

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE BALTIMORE & OHIO RAILROAD AT MOUNT AIRY,
MD., ON MARCH 4, 1934.

May 12, 1934.

To the Commission:

On March 4, 1934, a freight train on the Baltimore & Ohio Railroad broke in two at Mount Airy, Md., three cabooses at the rear of the train being buckled by the two helper engines coupled behind them; no casualties occurred as a result of the accident.

Location and method of operation

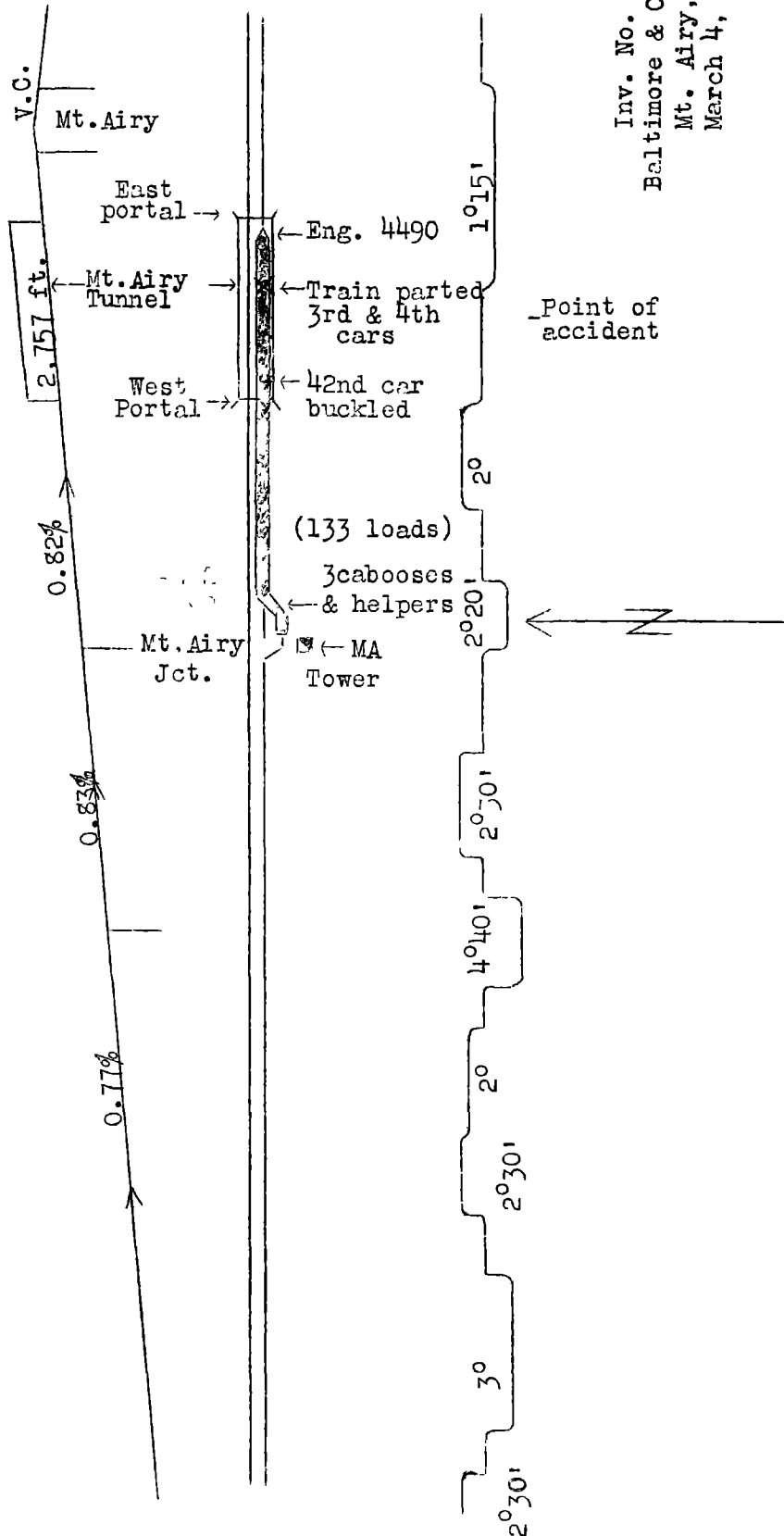
This accident occurred on the Baltimore Division, West End, extending between Weverton and Relay, Md., a distance of 68.1 miles; in the vicinity of the point of accident this is a double-track line over which trains are operated by time table, train orders, and a manual block-signal system; there is an interlocking plant at Mount Airy Junction and movements through Mount Airy tunnel are protected by semiautomatic signals. The tunnel is 2,757 feet in length and the west portal is located approximately one-half mile east of Mount Airy Junction. The accident occurred as the train was approaching the top of the grade at Mount Airy, with the road engine nearing the east portal of the tunnel, at which time the rear end of the train was outside the west portal and just east of Mount Airy Junction. Between Mount Airy Junction and the east portal of the tunnel the track is composed of a series of short curves and tangents, the curves varying from 1°15' to 2°20'. The grade for east-bound trains is ascending for several miles, being 0.82 percent between the junction and the east portal of the tunnel, this portal being about one-fourth mile west of the apex of the grade.

The weather was clear at the time of the accident, which occurred about 1:07 p.m.

Description

East-bound freight train Extra 4490 consisted of engine 4490, 133 loaded cars, 2 deadhead cabooses, 1 service caboose, and helper engines 4442 and 4499, in the order named; the train was in charge of Conductor Hawse and Engineman Drenner, with Enginemen Anderson and Porter, respectively, on the helper engines. This train left Frederick Junction, 13.5 miles west of Mount Airy Junction, at 12:18 p.m., according to the train sheet, passed

Inv. No. 1899
 Baltimore & Ohio R.R.
 Mt. Airy, Md.
 March 4, 1934



●	Relay, Md.	
		34.2 mi.
×	Point of accident	
●	Mt. Airy Jct., Md.	
		13.2 Mi.
		20.7
●	Frederick Jct.	
		20.7 Mi.
●	Weverton, Md.	

Mount Airy Junction at 1:06 p.m., and was approaching the top of the grade at a speed estimated to have been between 10 and 15 miles per hour when the train parted, due to a low coupler on the east end of the fourth car slipping under the coupler on the west end of the third car, causing the air brakes to apply in emergency.

The helper engines, working steam to full capacity, plowed into the three cabooses ahead, all of which were overturned and partly telescoped; the caboose next to the train was thrown to the right, while the other two were thrown to the left. The forty-second car buckled downward and was damaged beyond repair, although not derailed or uncoupled at either end; helper engine 4442 was derailed but remained upright on the ties.

Summary of evidence

Engineman Drenner, of engine 4490, stated that when his engine was about 8 or 10 car lengths from the eastern portal the air brakes suddenly applied in emergency. He sent Head Brakeman Bowers ahead to protect the adjoining track and told Fireman Rout to go to a nearby telephone and report the accident; then he went back and saw where the train had parted between the third and fourth cars, the forward portion of the train at this time being just outside of the tunnel, separated from the rear portion by about seven or eight car lengths. He examined the coupler at the west end of the third car and it was closed, while the coupler at the east end of the fourth car had the knuckle open and the lock pin was up. At first it was his opinion that the cut lever had raised the lock pin and it had worked up, but after conferring with Conductor Hawse he concluded that one of the couplers had probably slipped over the other. Engineman Drenner further stated that as his engine entered the tunnel he was working it hard, using a full head of steam, and it slipped on sand momentarily, but he said that he immediately adjusted the throttle and that the engine did not slip again after that time, and so far as the handling of his engine was concerned there was no slack in the front part of the train. Engineman Drenner did not notice any track condition in the tunnel, such as a low spot, that would have contributed to the accident, and subsequently the train was recoupled and taken into Baltimore without further incident. Engineman Drenner had been on this particular job for the past 3 years, handling long, heavy trains up the grade, and he said he rarely had trouble, although he understood that similar trouble had occurred to other trains during inclement weather. Engineman Drenner also said that after coupling up his train at Brunswick he tested the brakes and checked the leakage and had had no occasion to use the brakes after departing; one stop was made en route but the train drifted to a stop at that point. Statements of Fireman

Rout and Head Brakeman Bowers corroborated in substance those of Engineman Drenner.

Conductor Hawse and Flagman Striegel were riding on the service caboose ahead of the helper engines and the first knowledge they had of anything wrong was when the air brakes applied in emergency. The conductor went forward to ascertain what had happened and the flagman went back to protect; on arrival at the head end the conductor examined the couplers where the train had parted and found scrape marks on the bottom of the knuckle of the coupler at the west end of the third car and similar scrape marks on the top of the knuckle of the coupler at the east end of the fourth car, with the knuckle of the third car closed and locked, and the knuckle of the fourth car open; he did not notice anything wrong with the draft gear. Following the accident the entire train, with the exception of the forty-second car and the three cabooses, was handled into Baltimore without incident. Conductor Hawse said that he had previously handled a train with a road engine at the head end and three cabooses and two helper engines at the rear, similar to the train involved, and on a number of occasions the trains in his charge had broken in two, both when helper engines were used and when not used, but with no damage to the train except where the break-in-two occurred. He was of the opinion that in this instance the coupler on the third car gradually worked up, while the coupler on the fourth car worked down, until one finally slipped over the other, and that when this occurred the coupler on the fourth car was released so suddenly that the upward movement of the coupler caused the lock to be raised. Conductor Hawse further stated that the air was cut in on the one helper which was on the train when leaving Brunswick; the second helper was picked up when the rear of the train stopped at Frederick Junction and the air also was cut in on that engine before the train departed.

Engineman Anderson, of helper engine 4442, said that he heard wood cracking and then saw one of the cabooses being thrown to the right of the track, while Engineman Porter, of helper engine 4499, said that he was still working his engine when his fireman shouted a warning of danger; each engineman immediately closed the throttle on his engine.

Car Inspectors Kelley and Purdham stated that they made a terminal test of the air brakes on the train at Brunswick; they also made a class "C" inspection, which type of inspection does not require them to go between cars, but noticed nothing wrong with any of the couplers as to height or condition of the cut levers.

General Car Foreman Cox inspected the train when it was brought into Mount Clare Junction following the accident and the report of this inspection was made to General Superintendent Hoskins by District Master Mechanic McMillan. The report stated that there were marks on the couplers to show that the coupler on the west end of the third car, B&O 231813, had slipped over the coupler on the east end of the fourth car, B&O 323466, which latter car was equipped with a 5 by 7 inch coupler with three-key attachment and Sessions draft gear; the back cheek plate was sheared off where it was secured to the draft sill, and the back strap which secures and holds up the draft gear in place had been bent downward 4 inches, both the cheek-plate bolts and the bent draft strap showing new breaks; as a result of this condition the Sessions blocks were permitted to drop down in the back, thereby causing an excessive amount of slack in the draft gear. When the slack was taken up by the road engine it would cause the coupler to pull out to an excessive length and when the helper engines shoved the slack in, taking it away from the head end, it would allow the coupler to drop sufficiently to permit the coupler on the third car to slip over the low coupler. Measurements made of the coupler on B&O 323466 disclosed it to be $30\frac{1}{2}$ inches in height when it was pulled out to the fullest extent, and $32\frac{1}{2}$ inches in height when pushed back in normal position; the coupler on B&O 231813 measured $32\frac{1}{2}$ inches in height and there was no excessive slack in the draft gear. B&O 323466 was given its last "A" inspection at Connellsville, Pa., February 25, 1934, but General Foreman Cox said that even a class "C" inspection should result in detecting a back cheek plate sheared off as in this case, and he was of the opinion that the damage to the draft gear occurred as a result of excessive slack created when road engine 4490 at the front end of the train slipped on entering the tunnel and the two helper engines then pushed the slack in, driving the coupler back hard enough to shear off the cheek plate and bending the back draft strap downward, allowing the parts of the draft gear to drop out of place.

Since the occurrence of the accident, Superintendent Shriver has placed into effect as of March 6, 1934, the following instructions:

Effective at once, the general practice of deadheading cabooses on tonnage trains with two helpers over Mount Airy will be discontinued. When cabooses are deadheaded on trains with one helper, not more than one deadhead caboose will be moved on the train. Should an emergency arise when it is necessary to deadhead cabooses on trains with two helpers over Mount Airy, the deadhead cabooses will be handled behind the helper engines.

Should it be necessary to handle more than one deadhead caboose on trains with one helper over Mount Airy, the deadhead cabooses will be handled behind the helper to Mount Airy.

Conclusions

This accident was caused by extra 4490 parting between the third and fourth cars in the train, due probably to a low coupler.

Apparently the draft gear on the head end of the fourth car, B&O 323466 became damaged when the road engine momentarily slipped as it entered Mount Airy tunnel, and with the two helper engines at the rear working steam to full capacity it caused the slack to be shoved in hard enough to drive the coupler back and shear off the cheek-plate and bend down the back draft strap, allowing parts of the draft gear to drop out of place, thereby creating excessive slack. When the train was afterwards stretched, the coupler on the rear end of the third car, B&O 231813, slipped over the low coupler on the head end of the fourth car, as shown by fresh scrape marks on the couplers, causing the brakes to apply in emergency and resulting in the two helper engines throwing the three cabooses from the track.

Respectfully submitted,

W. J. PATTERSON,

Director.