestal binder-bolts on the trailer truck, and the train-control-receiver housing on the tender. These blows moved the south end of the stringer northward and westward into position where it was struck by the right front wheel of the first car, then driven under the truck, which was derailed.

The construction work at this location was being performed under contract, and the workmen were not employees of the carrier. The stringers were provided by the carrier for the purpose used. A railroad employee was not assigned to supervise the work at this location, because this force several times previously had performed similar work at other locations. They had been instructed to expect trains to be run at any time, and were cautioned to perform their work in a safe manner. Because of their previous satisfactory work, the division engineer said that he thought it was not necessary to provide flag protection, or to issue a train order restricting the speed of trains over the track in question.

Cause

It is found that this accident was caused by an obstruction on the track.

Dated at Washington, D. C., this fifteenth day of March, 1949.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.