SUMMARY FOR FE-03-02
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Georgia Southwestern Railroad
Location: Shellman, Georgia
Region: 3

Month: January
Date: Jan. 17, 2002
Time: 2:30 a.m., EST

Data for Fatally Injured Employee(s)

Locomotive Engineer (functioning as Operations Manager)
37 years old
10 years of service
Last rules training: Nov. 15, 2001
Last safety training: Nov. 15, 2001
Last physical: Unknown

Data for All Employees (Craft, Position, Activity)

Craft: Transportation and Engine

Positions:

Train No. 3837
Locomotive Engineer (functioning as Operations Manager)
Conductor (functioning as Student Engineer)

Carrier employee with hi-rail vehicle

General Manager
Road Master

Other Affected Parties

Farm Worker
Landowner East
Landowner West
National Resources Conservation Service:
District Conservationist & Randolph County Technician

SUMMARY FOR FE-03-02 CONTINUED
SELECTED FACTORS CONTINUED

Activities:

The Train Crew proceeded from Smithville to Cuthbert, stopping en route at Dawson, Georgia to set out three cars, pick up 15 cars, and perform an intermediate air brake test. En route to Cuthbert from Dawson, the Student Engineer became aware of the missing roadbed about 40 feet in advance, but did not have time to apply the emergency brake.

EVENT

The Locomotive Engineer/Operations Manager was crushed by railroad cars during a derailment.

POSSIBLE CONTRIBUTING FACTORS

PCF No. 1

En route from Dawson to Cuthbert, Georgia, the Student Engineer became aware of the missing roadbed about 40 feet in advance, but did not have time to apply the emergency brake to prevent the resulting derailment.

PCF No. 2

The time of day (night) made it difficult for the Student Engineer to see the missing roadbed.

PCF No. 3

The railroad did not comply with Federal regulations requiring that it maintain, and keep free of obstruction, drainage or other water-carrying facilities under or immediately adjacent to the roadbed, to accommodate expected water flow for the area concerned. The carrier's records covering the 378 days preceding the derailment showed only one correction of a blocked culvert. Review of the procedures and policies for drainage facility inspections revealed that the railroad lacked an annual culvert inspection program.

PCF No. 4

In response to a complaint from an area landowner, the railroad's Road Master conducted an inspection a little over a week prior to the derailment. He did not report any problems; consequently, the railroad failed to comply with regulations requiring track operations to be halted and remedial action initiated immediately.

OTHER ISSUES

In non-compliance with Federal regulations, the railroad failed to perform toxicological tests on either of the train service employees, claiming the exception allowed when an incident is wholly attributable to a natural cause (washout). FRA's investigation revealed that the cause actually was a choked culvert which overflowed. The culvert had not been maintained properly; nor was it repaired when problems were reported to the railroad several weeks prior to the incident.

REPORT: **FE-03-2002**

RAILROAD: Georgia Southwestern Railroad (GSWR)

LOCATION: Shellman, Georgia

DATE & TIME: Jan. 17, 2002; 2:30 a.m., EST

EVENT[1]: A Locomotive Engineer was crushed by railroad cars during a derailment.

EMPLOYEE:

Craft:	Transportation and Engine (T&E)
Activity:	Operating train
Occupation:	Locomotive Engineer
Age:	37 years old
Length of Service	10 years of service
Last Rules Training:	Nov. 15, 2001
Last Safety Training:	Nov. 15, 2001
Last Physical:	Unknown

CIRCUMSTANCES PRIOR TO THE ACCIDENT

GSWR Train No. 3837 (T-Hauler) went on duty at Smithville, Georgia at 1 a.m., EST on Jan. 17, 2002. Train No. 3837 was a mixed freight train scheduled to travel to Colquitt, Georgia, with cars to be added and removed at two locations en route. The crew comprised an Engineer and a Conductor. The Engineer was also the GSWR Operations Manager. The Conductor was also serving as a Student Engineer. The crew received the required rest period prior to reporting.

The Engineer had signed the Smithville Subdivision Block Register Book at midnight on Jan. 16, 2002 for Train No. 3837 (T-Hauler). The crew performed an initial air brake test with the Conductor/Student Engineer operating the controls. Train No. 3837 (T-Hauler) left Smithville westward toward Cuthbert, Georgia, then was to proceed southward toward Colquitt, Georgia. The train comprised two locomotives and eight cars. Locomotive 3837 was in the lead with the short hood forward. Locomotive 4028 was trailing with the long end forward. The Conductor/Student Engineer was operating the train.

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[1] "Event" is defined as "occurrence that immediately precedes and directly results in the fatality." Possible contributing factors are identified in the following report and attached summary.

The Train Crew stopped at Dawson, Georgia, set out three cars, and picked up 15 cars. A proper intermediate air brake test was performed before departing. The Conductor/Student Engineer continued to operate the train, as the Engineer was on the ground operating switches. Train No. 3837 (T-Hauler) left Dawson and continued westward toward Cuthbert with the Conductor/Student Engineer at the controls. The train comprised two locomotives with 18 empties and 2 loads on the rear.

The sky was dark and clear, and the temperature was 38° F.

THE ACCIDENT

Westbound Train No. 3837 (T-Hauler), operated by the Conductor/Student Engineer, was traveling at approximately 22 mph as it approached the accident site at about 2:30 a.m. The Student Engineer was sitting at the locomotive controls on the north side of the lead locomotive cab, and the Operations Manager was sitting in the passenger seat on the south side of the same cab. As the train approached MP 303.3, the Student Engineer became aware of the missing roadbed about 40 feet in advance and did not have time to apply the emergency brake.

The front of the lead locomotive fell into the washed out area (50 feet long and 20 feet wide), with the rear rotating to the north. The locomotive came to rest approximately perpendicular to the track. The front end of the trailing locomotive went to the north, with the rear then coming in on top of the lead locomotive. The first three cars behind the locomotives also derailed. The cars remained upright and parallel with the track.

The Student Engineer was thrown out of the cab window on impact. He sustained facial lacerations and a fractured ankle. After the accident, he found himself about three car lengths west of the derailment, on the roadbed. He went back to the locomotive and found that the Operations Manager was dead. He then walked 4.5 miles to the GSWR's station in Cuthbert, Georgia. The Student Engineer was unable to reach 911, but contacted the Cuthbert Fire Department. He then contacted the carrier's General Manager and another employee. The employee, who had a hi-rail vehicle, took the Student Engineer and two Firemen/EMS to the accident site. Toxicological tests were not performed on either of the train service employees.

POST-ACCIDENT INVESTIGATION

A subsidiary of Rail America, Incorporated, GSWR operated three subdivisions in southwestern Georgia and southeast Alabama. The Smithville Subdivision is a single main track running generally east to west from Smithville, Georgia, Milepost 276.0, to Eufaula, Alabama, Milepost 334.2. The Smithville Subdivision was controlled by a block register located at Smithville. The maximum authorized track speed through the accident area was 25 mph as designated in GSWR Timetable No. 6.

An investigation of the accident site revealed that a 50-foot long, 20-foot wide hole had developed in the roadbed at milepost 303.3. The hole extended from the north toe line of the embankment to about the edge of the ballast line on the south side of the track. The southern side of the embankment was still intact and had not been breached by the water. The embankment at the accident site is approximately 25 foot high and extends about 700 feet between cuts. The failed embankment's

fill material was obvious on the south side of the railroad extending from the outlet of a concrete box culvert.

A 6-foot concrete box culvert extending through the railroad embankment was located about 50 feet east of the failed embankment. The culvert was constructed around 1911 with concrete cast in place. The culvert flow line was about 25 feet below the rail. An inspection of the culvert after the accident revealed that it was in good condition and clear of any debris.

A small stream flowed through the culvert from north to south. The stream was the approximate property line between two adjacent property owners north of the railroad. A farm pond owned by Landowner East was located about 1,700 feet north of the railroad. A survey of the area north of the track revealed that high water had been standing for a considerable period of time due to marking on the trees. The Student Engineer stated that he had been over this area twice a day, two or three times a week, for the past five months. He stated that the water was always there. On Nov. 19, 2001, a farm worker discovered the water backed up on the property of Landowner East, north of the railroad, and notified the landowner. At a later date, the farm worker and others launched a boat in the backed up water, which extended to the base of the farm pond dam. They floated from the dam all the way to the railroad embankment on the backed up water. They stated that the water was clearly visible from the track. Later while duck hunting on the backed up water, they dropped a shot gun into the water. After recovering the shot gun, the farm workers estimated that the water was 20 feet deep at this point.

Landowner West found out about the high water from his nephew who was out deer hunting. He went to the area during the last part of November or beginning of December. He saw that the water was over his private road and was backed up into his planted pines. He attempted to call the railroad, but was never able to reach anyone.

On Dec. 31, 2003, Landowner East observed the backed up water personally. Concerned, he was able to contact the GSWR General Manager on Jan. 07, 2002. Landowner East advised the General Manager of the water problem and offered to meet with the railroad representative. The General Manager told him that the track had been inspected. The GSWR Road Master inspected the area at the request of the General Manager on Jan. 07, 2002, and did not report any problems.

Landowner East never heard from GSWR again. On Jan. 09, 2002, Landowner East encountered two employees from the Natural Resources Conservation Service, the District Conservationist, and a Randolph County Technician. He asked them to come with him to look at the water problem. They estimated that the water level against the north side of the embankment was about 15 feet below the top of the track and noted that the water was backing up into Landowner West's planted pines. They stated that the north end of the concrete culvert was covered by water, and that there was no water coming out of the south end of the culvert. Using topographical maps, the District Conservationist estimated that the water covered approximately 15 acres.

Track inspections were conducted over the accident site on Jan. 9th and 16th, 2002. The inspection reports did not show any exceptions to the Track Safety Standards at the accident location.

However, the culvert was seen to be discharging about five feet of water from the outlet end on Jan. 16, 2002.

During FRA's ground survey on Jan. 18, 2002, Investigators noted water marks on the trees northwest of the culvert, indicating the water had been backed up for an appreciable period of time. The marks were nine feet above the base of the tree. FRA Inspectors went to the farm pond north of the railroad and found its dam to be in good condition. From that point, FRA Inspectors could see where the water had backed up to the south base of the dam. Continuing south and east from the dam, FRA Inspectors could see the water line in the trees. The watermark was measured to be about 18 feet above the flow line of the culvert. At one point, FRA Inspectors saw a tree that a beaver had chewed in half eight feet, nine inches above the ground.

The carrier produced 51 track inspection records covering the period from Jan. 4, 2001 to Jan. 16, 2002. Several of the required records were missing. An FRA Track Safety Inspector performed hi-rail track inspections over the Smithville Subdivision within a few days after the accident. He recorded 61 exceptions to the FRA Track Safety Standards, nine of which regarded obstructed drainage facilities. The carrier's records covering the 378 days preceding the accident showed only one correction of a blocked culvert. The carrier's records reflected an average of 5.89 defects detected during each of their inspections.

A review of the procedures and policies for drainage facility inspections showed that GSWR did not have an annual culvert inspection program.

APPLICABLE RULES

49 CFR Part 213.33 states:

> Each drainage or other water-carrying facility under or immediately adjacent to the roadbed shall be maintained and kept free of obstruction, to accommodate expected water flow for the area concerned.

49 CFR Part 213.5(a) states:

> Except as provided in paragraph (b) of this section, any owner of track to which this part applies who knows or has notice that the track does not comply with the requirements of this part, shall -
> (1) Bring the track into compliance;
> (2) Halt operations over the track ; or
> (3) Operate under authority of a person designated under 213.7 (a), who has at least one year of supervisory experience in railroad track maintenance, subject to conditions set forth in this part.

49 CFR Part 213.233 (d) states:

> If the person making the inspection finds a deviation from the requirements of this part, the inspector shall immediately initiate remedial action.

49 CFR Part 213.241 (b) states:

> .....Records shall specify the track inspected, date of inspection, location and nature of any deviation from the requirements of this part, and the remedial action taken by the person making the inspection.....