

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2495
THE SOUTHERN RAILWAY COMPANY
REPORT IN RE ACCIDENT
NEAR TOPTON, N. C., ON
APRIL 7, 1941

-2-

SUMMARY

Railroad: Southern
Date: April 7, 1941
Location: Topton, N. C.
Kind of accident: Derailment
Train involved: Passenger
Train number: 17
Engine number: 1278
Consist: 2 cars
Speed: 30-50 m. p. h.
Operation: Timetable and train orders
Track: Single; 11°36' curve; 2.23 percent
descending grade westward
Weather: Partly cloudy
Time: About 1:26 p. m.
Casualties: 2 killed; 2 injured
Cause: Accident caused by excessive speed
on sharp curve

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2495

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

THE SOUTHERN RAILWAY COMPANY

May 20, 1941

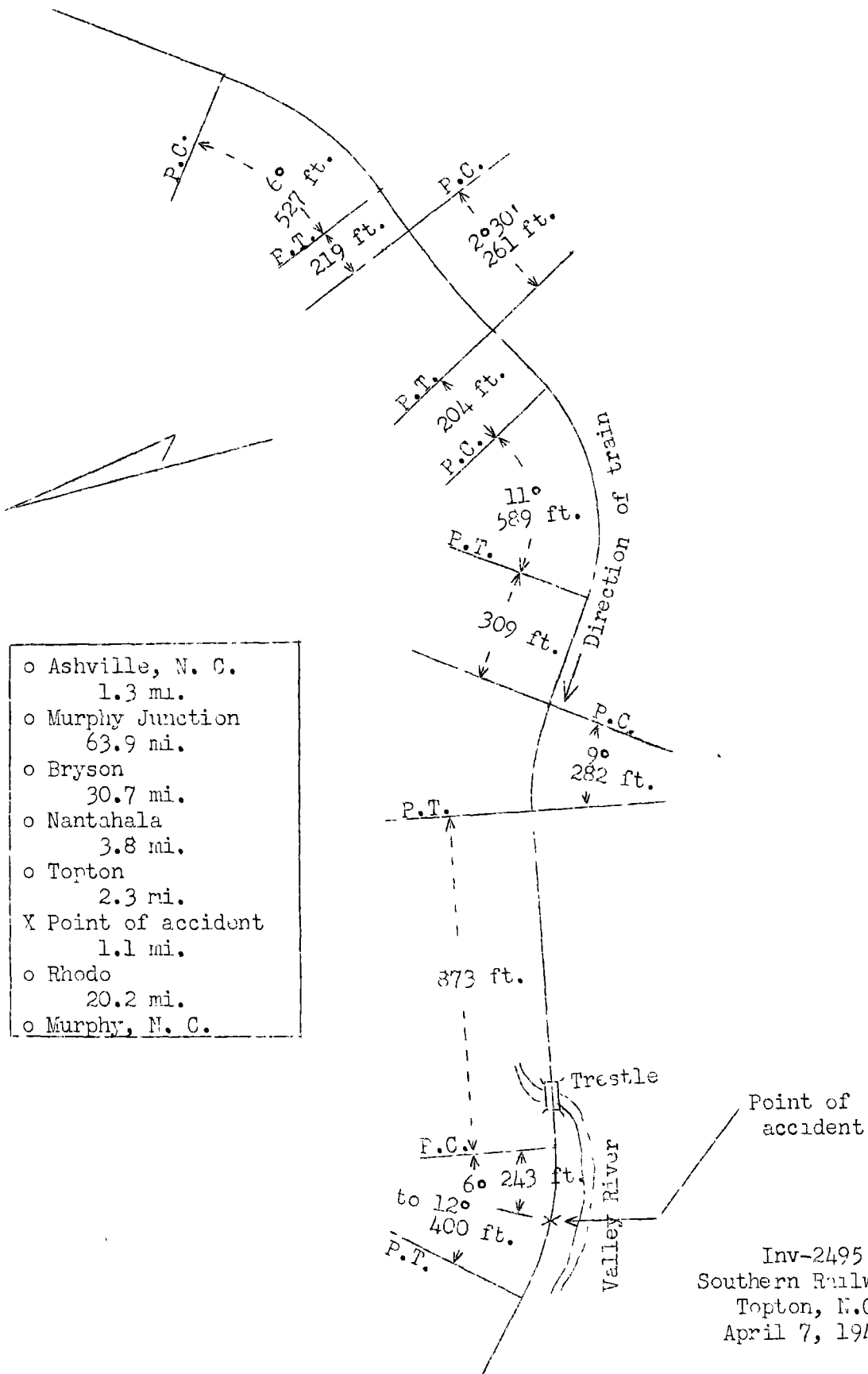
Accident near Topton, N. C., on April 7, 1941, caused by
excessive speed on sharp curve.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On April 7, 1941, there was a derailment of a passenger train on the Southern Railway near Topton, N. C., which resulted in the death of two employees and the injury of two passengers.

¹Under 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-2495
 Southern Railway
 Topton, N.C.
 April 7, 1941

Location and Method of Operation

This accident occurred on that part of the Asheville Division which extends between Murphy Junction and Murphy, N.C., a distance of 122 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. The accident occurred at a point 2.3 miles west of Topton. As the point of accident is approached from the east there is a series of short curves and tangents, followed, in succession, by an 11° curve to the right 589 feet in length, a tangent 309 feet, a 9° curve to the left 282 feet in length, a tangent 873 feet, and a compound curve to the right 400 feet in length, the maximum curvature of which is 12° ; the derailment occurred on the last-mentioned curve at a point about 243 feet west of its eastern end where the curvature is $11^{\circ}36'$. The grade for west-bound trains varies between 1.78 and 3.89 percent descending a distance of 2.61 miles to the point of accident and is 2.23 percent at the point of accident.

In the vicinity of the point of accident the track parallels the Valley River on the north. The track is laid on a hillside cut and is 20.8 feet above the level of the shoreline and 50 feet horizontally distant. On the north side of the track the toe of a wall of rock 13 feet high is 15 feet from the center of the track. The shoulder of the roadbed is 11 feet from the center of the track.

On the curve involved the track structure consists of 85-pound relay rail, 35 feet in length, laid in June, 1940, on an average of 20 hardwood ties to the rail length; it is fully tieplated with single-shoulder canted tieplates. The inside rail is single-spiked and the outside rail is double-spiked on the outside and single-spiked on the inside. The track is equipped with 4-hole 100 percent angle bars. An average of six rail anchors per rail length are provided. The track is ballasted with cinders to a depth of 10 inches and on the outside of the curve the ballast extends 4 feet beyond the ends of the ties. The maximum superelevation was 2-1/2 inches, and at the point of derailment the superelevation was 2 inches. The gage varied between 4 feet 8-1/2 inches and 4 feet 8-5/8 inches and was 4 feet 8-1/2 inches at the point of derailment.

Rules of the Operating Department read in whole or in part as follows:

Conductors

1136. * * *. They will have charge of the trains to which they are assigned and of all persons employed thereon. They are responsible for the safe and proper management of such trains, * * * for the performance of duty by the train employes, and for the observance and enforcement of all rules and instructions. * * *

1180. They must see that their trains are properly made up, inspected, * * * That each member of the crew is in place, * * *

Enginemen

1323. They must not leave their engines while on duty except in case of necessity, and then only in the care of the fireman. They must not leave them while on the main track, except to perform duties required by the rules.

RULES GOVERNING THE HANDLING OF TRAINS ON MOUNTAIN GRADES

BETWEEN * * * TOPTON AND ANDREWS * * *

DESCENDING

A. Before beginning the descent, all trains must stop and inspect and test the air brakes and hand brakes.

* * *

C. Handles of all retaining valves must be turned up.

* * *

According to the timetable the minimum running time for passenger trains between Topton and Rhodo, a distance of 3.4 miles, is 9 minutes, which provides for an average speed of 22.66 miles per hour.

The weather was partly cloudy at the time of the accident, which occurred between 1:25 and 1:30 p. m.

Description

No. 17, a first-class west-bound passenger train, with Conductor Shook and Engineman Jackson in charge, consisted at the time of the accident of engine 1278, of the 4-6-2 type, one baggage-mail car of steel underframe construction and one coach of steel construction, in the order named. This train departed from Asheville, 99.7 miles east of Topton, at 8:25 a.m., according to the train sheet, on time. At Bryson, 34.5 miles east of Topton, an engineman, who was learning the physical characteristics of the territory involved, boarded the engine and took charge of it. At Nantahala, 3.8 miles east of Topton, the crew received copies of train order No. 324, Form 19, which read as follows:

No 17 Seventeen Eng 1278 run 25 Twenty five
mins late Nantahala to Murphy

This train departed from Topton at 1:22 p.m., 38 minutes late, and, while moving at a speed variously estimated as between 30 and 50 miles per hour, became derailed at a point 2.3 miles west of Topton.

The engine was derailed to the left; it struck the riverbed on its left side, slid about 80 feet, made a one-half turn laterally and stopped on its right side 161 feet beyond the point of derailment at an angle of 80 degrees to the track; the front end was 27.8 feet and the rear end was 65.5 feet south of the center of the track. The engine truck became detached and stopped in front of the pilot. The cab was demolished; the steam turret and related piping, the independent brake valve, the automatic brake valve and the distributing valve were broken off, the throttle was badly bent and distorted, and the trailer-truck frame was broken. The tender stopped on its left side in the river and at right angles to the engine. Both trucks were detached. The draw bar was badly twisted but remained intact, and the left safety bar was broken. The left side of the tender was crushed inward about 4 feet at the coal pit location. The first car was derailed to the left with the front end against the tender and at an angle of 30 degrees to the track and leaned to the left at an angle of 15 degrees; its front end was 42.5 feet and its rear end 12-1/2 feet south of the track. The front truck was detached, the front coupler shank was twisted, the roof was broken and shifted out of line and the rear endsill was broken. The second car stopped with its front end 125 feet west of the engine, against the rock wall on the right side of the track; the front truck was derailed and the left side of the front vestibule was crushed inward.

The employees killed were the student engineman and the fireman.

Summary of Evidence

Engineman Jackson stated that at Asheville he inspected engine 1278 before No. 17 departed, and the engine appeared to be in suitable condition for service. A terminal air-brake test was made, several stops were made en route, and the air brakes functioned properly. Brake-pipe pressure of 100 pounds and main-reservoir pressure of 120 pounds were maintained. At Bryson an engineman possessing a permit to ride boarded the engine for the purpose of learning the physical characteristics of that part of the division. Engineman Jackson said that at Bryson he compared his watch with that of the student engineman and permitted him to take charge of the engine. The student engineman operated the train satisfactorily between Bryson and Nantahala, a distance of 30.7 miles. At Nantahala Engineman Jackson gave the student engineman train order No. 324, alighted from the engine, and proceeded to the coach to eat his lunch. In his opinion this procedure was safe since the student engineman appeared to know the road. At Topton Engineman Jackson proceeded to the engine with the intention of riding it, but was persuaded by the student engineman to return to the coach. It is customary at Topton to make an air-brake test and set the retaining valves for use between Topton and Andrews, a distance of 8.5 miles; however, in this instance he did not observe whether the retaining valves were set for use. No. 17 left Topton about 30 minutes late. He was in the front end of the rear car as his train was approaching the point where the accident occurred. The coach rode smoothly and the speed was between 20 and 30 miles per hour. On five occasions the brakes were applied and released to control the speed of the train as it moved on the descending grade between Topton and the point where the accident occurred. He said that the student engineman operated the train at lower speed than he himself would have operated it. At a point about 1,100 feet east of the curve involved a heavy brake application reduced the speed of the train lower than usual, then the brakes were released. Before the speed increased appreciably, the brakes were again applied at a point about 400 feet east of the curve involved. There was sufficient interval between the brake applications for the brake-pipe pressure to be restored. The first he knew of anything being wrong was when he felt a shock and the second car stopped against the rock wall, at 1:25 or 1:30 p.m. He did not see any person attempt to apply the brakes by means of the conductor's emergency valve. If he had considered the speed excessive he would have stopped the train himself by means of the conductor's emergency valve. Because of the train being operated in the usual manner, he thought the accident was caused by some object being on the track; however, he failed to find anything that could have caused the derailment. He did not examine the equipment after the occurrence of the accident. Engine 1278, which was regularly

assigned to haul No. 17, rode smoothly and was maintained in good mechanical condition. He had never experienced unusual swaying on the curve involved. He said that the rules prohibit an engineman from leaving the engine under his charge during a tour of duty unless the engineman becomes incapacitated or is required to perform duties elsewhere; however, in this instance the student engineman was capable and operated the train satisfactorily throughout a distance of 30 miles before Engineman Jackson left the engine. There is no maximum authorized speed over the territory involved but the speed is controlled in accordance with the average running time as indicated by the minimum prescribed time between stations shown on the timetable.

Conductor Shook stated that at Bryson the student engineman boarded the engine and operated it under the supervision of Engineman Jackson. At Nantahala Engineman Jackson boarded the coach. The conductor knew that the engineman was not complying with the rules in leaving the engine but did not criticize him because the student engineman appeared to be capable of operating the train. At Topton the brakes were inspected and the train left about 30 minutes late. After it departed the flagman set the retaining valves for use. As the train was approaching the point where the accident occurred the conductor was in the second car and the engineman was seated opposite him. The speed was about 30 miles per hour. The train rode smoothly and the conductor was not alarmed about the operation of the train. He paid no attention to the manner in which the brakes were being manipulated. The first he knew of anything being wrong was when the front truck of the coach became derailed. The weather was partly cloudy at the time of the accident, which occurred about 1:28 p.m. After the accident occurred he examined the track and equipment but found no indication of defective track or any obstruction having been on the track or any equipment having been dragged. The track was well maintained. He understood that the student engineman was on the engine for the purpose of learning the physical characteristics of the territory and that he was not qualified to operate a train over that part of the division until supervisory officials authorized him to do so. He was confident that the student engineman was capable or the regular engineman would not have left him in charge of the engine; therefore, he did not stop the train and insist that the regular engineman return to the engine. He said that according to the timetable the schedule time between Topton and Rhoda was 8 minutes and the minimum running time between those points was 9 minutes.

The statement of Baggage-master Adams added nothing of importance.

Flagman Messer stated that at Topton he observed that the brake was applied on the front truck of the second car. After his train left Topton he set the retaining valves for use on both cars. As the train moved on the descending grade he felt the brakes apply and release on one occasion. He was in the second car as the train was approaching the point where the accident occurred, and the speed was 30 miles per hour. The train rode smoothly and apparently was being operated in the usual manner. After the accident occurred he proceeded to the rear to provide flag protection. There was no indication of defective track or equipment having been dragged. He did not know the maximum speed permitted between Topton and the point of accident.

Railway Mail Clerk Kanupp stated that as the train was approaching the point where the accident occurred he was in the mail compartment at the front end of the first car. The speed between Topton and the point of derailment was between 45 and 50 miles per hour. When the car became derailed it did not seem that anything was struck until the car stopped at the edge of the river. He had been assigned as mail clerk on this schedule since 1923. In this instance the speed was greater than on other occasions.

Mrs. V. C. Olmstead, a passenger on No. 17, stated that she rides trains occasionally between Asheville and Murphy. In the instance involved the speed was excessive and the car lurched severely.

H. C. Strom and M. C. Choate, employees of the Southern Dairies Company at Asheville, stated that they were in an automobile driving westward on a highway which is parallel to the Southern Railway on the south. At a point about 3/4 mile west of Topton the train involved was moving between 45 and 50 miles per hour and passed them.

Kimsey Stover, a former employee of the railroad, stated that he lives 800 feet from the track. When No. 17 was about 350 feet east of the point where the accident occurred he observed it as it passed, and he thought the speed was about 50 miles per hour. He had observed trains pass his home during a period of 12 years and in this instance the speed was greater than on other occasions.

Track Supervisor Burchfield stated that he arrived at the scene of accident at 4:30 p.m. He examined the track throughout a distance of 1/2 mile east of the point of accident and there was no indication of dragging equipment or defective track. The first mark of derailment was a scar on the inside head of the outside rail. It started at a point 205.6 feet west of the eastern end of the curve and extended a distance of

30 feet westward; however, this mark was a result of a wheel of one of the cars sliding after the brakes became applied in emergency. There was no mark on the top of the head of the rails. Because the track was shifted to the south it was his opinion that the engine left the track at a point 3.65 feet west of the west end of the scarred rail. At a point 3.75 feet farther west there was a flange mark, 1/4 inch deep and 1-1/2 inches wide, on the end of a tie 15 inches outside the gage side of the high rail. Apparently this mark was made by a truck of a car, as it was not sufficiently deep to have been caused by a wheel of the engine. There was no mark between the rails at this point. Flange marks outside the high rail continued westward on the south ends of 63 ties. At a point 51 feet west of the point of derailment flange marks appeared between the rails on the top of ties and continued throughout a distance of 227 feet to the point where the front truck of the second car stopped. These marks were caused by the front truck of the second car becoming derailed to the right as a result of that car striking the baggage car. He said that according to A.R.E.A. superelevation tables, the overturning speed on the curve involved was 44 miles per hour. There was no indication on the wheels of the engine that any wheel had been in contact with the ties or the roadbed. There had been no authorized heavy repair to the track in this vicinity since June 1940. The track is patrolled once a week and spot surfacing is done as required. He had made a walking inspection of the curve on April 1, 1941. At that time the track was in good condition. Several hours after the accident, gage and cross levels were taken at joints and centers, starting at a point 339 feet east of the point of derailment and proceeding westward throughout a distance of 343 feet east of the first wheel mark on the ties; the results were as follows:

<u>Point</u>	<u>Gage</u>	<u>Superelevation</u>
West end trestle T-100.8	4' 8-1/2"	0
Joint	4' 8-1/2"	0
Center	4' 8-5/8"	0
Joint	4' 8-5/8"	1/4"
Center	4' 8-5/8"	1/2"
Joint	4' 8-1/2"	1/2"
Center	4' 8-5/8"	1/2"
Joint	4' 8-1/2"	5/8"
Center	4' 8-1/2"	5/8"
Joint	4' 8-5/8"	1-1/2"
Center	4' 8-1/2"	2"
Joint	4' 8-5/8"	1-7/8"
Center	4' 8-1/2"	2"
Joint	4' 8-1/2"	2-1/4"
Center	4' 8-1/2"	2-1/2"

<u>Point</u>	<u>Gage</u>	<u>Superelevation</u>
Joint	4' 8-1/2"	2-1/4"
Center	4' 8-1/2"	2"
Joint	4' 8-1/2"	1-7/8"
Center	4' 8-1/2"	1-7/8"
Joint	4' 8-1/2"	1-7/8"
Center	4' 8-1/2"	1-7/8"
Joint	4' 8-1/2"	2"
Point of derailment	4' 8-1/2"	2"

Note: Point of derailment or first mark on ties 6 feet 3 inches west of last joint shown.

Roadmaster King stated that he examined the track and the equipment. He found conditions as described by Track Supervisor Burchfield. There was no indication that any wheel of the engine had struck an obstruction. It was his opinion that the marks on the ties outside the high rail were made by the rear truck of the first car, and the engine overturned without marking the track. The engine was derailed at a point 3.75 feet east of the first mark on the ties outside the high rail. Because of the position and condition of the derailed equipment he concluded that the accident was a result of excessive speed, which he estimated to have been at least 50 miles per hour.

Section Foreman Lowe stated that he had been a section foreman for 21 years but had been assigned to the territory involved only 11 days before the accident occurred. Two days prior to the accident he made a walking inspection of the curve involved and at that time it was in good condition. After the accident occurred he examined the track east of the point of derailment and found no indication of defective track, obstruction on the track or dragging equipment. There was no flange mark on the head of the rail at the point of derailment.

General Car Foreman Glover stated that he arrived at the scene of the accident at 5:30 p.m. He examined the track carefully throughout a distance of 500 feet east of the point of derailment but was unable to find any indication of defective track or dragging equipment. Preceding the first mark on a tie outside the high rail, the track was moved out of alignment throughout a distance of 25 feet but retained its gage. The marks on the ties outside the high rail were made by the rear truck, of the six-wheel type, of the first car. The brake on the second car remained applied 11 hours. The brake-cylinder piston-travel was 9 inches. The retaining valve on the first car was set for use but the retaining-valve handle on the second car was in line with the pipe; this latter valve was so located that it could not have been moved during the

process of the derailment. All angle cocks were in proper position. The brake shoes of the second car disclosed indications of having been overheated. There were slid flat-spots on two pairs of wheels of this car. He gaged all wheels of the engine and cars; these measurements disclosed the wheels to be within the prescribed limits. There was no mark on the pilot of the engine. Because of the position in which the engine stopped and the absence of marks on the track at the point of derailment, it was his opinion that the accident was caused by the train being operated at a speed of not less than 50 miles per hour.

Master Mechanic Anderson stated that he arrived at the scene of the accident 7 hours after its occurrence. He inspected the track and the equipment. In his opinion the engine and tender overturned without marking the track. Apparently the marks on the ties outside the high rail were made by the rear truck of the first car. During the process of derailment the second car striking the corner of the first car caused the front truck of the second car to become derailed to the outside of the low rail. There were no marks on the wheels of the engine such as would appear if an obstruction was on the track. The engine truck was intact and the springs, equalizers, swing links, center castings and engine-truck center-pin were in good condition. The tripping device of the Wright Little Watchman was bent downward; this indicated that the brakes were applied as the engine left the rail. The sand pipes were intact. All driving-box wedges were free and were well lubricated. The driving-box spring system was intact and in place. The foundation brake rigging was in good condition. The bottom rail of the left trailer frame was broken at a point 36 inches back of the trailer wheel. The splash plates of the tender were securely fastened in place and were in good condition. The radial buffer was in good condition/was well lubricated. Because the cab was badly damaged it was impossible to determine the position of the automatic brake valve, the reverse lever and the throttle. After the accident occurred the independent brake valve, the automatic brake valve and the M3 feed valve were applied to engine 4508 and they performed their functions properly. During the process of derailment the distributing valve was broken; however, it was dismantled and all parts were found to be in good condition. All flanges were of good contour and their height and thickness were within the prescribed limits. All driving-wheel tires were 2-9/16 inches in thickness. Measurements of the engine wheels and lateral motion were as follows:

<u>Wheel</u>	<u>Lateral</u>	<u>Tread Wear</u>		<u>Wheel spacing Back-to-back</u>
		<u>Right</u>	<u>Left</u>	
Engine truck:				
Front	7/16"	1/64"	1/64"	53-7/32"
Rear	7/16"	1/64"	1/64"	53-3/16"
No. 1 driving	1/2"	1/16"	1/16"	53-1/8"
No. 2 driving	1/2"	1/16"	1/16"	53-1/4"
No. 3 driving	1/2"	1/16"	1/16"	53-1/8"
Trailer truck	3/8"	1/32"	1/32"	53-7/32"

Machinist Tarpley stated that he inspected engine 1278 before it departed from Asheville and it was in safe and suitable condition for service.

Coach Inspector Case stated that he inspected the equipment of No. 17 before it departed from Asheville. The equipment was in good condition and all brakes applied and released properly. The retaining valves were tested and functioned properly.

Superintendent Moon stated that train and engine-service employees who have not made a trip over the division, or any part of the division, during a 6-month period are required to make trips over the division to familiarize themselves with the territory involved before they are called for service.

Road Foreman of Engines Swicegood stated the records disclosed that in 1937 the student engineman had last been over that part of the division where the accident occurred. Supervisory officials give enginemen permits to ride engines in order to become thoroughly familiar with parts of the division over which they have not operated during a 6-month period. An engineman with whom a student engineman rides is required to sign the permit when in his opinion the student engineman is qualified to perform service.

According to data furnished by the railroad, the total weight of engine 1278 was 220,600 pounds, distributed as follows: Engine truck, 35,080 pounds; driving wheels, 147,400 pounds; trailer truck, 38,080 pounds. The tender was rectangular in shape and had two 4-wheel trucks. The weight of the tender loaded was 147,000 pounds. The diameters of the engine-truck wheels, the driving wheels and the trailer-truck wheels were, respectively, 30 inches, 67 inches, and 42 inches. The rigid wheel-base was 12 feet 6 inches in length, and the total length of the engine and the tender was 72 feet 10-7/8 inches. The last Class 3 repairs were completed at Asheville on July 27, 1940. The accumulated mileage since the last class repairs was 15,000 miles.

Observations of the Commission's Inspectors

Inspection of the track by the Commission's inspectors throughout a distance of 1,000 feet east of the point of accident disclosed no indication of equipment having been dragged. They found the marks of derailment to be as previously described. There was no flange mark on the head of the rails. There was no debris on the under side of the engine and the treads of the wheels were clean and bore no evidence of having been in contact with the embankment. There was no scar on the foundation brake rigging of the engine. The brake shoes of the engine were in place and there was no indication that they had been overheated.

Discussion

According to the evidence, No. 17 was moving at a speed variously estimated as from 30 to 50 miles per hour when the engine became derailed to the left at a point where the curvature of the track was $11^{\circ}36'$ to the right. Based on the minimum running time for the train involved between the station to the rear and the station in advance of the point of accident, the authorized average speed was 22.66 miles per hour. The weather was partly cloudy, the rails were in good condition and the gage varied between 4 feet 8-1/2 inches and 4 feet 8-5/8 inches. The superelevation at the point of derailment was 2 inches. The greatest variation in cross-levels between any two adjacent stations 16-1/2 feet apart was 1/4 inch. Throughout a distance of 25 feet immediately east of the point of derailment the track had been shifted outward somewhat but the gage remained unchanged. There was no indication of an obstruction having been on the track.

At Asheville, about 100 miles east of the point of accident, the engine, cars and air brakes were inspected and no defective condition was found. Between Asheville and Topton the air brakes functioned properly. At Topton, 2.3 miles east of the point of accident, the brakes were tested. After the occurrence of the accident, inspection of the engine and cars did not disclose any defective condition which might have existed prior to the derailment and contributed to the cause of the derailment.

Throughout a distance of 2.61 miles immediately east of the point of accident the grade varied between 1.78 and 3.89 percent descending for the train involved. There is considerable discrepancy in the testimony concerning the brake applications made on this grade. The engineman assigned to this train was in the rear car at the time of the accident. The student engineman, who was operating the engine, and the fireman were

killed in the accident. According to the statement of the assigned engineman, the brakes were applied and released on five occasions between Topton and the point of accident, and he thought the train was being operated in a safe manner and at a lower rate of speed than he would have operated it. The conductor paid no attention to the manner in which the brakes were being manipulated but he thought the train was being operated at a safe speed. The flagman felt the brakes apply and release on one occasion only and thought the train was being operated in the usual manner. The rules required that the retaining valves be set for use at Topton. After the accident occurred the retaining valve on the first car was found set for use but the one on the second car was found in release position. If this valve had been set for use it is possible the speed of the train would have been controlled properly. On the other hand, a railway mail clerk who was in the front end of the first car said that the speed was 45 or 50 miles per hour and greater than at any previous time he had been on this schedule during the past 18 years, and that his car did not seem to strike anything before it stopped at the edge of the river. A passenger on the train said that the coach lurched severely and the speed was excessive. Two persons in an automobile being driven westward on a highway near the railroad estimated the speed of the train at 45 or 50 miles per hour. A former railroad employee living near the point where the accident occurred estimated the speed at 50 miles per hour, which was greater than he had observed on any occasion during the past 12 years.

According to A. R. E. A. superelevation tables, the overturning speed on the curve involved is about 50 miles per hour. Since the engine overturned to the outside of the curve and was not in contact with any portion of the track structure, since there was no flange mark on the head of a rail, and since all factors that could cause or contribute to the cause of the derailment apparently are eliminated, except the factor of speed, it is believed that the estimates of the speed given by the members of the crew were considerably lower than the actual speed of the train and that the train was moving at overturning speed at the time of the derailment.

The student engineman was on the engine for the purpose of learning the physical characteristics of the line. Under the rules he was not authorized to operate the engine during the absence of the assigned engineman. During the past 4 years the student engineman had not been over the portion of the line where the accident occurred. The exact manner in which he manipulated the brakes and the extent of his knowledge of the grades and curves are not known. The conductor and the assigned engineman stated that they considered the student engineman qualified to handle the train in a safe manner.

Cause

It is found that this accident was caused by excessive speed on a sharp curve.

Dated at Washington, D.C., this twenty-ninth day of May, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.