

RAILROAD ACCIDENT INVESTIGATION

Report No 3793

MISSOURI PACIFIC RAILROAD COMPANY

GORHAM, ILL

NOVEMBER 19, 1957

INTERSTATE COMMERCE COMMISSION

Washington

SUMMARY

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| | | |
|--------------------|--|---|
| DATE | November 19, 1957 | |
| RAILROAD | Missouri Pacific | |
| LOCATION | Gorham, Ill | |
| KIND OF ACCIDENT | Side collision | |
| TRAINS INVOLVED | Passenger | Freight |
| TRAIN NUMBERS | St L S W 907 | St L S W Extra 969 North |
| LOCOMOTIVE NUMBERS | Diesel-electric unit 306 | Diesel electric units 969, 934, 946, and 825 |
| CONSISTS | 5 cars | 117 cars, caboose |
| SPEEDS | 30 m p h | 25 m p h |
| OPERATION | Signal indications | |
| TRACKS | Double, tangent, level | |
| WEATHER | Cloudy | |
| TIME | 1 00 a m | |
| CASUALTIES | 16 injured | |
| CAUSE | Failure to operate northbound freight train in accordance with signal indications | |

INTERSTATE COMMERCE COMMISSION

REPORT NO 3793

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

MISSOURI PACIFIC RAILROAD COMPANY

July 1, 1958

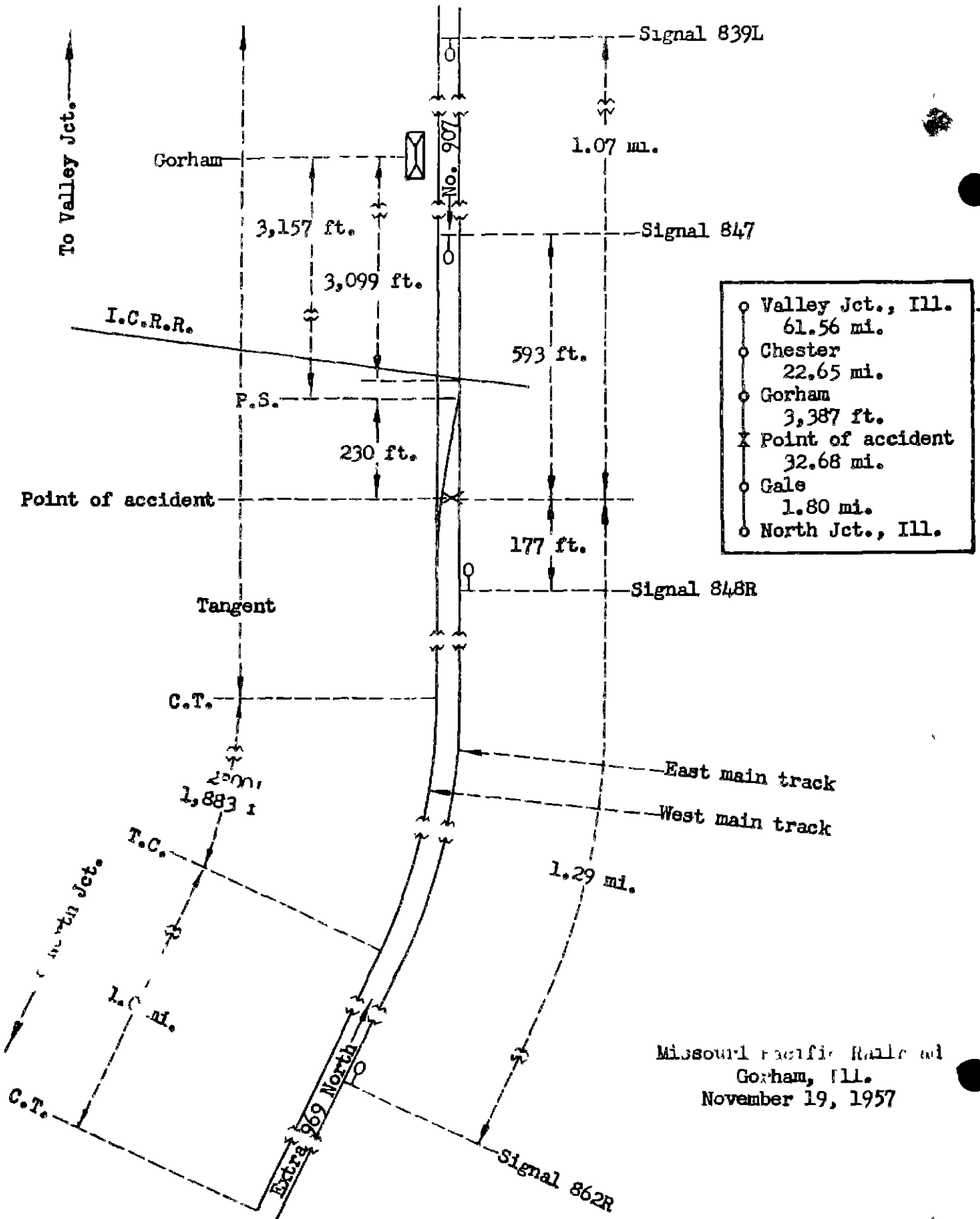
Accident near Gorham, Ill., on November 19, 1957, caused by failure to operate the northbound freight train in accordance with signal indications.

REPORT OF THE COMMISSION¹

TUGGLE Commissioner

On November 19, 1957, there was a side collision between a passenger train and a freight train on the Missouri Pacific Railroad near Gorham, Ill., which resulted in the injury of 13 passengers, 1 express messenger, 1 train porter, and 1 non-service employee.

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



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|---|-------------------|-----------|
| o | Valley Jct., Ill. | 61.56 mi. |
| o | Chester | 22.65 mi. |
| o | Gorham | 3,387 ft. |
| X | Point of accident | 32.68 mi. |
| o | Gale | 1.80 mi. |
| o | North Jct., Ill. | 1.80 mi. |

Missouri Pacific Railroad
 Gorham, Ill.
 November 19, 1957

Location of Accident and Method of Operation

This accident occurred on that part of the Illinois Division extending between Valley Jct and North Jct, Ill., 119.33 miles. Trains of the St. Louis Southwestern Railway are regularly operated over the Illinois Division. In the vicinity of the point of accident this is a double-track line over which trains are operated in either direction by signal indications. From east to west the main tracks are designated as east main and west main. Near Gorham, Ill., 84.21 miles south of Valley Jct., the main tracks are crossed at grade by a single-track line of the Illinois Central Railroad at a point 3,099 feet south of the station. A crossover designated as GO Crossover connects the main tracks. The north switch of the crossover, which is facing-point for southbound movements on the east main track, is located 3,157 feet south of the station. The switches of the crossover are power-operated and are controlled from Chester, Ill., 22.65 miles north of Gorham. The accident occurred on the crossover at a point 230 feet south of the north switch. From the north the main tracks are tangent throughout a considerable distance to the crossover. From the south on the main tracks there are, in succession, a tangent 1.0 mile in length, a 2°00' curve to the left 1,883 feet and a tangent 1,142 feet to the north switch of the crossover. The grade is level in the vicinity of the point of accident.

Automatic signal 839L and controlled signal 847, governing southbound movements on the east main track, are located, respectively, 1.07 miles and 593 feet north of the point of accident. Automatic signal 862R and controlled signal 848R, governing northbound movements on the east main track, are located, respectively, 1.29 miles and 177 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 |
|--------|-----------------|---|--------------|
| 839L | Yellow-over-red | Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before leading wheels pass the next signal. | APPROACH |
| 847 | Red-over-green | Proceed via diverging route not exceeding 30 MPH until entire train is through the turnout. | MEDIUM CLEAR |
| 862R | Yellow | Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before leading wheels pass the next signal. | APPROACH |
| 862R | Green | Proceed | CLEAR |
| 848R | Red-over-red | Stop | STOP |

These signals form part of a traffic-control system. The controlled signals are controlled from a control machine located at Chester. Signals 847 and 848R also form part of an automatic interlocking and govern movements over the Illinois Central crossing. The controlling circuits are so arranged that a controlled signal will not display an aspect to proceed when an opposing controlled signal or signal governing movements over a conflicting route 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 within the route governed by the signal is not in proper position and locked. Time, indication, and route locking are provided. When the route is lined for a southbound movement from the station at Gorham on the east main track over GO Crossover to the west main track, signal 847 displays a Medium-Clear aspect, provided the blocks of that signal and the signal in advance are unoccupied, signal 862R displays an Approach aspect, and signal 848R displays a Stop aspect.

The maximum authorized speed in the vicinity of the point of accident is 50 miles per hour for passenger trains and 45 miles per hour for freight trains.

Description of Accident

No 907, a southbound first-class St. Louis Southwestern passenger train, consisted of diesel-electric unit 306, 2 baggage cars, 1 mail-express car, and 2 chair cars, in the order named. The cars were of conventional all-steel construction. This train departed from Chester, the last open office, at 12:28 a. m., 14 minutes late; departed from Gorham at 12:57 a. m., 15 minutes late, passed signal 847, which displayed a Medium-Clear aspect, and while moving from the east main track over GO Crossover at a speed of 30 miles per hour, as indicated by the tape of the speed-recording device, the first car was struck by Extra 969 North.

Extra 969 North, a northbound St. Louis Southwestern freight train, consisted of diesel-electric units 969, 934, 946, and 825, coupled in multiple-unit control, 117 cars, and a caboose. This train passed Gale, 33.32 miles south of Gorham, the last open office, at 11:08 p. m., passed signal 862R, which should have displayed an Approach aspect, passed signal 848R, which displayed a Stop aspect, and while moving on the east main track at a speed of 25 miles per hour, as indicated by the tape of the speed-recording device, it struck the first car of No. 907.

The rear truck of the fifth car of No. 907 was derailed to the east. No separations occurred between units of the train. The locomotive stopped on the west main track with the front end 538 feet south of the point of collision. The first and second cars were slightly damaged, and the third to the fifth cars, inclusive, were badly damaged. The first to the third diesel-electric units, inclusive, and the front truck of the fourth unit of Extra 969 North were derailed. No separations occurred between units of the train. The first diesel-electric unit stopped with the front end 193 feet north of the point of collision and 28 feet east of the east main track. It leaned to the east at an angle of approximately 45 degrees. The second diesel-electric unit leaned to the east at an angle of approximately 30 degrees. The third unit stopped upright. The first to the third diesel-electric units, inclusive, were badly damaged.

The brakeman of No. 907 was injured.

The weather was cloudy at the time of the accident, which occurred about 1:00 a. m.

Discussion

On the day of the accident the train dispatcher crossed No 907 from the west main track to the east main track at a point north of Gorham because the crew of a southbound freight train was performing switching operations at Gorham and the freight train was occupying the west main track. This train departed southward on the west main track shortly before No 907 arrived at Gorham. No 907 passed signal 839L, which displayed an Approach aspect, and stopped at the station at Gorham. When the freight train departed the train dispatcher lined the route for movement of No 907 over GO Crossover to the west main track. Shortly after, No 907 departed from Gorham on the east main track. The headlight was lighted. As this train was approaching the point where the accident occurred the speed was being increased. The enginemen were in the control compartment of the diesel-electric unit, and the other members of the crew were in various locations in the cars of the train. Signal 847 displayed a Medium-Clear aspect and the speed of the train had increased to 30 miles per hour when it passed that signal. The first the enginemen became aware of anything being wrong was when they observed Extra 969 North closely approaching as No 907 entered the crossover. The collision occurred before the enginemen could take action to initiate a brake application. The brakes of the train became applied in emergency as a result of the collision. The first the members of the train crew became aware of anything being wrong was when the collision occurred.

As Extra 969 North was approaching the point where the accident occurred the speed was about 45 miles per hour. The engineer and the front brakeman were in the control compartment of the first diesel-electric unit maintaining a lookout ahead. The fireman was in the fourth diesel-electric unit because that unit was not functioning properly. The conductor and the flagman were in the caboose. The brakes of this train had been tested and had functioned properly when used en route. The engineer and the front brakeman said that when signal 862R came into view at a distance of approximately 1.5 miles they observed that it displayed an Approach aspect. They said that when the front end of the train entered the approach clearing section of signal 848R at a point 3,892 feet south of signal 862R, the aspect of signal 862R changed to Clear, and that the signal continued to display a Clear aspect as long as it could be observed before the locomotive passed it. Signal 862R will display a Clear aspect after the approach clearing section is occupied when signal 848R is displaying a Clear or Approach aspect, provided the signal system is functioning properly. Both the engineer and the front brakeman said that the engineer called the indication of signal 862R when the aspect changed to Clear and that the front brakeman acknowledged it. The fireman said that he observed signal 862R from his position in the fourth diesel-electric unit before the train occupied the approach clearing section and that it displayed an Approach aspect. He said that he did not again observe the signal before the locomotive passed it. The conductor said that he was in the cupola of the caboose on the left side as the train was approaching signal 862R and he observed that the signal displayed an Approach aspect. He said that while he was observing the signal the aspect changed to Clear and he called the indication to the flagman. He said that he did not again observe the signal before the caboose passed it. The flagman said that he was in the cupola of the caboose on the right side and that he heard the conductor call the Clear aspect. He said that he was unable to observe the signal from his position in the caboose at that time and that he did not observe the signal before the caboose passed it. The view of signal 848R from the control compartment of the first diesel-electric unit of an approaching northbound train is obstructed by curvature of the track and an overhead highway bridge. The engineer and the front brakeman said they observed that signal 848R displayed a Stop aspect when the signal came into view at a distance of approximately 2,200 feet. The engineer immediately initiated an emergency application of the brakes. The speed of the train was reduced to 25 miles per hour when the collision occurred.

The flagman of the southbound freight train said that he was standing on the rear platform of the caboose when the locomotive of Extra 969 North passed the caboose at a point approximately 3,500 feet south of signal 862R. He said he observed that signal 862R displayed an Approach aspect at that time. He said that he again observed the signal displaying an Approach aspect when the locomotive was approximately 2,700 feet south of the signal. Since these points are approximately 400 feet and 1,200 feet, respectively, north of the south end of the approach clearing section of signal 848R this would indicate that the signal system was functioning properly.

About 9:30 p. m. on the day before the accident occurred a trainmaster and a signal supervisor began an efficiency test involving signal 848R and 862R to determine the response of engine crews to restrictive signals. The test required the disconnecting of a wire of a relay of signal 848R which prevented signals 848R and 862R from displaying more favorable aspects than Stop and Approach respectively. At the conclusion of the test about 10:30 p. m., the signal supervisor connected the wire and restored the relay to normal operation. Since only one wire was disconnected it is improbable that the signal supervisor could connect it improperly at the conclusion of the test. Further, it is evident that this test had no bearing on the accident since it would require extensive rewiring of the signal system to cause signal 862R to change from an Approach aspect to a Clear aspect when a northbound train entered the approach clearing section of signal 848R while signal 848R was displaying a Stop aspect.

About 1 hour 30 minutes after the accident occurred the signal supervisor and a signal foreman examined the relays of signal 848R and found that they were in the proper position. Tests of the signals involved in the accident were begun about 7 a. m. on the day of the accident. It was found that the signal system functioned as intended.

A conductor and a flagman of a northbound freight train operating on the west main track about 9 hours after the accident occurred said that they observed signal 862R when the caboose of the train passed it and that it displayed a Clear aspect while the block of the signal was occupied by wrecking equipment. At that time tests of signal 862R were being performed and three members of the signal force were working at the signal. At the beginning of these tests it is the usual procedure to remove the lamp from each lamp unit of the signal and, therefore, the signal could not indicate the condition of track occupancy. During the tests it is also the usual procedure to energize each lamp individually and it is probable that the conductor and flagman of the northbound train observed the signal when the green lamp unit was energized.

The signal system is so designed that signal 862R cannot display a more favorable aspect than Approach when signal 848R is displaying a Stop aspect. Signal 848R cannot display an aspect other than Stop when the direction of traffic is established for a southbound movement on the east main track to signal 847, when the east main track is occupied between signals 839L and 847, or when the crossover switches are lined for a crossover movement. Since these three conditions existed immediately prior to the accident it is evident that three separate defects of the signal system would have had to occur in order for signal 848R to display a Clear aspect while Extra 969 North was approaching signal 862R, and that at least one of these defects would then have had to be removed after the locomotive of the train passed signal 862R in order for signal 848R to have displayed a Stop aspect as the train approached that signal. Since tests of the signal system disclosed no

condition that would cause the system to function other than intended, it is evident that all three of these defects would have had to be removed between the time the locomotive of Extra 969 North passed signal 862R and the time the tests were performed, which is an extremely remote possibility. The indicator lights of the control panel at Chester indicated that the route for No 907 was properly lined and that the signal system was functioning properly immediately before the accident occurred. It is concluded therefore, that signal 862R displayed an Approach aspect when the locomotive of Extra 969 North passed it.

Cause

This accident was caused by failure to operate the northbound freight train in accordance with signal indications.

Dated at Washington, D C , this first
day of July, 1958

By the Commission, Commissioner Tuggle

(SEAL)

HAROLD D McCOY,

Secretary

Interstate Commerce Commission

Washington 25, D C

OFFICIAL BUSINESS

RETURN AFTER FIVE DAYS

**POSTAGE AND FEES PAID
INTERSTATE COMMERCE COMMISSION**