INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3451

MISSOURI PACIFIC RAILROAD COMPANY

IN RE ACCIDENT

AT GADS HILL, MO., ON

FEBRUARY 13, 1952

SUMMARY

Date:	February 13, 1952	
Railroad:	Missouri Pacific	
Location:	Gads Hill, Mo.	
Kind of accident:	Side collision	
Trains involved:	Passenger	: Passenger
Train numbers:	1	: 8
Engine numbers:	T.& P. Diesel-electric units 2009A and 2008A	: Diesel-electric units 8005A and 8013A
Consists:	10 cars	: 1 Diesel-electric unit in tow, 11 cars
Estimated speeds:	12 m. p. h.	: 5 m. p. h.
Operation:	Signal indications	
Track:	Single; tangent; 1.25 percent descending grade northward	
Weather:	Clear	
Time:	8:17 p. m.	
Casualties:	14 injured	
Cause:	Failure to operate north-bound train in accordance with signal indication	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3451

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

MISSOURI PACIFIC RAILROAD COMPANY

March 27, 1952

Accident at Gads Hill, Mo., on February 13, 1952, caused by failure to operate the north-bound train in accordance with a signal indication.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On February 13, 1952, there was a side collision between two passenger trains on the Missouri Pacific Railroad at Gads Hill, Mo., which resulted in the injury of 13 passengers and 1 dining-car employee.

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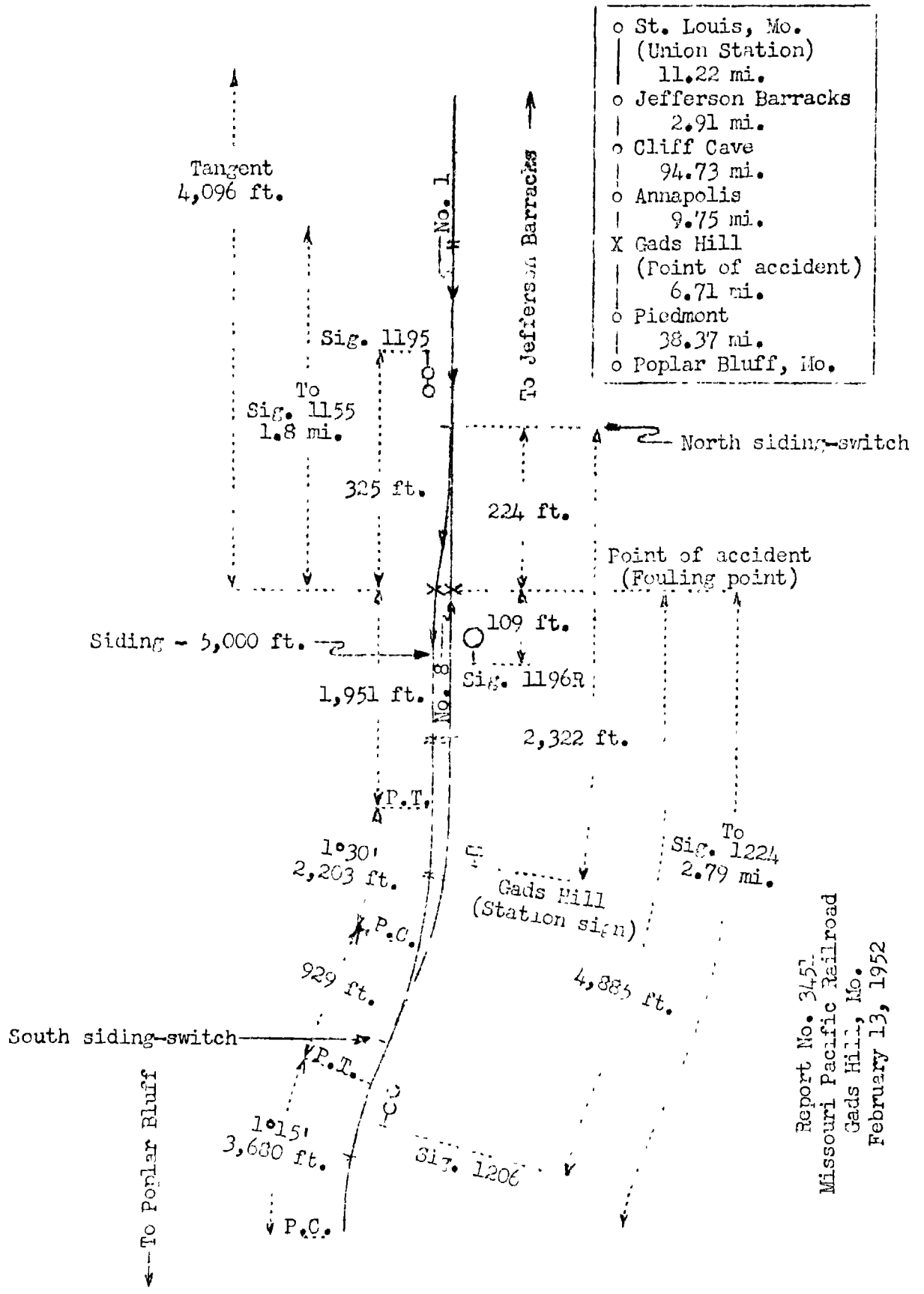
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Report No. 3452
Missouri Pacific Railroad
Gads Hill, Mo.
February 13, 1952

Location of Accident and Method of Operation

This accident occurred on that part of the Missouri Division extending between Jefferson Barracks and Poplar Bluff, Mo., 152.47 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by signal indications. At Gads Hill, 107.39 miles south of Jefferson Barracks, a siding 5,000 feet in length parallels the main track on the west. The north siding-switch is 2,532 feet north of the station sign. The accident occurred 224 feet south of the north siding-switch, at the fouling point of the main track and the siding. The main track is tangent throughout a distance of 4,096 feet immediately north of the point of accident and 1,951 feet southward. From the south there are, in succession, a 1°15' curve to the right 3,680 feet in length, a tangent 929 feet, a 1°30' curve to the left 2,203 feet, and the tangent on which the accident occurred. The grade is 1.25 percent ascending southward throughout a distance of 2,684 feet immediately north of the point of accident. From the south there are, in succession, a 1.25-percent ascending grade 1,535 feet, a vertical curve 2,501 feet, and a 1.25-percent descending grade 1,622 feet to the point of accident.

Automatic signal 1155 and semi-automatic signal 1195, governing south-bound movements on the main track, and automatic signal 1224 and semi-automatic signals 1206 and 1196R, governing north-bound movements on the main track, are located, respectively, 1.8 miles north, 325 feet north, 2.79 miles south, 4,885 feet south, and 109 feet south of the point of accident. These signals are of the color-light type and are continuously lighted. The aspects applicable to this investigation and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
1155 1224	Yellow	Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before leading wheels pass the next signal.	APPROACH
1195	Red over lunar white	PROCEED AT LOW SPEED: (1) Within ABS,--to next signal governing in same direction. * * *	LOW

1206	Yellow over red	Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before leading wheels pass the next signal.	APPROACH
1196R	Red	Stop.	STOP

These signals form part of a traffic-control system extending between Cliff Cave, 2.91 miles south of Jefferson Barracks, and Poplar Bluff. The control machine, located in the train dispatchers' office at Poplar Bluff, is equipped with visual indicators to show track occupancy of each OS section and between the OS sections, the position of each power-operated switch, and whether each controlled signal is displaying an aspect to proceed or an aspect to stop. The control circuits are so arranged that a controlled signal will not display an aspect to proceed when any opposing or conflicting controlled signal is displaying other than its most restrictive aspect, when the block between adjacent controlled points is occupied by an opposing train, or when a switch over which the signal governs is not in proper position and locked. When the route is lined for a south-bound movement from signal 1155 into the siding at Gads Hill and for a north-bound movement from signal 1224 to signal 1196R, signal 1155 indicates Approach, signal 1195 indicates Proceed at Low Speed, signals 1224 and 1206 each indicate Approach, and signal 1196R indicates Stop.

This carrier's operating rules read in part as follows:

DEFINITIONS.

Low Speed.--A speed that will permit stopping short of train, engine, obstruction or switch not properly lined and looking out for broken rail, but not exceeding 15 miles per hour.

17. Headlights.--The standard white headlight must be displayed brightly to the front of every train by day and by night.

When a train turns out to meet another train, the standard headlight must be kept burning brightly until entire train is clear of main track * * *

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34. Calling of Signals.--All members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

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The maximum authorized speed for the trains involved was 60 miles per hour.

Description of Accident

No. 1, a south-bound first-class passenger train, consisted of T.& P. Diesel-electric units 2009A and 2008A, coupled in multiple-unit control, one baggage-mail car, one baggage-dormitory car, three coaches, one dining car, one lounge-sleeping car, and three sleeping cars, in the order named. All cars were of lightweight steel or aluminum alloy construction, and all were equipped with tightlock couplers. This train departed from St. Louis Union Station, 11.22 miles north of Jefferson Barracks, at 5:44 p. m., 10 minutes late, passed Annapolis, 9.75 miles north of Gads Hill and the last siding north of Gads Hill, at 8:04 p. m., and passed signal 1155, which indicated Approach. The front of the train passed signal 1195, which indicated Proceed at Low Speed, and while the train was entering the siding at Gads Hill at a speed of about 12 miles per hour the third car was struck by No. 8 at the fouling point of the main track and the siding.

No. 8, a north-bound first-class passenger train, consisted of Diesel-electric units 8005A and 8013A, coupled in multiple-unit control, Diesel-electric unit 8017A in tow, three mail cars, one express car, one mail car, three coaches, one lounge-dining car, and two sleeping cars, in the order named. The tenth car was of lightweight steel construction, and the other cars were of conventional all-steel construction. The tenth car was equipped with tightlock couplers. This train departed from Poplar Bluff at 7:21 p. m., 46 minutes late, departed from Piedmont, 6.71 miles south of Gads Hill and the last siding south of Gads Hill, at 8:04 p. m., 40 minutes late, passed signals 1224 and 1206, each of which indicated Approach, passed signal 1196R, which indicated Stop, and while moving at a speed of about 5 miles per hour it struck the third car of No. 1.

The rear truck of the third car, both trucks of the fourth, fifth, and sixth cars, and the front truck of the seventh car of No. 1 were derailed to the west. The train stopped with the front end of the third car 216 feet south of the point of collision. The fourth, fifth, and sixth cars leaned to the west at an angle of about 30 degrees. The front truck of the first Diesel-electric unit of No. 8 was derailed to the east. This unit stopped upright and approximately in line with the track, with its front end 98 feet north of the point of collision. There were no separations between the units of either train. The side and end sheets of the third to the sixth cars, inclusive, of No. 1 were badly damaged, and the seventh car was slightly damaged. The front end and the side of the first Diesel-electric unit of No. 8 were somewhat damaged.

The weather was clear at the time of the accident, which occurred at 8:17 p. m.

Discussion

The train dispatcher intended that both No. 21, a southbound passenger train which was preceding No. 1, and No. 1 would enter the siding at Gads Hill to meet No. 8. He lined the route for No. 21 to proceed from Annapolis to Gads Hill and to enter the siding at the north siding-switch, and for No. 8 to proceed from Piedmont to signal 1196R. After No. 21 passed Annapolis he lined the route for No. 1 to follow No. 21 from Annapolis. No. 21 entered the siding at Gads Hill at 8:10 p. m. The dispatcher, without changing the position of the north siding-switch, then transmitted the code to cause signal 1195 to indicate Proceed at Low Speed to permit No. 1 to follow No. 21 into the siding. The indicators on the traffic-control machine indicated that the system functioned properly.

As No. 1 was approaching the point where the accident occurred the enginemen were maintaining a lookout ahead from the control compartment at the front of the locomotive, and the members of the train crew were in various locations in the cars of the train. The headlight was lighted brightly. The speed of the train was reduced to about 30 miles per hour in compliance with the indication of signal 1155, and it was further reduced to about 12 miles per hour in compliance with the indication of signal 1195. The enginemen said that as the front of their train entered the siding they observed the marker lights of No. 21 ahead. They also observed the headlight of No. 8 as that train approached, but they were

intent on determing the location of the rear end of No. 21 and they did not notice the speed at which No. 8 was moving when the front end of that train passed them. The brakes of No. 1 were applied in emergency as a result of the collision. The enginemen did not know that their train had been struck by No. 8 until they investigated to ascertain the cause for the brake application.

As No. 8 was approaching Gads Hill the enginemen were maintaining a lookout ahead from the control compartment at the front of the locomotive, and the members of the train crew were in various locations throughout the cars of the train. The headlight was lighted brightly. The brakes of the train had been tested at Poplar Bluff, and they had functioned properly when used in controlling the speed of the train at various points and in making a station stop at Piedmont. According to the statement of the fireman, signal 1224 indicated Approach. The indication was called by the enginemen, and the speed of the train was properly reduced. Because of curvature of the track, signal 1206 first was visible at a distance of about 1,000 feet. As No. 8 approached this signal the speed was further reduced so that the train could, if necessary, be stopped short of the signal. When the enginemen obtained a view of this signal, they observed that it indicated Approach and called the indication. The speed of the train then was slightly increased. When the train was about 2,800 feet south of signal 1196R, the enginemen observed that the signal indicated Stop. The fireman called the indication. The engineer answered him and then made a service application of the brakes. As No. 8 was closely approaching signal 1196R the fireman was watching No. 1 enter the siding. Until he observed that No. 8 was passing the point at which it ordinarily would stop for the signal, he was not aware that the train was moving at a speed at which it could not be stopped short of the signal. He called a warning to the engineer, and the engineer immediately made an emergency application of the brakes. The fireman thought the speed of the train had been reduced to about 5 miles per hour when the collision occurred. Both the train porter and the flagman looked ahead from open vestibule doors after the train entered the tangent on which the accident occurred. Each of them said that signal 1196R indicated Stop, and each of them thought that the speed of the train was being so controlled that the train could be stopped short of the signal. The flagman of No. 21 said that he looked at signal 1196R immediately before No. 8 passed No. 21 and the signal indicated Stop at that time. According to the tape of the speed recording device, No. 8 passed signal 1224 at a speed of

40 miles per hour. The speed was decreased to 21 miles per hour as the train approached signal 1206, and then was gradually increased to 28 miles per hour. An emergency application of the brakes became effective approximately 500 feet south of signal 1196R.

The engineer of No. 8 was not available for questioning during this investigation. The conductor said that soon after the accident occurred the engineer told him that because he was looking toward the headlight of No. 1 he misjudged the location of his train and the distance between his train and signal 1196R. The fireman said the engineer told him that he did not realize that sufficient time had elapsed for the train to reach signal 1196R after entering the tangent on which the accident occurred.

After the accident occurred the brakes of No. 8 were tested. With the exception of the brake equipment on the front truck of the first Diesel-electric unit, which was damaged in the accident, the brakes functioned properly.

Cause

It is found that this accident was caused by failure to operate the north-bound train in accordance with a signal indication.

Dated at Washington, D. C., this twenty-seventh day of March, 1952.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.