RAILROAD ACCIDENT INVESTIGATION

REPORT NO. 4161

THE TEXAS AND PACIFIC RAILWAY COMPANY

AMA, LOUISIANA

MARCH 3, 1969

FEDERAL RAILROAD ADMINISTRATION

BUREAU OF RAILROAD SAFETY

Washington, D C 20591

Summary

DATE:	March 3, 1969	
RAILROAD:	Texas and Pacific	
LOCATION:	Ama, La	
KIND OF ACCIDENT:	Collision	
EQUIPMENT INVOLVED:	Freight train	Motortruck
TRAIN:	Work Extra 1291	
LOCOMOTIVE NUMBER:	Diesel-electric unit 1291	
CONSISTS:	5 cars, caboose	Tractor, semitrailer
SPEEDS:	40-45 m p h	3-4 m p h
OPERATION:	Timetable, train orders, automatic block-signal system	
TRACK:	Single; 0°30' curve; level	
HIGHWAY:	2-lane; tangent; crosses track at angle of 76°00'	
WEATHER:	Partly cloudy	
TIME:	9:50 a m	
CASUALTIES:	2 killed	
CAUSE:	Failure of truck driver to stop his vehicle short of the crossing and to remain standing until the closely approaching train had passed	

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

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Synopsis

On March 3, 1969, a Texas and Pacific Railway freight train struck a motortruck, transporting a cargo of gasoline, at a rail-highway grade crossing near Ama, La The train engineer and front brakeman were fatally burned

The accident was caused by failure of the truck driver to stop his vehicle short of the crossing and to remain standing until the closely approaching train had passed

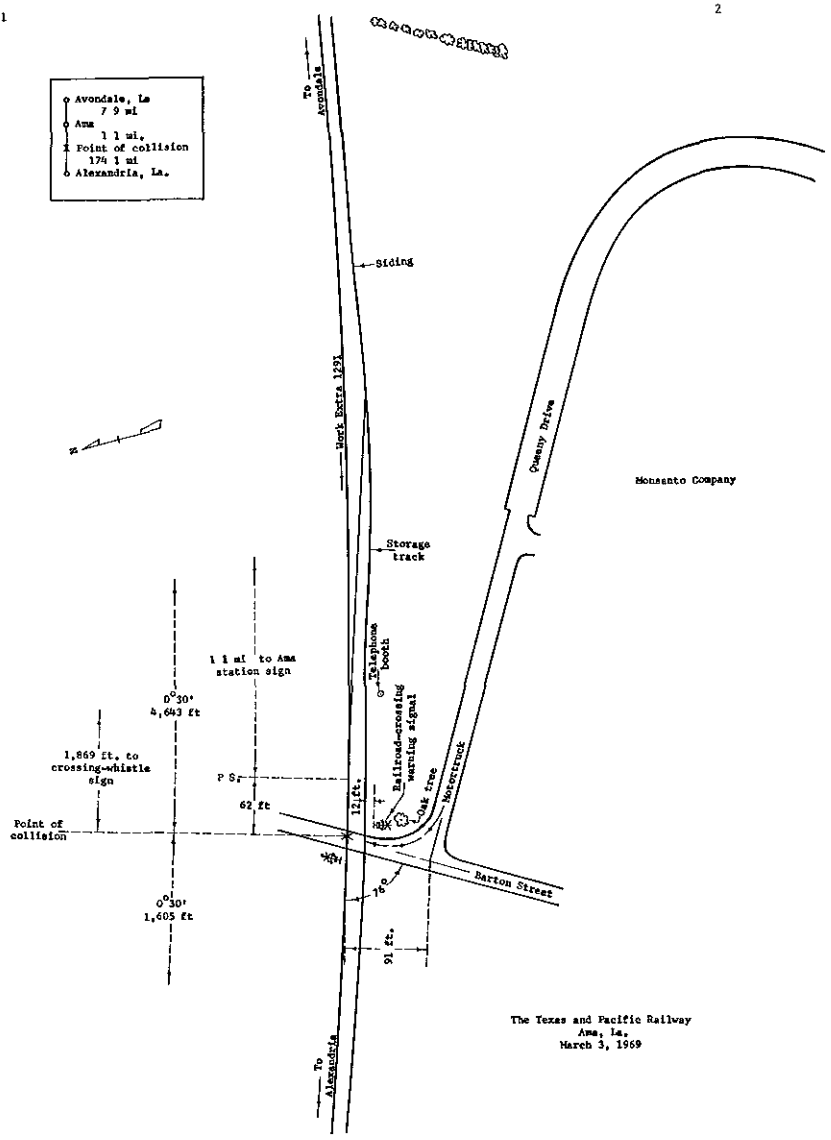
Location of Accident and Method of Operation

The accident occurred on that part of the Texas and Pacific Railway extending from Avondale to Alexandria, La , a distance of 183 1 miles In the accident area this is a single-track line over which trains operate by timetable, train orders, and an automatic block-signal system At Ama, 7 9 miles west of Avondale, a long auxiliary track parallels the main track on the south

The collision occurred on the main track, 1 1 miles west of the Ama station, where the main track and auxiliary track are crossed at grade by Barton Street, a private road

Main Track

From the east on the main track there is a $0^{\circ}30'$ curve to the right 4643 feet to the Barton Street crossing and 1605 feet westward The grade in this area is practically level



The Texas and Pacific Railway
Ama, La.
March 3, 1969

Barton Street

This street extends northward from U S Highway 90, through the main plant area of the Monsanto Company, and across the Texas and Pacific Railway to Louisiana State Highway 18, a total distance of about two miles It is paved with bituminous material to a width of 21 feet The street is tangent and crosses the railroad at an angle of 76°00'. From the south, its grade varies between 1 and 8% ascending for 92 feet, and is level about 10 feet to and over the main track at the railroad crossing

Crossing

The crossing is 32 feet wide Planking is laid between the rails of the main and auxiliary tracks, and along the north side of the main track The remaining area is surfaced with bituminous material to the level of the tops of the rails

Crossing Protection

A standard automatic crossing-warning signal of the flashing red-light type is adjacent to the east side of Barton Street, 12 feet south of the auxiliary track A similar signal, with a bell, is in the northwest angle of the crossing The circuits are so arranged that when a westbound train on the main track reaches a point 2650 feet east of the crossing, the red lamps of the signals start to flash and the bell rings These devices continue to function until the train has moved over the crossing There were no advance railroad crossing warning signs

Crossing Traffic

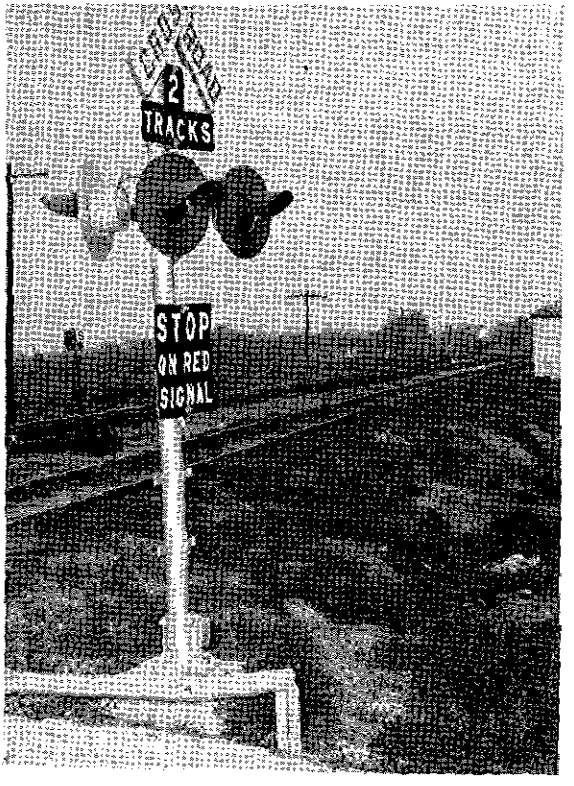
During the 28-day period preceding the accident, the average daily railroad movement over the crossing was 24 5 trains. In the 24-hour period beginning 12:01 a.m , March 10, 1969, 1058 highway vehicles moved over the crossing

Crossing Environment

Queeny Drive, a private road, intersects Barton Street from the east at an angle of 90°00', 91 feet south of the railroad crossing It circles the Monsanto Company plant area on the east and again intersects Barton Street at a point south of the plant area

From the east, Queeny Drive is tangent for 595 feet to its intersection with Barton Street just south of the railroad crossing The grade is level for 495 feet, then 0 8 to 1 4% ascending 100 feet to the Barton Street intersection The pavement is widened in the northeast angle of the street intersection, facilitating the movement of highway vehicles turning northward onto Barton Street from Queeny Drive

As a vehicle on Queeny Drive approaches Barton Street within 595 feet, the driver may readily observe the railroad



View of approaching westbound train from Barton Street, 39 feet south of the crossing center.

track structure on his right He cannot see the red lamps of the railroad crossing signals, because of the hoods over the lamps and the angle which he is approaching the railroad crossing Between points 106 and 52 feet from Barton Street, the driver's view of the crossing signals is obstructed by a large oak tree on the east side of Barton Street, between Queeny Drive and the railroad When his vehicle reaches the latter point, the crossing signal on the north side of the tracks comes into the driver's view Within a distance of 35 feet from Barton Street, the driver of the vehicle on Queeny Drive had an unobstructed view of both crossing signals

As the vehicle on Queeny Drive turns northward onto Barton Street, the driver's view of an approaching westbound train is obstructed by the oak tree until his vehicle reaches a point on Barton Street about 50 feet from the main track Immediately afterward, while his vehicle is approaching the main track at a distance of about 48 feet, the driver's view of any westbound locomotive approaching the crossing at a distance between 687 and 1200 feet is obstructed by an abandoned railroad concrete telephone booth located 161 feet east of Barton Street and 33 feet south of the main track

When the highway vehicle is within 46 feet of the main track, the driver has an unobstructed view of any westbound train approaching the crossing within a distance of about 2000 feet

Time and Weather

The collision occurred about 9:50 a m , under partly cloudy weather conditions

Maximum Authorized Speed

The maximum authorized speed for freight trains in the Ama area is 60 m p h Under Louisiana State law, the motortruck was required to stop within 50 feet but not less than 15 feet from the nearest rail at the crossing

The Accident

Work Extra 1291, a westbound freight train consisting of 1 switcher-type diesel-electric unit, 5 cars and a caboose, left Avondale at 9:30 a m the day of the accident after receiving the prescribed brake test About 20 minutes later, while moving westward on the main track at 40 to 45 m p h , as estimated by crew members and witnesses, it neared the point where the railroad crosses Barton Street at grade The engineer and front brakeman were in the control compartment at the rear of the locomotive, the conductor and flagman were in the caboose Witness statements indicate that the headlight was lighted; the locomotive horn and bell were sounding; and the crossing-signals were flashing and ringing

As the train approached the crossing, the engineer noticed that a northbound motortruck on Barton Street was

slowly nearing the crossing and began to sound short warning blasts on the locomotive horn Hearing this, the front brakeman, who was on the "fireman's" seat and was facing the engineer, looked ahead and saw a truck, a tractor and semitrailer loaded with gasoline, enter the crossing and move onto the main track immediately in front of the train The engineer, realizing a collision was imminent, applied the brakes in emergency About three seconds later, before its speed was reduced, the train also entered the crossing and struck the truck semitrailer about midway on its right side.

Appurtenances at the front of the locomotive penetrated the semitrailer tank, and broke the tank and semitrailer underframe in half The semitrailer was torn loose from the tractor It overturned and stopped, in two pieces, in a ditch on the north side of the railroad about 80 feet west of the crossing

Immediately after the impact, gasoline thrown over the locomotive became ignited A few seconds later, when the train reached a point about 300 feet west of the crossing, explosions occurred in the engine compartment and underneath the control compartment, resulting in the locomotive becoming engulfed in flames and in the control compartment windows being blown-out Flames entered the control compartment through the blown-out windows, causing clothing of the engineer and front brakeman to catch on fire.

As the train reduced speed, the front brakeman, with his clothing in flames, jumped from the locomotive 688 feet west of the crossing and ran to a ditch along the south side of the railroad, where he extinguished the fire on his clothing by rolling in ditch-water Immediately after the train stopped with the front end 855 feet beyond the crossing, the engineer alighted from the locomotive and extinguished the flames on his clothing by rolling in grass A Monsanto Company ambulance arrived at the scene within three or four minutes, and promptly transported both the engineer and front brakeman to a hospital Practically all the clothing was burned off both

Flames from the locomotive rapidly spread via spilled gasoline back to where both halves of the semitrailer stopped The truck tractor became engulfed in flames at the time of the impact It continued to roll northward on Barton Street after the semitrailer was torn loose It stopped upright about 115 feet north of the tracks While the tractor rolled to a stop, the flames consumed the gasoline spilled over it and subsided The driver escaped unharmed as a result of all the tractor windows being closed

Damages

The train did not derail The locomotive was heavily damaged by the impact, explosion and fire According to the carrier's estimate, the monetary damage to the locomotive was $67,000

The truck tractor was slightly damaged by fire, and the semitrailer was destroyed

Casualties

The engineer and front brakeman suffered first, second and third degree burns, covering 60 to 70% of their bodies The engineer died the day after the accident, and the front brakeman died five days later

Motortruck and Driver

Truck

This vehicle was owned by a private individual in Des Allemands, La., doing business as a distributor for Gulf Oil Products, on consignment, within the State of Louisiana

The truck was a combination vehicle consisting of a 1968 Chevrolet tractor with a conventional cab, and a Fruehauf semitrailer of the tank type Its overall length was 36½ feet The tractor had a single rear axle with dual wheels, a 185-horsepower gasoline engine, and a four-speed manual transmission The semitrailer had a single rear axle with dual wheels, and four compartments rated at 4000-gallon total capacity The combination vehicle had air brakes throughout

At the time of the accident, the truck was transporting 3175 gallons of gasoline Its gross weight was about 30,618 pounds

Driver

The driver, age 61, resided in Des Allemands, La , and held valid Louisiana Chauffeur's License No 2101260 There were no restrictions on his driver's license, and he did not need eyeglasses to drive He had been employed by the vehicle owner since September 1946, and had passed a physical examination, in August 1968 He was considered to be a highly competent and conscientious driver with no bad habits

History of Truck Movement

The driver reported to work at 6:30 a m the day of the accident after having been off duty throughout the previous day, a Sunday He left the vehicle owner's warehouse in Des Allemands at 6:45 a m , delivered a load of gasoline to a service station in Des Allemands; proceeded empty to Gretna, about 29 miles, and proceeded loaded to Boutte, La , about 1 9 miles After delivering 900 gallons of gasoline to a Gulf service station in Boutte, the truck proceeded westward 0 2 mile on U S Highway 90; turned northward onto Barton Street; turned right onto Queeny Drive; proceeded about 1½ miles along Queeny Drive and around the Monsanto Company's plant area to the other intersection with Barton Street

The driver stopped the truck short of the Barton Street intersection, shifted into first gear, then turned right onto Barton Street and approached the crossing at 3 or 4 m p.h

He stated that he believes he looked in both directions for an approaching train as a matter of habit He further stated that he did not see or hear a train, or see or hear the crossing signals indicating the approach of a train, before driving onto the crossing without stopping According to the driver, he first saw the train as his tractor moved over the main track, and he immediately realized a collision was imminent He then tried to accelerate his truck, but the speed did not increase materially before the collision

Witnesses

Several persons were in the crossing area at the time of the accident and many witnessed the collision The consensus of their statements is (a) the train approached the crossing with its headlight lighted and horn sounding (b) the red lamps of the crossing-warning signals were flashing and the crossing bell was sounding (c) the truck approached the crossing at slow speed and (d) the truck moved onto the crossing in front of the train without stopping

Post Examinations and Tests

Examination of the locomotive revealed all windows and doors of the control compartment apparently were closed at the time of the accident, except for an opening of about two inches of the sliding windows on the engineer's side The explosion on the locomotive apparently occurred when arcing in the No 1 traction motor ignited gasoline fumes forced there by the traction motor blower The wooden floor boards in the center of the control compartment were blown upward and were obstructing the rear door, indicating an explosion had also occurred under the control compartment Except for the bottom glass in the rear door, all windows of the control compartment were blown outward There were little indication of liquid gasoline having entered the compartment Fire damage within the compartment occurred at the level of the blown-out windows, apparently as a result of flames sweeping back from the engine compartment The window arm rests and the seats on both sides were charred, as well as the throttle handle and portions of the radio telephone equipment

Damage to the control compartment indicates that the clothing of the engineer and front brakeman ignited instantly after the windows of that compartment were blown out, permitting flames from the engine compartment to sweep through the control compartment

The automatic railroad-crossing warning signals were tested and found to be functioning properly

Hours of Service

All the train-crew members had been on duty 50 minutes at the time of the accident, after having been off duty 10 hours or more

Louisiana Motor Vehicle Law

Section 173 (a) of this law requires the driver of a vehicle carrying flammable liquids as a cargo, before crossing a railroad at grade, to stop his vehicle within 50 feet, but not less than 15 feet, from the nearest rail of the railroad It then requires him to listen and look in both directions for any approaching train, and for signals indicating the approach of a train, and to remain standing until he can proceed safely

Findings

1 The train approached the crossing in accordance with applicable rules and regulations

2 Due to its speed and proximity to the crossing when the engineer realized the truck was moving onto the tracks, the train could not stop or reduce speed materially before colliding with the truck

3 The crossing-warning signals were functioning and indicating the close approach of a train

4 Apparently due to his view being obstructed by an oak tree and an abandoned railroad telephone booth as he approached the crossing at a distance of about 50 feet, the driver was unable to see the train approaching at that time

5 The driver failed to notice that the flashing red lamps of the crossing signals were indicating the close approach of a train

6 Although he had a good view of the approaching train as his vehicle approached the main track within a distance of 46 feet, the driver did not see the train before his vehicle entered the crossing

7 The driver drove his vehicle onto the crossing without stopping, and listening and looking carefully in both directions for an approaching train

8 Had the driver exercized prudence dictated by the nature of the truck cargo and stopped short of the crossing, as required, to look and listen for any indication of an approaching train, the accident probably would have been averted

9 Although the crossing is well protected by automatic crossing-warning signals, protection for northbound highway vehicles on Barton Street is somewhat diminished by the presence of an oak tree and an abandoned railroad telephone booth in the southeast angle of the crossing The tree and telephone booth obstructs the view between a northbound highway vehicle and a westbound train approaching the crossing, and this obstructed view apparently was a factor in the accident

Dated at Washington, D C., this 17th
day of December 1970
By the Federal Railroad Administration

Mac E Rogers, Director
Bureau of Railroad Safety

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