

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2561  
THE MISSOURI PACIFIC RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT PERLA, ARK., ON  
JANUARY 16, 1942

## SUMMARY

Railroad: Missouri Pacific

Date: January 16, 1942

Location: Perla, Ark.

Kind of accident: Head-end collision

Trains involved: Engine and cars : Passenger

Train number: : Fourth 7

Engine numbers: 128 : 1406

Consist: 15 cars : 8 cars

Speed: Standing : 35-40 m. p. h.

Operation: Centralized-traffic-control system

Track: Single; tangent; 0.57 percent  
descending grade southward

Weather: Clear

Time: 4:30 p. m.

Casualties: 5 killed; 42 injured

Cause: Accident caused by engine occupying  
main track without proper author-  
ity or protection

Recommendation: That the Missouri Pacific Railroad  
Company immediately take measures  
to establish adequate means for  
the protection of movements to  
main track at hand-operated switches,  
and that electric switch locks be  
installed at main track hand-  
operated switches at points where  
trains clear in centralized-traf-  
fic-control territory involved in  
this accident. An order to show  
cause why it should not install  
electric switch locks will be  
served on said carrier

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2561

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

THE MISSOURI PACIFIC RAILROAD COMPANY

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April 2, 1942

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Accident at Perla, Ark., on January 16, 1942, caused by  
engine occupying main track without proper authority  
or protection.

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REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On January 16, 1942, there was a head-end collision between an engine with cars attached and a passenger train on the Missouri Pacific Railroad at Perla, Ark., which resulted in the death of 4 passengers and 1 employee, and the injury of 34 passengers, 1 Pullman employee and 7 railroad employees.

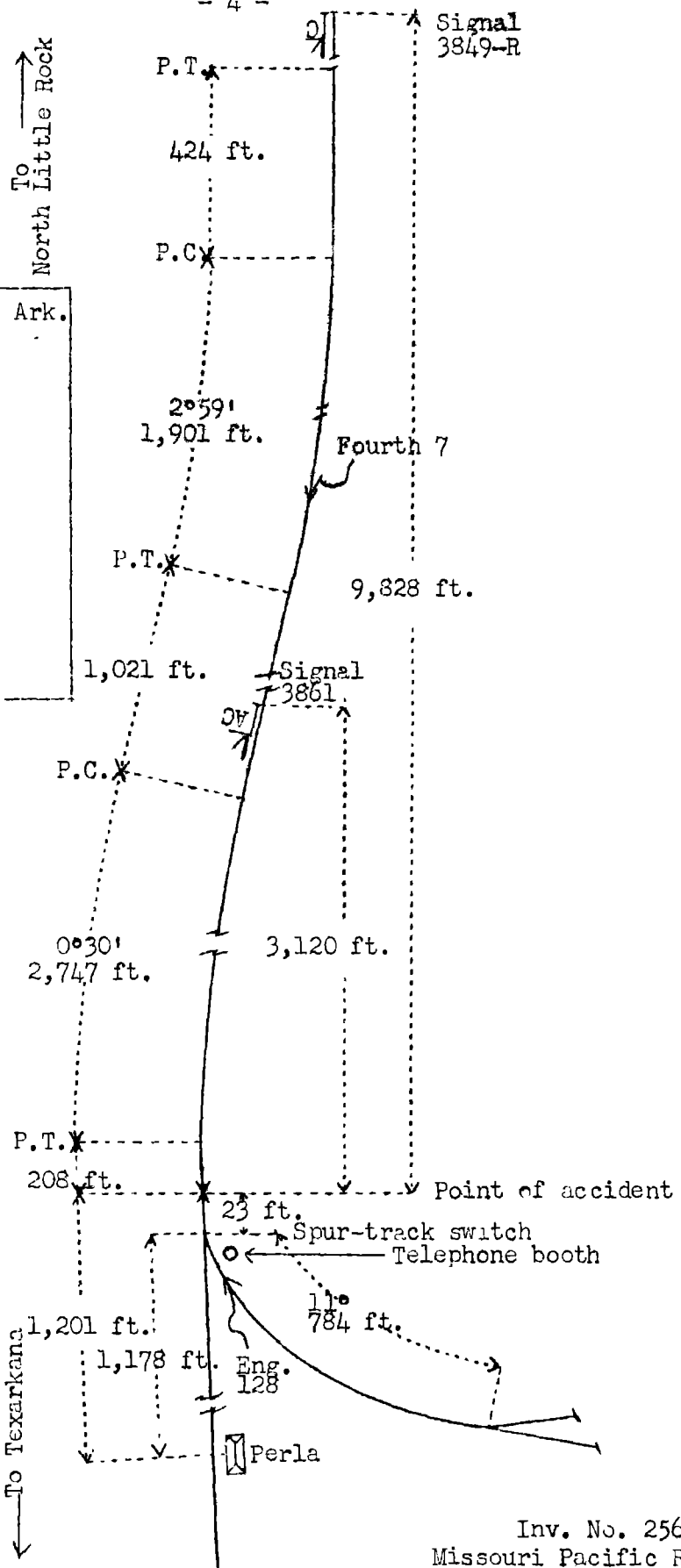
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<sup>1</sup>Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.

- North Little Rock, Ark. 1.46 mi.
- Little Rock 31.64 mi.
- Traskwood 7.34 mi.
- Gifford 2.26 mi.
- X Perla (Point of accident) 1.84 mi.
- Malvern 101.51 mi.
- Texarkana, Ark.

To North Little Rock ↑

↓ To Texarkana



Inv. No. 2561  
 Missouri Pacific Railroad  
 Perla, Ark.  
 January 16, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Arkansas Division, designated as the Little Rock Subdivision, which extends between North Little Rock and Texarkana, Ark., a distance of 146.05 miles. In the immediate vicinity of the point of accident this is a single-track line. Between Hot Springs Junction and Etta, Ark., a distance of approximately 27 miles, trains are operated by a centralized-traffic-control system and move in either direction by signal indications which supersede time-table superiority and take the place of train orders. At Perla entry to a spur track on the east side of the main track is made through a hand-operated facing-point switch for south-bound movements. The accident occurred on the main track at a point 23 feet north of this switch and 1,201 feet north of the station at Perla. As the point of accident is approached from the north there are, in succession, a tangent 424 feet in length, a 2°59' curve to the right 1,901 feet, a tangent 1,021 feet, a 0°30' curve to the left 2,747 feet and a tangent 208 feet to the point of accident and a considerable distance beyond. The grade for south-bound trains varies between 0.57 and 0.62 percent descending throughout a distance of about 1 mile, and is 0.57 percent at the point of accident.

Signals 3849-R and 3861, which govern south-bound movements, are located, respectively, 9,828 feet and 3,120 feet north of the point of accident. Signal 3849-R is of the single-unit, color-light type, and is continuously lighted. The aspects and corresponding indications and names of this signal are as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
Green	Proceed	Clear Signal
Yellow	Proceed at restricted speed through the entire block	Permissive Signal
Red	Stop	Stop Signal

Signal 3861 is of the single-unit, color-light type, and is approach lighted. The aspects and corresponding indications and names of this signal are as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
Green	Proceed	Clear Signal
Yellow	Proceed at restricted speed through the entire block	Permissive Signal
Red	Stop; then proceed at restricted speed through the entire block	Stop and Proceed Signal

Operating rules read in part as follows:

CENTRALIZED TRAFFIC CONTROL RULES

525. Under this system, block signals govern the use of the blocks, without requiring the use of train orders, and, unless otherwise provided, their indications supersede timetable superiority, but do not dispense with the use or observance of other signals whenever and wherever they may be required. \* \* \*

526. The movement of trains is supervised by the train dispatcher, who will issue instructions to the signalman, when required.

530. Trains or engines must not enter or foul main track, or re-enter main track after having cleared it, except on Proceed or Proceed at Restricted Speed indication of block signal governing movement to main track, or by authority of the train dispatcher or signalman. Train dispatcher or signalman must protect such movements by Stop-indication of block signals in both directions.

531. If work is to be done by any train or engine, \* \* \*, which may delay other trains, \* \* \*, authority must be obtained, including time and working limits from train dispatcher or signalman, and entered on clearance, when required, \* \* \*. Train dispatcher or signalman or both, will make record of authority given.

Before granting such authority, train dispatcher or signalman must protect working limits by Stop-indication of block signals in both directions and apply a red tag to each lever controlling these signals.

Trainmen must notify train dispatcher or signalman when work is completed, track cleared \* \* \* and in all cases before the time limit has expired.

\* \* \*

532. All switches, other than those remotely controlled, in C. T. C. territory, are hand operated and must not be used without authority of the train dispatcher or signalman, except:

- (a) After authority has been obtained and working limits secured as provided by Rule 531, hand operated switch leading to a track outside of C. T. C. territory may be used for time limit authorized, to set out, pick up or do switching. Part of train must be left on main track or switch left open, while work is being done within time limit authorized.

\* \* \*

FORM C  
CLEARANCE

\* \* \*

CENTRALIZED TRAFFIC CONTROL

C. & E.....

At Block Signal No.....

Working Limits Granted

Between.....

(Signal No.)

And.....

(Signal No.)

From.....M, To.....M

Be governed by Rule 531.

.....M.....

(Dispr.or signalman)

The maximum authorized speed for passenger trains hauled by 1400-class engines is 63 miles per hour.

### Description of Accident

Engine 128 was engaged in switching service at Perla. This engine, with 15 cars attached behind it, moved from the spur track to the main track. The engine stopped at a point 73 feet north of the spur-track switch and almost immediately afterward it was struck by Fourth 7.

Fourth 7, a south-bound first-class passenger train, consisted of engine 1406, one baggage car, three Pullman tourist cars, one baggage car and three Pullman tourist cars, in the order named. The first and fifth cars were of steel-underframe construction and the remainder were of all-steel construction. After a terminal air-brake test was made this train departed from Little Rock, 41.24 miles north of Perla, at 3:34 p. m., according to the dispatcher's record of movement of trains, 4 hours 19 minutes later. The brakes of this train functioned properly at all points where used en route and there was no condition of the engine that distracted the attention of the crew or obscured their vision. Fourth 7 passed signals 3849-R and 3801, which displayed proceed, and while moving at an estimated speed of 35 to 40 miles per hour it collided with engine 128.

Because of track curvature, the view from the cab of an approaching south-bound engine of an engine standing at the point of accident is restricted to a distance of about 1,350 feet.

The force of the impact moved engine 128 backward into the spur track a distance of 134 feet. The engine truck and the front tender truck were derailed. The pilot beam, the engine truck, both cylinders and the smokebox were demolished. The boiler was moved backward on its frame about 10 inches. The cab and the tender frame were demolished and the cistern was badly damaged. The first three cars were derailed and the first car was badly damaged. Engine 1406, of Fourth 7, was derailed and the engine truck, the pilot beam and both cylinders were demolished. The first car telescoped the second car a distance of 21 feet and both cars were practically demolished.

The weather was clear at the time of the accident, which occurred about 4:30 p. m.

The employee killed was a road foreman of engines, who was in the second car of Fourth 7. The employees injured



were the engineer, the fireman, the conductor, the front brakeman, the swing brakeman and the flagman of Fourth 7, and the fireman of engine 128.

### Data

The centralized-traffic-control system is in the charge of the signalman at Malvern, 1.84 miles south of Perla. The train dispatcher at Little Rock, 41.24 miles north of Perla, supervises the signalman at Malvern in the operation of trains in the centralized-traffic-control territory. A telephone is located near the spur-track switch at Perla for communication between members of train crews and the train dispatcher or the signalman.

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 30.5 trains.

### Discussion

The rules governing operation in the territory involved provide that hand-operated switches must not be used without authority of the dispatcher or signalman, and that when work is to be done at such points which may delay other trains authority, including time and working limits, must be obtained from the signalman, and entered on a clearance form by a trainman, before a train or an engine may enter or foul the main track at an intermediate point. Before authority for working limits and time is granted, the signalman must protect the movement by displaying stop signals on each side of the working limits, and he is required to make a record of authority given.

On the day of the accident engine 128 arrived at Perla and cleared the main track about 3:30 p. m. During subsequent switching operations two movements were made which required the use of the main track. Prior to the first of these movements the conductor called the dispatcher by telephone, about 3:50 p. m., and was given permission to use the main track until 4:05 p. m., ahead of Third 7. When it became necessary, about 4:25 p. m., to make the second movement to the main track, engine 128 stopped in the clear near the spur-track switch, and the conductor again asked the dispatcher for authority to occupy the main track, for a few minutes. He understood the dispatcher to say that the first train would be No. 67, a south-bound second-class freight train, and that it had not passed Traskwood, 9.6 miles north of Perla. The conductor accepted this information as authority for his engine to proceed to the main

track and he lined the switch and signaled to the engineer to make the movement to the main track. When his engine reached the switch, the conductor saw Fourth 7 approaching, and he then gave signals for his engine to move backward into clear, but the collision occurred before that could be done.

According to the statement of the dispatcher, about 4:25 p. m. the conductor of engine 128 requested permission to use the main track for a period of 10 minutes, and he informed the conductor that engine 128 could use the main track for 5 minutes of the period between the passage of Fourth 7 and No. 67 and that No. 67 would pass No. 95 at Traskwood; however, he said he does not give authorization for the use of the main track until conflicting trains are clear, and he did not intend this information to be accepted by the conductor as authority to use the main track.

The signalman at Malvern heard the conversation between the conductor of engine 128 and the dispatcher. He said that the dispatcher informed the conductor that after Fourth 7 passed, No. 67 would be next, and that engine 128 could use the main track for 3 or 4 minutes after Fourth 7 passed Perla. At that time Fourth 7 had passed Gifford, 2.26 miles north of Perla. The signalman said that when a conductor asks the dispatcher for permission to perform switching service on the main track during a period of a few minutes, it has been the practice for the dispatcher to inform the conductor that trains were in the vicinity. The signalman understood that this procedure provided adequate authorization, and he expected the switch engine to make the movement to the main track without further inquiry or authorization, but that if the use of the main track was needed for a period of 15 minutes or longer, working limits and time, authorized and recorded in the prescribed manner, would be required.

Because of the misunderstanding between the conductor and the dispatcher, engine 128 moved out upon the main track just as Fourth 7 was closely approaching. Signals 3849-R and 3861 displayed proceed for Fourth 7, as that train passed them before the switch to the spur track was opened. As Fourth 7 was approaching the point where the accident occurred the speed was about 50 miles per hour and the engineer and the fireman were maintaining a lookout ahead. The fireman saw engine 128 when it was moving toward the main track and he immediately warned his engineer, who closed the throttle. Then the engineer observed that engine 128 had fouled the main track and he immediately moved the brake valve to emergency position, placed the reverse lever in position for backward motion and opened the sander valve,

but the distance was insufficient to stop short of engine 128.

Trains in the territory involved are operated by signal indications only. After a train or engine has cleared the main track at a controlled point it must not foul the main track unless it receives a proceed or proceed-at-restricted-speed indication displayed by the signal governing movement to the main track. However, Perla is not a controlled point, the switch is hand operated, no signal is provided to govern movements from the spur track to the main track, and under the rules the crew of a train or engine must receive authority from the signalman to enter the main track. The investigation disclosed that prior to this accident it had been common practice at this point to make switching movements involving use of the main track for short periods of time upon oral authorization by telephone from the dispatcher or signalman. With but few exceptions no record of such authorization was made by the signalman, and no form was filled out by the member of the train crew who received the authorization. In the case of any such movement which may delay other trains, the rules require that the signalman must first display stop signals in both directions to protect the movement, apply a red tag to each lever controlling these signals, record the time and working limits on a prescribed form, and also transmit them to a member of the crew who is required to record them on a clearance form. The investigation disclosed that this practice had been followed only in cases when use of main track was required for periods of approximately 15 minutes or more, and that switch engines were not given permission to use the main track when other trains might be delayed.

About two months before the accident occurred the superintendent asked two of the signalmen at Malvern if they were keeping the record of authorizations and they told him that they were doing so, but it does not appear that an examination of these records was made to ascertain if they were complete, nor was a check made of the performance of crews of trains entering the main track at intermediate points in the territory involved. The investigation disclosed that there was not a uniform understanding on the part of officers and employees of the requirements covering movements of this character.

In this case the movement of engine 128 was made on the basis of a telephone conversation between the conductor and the dispatcher, which resulted in a misunderstanding. The practices which were being followed at the time of the accident did not provide adequate safeguards against the possibility of a misunderstanding between the signalman or

dispatcher and a member of a train crew requesting authority to use the main track at an intermediate point. There are 8 hand-operated main-track switches within the limits of this C.T.C. installation, and a movement of a switch engine to the spur track at Perla is made once, and sometimes twice daily. Operating officials should take steps immediately to insure that the main track is clear and that signals at controlled points governing movements approaching such intermediate points from both directions are set at stop before authorization is given for a movement to main track at a hand-operated switch, and that a definite procedure is established for requesting and issuing such authorization.

If the switch at the entrance to the spur track at Perla had been equipped with an electric lock, the conductor of engine 128 would not have been able to throw the switch when a train was closely approaching, as in this case, and the accident would have been prevented.

#### Cause

It is found that this accident was caused by an engine occupying the main track without proper authority or protection.

#### Recommendation

It is recommended that the Missouri Pacific Railroad Company immediately take measures to establish adequate means for the protection of movements to main track at hand-operated switches, and that electric switch locks be installed at main track hand-operated switches at points where trains clear in centralized-traffic-control territory involved in this accident. An order to show cause why it should not install electric switch locks will be served on said carrier.

Dated at Washington, D. C., this second day of April, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTLE,

(SEAL)

Secretary.