

Log P-32

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: August 22, 1977

Forwarded to:

Mr. David Reid  
City Commissioner  
Cherokee Water and Gas Board  
Cherokee, Alabama

SAFETY RECOMMENDATION(S)

P-77-18 through 20

At 9 a.m. c.d.t. on July 30, 1977, a low-order explosion followed by fire destroyed a house in Cherokee, Alabama. One person in the house suffered third-degree burns, was hospitalized, and died on August 3, 1977. The National Transportation Safety Board's continuing investigation of the accident indicates that natural gas, leaking from a broken 2-1/4-inch cast-iron gas main, migrated into the house via a recently backfilled sewer trench and was ignited by a cigarette lighter. The sewer laterals were perpendicular to and below the gas main. Earth settlement of the sewer backfill, aided by recent heavy rainfall, caused the failure of the cast-iron main, which was owned by the Cherokee Water and Gas Board (Cherokee).

Cherokee previously has experienced cast-iron gas main failures due to earth settlement over its recently installed sewers; the potential for additional failures may exist where segments of its cast-iron gas mains have been disturbed by sewer construction and have been left unsupported.

Federal regulations (49 CFR 192.755) regarding the protection of cast-iron pipelines require that when an operator has knowledge that the support for a segment of a buried cast-iron pipeline is disturbed by earth movement, that segment of the pipeline must be protected, as necessary, against damage. As soon as feasible, appropriate steps must be taken to provide permanent protection for the disturbed segment from damage that might result from external loads.

Additionally, 49 CFR 192.721, Distribution systems; patrolling, states:

(a) The frequency of patrolling mains must be determined by the severity of the conditions which could cause failure or leakage, and the consequent hazards to public safety.

(b) Mains in places or on structures where anticipated physical movement or external loading could cause failure or leakage must be patrolled at intervals not exceeding 3 months.

Apparently, Cherokee did not take these protective actions when it first became aware of the earth settlement problem.

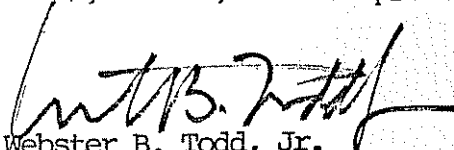
Therefore, the National Transportation Safety Board recommends that the Cherokee Water and Gas Board:

Require, during the remainder of its sewer construction program and all future construction programs, the support and protection of its cast-iron gas mains in accordance with Federal regulations and in a manner acceptable to the Alabama Public Service Commission. (Class I, Urgent Followup) (P-77-18)

Examine, support, and protect where necessary, in accordance with Federal regulations and in a manner acceptable to the Alabama Public Service Commission, those segments of cast-iron gas mains that have been disturbed already by this sewer construction project. (Class I, Urgent Followup) (P-77-19)

Immediately begin to patrol its gas distribution system as frequently as necessary while the potential exists for gas main failure due to settlement. (Class I, Urgent Followup) (P-77-20)

TODD, Chairman, BAILEY, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations. HALLEY, Member, did not participate.

  
By: Webster B. Todd, Jr.  
Chairman