

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE  
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
LOUISVILLE & NASHVILLE RAILROAD NEAR HURRICANE, ALA.,  
ON FEBRUARY 25, 1931.

March 23, 1931.

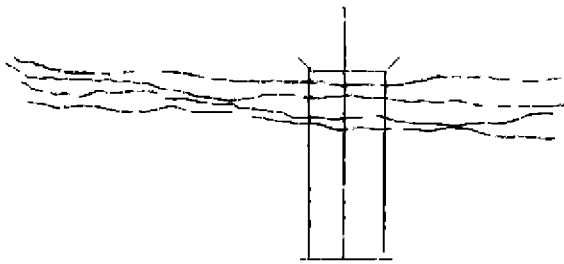
To the Commission

On February 25, 1931, there was a derailment of a passenger train on the Louisville & Nashville Railroad near Hurricane, Ala., resulting in the death of three employees and one Pullman porter.

Location and Method of operation

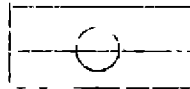
This accident occurred on the Mobile and Montgomery Division, extending between Sibert and Montgomery, Ala., a distance of 176.13 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. In the vicinity of the point of accident the line extends east and west by compass directions, but time-table directions are north and south, and the latter directions are used in this report. The accident occurred 2.18 miles south of Hurricane, at the south end of the draw span of bridge No. 193 over the Mobile River; approaching this point from the south, the track is tangent for a distance of about 2 miles. The grade for northbound trains is practically level to the south approach of the bridge; it is then ascending at the rate of 0.40 per cent for a distance of about 2,000 feet to the bridge, being level across the bridge.

Bridge No. 193 is a steel drawbridge, 1,050 feet 6 inches in length. It consists of one through girder span 80 feet in length, at the south end of the bridge, and four through truss spans, the draw span, of the pivot type, is 330 feet in length, and is the fourth span from the south end of the bridge, while the other three truss spans are each 208 feet in length. The bridge operator's tower is located near the top of the central part of the draw span, about 35 feet above the rails. When the draw span is closed it is secured to the fixed spans by means of rail locks and wedges. The spans rest on concrete piers and there is a clearance of 147 feet between the fenders of the pier upon which the draw span rests and the pier south thereof. The draw span is about 16½ feet above the mean low water level; the channel on the south side of the draw span, where the accident occurred, which channel is ordinarily used by

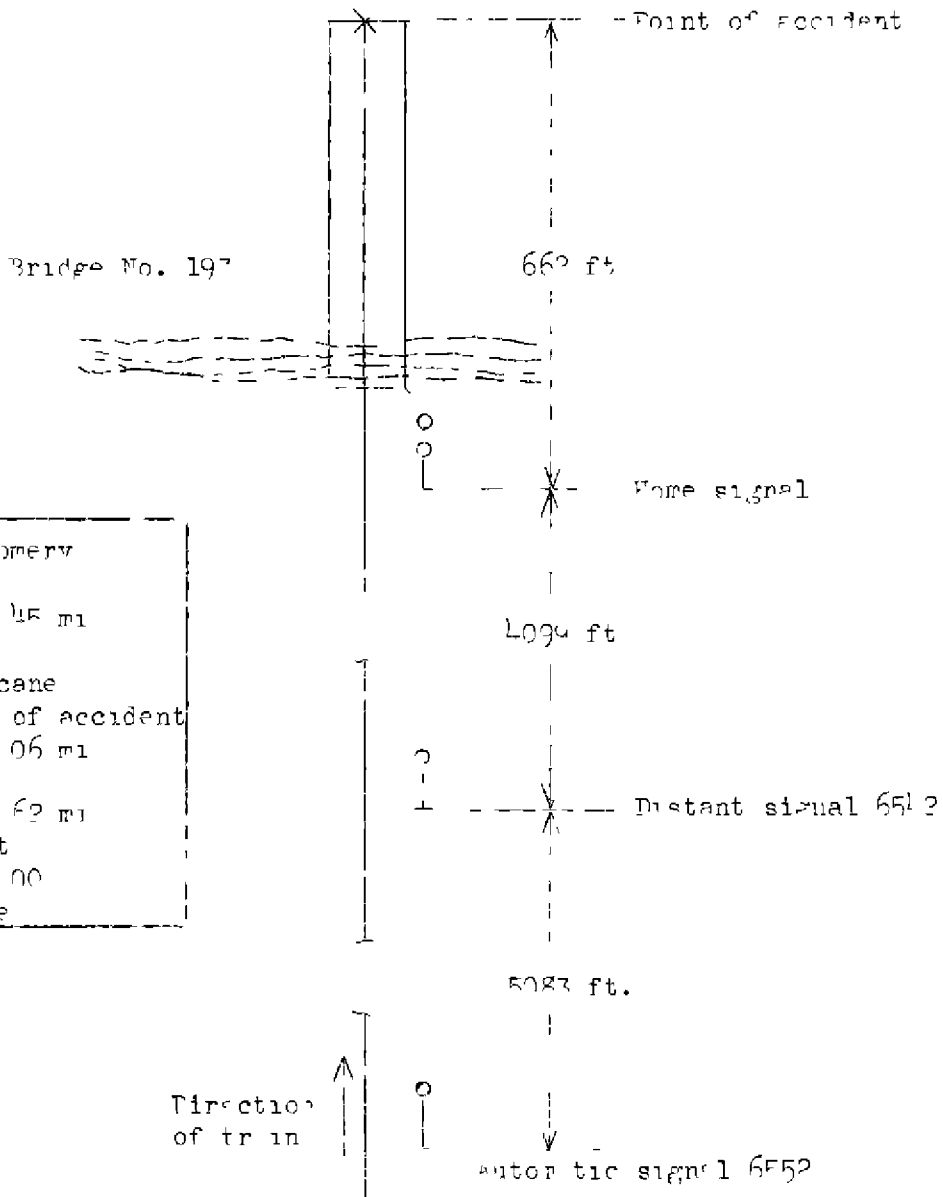


→ → →

Mobile River



→ → →



o	Montgomery
	162 1/2 mi
o	Hurricane
X	Point of accident
	5 06 mi
o	Crtiz
	8 62 mi
o	Sibert
	2 00
o	Mobile

Inv. no. 1693  
 Louisville & Nashville  
 Hurricane, Al  
 Feb. 25, 1931

navigation, is about 20 feet deep. There are three bridge lights on the draw span, one located on the top of the structure at each end, and one in the center. These lights show green to the railroad and red to navigation when the draw is closed, and vice versa when the draw is open. Oil is used in these lamps and they are in no way connected to the signal circuits. The Mobile River flows from west to east under Bridge No. 193 and the current generally is strong, depending on the water level and the ebb and flow of the tide. Ordinarily tugs tow the barges light upstream and loaded downstream. Owing to the swift current, there is danger of the towed barges on route down stream getting out of control and striking the draw-bridge piers, unless the draw span is so motion the towed barges approach. There is no superiority between rail traffic and navigation at this point, it is the practice to consider the nature of the boat or tow but generally to give precedence to the approaching train or boat which whistles first.

The signals in this vicinity are of the color-light type. The home signal governing northbound movements over Bridge No. 193 is located 662 feet south of the end of the fixed span of which the train plunged; it has two panels, the top panel displaying three indications, while only a fixed red light is displayed by the bottom panel. A stop indication is normally displayed by the home signal, consisting of two red lights. The home signal is so arranged that a proceed indication can not be displayed when the draw span is unlocked, nor in the event that either of the two blocks in advance is occupied even though the draw span is closed and locked. The draw span can not be opened unless a stop indication first is displayed by the home signal. After a proceed indication is displayed by the home signal, the bridge operator can at any time change the indication to stop, but the control mechanisms for the draw span, rail locks, wedges, etc., are so locked that the bridge operator can not then open the draw span except by operating a time-release, and more than three and one-half minutes are then consumed in fully opening the draw span. In the case here under investigation the draw span had been open about seven or eight minutes prior to the time the approaching train entered upon the approach bell circuit, about 1½ miles south of the drawbridge. Distant signal 6542 is located 4,099 feet south of the home signal, two indications only can be displayed by this distant signal, yellow and red, and its normal indication is yellow or caution. Automatic block signal 6552 is located 5,083 feet south of distant signal 6542.

The speed of trains over drawbridges is restricted to 15 miles per hour until the entire train has cleared.

The following special instructions are contained in the time table

"Distant signals are located in advance of home signals at \*\*\* Mobile River \*\*\* drawbridge.

The home signals will display stop at all times except when cleared for movement of trains. Engineers will call for these signals when movement of signal can be plainly seen, and will accept as proceed signals only when seen clearing from stop to proceed. If signal is in a proceed position when train approaches and engineer has not seen signal change from stop to proceed, the signal will be regarded as stop, and trains will set hand signal before crossing draw.

When hand signals are necessary they must be given from draw, and only when drawtenders know that draw and interlocking are safe for train movement.

If it becomes necessary to use hand signals on account of the home signals being inoperative, yellow flags by day and yellow lanterns by night shall be used to signal trains to proceed over the drawbridges

The normal position of distant signals on each side of \*\*\* Mobile River \*\*\* drawbridges is CAUTION, but when found in stop position trains will come to a stop and then proceed from distant signal to home signal under control expecting to find main track obstructed by train, cars, broken rail or otherwise.

Enginemen approaching home signals at drawbridges will call for the signals by giving four short blasts of the whistle. Change of the Home signal from stop to proceed must be made in view of the enginemen. In case of failure of operation of signals enginemen must be governed by Rule 27 and must know that the drawbridge is in proper position before proceeding."

The view approaching the signals and drawbridge is unobstructed. The weather was clear at the time of the accident, which occurred about 12.55 a.m.

#### Description

Northbound passenger train No. 98, the Pan American, en route from New Orleans to Cincinnati, consisted of one combination club and baggage car, four Pullman sleeping cars, and one observation car, in the order named, all of steel construction, hauled by engine 217. The total length of engine and tender was 74 feet 5 $\frac{1}{4}$  inches. With Conductor Dutkovich and Engineman Ingram in charge, this train left Sibert, its initial terminal on this division and the last open office, at 12.32 a.m., according to the train sheet, on time, and on approaching bridge No. 19<sup>2</sup> it passed distant signal 6542, which was displaying a caution indication, passed the home signal, which was displaying a stop indication, and plunged off the bridge at the open draw while traveling at a speed variously estimated to have been between 10 and 35 miles per hour.

The engine, tender and first car went off the bridge and were submerged, while the rest of the cars in the train stopped on the bridge; the forward end of the second car was extending about 15 or 20 feet over the water beyond the north end of the fixed span. Engine 217 came to rest on the bottom of the river in line with the track and in an upright position, with its forward end about 37 feet north of the end of the fixed span off which it had plunged; the tender came to rest on its right side and behind the engine, reversed, while the first car came to rest on top of the engine and tender, upright. The employees killed were the engineman, fireman, and baggagemaster.

#### Summary of evidence

Conductor Dutkovich, of train No. 98, stated that he witnessed the terminal test of the air brakes made at Sibert, and that the brakes worked properly en route, speed being reduced and the engine whistle sounded as required at Three Mile Creek, this being considered as a running test, and the same procedure was followed at the bridges at Chickasaw Bogue and Bayou Sara. Approaching Menemoosha, located 6.67 miles north of Sibert, the station whistle signal was sounded, and again at Ortiz, 1.95 miles north of Menemoosha. Approaching the Mobile River drawbridge, the conductor was riding in the rear car; he felt the air brakes being applied at about the usual point near the distant signal and heard the engine whistle sounded calling for the home signal. The speed of the train was reduced to about 12 or 15 miles per hour, which was about the usual rate of speed, but he

did not hear the whistle sounded again in acknowledgment of the home signal, as is done when the engineman sees the indication change from stop to proceed, he did, however, feel an emergency application of the brakes, and said the train did not appear to move more than 10 feet after this application. He estimated the speed of the train to have been about 10 to 15 miles per hour at the time of the accident, and said that it stopped with the rear car just north of the home signal. After the accident the home signal was displaying a stop indication, and the lights were red on the open draw span. He examined the angle cocks before the cars were pulled off the bridge and found them to be in proper position; he also looked to see if sand had been used in an effort to bring the train to a stop, but found none on the track. Conductor Dutkovich said that he talked with Engineman Ingram prior to starting the trip and the engineman appeared normal in every respect and also to be in good spirits. Conductor Dutkovich further stated that he had been operating trains over this division as a conductor for 20 years, and that if there had been any difficulty with the air brakes on train No. 98 on this occasion he would have noticed it before the train reached Mobile River drawbridge. The air-brake application made approaching distant signal 6542 was no heavier than usual, and he did not recall having felt a second application other than the emergency just before or at the time of the accident.

Statements of Flagman Presley were similar in substance to those of Conductor Duckovich as to what transpired, including the terminal air-brake test, reduction of speed at various points en route, rate of speed approaching the Mobile River drawbridge, distance the train moved after the air brakes were applied in emergency, the indications displayed by the home signal and bridge lights after the accident, and the fact that Engineman Ingram appeared to be in normal condition. When the air brakes were applied approaching the distant signal Flagman Presley estimated the speed of the train to have been 35 or 40 miles per hour, he did not feel another application made until they were applied in emergency, and he thought this occurred when the engine went off the bridge, at which time he estimated the speed of his train to have been about 12 miles per hour. He did not hear the engineman call for the home signal.

Bridge Operator Lewis stated that a tug boat, headed downstream, whistled for the draw at about 12.35 a.m. and he figured that it was going to be necessary to delay train No. 98 in the event he opened the draw span for the tug. At that time he could not see the lights of the tug; when

it came in sight it whistled a second time, but he waited to see whether the tug had a tow of logs or barges; in the event it was a tow of logs he intended to give train No. 98 preference. He definitely determined that the tug had a tow of barges, and when the tug whistled the third time he unlocked the bridge, pulled the wedges, and opened the draw span. Bridge Operator Lewis said that the draw had been open about seven or eight minutes when train No. 98 entered upon the approach bell circuit, about  $1\frac{1}{2}$  miles south of the drawbridge. He cut off the bell in his tower and then heard the engine whistle sound what he termed a "caution blow", a little later he heard a sound four blasts calling for the home signal. Bridge Operator Lewis was at the window in the tower watching the tug about to enter the channel between the fenders of the drawbridge with its tow of barges and the next train he knew train No. 98 had passed the home signal, which was displaying a stop indication, and then he realized from the roar of the engine that an accident was inevitable, he estimated the speed of the train at the time it passed the home signal to have been 30 or 35 miles per hour and the same speed at the time the engine plunged off the bridge at the open draw. The captain of the tug boat quickly changed his course, when about 150 feet from the entrance to the channel at the draw, turning to the left, and started back upstream with the barges in tow, one of the barges striking the north or long fender of the draw span in turning. Bridge Operator Lewis further stated that the headlight on the engine of train N. 98 was burning brightly, the reflection from the headlight blinding him so that he could not see those on the engine, that the engine whistle was not sounded in acknowledgment of the home signal, which would have been the case in the event the indication displayed had been changed from stop to proceed, and he thought steam had been shut off and that the train was drifting. All of the bridge signals were in proper working order, and in his opinion, not more than one and one-half or two minutes elapsed from the time he first heard the engine whistle sounded until the accident occurred.

Captain McDonald, in charge of the tug boat which was about to pass through the draw when the accident occurred, said the draw was open and displaying a green light for the movement of the tug before the train whistled for the caution board. He heard four blasts of the whistle and said that just before the engine reached the bridge he heard two or three quick blasts on the whistle, the engine running off the bridge into the water very shortly afterwards. Capt. McDonald did not think the engine was working steam at the time but said he thought the speed of the train could not have been less than 30 miles per hour, things

happened so quickly that he could not form any opinion as to whether the speed was being reduced.

Bridge Operator Beasley, on duty at Bayou Sara, stated that when train No. 98 was approaching his drawbridge the proper engine whistle signal was sounded and the train passed over the bridge at a speed not in excess of 10 miles per hour. He knew Engineman Ingram personally, and as the engine passed he was not more than 4 or 5 feet from the engineman, who was sitting on his seat box, and the engineman shouted a greeting to him.

Statements of Car Inspector Patterson and Car Inspector Helper DeLoach were to the effect that the air brakes on train No. 98 were tested at Sibert and operated properly.

Master Mechanic Talbert, who arrived at the scene of the accident before any of the equipment was moved, inspected the second car, which extended over the water at the open draw, and found that the train line pipes and also the angle cocks on the south end were all tight and in proper position, and that the air brakes were set; he did not see the north end of this car, as it extended over the river. Subsequently, the submerged equipment was raised, and when the first car was placed on a barge, he inspected it and found that the angle cock on the north end was open. Inspection of engine 217 after it was raised disclosed the reverse lever to be in forward motion, the brake valve in emergency position, although it looked as though it was broken, the throttle closed, pilot missing, and the cab demolished, as well as the pipe work. Owing to the damaged condition of the engine it could not be definitely determined whether the engineman had made an effort to stop the train, as the reverse lever showed signs of having been struck a heavy blow, and the brake valve and throttle were twisted. Master Mechanic Talbert said that judging by the distance the engine went after leaving the bridge the speed of the train was not less than 20 miles per hour at the time of the accident. H. A. McConville, foreman of the car department, said the coupler, train and signal pipe lines, angle cocks and hose were missing from the south end of the club car when it was recovered from the river.

#### Conclusions

This accident was caused by the failure of Engineman Ingram, of train No. 98, to obey signal indications and to have his train under proper control when approaching an open drawbridge.



Both the engineer and the fireman were killed as a result of this accident, and it is therefore impossible to ascertain exactly what transpired on the locomotive just prior to the occurrence of this accident. Engineer Ingram had had many years of experience and was thoroughly familiar with operating conditions on this line. So far as could be learned from surviving members of the train crew and other employees, he was in normal condition prior to and during the first part of the trip in which this accident occurred. There had been no unusual circumstances attending the operation of the train from Mobile until it had practically reached the place of accident. The engineer controlled his train properly when approaching and passing over the drawbridge at Bayou Vera, approximately five miles south of the point of accident and called a greeting or salutation to the operator at that point. Approaching the Mobile River drawbridge the evidence indicates that he sounded the usual whistle signal for the distant signal and made a brake application to reduce speed, also he sounded a whistle signal calling for the home signal, but from that point onward he apparently did nothing either to avoid overrunning a positive stop signal, or to prevent his train from running into the open draw, or to save himself from almost certain death by jumping before his engine plunged into the river. There was an unobstructed view of the signals approaching the drawbridge, and there is no question that they were displaying their proper caution and stop indications. Furthermore, the lights on the draw span gave an unmistakable indication that the draw was open. The colored fireman was also an employee of long experience. An autopsy upon the engineer's body did not throw any light upon the cause of this accident, and any attempted explanation for the failure of the engineer under the circumstances properly to control his train is nothing more than mere conjecture.

There was a 15 miles-per-hour speed restriction over drawbridges, and Engineer Ingram had been reported and reprimanded several times for crossing drawbridges, including Bridge No. 193, at speed exceeding this rate. There was considerable variation in the estimates of speed of train No. 98 at the time of the accident. The fact that the engine after plunging off the drawbridge came to rest in an upright position on the bottom of the river, in line with the track, with its forward end about 37 feet north of the pier of the fixed span off which it plunged, with the tender behind it and between it and

that pier, and the first car on top of them, is an indication that the speed of the train was probably higher than the estimate of 10 miles per hour made by the conductor. On the other hand, from the fact that the rear portion of the train stopped with the second car in the train overhanging the open draw, as a result of the emergency application which apparently was made either by the engineer just before the locomotive plunged into the river or as a result of the train parting at that time, it appears that the train could not have traveled more than about 160 feet, and perhaps considerably less than that distance, after the emergency application was made, consequently the higher estimates of 30 and 35 miles per hour are considered excessive. In any event, the actual rate of speed is probably not a factor of major importance in connection with the cause of this accident in view of the total absence of any evidence that the engineer attempted to stop when he reached the home signal or before reaching the open draw.

From the investigation it is concluded that the brake equipment on this train was in proper operating condition. This is established by records of test before the accident, the fact that the speed of the train was properly controlled at several places south of the point of accident, the fact that the emergency application at the point of accident was effective, and inspection after the accident of that part of the brake equipment of this train which was not damaged by the accident.

During the 30-day period prior to the accident the draw span of this bridge was opened 211 times, resulting in delay to 32 trains for a total of 5 hours and 13 minutes. There are a number of drawbridges in this vicinity. The train movement for this 30-day period averaged approximately 23 trains daily. It is possible that had smash signals, automatic train control, or automatic cab signals been in use on this line, this accident might have been prevented. In view of the circumstances surrounding this accident the carrier should give careful consideration to the question of whether additional protection should be provided on this line.

Engineer Ingram entered the service of this railroad as a brakeman on November 13, 1896, was made a mechanical helper on July 19, 1901, fireman on February 6, 1902, and engineer on May 14, 1903. At the time of the accident

he had been on duty 1 hour and 8 minutes, as had the rest of the entire crew, with the exception of the baggage-master, prior to which they had been off duty 18 hours and 22 minutes, the baggagemaster had been on duty 5 hours and 5 minutes, prior to which he had been off duty 10 hours and 45 minutes.

Respectfully submitted,

W. P. BORLAND,

Director.