

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
CHICAGO, BURLINGTON & QUINCY RAILROAD

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KEENESEBURG, COLO.

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JANUARY 1, 1937

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INVESTIGATION NO. 2131

SUMMARY

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Inv-2131

Railroad: Chicago, Burlington & Quincy  
Date: January 1, 1937  
Location: Keenesburg, Colo.  
Kind of accident: Side collision  
Trains involved: Freight : Freight  
Train numbers: Extra 5084 East : No. 72  
Engine numbers: 5084 : 5086  
Consist: 23 cars, caboose : 53 cars, caboose  
Speed: 35 m.p.h. : Standing  
Track Tangent; automatic block signals  
Weather: Clear and cold  
Time: 10:45 p.m.  
Casualties: 2 killed; 1 injured  
Cause: Failure properly to protect a movement  
from siding to main track.

March 8, 1937.

To the Commission:

On January 1, 1937, there was a side collision between two freight trains on the Chicago, Burlington & Quincy Railroad at Keenesburg, Colo., which resulted in the death of 2 employees and the injury of 1 employee.

#### Location and method of operation

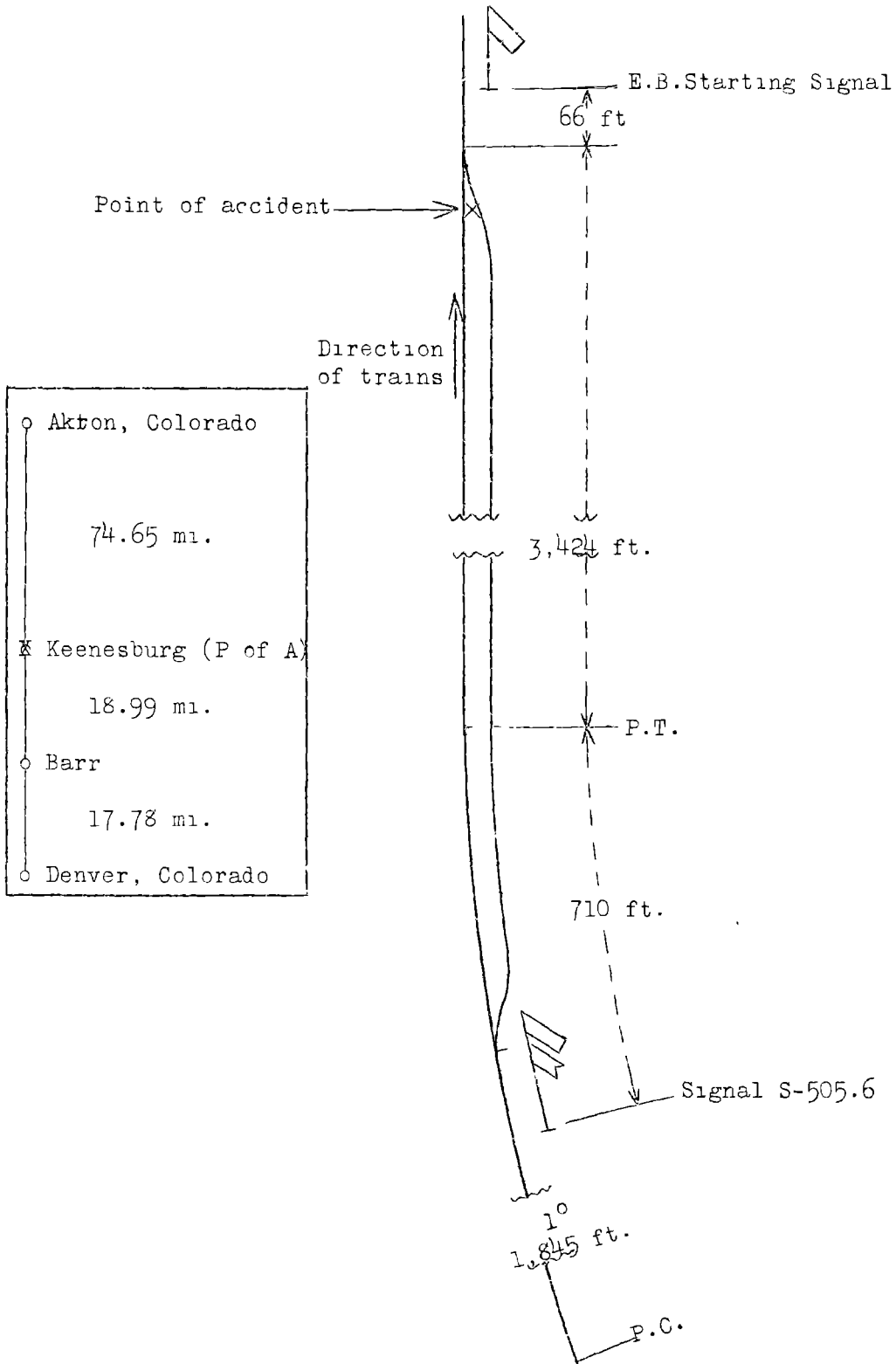
This accident occurred on that part of the McCook Division extending between Akron and Denver, Colo., a distance of 111.42 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred at the frog of the east switch of the passing track at Keenesburg; approaching this point from the west there is a 1° curve to the right 1,345 feet in length, then the track is tangent for a distance of 3,424 feet to the switch and for a considerable distance beyond. The grade for east-bound trains is 0.65 percent descending at the point of accident.

The passing track at Keenesburg is 3,997 feet in length and parallels the main track on the south. On the south side of the track at a point 66 feet east of the east switch there is an approach lighted single-arm 2-position stop-and-stay signal, known as a starting signal. East-bound home signal S-505.6 and distant signal S-508.0, of the 2-arm, lower-quadrant, semaphore type, approach lighted, are located 4,200 and 7,702 feet, respectively, west of the starting signal.

The weather was clear and the temperature was about 5° below zero at the time of the accident, which occurred about 10:45 p.m.

#### Description

Train No. 72, an east-bound freight train, consisted of 53 cars and a caboose, hauled by engine 5086, and was in charge of Conductor Layton and Engineman Loper. This train left Denver at 8:45 p.m., according to the train sheet, and entered the eastward siding at Barr, 17.78 miles east of Denver, for the purpose of meeting Extra 5115 West. Train No. 72 departed from Barr at 9:45 p.m., passed Hudson, the last open office, at 10:08 p.m., according to the train sheet, and on arrival at Keenesburg, 7.52 miles distant, entered the



Inv. No. 2131  
Chicago, Burlington & Quincy R.R.  
Keenesburg, Colorado  
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passing track for east-bound passenger Train No. 302; after this train had passed, Train No. 72 pulled ahead and stopped with the engine fouling the main track, and while standing at this point was sideswiped by Extra 5084 East.

Extra 5084, an east-bound freight train, consisted of 23 cars and a caboose, hauled by engine 5084, and was in charge of Conductor Fackler and Engineman Starkey. This train left Denver at 9:00 p.m., according to the train sheet, and on reaching Barr it entered the westward siding, where it met Extra 5115 West, then remained there until east-bound passenger Train No. 302 passed at 10:03 p.m. Extra 5084 departed from Barr at 10:07 p.m., 4 minutes behind Train No. 302, passed Hudson at 10:27 p.m., passed distant signal S-508.0, which was displaying a caution indication, passed home signal S-505.6, which assumed proceed position just before the engine reached it, and collided with engine 5086 of Train No. 72 while traveling at a speed estimated to have been about 35 miles per hour.

The left side of engine 5086 and the front end of engine 5084 were badly damaged; engine 5084 was derailed to the left, stopping on its left side about 160 feet away, the tender telescoping the engine cab. Several cars were also damaged. The employees killed were the engineman and fireman of Extra 5084 East, and the employee injured was the head brakeman of that train.

#### Summary of evidence

Engineman Loper, of Train No. 72, stated that he was examined on the operating rules in January, 1936. His train cleared at Barr for an opposing train, and left that station at 9:42 p.m. and proceeded to Keenesburg ahead of Train No. 302; he had no orders with reference to Train No. 302, and it was his understanding that in automatic block-signal territory, inferior trains are required to clear superior trains in the same direction by the distance of one automatic block signal. He further understood that a block signal behind a train afforded protection to that train and also that marker lamps displaying red to the rear of a caboose were considered complete protection for that caboose. His train first came to a stop on the passing track at Keenesburg with the engine about 15 or 20 car lengths west of the east switch. After Train No. 302 had passed, Conductor Layton gave him a proceed signal from the ground, near the rear of the engine, and then boarded the engine; the engineman assumed that his caboose markers were displaying red to the rear and pulled ahead and said that when pulling out on the main line it was his custom to start out slowly and foul the main track before the switch

was thrown for the movement, moving under complete control so he could stop, if necessary, before running through the switch and that he considered this to be a safe method of operation. When the train started to move ahead, Conductor Layton, Fireman Opie and Head Brakeman Parks were on the engine. Engineman Loper applied the automatic brake near the east switch, and remarked to the conductor that the following train was approaching and suggested it would be best to let them pass, but the conductor said "No, go on." The train was then moved ahead slowly, and stopped with the engine fouling the main track. The starting signal, which lighted when his engine reached the fouling point, displayed a clear indication, indicating that Train No. 302 had passed Tampa, 4.41 miles east of Keenesburg. After stopping, the engineman was engrossed in looking ahead and waiting for the head brakeman to open the east switch; Fireman Opie informed him twice that the following train was approaching and was not going to stop, but it was then too late to avert the accident. Conductor Layton and Head Brakeman Parks got off just before the collision occurred, but Engineman Loper and Fireman Opie made no effort to get off. Engineman Loper said that at the time he started ahead on the passing track he saw the reflection from the headlight of the following train, about  $1\frac{1}{2}$  miles west of home signal S-505.6, but after his own engine reached the fouling point he could not see the reflection on account of the curve in the rear and structures located near the south side of the track. He did not see Flagman Rainey behind his train, but when the conductor gave him a proceed signal and told him to go ahead, he took it for granted that proper protection was being afforded to cover the movement from the siding to the main track, ahead of Extra 5084 East, assuming that the cabooses markers were displaying red to the rear and that home signal S-505.6 was displaying a stop indication ahead of the following train. Engineman Loper further stated that the air brakes were tested and worked properly, that his train was on the passing track at Keenesburg for about 18 to 20 minutes, and that he did not ask the conductor whether the cabooses markers had been turned or whether a flag was out.

Conductor Layton, of Train No. 72, stated that after pulling out of the siding at Barr, the switch was closed behind his train at 9:45 p.m.; his train held no orders with respect to Train No. 302. A stuck brake on a car slowed the train down, and his train did not arrive at Keenesburg to head in until 10:17 p.m., which was on short time ahead of Train No. 302. After getting into clear on the passing track he turned the cabooses markers and the cupola light so as to display green to the rear, then he and Flagman Rainey walked on the south side of the train toward the engine, during

which time Train No. 302 passed. Conductor Layton got on the engine, and at first told the engineman to go ahead of Extra 5084 East, then, as the following train was close, he changed these instructions and told the engineman to wait until the extra passed; also that the markers on their own train were displaying green to the rear, and the conductor thought that the engineman heard him. As the engine moved ahead, Conductor Layton got off about 12 or 15 car lengths west of the fouling point of the east switch in order to turn the caboos markers, but before doing so, he came forward again and was about 3 car lengths behind the engine when the accident occurred. The east-bound starting signal was still red when he dropped off the engine, and the next time he looked it was green, indicating that the block was clear. The only signal he gave the engineman was to pull down to the east end of the siding; he did not think the engineman was going to foul the main track, but thought he understood what was intended. He did not give Flagman Rainey any instructions, as he was not figuring on departing ahead of the extra, and he did not know where the flagman was when the train pulled ahead on the passing track. There was no one on the caboose to turn the markers red.

Fireman Opie, of Train No. 72, was making his first trip; he said that when Engineman Loper asked Conductor Layton about going, he heard the conductor tell him to pull out and go ahead of Extra 5084 East. Fireman Opie thought that this conversation took place before he called attention to the fact that the following train was approaching and had passed home signal S-505.6. En route the fireman asked the engineman whether their train was supposed to run ahead of the Extra and the engineman told him that it was.

Head Brakeman Parks, of Train No. 72, stated that while on the engine, the engineman told the conductor that the following train might be coming, or words to that effect, and the conductor said to let that train stay behind. Head Brakeman Parks did not hear the extra approaching and he was satisfied that the conductor did not, otherwise the conductor would not have made the remark to let that train stay behind. The head brakeman did not hear anything said to the engineman about the rear end of their own train not being protected, or that the caboose markers were displaying green to the rear, and he thought that the intended move was to promptly head out on the main track and depart. Flagman Rainey volunteered to handle the switch for this movement. The conductor got off just about at the clearance point at the east end of the passing track. Head Brakeman Parks further stated that he felt as though signal S-505.6 was displaying a red indication when Extra 5084 East passed it. Just prior to the collision he saw someone with a lantern at the east switch who appeared

to act as though confused and whom he thought was Conductor Layton. On looking back, the head brakeman saw the approaching headlight about 20 car lengths distant, and the accident occurred almost immediately.

Flagman Rainey, of Train No. 72, stated that after his train entered the passing track at Keenesburg he closed the west switch, following which the air was cut out of a car on which the brake was sticking; he then walked to the head end of the train with the conductor and head brakeman. As his train pulled ahead, he rode on the south rear steps of the first car, this being a deadhead caboose, nearly to where the stop was made, then crossed over to the north side, intending to run forward to open the east switch and to line it back after his train had pulled out on the main track. His train had barely stopped, however, when he saw the reflection of the approaching headlight about 20 car lengths away, and he immediately jumped to the ground and gave stop signals with his lantern, to the approaching train; the collision occurred almost immediately. The throttle of engine 5084 was closed when the engine passed him, and the air brakes were not applied, at which time he was about 3 car lengths behind his own engine. Flagman Rainey knew that this extra was following his own train. After the accident, Head Brakeman Hoffman, who was injured, told him that those on engine 5084 were looking at the train order and did not see Train No. 72 on the siding.

Head Brakeman Hoffman, of Extra 5084, said that approaching Keenesburg, yellow indications were encountered on signals for some distance, and that signal S-505.6 also displayed yellow, but that it cleared just before the engine passed it and he called its indication. He did not see Train No. 72 on the siding until just prior to the accident; however, he thought that Engineman Starkey saw it and probably assumed that it was waiting for some opposing train and therefore handed him the train orders to read and ascertain whether any meet with another train had been overlooked; Brakeman Hoffman did not have time to look at the orders, and thought that Train No. 72 pulled out just at that time. Immediately prior to the accident the engineman made an attempt to apply the air brakes, and Brakeman Hoffman jumped.

Conductor Fackler and Flagman Allison, of Extra 5084 East, were in the caboose. Owing to the short length of their train the signal indications ahead of the engine could be observed without difficulty. Signal S-505.6 displayed a proceed indication at the time the engine of their train passed it. The marker and cupola lights of Train No. 72 were displaying green



to the rear, indicating that that train was in the clear, and there was no member of the crew visible at the rear of the train. The air brakes of their own train were tested and worked properly, but they did not know whether the brakes were applied just prior to the accident, at which time they estimated the speed to have been about 35 miles per hour.

Signal Maintainer Humphrey tested the signal involved shortly after the accident and it was in proper working order.

#### Discussion

On arrival at Keenesburg, Train No. 72 headed in at the west switch of the passing track and stopped with the engine about 15 or 20 car lengths west of the east switch, and the conductor turned the marker and cupola lights of the caboose to display green to the rear. He and the flagman then went forward to a car upon which the air brake was sticking, and at this point, met the head brakeman. The air was cut out on this car and all three of these employees walked along the south side of the track, to the head end of the train. The conductor and head brakeman boarded the engine, and the flagman got on the rear steps of the deadhead caboose coupled to the engine. After east-bound passenger Train No. 302 had passed, Train No. 72 started ahead on the siding. The engineman said that the conductor gave him a proceed signal and he therefore assumed that the marker and cupola lights of the caboose were displaying red to the rear and that proper rear end protection was afforded. He told the conductor that the following extra was approaching and suggested that it be permitted to pass, but the conductor said no, to go ahead of it. The engineman stopped the train with his engine fouling the main track, and said that this was his usual custom when pulling out of a siding. He felt certain that signal S-505.6 assumed the stop position before the following train had passed it and he considered that his train was properly protected by the block signal and the caboose markers. The investigation indicated that there was a misunderstanding between the engineman and the conductor of Train No. 72 as to whether their train would proceed ahead of Extra 5084 East, or whether they would allow that extra to pass them at this point. Apparently the engineman understood they were to proceed ahead of the extra and assumed that necessary protection for the movement from siding to main line was being afforded. The conductor, however, understood that his train would not pull out on the main line until after the extra had passed and took no measures to provide necessary protection. The result was that Train No. 72 fouled the main track as Extra 5084 East was closely approaching and no flag protection was provided.

It is noted that Train No. 72 and Extra 5084 East each cleared at Barr for Extra 5115 West, after which Train No. 72 departed from that point, according to Conductor Layton, at 9:40 p.m., only 7 minutes ahead of the time of Train No. 302 and passed Hudson at 10:08 p.m., 1 minute later than the time of Train No. 302 at that station. Under the rules of this railroad, in automatic block-signal territory, unless otherwise provided, an inferior train must clear the time of a superior train in the same direction not less than 5 minutes. Engineman Loper was not conversant with this rule, but understood that an inferior train was required to clear a superior train in the same direction by a distance of one block. Furthermore, at Keenesburg, instead of remaining on the siding until the switch ahead of his train was thrown for the movement to the main track, he moved his train ahead until the engine fouled the main track. By night, on single track, caboose markers are required to display red to the rear, except when on a siding to be passed by another train, and automatic block signals do not dispense with the use of other signals whenever and wherever they may be required. Rule 99 requires flag protection when a train is moving under circumstances in which it may be overtaken by another train; however, the engineman relied on the caboose markers and the block-signal behind his train for protection and neither the conductor or flagman took any steps to provide flag protection as required by rule 99.

On October 27, 1936, there was a serious head-end collision on this same sub-division, which resulted in the injury of 12 passengers, 1 mail clerk, 1 Pullman porter and 4 employees. In our report covering the investigation of this accident the following statement was made:

"The rules provide that the engineman show train orders to his fireman and sound the meeting-point whistle signal at least 1 mile before reaching the meeting-point, and if such signal is not given, the conductor is required to take immediate action to stop the train; the rules also provide that when fogs, storms or other conditions obscure the view of track or signals, speed of trains must be reduced to permit strict observance of signals and insure absolute safety, regardless of time, and that extraordinary precaution must be taken, both at switches and at all places where the right to proceed depends upon signals; also that when fog or storms are reported, dispatchers will give trainmen and enginemen notification of same by train order. None of these rules was obeyed."

Not only does the accident above referred to, as well as the accident here under investigation, show a flagrant disregard of operating rules, but the present accident also indicates a lack of proper understanding of such rules on the part of some of the employees involved.

Conclusion

This accident was caused by failure properly to protect a movement from a siding to the main track.

Recommendations

It is recommended that operating officials of this railroad take necessary measures to insure proper understanding and enforcement of operating rules.

Respectfully submitted,

W. J. PATTERSON,

Director.