

No. 206
July 1, 1914.

**IN RE: INVESTIGATION OF ACCIDENT ON THE SOUTHERN RAILWAY NEAR
SADLER, N. C., JUNE 14, 1914.**

On June 14, 1914, there was a derailment of a passenger train on the Southern Railway near Sadler, N. C., which resulted in the death of the engineman and fireman and the injury of one mail clerk, two porters and one passenger. After investigation of this accident the Chief Inspector of Safety Appliances reports as follows:

Southbound passenger train No. 89, known as the Birmingham Special was en route from Washington, D. C., to Birmingham, Ala., and consisted of 1 mail car, 1 combination car, 1 coach, 1 tourist car and 4 Pullman sleeping cars, hauled by locomotive No. 1307 and was in charge of Conductor Tucker and Engineman Wingate. The cars in this train were all of all-steel construction with the exception of the coach, which had steel underframe and steel sides up to the window frames. Train No. 29 left Danville, Va., at 11:49 p.m. June 13, 2 minutes late, left Pelham, N. C., at 12:16 a.m. 9 minutes late, and at 12:53 a.m. was derailed at the north passing track switch at Sadler while running at a speed estimated to have been about 40 miles per hour.

The locomotive and the first 5 cars were derailed, as well as the forward truck of the sixth car. The engine turned completely around and came to rest on its left side at the foot of the embankment on the west side of the track. The tender was across the two tracks, still coupled to the engine. The mail car remained coupled to the tender and was in an upright position clear of the main track, as were the two following cars. The other derailed cars also remained upright. The track was badly torn up from the switch to the rear end of the engine, a distance of about 450 feet.

This part of the Southern Railway is a single track line and train movements are protected by a manual block signal system. The track is laid with 85-pound steel rails, 33 feet long, with about 15 oak ties under each rail, ballasted with about 8 inches of rock, with about 13 inches of pebble ballast underneath. Approaching the scene of the accident from the north the track is straight for about one-half mile, with a slightly ascending grade, and at the point of derailment is on a fill varying in depth from 10 to 12 feet.

Examination of the passing track switch at which the train was derailed showed that about 40 inches of a section of an arch bar tie strap, about 10 feet in length, had become wedged between the switch point and the stock rail, causing the spreading of the former. This tie strap came from the right side of the rear truck and the Pullman sleeping car Landro, the fifth car in northbound

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passenger train let No. 38, which had passed Sadler at about 11:28 p.m. nearly an hour before the derailment occurred. The tie strap apparently had become detached from the forward end of the truck, bent around and dragged into the switch, breaking off near the front end of the rear pedestal. The part attached to the forward end of the truck frame, leading to the front pedestal, had broken off at the first pedestal bolt hole and was found on the right side of the track at a point about 100 yards north of the switch. The part attached to the rear of the truck frame, leading to the rear pedestal, was found on the arrival of the train at Washington, D. C., and was removed at that point. The breaks in this tie strap were fresh and there were no apparent flaws in the metal. Although the tie strap showed that it had been dragging for some time prior to becoming wedged in the switch, no marks were found on the ties at any point south of the switch. This arch bar tie strap was about 14 feet in length when complete. The forward end was fastened to the front of the truck frame with one bolt; it then passed under the three journal boxes, being fastened at each pedestal with two bolts; it was then fastened to the rear of the truck frame with one bolt. These tie straps carry little weight, being placed on the truck for the purpose of holding the pedestals in position and keeping the wheels from dropping out in case the truck frame should be raised for any purpose. The defective tie strap had not been discovered by inspectors at any point south of Sadler, neither had the fact that it had been broken, and most of it missing, been discovered prior to the arrival of train let No. 38 in Washington, although located on the outside of the truck and so situated that it could easily have been discovered.

At the time that train let No. 38 passed Sadler a freight train was on the siding. The train crew of this freight train noticed fire flying from about the middle of the passenger train but thought it was due to the sticking of a brake shoe. After the passage of train let No. 38, two northbound passenger trains had passed over the switch but experienced no trouble on account of the switch being a trailing point switch for movements in that direction. Train No. 29 was the first southbound train to pass.

When train let No. 38 was inspected at Salisbury, Spencer and Greensboro, N. C., points 77, 75, and 28 miles, respectively, south of Sadler, the defective strap, if it was defective at those points, was not discovered; in fact, the inspection undoubtedly was not such as would have enabled the inspectors to have discovered its condition. After passing Sadler the train was inspected at Danville and Monroe, V., points 21 and 93 miles, respectively, north of Sadler; nevertheless, the fact that the tie strap was broken and missing was not discovered until the train reached Washington, 259 miles from Sadler. Under the time-card schedule, train let No. 38 stops 10 minutes at Salisbury, 5 minutes at Spencer and 7 minutes at Greensboro. Stops of 10 and 5 minutes are also made at Danville and Monroe, respectively,

At all of these points inspections are made, while at some of them cars are picked up and set out, engines changed, air brakes tested, etc.

The inspectors at Salisbury, Spencer and Greensboro stated that they found none of the equipment on train let No. 38 to be defective. All of them were of the opinion that the time allowed under the time-card schedule was not sufficient to enable a careful inspection to be made of each car, especially when there was other work to be done, such as picking up and setting out cars changing engines, etc. The opinion of these men seemed to be that two inspectors should have at least 15 minutes in which properly to inspect a train of 8 cars, which was the number of cars in train let No. 38 at that time. In most cases when a train was ready to proceed the inspectors would allow it to go, even though their inspection had not been completed, this being done to avoid delay. It appeared, however, that on some occasions a train would be held until the inspection could be completed. When a train was so delayed they were asked why they had delayed it, but had never been criticized for their action.

The inspectors at Danville were advised by a Pullman porter, who got off between the two rear cars of train let No. 38, that something seemed to be dragging under the cars as a great deal of dust had been kicked up along the road. They made a particularly close inspection under the two rear cars but found nothing. Inspector Clark, who inspected the right side of train let No. 38 at Danville, stated that he did not pay particular attention to the outside of the trucks as he was looking for something dragging under the train, and in view of these circumstances he said that he would not have noticed the missing tie strap. The inspectors at Monroe stated that they made the usual inspection, but did not detect the fact that the tie strap was missing.

This accident was caused by the spreading of the switch point at the passing track switch, due to the wedging between the switch point and stock rail, of one end of a section of an arch bar tie strap which had been broken off at one of the cars in northbound passenger train let No. 38.

On March 30, 1914, there was a derailment on the Chicago, Burlington and Quincy Railroad at Hawthorne, Ill., due to a loose wheel. Marks on the track made by this loose wheel were found as far as 200 miles back of the point of derailment, and the train had been inspected at three points within that distance of 200 miles. None of these inspections, however, developed the fact that there was a loose wheel.

These inspections of passenger trains made at various points

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along the road are at the best but casual inspections. In most cases not only is insufficient time allowed for making a proper inspection, but there are also added duties in the way of changing engines, testing air brakes, picking up and setting out cars, etc. A great many of these inspections are performed in a hasty and perfunctory manner and the inspectors are unable to detect only the most serious defects and even then many escape unnoticed, as was the case in this instance at Danville and at Monroe. It is obvious that inspectors can not make a careful inspection of from 8 to 12, or even 14 cars and assist in changing engines, testing air brakes, etc., in the short period of time allowed for that purpose. If it is desired to obtain the greatest benefit from these running inspections it would seem that either more time should be allowed for such inspections or that more inspectors should be provided.