

RAILROAD ACCIDENT INVESTIGATION

Report No 3785

SOUTHERN RAILWAY COMPANY

CALHOUN, TENN

SEPTEMBER 24, 1957

INTERSTATE COMMERCE COMMISSION

Washington

SUMMARY

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DATE	September 24, 1957
RAILROAD	Southern
LOCATION	Calhoun, Tenn
KIND OF ACCIDENT	Derailment
TRAIN INVOLVED	Freight
TRAIN NUMBER	153
LOCOMOTIVE NUMBER	Diesel-electric units 4167, 6107, 4330 and 4162
CONSIST	149 cars, caboose
ESTIMATED SPEED	45 m p h
OPERATION	Timetable, train orders, and automatic block-signal system
TRACK	Single, 8° curve, 0.74 percent descending grade westward
WEATHER	Cloudy
TIME	10.10 p m
CASUALTIES	3 Injured
CAUSE	Switch being opened immediately in front of approaching train

INTERSTATE COMMERCE COMMISSION

REPORT NO 3785

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

SOUTHERN RAILWAY COMPANY

April 25, 1958

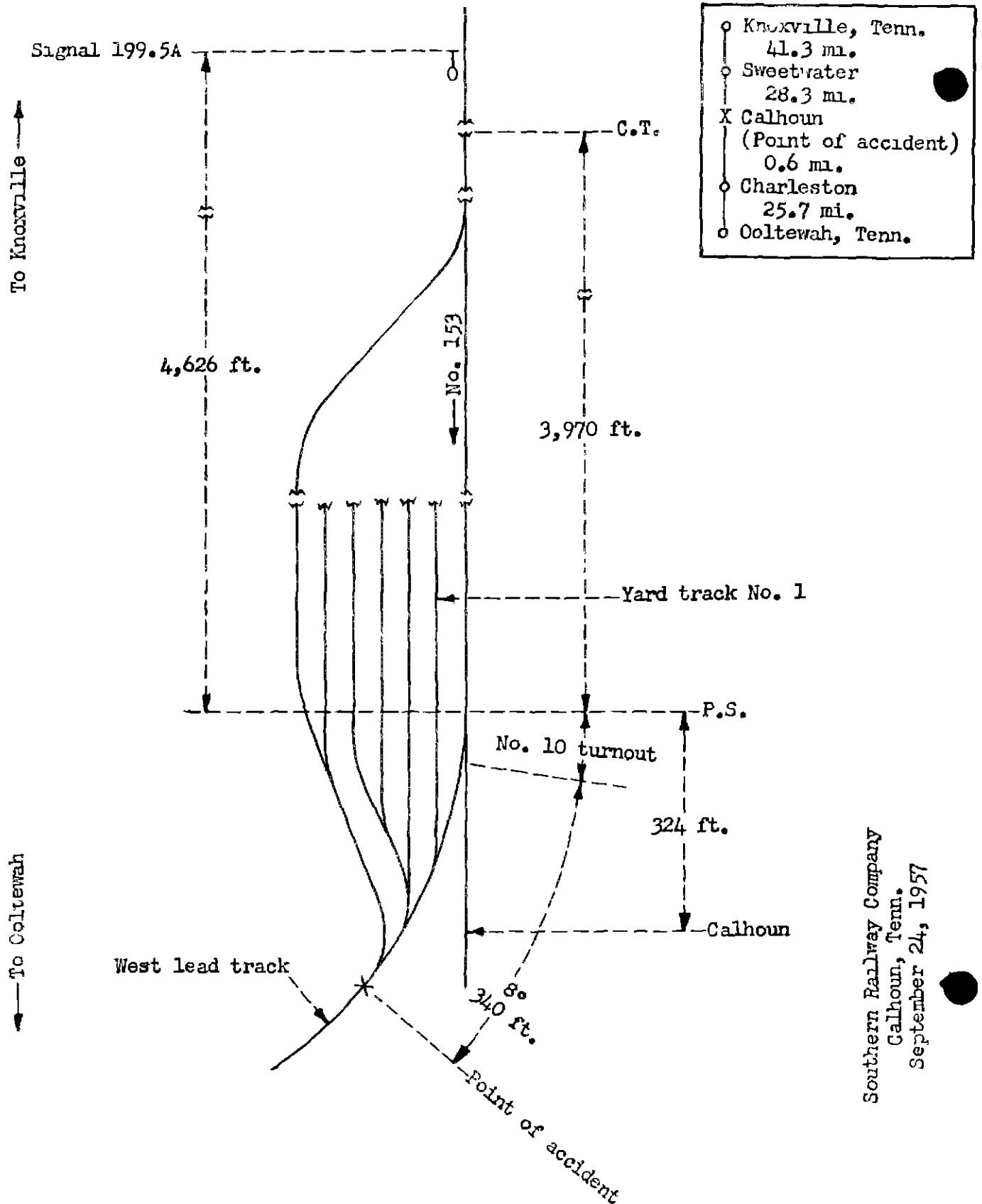
Accident at Calhoun, Tenn , on September 24, 1957, caused by a switch being opened immediately in front of an approaching train

REPORT OF THE COMMISSION¹

TUGGLE, Commissioner

On September 24, 1957, there was a derailment of a freight train on the Southern Railway at Calhoun, Tenn , which resulted in the injury of three train-service employees

¹ Under authority of section 17 (2) of the *Interstate Commerce Act* the above-entitled proceeding was referred by the Commission to Commissioner Tuggle for consideration and disposition



Location of Accident and Method of Operation

This accident occurred on that part of the Knoxville Division extending between Knoxville and Ooltewah, Tenn., 95.9 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders, and an automatic block-signal system supplemented by an intermittent inductive automatic train-stop system. At Calhoun, Tenn., 69.6 miles west of Knoxville, six yard tracks parallel the main track on the north. The yard track adjacent to the main track is designated as Yard track No. 1. The east ends of the yard tracks join a lead track. The lead track diverges to the north from the main track and extends a considerable distance westward. The main-track switch of the lead track, which is facing-point for westbound movements, is located 324 feet east of the station. The accident occurred within yard limits on the lead track at a point about 420 feet west of the main-track switch. From the east on the main track and on the lead track there are, in succession, a tangent 3,970 feet to the main-track switch of the lead track, a No. 10 turnout to the right, and a compound curve to the right approximately 340 feet to the point of accident and a considerable distance westward. The curvature at the point of accident is 8 degrees and the grade is 0.74 percent descending westward.

The switch stand of the main-track switch of the lead track is of the ground-throw low-stand type and is located north of the main track. It is not equipped with targets or a lamp. Operating-lever keepers are provided. One keeper secures the operating lever in normal position for movements on the main track and the other in reverse position. The keepers are so designed that they can be secured in position by a switch lock.

Automatic signal 199 5A, governing westbound movements on the main track, is located 4,626 feet east of the main-track switch of the lead track. This signal is of the color-light type and is continuously lighted. It displays three aspects. The aspect applicable to this investigation, and the corresponding indication and name are as follows:

Signal	Aspect	Indication	Name
199 5A	Green-over-number plate	PROCEED	CLEAR

The controlling circuit is so arranged that when a main-track switch within the block of the signal is opened the signal will indicate Proceed-at-restricted-speed.

This carrier's operating rules read in part as follows:

404 The position of a switch or derail being used is the responsibility of the employee handling the switch or derail. This, however, does not relieve other crew members of responsibility where and when they are in position to observe the positions of switches and derails.

The normal position for a main track switch is set and locked for movement on the main track. * * * They must be left in their normal positions after having been used and locks tested to know that they are secured. * * *

* * *

Engineer and firemen must see that switches and details within view from their position on the engine are properly lined.

104(a) When a train is in siding to meet another train, main track switch must be lined and locked for main track movement. Member of crew will not go nearer to the main track switch than clearance point until the opposing train has passed over the switch.

* * *

The maximum authorized speed for freight trains in the vicinity of the point of accident is 30 miles per hour.

Description of Accident

No. 153, a westbound first-class freight train, consisted of diesel-electric units 4167, 6107, 4330, and 4162, coupled in multiple-unit control, 149 cars, and a caboose. This train passed Sweetwater, Tenn., 41.3 miles west of Knoxville, the last open office, at 9:14 p. m., 3 hours 22 minutes late, passed signal 1995A which indicated Proceed, was diverted to the lead track at Calhoun, trailed through the switch of yard track No. 1, and while moving at an estimated speed of 45 miles per hour the locomotive and the first to the 43rd cars, inclusive, were derailed at a point approximately 420 feet west of the main-track switch of the lead track.

Separations occurred between the first and second diesel-electric units, and at both ends of the fourth diesel-electric unit. The first unit stopped approximately at right angles to the track on its left side at the bottom of a 20-foot fill with the front end about 60 feet south of the lead track and 350 feet west of the point of derailment. The second to the fourth diesel-electric units, inclusive, stopped approximately upright and in line with the front end of the second unit about 70 feet south of the lead track and 700 feet west of the point of derailment. The derailed cars stopped in various positions on or near the track structure. The diesel-electric units were heavily damaged. Thirty-four of the derailed cars were destroyed and nine were heavily damaged. The track structure was destroyed in the immediate vicinity of the point of accident.

The engineer, the fireman, and the front brakeman of No. 153 were injured.

The weather was cloudy at the time of the accident, which occurred about 10:10 p. m.

Discussion

On the day of the accident diesel-electric unit 2115, a road-switcher type assigned to yard service, was being used to perform switching operations at Calhoun and Charleston, 0.6 miles west of Calhoun. Members of the yard crew held a message instructing them to exchange locomotives with No. 69, a westbound second-class freight train. About an hour before the accident occurred this unit, coupled to a caboose, entered the lead track from the main track. The brakeman then restored the main-track switch to normal position and locked it in that position. The movement proceeded westward on the lead track to a point where switching operations were to be performed. While at that location the conductor made an unsuccessful attempt to communicate with the crews of No. 153 and No. 69 by radio to determine the locations of these trains. The yard crew then decided to return to Yard track No. 1 to await the arrival of No. 69. As diesel-electric unit 2115,

headed west and with the caboose coupled to the east end, entered Yard track No. 1 the brakeman alighted on the north side of the caboose. The enginemen were in the control compartment, and the conductor and flagman were in the caboose. The fireman, a qualified engineer, was operating the locomotive. Two unsuccessful attempts were made to couple the caboose to cars standing on Yard track No. 1 and the movement was then stopped with the front end of the control compartment at a point approximately opposite the switch stand of the main-track switch of the lead track.

The engineer said that about the time the movement stopped he observed the conductor alight from the caboose on the south side and walk toward the main-track switch stand. He said that his attention was then diverted by the headlight of an approaching westbound train and that he did not again observe the conductor until he was running toward the front of locomotive 2115 as the westbound train was closely approaching. No other member of the crew observed the conductor's movements immediately after he alighted from the caboose. The conductor said that he alighted from the caboose about the time the movement stopped and that he was proceeding to a telephone located at the west end of the yard tracks to determine the locations of No. 153 and No. 69 when he observed a westbound train approaching. He said that he then ran westward to be in the clear of the approaching train. He said that he did not line the main-track switch for entry to the lead track and that he did not observe the position of the switch when he passed it. Each member of the crew said that he did not observe any persons other than members of the yard crew in the vicinity of the lead track and Yard track No. 1 from the time the movement entered Yard track No. 1 until after the accident occurred.

As No. 153 was approaching the point where the accident occurred the enginemen were in their respective positions in the control compartment at the front of the locomotive. The front brakeman was in the control compartment of the fourth diesel-electric unit, and the flagman and the conductor were in the caboose. The brakes of this train had been tested and had functioned properly when used en route. The headlight was lighted brightly. The engineer, the fireman and the front brakeman said that they observed signal 199 5A and that it indicated Proceed. When the train passed the signal the automatic train-stop device was not actuated. The engine crew estimated that the speed of the train was about 45 miles per hour as it approached Calhoun. They said that when the train was about 380 feet east of the main-track switch of the lead track they observed a man moving in the vicinity of the switch stand of that switch. The fireman then observed that the switch was lined for entry to the lead track and called a warning. The engineer immediately initiated an emergency brake application but the speed of the train was not materially reduced before the accident occurred.

Examination of the main-track switch of the lead track after the accident occurred disclosed that the switch was lined for entry to the lead track and that the operating lever was latched in position. The switch lock was found on a tie near the switch stand. The switch and switch stand were found to be in good condition.

The signal system in the vicinity of the point of accident was tested after the accident occurred and was found to function as intended. Tests disclosed that when the main-track switch of the lead track was not in proper position for movement on the main track, signal 199 5A displayed a Proceed-at-restricted-speed aspect.

The investigation disclosed that the switch involved was not broken and had not been trailed through. No. 18, an eastbound first-class passenger train due to leave Charleston at 9:26 p. m., passed this point after the yard movement had entered the lead track and the switch had been restored to normal position. There was no subsequent movement over the switch before the accident occurred. Signal 199 5A indicated Proceed as No. 153 approached and the train-stop device was not actuated as the locomotive passed over the inductor. This indicates that the block was clear and the switch involved was in normal position approximately 70 seconds before the derailment occurred, as estimated from the speed at which No. 153 was moving as it approached the point of accident. Under these circumstances it is apparent that the switch was lined for entry to the lead track while No. 153 was moving between the signal and the point at which it was diverted to the yard track. Although the identity of the person who lined the switch for the diverging movement could not be definitely established, the conductor of the yard crew alighted from the caboose on the adjacent track immediately before the accident occurred and he was the only person who was seen or known to be in the vicinity of the switch as No. 153 was closely approaching. If this switch had been equipped with a switch lamp or a reflectorized target it is possible the members of the crew of the locomotive would have observed that the switch was lined for entry to the siding in sufficient time to have reduced materially the speed of the train before entering the siding.

Cause

This accident was caused by a switch being opened immediately in front of an approaching train.

Dated at Washington, D. C., this twenty-ninth
day of April, 1958

By the Commission, Commissioner Fuggie

(SEAL)

HAROLD D. MCCOY,
Secretary