Inv-2139

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

MISSOURI PACIFIC RAILROAD

BUCYRUS, KANS.

JANUARY 30, 1937

INVESTIGATION NO. 2139

SUMMARY

Inv-2139

Railroad:	Missouri Pacific	
Date:	January 30, 1937	
Location:	Bucyrus, Kans.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	:Freight
Train numbers:	Extra 1424	:No. 167
Engine numbers:	1424	:1444
Consist:	66 cars and caboose	:42 cars and :caboose
Speed:	Standing	:30-45 m.p.h.
Track:	4^{o} 6' curve; level	
Weather:	Raining	
Time:	5:05 a.m.	
Casualties:	1 killed and 2 injured	
Cause:	Failure of Train No. 167 to be operated in compliance with signal indications and failure of Extra 1424 to be properly protected by flag.	

Inv-2139

March 24, 1937.

To the Commission:

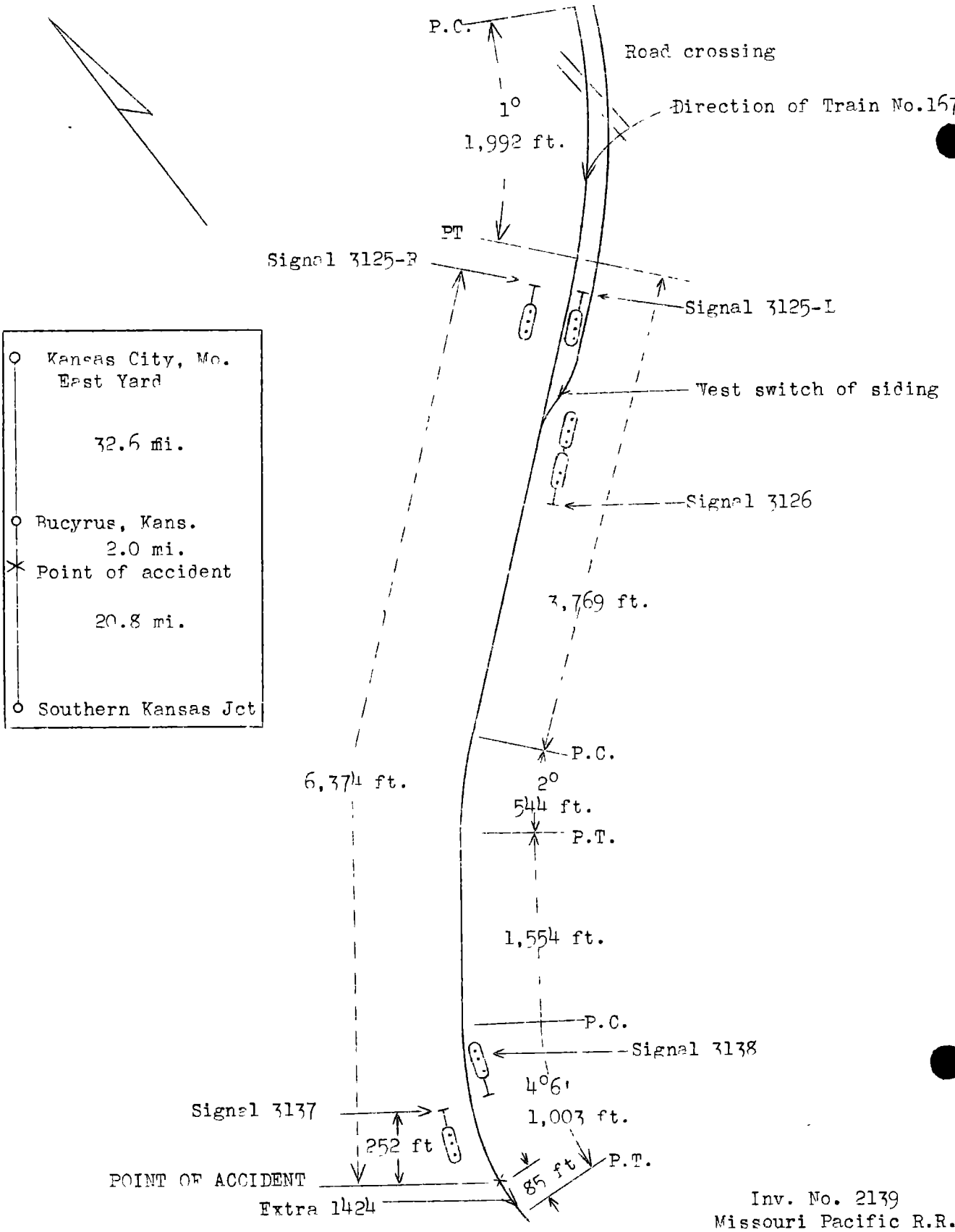
On January 30, 1937, there was a rear-end collision between two freight trains on the Missouri Pacific Railroad near Bucyrus, Kans., which resulted in the death of 1 employee and the injury of 2 employees.

Location and method of operation

This accident occurred on the Kansas City District of the Central Kansas Division, which extends between East Yard, Kansas City, Mo., and Southern Kansas Jct., Kans., a distance of 55.4 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by a centralized traffic control system, which provides for manual control of absolute signals and certain switches, all other signals being automatic. The only train orders used are slow orders or those of a similar nature. Lap sidings are situated at Bucyrus with an interlocking plant at the lap, controlled by operators continuously on duty and who also operate by remote control the switches at the east and west ends of the sidings. The accident occurred approximately 1 mile west of the most westerly switch of the sidings. Approaching the point of accident from the east there is a 1° curve to the right 1,992 feet in length, tangent track for a distance of 3,769 feet, a 2° curve to the left 544 feet in length, then tangent for 1,554 feet, followed by a 4° 6' curve to the left 1,003 feet in length, the accident occurring on this last-mentioned curve at a point 85 feet from its western end. The grade is undulating, with a maximum of 0.55 percent ascending grade for west-bound trains, although it is level at the point of accident.

Absolute block signal 3125-R, located at the western end of the siding or 6,374 feet east of the point of accident, is of the color-light type and displays green, yellow, and red, for proceed, proceed at restricted speed, and stop, respectively. Automatic block signal 3137, located 252 feet east of the point of accident, is of the color-light type and displays green, yellow, and red, for proceed, proceed at restricted speed, and stop and proceed, respectively.

It was raining at the time of the accident, which occurred at 5:05 a.m.



Inv. No. 2139
Missouri Pacific R.R.
Bucyrus, Kans.
Jan. 30, 1937.

Description

Extra 1424, a west-bound freight train, consisted of 66 cars and a caboose, hauled by engine 1424, and was in charge of Conductor Patterson and Engineman Tegler. This train departed from Kansas City, Mo., at 1:30 a.m., according to the train sheet, passed Bucyrus at 4:45 a.m., reduced speed because of low steam and stalled when the steam pressure became so low that the air pumps failed to keep the train line sufficiently charged; while the train was standing its rear end was struck by Train No. 167.

Train No. 167, consisted of 72 cars and a caboose, hauled by engine 1444, and was in charge of Conductor Waggoner and Engineman Schowengerdt. This train departed from Kansas City at 3 a.m., according to the train sheet, 45 minutes late, passed Bucyrus at 5:01 a.m., passed signal 3125-R displaying a yellow indication, passed a lighted fusee approximately 600 feet from the caboose of Extra 1424, passed signal 3137 displaying a red indication, and struck the rear end of Extra 1424 while traveling at a speed estimated to have been between 30 and 45 miles per hour.

The caboose of Extra 1424 was destroyed, the two cars ahead of it were derailed and badly damaged but remained in general line with the track; these were specially constructed flat cars loaded with a high pressure cylinder, which fell to the right side of the track. Engine 1444 stopped on its left side to the left of the track, badly damaged, with its front end resting on the rear car of Extra 1424. The first two cars of Train No. 167 stopped to the right of the track, while the third and fourth cars were derailed but remained in general line with the track. The employee killed was the engineman of Train No. 167, and those injured were the fireman and head brakeman of Train No. 167.

Summary of evidence

Engineman Tegler, of Extra 1424, stated that after passing Bucyrus the steam pressure dropped to 90 pounds due to the stoker clogging and as a result the air brakes became applied. As soon as the train stopped he whistled out a flag, and after standing about 6 or 7 minutes they were ready to proceed and he recalled the flagman. After waiting about 3 or 4 minutes more he crossed to the left side of the cab and looked for a signal from the rear end but it was raining and

foggy and very difficult to see signals. As he looked back he saw Train No. 167 approaching. He attempted to start the train, but as he did so the brakes were applied as a result of the collision. After the accident the train was cut ahead of the derailed cars and Engineman Tegler stated he had no difficulty in seeing a proceed signal given by the brakeman on top of the rear car.

Fireman Hatfield, of Extra 1424, stated that on approaching and passing through Bucyrus the signal indications could be clearly seen, and although it was raining and slightly foggy, he saw the indication of signal 3137 when about 35 or 40 car lengths from it. Under normal conditions this signal could be seen for more than 1 mile.

Head Brakeman Hart, of Extra 1424, stated that after his train became stalled west of Bucyrus he looked for a signal from the rear end and saw the reflection of the headlight of Train No. 167, the red indication of signal 3138 and also what appeared to be the reflection of a fusee, although he did not see the fusee. Had a signal been given from the rear end of the train he thought he could have seen it from the engine.

Conductor Patterson, of Extra 1424, stated that his train was restricted by train order to a speed of 25 miles per hour, because of handling a special load. After passing Bucyrus he noticed a gradual reduction in speed until the train finally stopped and the engineman whistled out a flag, at 4:55 a.m. As Flagman Kilmartin started back with his flagging equipment he called the flagman's attention to the headlight of Train No. 167, which appeared to be at the station at Bucyrus. Conductor Patterson then started toward the head end of the train and spent several minutes in examining the special load on the rear cars. He then heard the flagman recalled and gave a proceed signal and started toward the caboose. He saw the train approaching at a high rate of speed and knew that a collision was inevitable. He went into the caboose and obtained a fusee but did not have time to light it. He ran toward the train, passed the flagman who was on his way in, and he himself was about 10 car lengths from the caboose when the train passed him at a speed of about 30 or 35 miles per hour; he thought the engine was working a light throttle and the air brakes were not applied. He was on the engineman's side and he did not see any one in the cab. It was hazy and raining fairly hard at that time. Flagman Kilmartin had left a burning fusee about 8 or 10 pole lengths or

500 feet behind the caboose. The marker and cupola lights on his caboose were burning properly. Conductor Patterson stated that in view of the open country he did not think it necessary for his flagman to throw off fusees when the speed of his train was being reduced after passing Bucyrus as he did not know that his train was going to stop. He did think, however, that the placing of torpedoes would have provided additional protection.

Flagman Kilmartin, of Extra 1424, stated that as soon as his train stopped he left the cupola, put on his overshoes and overcoat and started back with two fusees and a red and a white lantern. He heard the conductor call his attention to the headlight of Train No. 167. He ran back part of the way and then walked until the engineman whistled for him to come in. He had a little trouble in getting the fusee lighted and placed in the track, but after doing so he started back toward his train. The marker and cupola lights on his caboose were burning and signal 3137 displayed a red indication. He saw Conductor Patterson giving a proceed signal from the left side of the train and Flagman Kilmartin also gave a proceed signal from the right side when he was still some distance from the caboose. He looked back and saw the headlight of the approaching train but did not think that the train was traveling very fast. He heard his conductor say that the trains were going to collide and when the approaching train was near enough for him to realize its speed he ran to the right-of-way fence. He did not place a torpedo nor did he give a stop signal, but he left a burning fusee about 15 or 16 car lengths from his caboose, and at that time Train No. 167 was a short distance west of the station. Flagman Kilmartin could not explain why he returned to his train without first knowing that the proper flag protection was given in accordance with the rules, other than to say that he misjudged the speed of Train No. 167 and thought that he could get back to the caboose and his train could get started before the approaching train would overtake it.

Fireman Crum, of Train No. 167, stated that he and the engineman called the signal indications on approaching and passing through Bucyrus, and on passing the station he picked up a message and handed it to the engineman who read it, but they did not have any conversation relative to its contents. The engineman sounded the whistle signal for a highway crossing, and on approaching the highway crossing about 20 car lengths east of signal 3125, the engineman called "yellow signal," and Fireman Crum repeated it, and the engineman partly closed the throttle. The train was traveling at a

speed of about 40 miles per hour when the fireman saw a red fusee about 15 car lengths ahead and he called "red fusee;" he saw the engineman glance at him and place his hand on the brake valve. As soon as the engine was close enough to the fusee so that Fireman Crum could see through the glare he saw the rear end of the train and at the same time saw the red indication of signal 3137. He called to the engineman to apply the brakes in emergency and to jump off. He did not look at the engineman but jumped off himself and did not know whether the brakes had been applied. Due to the rain he thought the range of vision was limited to about 35 or 40 car lengths, but in another statement Fireman Crum stated that the engine was about half-way between the west passing track switch and the point of accident when he first saw the red fusee. He did not see any one near the rear end of the train.

Head Brakeman Flint, of Train No. 167, stated that he was in the brakeman's cabin on the tender. He heard the engineman sound the station whistle signal at Bucyrus and also the signal for the highway crossing at the west end of the passing track, but due to the rain he stayed in the cabin and did not observe the signal indications. The train was traveling at a speed of between 35 and 40 miles per hour when the collision occurred and he was unable to say whether or not the air brakes had been applied. After the accident he found a burning fusee on the track on his way back to the caboose but he was unable to give its location; he picked it up and walked back slowly and on reaching his caboose there was about 4 inches of the fusee left. He thought the range of vision was limited to about 20 car lengths.

Conductor Waggoner, of Train No. 167, stated that he was on the left side of the cupola and due to a high car ahead of the caboose he was unable to see over the top of the train and it was necessary to look out of the side window to see ahead. He did not see signal 3125-R, but his flagman called its indication as being yellow. After passing Bucyrus he closed his side window. His train was traveling at a speed of between 30 and 40 miles per hour when the collision occurred and while the flagman called his attention to an application of the air brakes just before the accident, he could not say positively whether there had been a brake application. After the accident he saw the reflection of the burning fusee against a tank car which he later located as the seventeenth car in the train, and when he walked toward the head end he met his head brakeman coming back and carrying this burning fusee. Conductor Waggoner stated that the air

brakes had been tested at Kansas City and they functioned properly en route.

Flagman Roy, of Train No. 167, stated that his train was traveling at a speed of between 40 and 45 miles per hour on passing signal 3125-R, and he called its indication to the conductor, although nothing was said about reducing speed. He felt an application of the air brakes and looked at the air gauge and saw that a 15 or 20 pound reduction was being made. The train then traveled a distance of about 15 or 20 car lengths before the collision occurred.

Signal Supervisor Kempe arrived at the scene about 2 hours after the occurrence of the accident and found signal 3137 displaying a red indication. He and his signal foreman made a check of the signal circuits and all signals were working properly. The lens in signal 3137 has a 30° spread and is focused so that it can be seen at a distance of 1 mile in the day time and 1½ miles at night.

Engineman Dever, of Extra 1434, which pulled the rear portion of Train No. 167 back to the siding at Bucyrus after the accident, stated that with the exception of one car he handled this portion of the train to Osawotomie together with his own train and the brakes operated properly en route.

On the night of February 3, 1937, a visibility test was made in the vicinity of the point of accident. With a caboose standing in the same relative position to signal 3137 as the caboose at the time of the accident, and with an engine of the same type as engine 1444, it was found that there was an unobstructed view of signal 3137 from the fireman's side of the cab for a distance of 6,300 feet and the lights on the caboose could be seen for a distance of 970 feet. From the engineman's side of the cab, signal 3137 could first be seen at a distance of 2,290 feet; it remained in view for 700 feet, and then, due to the curve to the left, was obscured from view for a distance of 1,270 feet, following which it could then be seen for the remaining distance of 320 feet; these observations were made from the side windows of the cab. Piping and other accessories installed on each side of the boiler interfered with and restricted the view through the storm windows to a considerable degree, and due to curves, cuts, pole lines and other obstructions adjacent to the track on this district, together with the signal-indication system of train movements it appears that observance of these signals necessitates unceasing vigilance from the side windows of engine cabs.

Inspection of engine 1444 was made by the Commission's inspectors in the shop at Kansas City, Mo., and it was found that the angle cock at the rear of the tender was in good condition and both hose between the engine and tender were almost new. The brake, feed and distributing valves were removed from engine 1444 and mounted on engine 1448 and tested in actual service. In a series of applications and releases of the brakes on the engine the valves functioned properly and were allowed to remain as part of the equipment on that engine.

Inspection was also made of the damaged equipment of Extra 1424 at the shop at Osawatomie. All angle cocks and air hose were accounted for with the exception of those at the B ends of two cars; one angle cock and hose were found but the car on which they belonged could not be identified. All angle cocks inspected were of the self-locking type and none of the hose had loose linings.

Discussion

As shown by the evidence, the speed of Extra 1424 was gradually reduced and the train finally stalled due to low steam pressure; Flagman Kilmartin threw off no lighted fusees and did not leave the cupola until after his train had stopped. He then got ready and started back with flagging equipment. Approximately 10 minutes elapsed from the time his train stopped until the time of the accident, yet according to the flagman's own statement he went back a distance of only 600 feet where he placed a lighted fusee after being recalled by the engineman and then started toward his train, making no further effort to flag Train No. 167 which was then approaching, and he did not put down torpedoes as required by Rule 99. With the time available Flagman Kilmartin could have gone back sufficient distance to have insured full protection.

The engineman and fireman of Train No. 167 saw and called the yellow or restricted speed indication of signal 3125-R. Although it was raining and visibility was somewhat restricted, the engineman only partly closed the throttle and took no other action to reduce the speed of his train; the fireman saw a red fusee on the track ahead and called a warning but even then the engineman did not immediately take necessary action to reduce speed; there is some evidence that he applied the brakes just prior to the accident, but it was then too late to stop, and the train overran signal 3137, which was displaying a stop indication, and collided with the preceding

train while still running at a relatively high rate of speed. The engineman of Train No. 167 was killed in the accident and it therefore could not be determined why he failed properly to control his train in accordance with signal indications.

The section of line on which this accident occurred was formerly equipped with automatic train-stop devices in addition to the centralized traffic control system, but the use of automatic train-stop devices was discontinued in 1933. The accident here under investigation is of the type which automatic train-stop devices were designed to prevent, and had these devices been continued in service it is reasonable to assume that this accident would have been averted.

Conclusion

This accident was caused by the failure of Train No. 167 to be operated in compliance with signal indications and by the failure of Extra 1424 to be properly protected by flag.

Respectfully submitted,

W. J. PATTERSON,

Director.