INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

MISSOURI PACIFIC RAILROAD

BENTON, ARK.

FEBRUARY 19, 1938

INVESTIGATION NO. 2254

SUMMARY

Inv-2254

Railroad:	Missouri Pacific	
Date:	February 19, 1938	
Location:	Benton, Ark.	
Kind of accident:	Head-end collision	
Trains involved:	Passenger	: Passenger
Train numbers:	No. 3	: 1st 18
Engine numbers:	6603	: 6611
Consist:	7 cars	: 9 cars
Speed:	6-28 m.p.h.	: Standing
Track:	Tangent; 0.388 percent descending for southward movements	
Method of operation:	Centralized traffic control system	
Weather:	Clear	
Time:	8:45 p.m.	
Casualties:	27 injured	
Cause:	Failure properly to obey a restricted-speed signal indication.	

To the Commission:

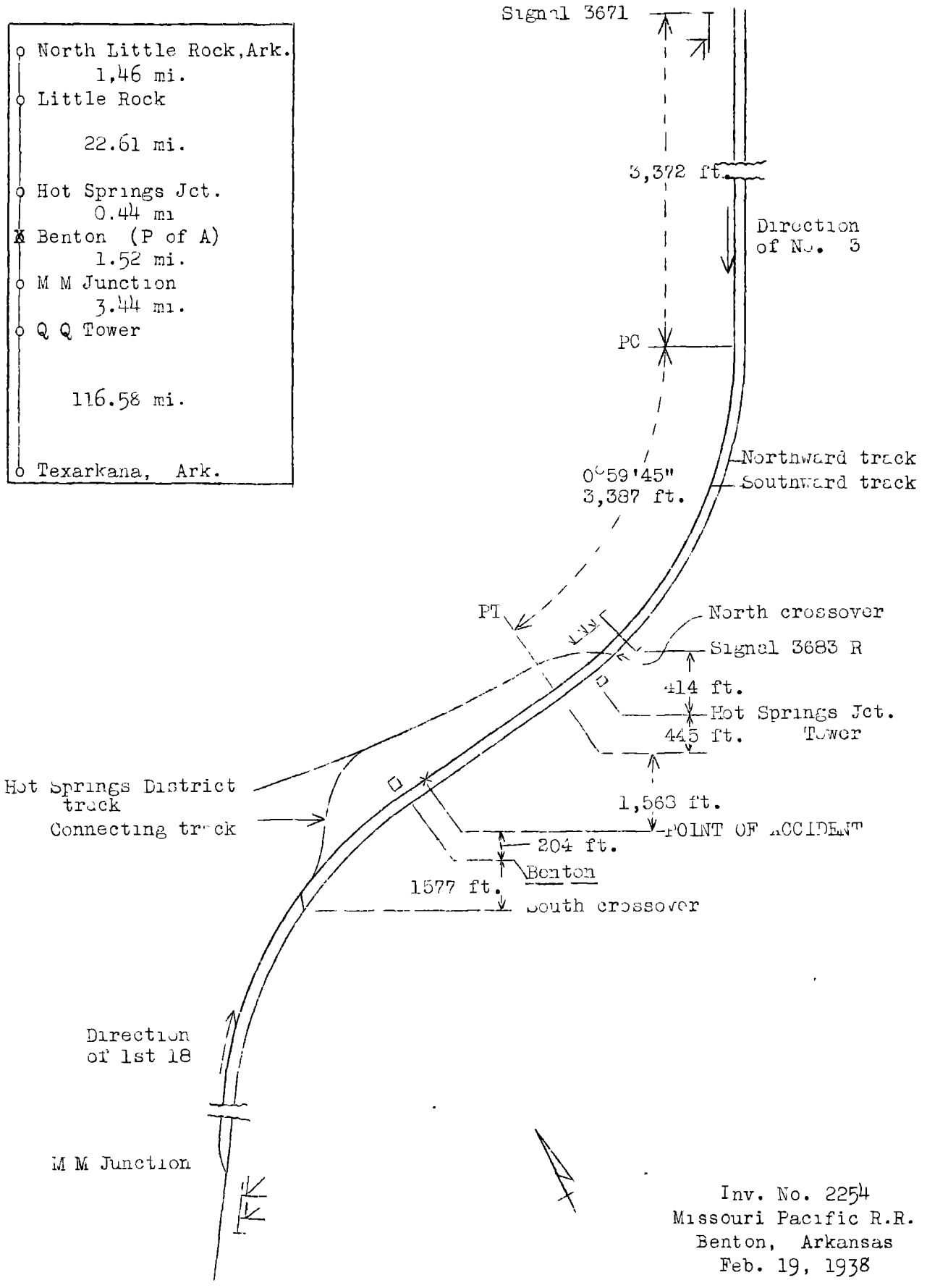
On February 19, 1938, there was a head-end collision between two passenger trains on the Missouri Pacific Railroad at Benton, Ark., which resulted in the injury of 21 passengers, 2 mail clerks, 1 dining-car employee and 3 train-service employees.

Location and method of operation

This accident occurred on the Little Rock District, of the Arkansas Division, which extends between North Little Rock and Texarkana, Ark., a distance of 146.05 miles. Between North Little Rock and MM Junction, a distance of 26.03 miles, this is a double-track line equipped with an automatic block-signal system of the absolute-permissive type. Operation between North Little Rock and Hot Springs Junction is by time-table and train orders in conjunction with the block-signal system, while between Hot Springs Junction and MM Junction, a distance of 1.96 miles, trains are operated in either direction on both main tracks by signal indications only, under a centralized traffic control system.

The accident occurred on the southward main track at a point 203 feet north of the station at Benton, and 2,109 feet south of Hot Springs Junction. Approaching this point from the north on the southward main track there is tangent track for a distance of 13,600 feet, followed by a $0^{\circ}59'45''$ curve to the right, 3,387 feet in length, then 1,772 feet of tangent track; the accident occurred on this tangent at a point 204 feet from its southern end. The grade varies from 0.596 to 0.388 percent descending for southward trains, being 0.388 percent for a distance of 394 feet approaching the point of accident.

The north switch of a trailing-point crossover, 183 feet in length, is located 212 feet north of Hot Springs Junction. The Hot Springs District Line leads off the southward main track by means of a facing-point switch at a point 83 feet south of the south switch of this crossover and parallels the southward main track on the west side to the vicinity of the station where it diverges to the west. The south switch of a facing-point crossover, 183 feet in length, is located about 1,600 feet south of the station, and about 1,230 feet south of the station a track connecting with the Hot Springs District Line leads off the southward main track in a northwesterly direction through a switch which is facing-point for northward movements.



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At the station a platform 12 feet wide and 870 feet long, adjacent to the southward main track, is lighted at night by electric lights and south of the station, parallel with and adjacent to this platform, there is a driveway 24 feet wide.

With the exception of the crossover switches and the connecting-track switch south of the station, which are manually operated, all signals and switches within the territory between Hot Springs Junction and MM Junction are embraced in a centralized-traffic-control plant which is operated from a tower at Hot Springs Junction. The signals involved, which govern movements on the southward track, are distant signal 3671 and home signal 3683-R, located 6,218 feet and 414 feet, respectively, north of the Hot Springs Junction tower. Signal 3671 is an automatic, one-unit, three-indication, color-light signal, located on a mast, and is capable of displaying a red, yellow, or green light. Signal 3683-R is an interlocking signal located on a signal bridge; it is a vertically arranged, three-unit, color-light signal, the top unit of which has three indications and is capable of displaying a red, yellow, or green light. The middle unit has two indications and is capable of displaying a red or yellow light. The bottom unit has two indications and is capable of displaying a purple or yellow light.

The top unit governs movements on the southward track to signal 3689-R, located approximately 1,000 feet south of the station. The middle unit governs movements through the turnout to the Hot Springs District Line, and the bottom unit indicates restricted speed and governs movements on the main track and through the above-mentioned turnout. The indications are: red for "stop", yellow for "proceed at restricted speed", and green for "proceed". When the southward main track between signals 3683-R and 3689-R is occupied, signal 3671 will display a yellow indication and signal 3683-R will display red-over-red-over-purple, which is a stop indication; however, the signalman in the tower can cause the bottom unit to display a yellow light, resulting in a red-over-red-over yellow indication being displayed, which is an indication to proceed at restricted speed.

The maximum authorized speed is 70 miles per hour. Restricted speed is defined as follows: "Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced".

The second paragraph of Rule 17 specifies that the headlight must be dimmed while passing through yards where yard engines are employed; approaching stations at which stops are to be made or where trains are receiving or discharging passengers; approaching train order signals, junctions, terminals, or meeting points, or

while standing on main track at meeting points and on two or more tracks when approaching trains in the opposite direction.

The weather was clear at the time of the accident, which occurred at 8:45 p.m.

Description

First 18, a north-bound passenger train, consisted of one coach, four baggage cars, one mail car, two coaches, and one Pullman sleeping car, in the order named, all of all-steel construction, hauled by engine 6611, and was in charge of Conductor Anderson and Engineman Brannon. This train passed QQ Tower, 4.96 miles south of Benton, at 8:30 p.m., according to the train sheet, 26 minutes late. Approaching MM Junction it received a signal indication directing it to proceed on the southward main track. It arrived at the station at Benton at 8:36 p.m., according to the train sheet, although it was due to have left this point at 8:15 p.m. The engine was immediately detached from the train and proceeded northward on the southward track to the crossover just north of Hot Springs Junction tower where it crossed over to the northward track and backed southward to the crossover located south of the station. Through this crossover it returned to the southward track and had just been coupled to the rear of its train preparatory to delivering it through the connecting track to the Hot Springs line when the forward end was struck by No. 3.

No. 3, a south-bound passenger train, consisted of one baggage car, two mail cars, one baggage car, two coaches, and one dining-parlor car, in the order named, all of all-steel construction except the first car which had a steel underframe with wooden superstructure, hauled by engine 6603, and was in charge of Conductor C. F. Smith and Engineman J. T. Smith. This train was being operated on the southward track; it passed signal 3671, displaying a yellow indication, and signal 3683-R, displaying a red-over-red-over-yellow indication, and then passed Hot Springs Junction at 8:44 p.m., according to the train sheet, 1 hour 21 minutes late, and collided with First 18 while traveling at a speed variously estimated to have been between 6 and 28 miles per hour.

The forward vestibule of the leading car of First 18 was telescoped by engine 6603, and the leading truck of this car was knocked off center, and two pairs of wheels were derailed. A coupler in each of the fourth and fifth cars of First 18 was broken, and a coupler of the first car of No. 3 was bent. The pilot beam and the front wall of one cylinder of engine 6603 were broken, while the coupler at the rear was bent. The front deck

casting, pilot, and the forward safety appliances on engine 6611 were damaged. The train-service employees injured were the brakeman and the train porter of No. 3, and the train porter of First 18.

Summary of evidence

Engineman Brannon, of First 18, stated that his train arrived at Benton on the southward track at 8:35 p.m. Leaving the train brakes applied, the engine was cut off and he proceeded on the southward track to the crossover at Hot Springs Junction, crossed over to the northward main track and backed to the crossover south of the station. He then crossed over to the southward track and proceeded northward to the rear of his train, preparatory to delivering the train to the Hot Springs line, and had just coupled to the rear of his train when he felt the shock of the collision, of which he had no warning. Running around the train in this manner was a normal movement; these movements are made under signal indications, and on the night of the accident these indications were clearly visible. He could not recall ever having met No. 3 at Benton under similar circumstances.

Fireman Robertson, of First 18, corroborated the statement of Engineman Brannon in all essential details.

Conductor Anderson, of First 18, stated that he was standing a short distance south of the station at Benton when the collision occurred. He recalled having met No. 3 at Benton under similar conditions in one instance, but his train had been moved to a point south of the connecting track switch when No. 3 arrived at the station. He considered the north end of his train at the time of the accident to be the leading end of his train and said that under the rules he was not required to protect the leading end of his train in signal-indication territory.

The statement of Flagman McKee, of First 18, added nothing of importance while the statement of Train Porter Fairchild, of First 18, corroborated that of Conductor Anderson.

Engineman Smith, of No. 3, stated that an air brake test was made before leaving Little Rock and a running test of the brakes was made shortly after leaving that station and the brakes responded properly. The brakes functioned properly when they were applied to reduce speed at a point about 10 miles north of Benton. He received a yellow indication at signal 3671 and speed was reduced to about 15 miles per hour. He expected to stop at signal 3683-R but when approaching Hot Springs Junction he observed that this signal was displaying two red lights over a yellow light, which he said was a restricted-speed signal and

which required him to run prepared to stop short of train, obstruction, or anything that might require the speed of the train to be reduced. He said the speed was about 12 or 15 miles per hour between Hot Springs Junction and the point of accident and he considered that this was a little too fast to comply with the rules. His attention was attracted to an engine standing on the Hot Springs line and when he again looked ahead he saw First 18's equipment about 40 or 50 feet distant. He immediately applied the brakes in emergency and estimated the speed of his train at about 10 miles per hour at the time of the accident. In compliance with the rules affecting the approach to stations the headlight of his engine was dimmed approaching the scene of the accident, and this together with automobile headlights in the vicinity of the station made it impossible for him to see First 18's train sooner. He could plainly see the signal indications. It was his opinion that if an engine or light had been at the leading end of First 18 it would have afforded a greater degree of safety; however, he said it was not required by the rules. He also said that had he seen the train ahead a distance of 100 or 150 feet he would have been able to stop short of it. He could not recall having previously found No. 18 on the southward track at Benton.

Fireman Killman, of No. 3, practically corroborated the statement of Engineman Smith with reference to events up to the time of approaching signal 3683-R, at which point he said the speed was reduced to about 10 miles per hour. Shortly thereafter he went to the right side of the engine in order to see an engine that was standing on the Hot Springs District line. When the brakes were applied in emergency by the engineman he returned to his seatbox and observed First 18's train about 30 feet ahead. He said a white light on the forward end of First 18's train would have been of some benefit in seeing it but that it was not required by the rules. He estimated the speed at the time of the accident to have been 6 or 7 miles per hour.

Conductor Smith, of No. 3, stated that there was nothing unusual in the operation of the train between Little Rock and the point of accident. Before leaving Little Rock he talked with the engineman and the latter appeared normal in all respects. Conductor Smith was in the leading coach approaching Hot Springs Junction; the train passed this point at about 10 miles per hour and proceeded at about that speed to the point of accident. He said that First 18 was not required to be protected but that had a flagman protected the leading end of that train it would have provided a factor of safety.

The statements of Flagman Wilkinson and Train Porter McCarroll, of No. 3, corroborated that of Conductor Smith in all essential details except that the flagman estimated the speed to have been from 25 to 28 miles per hour at the time of the accident.

Train Dispatcher Ivey, who was in charge of Hot Springs Junction tower at the time of the accident, stated that the movements between Hot Springs Junction and MM Junction, with or against the current of traffic, are governed by signal indications only, and that all signals and switches between these two points except the crossover switches south of Benton station are controlled from his tower. He directed First 18 to use the southward track from MM Junction to Benton in order to expedite its work at the station and expected it to arrive there at 8:30 p.m. and No. 3 to arrive at Hot Springs Junction at 8:45 p.m. He thought there would be ample time for First 18's engine to run around its train at Benton and place it on the Hot Springs line before No. 3 would arrive there. However, First 18 stopped at the station at 8:34:30 p.m. and had completed the run-around movement, and coupled to the rear of its train when he gave No. 3 the restricted-speed indication at signal 3683-R, and No. 3 passed the tower at 8:44 p.m. at a speed of about 15 miles per hour. The manner in which he handled these trains was regular practice and he considered these movements safe in every respect.

Trainmaster Stanley stated that the signal indications in this territory take the place of train orders and supersede time-table superiority, and that flag protection is not required for forward movements as these are protected by signal indications. First 18 in its position at the station was afforded adequate protection by the signals, and he did not believe that a light displayed on its front end would have contributed to a greater degree of safety. He considered Engineman Smith a competent engineman. In making surprise tests he has found that the employees were thoroughly familiar with the operation in this vicinity; no confusion regarding this operation had ever come to his attention.

Discussion

First 18 had proceeded on the southward track from MM Junction to Benton in compliance with signal indications as displayed by the train dispatcher. The signal indications received by No. 3 approaching Benton required it to operate at such speed as to be able to stop short of train or obstruction. The engineman estimated the speed at the time of the accident at about 10 miles per hour, while the estimates of other employees varied from 6 to 28 miles per hour. It is apparent that No. 3 was not being operated at restricted speed and the engineman admitted that he was

running too fast. Both he and the fireman momentarily looked at another engine on an adjacent track, a matter which had no bearing on the operation of their train, but which caused their failure to see First 18's train until too close to avoid the accident. In compliance with the rules affecting the approach to stations the headlight of No. 3's engine was dimmed, and this, coupled with the glare of automobile headlights in the vicinity of the station, also contributed to their failure to see the train ahead. Under these conditions a speed consistent with safe operation should have been maintained, and had this train been operated at a properly restricted speed the accident would have been avoided.

The last movement of First 18 prior to the time of the accident was northward and until the southward movement was begun it was still a northward movement; according to the trainmaster and the employees protection by flag of the forward end of a train in this territory is not required.

The train dispatcher had figured there would be an interval of approximately 15 minutes between the arrival of the two trains involved and based his plans in advance accordingly. However, First 18 was 4½ minutes behind the expected arriving time while No. 3 was 1 minute ahead, thus reducing the interval to approximately 9½ minutes. As a result it developed that the margin of time was not sufficient to permit First 18's train to be pulled away from the station. It appeared from the evidence that the dispatcher handled the trains in the customary manner and in accordance with the rules.

Conclusion

This accident was caused by failure to obey a restricted-speed signal indication.

Respectfully submitted,

W. J. PATTERSON,

Director.