

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
CHICAGO, BURLINGTON & QUINCY RAILROAD AT ROME, IOWA,
ON MARCH 16, 1929.

July 16, 1929.

To the Commission:

On March 16, 1929, there was a rear-end collision between a passenger train and a freight train on the Chicago, Burlington & Quincy Railroad at Rome, Iowa, resulting in the injury of five passengers and two Pullman employees.

Location and method of operation

This accident occurred on that part of the Ottumwa Division of the Iowa District extending between Ottumwa, Iowa, and Galesburg, Ill., a distance of 117.3 miles, this is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the eastbound main track at a point approximately 690 feet west of the station at Rome, approaching this point from the west the track is tangent for more than $3\frac{1}{2}$ miles and then there is a 1° curve to the left which is 1,345 feet in length, followed by 2,122 feet of tangent to the point of accident, this tangent extending for a considerable distance beyond that point. The grade for eastbound trains is descending, being 0.66 per cent at the point of accident and almost the same for 2 miles approaching that point.

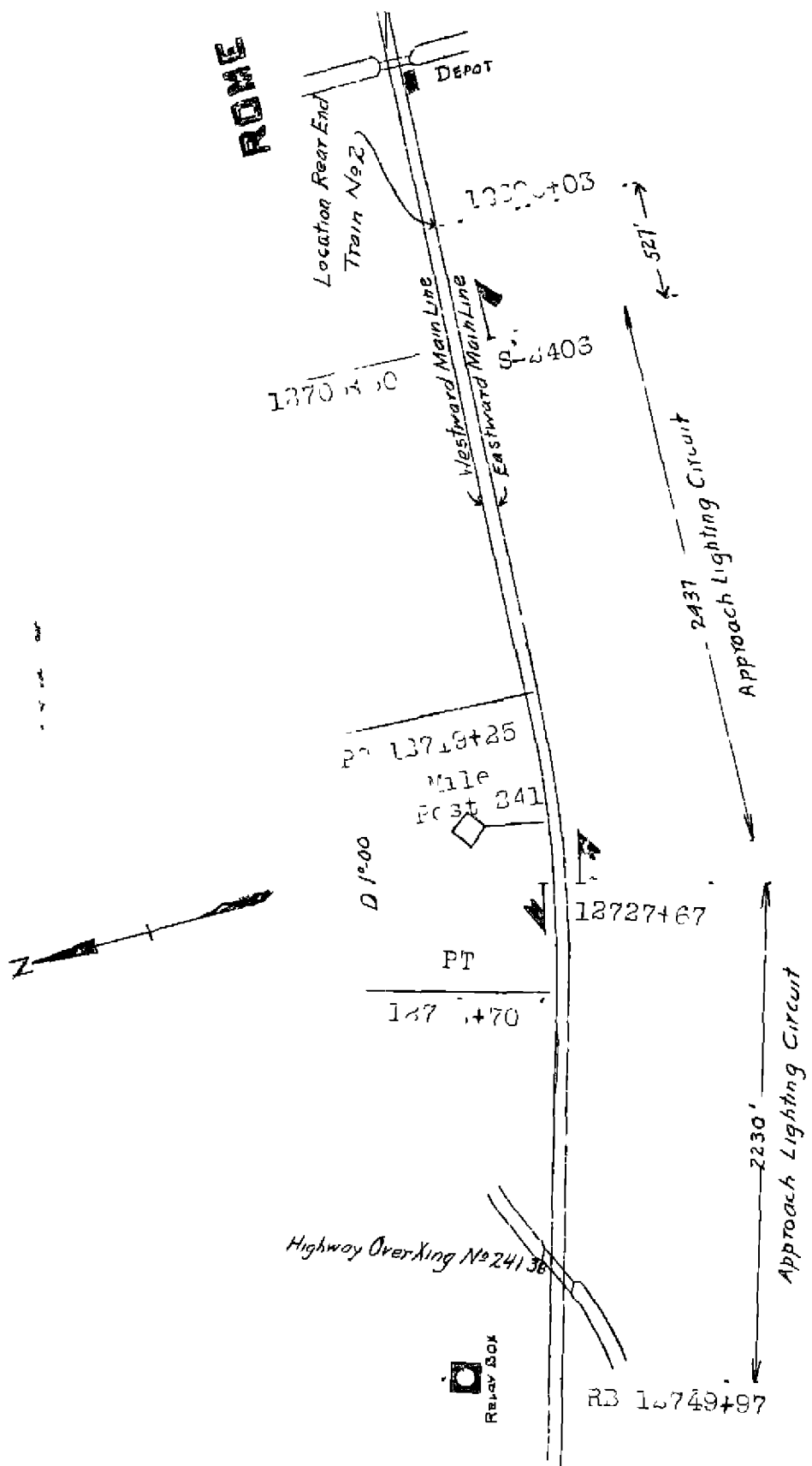
The automatic signals involved are stop and proceed-signal S-2406, the home signal, and its distant signal, these two signals are of the lower-quadrant, approach-lighting, semaphore type and are located 527 and 2,964 feet, respectively, west of the point of accident.

The weather was clear at the time of the accident, which occurred at about 12.22 a.m.

Description

Eastbound passenger train No. 2 consisted of one baggage car, two coaches, one dining car, three Pullman sleeping cars and one lounge car, in the order named, hauled by engine 2953, and was in charge of Conductor Owens and Engineman Long. The first, third, fourth and fifth cars were

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of all-steel construction, while the remainder were of steel-underframe construction. Train No. 2 was brought to a stop at Rome for the purpose of closing the blow-off cock on the engine, the lever having become disconnected, and after standing at this point about eight minutes the train was struck by extra 4992.

Eastbound freight train extra 4992 consisted of 75 loaded cars, 1 empty car and a caboose, hauled by engines 4992 and 534E, and was in charge of Conductor Coburn and Enginemen Lane and Welch. Extra 4992 left Lockridge, 3.5 miles west of Rome, at 12.16 a.m., eight minutes behind train No. 2, passed the distant signal in the caution position, passed the flagman of train No. 2, passed the home signal, which was displaying a stop indication, and collided with the rear end of train No. 2 while traveling at a speed estimated to have been between 5 and 8 miles per hour.

At the time of the impact train No. 2 was standing on the descending grade with only the independent engine brake applied and this train was driven ahead about an engine-length; while no derailment resulted to any of the equipment in train No. 2, the lounge car was telescoped a distance of about 8 feet by engine 4992 and this car in turn telescoped the sleeping car ahead of it a distance of about 4 feet. Engine 4992, the lead engine, was considerably damaged, and engine 534E, the second engine, was slightly damaged, the first two freight cars were badly damaged and the next three cars were derailed, two of them going down an embankment.

Summary of evidence

Engineman Long, of train No. 2, said that after departing from Lockridge the fireman opened the blow-off cock to blow out sediment from the boiler, but was unable to close it as the lever became disconnected, consequently the train was brought to a stop at Rome. Fireman Kaletsch crawled under the engine but was unable to close the cock on account of escaping steam and water. In the meantime the water had reached a low level and preparations were being made to pull the fire when the collision occurred. Conductor Owens was on the engine at the time of the accident. Head Brakeman Graham stated that when his train stopped he got off behind the conductor and started toward the engine. On looking back he saw the flagman going out with a lighted red fusee, and also the reflection of the headlight of the approaching train in the distance. It did not occur to any of these employees that there was any danger of an accident.

Flagman Schaefer, of train No. 2, stated that he saw extra 4992 while at Lockridge and as his train was leaving

that point he went back to change the markers, the train having been operated against the current of traffic coming into Lockridge, and heard the flagman of the freight train being recalled. Flagman Schaefer was riding in the next to the last car when he felt the air brakes applied as his train approached Rome and as soon as it was brought to a stop he got off and started back to flag, reaching a point about opposite the rear end of the last car when he was whistled out. At this time he could hear extra 4992 coming down the hill and it came in sight when he had gotten back west of signal S-2406, or about to the point of the east end of the curve. Flagman Schaefer said he continued going back as fast as he could, without running, and did not reach a point half way round the curve. His stop signals, given with a red fusee, were answered twice and when extra 4992 passed him, at a speed in excess of 20 miles per hour, at which time he was on the fireman's side, the air brakes were applied on the train and fire was flying, from the wheels. Flagman Schaefer further stated that he started back as soon as possible and went back as far as he could under the circumstances; he did not put down torpedoes as he said that he did not have time to do so, because of the fact that extra 4992 was approaching and he wanted to get back as far as he could.

Engineman Lane, of extra 4992, stated that his train followed train No. 2 out of Lockridge, as soon as it had cleared the block. Approaching the distant signal at Rome, the approach-lighting circuit of which extends 2,230 feet west of the signal, the speed of his train was about 35 miles per hour. When the signal lighted up, Head Brakeman Little, who was riding on the fireman's side of the cab, on the inside of the curve, shouted "yellow board." Engineman Lane immediately shut off steam, whistled the second engine to do likewise, made about a 10-pound brake-pipe reduction and lapped the brake valve, but in his estimation the brakes did not take proper effect; after traveling about 1,000 feet farther he made another reduction, and when he reached the beginning of the curve, west end, at which time the brake-valve exhaust had stopped, he moved the brake-valve handle to the emergency position. The speed was reduced to between 20 and 25 miles per hour at the time the caution signal was passed and at about that point the flagman was observed with a lighted red fusee. Engineman Lane acknowledged the flagging signals, but said there was then nothing he could do, as he had all the air applied, and the engine passed the flagman at a speed of about 15 miles per hour. Just after going around the curve he opened the sanders and on reaching a point about 200 feet west of signal S-2406, which he saw was displaying a stop indication, he reversed the engine and worked steam, and he estimated the speed to have been between 5 and 8 miles per hour when

passing signal S-2406. Engineman Lane did not think that the accident was a result of his having misjudged the speed, but said the train did not come to a stop as quickly as he thought it would. Engineman Lane further stated that he might have brought the train to a stop more quickly had he made a reduction, bunched the train, and, after the brakes had applied on all of the cars, put on all of the air, it was also his opinion that he should have opened the sanders, as is customary with a heavy train, when he saw the caution signal.

With respect to the condition of the air brakes on extra 4992, Engineman Lane stated that they were tested in the usual manner at Ottumwa, the point at which engines were changed, by setting the brakes after he had pumped up the train line, he sounded the whistle once to let the trainmen know that he was going to apply the air brakes and made about a 10-pound reduction, then another reduction of about 10 pounds, and then whistled off. About two minutes were consumed between the time he whistled once and applied the brakes and the time he released the brakes and whistled off. He did not receive a signal from any of the trainmen to set the brakes and no report was made to him as to the condition of the train, and so far as he knew no carmen assisted in making the air test. He said that the object of making a test of this kind was to get a good exhaust through the brake valve and thereby be able to "pretty nearly tell whether all the brakes are coupled up." In this connection, however, it should be noted that a so-called test of this kind is not in compliance with the rules, and furnished no indication of the condition of the brakes. A stop was made at Fairfield, 24.4 miles east of Ottumwa to permit the second engine to take water, but Engineman Lane said the automatic air was not used in making that stop, the first time it was used being at Lockridge, 11.5 miles east of Fairfield, and a free exhaust was obtained from the brake valve, indicating that the brakes were working on all of the cars. The speed was only 15 miles per hour when he applied the air brakes at that point and the brakes did not take hold as they should, although they managed to stop the train. Engineman Lane said that the air gauge on the engine registered the required pressures, 70 pounds brake pipe and 90 pounds main reservoir. There was nothing wrong with the air pump, no trouble being experienced in keeping the required amount of brake-pipe pressure, and he did not notice any brakes sticking or leaks of any kind, the only thing being that it would require longer for the air brakes to take hold on loaded cars than on empty cars. Engineman Lane further stated that the night was clear, but that the rail was frosty and the engine slipped quite a bit; testimony of members of the crew of train No. 2, however, refuted the contention with respect to the condition of the rail, they saying that it was what is considered a good rail for

braking purposes. Engineman Lane said that he did not know why the brakes did not hold unless it was due to the heavy train.

The statements of Fireman Walters, of engine 4992, the lead engine, Engineman Welch and Fireman Larson, of engine 5348, the second engine, Conductor Coburn, Head Brakeman Little and Flagman Cline were in substance similar to those of Engineman Lane as to what transpired prior to the accident, also as to the customary method of making the air-brake tests at Ottumwa. Conductor Coburn said that at the time the air brakes were tested at Ottumwa he was near the rear end of the train, but that he did not notice what pressure was registered on the caboose air gauge. There was only one car inspector at Ottumwa yard and this car inspector had nothing to do with their train, only to inspect it for defects on its arrival. Conductor Coburn said that carmen do not assist in making air-brake tests, but sometimes they will go over a train with members of the crew to fix leaks, although after a train is made up a car inspector is hardly ever seen. Conductor Coburn noticed the caboose air gauge after the train departed from Ottumwa, however, and he said that it registered 70 pounds pressure while going up the hill. After the accident 70 cars were pulled back to Lockridge and the train was then moved to Galesburg, it was not necessary to make any repairs to the train line on any of these cars and nothing wrong was found.

Engineman Welch stated that he did not cut in the air on his engine at any time, it having been cut out on the pit when the engines were coupled, and he said that he did not touch the brake valve from the time the train left Ottumwa. The train was not handled in the way he would have handled it himself and he was of the opinion that had the air been used differently the accident might have been averted, saying that the speed down the hill was higher than the speed at which he would have operated the train. During the course of the trip to Galesburg following the accident the lead engine was in charge of Engineman Smiley, and Engineman Welch said no difficulty was experienced in handling the train or in making several stops en route.

Head Brakeman Little said that he was standing about 15 or 20 car-lengths from the engine when the air-brake test was made at Ottumwa and that he saw the brakes set on about 10 cars at the head end of the train, the piston travel was between 6 and 8 inches. Flagman Cline said that he was about 30 car-lengths back at this time, the air brakes were tested in the usual manner and after the train left Lockridge he looked at the caboose air gauge and noted that the pressure registered was 70 pounds.

Engineman Smiley stated that following the accident extra 4992 was moved back to Lockridge; after again departing from Lockridge en route to Rome a speed of about 35 miles per hour was attained and then Road Foreman Harrington applied the air brakes, at a point about 1 mile west of the distant signal involved, making a heavy application, and the train was brought to a stop on the descending grade within a distance of about three-fourths of a mile. Road Foreman Harrington then got off and Engineman Smiley handled the train to Galesburg. Engineman Smiley said that the air brakes seemed to work all right, but that the train gained speed immediately after the brakes were released. It was what he considered a poor braking train, apparently with heavy loads at the rear end, and as soon as the air brakes were released the cars would come against the engine and make it gain speed, indicating that most of the braking power was on the head end of the train. Engineman Smiley said that it was the usual practice to test the air brakes at all terminals about the same way that they were tested at Ottumwa.

In a letter dated March 18, Road Foreman Harrington said that when he started east from Lockridge with the last 70 cars of the train of extra 4992, with two engines of the same type as those involved in the accident and about 300 tons less tonnage, he began braking from a speed of 30 or 35 miles per hour, making a 12 or 15-pound reduction, and then as soon as the exhaust had ceased he made another 10-pound reduction and allowed the train to come to a stop. He found that it had been brought to a stop within a distance of approximately 3,120 feet.

When the train arrived at Galesburg the brakes on the 70 cars were tested by representatives of the railroad and it was found that on one car the brake would not stay applied, while on nine others the piston travel was from $9\frac{1}{2}$ inches to 11 inches, there was practically no brake-pipe leakage. When the two engines involved in the accident reached the shops a test of their brakes was made and it was found that the piston travel on each of the engines was 7 inches.

Conclusions

This accident was caused by the failure of Engineman Lane, of extra 4992, properly to obey signal indications.

Engineman Lane attributed his failure to bring his train to a stop to the fact that the air brakes did not seem to hold properly. While the record indicates that there is much merit in this contention, yet it was demonstrated following the accident that had the brake valve

been manipulated differently the accident could have been prevented, as evidenced by the fact that at the time the 70 undamaged cars were moved from Lockridge to Galesburg, Road Foreman Harrington made an air-brake test on the descending grade under conditions practically similar to those that obtained just prior to the accident as to speed, gradient, pressure registered on the air gauge, etc., and brought the train to a stop within a distance of 3,120 feet. Engineman Lane said he began braking when the distant signal lighted up, or at a point nearly 5,200 feet from the point of accident, and it is believed that had he handled the brake valve properly he could have brought his train to a safe stop, in spite of the defective brakes which were found in various parts of the train.

The cars in the train of extra 4992 were standing in the yard at Ottumwa on two tracks, and after the engines had been coupled to the train and the head end had been doubled over, the engineman applied the air brakes and then released them. He said the idea of a test of this kind was to determine whether the air was coupled and this is exactly what was accomplished - and nothing else. The result was that no one on the train knew anything about the condition of the brakes, and judging from the statements of some of the witnesses this is the situation which usually prevails in this territory. The only real test which appears to have been made was when the 70 undamaged cars finally reached Galesburg, the terminal on this sub-division, and at that time 10 of the cars were found to have air brakes in defective condition. The situation with respect to air-brake conditions, as disclosed by this accident, should be promptly corrected by the management of this railroad. Had the brakes been given a proper terminal test before the train departed from Ottumwa, and all defective brakes repaired, it is possible that Engineman Lane would have been able to stop in time to avert the accident.

All the employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.