

Dept. of Transportation

JUL 18 1976

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INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE DENVER AND RIO GRANDE WESTERN RAILROAD
AT MEARS JUNCTION, COLO., ON AUGUST 6, 1935.

October 11, 1935.

To the Commission:

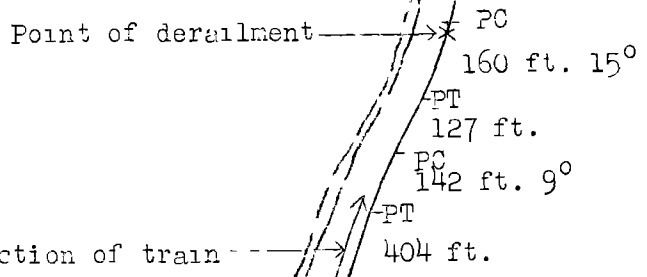
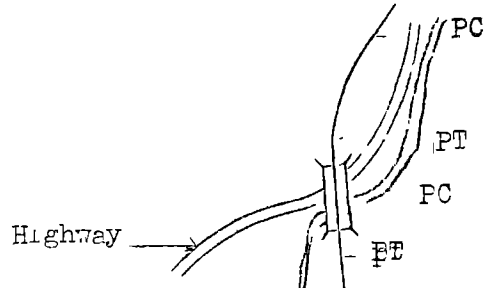
On August 6, 1935, there was a derailment of a freight train on the Denver and Rio Grande Western Railroad near Mears Junction, Colo., resulting in the death of 1 employee and 3 trespassers and the injury of 8 trespassers.

Location and method of operation

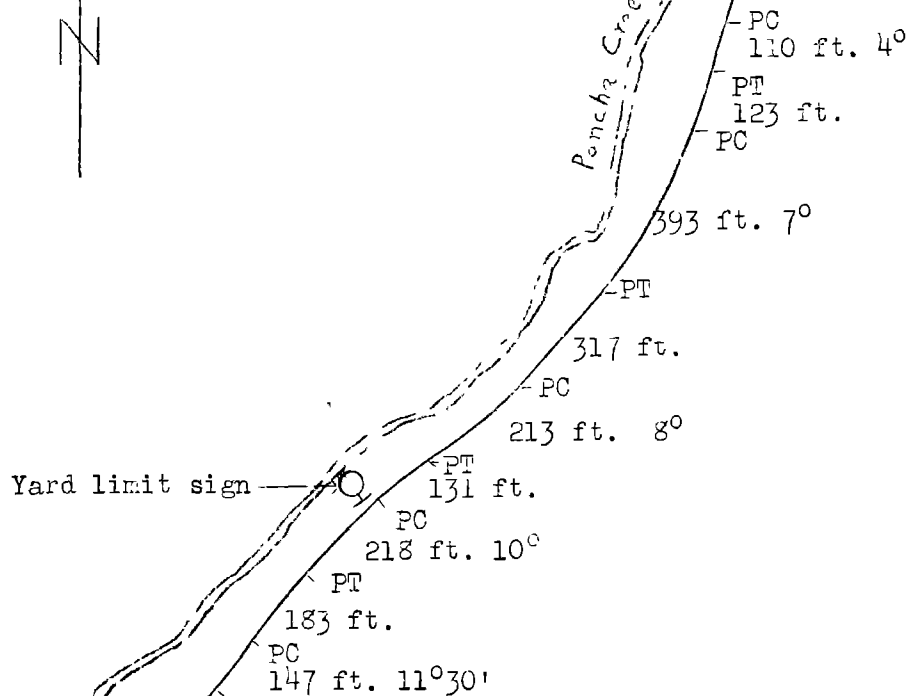
This accident occurred on Sub-Division 13 of the Alamosa Division, extending between Salida, Colo., and Gunnison, Colo., a distance of 75.5 miles. This is a narrow-gauge, single-track line over which trains are operated by time table and train orders, no block-signal system being in use. The accident occurred at a point about 3,980 feet east of the east switch at Mears Junction. Approaching the point of accident from this switch and proceeding in an easterly direction, there are a series of short left and right curves and tangents; the accident occurred on a 15° curve to the left, 160 feet in length, at a point 15 feet from its eastern end.

Between the east switch at Mears Junction and the point of accident the track is laid on the side of the mountain, with an ascending grade of 0.15 percent for approximately 1,100 feet, then a descending grade of 3.75 percent approximately 3,000 feet to the point of accident. At the point of accident a wall of granite slopes upward on the right; on the left Poncha Creek flows about 55 feet below. The maximum speed for freight trains in this vicinity is restricted to 12 miles per hour, while that for passenger trains is limited to 18 miles per hour. The track is laid with 70-pound rails, 30 feet in length, with an average of 17 pine ties to the rail length, fully tieplated and double-spiked on all curves of 8° or more, and further secured with rail anchors. The ballast is natural soil of decomposed granite and the track is in fair condition. There is an elevation of 1 inch on the outer rail of the 15° curve on which the derailment occurred.

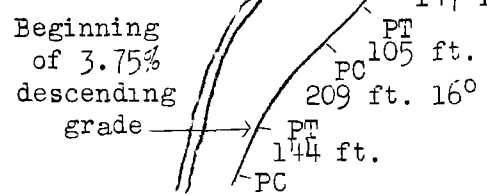
• Salida, Colo.
10.9 mi.
✕ Point of accident
• Mears Jct;
14.7
• Marshall Pass
47.9 mi.
• Gunnison, Colo.



Poncha Creek



Yard limit sign → ○



Inv. No. 2001
Denver & Rio Grande Western RR,
Mears Junction, Colorado
August 6, 1935.

The weather was clear at the time of the accident, which occurred at 6:50 p.m.

Description

Extra 492, an east-bound freight train in charge of Conductor Hallock and Engineman Allen, left Gunnison at 9:45 a.m., arrived at Marshall Pass at 3:20 p.m. and departed at 5 p.m. After setting out cars at Mears Junction, Extra 492 consisted of 29 loaded cars, 1 empty flat car used as an idler, 1 dead engine and a caboose, a total of 1,106 tons, hauled by engine 492; this train departed from Mears Junction at about 6:45 p.m. and, after traveling a distance of approximately 4,000 feet, was derailed while traveling at a speed estimated at between 25 and 50 miles per hour.

The engine stopped with its right side against a wall of rock, tipped at an angle of about 55° and practically parallel to the track. The tender stopped on its right side. The first 24 cars in the train and the forward truck of the twenty-fifth car were derailed, the wreckage of the derailed cars piling up around and behind the engine, covering a distance of approximately 110 feet. Engine 492 was an old standard-gauge locomotive rebuilt for narrow-gauge service, with a total weight of engine and loaded tender of 307,250 pounds.

The employee killed was the head brakeman; 3 trespassers riding on the train were killed and 8 trespassers riding on the train were injured.

Summary of evidence

Conductor Hallock stated that the train left Gunnison, its initial station, at 9:45 a.m., with 53 loaded cars, 1 empty car and 1 dead engine, a total of 2,321 tons. Cars were picked up and set off at various stations. From Marshall Pass the train consisted of 39 loaded cars, 1 empty trailer car, the dead engine and caboose. Between Marshall Pass and Mears Junction 1 car of ties was set out at Pocono, 1 at Grays and 1 at Keene, the helper engine on the rear end of the train being used to set out the last three cars; at Mears Junction 7 loaded cars were set out, the cut being made behind the fourteenth car; 6 were set out on the siding, 7 set back on the train and the head car set out on the siding, after which the locomotive returned to the main line and pushed the 6 cars back to a coupling. The required air-brake test was made before departing from Mears Junction and all brakes functioned

properly. Leaving Mears Junction the air pressure on the caboose gauge registered 80 pounds; when the train had moved approximately 1,000 feet the pressure had dropped to 75 pounds and he thought the engineman was setting the brakes; but as the train continued to gain speed he opened the emergency valve and obtained a good exhaust, indicating satisfactory air pressure. He felt the rear cars jerking and bumping as if the independent brake were being used; then the train stopped before there was time to set hand brakes. No difficulty in controlling the train was experienced between Gunnison and Mears Junction and all retainers were set up before leaving Mears Junction. He heard the engine whistle; but he believed the engineman was whistling for a flag and it was after the whistle was sounded that he opened the emergency valve. He estimated the speed of the train to be about 25 miles per hour at the time of derailment. He stated that he was familiar with the rules governing the operation of air brakes and complied with them.

Rear Brakeman Wilson stated that at Mears Junction he assisted in setting out six cars, that Brakeman Boots made the coupling on the head end and he made the other coupling when the train was coupled up, and he was positive that he opened the angle cock. He and Brakeman Boots walked to the center of the train and waited until the brakes were charged and applied and, after the brakes were released, they turned up the retainers; he worked to the rear end and Brakeman Boots worked to the head end. Before leaving Mears Junction he did not observe the caboose gauge but asked the conductor if he was ready to leave, receiving an affirmative reply. After the train started the caboose gauge registered 80 pounds pressure. He knew positively that air was working through the train. He did not hear the engine whistle sounded and the first indication he had that the train was running away was when the caboose was near the top of the descending grade. He did not go out on top of the train until after the conductor opened the emergency valve and he did not have time to set the hand brake on the car ahead of the caboose before the train stopped. He could assign no definite cause for the accident unless it were that someone had turned an angle cock after the train had started.

Engineman Allen stated that several stops were made enroute from Gunnison to Mears Junction; the air brakes were tested by the car inspector on duty at Marshall Pass and two pounds leakage was noted on the air brake clearance card. The air brakes had functioned properly at all times. Cars were set out at Mears Junction, after which the usual air brake test was

made. Brake-pipe pressure on the locomotive gauge was a little more than 80 pounds. One normal long exhaust was obtained through his brake valve, indicating that the air was cut through the train. The brakemen turned up the retainers, after which Engineman Allen pulled the train about 1,000 feet, then shut off steam and permitted the train to drift about 8 or 10 car lengths. Speed did not increase rapidly until the rear end of the train, with the dead engine, passed over the summit of the grade; then feeling acceleration and surge of his train, he attempted to apply the brakes but obtained a succession of short exhausts, indicating a very short train line. Immediately he made another brake-pipe reduction and then put the brake valve in emergency position, obtaining similar short exhausts through the brake valve. Realizing that he had lost control of the train, he whistled for brakes and attempted to reverse the engine but speed of the train was too great for him to do so. He then jumped off the train, which was moving about 35 miles per hour, and he stated that he believed speed was much greater when the derailment occurred. He could not state definitely the cause of the brakes failing to function on his train; but he believed that a hose had become kinked or an angle cock near the engine had been closed after the train started from Mears Junction.

Fireman Mitchell stated that the engineman experienced no difficulty in controlling the speed of his train between Marshall Pass and Mears Junction. After the train was recoupled at Mears Junction the required air brake test was made and on departure the air gauge registered a little more than 80 pounds. He did not realize that the train was running away until the engineman made the first application of the air brakes and whistled for hand brakes. Fireman Mitchell jumped off the engine while the train was moving at a speed of 25 or 30 miles per hour. He could not state the cause of the accident unless an angle cock near the engine had been closed.

D. R. Collins, mechanical expert for the Westinghouse Air Brake Company, stated that he and General Air Brake Instructor Rawlins, of the Denver and Rio Grande Western Railroad, subsequently tested the air brakes of those cars of the train that were undamaged, including the dead engine, and found all brakes operative and the foundation brake gear in good condition. The wheels and brake shoes on these cars indicated heavy braking. He also inspected the wrecked equipment upon which all wheels and brake shoes found indicated heavy braking; all angle cocks found were open and were equipped with self-locking handles.

Car Inspector Jefferson stated that he inspected the air brake equipment of this train at Marshall Pass and issued to the engineman an air-brake clearance card which indicated that he had 40 cars, none of which had cut-out or inoperative brakes, that brake-pipe pressure was 30 pounds with 2 pounds leakage per minute, and that all retainers were functioning properly.

Roadmaster Rask stated that the derailment was due to excessive speed.

Discussion

The evidence indicates conclusively that all air brakes of this train were operative when inspected at Marshall Pass, 14.7 miles west of Mears Junction, and were operative when inspected again after cars were set out at Mears Junction, prior to which no difficulty in controlling the train had been encountered.

Witnesses have suggested that an angle cock may have been entirely or partly closed immediately after the train departed from Mears Junction, or that a hose became kinked, thereby obstructing flow of air through the brake pipe and interfering with operation of the air brakes. There is no evidence of malicious tampering with an angle cock.

The investigation disclosed that 13 trespassers were riding on this train, 7 of whom were questioned concerning their positions and movements on the train but each denied that he had tampered with any angle cock.

Average distance from top of rail to top of angle cock is $22\frac{1}{2}$ inches, making a convenient step when passing across between ends of cars; smooth appearance of angle cocks examined indicated that they were used frequently for that purpose. Evidence disclosed that occasionally an angle cock becomes closed when used as a step.

This train was derailed on a 15° curve with 1 inch superelevation, on which speed of freight trains is restricted by rule to 12 miles per hour; at time of derailment this train was moving at speed variously estimated at 25 to 50 miles per hour; the train was not under control of the engineman at the time of derailment due to failure of the brakes to function but the cause of the air brake failure could not be definitely determined.

Conclusion

This accident was caused by excessive speed on a sharp curve, the engineman having lost control of the train on a steep descending grade.

Respectfully submitted,

W. J. PATTERSON,

Director.