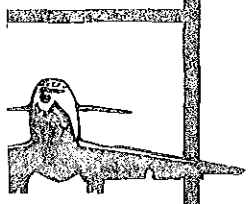

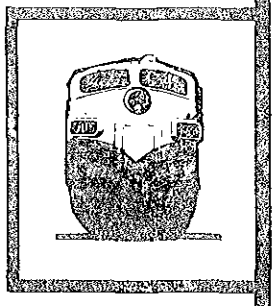

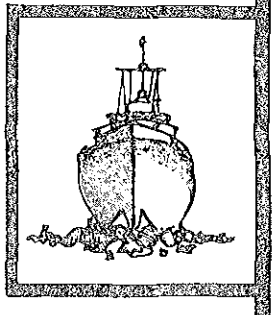

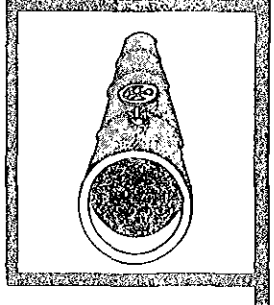

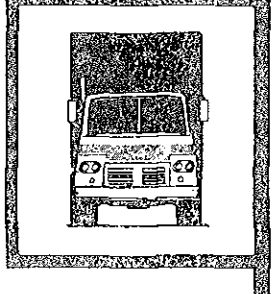

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C. 20594

RAILROAD/HIGHWAY ACCIDENT REPORT

ILLINOIS CENTRAL GULF RAILROAD
FREIGHT TRAIN AND
MOBIL OIL COMPANY
TRACTOR/CARGO-TANK SEMITRAILER
COLLISION AND FIRE
KENNER, LOUISIANA
NOVEMBER 25, 1980

NTSB-RHR-81-1

UNITED STATES GOVERNMENT

TECHNICAL REPORT DOCUMENTATION PAGE

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7. Author(s)		8. Performing Organization Report No.
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15. Supplementary Notes
The subject report was distributed to NTSB mailing lists 8A, 8E and 15.

16. Abstract

About 6:58 p.m., on November 25, 1980, a southbound tractor/cargo-tank semitrailer loaded with 8,600 gallons of gasoline approached a railroad/highway grade crossing on Williams Boulevard in Kenner, Louisiana. The vehicle was driven around the grade crossing automatic gates which were down and was struck by an eastbound Illinois Central Gulf Railroad freight train. The freight train's lights were illuminated, its whistle was sounding, and its bell was ringing. The overturning semitrailer struck a northbound automobile stopped at the crossing. Gasoline flowing from the ruptured cargo tank ignited. The burning gasoline destroyed the automobile, a building, the semitrailer, and damaged 19 other automobiles. The train locomotive was derailed and was damaged by fire. Seven persons were killed and six others were injured in the accident.

The National Transportation Safety Board determines that the probable cause of this accident was the failure of the truckdriver to obey the activated warning devices and his attempt to drive the truck across the railroad/highway grade crossing ahead of the freight train. Contributing to the severity of this accident and loss of life was the rupture of the cargo tank and the ignition of the gasoline cargo.

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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594

RAILROAD/HIGHWAY ACCIDENT REPORT

Adopted: May 29, 1981

ILLINOIS CENTRAL GULF RAILROAD FREIGHT TRAIN MOBIL OIL COMPANY TRACTOR/ CARGO-TANK SEMITRAILER COLLISION AND FIRE KENNER, LOUISIANA NOVEMBER 25, 1980

SYNOPSIS

About 6:58 p.m., on November 25, 1980, a southbound tractor/cargo-tank semitrailer loaded with 8,600 gallons of gasoline approached a railroad/highway grade crossing on Williams Boulevard in Kenner, Louisiana. The vehicle was driven around the automatic grade crossing warning gates which were down and was struck by an eastbound Illinois Central Gulf Railroad freight train. The freight train's lights were illuminated, its whistle was sounding, and its bell was ringing. The overturning semitrailer struck a northbound automobile stopped at the crossing. Gasoline flowing from the ruptured cargo tank ignited. The burning gasoline destroyed the automobile, a building, the semitrailer, and damaged 19 other automobiles. The train locomotive was derailed and was damaged by fire. Seven persons were killed and six others were injured in the accident.

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INVESTIGATION

The Accident

About 6:58 p.m., on November 25, 1980, a tractor/cargo-tank semitrailer (truck) loaded with 8,600 gallons of gasoline was southbound on Williams Boulevard in Kenner, Louisiana, approaching an Illinois Central Gulf Railroad (ICG) railroad/highway grade crossing. The crossing consisted of two tracks located 60 feet apart at nearly right angles to the four-lane roadway. (See figure 1.) It was dark with street lighting in the area. The grade crossing traffic control devices included bells, flashing lights, and automatic gates. An eastbound ICG freight train (CN-5) was approaching the crossing at a speed estimated by witnesses to be 25 to 30 mph, with two headlights on, the whistle blowing, and a bell ringing. The lead locomotive unit had activated the warning devices and according to witnesses the bells had sounded, the lights were flashing, and the automatic gates had descended to a horizontal position.

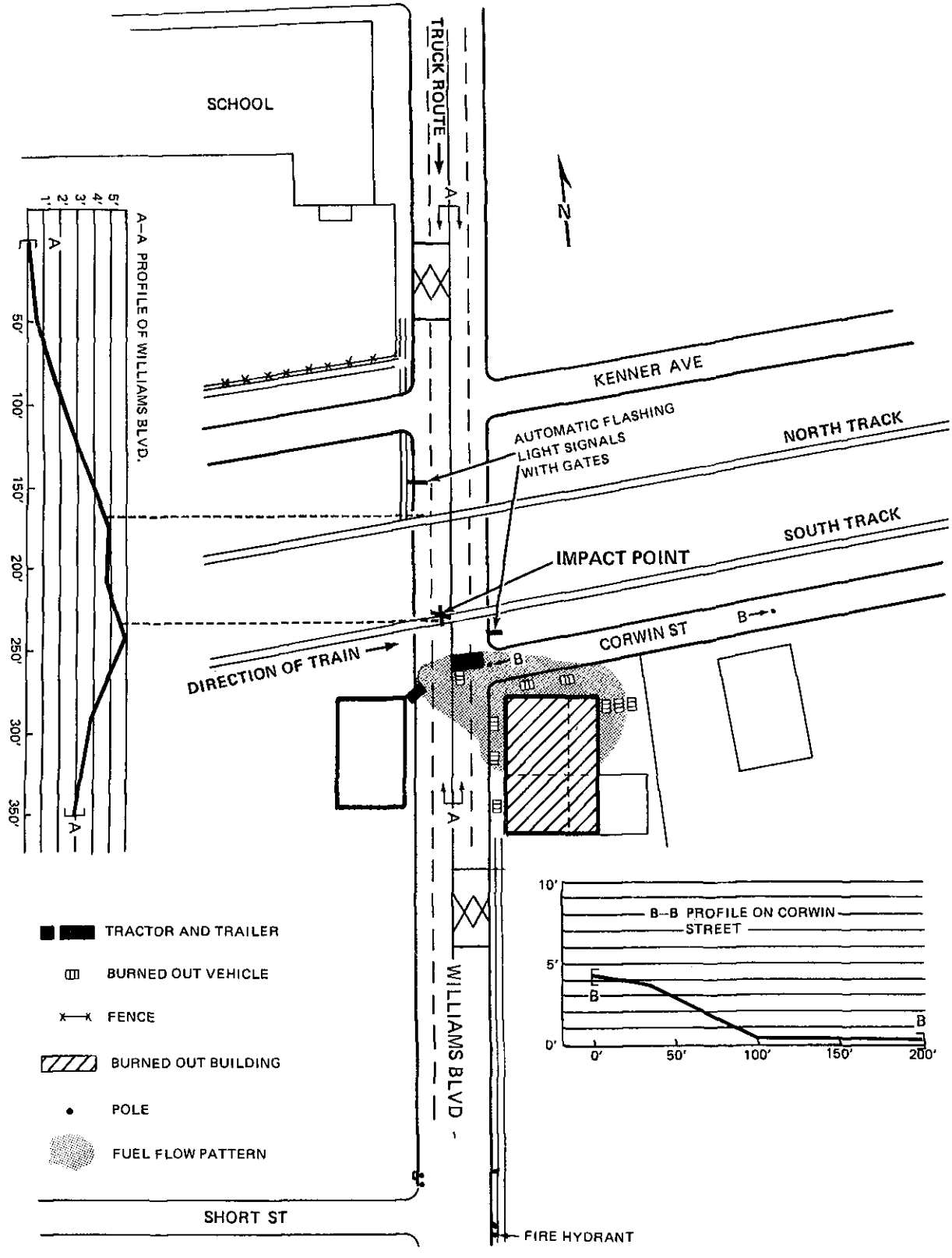


Figure 1.--Plan view of accident site.

As the truck was approaching the crossing, several other southbound vehicles were behind the truck and several northbound vehicles were also approaching the crossing. The driver of the second northbound automobile said that he was following an automobile toward the crossing and noticed the crossing lights illuminate and watched the gates descend to their horizontal position as he approached. The automobile in front of him stopped at the crossing and then drove around the automatic crossing gate and proceeded across the tracks. This witness then pulled up close to the crossing gate so he could see to his left and saw the train approaching. He said its headlights were on and it was blowing its whistle as it approached at 25 to 30 mph. He estimated the train to be near the next street (Minor Avenue, 500 to 600 feet west) and decided he had time to cross in front of it, so he drove around the gate and across the tracks.

As this driver reached the north edge of the crossing, he saw the truck was stopped at the automatic crossing gate in the southbound lanes with its tractor angled slightly to the left toward him. The tractor's left turn indicator was flashing and the tractor was vibrating like it was in gear and trying to start forward. The driver of the northbound vehicle said that as he passed the truck he thought the truck was going to go across the tracks so he watched in his rearview mirror. He said the truck moved far enough to the left to clear the automatic crossing gate and then moved slowly onto the tracks. The witness said, "there was no way that truck was going to beat the train," so he pulled over to the right curb and stopped to see what was going to happen. He watched as the locomotive struck the right side of the trailer near the right rear wheels. Almost instantly after impact, the front of the locomotive was covered with flames and the trailer was bounced into the air and thrown to its left. Within seconds, flames were coming up on the far side of the train and could be seen above the freight cars. At this time the witness, a volunteer firefighter, sought to find a telephone to notify the police and fire departments.

The first vehicle behind the truck was a Louisiana Transit bus traveling empty to the bus garage area. The busdriver said the truck was stopped while two passenger cars came north around the automatic crossing gate and crossed the tracks. The busdriver did not notice the left turn signal flashing on the truck, but he said he was surprised when the truck started forward, pulled around the automatic crossing gate, and proceeded across the tracks. The busdriver said he "watched in disbelief" because it was obvious to him that the train was going to hit the truck. The busdriver said he could see the train clearly near Minor Avenue and could hear the train whistle almost continuously. He estimated the train's speed to be 25 to 30 mph. When the train hit the right rear of the trailer, it was knocked to the south side of the train and out of his sight. He heard an explosion, saw fire covering the front of the locomotive, and saw flames high above the freight cars on the far side. He estimated the time from when the truck started to move to when it was hit to be less than 30 seconds. He did not think the truck exceeded 3 or 4 mph across the tracks and did not hear any interruption in the sound of the engine to indicate that the gears were shifted.

A 1977 Chevrolet Camaro occupied by a woman and her 6-month-old baby was traveling north behind the two vehicles that drove around the automatic crossing gate. The driver said she stopped when she reached the crossing because the gate was down and the lights were flashing. She saw the train approaching the crossing and heard the train whistle. She did not see the truck start up, but did see it coming across the crossing while the gates were down and the crossing warning lights were flashing. She estimated the truck's speed to be near 35 mph. She saw the train hit the semitrailer and throw it toward her as it burst into flames. The tractor separated from the semitrailer and the semitrailer rolled onto the front of her car. She tried to back her automobile away, but it could not move. She attempted to open her door but it would only open a few inches and

she could not get out. She saw the truckdriver leave the tractor as it rolled toward a building on the corner, and she shouted to him for assistance. He came over and forced her door open and helped her out. She then asked him to get her baby out of the car. While he was attempting this rescue, burning gasoline was surrounding the automobile and a surge of flames forced them both away from the car, leaving the baby in the seat.

Two occupants of another northbound vehicle saw the truck just before the train hit it. They saw the crossing warning system functioning and heard the train whistle, but buildings prevented their seeing the train until it was at the street. One witness said the separated truck tractor was moving toward the building on the southwest corner when the driver jumped out. The tractor continued to roll a short distance and struck the corner of the building. These witnesses watched the truckdriver help the driver out of the Camaro and then try to get out something else until the flames drove him away.

The driver of the truck said he was southbound at an unstated speed when he saw the automatic grade crossing gate in a down position indicating a train was approaching. He said that when he attempted to stop, the truck's brakes failed and he was forced to go around the gate and across the tracks in front of the train. He made no other statements about the accident other than that he thought the train was on the north track rather than the south track and that he would not have crossed in front of a train while transporting gasoline if his brakes had not failed.

The train engineer and the front brakeman were in the cab of the lead locomotive unit with the engineer on the right side as they approached the crossing at a stated 25 mph. They said they did not notice the truck until it started slowly across the tracks and they were too close to stop. When they realized the train was going to hit a truck that might be loaded with flammable cargo, the engineer fell prone on the floor and the brakeman moved behind the water cooler. They said that when they hit the truck, the locomotive was covered with flame, but because the doors and windows were closed no flame came into the cab. Soon after the impact, the engineer determined that though he could feel the train was derailed, the train was still upright, so he applied the train's brakes in an emergency application and the train came to a stop 1,334 feet east of the crossing. As the train was slowing, the crew opened a door and leaped from the locomotive.

As the locomotive struck the semitrailer, the cargo tank ruptured, rolled upside down, and spilled a large amount of cargo fuel which ignited immediately on the roadway just south of the tracks. (See figure 2.) The track level was elevated above the roadway grade and the burning fuel ran 40 feet to the south and 50 feet to the east around a building on the southeast corner of the intersection that housed a bar and an upholstery shop. The burning fuel flowing to the south surrounded the stopped Camaro and the truck tractor and ran past the west (front) door of the bar. The fuel flowing to the east ran into the north foundation and around to the east side of the bar past the north door. (See figure 1.)

Survivors said that the nine persons inside the bar heard the crash of the train hitting the truck and a loud explosion. They rushed to the west (front) door but it was covered with flames. They then went into the east room and opened the north exit door but that area was also covered with flames, so they moved to the southeast rear corner of the building seeking another exit. At this time they said smoke and flames were coming up through the floor and it was very difficult to breathe. One survivor found a blocked doorway that led from the bar into the upholstery shop. He pushed out the windows in the top of the door and crawled through. He shouted back to the other persons to follow him. When he got out of the building, there were only two other persons with him and the building was engulfed in flames. Six persons perished in the bar.

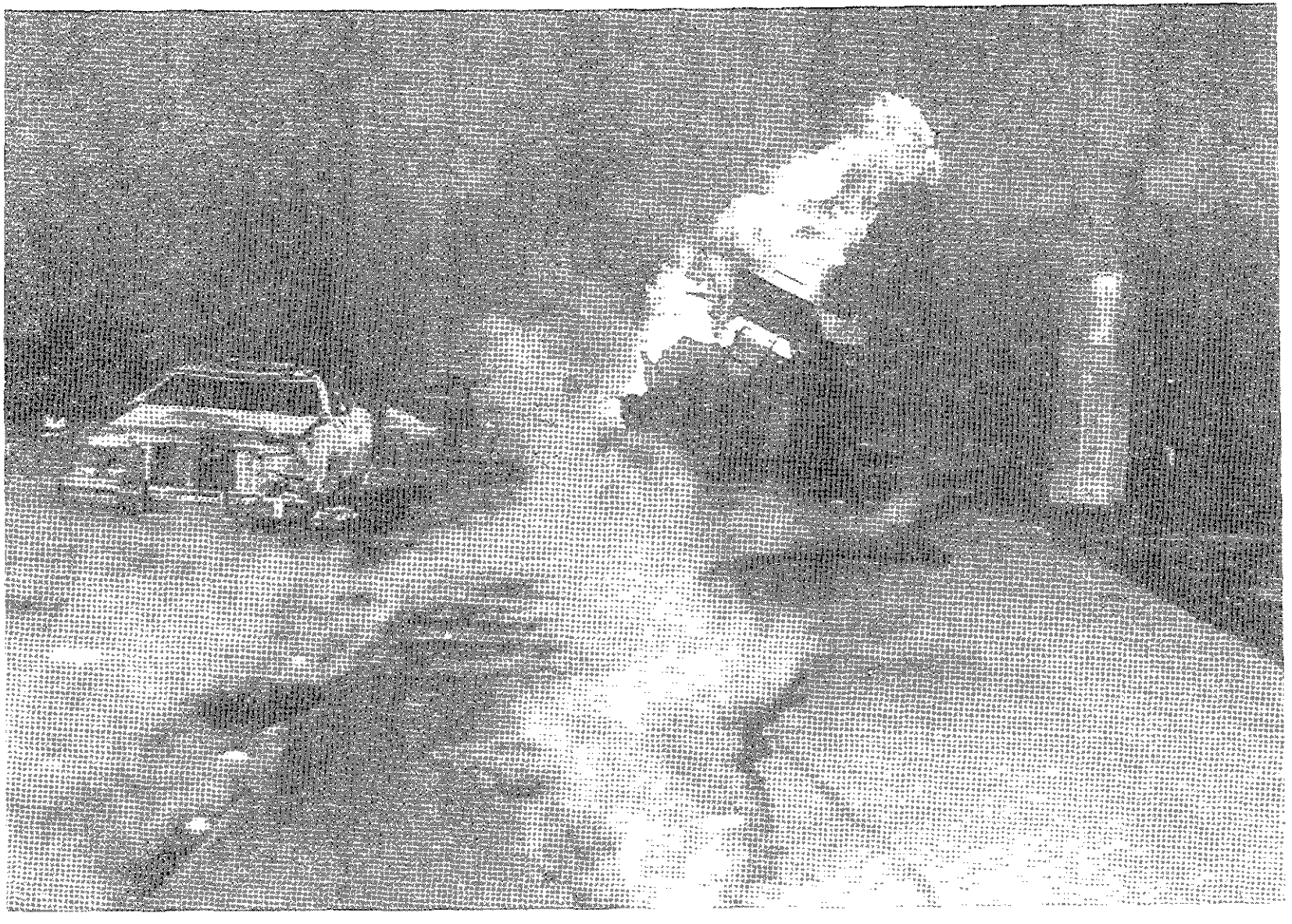


Figure 2.--Burning trailer and fuel flow pattern.

Injuries to Persons

Injuries	Drivers	Passengers	Building Occupants	Total
Fatal	0	1	6	7
Nonfatal	2	1	3	6
None	1	0	0	1
Total	3	2	9	14

Vehicle Information

The 1977 Kenworth three-axle conventional tractor unit (VIN 159473-5), company No. 443, was owned and operated by the Mobil Oil Company. It was powered by a 270-hp V6 diesel engine. It had a Fuller RT9509A transmission with a first-gear ratio of 7.90:1 and a 3.70:1 rear-axle ratio. The combination tractor and trailer weighed 75,685 pounds. It was equipped with air-mechanical "S" cam brakes with springbrakes on all four drive-wheel positions, tractor protection valve and dash-mounted parking brake control, Federal Motor Vehicle Safety Standard (FMVSS) 121 B. F. Goodrich antiskid control (reportedly disconnected), 1/ and 11x22.5 tires. It was towing a 1977 Heil cargo-tank semitrailer (VIN SN-929749), model No. MC306AL, company No. 676, owned by Mobil. It was a four-compartment aluminum tank equipped for top and bottom loading. The brakes were air-mechanical "S" cam with springbrakes at all four wheel positions and FMVSS 121 Kelsey Hayes antiskid control (reportedly disconnected). The tires were 11x22.5. (See figure 3.)

Vehicle Damage

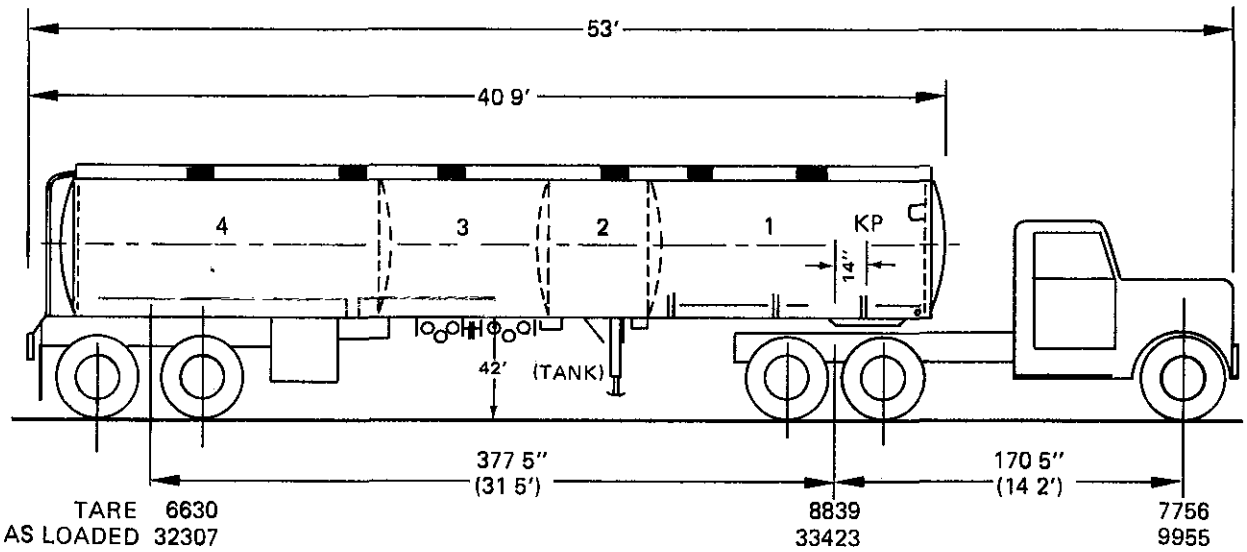
The vehicle was examined on November 26, 1980, in Kenner. The tractor wreckage, which had been placed on a flatbed trailer, had been extensively damaged by fire. Most vehicle components, which were either combustible or had low melting points, were destroyed. The transmission was in neutral. The tachograph could not be found. The right-side frame extension had failed vertically, adjacent to the forward edge of the primary side rail. The forward end of the frame extension attaches to the bumper and supports the hangers for the front springs. The right-side diesel fuel tank appeared to be undamaged. On the left side, the cab step-type battery box had 5-inch-diameter holes burned on the forward and underside surfaces.

Except for the left-rear bogie brake chamber (with piggyback springbrake), all aluminum chamber pressure plates, springbrake housings, and flexible brakelines on the tractor were missing. The left-rear bogie springbrake was in the applied position; all other bogie brakes were released. Measurements of the top brakeshoe lining thicknesses, midway between the toe and heel, at the edge nearest to the dust cover were as follows:

	Right side	Left side
Front	10/32 inch	13/32 inch
Rear	10/32 inch	8/32 inch

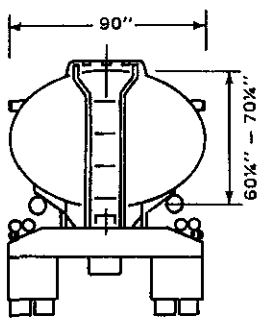
New lining thicknesses are 24/32 inch; rivet heads are 8/32 inch above the brakeshoe.

1/ Examination of Mobil vehicle maintenance records verified that the electronics portion of the FMVSS 121 brake system had been removed from both the truck and the trailer in 1979.



SHELL FULL COMPARTMENT CAPACITIES (GALLONS)

NO 1	2808
NO 2	1144
NO 3	1872
NO 4	3536
TOTAL	9360 (GAL)



WEIGHTS

TRACTOR TARE	FRONT	7545
	REAR	6480
	TOTAL	14025
TRAILER TARE	KINGPIN	2570
	TANDEM	6630
	TOTAL	9200
		23,225
CARGO 8600 x 6 1		52,460
	GCW	75,685 (lbs)

Figure 3.--Tractor and cargo-tank semitrailer.

The fifth wheel was still attached to the semitrailer kingpin. The tractor mounting assembly failed as the semitrailer rolled counterclockwise after impact.

Tire identification was not possible because only relatively small portions of the tires survived the fire. All were deflated. However, the following tread depth measurements were made:

	Left side	Right side
Front	16/32 inch	16/32 inch
Front bogie axle		
Inside	5/32 inch	4/32 inch
Outside	Destroyed	9/32 inch
Rear bogie axle		
Inside	Destroyed	Destroyed
Outside	Destroyed	6/32 inch

The semitrailer wreckage also had been placed on a flatbed trailer. (See figure 4.) Only steel components and approximately one-third of the aluminum cargo tank survived the postcrash fire. The entire underside of the tank had been consumed by fire. (See figures 5 and 6.)

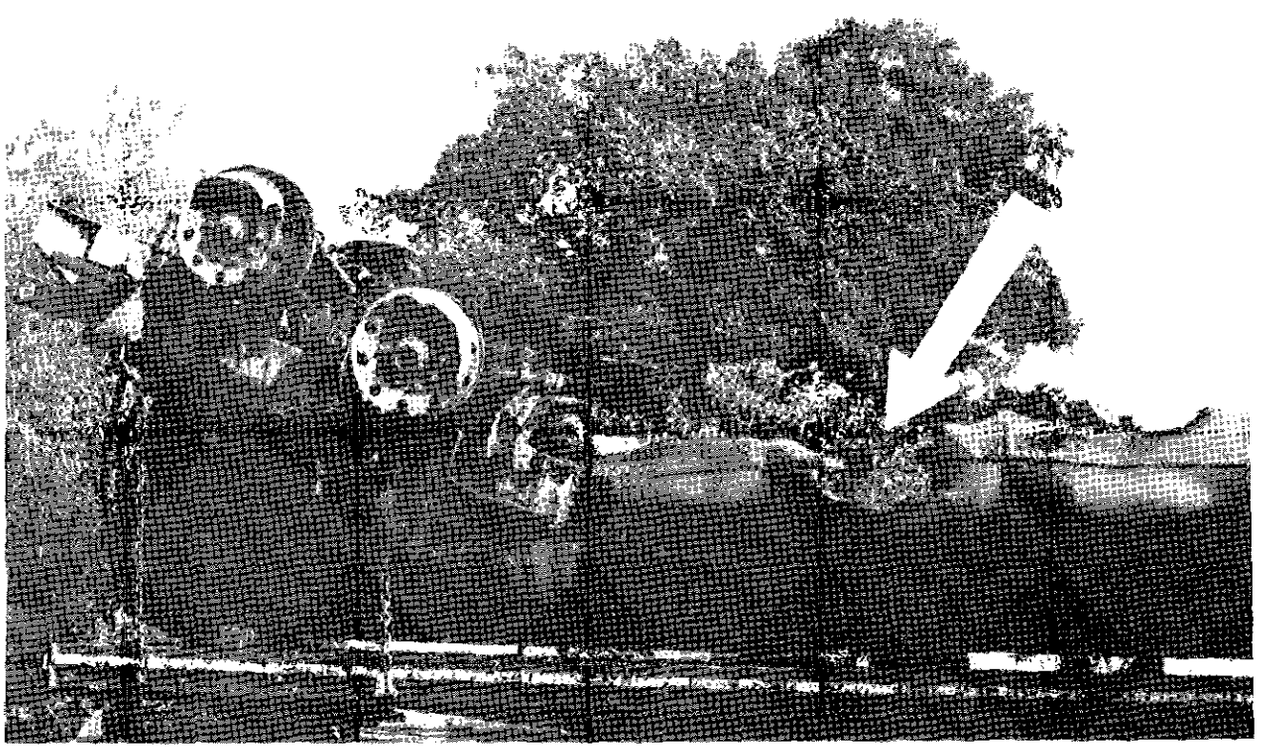


Figure 4.--Left side of trailer.
Note hole from locomotive coupling penetration.

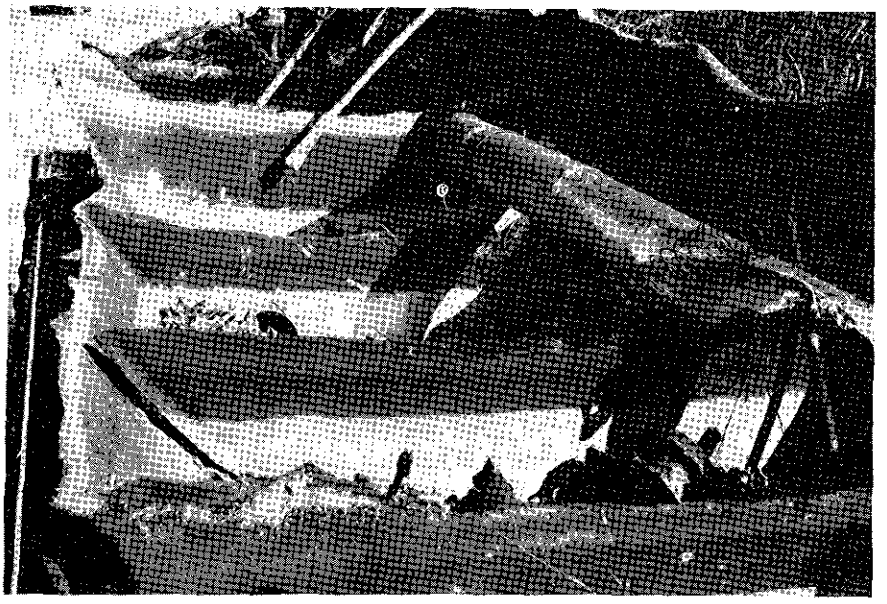


Figure 5.--Underside of trailer tank involved in the accident.

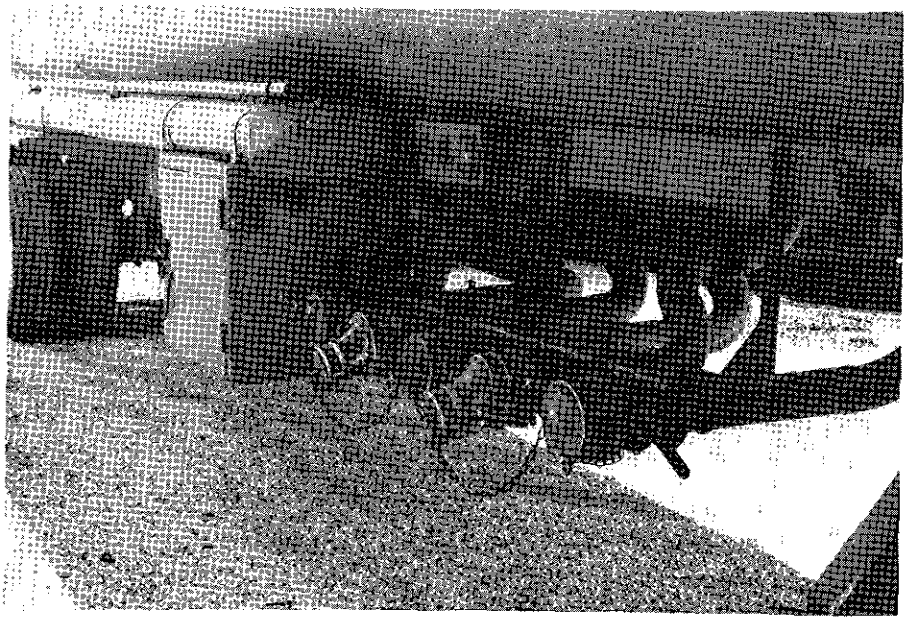


Figure 6.--Undamaged underside of trailer tank similar to tank involved in accident.

Physical damage was observed at the semitrailer tandem. A large puncture hole that matched the size and shape of the locomotive coupling was found in the left-side tank shell 14 1/2 feet forward of the rear bumper. All six cargo tank manhole covers were undamaged, closed, and none was leaking.

All aluminum springbrake components on the semitrailer were destroyed. Brake lining thickness measurements were as follows:

	Right side	Left side
Front	20/32 inch	17/32 inch
Rear	20/32 inch	18/32 inch

New brake lining thicknesses are 24/32 inch.

Physical damage to the tandem subframe was found 53 inches forward of the tandem centerline on the right side. The subframe had been displaced 10 inches toward the left. The forward axle also was displaced leftward. Forward-axle suspension components (springs, spring clips, hangers, radius rods) were also displaced, broken, and generally disoriented.

Before it was removed from the accident site, the shell of the semitrailer had been resting on the left side overturn protection rail. (See figures 4, 5, 6, and 7.) The remaining shell material on the right side extended approximately 12 inches downward from the right side overturn rail. The remaining shell material on the left side extended approximately 12 inches below the horizontal centerline of the shell.

The maximum distance from the soot line on the bulkheads, baffles, and inner surfaces of the shell and heads (see figure 5) to the inner surface of the shell was measured for each compartment (see figure 7). Evaluation of the burn damage and soot level on the remaining portions of the cargo tank indicated 6,856 (80 percent) of the 8,600 gallons of fuel either burned or escaped during the postcrash fire. The manhole covers ordinarily at the top of the tank retained the fuel in the inverted position.

Other Damage

A 1977 Chevrolet Camaro was involved in the accident because of its position in the roadway. Its engine was running but none of the mechanical aspects of the vehicle are pertinent. It was completely burned. All sheet metal was warped from the heat and all combustibles, soft metals, and all instruments were destroyed. The top collapsed during the fire along a longitudinal line near its center with the A and B pillars bent toward the center. The front of the hood was crushed downward to the radiator and engine. (See figure 8.)

The building housing the bar and upholstery shop was destroyed by fire. Nineteen automobiles in the area were damaged by fire.

Train Information

The eastbound ICG train No. CN-5 consisted of a three-unit, diesel-electric locomotive, 68 loaded freight cars, 51 empty freight cars, and a caboose.

The locomotive included ICG units Nos. 3070, 3062, and 3051 coupled in multiple-unit control in that order from front to rear. All of the units were model GP-40's, manufactured by the Electro-Motive Division of the General Motors

COMPARTMENT	SHELL FULL CAPACITY (GALS)	POST FIRE QUANTITY (GALS)
1	2808	138.96
2	1144	413 84
3	1872	344 05
4	3536	847 9
TOTAL	9360	1744 75

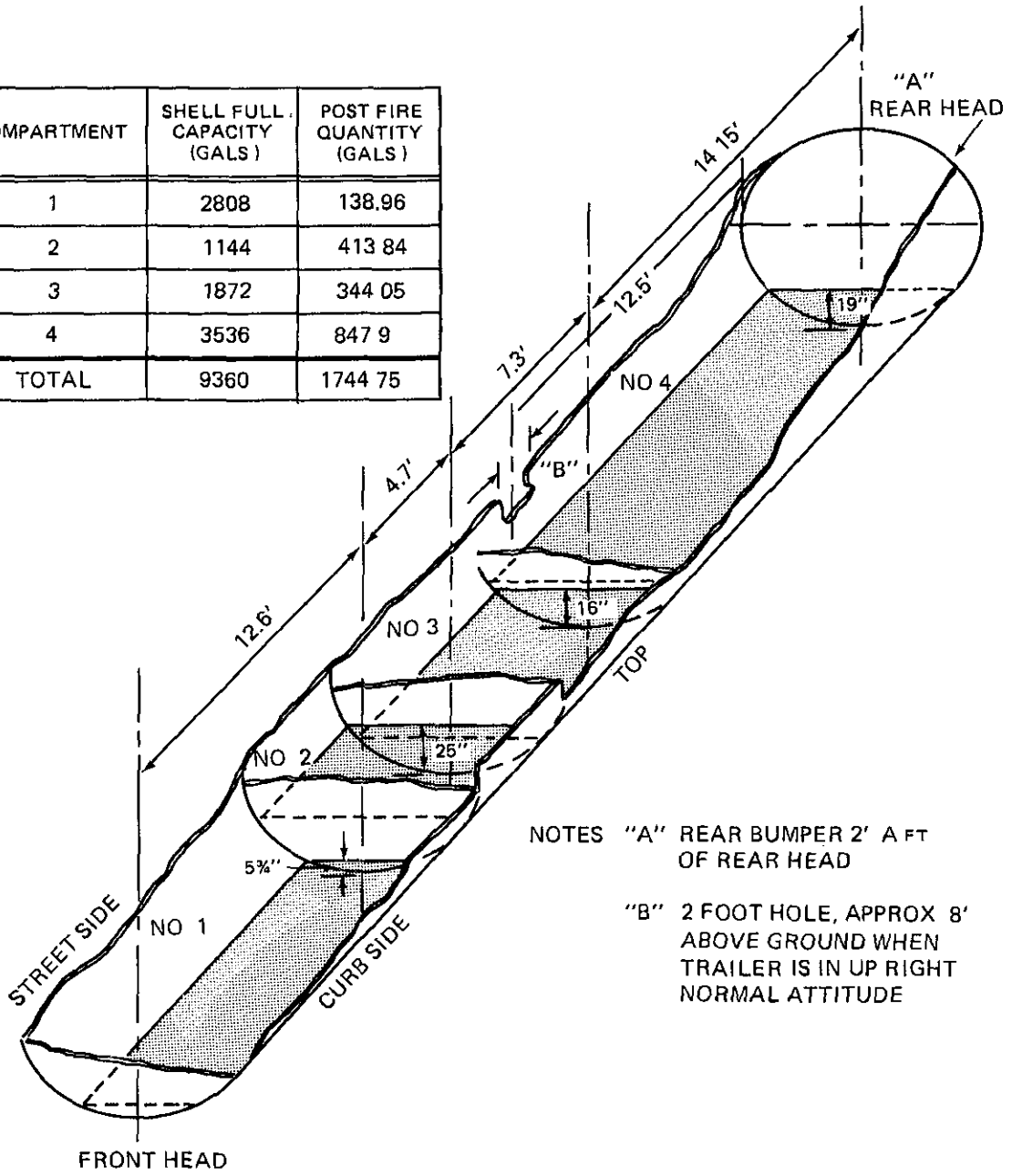


Figure 7.--Diagram of cargo tank shell in postaccident upside-down attitude.

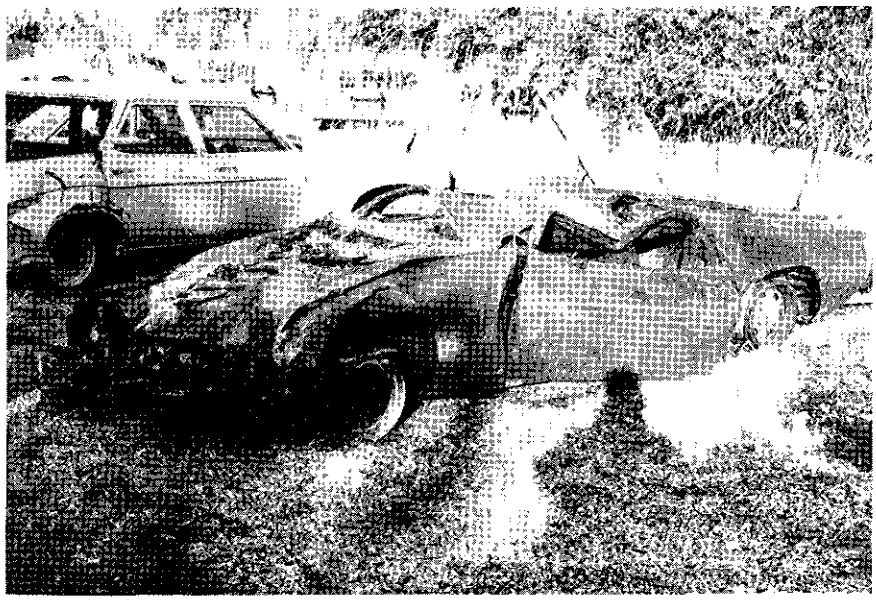


Figure 8.--Automobile struck by cargo tank.

Corporation. ICG unit No. 3070 was facing forward at the time of the accident. This unit had been manufactured with the top of the front hood below the windshield level as an aid to visibility from the cab. It was equipped with 26-L brake equipment, Barco speed indicator (no recorder), a three-chime, air-operated whistle mounted on the roof with two bells forward and one rearward. The unit was equipped with two sets of twin headlights. The set mounted on the front center of the low-front hood were fixed headlights. The set mounted above the windshield at the center was designed to oscillate, but was operating as though it was fixed because the oscillation function was inoperative. The unit was equipped with two, two-axle trucks with all wheels being drivers. The locomotive bell was mounted near the front of the unit under the side sill.

Because of the cool ambient evening temperature, the cab windows were closed tightly at the time of the collision. The cab doors remained closed and cab window glazing remained intact during impact. The interior of the lead locomotive unit's cab was not exposed to the fire. Exterior fire damage to the unit consisted of charred paint and clouded window glass. Mechanical damage at the front end of ICG unit No. 3070 consisted of rearward bent handrails and vertical grabirons at each stairwell. There was a dent approximately 12 inches wide and 24 inches high below the front headlight. Its average depth below the front headlight was about 3 inches. The right-front corner of the forward breastplate of this unit was bent backward 3 to 4 inches. (See figure 9.)

Track Information

The train was traveling on the south track 2/ along a left curve that progressed from a 1/2-degree curve to a 1-degree curve approximately 1,575 feet west of Williams

2/ The ICG designates the tracks as north and south, but the tracks are oriented east and west at this location.

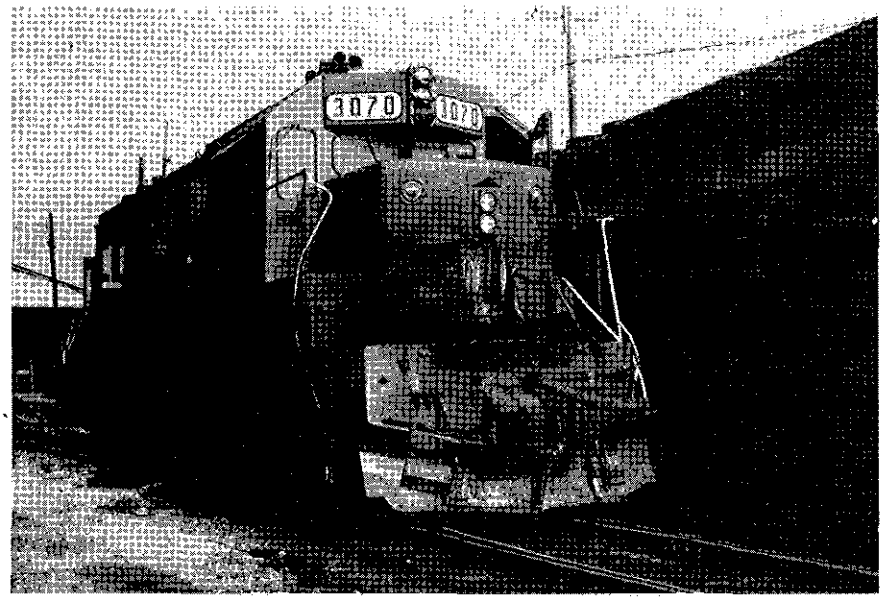


Figure 9.--Locomotive front-end damage.

Boulevard and then became a straight section approximately 650 feet west of Williams Boulevard. (See figure 10). In this same area the Williams Boulevard crossing device actuator and a restart actuator were located 2,423 feet and 1,540 feet, respectively, west of Williams Boulevard. The restart device was placed to permit switching activities between the start and restart actuators without the Williams Boulevard crossing devices remaining activated while a train was within these limits.

In the vicinity of the crossing, train movements were governed by signal indications of an automatic block signal system, timetable special instructions, and train orders. Pertinent ICG rules and the Kenner city ordinances stated that the maximum allowable speed for an engine or lead car on crossings from Hanson Street to Filmore Street was 25 mph. Trains were operated north and south on the main tracks in the vicinity of the Williams Boulevard intersection. The west track circuit on the southbound main track used to activate the crossing warning equipment was approximately 2,423 feet long. Postaccident tests indicated that the crossing lights and bell began operating about 1 second after activation, and the gates were down in a horizontal position within 15 seconds. (See figure 11.) The southbound 14 1/2-foot crossing gate arm tip extended into the center of the left southbound traffic lane.

The crossing gate equipment in the southeast quadrant was damaged when it was struck by the semitrailer. The ICG estimated damage to the railroad equipment was $7,500.

Driver Information

The truckdriver was a 36-year-old male in good health. He held a valid Class D Louisiana driver license No. 4758440-D that expired on March 31, 1981, which authorized

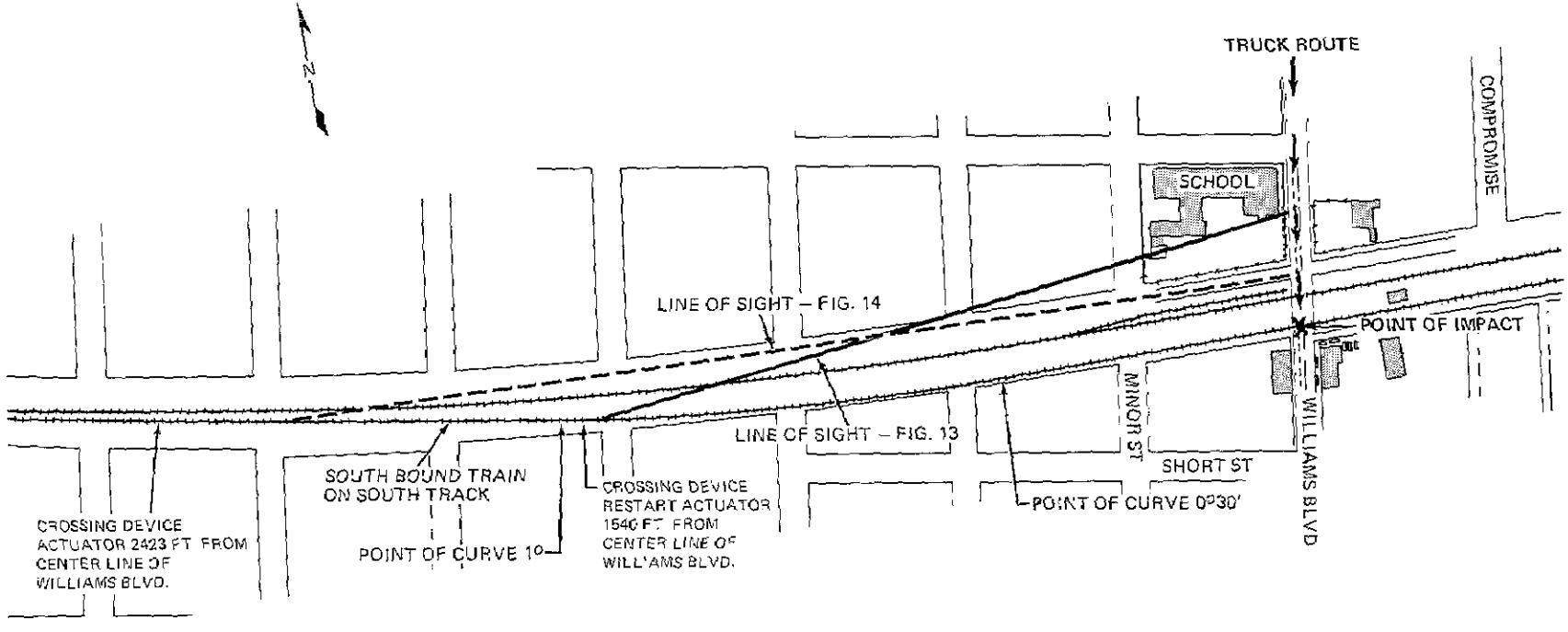


Figure 10.—Track in accident area.

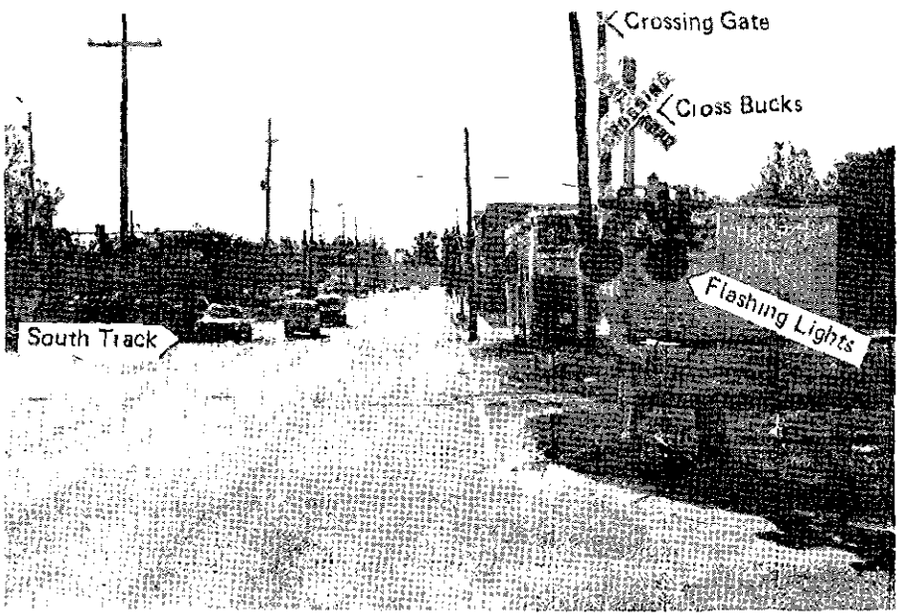


Figure 11.—Warning devices for southbound traffic.

him to drive a tractor-trailer unit. His driver record shows a conviction for speeding in Benton, Louisiana, on November 27, 1979. He was hired by Mobil in 1974 and worked in Dallas, Texas, about 5 years and then transferred to the Baton Rouge, Louisiana, terminal.

His present supervisor said that he had performed his job well over the past 1 1/4 years. His driver record with Mobil showed that he was involved in two nonchargeable accidents--one on July 7, 1977, and the other on December 10, 1979. It also showed he had participated in the company safety training program. He had driven the same tractor-trailer combination since transferring to Baton Rouge and was described as taking pride in keeping it clean and in good condition.

The truckdriver refused to provide information about his actions. He stated he would not discuss the accident because of pending legal actions associated with the accident. Mobil records indicate that on the day before the accident, the truckdriver worked from 2 p.m. until 1:30 a.m. delivering gasoline. On the day of the accident, he started work at 2:30 p.m. He drove his regularly assigned tractor and semitrailer to Mobil's loading rack and loaded the trailer's forward compartment with gasoline. About 3 p.m., he drove to the Exxon Oil Company's Baton Rouge Terminal on Phoenix Highway and loaded the three remaining compartments with gasoline. He then drove approximately 70 miles to Mandelville, Louisiana, and unloaded the gasoline at a service station. Then he proceeded empty approximately 37 miles to the Shell Oil Company Terminal in Kenner, arriving at 6:32 p.m. He loaded a total of 8,600 gallons of unleaded premium gasoline as follows:

Compartment	Gallons
1	2,600
2	1,100
3	1,700
4	3,200
Total	8,600

The truckdriver left the Shell terminal 10 to 15 minutes before 7 p.m. for the Intercoastal Oil Company in Houma, Louisiana, approximately 54 miles from Kenner. He departed east on Airline Highway and turned right at Williams Boulevard about 1.6 miles from the Shell terminal and proceeded about 0.2 mile south to the railroad crossing. Transportation of hazardous materials was not restricted by local ordinance on this route.

Roadway Information

The only marks on the roadway that could be identified were the wheel marks of the derailed locomotive axle. Other gouges and scuffs existed between the point of impact and point of rest of the semitrailer but could not be attributed to particular parts of the semitrailer. Burn stains on the road surface indicated a flow and burn pattern of the spilled gasoline to the south and east.

Williams Boulevard (State Route 49) is the major north-south arterial in the city of Kenner from the Mississippi River north to Lake Pontchartrain. In the vicinity of the Kenner Avenue railroad crossing between Jefferson Highway and Airline Highway, Williams Boulevard is a four-lane, undivided highway 42 feet from curb to curb. The pavement is marked with double yellow centerlines with raised reflective markers, dashed white lane lines between the 10-foot lanes, and solid white edgelines 1 foot from the curbs. The posted speed limit is 30 mph, except between 7 a.m. and 9 a.m. and 2 p.m. and 4 p.m. when a 25-mph school zone speed limit is applicable. According to the Louisiana Department of Transportation and Development, the average daily traffic count in the area is 15,000 vehicles.

The railroad tracks are at a higher elevation than the highway, so the southbound traffic on Williams Boulevard must climb approximately 5 feet over a distance of 180 feet to the level of the north track and then climb another 1 foot over a distance of 60 feet to the level of the south track. The slope then descends 3 feet over a distance of 110 feet to the general grade of Williams Boulevard south of the crossing. (See figure 1.) Williams Boulevard is also higher than the level of east-west Corwin Street which is parallel to the railroad tracks. The pavement elevation from the approximate point of rest of the semitrailer at the east edge of Williams Boulevard drops 4 feet over a distance of 100 feet to the east along Corwin Street.

On the southbound approach to the crossing, a railroad advance warning sign was posted at the right edge of the roadway, 360 feet north of the north track. (See figure 12.) The pavement markings consisted of surface white bands across the lanes 170 feet and 120 feet north of the north track with the appropriate dual "X" and the letters "RR" inbetween. All markings showed signs of traffic wear. (See figure 13.)

The advance warning signs, the pavement markings, the crossbucks, the flashing light signals, the accompanying warning bells, and the automatic gates were all in accordance with Part VIII Traffic Control Systems for Railroad-Highway Grade Crossings of the Manual on Uniform Traffic Control Devices (MUTCD). 3/

As part of the State of Louisiana railroad-highway grade crossing program, an onsite inspection of the Williams Boulevard crossing was conducted on April 24, 1979, by officials of the ICG and the State of Louisiana. The recommendations resulting from the inspection were: (1) replace the existing automatic gates with longer gates; (2) install new, 54-foot-long, rubber pad grade crossings on the track centerline; (3) change the

3/ The MUTCD is published by the Federal Highway Administration (FHWA) of the U.S. Department of Transportation and is the approved national standard for all highways open to public travel in accordance with Title 23, U.S. Code, Sections 109(b) and 402(c) and 23 CFR 1204.4.

Figure 12.--Southbound approach to crossing.

Figure 13.--Pavement marking warning sign north of crossing.

wiring under the crossing and update the circuitry to include motion sensors; and (4) relocate the flashing light signal and gate in the northwest corner if the old siding track is removed. The State of Louisiana was waiting for engineering plans and estimates from the ICG before scheduling this crossing for the recommended improvements.

A Federal Railroad Administration (FRA) demonstration project that would close tracks of the Louisiana and Arkansas Railroad 0.2 mile north of the crossing along Airline Highway and route that traffic on the ICG crossing is currently proposed. This would require further adjustment on the ICG tracks. Another project the ICG is developing would provide a Y-turnaround in the area that would change the railroad traffic pattern across the Kenner Avenue crossing.

Highway luminaires are present on Williams Boulevard, Kenner Avenue, and Corwin Street. They are mounted at a height of about 40 feet with 100-foot spacing.

Accident history records provided by the Kenner Police Department indicate there have been two previous accidents at this crossing since 1976. Both of these accidents occurred in 1979 and involved passenger vehicles that were hit by trains. Both accidents were on Sundays during the hours of darkness. It was raining during the first accident, and the driver of the vehicle involved in the second accident was found to have a 0.15 percent blood alcohol level. Both drivers drove around properly actuated warning gates. One driver received minor injuries; the other was not injured.

There is no record of any traffic enforcement actions related to drivers of motor vehicles for violating the railroad crossing warning devices.

On November 28, 1980, a series of daytime photographs was taken along the line of sight between Williams Boulevard and the ICG tracks west of the crossing. The camera was held at a height of 9 1/2 feet from the ground, the approximate height of a driver sitting in a tractor similar to the tractor involved in this accident. At a location on Williams Boulevard 240 feet north of the south track, there was a clear view of the track for a distance of 1,469 feet. (See figure 14.) The visibility steadily increased as the observer neared the crossing to a maximum distance of 3,346 feet while on the track. (See figure 15.)

Similar observations were made during the hours of darkness with a locomotive approaching the crossing. At the time the locomotive activated the crossing signal, the locomotive's headlight was readily visible and as it approached the Minor Avenue crossing, 500 to 600 feet west of Williams Boulevard, the locomotive was recognizable and clearly visible to observers standing at the crossing. On two occasions, eastbound trains were observed approaching the crossing on the south track. The bells, lights, and automatic crossing gates operated as required and the train whistle was audible.

While taking measurements at the scene, Safety Board investigators twice observed drivers of southbound automobiles ignore the automatic crossing gates while a train was approaching by driving around the lowered crossing gates and crossing in front of the train. Driving around a lowered automatic crossing gate at a railroad track is in violation of the Motor Vehicle and Traffic Regulations, Title 32 of the Louisiana Revised Statutes of 1950, as amended, Sections 171-A-(1)(2)(3)(4) and 171-B.

Kenner City Ordinance No. 13 1/2-3 prohibits a railroad train from blocking a crossing longer than 10 minutes. Bystanders at the accident scene said that trains often block the crossing from 15 to 45 minutes when switching and the delays have caused motorists to bypass the automatic crossing gates to cross the tracks in front of trains. City officials said that crossings along the ICG track were often blocked much longer than

Figure 14.--Line of sight west from a point on Williams Boulevard 240 feet north of the crossing. The tracks were visible for 1,469 feet.

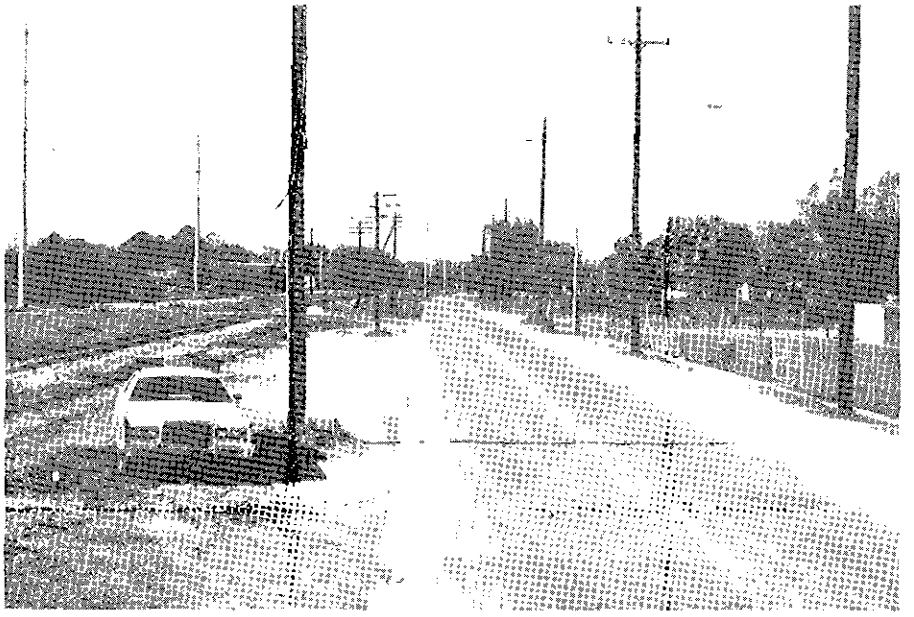


Figure 15.--View from the approximate position of the tractor 105 feet north of the crossing on Williams Boulevard before it went around the crossing gate. The sight distance west along the tracks was 2,110 feet.

the 10-minute limit and that this restricted police and fire protection coverage on both sides of the tracks.

Fire

An offduty Kenner Fire Department captain near the accident scene heard two explosions following the crash. When he arrived at the scene a few moments later, the semitrailer was burning approximately 25 feet south of the south track. Approaching firefighters observed orange-yellow flames rolling continuously upward to a maximum estimated height of 100 feet, where thick black smoke evolved.

The first onduty firefighters who learned of the fire were roadtesting a Jefferson Parish Fire Department firetruck about 7 p.m. and saw the fireball from less than a mile north of the scene. They immediately started for the fire and notified the Kenner Fire Department through their dispatcher. At the same time, observers in the nearby control tower of the New Orleans International Airport (Moisant Airport) observed the fire, relayed a message to the Kenner Central Station, and dispatched an airport investigator to the scene to determine if an aircraft was involved or if they could render aid. The Kenner Fire Department dispatched three pumper units to the scene, one from the south and two from the north, and requested the Moisant Airport to dispatch its foam truck to aid at the scene.

Five minutes after the start of the fire, gasoline was running into the street drainage system, followed by undergound explosions that blew manhole covers off the drainage system both north and south of the fire. The fire department ordered the evacuation of a two-block area to protect residents in the area.

With the train blocking the intersections near the fire, an extensive detour was necessary to transfer firefighting units north or south of the tracks, and communication was restricted to radio contact between units on opposite sides of the fire. With the train locomotive derailed and no other motive power immediately available, it was not possible to break the train and move the cars away from the fire area. The efforts of the firefighting crews were further restricted by their not being able to reach the area between the south side of the train and the burning semitrailer because of the proximity of the semitrailer to the train.

Other firefighting units were requested from the Jefferson Parish Fire Department. These were used to protect buildings near the fire and prevent spread of the fire. The high flames burned overhead power lines causing a loss of power in the community. The possibility of falling electric power lines posed a hazard to the firefighters, so power was turned off in the area. Natural gas service was also turned off. The foam truck from the airport delivered one load of water-foam over and under the train cars from the north side of the tracks. The foam truck refilled and moved in close to the semitrailer south of the train and extinguished its flames. Further flareups were controlled by city fire department units. The fire department reported the fire to be under control at 9 p.m. The firechief estimated the total damage at $300,000 to $425,000.

During the fire, the firefighters did not know the contents of the railroad cars stopped in the fire area even though a search had been initiated from the command post south of the fire for the conductor or other train crewmembers who would have the consist records of the train. The firechief was unsuccessful in his attempts to contact the conductor and went through the entire firefighting procedure without cargo information from the traincrew.

At the time of the accident, the conductor was seated in the cupola of the caboose with the flagman. The conductor saw a large blue flash near the head end of the train and simultaneously the electric lighting in the area on his side of the track flickered. Shortly afterward, he and the flagman saw a large fireball rise from the area at the head end of the train. The conductor tried unsuccessfully to reach his engineer by radio.

About 30 to 45 seconds after the fireball was observed, the train's brakes were applied in an emergency application. When the train stopped, the conductor took the portable radio, both copies of the train consist, and the waybills and started toward the head end of the train. He ran for a distance along Kenner Avenue until he flagged a ride in a Kenner Police Department patrol car to the intersection of Williams Boulevard and Kenner Avenue. When he arrived, he checked the commodities of the cars near the fire to see if they posed a threat. A car of lumber was stopped with its north end on Williams Boulevard; the car ahead of it and nearest to the burning building was an empty tank car that last contained propane. He said that because of the direction of the wind, the flames were not a threat to any of the cars. Consequently, he aided the Kenner Police Department patrolman in keeping the crowd away from the railroad on the north side and remained in the area for about an hour or more. He said he was neither asked for nor did he offer the train consist printout to local police or fire officials.

ICG Timetable Special Instruction No. 1210 states that the conductor is required to go to the accident location, notify the train dispatcher of the situation status, make himself available to advise the emergency response force (fire, police, etc.) concerning contents of the cars involved, and remain near the scene to furnish any necessary information that may be requested.

The conductor was not wearing an identifiable uniform or insignia and the fire department personnel seeking him apparently did not recognize him. A trainmaster employed by the carrier appeared on the scene shortly after the conductor arrived at the head end. The trainmaster did not question the conductor about the availability of the consist and emergency response procedures for the local officials.

Meteorological Information

The weather as reported by the Moisant Airport about the time of the accident was as follows:

Time (p.m.)	Wind direction (degrees/compass)	Wind speed (knots)	Dewpoint (F°)	Temp. (F°)	Surface visibility (miles)
6:54	050/NE	12	46	52	7
7:21	070/ENE	12	--	--	7
7:52	070/ENE	11	44	52	7
8:54	070/ENE	09	44	51	7

Sunset occurred at 5:01 p.m. and it was dark with artificial street lighting at the time of the accident. It was overcast and dry.

Medical and Pathological Information

All of the victims died from burn injuries.

The three bar patrons that escaped and the truckdriver were treated for minor injuries and released from the hospital.

Survival Aspects

The 52-foot by 82-foot frame building with a loose brick foundation that housed the bar and the upholstery shop was located on the southeast corner of the intersection 10 feet south of the edge of Corwin Street and 10 feet east of the edge of Williams Boulevard. (See figure 1.) It was partitioned east to west with the bar at the north end and the upholstery shop at the south end. The bar was further partitioned with a narrow room on the east side of the bar that was used for storage and to repair electrical equipment. There was one doorway out of the bar in the west wall and another doorway in the east wall that led into the smaller room. The smaller room had an outside door in the north wall. The bar met local fire department requirements for exits.

All nine persons in the building at the time of the accident were in the barroom. They attempted to escape through the west and north doorways, but the exits were blocked by flames. Three persons escaped by breaking through a blocked doorway between the bar and the upholstery shop and exiting through a south doorway to the building. Five of the victims were found in the southeast corner of the barroom and another was found near a restroom.

Following the fire that destroyed the Camaro, the 6-month-old victim was found in the remnants of an Astroseat VI Carseat in the right-front passenger seat. The car seat met the Federal Motor Vehicle Safety Standard 213 requirements. The mother said that she had owned the carseat about 2 months and had used it regularly during that time. The mother said she put the infant in the carseat according to the instructions in the owner's manual, carried the carseat to the car, and placed it in the right-front passenger seat, facing to the rear. She threaded the vehicle seatbelt through the metal framework of the carseat and buckled it near the console tunnel.

After the accident, the truckdriver forced the door of the car open and helped the mother out of the car. She asked the truckdriver to get the infant out of the car, but he was unable to do so in the short time before the fire became too intense.

ANALYSIS

The Accident

Postcrash testing and witness statements verified that the warning devices at the crossing were functioning as required at the time of the accident. There is no doubt the truckdriver saw the active crossing warning devices and was aware of the train's presence, although he said he thought the train was on the north track rather than the south track. The truckdriver refused to make a statement explaining his actions, other than that his brakes failed. During his criminal trial on charges of negligent homicide, the truckdriver testified that his brakes failed before he reached the intersection of Kenner Ave, and he could not stop for the warning gate. 4/ Postaccident examination of the brake system revealed no evidence of a mechanical problem. Further, the brake system design characteristics were such that if the system's air pressure had been lost, the springbrakes would have applied automatically and provided sufficient braking capability to stop the combination vehicle. The driver also could have actuated a dash control valve to apply the springbrakes.

Events following the impact indicate that tractor air pressure for braking was available up to and following the impact. After the tractor separated from the trailer and the driver left the cab, the tractor rolled on its wheels toward the southwest and struck the building. The brake system design incorporated a tractor protection valve to prevent

4/ Times Picayune, New Orleans, Louisiana, March 13, 1981, p. 15.

tractor air pressure loss if the trailer disconnected for any reason. The tractor protection valve functioned as intended, since the tractor system brake had air pressure after the impact. And, had it not, the bogie-axle springbrakes would have applied automatically and stopped the tractor before it rolled into the building. Postcrash fire eventually destroyed the system's ability to retain air pressure, causing the springbrakes to apply. The postcrash inspection revealed that the left rear spring brake, the only one not destroyed by fire, was in the engaged mode which indicates that air pressure was lost sometime during the fire.

The uphill highway gradient approaching and over the crossing averaged about 3 percent. Considering this grade and the 75,685-pound weight of the truck, the tractor manufacturer stated that the truckdriver would normally have started forward in first gear. Using the transmission gear and axle ratio, a top speed of 7 to 8 mph at the 1,950-rpm governed engine speed was attainable within 3 seconds. At 7 to 8 mph the loaded vehicle required very little braking effort to stop on the 3-percent uphill gradient.

Witnesses verified the functioning of the lights, bells, whistles, and brake operation of the train. The train was operating within the rules of the City of Kenner and the ICG. Witnesses said the truck stopped at the warning gate, waited for two northbound vehicles to cross the tracks, and then drove around the gate to cross in front of the train. Therefore, the Safety Board concludes that the movement of the tractor-semitrailer through the grade crossing was initiated and maintained by the truckdriver and was not the result of faulty brakes. The reason for the truckdriver's decision to attempt to cross in front of the train is not evident and he refused to comment. Drivers of other vehicles at the crossing correctly judged that the tractor-semitrailer could not cross the tracks safely. The truckdriver's error in judgment was inexplicable in the light of his experience when it was so obvious to others in the vicinity that the truck would not be able to cross the tracks before the train reached the crossing.

The truckdriver was properly licensed and experienced for operating this particular truck. His several trips over this same route should have made him familiar with the area. He had received training in a major oil company safety program for several years which should have alerted him to the precautions to be taken with the hazardous material he transported. His own comment that he would not bypass a crossing warning device of his own volition indicates he was aware of the hazard that existed. However, because of his refusal to discuss the matter, the Safety Board is unable to explain the truckdriver's actions.

The witnesses at the crossing and the traincrew stated that the truck was traveling slowly onto and across the crossing. The Camaro driver's estimate of a higher truck speed was probably due to the driver's perspective; the truck was moving toward her with its engine roaring and the semitrailer came flying through the air toward her at an accelerated rate after it was struck by the train.

The mechanical components of the train were all functioning properly except for the oscillating action of the upper headlight. The truckdriver said he saw the train and thought it was on a different track; he apparently failed to estimate its speed properly. The oscillating headlight was developed to improve the conspicuity of the locomotive, but it is not known if it would have aided in estimating the exact position and rate of travel of the train.

The centerline of the locomotive struck the semitrailer on the right side at a point 14 1/2 feet from its extreme rear, as demonstrated by trailer subframe damage and a hole that matched the contour of the locomotive coupling on the left side of the tank. The coupling penetrated the tank as it rolled to its left away from the train. As the semitrailer rolled, it separated from the tractor at the fifth wheel. The front of the

locomotive struck and distorted the tank and probably initiated cargo fuel leakage from the pipes at the bottom of the tank used for loading and unloading cargo fluids. At the same time, sparks could have been caused by metal parts of the two units contacting each other and/or the rail and road surface. The front of the locomotive was also equipped with a large electrical plug-in box and associated wires that were used to connect two locomotives together and transfer electrical power from one unit to another. This area was damaged by the collision and could have provided a possible source of ignition of the gasoline that covered the front of the locomotive following penetration by the coupler.

The gasoline cargo was released progressively as the bulkheads were melted, releasing the fuel over a period of time. The initial cargo release was quite substantial, however, since the building at the southeast corner of the intersection was bracketed on the west and north sides so quickly the nine occupants of the bar were unable to exit from the west or north doors. The loose brick foundation permitted burning gasoline to flow under the floor.

The traincrew was experienced, trained, and familiar with the route. They were operating within their service time limitations. They had not observed the approach of the truck until after it passed around the crossing gate and were not aware it was going to continue across the track until they were an estimated 2 to 3 seconds from impact. Since it takes approximately 5 seconds for the train brakes to become effective after being applied, the engineer and fireman knew that a collision was unavoidable and they sought a protected position in the cab. Applying the train brakes at this time would not have affected the severity of the accident. The engineer made an emergency application of the brakes shortly after impact.

The Roadway

Williams Boulevard was in good repair both north and south of the railroad crossing. At the crossing the difference in elevation between the street and the tracks and the slight difference in grade between the two tracks created an irregular section of roadway. The crossing would not tolerate vehicle speeds as high as usual roadway speeds. However, at the slow speed the truck was traversing the crossing there should not have been handling problems with the truck.

The southbound approach to the crossing permitted a clear line of sight between the truck and the train for the last 240 feet of truck travel. Since the witnesses and the truckdriver saw the train, although they interpreted its position and speed differently, visibility is not considered an issue in this accident.

Although the elevation of the tracks above the roadway grade on the south side of the tracks contributed to the flow of the flammable liquid, the Safety Board does not believe the facts, conditions, and circumstances of this accident warrant initiation of modification efforts.

On April 24, 1979, the State of Louisiana and the ICG recommended that the existing automatic gates be installed with longer gate arms and that the wiring under the crossing be changed and the circuitry updated. A longer gate arm extending further across the traveled portion of the roadway requires a much more definitive movement by a vehicle to bypass the barrier. The greater effort required to drive around a barrier ordinarily requires a greater decisionmaking process to provide the extra motivation. This may permit a more thorough evaluation of the circumstances and cause more motorists to accept the safer alternative of waiting for the train.

The changing of the wiring and updating the circuitry to include motion sensors is compatible with the recommendations of both the Association of American Railroads (AAR) 5/ and the FHWA 6/ guidelines for installation of special devices or circuits to provide reasonably uniform notice in advance of all train movements over a crossing so that uniform warnings are given regardless of train speeds. This could upgrade the credibility of the active crossing warning devices with motorists who in the past have complained of signals operating over a long period of time while switching is being accomplished in the area.

Though Kenner City Ordinance No 13 1/2-3 prohibits a railroad train from blocking a crossing longer than 10 minutes, some citizens complained that switching in the area results in the Williams Boulevard crossing being blocked at times from 15 to 45 minutes. Some city officials agreed that the railroad crossings along the ICG track were often blocked much longer than the 10-minute limit and this was a concern because it restricted their police and fire protection coverage on both sides of the tracks. No documentation as to exact dates or periods of time was provided, and no record of correspondence or enforcement action between the city and the ICG was available.

The ICG Operating Rules, section 103d 7/ states:

> Public grade crossings must not be blocked longer than five minutes when it can be avoided. When parting trains or cuts of cars at such locations, the cars should be left no less than fifty feet from each side of crossing, when practical. Before movement is made to recouple, the crossing must be protected by a trainman.

An ICG interpretation 8/ of the above rule states:

> Unnecessary operation of automatic grade crossing warning devices due to engines or cars standing on circuit, especially at certain locations where it is done frequently, tends to cause motorists to disregard those warning devices, and must be avoided.

The ICG should insist on compliance with these operating rules by the crewmembers responsible for the operation of their trains. This would assure compliance with the city of Kenner's ordinance and avoid contributing to the cause of motorist disregard of traffic control devices and automatic crossing gates at railroad/highway grade crossings.

Not only the ICG but all railroads should have and enforce similar Operating Rules or Special Instructions. The AAR should disseminate the details of this accident to its members and urge that the necessary action be taken to avoid the lengthy blockage of railroad/highway grade crossings.

Two vehicles violated the automatic crossing gates and lights before the truck crossed in front of the train. It is not known if observing these two vehicles influenced the truckdriver in his decision to go around the gate or if he had encountered other gate violations on previous trips through the area. Although verbal reports of extensive gate violations were expressed by citizens of the community, and two violations were observed

5/ Communication and Signal Section, AAR, "Recommended Practices for Railroad-Highway Grade Crossing Warning Systems," Bulletin No. 7, 1974.
6/ FHWA, Manual on Uniform Traffic Control Devices, Part VIII 8C-5, April 1, 1978.
7/ Illinois Central Gulf Railroad Operating Rules, January 1, 1978, p. 42.
8/ Illinois Central Gulf Railroad Interpretations and Explanations of Operating Rules, July 1, 1974, p. 93.

during the investigation, this activity is not documented by a long list of enforcement actions for the offense and there are records of only two other accidents at the crossing in the past 4 years.

Accident statistics indicate that railroad crossings were responsible for the loss of approximately 1,000 lives in 1978 and 900 in 1979. The fact that a crossing is equipped with complete visual and audible signals does not necessarily prevent accidents. Averaging the 1978 and 1979 FRA data for railroad/highway grade crossings indicates that 10.5 percent of all reported accidents/incidents occurred at crossings with automatic gates. This accounts for 11.5 percent of the fatalities and 8.6 percent of the injuries that occurred during the 1978 and 1979 accidents. Of this 10.5 percent of accidents occurring at crossings with gates, 47.5 percent of the motorists involved drove around or through the gates, accounting for 73 percent of the fatalities and 57 percent of the injuries at crossings with gates.

In March 1972, the FRA and the National Highway Traffic Safety Administration began a joint effort to determine driver performance and related human factors that contributed to motor vehicle/train accidents and to develop and demonstrate the effectiveness of countermeasures for these factors. 9/ A significant effort was made to understand driver behavior at railroad crossings, to develop accident prevention countermeasures, and to predict which would improve behavioral safety. These driver-oriented countermeasures included: (1) driver education to eliminate intolerant attitudes about delays at railroad crossings; (2) enforcement of laws that stipulate grade crossing behavior; and (3) efforts to increase appropriate "looking behavior." As part of the study, drivers were asked to suggest ways to reduce crossing accidents. After increased use of gates and better warning signs and signals, drivers thought improved driver education, stricter law enforcement, and public safety campaigns were useful methods to improve crossing safety.

The Safety Board has issued a number of recommendations to improve railroad/highway grade crossing safety that advocate further development of improved train and crossing equipment, better methods of upgrading crossing protection, and improved driver education and law enforcement. Congress has mandated that the FHWA 10/ pursue an aggressive program to develop better crossing equipment and upgrade crossing protection and has provided specific funds to achieve that objective. Currently, there is no nationwide effort to implement driver-oriented countermeasures or to provide a focal point for combining and enhancing existing education, enforcement, and engineering efforts within the States. However, 28 States, in conjunction with major railroads and the National Safety Council, have implemented crossing safety programs titled "Operation Lifesaver." These programs provide an effective focal point for combining and enhancing existing education, enforcement, and engineering efforts within a State. These programs have been successful, but there is a need to provide additional resources to insure complete development, implementation, and evaluation of this effort toward maintaining continued activity in this area after an initial concentrated effort.

Fire Suppression

Because the gasoline spread so rapidly, the victims were not able to escape its approach and had no defense against it. Bystanders were helpless except for the help given the driver of the Camaro by the truckdriver.

9/ J. H. Sanders, et. al., "Human Factors Countermeasures to Improve Highway-Railway Intersection Safety," U.S. Department of Transportation, July 1973 (DOT HS-800 888).
10/ Public Law 93-87, Federal Aid Highway Act of 1973, Section 203.

The rapid action of responding fire departments and their communication with other approaching units was responsible for the fire companies' ability to isolate the fire and bring it under control without it spreading into the nearby residential and business areas.

The firechief did not know the contents of the train cars that were stopped near the fire during the emergency. The search for the train conductor was initiated by the firechief on the south side of the fire. The conductor said that he had come forward from the caboose to the fire area with all the papers necessary and spent his time on the north side of the fire helping to keep spectators away from the train. He was aware that he was supposed to provide information about contents of the train and pertinent information concerning hazardous materials to the fire authorities, but he said no one asked him for any information and he did not volunteer help.

The conductor complied with his railroad special instructions. However, if he had taken the initiative to contact the command post at the scene through other emergency service personnel, he could have provided information concerning the train car contents and might have been helpful in providing communication with the proper railroad personnel that could have expedited the train movements the firefighters felt were necessary. The ICG should modify its instructions to make them very specific as to the actions that traincrews should take in an emergency. Such accidents are not limited to the city of Kenner or to the ICG. The AAR should disseminate the circumstances of this accident and the recommendations included in this report to its membership, so that all railroads will benefit from the lessons learned.

CONCLUSIONS

Findings

1. The truckdriver observed the lowered automatic railroad gate and stopped at the crossing.

2. The truckdriver mistakenly concluded that the train was approaching on the nearer track, and the truckdriver underestimated the closing speed of the train.

3. The cargo-tank semitrailer contained 8,600 gallons of gasoline, of which 80 percent was burned or lost.

4. The six cargo tank manhole covers maintained their product retention integrity.

5. The higher elevation of the grade crossing in relation to the Williams Boulevard south approach to the crossing and Corwin Street contributed to the rate and manner in which the fuel and fire spread.

6. The ensuing fire from the burning gasoline quickly spread to a nearby building and blocked the two readily accessible doorways and prevented the escape of six of the nine persons in the building.

7. The highway did not contribute to the cause of this accident.

8. The brakes of the tractor-semitrailer did not malfunction as stated by the driver.

9. The train was being operated in compliance with ICG rules and special instructions.

10. The grade crossing active traffic control devices and gate equipment were operating in accordance with regulations at the time of the collision.

11. The locomotive engineer's delay in initiating an emergency application of the train's airbrakes would not have affected the severity of this accident.

12. It was not possible to immediately move the train from the crossing because of its derailment and lack of auxiliary motive power.

13. The derailed train was an obstacle in communication between, and the transfer of, firefighting units from one side of the tracks to the other.

14. The firechief was unable to contact the train conductor or other train crewmembers who could have provided information about the rail car contents.

15. The combined efforts of the three fire departments were able to extinguish the cargo tank-semitrailer and building fires without further loss of life or loss of additional property.

16. There is known disregard for the traffic control devices at railroad grade crossings in the city of Kenner.

17. There is no record of enforcement by the city of Kenner of ordinances relating to the bypassing of the grade crossing warning devices and the city ordinances regulating the time trains may block grade crossings.

Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was the failure of the truckdriver to obey the activated warning devices and his attempt to drive the truck across the railroad/highway grade crossing ahead of the freight train. Contributing to the severity of this accident and loss of life was the rupture of the cargo tank and the ignition of the gasoline cargo.

RECOMMENDATIONS

As a result of its investigation of this accident, the National Transportation Safety Board made the following recommendations:

--to the State of Louisiana and the Illinois Central Gulf Railroad Company:

Expedite implementation of recommendations made in 1979 by the evaluation program of the State of Louisiana and the Illinois Central Gulf Railroad for upgrading the Williams Boulevard and Illinois Central Gulf Railroad grade crossing. (Class II, Priority Action) (R-81-76)

--to the city of Kenner, Louisiana:

Institute an aggressive program to enforce Section 171-A-(1), (2), (3), (4) and Section 171-B of the Motor Vehicles and Traffic Regulations, Title 32 of the Louisiana Revised Statutes of 1950 as amended, which

prohibit vehicles from driving around a lowered railroad crossing gate at a railroad/highway grade crossing, and Kenner City Ordinance No. 13 1/2-3 which prohibits a railroad train from blocking a crossing in excess of 10 minutes. (Class I, Urgent Action) (H-81-31)

--to the Illinois Central Gulf Railroad Company:

Revise Special Instruction No. 1210, subitems 6 and 7, of the Mississippi Division Timetable No. 1 to require that, in the event of an emergency involving a train, the conductor must actively seek out the onscene individual in charge of the emergency service operation, identify himself, and provide the materials and information described in the instructions. (Class II, Priority Action) (R-81-77)

Enforce the company operating rules that require all train crews to comply with ICG rules, local ordinances, and/or State statutes relating to the prohibition against blocking railroad/highway grade crossings beyond established time limits. (Class II, Priority Action (R-81-78)

--to the city of Kenner, Louisiana; the State of Louisiana; and the Illinois Central Gulf Railroad:

Combine efforts, in conjunction with the National Safety Council, to implement the "Operation Lifesaver" program to alert citizens to the need for safety considerations at the railroad/highway crossings in Kenner and other crossings in the State. (Class II, Priority Action) (H-81-32)

--to the Association of American Railroads:

Inform the Association membership of the circumstances of this accident and urge that all railroad operating rules require that, in the event of an emergency involving a train, the conductor be required to actively seek out the onscene individual in charge of the emergency service operation, identify himself, and provide the information contained in the waybills and train consist. (Class II, Priority Action) (R-81-79)

Inform the Association membership of the circumstances of this accident with special emphasis on the blocking of railroad/highway grade crossings in violation of local ordinances which fosters a disregard by motorists for traffic control devices at grade crossings and urge the member companies to include in their operating rules and special instructions a prohibition against such practices and the requirement for their personnel to comply with such operating rules and local ordinances at grade crossings. (Class II, Priority Action) (R-81-80)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JAMES B. KING
Chairman

/s/ PATRICIA A. GOLDMAN
Member

/s/ G. H. PATRICK BURSLEY
Member

ELWOOD T. DRIVER, Vice Chairman, and FRANCIS H. McADAMS, Member, did not participate.

May 29, 1981

APPENDIX

INVESTIGATION

Investigation

The National Transportation Safety Board was notified of this accident by the Louisiana State Police at 8:15 a.m. on November 26, 1980. Investigation team members from the Board's Atlanta, Georgia, field office arrived on the scene at 2 p.m. An investigator-in-charge and additional investigative team members were dispatched from Washington, D. C., and arrived on the scene at 6 p.m.

Investigative groups were formed for Human/Injury Causative Factors, Highway/Environment Factors, Vehicle Factors, Railroad Factors, and Hazardous Materials Factors.

Other agencies participating in the investigation were: Federal Railroad Administration; Illinois Central Gulf Railroad; city of Kenner, Louisiana, Police and Fire Departments and Mutual Aid Associates; Jefferson Parish Sheriff's and Coroner's Offices; and Louisiana State Police.

Depositions/Hearings

There were no depositions or hearings held in this investigation.

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