

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2479  
THE ILLINOIS CENTRAL RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT EVERS, ILL., ON  
JANUARY 15, 1941

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## SUMMARY

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Railroad:	Illinois Central
Date:	January 15, 1941
Location:	Evers, Ill.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	333
Engine number:	1010
Consist:	6 cars
Speed:	50 m. p. h.
Operation:	Timetable and train orders
Track:	Single; 5°30' curve; 0.50 percent descending grade southward
Weather:	Dense fog
Time:	9:07 p. m.
Casualties:	1 killed; 2 injured
Cause:	Accident caused by excessive speed on sharp curve, combined with ir- regularity in track surface

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2479

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS  
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE ILLINOIS CENTRAL RAILROAD COMPANY

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March 25, 1941

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Accident at Evers, Ill., on January 15, 1941, caused by  
excessive speed on sharp curve, combined with irreg-  
ularity in track surface.

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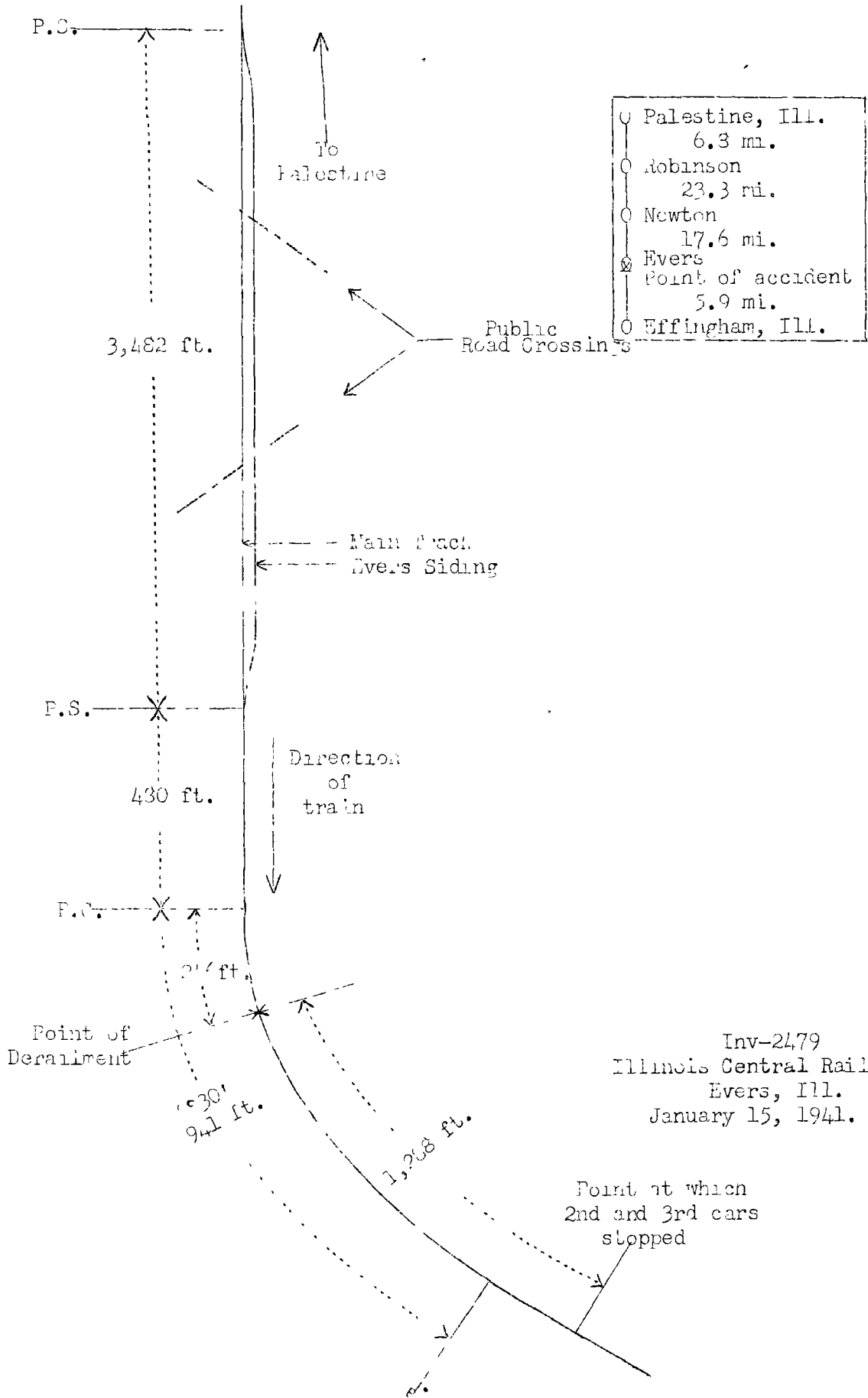
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On January 15, 1941, there was a derailment of a passenger train on the Illinois Central Railroad at Evers, Ill., which resulted in the death of one employee and the injury of one express messenger and one employee. This accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

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<sup>1</sup>Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2479  
 Illinois Central Railroad  
 Evers, Ill.  
 January 15, 1941.

### Location and Method of Operation

This accident occurred on that part of the Illinois Division designated as the Effingham District which extends between Palestine and Effingham, Ill., a distance of 53.6 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders; there is no block system in use. Time-table directions are north and south. At Evers a siding 3,492 feet in length parallels the main track on the east; the derailment occurred at a point 726 feet south of the south siding-switch. As the point of accident is approached from the north there is a tangent more than 4,000 feet in length, which is followed by a 5°30' curve to the left 941 feet in length; the accident occurred on this curve, which is designated as Evers Curve, at a point 246 feet south of its northern end. The grade for south-bound trains is, successively, 0.70 percent descending a distance of 200 feet, level 400 feet, 1.0 percent descending 100 feet, level 300 feet, 0.50 percent ascending 300 feet, level 600 feet, 1.0 percent descending 100 feet, level 200 feet, 0.853 percent ascending 600 feet, level 100 feet, 0.50 percent descending 75 feet to the point of derailment and 410 feet beyond.

The track structure on the curve involved consists of 90-pound rail, 35 feet in length, laid new in 1927 on an average of 20 treated hardwood ties to the rail length; it is fully tie-plated, double-spiked on the inside of the rail and single-spiked on the outside, equipped with an average of four rail anchors and four to six rail bolts to each rail, and is ballasted with cinders to a depth of 12 inches. The maximum superelevation on the curve involved was 3 inches and the gauge varied between 4 feet 8-3/8 inches and 4 feet 9-1/4 inches. The superelevation at the point of derailment was 2-5/8 inches.

Time-table special instructions read in part as follows:

Permanent yellow slow boards are located 500 feet in advance of a condition requiring reduced speed. Indication — Reduce speed to ten miles per hour, or speed specified by numerals on board. \* \* \*

The maximum authorized speed in the vicinity of the point of accident is 50 miles per hour. A triangular speed-limit sign bearing the numerals "50" is located at a point 322 feet north of the northern end of the curve involved and 14 feet west of the west rail; it restricts the speed on the curve to 30 miles per hour.

There was a dense fog at the time of the accident, which occurred about 9:07 p. m.

### Description

No. 333, a first-class south-bound passenger train, with Conductor Fitch and Engineman Renchen in charge, consisted of engine 1010, of the 4-4-2 type, one express car, one rail-baggage car and one coach, in the order named; the first car was of steel underframe and wooden superstructure construction, and the second and third cars were of steel construction. This train departed from Palestine, 47.7 miles north of Evers, at 7:25 p. m., according to the train sheet, 3 minutes late, departed from Newton, 17.6 miles north of Evers and the last open office, at 8:33 p. m., 13 minutes late, and, while moving at a speed estimated at 50 miles per hour, became derailed on Evers Curve.

Engine 1010 was derailed to the right and stopped, bottom up, with its front end 257 feet beyond the point of derailment and 17.5 feet west of the track; the rear end of the engine was 34.6 feet west of the track. The engine was badly damaged; its truck was detached and the cab was demolished. The tender frame remained coupled to the engine and stopped immediately behind the engine; the tender broke loose from its frame, overturned and stopped parallel to the track. The tender trucks were detached and stopped between the engine and the track. The first car was derailed and stopped between the tender and the track and leaned against the tender. The trucks of this car were detached and stopped near the engine. The coupler on the front end of the second car was broken. The second and third cars remained coupled and stopped 1,288 feet south of the point of derailment. The front truck of the second car was derailed to the left and the car was slightly damaged.

The employee killed was the engineman and the employee injured was the fireman.

### Summary of Evidence

Fireman Eidson stated that at Robinson, 10.9 miles north of Evers, a car was added to the train and an air-brake test was made. As the train was leaving Robinson a running test was made, and the brakes functioned properly en route. As his train was approaching the point where the accident occurred the speed was about 50 miles per hour and, on a curve near the north siding-switch at Evers, the engineman closed the throttle. The fireman then tended the fire and while thus occupied he heard the engine whistle sounded for two highway crossings located 3,716 feet and 2,240 feet north of the point where the accident occurred. The fireman said that because the engine rode so roughly on the curve involved he was accustomed to tend the fire before the engine entered it. He did not observe that the engine passed over the top of the south siding-switch while he was

tending the fire. The fireman finished tending the fire before the engine entered Evers Curve and then returned to the left seatbox. He did not know the exact progress of his train with relation to the curve but observed that the engineer had not applied the brakes to reduce speed in compliance with the speed restriction on the curve. Soon afterward the engine rose on the left side and overturned to the right. The accident occurred about 9:07 p. m. In the vicinity of the point of accident visibility was restricted by fog so that he was unable to see either the ground or the rails in front of the engine. He said that the engineer appeared normal when he sounded the whistle signal for the road crossings. The fireman expressed the opinion that the engineer had some landmark by which he was governed in braking for the curve and, because of the dense fog, failed to observe this landmark. The switch lights at the ends of the siding were located on the east side of the track. The fireman said he was not alarmed when the engineer failed to apply the brakes since it was his custom to delay longer than other engineers the braking of his train at points where reduced speed was required. This was the first instance he had observed the engineer fail to obey the speed restriction on Evers Curve.

Conductor Fitch stated that his train left Newton about 10 minutes late, stopped about 3 minutes at Wheeler, 6 miles north of Evers, to do station work, and stopped about 5 minutes at Dieterich, 4.4 miles north of Evers, to do station work. As his train approached the point where the accident occurred he was in the rear seat of the rear car. Because of dense fog he was unaware of the location of his train and was unable to estimate the speed; however, in his opinion, the speed was in excess of 30 miles per hour. He said that the air brakes were not applied prior to the time of the accident. The first he knew of anything being wrong was when the train gave a lurch just before the accident occurred. It was his opinion that the engineer became lost as to location, failed to apply the air brakes, and as a result the train entered the curve involved at excessive speed. After the accident occurred he observed that the switch light on the south siding-switch was lighted but he was unable to distinguish the light a distance greater than 10 feet. He said the track south of the point of derailment was out of proper alignment but it was not otherwise damaged by the accident. He observed marks on the ties outside the high rail but there was no mark between the rails. He and the engineer involved had worked together for 15 years and during that period he had observed that the engineer complied with speed restrictions.

Flagman-Baggage-man Hendress stated that he was in the baggage car when the accident occurred and the speed was about 50 miles per hour. He said that the brakes were not applied prior to the occurrence of the accident. His first knowledge of anything being wrong was an abrupt reduction of speed, after which the baggage car moved on the ties. Immediately after the acci-

dent occurred he proceeded to the rear to provide flag protection and observed that the switch lights at each end of the siding were lighted; because of the dense fog he was unable to see them a distance of more than 10 or 12 feet. He said that when the speed of a train was reduced to 30 miles per hour it rounded Evers Curve smoothly.

Railway Mail Service Helper Flockin stated that he was in the second car when the train was approaching the point where the accident occurred. He thought the speed was too great to round the curve safely, so he called a warning to the mail clerk to brace himself. Fog restricted visibility to a distance of about 15 feet. He said that the air brakes were not applied prior to the time the train entered the curve.

Section Foreman Henkelman stated that he arrived at the scene of the accident at 10:30 p. m. As a result of the derailment the track was out of proper alinement but it was restored in about 30 minutes. Because of dense fog the switch lights at the siding could be seen a distance of about 60 feet only. At the point of derailment there were marks on 10 or 12 ties outside the high rail. Marks on the ground indicated that the engine had moved in a tangential direction. There was no mark on the ties between the rails. Marks, apparently made by the front truck of the second car, started at a point opposite the place where the engine stopped. He examined the track north of the point of accident and found no indication of defective track or dragging equipment. The prescribed superelevation for this curve is 2-1/2 inches. At noon of the day of the accident he made a regular inspection trip over this curve and did not observe either a soft spot in the ballast or other defective condition. The last time he had renewed ties was about 1-1/2 years prior to the accident; about 20 percent of the ties on the curve were in good condition at the time of the accident. His last inspection of surface and alinement was made about two weeks prior to the day of the accident; at that time the condition of the track was satisfactory. This was the first derailment on Evers Curve during the 24 years he had been in charge of the section involved.

General Car Foreman Henley stated that he arrived at the scene of the accident at 11:30 p. m. He examined the track and found that the first mark of derailment was a flange mark, about 1/8 inch deep, 14 inches outside the high rail. The next mark appeared on the seventh tie southward, and there were marks on several ties beyond. These latter marks were about the same distance outside the high rail as the first mark. As there was no mark between the rails, it appeared that the wheels on the left side did not touch the track structure as the engine overturned. There were marks in the ground made by the sandbox and the dome as the engine slid in a tangential direction until it reached a point 25 or 30 feet west of the high rail, where it struck the



highway embankment; then the engine was diverted inward toward the track. He examined the rails carefully but was unable to find any mark on the top of the head of the rails. He examined the engine and found the independent brake valve in running position, the throttle quadrant badly bent, the throttle latched in closed position, the sander valve closed, and the automatic brake valve badly damaged. He was unable to determine the actual position of the automatic brake valve. His examination of the derailed equipment failed to disclose any condition which could have contributed to the cause of the derailment. The brakes remained applied on the second and third cars. In his opinion the engine was derailed by overturning.

Acting Assistant Engineer Tilley stated that he arrived at the scene of the accident about 10 a. m., January 16, and examined the track. Starting at the south siding-switch and proceeding southward to the point of derailment the gage and cross levels, which were taken at stations 16-1/2 feet apart, were as follows:

<u>Stations</u>	<u>Gage</u>	<u>Elevation</u>	<u>Distance north of point of derailment</u>
1 PS	4' 8-5/8"	-1/8"	726.0'
2	4' 8-5/8"	1/8"	709.5'
3	4' 8-5/8"	0	695.0'
4	4' 8-1/2"	0	676.5'
5	4' 8-5/8"	-3/8"	660.0'
6	4' 8-1/2"	1/8"	643.5'
7	4' 8-5/8"	-1/4"	627.0'
8	4' 8-1/2"	0	610.5'
9	4' 8-5/8"	-1/8"	594.0'
10	4' 8-5/8"	0	577.5'
11	4' 8-1/2"	-1/2"	561.0'
12	4' 8-5/8"	1/4"	544.5'
13	4' 8-1/2"	-1/8"	528.0'
14	4' 8-3/8"	1/8"	511.5'
15	4' 8-5/8"	1/8"	495.0'
16	4' 8-1/2"	1/8"	478.5'
17	4' 8-5/8"	-1/8"	462.0'
18	4' 8-5/8"	1/4"	445.5'
19*	4' 8-1/2"	0	429.0'
20	4' 8-1/2"	-1/4"	412.5'
21	4' 8-5/8"	-1/2"	396.0'
22	4' 8-5/8"	0	379.5'
23	4' 8-5/8"	1/8"	363.0'
24	4' 8-5/8"	7/8"	346.5'
25	4' 8-5/8"	5/4"	330.0'
26	4' 8-1/2"	1-1/4"	313.5'

<u>Stations</u>	<u>Gage</u>	<u>Elevation</u>	<u>Distance north of point of derailment</u>
27	4' 8-1/2"	1-1/8"	297.0'
28	4' 8-5/8"	1-1/2"	290.5'
29	4' 8-5/8"	1-3/4"	264.0'
30 PC	4' 8-1/2"	2"	247.5'
31	4' 8-3/4"	1-7/8"	231.0'
32	4' 8-3/4"	2-1/2"	214.5'
33	4' 8-7/8"	2-1/2"	198.0'
34	4' 8-3/4"	2-1/4"	181.5'
35	4' 8-3/4"	2-3/8"	165.0'
36	4' 9"	2-5/8"	148.5'
37	4' 9"	2-5/8"	132.0'
38	4' 8-7/8"	2-7/8"	115.5'
39	4' 9-1/4"	2-1/2"	99.0'
40	4' 9-1/4"	2-5/8"	82.5'
41	4' 9-1/8"	2-1/8"	66.0'
42	4' 9-1/8"	2-1/4"	49.5'
43	4' 9-1/8"	2-1/4"	33.0'
44	4' 8-7/8"	3"	16.5'
West joint FD	4' 9-1/4"	2-3/8"	--

- PD - Point of accident
- PC - North end of Evers Curve
- \* - Rail changes from 85-pound to 90-pound
- PS - Point of switch south end of Evers siding
- - Indicates east rail is higher by amount shown

The first mark of derailment was a flange mark on a tie, 17 inches outside the gage side of the high rail at a point 246 feet south of the north end of the curve. At points 10.5 feet and 15 feet south there were flange marks on the tops of two ties, 17 inches outside the gage side of the high rail. At a point 53 feet south of the point of derailment marks indicated that wheels of the engine left the ends of the ties.

Master Mechanic Jones stated that the engine was examined at the scene of the accident and again after it was moved to Mattoon; measurements were as follows:

<u>Wheels</u>	<u>Lateral</u>	<u>Size of wheels</u>		<u>Wheel spacing back-to-back</u>
		<u>Left</u>	<u>Right</u>	
Engine truck:				
Front wheels	1/4"	31-1/32"	31-1/32"	53-5/16"
Rear wheels	5/8"	31-11/16"	31-5/8"	53-5/16"
		New size 33"		
Drivers:				
Front wheels	1/2"	77-5/8"	77-5/8"	53-1/4"
Rear wheels	3/8"	77-5/8"	77-5/8"	53-5/32"
		New size 79"		
Trailer:				
Wheels	3/8"			53-3/16"

The maximum flange wear on the engine truck wheels was  $1/8$  inch and on the driving-wheel tires,  $3/32$  inch. The flanges of the trailer-wheel tires were of full contour. Engine 1010 was last given Class 3 repairs in 1936 and Class 5 repairs in 1938; it had covered 72,173 miles. Engines of this type had been in use in this district since 1920. In his examination of the engine he found no defect which could have contributed to the cause of the derailment.

According to data furnished by the carrier, the total weight of engine 1010, which was of the 4-4-2 type, was 210,000 pounds, distributed as follows: Engine truck, 47,000 pounds; driving wheels, 113,000 pounds; and trailing truck, 50,000 pounds. The tender had two four-wheel trucks, its capacity was 7,000 gallons of water and 15 tons of coal, and its gross weight was 147,600 pounds. The length of the rigid wheel-base of the engine was 7 feet 3 inches; the total length of the engine wheel-base was 29 feet. The distance between the Nos. 1 and 2 pairs of driving wheels was 7 feet 3 inches; the distance between the No. 2 pair of driving wheels and the trailing-truck wheels was 9 feet 9 inches; the total length of the engine and tender was 69 feet  $5/16$  inch.

#### Observations of the Commission's Inspectors

The Commission's inspectors examined the track in the vicinity of the point of accident and found that the first mark of derailment was a light flange mark on the west end of a tie. Southward from this mark there were other marks on the west ends of ties. There was a distance of several feet between the last mark on a tie and the beginning of marks on the ground to the west of the track.

#### Discussion

According to the evidence, No. 333 was moving at a speed of about 50 miles per hour on a  $5^{\circ}30'$  curve to the left when the engine became derailed and overturned to the right at a point 246 feet south of the northern end of the curve.

Prior to the occurrence of the accident, the locomotive was in good mechanical condition; there was no evidence of defective or dragging equipment. The first mark of derailment was a flange mark on a tie 17 inches outside the gage side of the high rail. The second mark was 10.5 feet farther south and was about the same distance outside the high rail. The third mark was 15 feet farther south and also 17 inches outside the high rail. The fourth mark was at the end of a tie 53 feet south of the first mark. Since there was no mark either between the rails or on the heads of them, and since the locomotive rolled over on its right side and then turned bottom up it is apparent that the derailment was a result of the train moving at overturning speed. The max-

imum authorized speed on the curve involved was 30 miles per hour. According to A. R. E. A. superelevation tables, the overturning speed on a 5°50' curve having a superelevation of 2-1/2 inches is about 76 miles per hour and the maximum safe speed is about 46 miles per hour. It follows that the estimated speed at the time of the derailment was about 26 miles per hour lower than the theoretical overturning speed and about 4 miles per hour higher than the theoretical maximum safe speed; however, the superelevation at the point of derailment was only 2-3/8 inches and at a point 66 feet farther north it was only 2-1/8 inches; in addition, there was some testimony that the speed at the time of the accident was somewhat higher than 50 miles per hour and the fact that the rear two cars moved 1,288 feet beyond the point of derailment seems to substantiate this evidence. Apparently some other factor combined with the speed was necessary to cause the derailment. Undoubtedly, another factor was irregularity of the surface of the track immediately north of the point of derailment. The variation in levels between two adjacent stations 16-1/2 feet apart was as much as 3/4 inch. This condition undoubtedly caused the locomotive to roll, and the rolling would overcome some of the effect of the superelevation.

According to the evidence, the engineman was alert at a point a short distance north of the curve involved, as he closed the throttle in preparation of reducing the speed for the curve and sounded the whistle signal for two highway crossings; however, he did not make a brake-pipe reduction. The fireman was not alarmed about the failure of the engineman to make a brake-pipe reduction as the latter usually delayed longer than other enginemen the braking of his train. A dense fog restricted visibility to a distance of 10 to 20 feet. The fireman thought that because of this condition the engineman could not see landmarks whereby he could determine the exact progress of his train. The engineman was familiar with the territory involved; why he failed to reduce speed for the curve is not definitely known, as he was killed in the accident.

A slow-speed sign for the curve involved was located 14 feet west of the west rail. It is probable that because of the dense fog the headlight beam failed to illuminate it. Had the sign been located nearer the track, it is possible that the engineman could have seen it and then he would have known his exact location.

#### Cause

It is found that this accident was caused by excessive speed on a sharp curve, combined with irregularity in track surface.

Dated at Washington, D. C., this twenty-fifth day of March, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,  
Secretary.