

## INTERNATIONAL COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE  
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
ATLANTIC COAST LINE RAILROAD NEAR CHATMAR, FLA., ON  
NOVEMBER 12, 1927.

December 28, 1927.

To the Commission:

On November 11, 1927, there was a derailment of a freight train on the Atlantic Coast Line Railroad near Chatmar, Fla., which resulted in the death of one employee.

#### Location and method of operation

This accident occurred on the Wilcox Branch of the Ocala District, extending between Dunnellon and Wilcox, Fla., a distance of 31.3 miles. This is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The accident occurred approximately 3 miles north of Chatmar. Beginning at Chatmar and extending northward the track is tangent to the point of accident and for a considerable distance beyond, while the grade is slightly undulating and is practically level at the point of accident. The maximum speed for engines backing up is restricted to 15 miles per hour.

In the vicinity of the point of accident the track is laid with 85-pound rails, 33 feet in length, with about 18 ties to the rail-length. At the time of the accident this line was undergoing extensive repairs to accommodate main-line traffic and is being ballasted with crushed limestone. The first course of ballast, about four inches in depth, had been spread and placed under the ties. The second course was spread a few days prior to the date of the accident but the track had not been raised above it, leaving this ballast about even with the tops of the rails.

The weather was clear at the time of the accident, which occurred at about 10.20 p. m.

#### Description

Northbound freight train extra 806 consisted of 35 empty cars and a caboose, hauled by engine 806, running backwards, and was in charge of Conductor O'Steen and Engineman Dean. At the time of the accident this train was enroute to Otter Creek, approximately 25 miles north of Chatmar, where the cars were to be loaded and a return movement made. There being no facilities for turning

engines at Otter Creek it is customary to back the engine on the northbound movement so that it will be headed in the proper direction while handling the loaded equipment. This train left Lamellon at 9.50 p. m., and after turning the engine at Chatmar it departed from that point at about 10.05 p. m., and shortly afterwards it was derailed while travelling at a speed estimated to have been about 15 miles per hour.

The engine came to rest on its left side parallel with the track at a point approximately 300 feet north of the initial point of derailment, the tender also came to rest on its left side, being almost completely reversed, but it remained coupled to the engine; both were considerably damaged. The first five cars were derailed and came to rest in various positions within a space of less than 100 feet, the first four cars being badly damaged while the fifth car was slightly damaged. The employee killed was the fireman.

#### Summary of evidence

Engineer Dean stated that after passing over a slight ascending grade a short distance south of the point of accident he placed the trolley on the drifting position, and shortly after this had been done he heard a peculiar sound which he thought was caused by ballast on the rails. He looked at the tender and it appeared to be riding smoothly but there was fire flying from its wheels, and having had trouble on one previous occasion, due to a rear pilot brace dropping down and knocking ballast on the rails, he was of the impression that something of this nature had happened again and he was about to apply the brakes for the purpose of making an ordinary stop when the tender left the track, swung around and derailed the engine. Upon observing the tender leave the track he applied the air brakes in emergency but he did not think the application of the brakes had anything to do with stopping the train. Engineer Dean estimated the speed of the train at the time of the accident at 15 miles per hour, which in his opinion was perfectly safe as the track appeared to be in good condition, and he further stated that he did not think the ballast had anything to do with the accident although he made no investigation to ascertain its cause.

Brakeman Willis stated that at the time of the accident he was standing in the cab of the engine near the fireman's seat. His first knowledge of anything wrong was when he observed the tender leaning to one side and he immediately jumped out of a cab window. He said the speed of the train was about 14 or 15 miles per hour at the time and that he had noticed no rough riding of the tender prior to its derailment, he had no idea as to

what caused the accident.

Conductor O'Steen stated that he was riding in the cupola of the caboose and that his first intimation of anything unusual was when the train came to a sudden stop. He thought the speed of the train was not over 15 miles per hour at any time after leaving Oakes, that the tree was in fair condition and that the caboose rode about as usual. Conductor O'Steen was unable to say what caused the accident as he made no investigation of conditions, although on several occasions he could hear the caboose running over ballast. The statements of Flayman Jarvis brought out no additional facts of importance.

Section Foreman Hodges stated that the track in the vicinity of the accident had been ballasted and surfaced in June and that he passed over it at 4.15 p. m. on the day of the accident, at which time he noticed no variations. After the accident, however, the section foreman found some low joints while the track also was slightly out of line, but he did not think these defects were sufficient to have caused any undue rocking of the tender. He also stated that he found no indications of anything dragging and that he did not think the ballast between the rails contributed to the cause of the accident. He thought the irregular alignment immediately south of the point of accident resulted from the derailment of the equipment.

Readmaster Guest stated that he passed over this portion of the track on a motor car on the morning of the accident and found it to be slightly out of line and what he termed as a little wavy, but that he made no attempt to have these exceptions remedied as he did not think they were serious enough to cause a derailment provided the maximum speed limit was not exceeded. After the accident he found the surface of the track south of the point of accident to be somewhat irregular, but the maximum variation was only 3/4 inch. Readmaster Guest thought the combination of irregular alignment and surface could have a tendency to cause a tender to rock to some extent, and said he believed the speed limit was being considerably exceeded at the time of the accident, being of the opinion that a train travelling at 15 miles per hour would pass safely over it with varying as much as 3 inches in cross levels. He also said that an engine could be running over this portion of the track with a load of 30 miles per hour to be considered under the track conditions as they existed at the time of the accident and that these conditions had not been corrected since the accident as he still considered the track safe for the maximum prescribed speed.

Superintendent Rollins stated that he arrived at the scene of the accident shortly after its occurrence and after making an investigation to determine its cause he was of the impression that it was caused by the tender rocking off the track due to slight variations in the track south of the point of accident which probably were aggravated under the pressure of traffic. He did not think the speed of the train was more than 15 miles per hour at the time it was derailed.

Mr. Master Peterson stated that shortly after the accident he examined the track to ascertain what caused the accident and found a flange mark on top of the west rail, this mark first appeared about  $\frac{1}{2}$  inch from the gage side and extending diagonally across the rail for a distance of about 17 feet. Near the point where this flange mark left the rail he noticed marks where another wheel had crossed the rail. He could find nothing at this point which would have caused a wheel to mount the rail.

Trackmaster Donnelly corroborated the statements of Trainmaster Peterson as to the marks found on the rail. He also corroborated Foremaster Guest as to track conditions, further stating that he walked southward for a distance of about  $\frac{1}{2}$  mile and found nothing to indicate that anything had been dragging. He examined the wheels of the rear truck of the tender, which was the leading truck in the direction in which the train was moving, and they appeared to be in perfect condition. He was of the opinion that the surging of water in the tank, coupled with low joints, caused the tender to be rocked from the track.

Master Mechanic Witherspoon stated that he made a careful inspection of the tender after the accident and that no defects were found which could have contributed to the cause of the accident. He accompanied Foremaster Guest in making an inspection of the track and measurements were taken for a distance of 100 feet south of the point where the flange marks first appeared on the rail. At the first point south the east rail was found to be three-eighths inch low, a short distance beyond this point the west rail was one-half inch low, while measurements taken a little farther south showed the east rail five-eighths inch low. Beyond this point the track was approximately level. Mr. Witherspoon said the indications were that one of the leading wheels on the rear truck of the tender raised above the west rail and then came down on top of that rail, moving along on the running surface of the rail for a distance of 18 $\frac{1}{2}$  feet before it dropped off on the outside. Mr. Witherspoon was also of the opinion that the speed of the train was in excess of 15 miles per hour, and that this speed, coupled with irregular surface and the fact that the tender of engine 806 was full of water, resulted in the occurrence of the accident.

Engine 66 is of the 2-8-2 type, having a total weight, engine and tender, of 593,200 pounds. The tender has a length of 39 feet in length over all and is equipped with a pilot and a flight at its rear end. It is also equipped with grish plates and has a capacity of 8,000 gallons of water and 15 tons of coal; at the time of the accident it was practically full of water and contained about 7 tons of coal.

The first mark of derailment appeared on the running surface of the west rail, apparently caused by a wheel flange. It first appeared about three-fourths inch from the gauge side of the rail and extended for a distance of 18½ feet to the point where the wheel dropped off on the outside near the leading end of the rail. There was a mark where a wheel flange struck the first bolt of the angle bar which connects this rail with the following one while the second bolt was sheared off. The wheels then ran along the ballast on top of the ties for some distance before they dropped off the ends of the ties, the leading end of the tender swinging to the left and finally causing the derailment of the engine.

#### Conclusions

This accident is believed to have been caused primarily by the uneven surface of the track.

Inspection of the equipment failed to disclose any condition which it is believed could have caused the derailment. A survey of the track, however, revealed that it was slightly out of line, while there were some low joints, on alternate sides of the track, for a short distance south of the point of accident. These irregular track conditions apparently were sufficient to cause the tender to rock to such an extent that it permitted the leading wheel on the west side of the rear tender truck to mount the rail, followed by the derailment of the train.

There is some question as to whether the maximum speed limit for engines backing up was not being exceeded at the time of the accident, but this could not be definitely determined. The crew maintained that the train was travelling not more than 15 miles per hour, but some of the officials were of the opinion that it was moving at a greater rate of speed, basing their opinions on the distance the equipment moved after being derailed and before it finally came to rest.

The applicants involved are experienced men,  
at the time of their selection. They had been on duty 4 hours  
and 10 minutes and will vary in length of duty, 25 hours or  
more.

Respectfully submitted,

W. P. BORLAND  
Director