

RAILROAD ACCIDENT INVESTIGATION

Report No 4119

MISSOURI-KANSAS-TEXAS RAILROAD COMPANY

MISSOURI PACIFIC RAILROAD COMPANY

CAPHEAD, TEXAS

APRIL 6, 1967

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

Washington

Summary

DATE:	April 6, 1967	
RAILROADS:	Missouri-Kansas-Texas	Missouri Pacific
LOCATION:	Caphead, Texas	
KIND OF ACCIDENT:	Collision	
EQUIPMENT INVOLVED:	Yard movement	Freight train
TRAIN NUMBER:		Extra MP 467 South
LOCOMOTIVE NUMBERS:	Diesel-electric units 13, 4	Diesel-electric units 467, 463, 421, 489, 402
CONSISTS:	52 cars	94 cars, caboose
ESTIMATED SPEEDS:	3-7 m.p.h.	25-35 m.p.h.
OPERATION:	Timetable, train orders, automatic block-signal system; yard limits	
TRACK:	Single; tangent; 0.22 percent descending grade southward	
WEATHER:	Clear; dusk	
TIME:	7:09 p.m.	
CASUALTIES:	5 injured	
CAUSE:	Failure of the crew members on the locomotive to operate the MP train in accordance with signal indications and yard-limit rules, and operator failing to line proper route for train involved	

RECOMMENDATION:

It is recommended that the MKT and MP immediately familiarize all MP train-service employees performing service on the MKT line involved with the meanings and requirements of all aspects displayed by controlled signals at Caphead and MoPac Jct. It is also recommended that the MKT take immediate measures to familiarize assigned operators with proper manipulation and functioning of traffic control machines in their charge.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
RAILROAD SAFETY BOARD

RAILROAD ACCIDENT INVESTIGATION
REPORT NO. 4119

MISSOURI-KANSAS-TEXAS RAILROAD COMPANY

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APRIL 6, 1967

Synopsis

On April 6, 1967, a collision occurred between a Missouri-Kansas-Texas Railroad Company yard movement and a Missouri Pacific Railroad Company freight train at Caphead, Texas, resulting in injury to five train-and yard-service employees

The accident was caused by failure of the crew members on the locomotive to operate the MP train in accordance with signal indications and yard-limit rules, and operator failing to line proper route for train involved.

Location and Method of Operation

The accident occurred on that part of the Fort Worth Subdivision of the Missouri-Kansas-Texas Railroad extending between Fort Worth and Bellmead, Texas, a distance of 85.9 miles. In the accident area this is a single-track line over which trains of the Missouri-Kansas-Texas Railroad Company (MKT) and the Missouri Pacific Railroad Company (MP) are jointly operated by timetable, train orders, an automatic block-signal system, and yard-limit rules. MKT operating rules are in effect.

Caphead is 1 0 mile north of Bellmead. Yard-limit signs are located 4,856 feet north of the Caphead station point and a considerable distance south of the Bellmead station

At Caphead, a track parallels the main track on the west, as indicated in the sketch appended to this report. A crossover connects these tracks. The north crossover-switch is facing point for southbound movements on the main track and is 57 feet north of the Caphead station point. Northward from the south crossover-switch, the track paralleling the main track is a track of the MKT Rotan Subdivision. Southward from that switch, it is the lead track for the north end of the MKT yard system at Bellmead. The crossover at Caphead is considered by the MKT to be part of the lead track.

The collision occurred within yard limits, on the lead track, 297 feet south of the north crossover-switch at Caphead

At MoPac Jct., 2,064 feet south of the north crossover-switch at Caphead, an MP main track diverges southeastward from the MKT main track.

Automatic signal 8403, governing southbound movements on the MKT main track, is 1.5 miles north of the north crossover-switch at Caphead. Signal 4 RAB, a two-unit dwarf signal governing southbound movements on the MKT main track and southbound movements from the main track to the lead track at the north end of the Bellmead yard, is 16 feet north of the north crossover-switch at Caphead. Signal 2 RAB, governing southbound movements on the MKT main track and southbound movements from that track to the MP main track at MoPac Jct., is 44 feet north of the switch connecting the MKT and MP main tracks.

Signals 4 RAB and 2 RAB are remotely controlled by the Bellmead operator from a traffic control machine in the Bellmead yard office. The north switch of the crossover at Caphead, and the switch connecting the MKT and MP main tracks at MoPac Jct., are of the dual-control type. They may be manually operated, or remotely operated from the traffic control machine in the Bellmead yard office.

A highway bridge spans the MKT main track and the Rota Subdivision track, 824 feet north of the north crossover-switch at Caphead.

Special instructions in the MKT timetable provide that between Caphead and a point 4.5 miles south of Bellmead "Trains Will Have No Superiority and All Trains and Engines Will Move At Restricted Speed."

Details concerning the main track, signals, MKT operating rules, MKT timetable special instructions, train involved, damages, and other factors are set forth in the appendix.

Description and Discussion

At 3:59 p.m. the day of the accident, a MKT yard crew comprised of an engineer, foreman, and two yardmen went on duty at Bellmead yard to perform switching operations with a locomotive consisting of switcher-type diesel-electric units 13 and 4, coupled in multiple-unit control. The engineer operated the locomotive from the control compartment at the south end of unit 4, which was the south unit. About 6:05 p.m., the yard locomotive proceeded to the lead track at the north end of Bellmead yard to assemble a cut of cars on the north end of yard track No. 10. These cars were to be placed in the consist of No. 2, a northbound second-class MKT freight train, when that train arrived at Bellmead yard. No. 2 stopped on track No. 15 in Bellmead yard at approximately 6:30 p.m., after which its locomotive was moved to another track. Soon afterward, the yard locomotive pushed a cut of cars southward on the lead track to a coupling with the cut of cars on yard track No. 10, forming a combined cut of 52 cars. About 7:05 p.m., after the air hose were coupled and the air brake systems were charged, the yard locomotive started to pull the cut of 52 cars from track No. 10, to double it to the north end of yard track No. 15 and couple it to the front end of No. 2. To accomplish this movement, it was necessary for the locomotive to proceed northward on the lead track beyond the south switch of the crossover at Caphead. This had been anticipated and one of the yardmen had previously lined the south crossover-switch for movement from the lead track to the Rotan Sub-division track.

The yard foreman and one of the yardmen remained in the vicinity of the north switch of track No. 10 as the cut of cars was being pulled from that track. The other yardman and the engineer were in the control compartment at the south end of the locomotive. The engineer was seated on the east side of the control compartment and the yardman was seated on the west side. Because of his position in the control compartment and curvature of the lead track, the engineer's view of the lead track and main track northward was materially restricted by the engine housings of the locomotive. The yardman's view ahead was somewhat obstructed by trees and by supports of the highway bridge located a short distance north of the Caphead station sign.

According to estimates of the crew members, the yard locomotive moved at 3 to 7 miles per hour as it pulled the cut of cars from track No. 10 and proceeded northward on the lead track. When it neared the south switch of the crossover at Caphead, the yardman in the control compartment saw the headlight of Extra MP 467 South, a southbound MP freight train operating on the MKT main track, come into

view a relatively short distance ahead. At this time, according to the yardman, the front portion of Extra MP 467 South was moving under the highway bridge at 25 miles per hour or more and he informed the engineer, whose view was obstructed, about sighting the approaching train. He said he then commented to the engineer on the speed at which the train was moving. About that time, according to the yardman, he saw the headlight beam of Extra MP 467 South sweep in his direction and realized that the approaching train was being diverted through the Caphead crossover to the lead track immediately in front of the yard locomotive. He called a warning to the yard engineer, then left the control compartment to alight from the locomotive. The engineer said the yardman informed him about the approach of Extra MP 467 South and remarked that it was moving unusually fast. He said that he was unaware of anything being wrong before the yardman called a warning, and that he promptly applied the independent and automatic brakes. Immediately thereafter, at 7:09 p.m., before the speed of the yard movement was reduced, the locomotive was struck by Extra MP 467 South on the lead track, 297 feet south of the north crossover-switch at Caphead. The accident occurred before the MKT engineer and yardman could alight from the yard locomotive.

The engineer and yardman on the MKT yard locomotive, and the engineer, fireman and front brakeman of Extra MP 467 South, were injured.

The engineer of Extra MP 467 South, whose injuries included two concussions, was unable to recall the events leading to the accident.

Extra MP 467 South consisted of 5 diesel-electric units, 94 cars and a caboose, manned by MP employees. It left a yard in Fort Worth at 4:38 p.m., entered the MKT Fort Worth Subdivision, and passed Ney, 1.5 miles south of the Fort Worth station, at 4:55 p.m. At Ney, the crew members received, among others, copies of train order No. 92, which read in part as follows:

No 2 Eng 81A wait at Caphead until 715 PM
for Extra MP 467 South *** ***

The time specified in train order No. 92 applied at the north switch of the Caphead crossover. Under the provisions of this order, if No. 2, the superior train, left the Bellmead yard and proceeded northward on the north lead track before 7:15 p.m., it was restricted from entering the MKT main track at the Caphead crossover before that time, unless Extra MP 467 South had arrived at Caphead and had cleared the main track north of the crossover. In the event that Extra MP 467 South proceeded to Caphead for No. 2 and

the route was established at Caphead for movement from the MKT main track to the MP main track, it was authorized to continue southward at Restricted speed on the MKT main track and to enter the MP main track at MoPac Jct. When the route is established for such movement, signals 8403 and 4 RAB display Clear aspects and signal 2 RAB displays either a Clear or Approach aspect. Signals 8403 and 4 RAB display Approach and Low aspects, respectively, when the route is established at Caphead for a southbound movement on the MKT main track to enter the Bellmead yard lead track at the north switch of the Caphead crossover.

Extra MP 467 South passed Itasca, 40.6 miles north of Caphead, at 5:52 p.m. and continued southward on the MKT main track, en route to the MP main track at MoPac Jct. Shortly before 7:00 p.m., apparently as it neared Elm Mott, 5.5 miles north of Caphead, the Bellmead operator radio-telephoned the conductor and inquired as to how far the train would go with respect to train order No. 92. The conductor replied that it would go to Caphead. He stated the operator then informed him that the route would be lined at Caphead and MoPac Jct. for the train to proceed to the MP main track. This statement was substantiated by the fireman, who said he overheard the radio-telephone conversation between the operator and conductor. A few minutes after passing Elm Mott, Extra MP 467 South neared signal 8403, which displayed an Approach aspect, and the crew members on the locomotive called this aspect to each other. The fireman and front brakeman said the engineer then initiated a service brake application and the train passed the signal while moving at 40 to 50 miles per hour.

Before the locomotive passed signal 8403, the top unit of dwarf signal 4 RAB came into the fireman's view and he saw that it was displaying a red aspect. The top unit of signal 4 RAB came into the engineer's view a few moments later. He apparently also saw that it was displaying a red aspect. The aspect displayed by the top unit of signal 4 RAB and the Approach aspect displayed by signal 8403 should have indicated to the crew members on the locomotive that the route at Caphead was not established for their train to proceed on the MKT main track to MoPac Jct. Soon after the locomotive passed signal 8403, both units of signal 4 RAB, which was displaying a Low aspect (red-over-lunar) came into the engineer's, fireman's, and front brakeman's range of vision at a distance of 1.3 miles, as revealed by sight tests after the accident. However, according to the fireman and front brakeman, they were unable to discern the aspect displayed by this signal until the locomotive had proceeded a considerable distance farther southward.

As Extra MP 467 South proceeded on the descending grade in the block of signal 8403, the front end passed the yard-limit sign located 4,856 feet north of the Caphead station sign. The fireman, conductor, and front brakeman said the train speed had been reduced to about 15 or 20 miles per hour by this time. The flagman, however, stated that the speed was about 45 miles per hour, and that the brakes had not been applied in approach to Caphead before the train neared the yard-limit sign. According to the fireman's and front brakeman's statements, they and the engineer still were unable to see the full aspect displayed by signal 4 RAB as the locomotive proceeded southward between the yard-limit sign and the highway bridge located 824 feet north of the crossover at Caphead, but could see that the top unit continued to display a red aspect. They said that they and the engineer had called that aspect to each other. The fireman stated he first saw both units of signal 4 RAB, and saw that the signal was displaying a Low aspect, at a distance of 400 or 500 feet, apparently soon after the locomotive moved under the highway bridge. Both the fireman and front brakeman said they and the engineer called this aspect to each other. About the same time, according to the fireman's statements, the engineer released the train brakes, although the Low aspect displayed by signal 4 RAB indicated that the route was established at Caphead for movement from the MKT main track to the lead track at the north end of Bellmead yard, instead of for movement on the MKT main track to MoPac Jct. Soon afterward, apparently as the train approached the crossover at Caphead within a distance of a few hundred feet, the front brakeman saw that the north switch of the crossover was not properly lined for the train to proceed on the MKT main track to MoPac Jct. and he called a warning. The fireman estimated that the train was about 250 feet from the Caphead crossover when the front brakeman called the warning, and said that the train was moving between 15 and 20 miles per hour at this time. He said he operated the emergency brake valve and the engineer simultaneously applied the train brakes in emergency. Immediately thereafter, at 7:09 p.m., 6 minutes before the time shown in train order No. 92, Extra MP 467 South entered the lead track at the north switch of the Caphead crossover and struck the MKT yard movement.

Statements of the fireman, front brakeman, conductor, and flagman of Extra MP 467 South indicate that they took no exception to the manner in which the engineer operated the controls as the train approached Caphead, and that they thought the speed of the train was being properly controlled at that time.

The residence of a MKT yard clerk is located on the west side of the MKT main track between signal 8403 and the highway bridge. According to his statements, the yard clerk observed Extra MP 467 South as it moved on the

descending grade in the block of signal 8403, and as the front end passed the yard-limit sign located north of the Caphead station sign and moved out of view beyond the highway bridge. He estimated that the train was moving at approximately 45 miles per hour as it neared the crossover at Caphead, and stated that he did not observe any reduction in its speed before he heard the sound of the collision.

According to statements of the Bellmead operator, he radio-telephoned the conductor of Extra MP 467 South about 7:00 p.m. to determine how far the train would proceed with respect to train order No. 92, and was informed that it would go to Caphead. He said he acknowledged this information by replying "O.K." The operator could not recall details of the radio-telephone conversation, but said it was possible he told the conductor that the route would be lined at Caphead and MoPac Jct. for his train to proceed to the MP main track. When this conversation was concluded, the operator manipulated the controls of the traffic control machine to establish the route at Caphead and MoPac Jct. for Extra MP 467 South to proceed to the MP main track. He then left the yard office and proceeded by automobile to MoPac Jct., to pick up the register ticket that the conductor would throw from the caboose at that point. According to the operator's statements, he hurriedly manipulated the controls of the traffic control machine before leaving the yard office and did not check the indicator lights of the machine to determine whether he had properly established the route intended. In addition, the operator stated it was possible that he failed to follow the proper sequence when he manipulated the traffic control machine levers and code start buttons to establish the intended route for Extra MP 467 South.

Tests made after the accident disclosed that the north switch of the crossover at Caphead, the traffic control machine in the Bellmead yard office, and the signals involved functioned properly.

According to the MKT timetable special instructions, the north crossover-switch at Caphead is in normal position when it is lined for movement from the MKT main track to the lead track.

The traffic control machine in the Bellmead yard office has two switch levers, two signal levers, and two code start buttons. It is provided with time and route locking. A track model board is associated with the traffic control machine and is equipped with indicator lights to show track occupancy. Indicator lights are also above the switch and signal levers of the machine to show the positions of controlled switches

and signals. Lever No. 3 controls the north switch of the Caphead crossover and it has two positions, "N" and "R." The lever must be placed in "R" position to move the north crossover-switch to normal position, lined for movement from the MKT main track to the lead track. When this switch is in normal position, the amber indicator light located above the "R" position of lever No. 3 is illuminated. The lever must be placed in "N" position to move the north crossover-switch to reverse position, lined for movement on the MKT main track. When the switch is in reverse position, the green indicator light above the "N" position of lever No. 3 is illuminated. To establish the route for a southbound movement on the MKT main track to proceed at Caphead and MoPac Jct. to the MP main track, the Bellmead operator must place the switch and signal levers of the traffic control machine in proper positions before pushing the code start buttons.

Examination soon after the accident revealed that the north switch of the Caphead crossover was lined for movement from the MKT main track to the lead track, and that the south crossover-switch had been run through by wheels of Extra MP 467 South. All four levers of the traffic control machine were found in the positions required to establish the route for a southbound movement to proceed on the MKT main track at Caphead to the MP main track at MoPac Jct. However, the amber indicator light above the "R" position of switch lever No. 3 was illuminated, indicating that the north crossover-switch was in normal position, lined for movement from the MKT main track to the lead track. It is apparent that this switch was in normal position and that lever No. 3 of the traffic control machine was in "R" position before the operator started to establish the route for Extra MP 467 South to proceed on the MKT main track at Caphead to the MP main track at MoPac Jct. The operator apparently pressed the code start buttons of the traffic control machine before he moved lever No. 3 to "N" position, and thereby locked the north switch of the Caphead crossover in normal position. Because of the time locking provided, the north switch of the crossover remained locked in normal position when the operator later moved lever No. 3 of the traffic control machine to "N" position, and signal 4 RAB was thereby caused to display a Low aspect, instead of a Clear aspect. Thus, the operator inadvertently established the route for Extra MP 467 South to enter the lead track at the north switch of the Caphead crossover, instead of the route intended.

The investigation disclosed that the MKT yard movement was moving on the Bellmead yard lead track in compliance with the rules when it was struck by the MP train, and its

crew members were unable to take any action which might have prevented the accident.

As Extra MP 467 South approached Caphead on the MKT main track, the Bellmead operator radioed the conductor and apparently informed him that the route would be established at Caphead and MoPac Jct. for his train to continue southward on the MKT main track at Caphead to the MP main track. Upon conclusion of this radio conversation, the operator manipulated the controls of the traffic control machine to establish the route mentioned above. However, he failed to manipulate the controls in the proper sequence and thereby erroneously established the route for Extra MP 467 South to enter the Bellmead yard lead track at the north switch of the Caphead crossover, instead of the route intended. He then left the traffic control machine without checking its indicator lights to determine whether he had properly established the route for the train to proceed at Caphead to the MP main track at MoPac Jct. It is evident that the information transmitted by the operator to the crew members of Extra MP 467 South through his radio conversation with the conductor, and the operator's failure to establish the proper route at Caphead for the train, contributed to the cause of the accident.

The engineer, fireman, and front brakeman of Extra MP 467 South apparently overheard all, or portions, of the Bellmead operator's radio conversation with the conductor and assumed that before their train arrived at Caphead the route would be established at that point for it to proceed on the MKT main track to the MP main track at MoPac Jct. However, they were prohibited by MKT timetable special instructions from utilizing the information that the Bellmead operator transmitted to the conductor over the radio in any manner that would have the effect of supplementing or modifying strict compliance with MKT operating rules and special instructions. As the train approached signal 8403 at 45 to 50 miles per hour, the crew members of the locomotive observed that this signal was displaying an Approach aspect and were able to discern that the top unit of dwarf signal 4 RAB was displaying a red aspect. These aspects should have indicated to them that the Bellmead operator had not established the route at Caphead for their train to proceed on the MKT main track to the MP main track at MoPac Jct., and that the train was therefore required to stop short of signal 4 RAB. The Approach aspect displayed by signal 8403 authorized Extra MP 467 South to proceed in the block of that signal at not exceeding 30 miles per hour, prepared to stop short of signal 4 RAB. When the locomotive passed the yard-limit sign 4,856 feet north of the Caphead station point, the train was further required by rule to be

operated within the Caphead-Bellmead yard limits at Restricted Speed, prepared to stop short of a train, engine, obstruction or switch not properly lined.

In view of the extent of damages resulting from the accident and statements made by the flagman of Extra MP 467 South, the yardman in the control compartment of the MKT yard locomotive, and the MKT yard clerk, it is apparent that the fireman, front brakeman, and conductor of Extra MP 467 South were mistaken as to the speed of their train in approach to the collision point. After the front of Extra MP 467 South passed signal 8403, which displayed an Approach aspect, the train apparently proceeded southward on the descending grade in the block of that signal and entered the Caphead-Bellmead yard limits while moving at approximately 45 miles per hour, or 15 miles per hour faster than the maximum speed authorized under the aspect displayed by signal 8403. The engineer then initiated a service brake application, which apparently reduced the train speed to somewhat in excess of 25 miles per hour as the front end moved under the highway bridge located 824 feet north of the crossover at Caphead. Shortly thereafter, the crew members on the locomotive saw that signal 4 RAB was displaying a Low aspect, which should have indicated to them that the route was established at Caphead for their train to enter the Bellmead yard lead track at the north switch of the Caphead crossover. The engineer then apparently released the service brake application and neither the fireman nor the front brakeman took any exception, indicating that all the crew members on the locomotive thought the north crossover-switch at Caphead was lined for their train to proceed on the MKT main track to MoPac Jct., and that they did not realize signal 4 RAB displayed a Low aspect only when the route is established for a southbound movement on the MKT track to enter the Bellmead yard lead track at the north switch of the Caphead crossover. None of the crew members on the locomotive was aware of anything being wrong before the train reached a point about 250 feet north of the Caphead crossover, at which time the front brakeman saw that the north crossover-switch was lined for movement to the Bellmead yard lead track. He called a warning and the engineer and fireman promptly applied the train brakes in emergency. A few moments later, before its speed was materially reduced, the train entered the lead track at the north crossover-switch and struck the MKT yard movement, apparently while moving at 25 to 35 miles per hour. It is evident that after Extra MP 467 South entered the Caphead-Bellmead yard limits, it was not operated at Restricted Speed as required, resulting in the collision. Had the train been operated at Restricted Speed after it entered the yard limits, it could have been stopped short of the north crossover-switch when that switch was seen to be improperly lined

and the accident would have been avoided.

Findings

The MKT yard movement was moving on the Bellmead yard lead track in conformity with the rules when the accident occurred

The Bellmead operator radioed the conductor of Extra MP 467 South and informed him that the route would be established at Caphead and MoPac Jct. for the train to proceed on the MKT main track to the MP main track. He then manipulated the controls of the traffic control machine without following the proper sequence and erroneously established the route at Caphead for the train to enter the Bellmead yard lead track instead. It is evident that the operator had not been thoroughly and properly trained in operation of the traffic control machine and this deficiency contributed to the cause of the accident.

The crew members on the locomotive of Extra MP 467 South overheard all or part of the information that the Bellmead operator conveyed to the conductor by radio, and utilized this information. As a result, the train proceeded at excessive speed in the block of signal 8403 and within the Caphead-Bellmead yard limits, and could not be stopped short of the north crossover-switch at Caphead and the MKT yard movement, as required, after the switch was observed to be improperly lined. Had the speed been properly controlled while the train moved on the MKT main track in the block of signal 8403 and within yard limits, the accident probably would have been averted. Although the aspects displayed by signals 8403 and 4 RAB should have indicated to the crew members on the locomotive that the route at Caphead was not properly established for their train to proceed on the MKT main track to the MP main track at MoPac Jct., they evidently thought the route had been established for such movement, indicating that they were unfamiliar with the traffic control installation at Caphead and MoPac Jct. This unfamiliarity evidently also contributed to the cause of the accident.

Cause

This accident was caused by failure of the crew members on the locomotive to operate the MP train in accordance with signal indications and yard-limit rules, and operator failing to line proper route for train involved.

Recommendation

It is recommended that the MKT and MP immediately

familiarize all MP train-service employees performing service on the MKT line involved with the meanings and requirements of all aspects displayed by controlled signals at Caphead and MoPac Jct. It is also recommended that the MKT take immediate measures to familiarize assigned operators with proper manipulation and functioning of traffic control machines in their charge.

Dated at Washington, D. C., this 7th
day of December 1967.
By the Federal Railroad Administration,
Railroad Safety Board.

(SEAL)

Bette E. Holt
Acting Executive Secretary

Appendix

Track

The MKT main track is tangent throughout a considerable distance north of the north crossover-switch at Caphead and a short distance southward. The grade for southbound trains averages 0.58 percent descending throughout a distance of 1.3 miles north of the Caphead crossover, and is 0.22 percent descending at the crossover. The north and south turnouts of the crossover are provided with No. 11 and No. 9 frogs, respectively.

Signals

Automatic signal 8403 and controlled signals 4 RAB and 2 RAB 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:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
8403	Green	Proceed	Clear
4 RAB 2 RAB	Green-over-red		
8403	Yellow	Proceed, immediately reducing to 30 MPH,	Approach
2 RAB	Yellow-over-red	or slower if necessary, prepared to stop before leading wheels pass the next signal	
4 RAB	Red-over-lunar	PROCEED AT LOW SPEED ***	Low

Signals 4 RAB and 2 RAB are controlled from the traffic control machine in the Bellmead yard office. The controlling circuits of these signals and signal 8403 are so arranged that when the operator of the traffic control machine has established the route at Caphead and MoPac Jet for a southbound train on the MKT main track to proceed to the MP main track, signals 8403 and 4 RAB display Clear aspects and signal 2 RAB displays a Clear or Approach aspect. If the route has been established for a southbound train on the MKT main track to enter the Bellmead yard lead track at the north switch of the Caphead crossover, signal 8403 displays an Approach aspect and signal 4 RAB displays a Low aspect.

MKT Operating Rules

Restricted Speed. - Proceed prepared to stop short of train, engine, obstruction or switch not properly lined.

Low Speed. - A speed that will permit stopping short of train, engine, obstruction or switch not properly lined *** but not exceeding 15 miles per hour.

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.

34(a). Keeping Lookout. - Engineers must, and firemen and forward trainmen when practicable will, keep a constant and vigilant lookout for signals or any condition that may affect the movement of their train or engine.

93. Yard Limit Rule. ***

Within yard limits, the main track may be used without protecting against second and inferior class trains, extra trains and engines.

Within yard limits, second and inferior class trains, extra trains and engines must move at restricted speed.

107. Co-operation Between Crew Members.

(6) ***

When the conductor or engineer fails to take action to stop the train, and an emergency requires, brakemen and firemen must take immediate action to stop the train.

MKT Timetable Special Instructions

Operation of Radio

Communications via radio must not be utilized by any

employe in any manner that would have the effect of supplementing or modifying strict compliance with Operating Rules and Special Instructions.

Train Involved

Extra MP 467 South consisted of diesel-electric units 467, 463, 421, 489 and 402, coupled in multiple-unit control, 94 cars and a caboose. The train brakes had been tested and had functioned properly when used en route. The headlight was lighted. As the train approached the accident point, the engineer, fireman and front brakeman were in the control compartment of the first diesel-electric unit. The conductor and flagman were in the caboose.

Damages

Both diesel-electric units and the first car of the MKT yard movement were derailed and heavily damaged (see Photo).

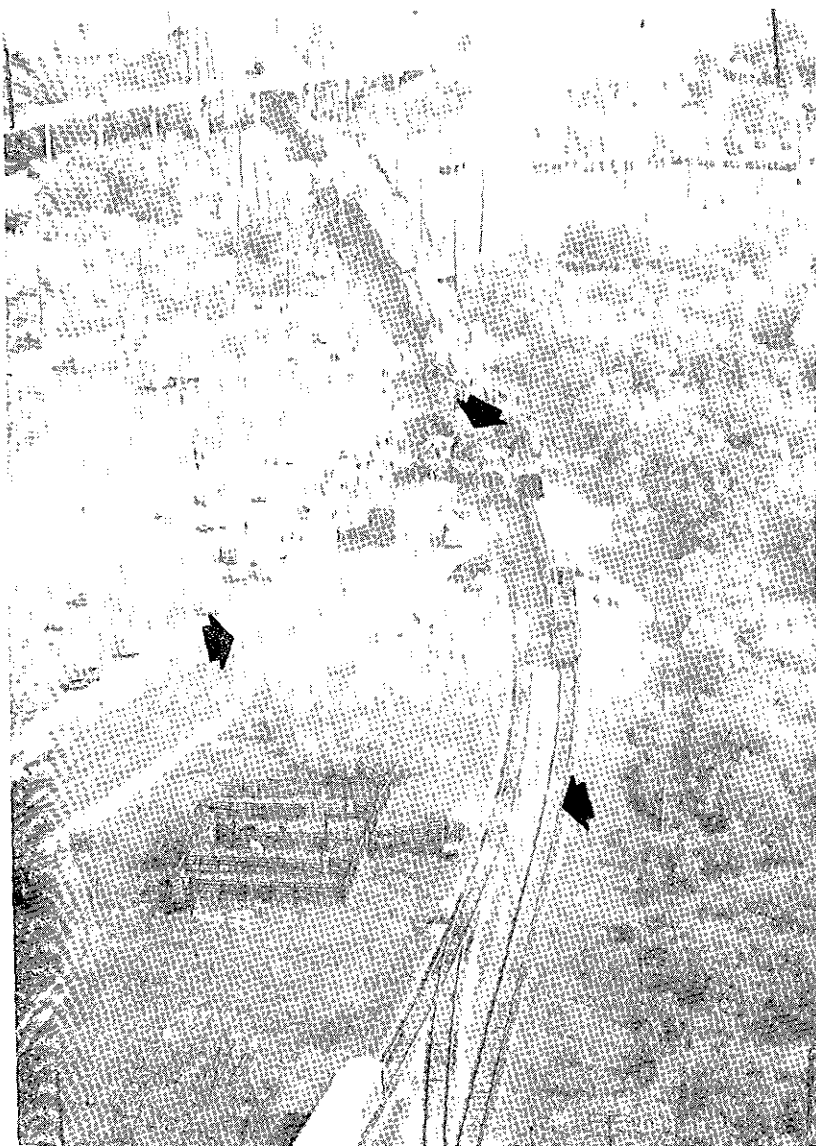
Extra MP 467 South stopped with the front end 71 feet south of the collision point. All five diesel-electric units, the first and second cars, and the eighth to fourteenth cars, inclusive, were derailed. They stopped in various positions on or near the structures of the MKT main track and the lead track. The first and second diesel-electric units were destroyed, and the other three units were heavily damaged. Of the nine derailed cars, two were destroyed, three were heavily damaged, and three were slightly damaged.

Other Factors

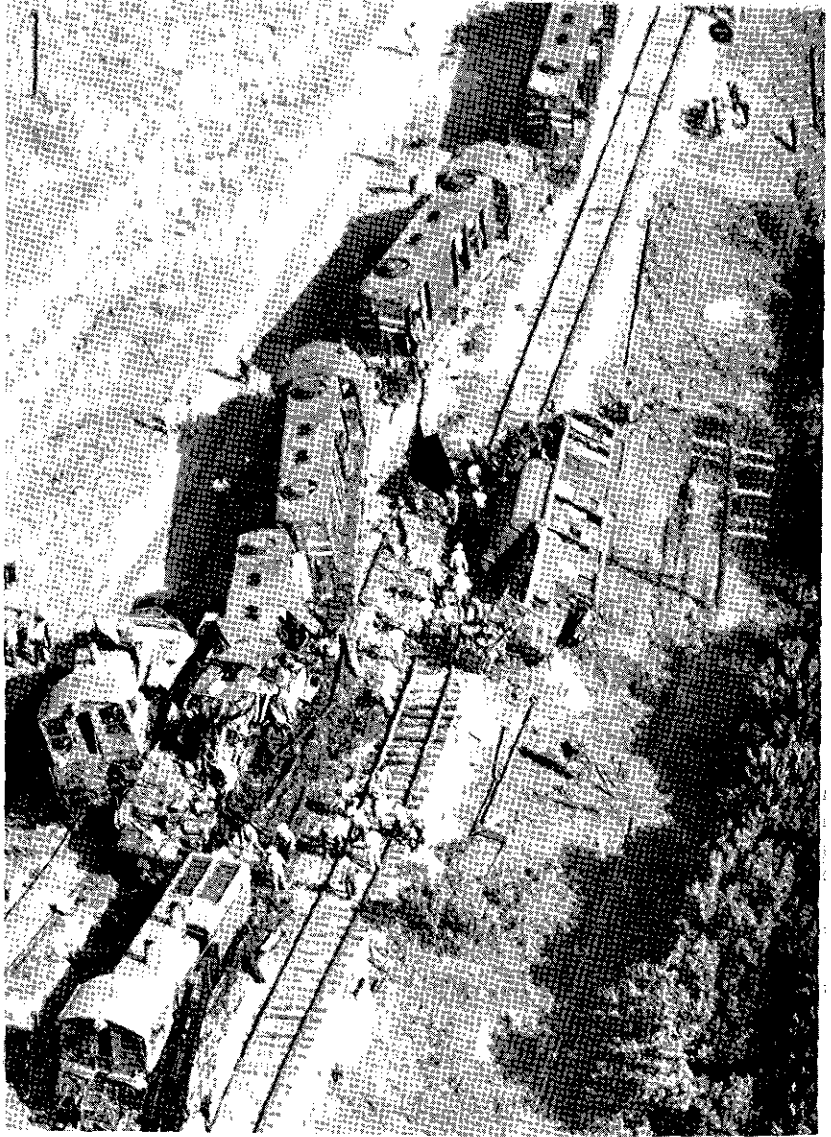
The accident occurred at 7:09 p.m. It was dusk at this time and the weather was cloudy.

The maximum authorized speed for freight trains between Fort Worth and Caphead is 45 miles per hour. Within the Bellmead-Caphead yard limits, the maximum authorized speed for freight trains is Restricted Speed.

According to their daily time returns, the engineer, fireman, and two yardmen of the MKT yard locomotive had been on duty 3 hours 10 minutes at the time of the accident, after having been off duty 16 hours. The engineer, fireman, conductor, front brakeman and flagman of Extra MP 467 South had been on duty 3 hours 39 minutes at the time of the accident, after having been off duty more than 63 hours.

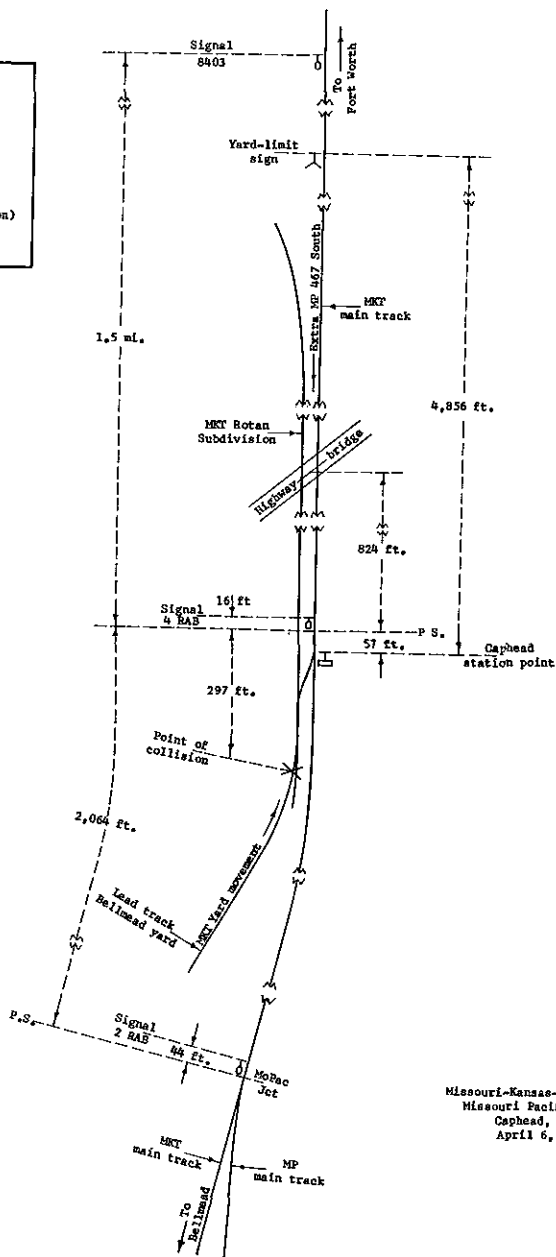


View northward with collision point shown by arrow at center. Lower arrows point to MKT main track at right and Bellmead yard lead track at left. Photo shows wrecking train occupying MKT main track between arrows.



Collision point shown by arrow. MKT diesel-electric units 13 and 4 at bottom left and left, respectively. Overturned first unit of Extra MP 467 South shown at right of arrow. Second MP unit (destroyed) is adjacent to MKT unit 4. Third MP unit is at left of arrow.

- Fort Worth, Tex. 1.5 mi.
- Ney 42.8 mi.
- Itasca 35.1 mi.
- Elm Mott 5.5 mi.
- ⊗ Caphead (Point of collision) 1.0 mi.
- Bellmead, Tex.



Missouri-Kansas-Texas Railroad
 Missouri Pacific Railroad
 Caphead, Texas
 April 6, 1967