

BUREAU OF SAFETY

-----  
REPORT NO. 1969

Railroad: Nashville, Chattanooga & St. Louis  
Date: February 25, 1935  
Location: Lexington, Tenn.  
Kind of accident: Head-end collision  
Trains involved: Passenger : Mixed  
Train numbers: 104 : 231  
Engine numbers: 506 : 375  
Consist: 5 cars : 3 cars  
Speed: 15-25 MPH : standing  
Track (Alinement): Tangent track, but grade ascends  
(Grades ): until within 175 feet of switch  
involved and then descends  
Weather: Clear  
View: Account grade conditions and low switch  
stand, position of switch by day can  
be determined only by switch points.  
Casualties: Eight injured  
Cause: Open switch

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN  
ACCIDENT ON THE NASHVILLE, CHATTANOOGA & ST. LOUIS  
RAILWAY AT LEXINGTON, TENN., ON FEBRUARY 23, 1935.

April 18, 1935.

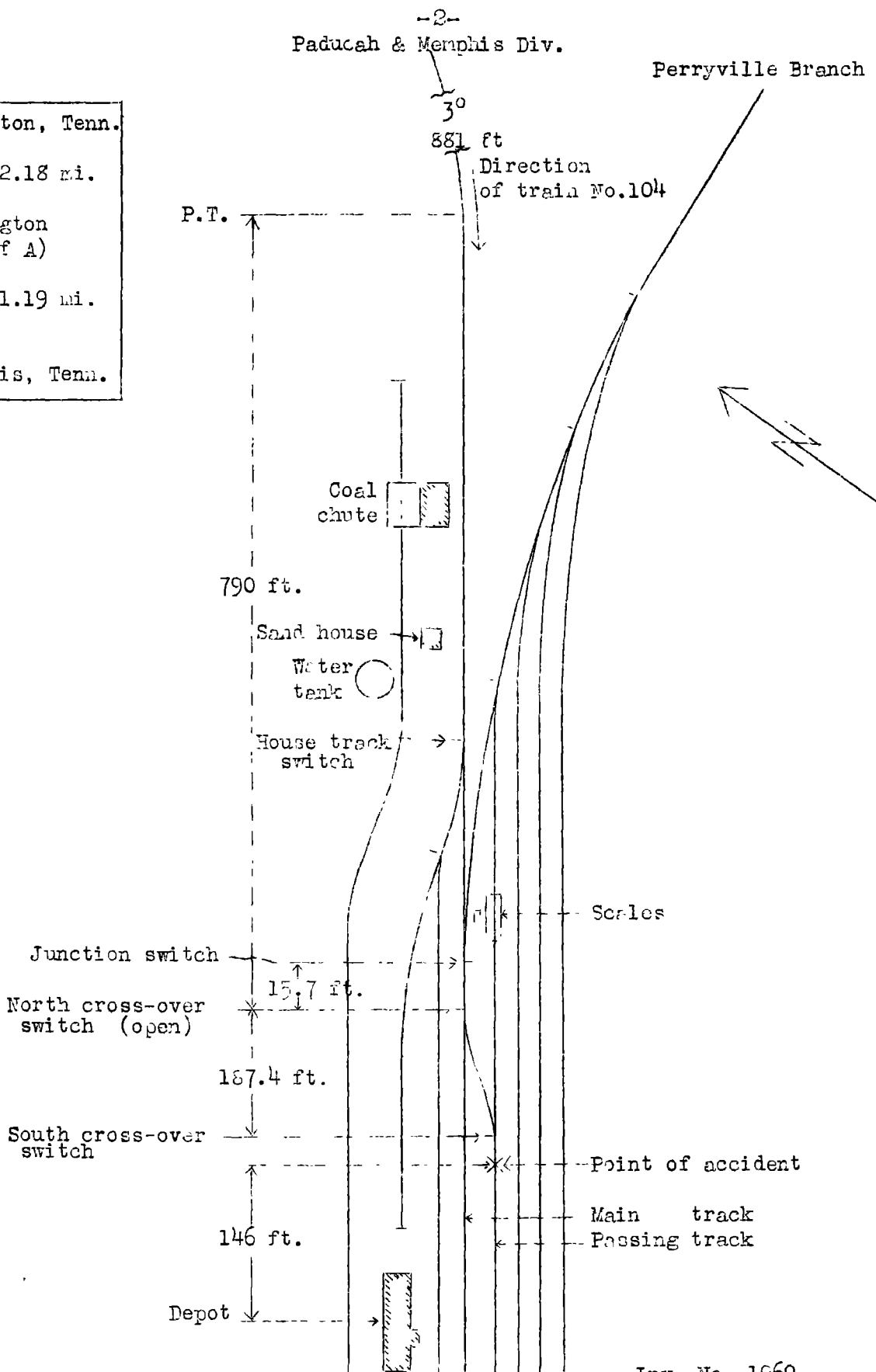
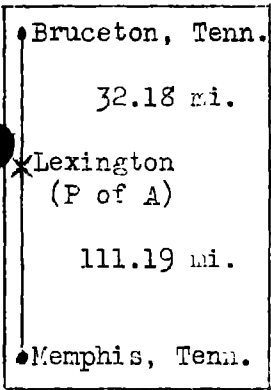
To the Commission:

On February 23, 1935, there was a collision between a passenger train and a mixed train on the Nashville, Chattanooga & St. Louis Railway at Lexington, Tenn., which resulted in the injury of 5 passengers, 2 employees and 1 porter.

## Location and method of operation

This accident occurred on that part of the Paducah and Memphis Division extending between Bruceton and Memphis, Tenn., a distance of 143.87 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 block-signal system being in use. There is a cross-over at Lexington which connects the main track with the passing track, and the collision occurred on the passing track at a point 4.6 feet south of the south switch of the cross-over or 146 feet north of the center line of the depot. The switch involved in the accident was the north cross-over switch, a facing-point switch for south-bound trains. Approaching the cross-over from the north, there is a 3° curve to the right 881 feet in length, followed by 790 feet of tangent to the north cross-over switch and for a considerable distance beyond that point. The grade is 0.486 percent ascending to within 175 feet of the north switch of the cross-over, and then it is 0.49 percent descending to and beyond the switch.

The passing track and various yard tracks parallel the main track on the east, and the Perryville Branch serves as a lead track to the yard tracks; it leads off the Paducah and Memphis Division main track toward the northeast, the junction switch being a trailing-point switch for south-bound trains and being located 15.7 feet north of the north switch of the cross-over. The scale track is a continuation of the passing track and connects with the Perryville Branch. The switch stand of the north switch of the cross-over is of the New Century low type and is located on the west side of the main track; it is not equipped with targets but has a switch lamp, the top of which is 28 inches above the head block. The switch stand of the junction switch of the Perryville Branch is located on



Inv. No. 1969  
 Nashville, Chattanooga & St. Louis Ry.  
 Lexington, Tenn.  
 Feb. 23, 1935.

the east side of the main track and is equipped with large targets about 6 feet above the head block, as is also the house-track switch stand, located on the west side of the main track and 132 feet north of the junction switch. The depot, sand house and coal chute are located on the west side of the main line track; the sand house and coal chute being 250 feet and 375 feet, respectively, north of the north switch of the cross-over.

With the sun shining brightly, as was the case at the time of the accident, the indication displayed by the switch lamp of the north cross-over switch can not be seen and under such conditions the members of the engine crew of a south-bound train can determine the position of the switch only by seeing the switch points.

The weather was clear at the time of the accident, which occurred about 11:59 a.m.

#### Description

Train No. 231, a north-bound mixed train on the Perryville Branch, originates at Lexington at 12:01 p.m. It had been made up and consisted of engine 375, two freight cars, and a wooden coach, in the order named, and was in charge of Conductor Dennison and Engineman Lindenfield. It was standing on the passing track with the front end of the engine immediately south of the cross-over. About 2 minutes before its scheduled departing time, Train No. 104 entered the north switch of the cross-over, which was open, and then ran through the south cross-over switch and struck the branch line train.

Train No. 104, a south-bound passenger train on the Paducah and Memphis Division main line, consisted of 1 baggage-mail car, 1 baggage car, 2 coaches, and 1 cafe-coach, in the order named, hauled by engine 506, and was in charge of Conductor Hall and Engineman Herring. The cars were of all-steel construction with the exception of the second car, which was of steel-underframe construction. This train left Bruceton, 32.18 miles north of Lexington, at 10:45 a.m., according to the train sheet, on time, and on reaching Lexington it entered the north cross-over switch and collided with Train No. 231 while traveling at a speed estimated to have been between 15 and 25 miles per hour.

Train No. 231 was driven backward a distance of about 50 feet and the front end of each engine was considerably damaged; the engine truck of engine 506 was demolished but none of the other equipment of this train was derailed or damaged. The employees injured were the conductor and fireman of Train No. 104.

#### Summary of evidence

Brakeman Garvey, of Train No. 231, who was a qualified conductor, stated that he had been on this particular run for about 13 years. He said that station switching and work of making up the train was performed between the hours of 9:30 and 11:15 a.m. During the course of this switching a car of coal was placed on the branch lead, following which the engine ran around it by backing through the scale track and then heading north through the cross-over and coupling to the car, about 9:45 a.m.; Brakeman Garvey said that he handled the north cross-over switch and the junction switch while this move was made and that this was the only time the north cross-over switch was opened. He then closed that switch and about 10:50 a.m. he returned to it and locked it, saying that the engine made several moves over this switch on the main track both before and after he locked it and then finally backed through the scale track and coupled to its train on the passing track at about 11:15 a.m., where it remained until the accident occurred. At the time he locked the switch he snapped the lock and pulled on the chain, also observing that the switch points fitted properly. After the engine was finally coupled to the train he went home to lunch and was gone about 20 or 25 minutes. On his return to the depot, about 11:35 a.m., he walked by the switch but did not observe its position, but immediately after the accident he saw that it was lined for the cross-over and locked. Brakeman Garvey further stated that he last observed the position of the switch about 20 minutes after he had locked it, or at the time he finally closed and locked the junction switch, about 11:10 a.m., at which time he looked at the cross-over switch and saw that it was lined for the main track, although he did not notice whether or not it was locked at that time because he knew that he had already locked it; he did not think that he became confused as to the position of the switch and inadvertently opened it and locked it in that position.

Brakeman Hodges, of Train No. 231, stated that the only time the north cross-over switch was opened was at the time the engine ran around the car of coal and he said he saw Brakeman Garvey line the switch back for the main track and put the lock in the hasp, but that he did not lock it. About 10:30 a.m. Train No. 105, a north-bound passenger train, passed over the

switch on the main track, and Brakeman Hodges said that about 10:50 a.m. he saw Brakeman Garvey lock the switch and that it then was lined for the main track. Brakeman Hodges also went home for lunch after his train was finally made up, which was about 11:17 a.m., and on his way home he crossed the main track at a point about one and one-half rail lengths south of the switch and saw that it was lined for the main track and locked. Brakeman Hodges said that he had not personally handled the north cross-over switch at any time nor did he see any one handle it except Brakeman Garvey.

Conductor Dennison, of Train No. 231, stated that while the switching was being performed he was engaged with other duties. He went to the coal chute about 11:05 a.m. and told Brakeman Garvey that he was going home to eat, and while on his way to the coal chute he had looked at the north cross-over switch and saw that it was lined for the main track with the lock in the hasp; it looked as if the lock was shut, although he did not pull on the chain to ascertain whether it actually was locked. On his return from lunch, about 11:25 a.m., he walked right over the switch and he stated that it then was lined for the main track and locked; he was unable to account for the switch being open at the time of the accident.

Statements of Engineman Lindenfield and Fireman Attaway, of Train No. 231, were to the effect that the switch was used only once during the course of switching, this being while running the engine around the car of coal.

Engineman Herring, of Train No. 104, stated that when about 3,200 feet north of the cross-over the speed of his train was about 45 miles per hour and he made a service application of the brakes, reducing the speed to about 30 or 35 miles per hour. While rounding the curve approaching the station he was looking for the indication displayed by the train-order signal, and on reaching a point about 400 feet north of the north cross-over switch the fireman called the indication displayed by the train-order signal. Engineman Herring said he was prepared to make the regular station stop and that he continued to look for the train-order signal; when about opposite the sand house he saw the signal, then glanced ahead and saw the target of the house-track switch, located 198 feet north of the north cross-over switch, following which the fireman jumped off his seat box and ran over and shoved the brake-valve handle into emergency position and called "open switch", at which time the speed was about 25 or 30 miles per hour with the engine working a drifting throttle. The engine entered the open north cross-over switch, ran through the south cross-over switch, and struck Train No. 231 while traveling at a speed of about 15 to 18 miles per hour.

Engineman Herring was of the opinion that the open switch points were seen as soon as it was possible to have done so under the existing conditions, saying that with the sun shining brightly the view of the indication displayed by the switch lamp was rendered negligible, the view being interfered with also by the fact that the switch was located just beyond the apex of the grade and in proximity to other switches. Fireman Turner was seriously injured as a result of the accident and was not interviewed.

Section Foreman Bray stated that the switch stand in question always had been equipped with a lamp on which a disc target was built around each lens, known as a day-target lamp. During switching operations, however, the targets were knocked off and the lenses broken out, and in the latter part of November, 1934, he ordered a main-line switch lamp for this stand; on December 18, 1934, he received a straight lamp, designed for a switch already equipped with a target, and placed it on the switch stand without notifying the supervisor that he was using a plain lamp, without targets, on a main-line switch. The section foreman also said that the junction switch, which is equipped with a high target stand located on the east side of the track, was just north of the north cross-over switch and in order to keep the two stands from being in line with each other, the stand of the cross-over switch was placed between the main track and house track, and on account of the clearance between these tracks a high target stand could not be used as a matter of safety to employees riding on the sides of cars during switching operations.

#### Discussion

According to the evidence the north cross-over switch was used only once during the switching performed by the crew of Train No. 231 and that was at about 9:45 a.m., when Brakeman Garvey opened it to permit his engine to head through the cross-over in order to run around a car, and he said that he then closed the switch and placed the lock in the hasp but did not lock it. About 10:30 a.m. Train No. 105, a north-bound passenger train, passed over the switch while it was unlocked and Brakeman Garvey said that at about 10:50 a.m. he walked over to the switch and snapped the lock and pulled on the chain and that at about 11:10 a.m. he looked at the switch as he passed it and saw that it was closed. Brakeman Hodges verified these statements by saying he saw Brakeman Garvey close the switch and later on saw him lock it, while Conductor Dennison observed the position of the switch on his return from lunch at 11:25 a.m. and saw that it was closed at that time. Immediately after the accident the switch was found to be lined for the cross-over

and locked, and it was not damaged, indicating that it had been opened after the passage of Train No. 105 at 10:30 a.m. Employees were in the vicinity practically continuously up to the time of the accident, but so far as could be determined no one touched the switch except Brakeman Garvey and he said he did not think that he became confused at any time as to the position of the switch and inadvertently changed it from the main track to the cross-over and locked it in that position; however, the investigation did not reveal any other possible explanation for the switch being open.

Engineman Herring, of Train No. 104, was looking for the train-order signal and then glanced at the house-track switch target, and about this time his fireman ran across to his side of the engine, shoved the brake-valve handle into emergency position, and called "open switch"; the engineman also said that the indication displayed by the switch lamp was practically obscured when the sun was shining, in fact, observations showed that the position of the switch, just over the apex of a grade, could first be ascertained by observing the switch points. There was no target on the switch stand, the section foreman saying that he had asked for a new main-line switch lamp and received a lamp designed for a stand already equipped with targets, instead of a lamp with a disc target surrounding each lens.

#### Conclusions

This accident was caused by an open switch.

It is recommended that the carrier make such changes as may be necessary in order to permit of the installation of a switch stand which will be adequate to afford a proper indication of the position of the switch to a train approaching from either direction.

Respectfully submitted,

W. J. PATTERSON,

Director.