

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
VIRGINIAN RAILWAY

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LESTER SIDING, W. VA.

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DECEMBER 13, 1935..

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INVESTIGATION NO. 2025

SUMMARY

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Railroad: Virginian  
Date: December 13, 1935.  
Location: Lester Siding, W.Va.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: 3  
Engine number: 215  
Consist: 4 cars  
Speed: 28-30 m.p. h.  
Track: 4<sup>o</sup> curve; descending grade  
Weather: Light rain  
Time: Between 7:35 and 7:36 p.m.  
Casualties: 1 killed and 3 injured  
Cause: Probably loose guard rail.

February 6, 1936.

To the Commission:

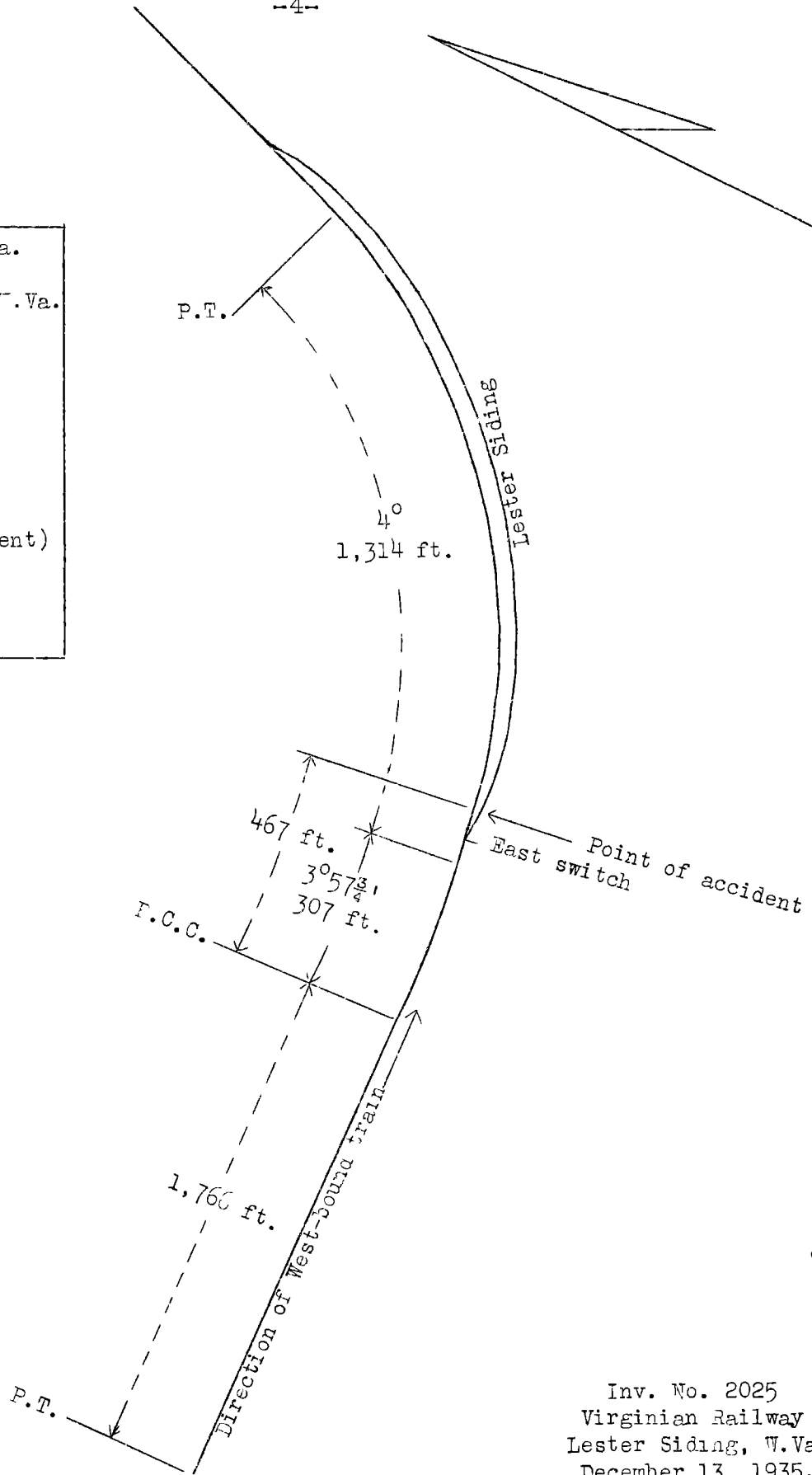
On December 13, 1935, there was a derailment of a passenger train on the Virginian Railway at Lester Siding, W.Va., which resulted in the death of 1 employee and the injury of 1 mail clerk and 2 employees.

#### Location and method of operation

This accident occurred on the Fourth Sub-division of the New River Division which extends between Elmore and D.B. Tower, near West Deepwater, W.Va., a distance of 60.3 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time table and train orders, no form of block-signal system being in use. The accident occurred at the frog of the east switch of Lester Siding; approaching this point from the east the track is tangent for a distance of 1,766 feet, followed by a compound curve to the left, the curvature being  $5^{\circ} 57\frac{1}{2}'$  for a distance of 307 feet and  $4^{\circ}$  for a distance of 1,314 feet; the accident occurred on the  $4^{\circ}$  portion of the curve at a point 467 feet from its eastern end. The grade for west-bound trains is descending for more than 1 mile, varying from 1 percent to 2.2 percent to a point within 160 feet from the point of accident; it is then 0.355 percent to and for a considerable distance beyond the point of accident.

The passing track parallels the main track on the north, the switch being a facing-point switch for west-bound trains and having a No. 10 turnout. The frog is a Bethlehem Steel Co. No. 10, 100-pound spring rail frog with an A.R.A., "B" standard guard rail opposite the frog along the south rail of the main track. The guard rail, 15 feet in length, was laid on guard rail tieplates on 10 ties, extending 9 feet east and 6 feet west of the point of frog. The guard rail and that portion of the running rail which it parallels were double-spiked on the outside and single-spiked between the two rails except at the eighth tie two spikes were applied on the guard rail; for additional support against lateral stress  $\frac{3}{8}$  inch malleable iron braces were spiked against the guard rail on its north side on the first, second, fourth, sixth, eighth, and tenth ties. Two Q and C clamps with adjustable filler blocks, lugs, shoes, and wedges were secured to the running rail and the guard rail, one clamp being located 1 foot 8 inches west and the other 4 feet 1 inch east of the point of frog; the wedges in the clamps were on the north side of the rail and were pointed toward the west. A metal foot guard  $\frac{3}{8}$  inch by

• D. B. Tower, W. Va.	.4 mi.
• West Deepwater, W. Va.	
	42.4 mi.
• Lester	.5 mi.
× Lester Siding (Point of accident)	17.0 mi.
• Elmore, W. Va.	



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2 and 3/4 inches by 20 inches in length was secured to each end of the guard rail by two 3/4 inch bolts.

The track is on a fill about 5 feet in height, and is laid with 100-pound rails, 33 feet in length, with an average of 20 oak ties to the rail length, single-spiked, fully tieplated, and is ballasted with crushed stone to a depth of about 12 inches below the bottoms of the ties. The track is maintained in fair condition. The superelevation on this curve is 3 1/4 inches and the gauge is 4 feet 8 1/2 inches at the point of frog.

Special instructions contained in the time table restrict the speed of passenger trains to 30 miles per hour.

A drizzling rain was falling at the time of the accident, which occurred about 7:35 or 7:36 p.m.

#### Description

Train No. 3, a west-bound passenger train, consisted of 1 combination mail and baggage car, 2 coaches and 1 baggage car, hauled by engine 215, and was in charge of Conductor Kelly and Engineman Linville. All of the cars were of steel construction with the exception of the rear car which was of wooden construction. This train departed from Slab Fork, 3.8 miles east of Lester Siding, at 7:28 p.m., according to the train sheet, on time, and was derailed at the switch frog at Lester Siding while traveling at a speed estimated to have been 28 or 30 miles per hour.

Engine 215 was derailed to the right and stopped on its left side at a right angle to the roadbed at the bottom of the fill north of the passing track and 283 feet west of the point of accident. The tender stopped on its left side in reverse position, with its front end about 15 feet west of the rear of the engine and its rear end on the passing track. The first two cars and the front truck of the third car were derailed; the cars remained in general line with the main track, the front end of the first car stopping opposite the tender. The employee killed was the fireman and those injured were the engineman and conductor.

#### Summary of evidence

Engineman Linville stated that after passing Jenny Gap, 1.6 miles east of Lester Siding, he closed the throttle and was drifting; on the tangent track about 400 feet from the switch he made a light application of the air brakes, reducing the speed

to about 28 miles per hour, and after releasing the brakes before reaching the switch he adjusted the generator throttle as the headlight was a little dim; while he was doing this the engine became derailed; he was thrown backwards and had no opportunity to apply the brakes. The engine was in good mechanical condition and the brakes functioned properly. On the previous day he had reported that all the wedges on this engine needed adjusting, and the work had apparently been done as the engine rode smoothly on this trip.

Conductor Kelly stated that the train was traveling at an average speed of about 30 miles per hour when he felt something wrong, as though a brake beam had come down; he was sitting on the second car in the train and immediately jumped up and reached across for the emergency valve; he was knocked around several times, and when he opened the valve the brakes must have been already applied as he heard no exhaust. Conductor Kelly stated that he did not feel an application of the air brakes after leaving Jenny Gap up to the time of the accident, although if the engineman made a very light application he probably would not have noticed it. After the accident he examined the track and found that the track wedges had been knocked loose and were lying on the track and the guard rail had been pushed westward 6 or 8 inches; there was a flange mark on the point of frog. Conductor Kelly further stated that the train was handled smoothly and there was no excessive speed at any time.

The statements of Conductor Lilly, who was deadheading on Train No. 3 and was sitting beside Conductor Kelly, practically corroborated those of Conductor Kelly.

Flagman Kincaid stated that he noticed nothing unusual in the operation of the train; at the time of the accident he was working on reports and was unable to say whether the air brakes had been applied prior to that time. After the accident he examined the track closely; the first mark of derailment was on the point of frog, followed by wheel marks on the ties. The guard rail was leaning slightly toward the north rail with the clamp wedges and some of the braces and spikes knocked loose; the guard rail had been knocked westward about 8 or 10 inches and could be moved. He saw no indication of dragging equipment or any foreign object between the guard rail and main rail nor did he see anything that would lead him to believe that any one had tampered with the guard rail or frog. It appeared to him that something from a train had caught the guard rail and jerked it forward. On his way back to flag he inspected the track; it was covered with snow which had fallen recently, but he did not see any indication of dragging equipment.

Section Foreman McKinncy stated that from his examination of the guard rail it appeared to him that something had been dragging, had shoved the guard rail westward about 9 or 10 inches, had struck the foot guard at the east end, driving it down in the guard rail, and then had dragged on through and knocked the west foot guard off, and had opened the guard rail. On the day following the accident he inspected the track eastward to Jenny Gap, including the west switch at that point, and also westward to Lester Station, including the west switch of Lester Siding, but did not find marks of any kind on the track other than those at the point of accident. He had last been over this track on the day before the accident, having been over this switch on four occasions; he made a careful inspection early in the morning and saw that it was in good condition; the clamps were tight, cotter keys were in wedges and the wedges were tight, and that night when sweeping snow from the switch, he noted that the guard rail was securely spiked and anchored. Section Foreman McKinney last checked the curve on which this accident occurred on December 6 and found the superelevation uniform, about  $2\frac{1}{2}$  inches, and the gauge was about  $\frac{1}{2}$  inch wide in two or three places. No work on the track was necessary and he considered it normal and in safe condition, most of the spikes being down firmly on the rail and plates.

Section Laborer McMillion stated that he performed the duties of track walker on the day of the accident and walked over the east switch at Lester Siding on four different occasions, the last time being about 2 p.m., at which time the switch and guard rail were in good condition and the guard rail was securely fastened.

Roadmaster Patterson stated that on the day of the accident he passed over the east switch at Lester Siding on the main track on a motor car at about 11:30 a.m., and at about 3:15 p.m. he went through the siding; he observed nothing wrong at that time. After the accident he inspected the track and in addition to the marks previously mentioned there were three distinct flange marks on the ties immediately west of the heel of the frog; these heavy flange marks continued westward on the ties for a distance of about 70 feet, and from that point both the main track and siding were torn out for a distance of 100 feet or more. The first flange marks on the inside of the south rail were about 2 feet west of the west end of the guard rail. The guard rail was practically turned over, one filler block crushed and three were dislocated; the wedges of the guard rail clamps were knocked out, some of the braces bent and some

loose with their spikes pulled about 2 inches. The foot guard on the east end of the guard rail was doubled up in the guard rail about 2 feet westward, and there was a mark on the web of the guard rail at the east end. The foot guard at the west end of the guard rail was found about 30 feet to the westward. There were slight marks on the inside of the web of the guard rail but he was unable to say whether they were flange marks or marks made by something dragging. Roadmaster Patterson checked the gauge at the frog soon after his arrival but he did not make a general check of the track until several days later; the track was in good condition and while the ties under the guard rail were not new, they were in fair condition and sufficiently sound for the spikes to hold the rail firmly in place. Between the time Roadmaster Patterson passed over the frog on the afternoon of the accident and the time of the accident, a freight train passed this point; he did not think it possible for an entire train to pass over the frog and guard rail in the condition it was found after the accident, although he believed that some wheels would. Due to the absence of marks of dragging equipment on the track at any other points, he did not believe that a preceding train caused the guard rail to be loosened, but thought something on engine 215 struck the guard rail or struck between the guard and running rails, turning the guard rail over and pulling it forward at the same time.

Division Engineer Charlton checked the track for gauge, superelevation and cross levels on December 16, at which time the guard rail had been placed in its former position and in his opinion the track east of the scene of accident was in the same condition as it was prior to the derailment. He found no condition that could have caused the accident and he considered the track safe for a speed of 45 miles per hour.

Master Mechanic Strong stated that after making an inspection of the track and noting the position of the equipment he was of the opinion that the Nos. 1 and 2 engine truck wheels and No. 1 driving wheel were the first to be derailed. Examination of the engine disclosed that the left trailer frame was broken through a cavity provided for the trailer brake beam hanger; the upper portion of this hanger was still in position, the lower portion and the brake beam being torn off after the derailment. The beam was found on top of the bank about 30 feet from the engine with its left end broken off and the beam badly bent. There were heavy rail marks on this beam and it was his opinion that it came in contact with the rails, particularly the broken rails, that it spread the trailer frame to such an extent that it caused the failure of the trailer frame. After raising the engine on its wheels he found the front end



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of the left engine truck pedestal binder loose, and concluded that the pedestal binder bolts had been sheared off by coming in contact with the rail during the derailment as he found pieces of these bolts snared off in the pedestal. The bottom side of the right front driving brake pull rod jaw was broken off but the rod was still in position. All driving brake shoes and heads were intact, the driver pedestal binder bolts were in place, pedestal binders were tight, driving box wedge bolts were all in place, some of which were bent, and the safety chains to the engine truck were still connected. After the engine was re-railed Master Mechanic Strong again inspected it at Elmore and found that the driving tires had proper contour; these tires had been applied at Roanoke on December 5, 1935. The No. 1 and No. 2 engine truck wheels showed some flange wear but would not take the 1 inch gauge; the trailer wheels had proper contour with little or no flange wear. The spacing of the wheels on the engine were as follows: No. 1 engine truck  $53\frac{1}{2}$  inches; No. 2 engine truck  $53\frac{1}{2}$  inches; No. 1 driving wheel tires  $53\frac{3}{8}$  inches; No. 2 driving wheel tires  $53\frac{3}{8}$  inches; No. 3 driving wheel tires 53 inches, and the trailer truck wheels  $53\frac{1}{2}$  inches. The engine truck pedestal binder, which he had observed while the engine was lying on its side, was hanging down about 4 inches from the pedestal but bore no evidence of having come in contact with the guard rail. All brake beams, brake hangers, rods, shoes and needs were in place; right engine truck and driver pedestal binders were tight and all bolts in place, none of which were broken. All swing links and bolsters of the engine truck frame were in good condition. There were many marks, cuts and scars on the engine truck wheels, but he could not identify them as having been made by the wheels striking the frog point. A check of the lateral on the engine truck, drivers and trailer truck showed No. 1 engine truck wheel  $\frac{5}{8}$  inch lateral; No. 2 engine truck wheel  $\frac{1}{2}$  inch; No. 1 driving wheel  $\frac{7}{16}$  inch; No. 2 driving wheel  $\frac{7}{16}$  inch; No. 3 driving wheel  $\frac{3}{8}$  inch, and the trailer truck wheel  $1\frac{1}{8}$  inches, which was due to the broken frame, left side, and the bent trailer frame right side; otherwise the lateral on trailer truck wheels would have been approximately  $\frac{1}{2}$  inch. The pilot was bent backwards and pulled off as the engine was re-railed. Master Mechanic Strong stated that after a thorough examination he was of the opinion that the derailment was caused by a loose guard rail, but was unable to say how it became loose.

Superintendent White stated that after inspecting the track and derailed equipment he was of the opinion that the engine truck wheels were not derailed at the frog point, but that the driving wheels were derailed and that the tender and the

following cars followed the main track. The three distinct flange marks west of the frog point were in his opinion made by the flanges of the driving wheels.

Conductor McCommack, in charge of Extra 730, west-bound the last train to pass over the track at Lester Siding prior to the occurrence of the accident, stated that on arrival at Page, 35.1 miles west of Lester Siding, his train was given a thorough inspection by himself and brakemen and no part of the equipment was found to be down, broken or dragging. His train passed Lester Siding at a speed estimated to have been about 20 miles per hour, passing that point at approximately 6:55 p.m., according to the train sheet.

Examination of the track after the accident disclosed that the first mark of derailment was a heavy flange mark on the point of frog, followed by a light mark extending along the top surface of the center of the frog and the filler block to the heel of the frog. A flange mark then appeared on the top of the west end of the angle bar adjacent to the heel of the frog on the outside of the north rail at a point 9 feet west of the first mark of derailment; 3 feet beyond a heavy flange mark was visible on top of a spike and closely adjacent to this mark there were 3 heavy and distinct flange marks on the ties extending for a distance of 47 feet to a point where the wheels apparently dropped between the ends of the main track ties and the siding ties. The first marks of derailment on the south side of the track were flange or wheel marks on a tie near the gauge side of the left rail 12 feet west of the point of frog, or 6 feet west of the leaving end of the guard rail; these marks extended westward on the ties for a distance of 62 feet to a point where the main track was completely destroyed for a distance of 209 feet to the overturned engine. The siding was completely destroyed for a distance of 165 feet.

Examination and measurements taken by the officials of the railroad accompanied by the Commission's inspectors did not indicate any unsafe track conditions that might have caused the accident. Within a distance of 505 feet east of the point of frog the gauge varied from 4 feet  $8\frac{1}{4}$  inches to 4 feet  $9\frac{1}{8}$  inches, it being 4 feet  $8\frac{1}{2}$  inches at point of frog. The super-elevation was fairly uniform having a maximum of  $3\frac{3}{4}$  inches at a point 45 feet east of point of frog, and it was  $3\frac{1}{4}$  inches at point of frog. Measurements taken at a point opposite the point of frog and also at points 4 feet 3 inches from each end of the guard rail showed the distance from the flange side of the guard rail to the gauge side of the running rail to be  $1\frac{3}{4}$  inches. Examination of the engine by the Commission's inspectors disclosed nothing in addition to that found by Master Mechanic Strong, and revealed nothing that

could have caused the accident. There further appeared to be no evidence of malicious tampering.

#### Discussion

Examination of the track after the accident disclosed a loose guard rail; the guard rail clamps, wedges and filler blocks were knocked loose, one filler block was crushed, some of the braces were loose and some were bent, and the guard rail was knocked westward a distance of 8 or 10 inches, and canted toward the north, leaning loosely on the bent braces. The foot guard at the east end of the guard rail had heavy scars on its top and side and was dragged westward about 2 feet, being crushed into a compact mass near the bolt at its west end; the foot guard in the west end of the guard rail was completely torn out and later found at a point about 60 feet beyond. The marks on the end of the guard rail and the location and condition of the foot guards, together with the position of the guard rail and its parts and fastenings after derailment, indicate that a blow was delivered on its east or receiving end and that some object was then dragged through between it and the running rail. However, there were no marks of dragging equipment on the ties, rails or roadbed within a considerable distance on either side of the point of accident, and no foreign object which may have caught this guard rail was found. Careful examination of engine 215 revealed nothing that could have contributed to the cause of the accident.

According to the evidence this guard rail was in good condition when last inspected during the afternoon on the day of the accident, and the last train, Extra 730 consisting of 58 cars, passed over this frog and guard rail about 6:55 p.m. The records covering inspection of Extra 730 at Dickinson, W.Va., on the night of the accident, indicate that only one car was shopped and that was for a defective brake wheel.

There were no irregularities found in the track approaching the point of accident that may have contributed to the cause of the accident, and the evidence indicates that the speed was not excessive. The engineer stated that he made a light application of the brakes on approaching this curve but released them before entering the switch.

#### Conclusion

It is believed that this accident was caused by a loose guard rail, but it could not be determined how the guard rail became loose.

Respectfully submitted,  
W. J. PATTERSON, Director.