

Fire Investigation Summary

Church Fire

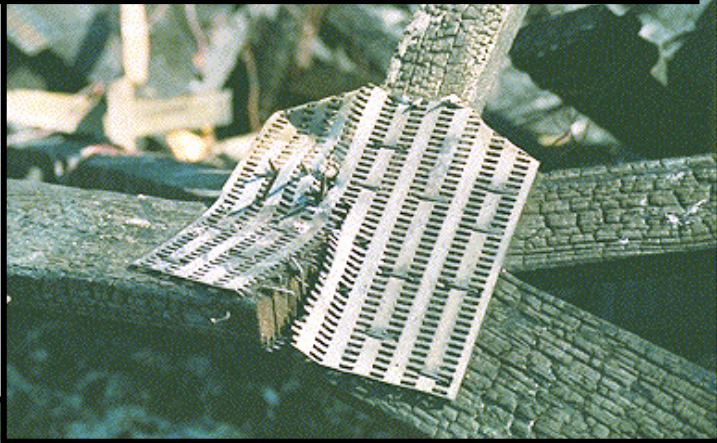
Lake Worth, Texas

February 15, 1999



A fire in a single-story church building resulted in the deaths of three fire fighters after a collapse of the truss roof system.

The fire began in an adjacent storage shed and spread rapidly, driven by the wind, into the attic space of the church. The fire continued to spread rapidly through the concealed attic space.



While fire fighters simultaneously battled the fire from within the church and ventilated the attic space from above, the roof system collapsed. The sudden collapse trapped five fire fighters inside the building. The four fire fighters on the roof narrowly escaped.

Rescue attempts successfully removed two fire fighters from the building before conditions precluded any further attempts.



National Fire Protection Association
Fire Investigations Department

On February 15, 1999 at approximately 10:42 a.m., a fire occurred in a church in Lake Worth, Texas. The fire resulted in the deaths of three fire fighters when the wood truss roof collapsed only minutes after the arrival of the fire department.

The fire began in a storage shed adjacent to the northeast corner of the church building. A strong wind directed the flames on the east side of the church, eventually spreading the fire into the attic space of the church. As the pastor was cleaning up the church from the previous evening services, a teenage male came to the door of the church to report the fire to the pastor. The pastor went outside to investigate and there he saw the shed ablaze, and the flames impinging on the northeast corner of the church.

Just before the male reported the fire to the pastor, a police officer from the neighboring jurisdiction of Samson Park spotted the fire and reported it to his dispatcher. (The town line is immediately adjacent to the church's property.) The dispatcher notified the Samson Park Fire Department, thinking the fire was in that jurisdiction. At the same time, a water department employee from Lake Worth spotted the fire and reported it via radio to his supervisor, whom in turn reported it to the Lake Worth Fire Department. With the dual notifications and with automatic aid a total of six fire departments responded to the reported fire.

The pastor reported hearing sirens as he returned to the building to report the fire.

The first arriving engine from Lake Worth (E210) was positioned in front of the church (Side A) on Roberts Cut-Off Road. The next arriving unit was an engine from Samson Park (E225) and was positioned on the Cowden Street (Side B), adjacent to the

church (north). Two 1 ¾-in. (44-mm) handlines were deployed from both the Samson Park and Lake Worth engines. Both the lines from the Lake Worth engine were advanced into the church, while one line from Samson Park was also deployed into the church.

An aerial tower from the Saginaw Fire Department (T14) arrived and was set up on the northwest corner of the building to provide access to the roof for ventilation. River Oaks Fire Department E13 responded and supplied E210 with water from a nearby hydrant. The crew from E13 then responded to the building to assist in battling the fire.

Crews from Lake Worth and Samson Park had advanced into the east portion of the church from the front of the church, using the center aisle toward the rear of the altar area into the sanctuary in the southern corner. They had located a fire in the attic space and were attempting to extinguish it. Two fire fighters from River Oaks entered the building and joined the crew in the sanctuary. At this time, there were five fire fighters in this area: two from River Oaks, one from Samson Park, one from Lake Worth, and one from the Eagle Mountain Fire Department

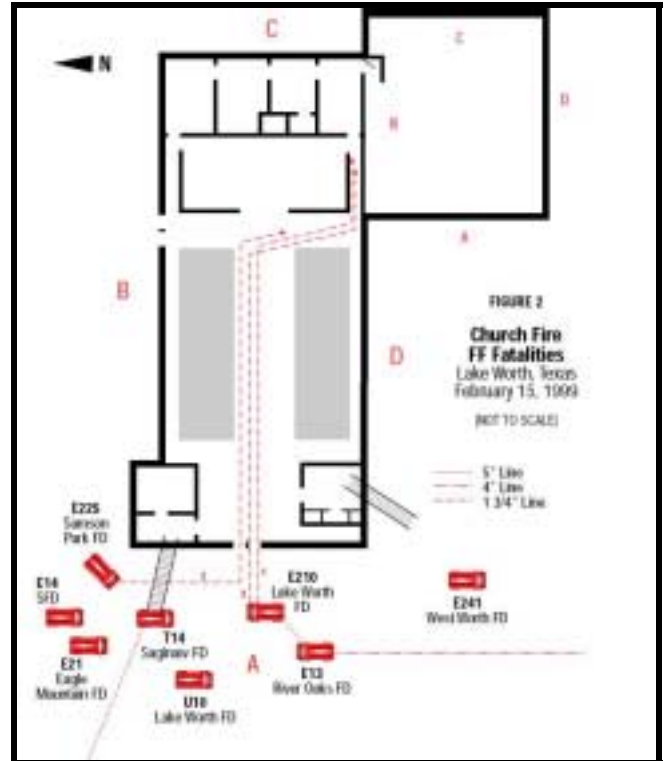
Four fire fighters accessed the roof to begin ventilation operations. One fire fighter removed the covers from the roof monitor ventilation units and reported light smoke venting from the units at first. This smoke got heavier as minutes went by. Before rooftop ventilation could be completed, the roof structure collapsed, sending one fire fighter into the main hall of the church, and leaving another fire fighter hanging by his fingers at the edge of the collapsed portion of the roof. The remaining two fire fighters

were on the only portion of the roof not to collapse. One fire fighter went to assist the fire fighter hanging by his fingers, and the three quickly exited the roof toward the tower ladder. The fire fighter who had fallen into the building was able to find the front door and exit with minor injuries.

The collapse trapped the five fire fighters in the interior of the building in the southeast corner of the church near the wall shared with the Fellowship Hall. An initial accountability check revealed that two fire fighters were trapped in the building. A rescue attempt was attempted through the Fellowship Hall, and as a fire fighter entered the hall he found a door near where the trapped fire fighters were believed to be located. He was able to remove two of the five fire fighters inside the building, but was unaware that there were additional fire fighters trapped inside. Conditions deteriorated rapidly immediately following this rescue. A second more accurate accountability check was made, and it was realized that three fire fighters were still missing, two from River Oaks and one from Samson Park.

As the fire was being extinguished, the three fire fighters were found. Two were in a short corridor adjacent to the altar and the third was found in one of the offices on the east side.

State and local fire marshals have determined that the fire was incendiary in nature. No arrests have been made in this incident at the time of this report.



Based on the fire investigation and analysis, the NFPA has determined that the following significant factors may have contributed to the deaths of the three fire fighters:

- Lack of a proper building/incident size-up (risk vs. benefit analysis)
- Lack of compatible accountability systems among mutual aid departments
- Absence of an established rapid intervention crew (RIC)
- Lack of use of Personal Alert Safety Systems (PASS)
- Lack of subdivision in combustible attic space

Written by Robert F. Duval – Senior Fire Investigator - NFPA

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The National Fire Protection Association's Fire Investigations Department documents some of the most significant fires and incidents throughout the world. The objective of these investigations is to determine what lessons can be learned from these incidents. The information is then made available to the fire safety community to be used in developing future codes and standards. A complete listing of reports is available, either on request or can be viewed on our Web page.

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Related reports published by the NFPA Fire Investigations Department include the following:

- Hackensack, NJ – July 1, 1988
- Pittsburgh, PA – February 14, 1995
- Chesapeake, VA – March 19, 1996
- Branford, CT – November 28, 1996
- Marks, MS – August 29, 1998

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