

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
ILLINOIS CENTRAL RAILROAD

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ROBBS SPUR, ILL.

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JANUARY 29, 1939

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INVESTIGATION NO. 2325

SUMMARY

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Inv-2325

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Railroad: Illinois Central  
Date: January 29, 1939  
Location: Robbs Spur, Ill.  
Kind of accident: Derailment  
Train involved: Freight  
Train number: Extra 7001 South  
Engine number: 7001  
Consist: 106 cars and caboose  
Speed: 30-35 m.p.h.  
Operation: Timetable, train orders and automatic block signals  
Track: Tangent; 0.3 percent descending grade southward  
Weather: Raining and heavy wind  
Time: 7:05 p.m.  
Casualties: 3 killed and 1 injured  
Cause: Striking rocks which had fallen upon the track.

Inv-2325

March 2, 1939.

To the Commission:

On January 29, 1939, there was a derailment of a freight train on the Illinois Central Railroad near Robbs Spur, Ill., which resulted in the death of three employees and the injury of one employee. This accident was investigated in conjunction with the Illinois Commerce Commission.

#### Location and method of operation

This accident occurred on that part of the St. Louis Division designated as the Bluford District which extends between Bluford, Ill., and New Yard, Ky., a distance of 127 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 derailment occurred at a point 5,643 feet north of Robbs Spur. Approaching from the north there is a 0°30' curve to the right 1,940 feet in length, followed by a tangent which extends 566 feet to the point of accident and 3,980 feet beyond. The grade is slightly descending for south-bound trains, being 0.3 percent at the point of derailment.

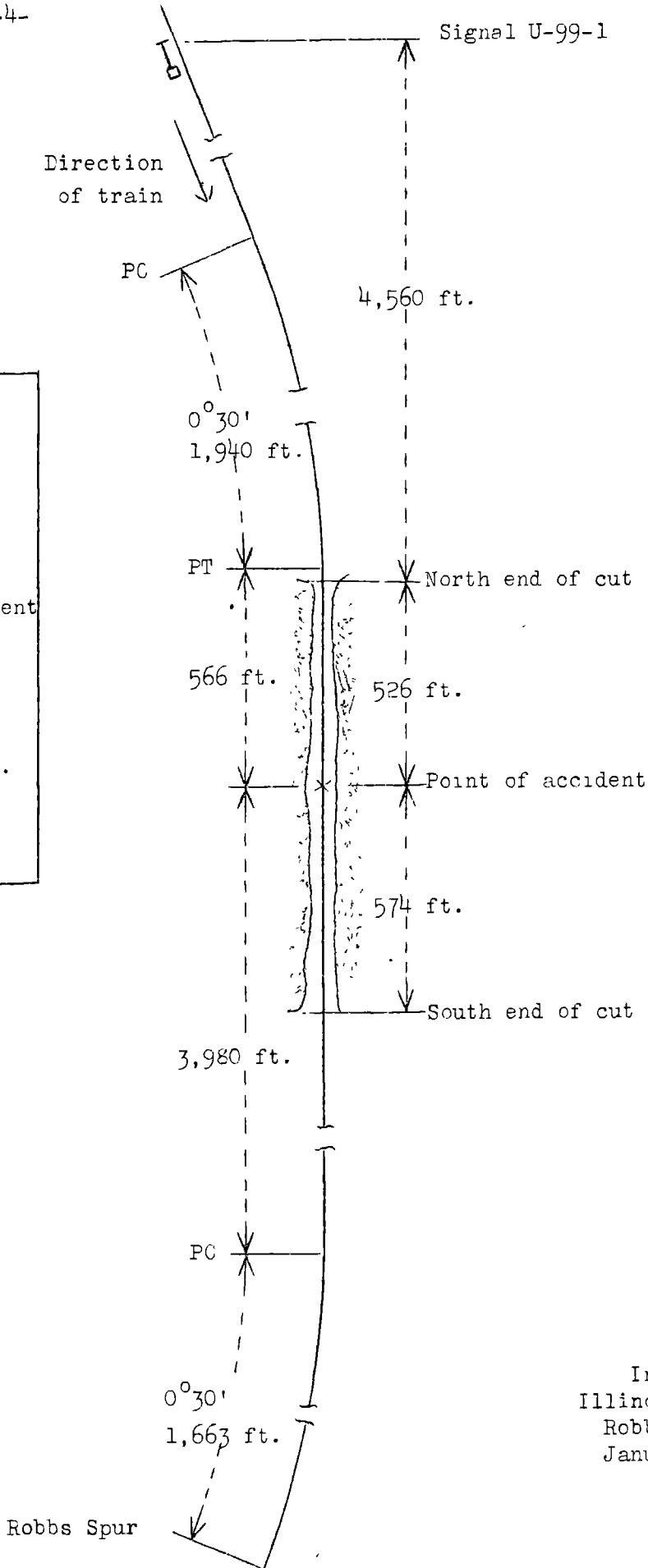
In the immediate vicinity of the point of accident the track is laid through a 1,100-foot cut, the maximum width of which is 82 feet. At the point of derailment the walls of the cut are 14 feet and 19 feet, respectively, from the center-line of the track on the east and west sides and consist of stratified limestone with a clay covering. Immediately north of the point of derailment the maximum height of the west wall is 34 feet, above which is a top layer of clay 4 feet in depth in which are embedded boulders of various sizes. The rock portion of the cut slopes at a ratio of  $\frac{1}{4}$  to 1 and the clay portion at a ratio of 1 to 1.

The track structure consists of relaid 90-pound rail, 31 feet in length, laid on 17 pine and oak creosoted ties to the rail length; it is single-spiked, fully tieplated, provided with seven rail anchors to the rail length, ballasted with 6 inches of slag on top of 12 inches of cinders, and is well maintained.

Automatic signal U-99-1 is a 3-position color-light signal, approach-lighted, located approximately one mile north of the point of derailment.

Rules 25 and 207 of the book of maintenance-of-way-and-structure rules read in part as follows:

o	Bluford, Ill.
	44.2 mi.
o	Delta
	14.9 mi.
X	Point of accident
	1.1 mi.
o	Robbs Spur
	21.2 mi.
o	Metropolis Jct.
	45.6 mi.
o	New Yard, Ky.



Inv. No. 2325  
 Illinois Central R.R.  
 Robbs Spur, Ill.,  
 January 29, 1939.

25. \*\*\* When there is reason to believe that the safety of the track or any structure is endangered by flood, fire or other causes, every employee, before permitting its use, must make a personal inspection, using all precautions in the interest of life and property.

\*\*\* Any conditions likely to affect the safety of trains, such as storms, floods and fire must be promptly reported by wire and watched. In case of threatening or prevailing storms, track must be patrolled and all bridges, culverts or other localities in track liable to be affected by such storms, must be closely watched. \*\*\*

207. \*\*\* During heavy rain and windstorms every precaution must be taken to prevent accidents. Each section foreman must be out and have with him a sufficient number of men to insure safety to trains. \*\*\*

In this territory the maximum authorized speed for freight trains of the class involved is 35 miles per hour.

It was raining at the time of the accident, which occurred at 7:05 p.m.

#### Description

Extra 7001, a south-bound freight train, consisted of 106 cars and a caboose, hauled by engine 7001, of the 2-8-4 type, and was in charge of Conductor Elliott and Engineman West. This train departed from Bluford, about 59 miles north of Robbs Spur, at 5 p.m., according to the train sheet, passed Delta, the last open office, about 15 miles north of Robbs Spur, at 6:24 p.m., and shortly after entering the cut involved it struck a rock which it shoved a distance of about 62 feet and then was derailed, while traveling at a speed estimated to have been between 30 and 35 miles per hour.

The engine, badly damaged, stopped on its left side with its cab lying against the east wall of the cut and the front end at an angle of about 45 degrees across the track in a southwesterly direction 250 feet south of the point of derailment; the tender, also badly damaged, stopped at about a 45 degree angle across the track to the north of and approximately at right angles to the engine; the following 30 cars stopped in various positions across or adjacent to the track; the thirty-first car with its lead truck derailed, remained in upright position and in line with the track. The first, fourth, sixth to sixteenth, inclusive, and the eighteenth and nineteenth cars were demolished;

the second, third, fifth, seventeenth and twentieth to twenty-ninth cars, inclusive, were considerably damaged, while the thirtieth and thirty-first cars were slightly damaged. All the derailed equipment stopped within a distance of 700 feet between the walls of the cut, and the track was torn up a distance of 770 feet. The employees killed were the engineman, the fireman and the brakeman, and the employee injured was the flagman.

#### Summary of evidence

Conductor Elliott stated that air-brake tests were made at Bluford; he and the engineman were informed by an inspector that the air was working on each car, and he observed that the caboos gauge registered the proper air pressure. Among other train orders a slow order specifying a maximum speed of five miles per hour through tunnel No. 2, located about 3 miles north of the point of accident, was received at Bluford; before departing from this point he saw the fireman, conversed with the engineman and the brakeman, delivered the orders to them, and compared time; they appeared to be normal in every respect. There was an unusually heavy rain at this point and some one had informed him that it had rained all day; it occurred to him that the rain might cause some damage to the track and the cuts, and he remarked to the engineman that it was going to be a bad night and for him to be careful. No stops were made en route. Due to an ascending grade through tunnel No. 2 the speed was reduced but no brake-pipe reduction was made by the engineman at any point. He was on the left side in the cupola of the caboose, and as the heavy rain was accompanied by a strong wind, he could not see very far, although he was able to distinguish block signals for some distance; he did not see the indication of signal U-99-1. After passing through the tunnel the speed was increased, shortly after which a very unusual stop was made, which was the first intimation he had of the accident. There was no excessive speed at any point and at the time of the accident it was not over 35 miles per hour. After taking care of the injured flagman and arranging to provide flag protection, he went toward the head end of the train; he found the seventy-eighth car from the caboose to be the first of the cars derailed. When he reached the engine, which was on its left side, he observed that the window on the engineman's side was wide open. He has been employed in this territory since June, 1928, and during this period there had been similar rains but he had never experienced any trouble as a result thereof in this particular cut.

Flagman Wideman's statement as to weather conditions corroborated that of the conductor. He stated that there had been no trouble experienced with the train, nor was there any bad handling, jerking or rocking. When passing through tunnel No. 2 the speed was not in excess of 5 miles per hour, after which he observed that the speed was increased to not more than 30 or 35

miles per hour. He was sitting in the lower part of the caboose on the left side; he did not feel the brakes apply until the sudden stop, when he was rendered unconscious. He said that in this vicinity slides of dirt had fallen on the track.

Car Inspectors Armstrong, Martin and Outland, located at Bluford, stated that they made a test of the air brakes on this train and found all to be functioning properly. Inspector Outland stated that he reported the air-brakes to the engineman at 4:45 P.M. as being all right.

Car Inspector Stover stated that on February 2 he inspected 76 cars which were returned to Bluford from the derailment; he found three with the cross-over brake pipes broken, all being new defects. After making repairs, air brakes were tested on each car with the yard-air line and they worked properly.

Machinist McKinney, of Bluford, stated that he inspected engine 7001 on January 29 before it left Bluford and he made a few repairs. He made a test of the engine brakes and found them to be functioning properly.

General Foreman Wardlaw stated that he inspected this engine about 11 a.m., January 30, at the scene of the accident and found the throttle valve closed, the automatic valve in full-release position, the independent brake-valve handle in running position, the screw-type reverse gear locked in forward motion  $1\frac{1}{2}$  inches from center, this being two-thirds of the distance from full forward motion to center. He did not report any condition about the engine that would have contributed to the derailment.

Master Mechanic Seely stated that when Engineman West delivered engine 7001 at Bluford at 4:25 a.m., on the day of the accident, he reported nothing wrong with it; however, the employees at this point go over all engines before engines are again dispatched, and as a result certain defects were found and repaired by Machinist McKinney.

The master mechanic stated that he arrived at the scene of the accident about 2 a.m., January 30, and his inspection of the engine showed that the engine was not stripped on its right side, the steel pilot was bent back, all the brake beams were bent and the ash-pan was bent and damaged by having run over some object which he thought was a large stone that he saw under the tender. The engine was equipped with a Pyle headlight which was burning properly when the engine was dispatched. After the accident there was neither a test made of the headlight nor an examination of the headlight switch due to the cab being torn from the engine. It was his opinion that the engine lunged considerably which prevented the engineman from getting hold of the brake-valve handle.

Chief Train Dispatcher Newman stated that the last train to pass through the cut involved was Extra 7024 North, about 12:20 p.m., on the day of the accident. During the afternoon the rain was intermittent and was not heavier than previous rains, nor such as to cause alarm. His office had received no request to issue slow orders and no reports of slides or rocks falling had been received. Ordinarily, on this district, he has put out slow orders when there is any hazard, although he had no record to show that such orders had been necessary before to cover this particular cut.

Trainmaster Street stated that he arrived at the scene of the accident between 1:40 and 2 a.m., January 30, and it was his opinion that the accident was caused by a boulder falling from the west side of the cut, striking and dislodging another rock on the face of the cut, which fell to the track in front of the engine.

Section Foreman Johnston stated that he has been in charge of this territory a little over a month but his gang, which consists of two laborers, had probably been employed on this section from the time the line was built in 1928. The laborers have talked with him about water conditions, but he had no recollection of their saying anything relative to rocks falling and he had experienced no difficulty of this character in any of the cuts. He patrols the track daily, except Sunday, and additional patrolling is done during unusual weather when he thinks it necessary, which is in accordance with his instructions and the rules. The last time he patrolled the track in the cut involved was at 11 a.m., January 28, when he walked through it but did not make an inspection of its walls. He has never been on top of the wall on the west side, although he has looked at the sides of the cut. On the day and night previous to the accident there was no rain but there was continuous rain during the day of the accident, which became heavier about 6 p.m., however, he thought it was not such as to warrant patrolling. About 5 or 5:30 p.m., he looked at the water at a point south of Robbs where it flows from the hillside into a sewer, at which point it has a tendency to flow over the track and would probably be the deepest; however, the water had not overflowed the track and he therefore thought there would be no damage elsewhere; it did not occur to him that rocks might fall in the cuts. It was his opinion that the cause of the rock falling could have been due to the rain or vibration as the train entered the cut, or a combination of these conditions.

Division Engineer Van Arsdalen stated that he arrived at the point of accident between 1:40 and 2 a.m., January 30, and in company with the district engineer, the road supervisor and the supervisor of bridges and buildings, made observations and found two rocks; one was weather-beaten and had rounded edges;



it measured 34 inches by 22 inches by 15 inches, and, in his opinion, it had slipped from the dirt on top of the west side of the cut, and apparently struck the other rock, which was 21 inches by 15 inches by 12 inches and had jagged edges; both fell to the track at a point 526 feet south of the north end of the cut. The larger rock was under the tender ahead of the rear truck while the smaller one was in the ditch on the west side opposite the locomotive cab and about 5 feet from the engine. The rigging under the engine showed limestone marks. His opinion as to cause of the accident was the same as that of the trainmaster. The location where the rocks fell on the track was determined from the condition of the ties, as those south of that point were mashed and crushed in the center, but no such marks appeared north thereof. There was also some dirt and smaller stones in the ditch which he thought had fallen prior to the accident. The engine ran 312 feet after striking the rock although the derailment was actually about 250 feet north of the point where it stopped. The track was torn up, ties were displaced and the rails were thrown from both sides to the center. He stated that section foreman with men patrol the tracks with motor-cars daily, except Sunday. While it had rained in this territory since 6 p.m., of the day before the accident, yet as there had been other rains of this severity with no trouble, he did not think it was necessary to send out a track walker on the day of the accident. The various cuts are scaled in the spring of the year after the frost has left the ground by the use of a pile-driver and crane, and men with bars remove loose rocks. He has no record of any slides or rocks falling in this particular cut.

Signal Maintainer Cavaness stated he has been assigned to this territory more than seven years and during this time there had never been any trouble in this cut due to rock falling and he had never observed rocks which had fallen in the ditches after frosts or heavy rains. The day after the accident he shunted the track relay and examined signal U-99-1 to see that it was displaying the proper indication.

Supervisor of Signals Goddard stated that when operation was restored on February 3, the assistant maintainer observed signal performance for the first passing train and found that all signals functioned as intended. He said that had the rail been broken by the rock prior to the time Extra 7001 passed signal U-99-1, it would have displayed a red aspect.

Superintendent Hamilton stated that there had never been any fall of dirt or rocks in the cut involved.

### Observations of Commission's Inspectors

The Commission's inspectors observed that the topography of the region in the vicinity of the point of accident is hilly and rough to a considerable extent; there was also water in low places and the earth was quite soggy, indicating there had been considerable rainfall recently.

In examining the two boulders described by the division engineer, it was found that they bore marks indicating that they had come in contact with something recently. The pilot of the engine which was detached had been bent under and damaged; abrasions and white marks which appeared to have been made by contact with a limestone boulder were found on the brake rigging, ash-pan and trailer axle of the engine. On the clay slope above the west wall at a point where it reaches its maximum height they observed a number of boulders which appeared to be similar in formation to the two mentioned; some were hanging with very little support and apparently ready to fall, the clay being badly washed away, and it appeared probable that the boulders which caused the derailment fell from this immediate location.

### Discussion

According to the evidence, after the derailment two rocks were found which bore marks of having come in contact with some object recently; one, which measured 34 by 22 by 15 inches, was under the tender ahead of the rear truck, and the other, 21 by 15 by 12 inches, was in the ditch on the west side opposite the engine cab and about 5 feet from the locomotive; it was apparent that the larger rock had slipped from the clay on the top of the west side of the cut and struck the smaller one on the face of the slope, causing both to fall to the center of the track in front of the engine at a point 526 feet south of the north end of the cut at which point the ties were mashed and crushed. The engine pilot was bent and there were marks on the brake rigging, ash-pan and trailer axle indicating that the engine had passed over these rocks before being derailed, after which it ran a distance of 250 feet before stopping, with its front end 312 feet south of the point where it contacted the obstruction.

At the time the engine was dispatched its headlight was burning. About 3 miles north of the point of accident speed was reduced to five miles per hour in compliance with a slow order; a speed of 30 to 35 miles per hour was then attained and maintained to the point of accident. The conductor stated that there was no brake-pipe reduction made en route. The conductor did not observe the indication of signal U-99-1 which after the accident was found to be properly functioning; it would have displayed a red aspect had the rail been broken prior to the

approach of the train; since the speed of the train was not reduced approaching this signal, apparently it was not displaying a stop indication. At the time the engine left Bluford its headlight was burning brightly. The visibility was restricted by heavy rainfall. It is not known at what distance the employees on the engine saw the rocks on the track as they were killed in the accident, but since no brake-pipe reduction was made it is apparent the distance was very short.

It had rained intermittently in this territory approximately 25 hours prior to the accident, becoming steadier and heavier toward evening of that day; however, according to the evidence, this rain was not more severe than other rains which had not caused any trouble; therefore, no slow orders were issued on this account, also as there were no reports received of slides, the track was not specially patrolled. This cut had been patrolled by the section foreman at 11 a.m., the previous day, and about 5:30 p.m. the day of the accident he investigated water conditions south thereof, but found nothing unusual and he thought that the rain was not such as to warrant the patrolling of the track. The last train previous to the one involved in the accident passed through this cut 6 hours 45 minutes prior to the time of the accident.

This line was placed in operation in May, 1928, and none of the employees involved have any knowledge or records of rocks falling or slides occurring in the cut involved since that time.

#### Conclusion

This accident was caused by the train striking rocks which had fallen upon the track.

Respectfully submitted,

W. J. PATTERSON,

Director.