

Fire Investigation Summary

Warehouse

Phoenix, Arizona
August 2, 2000



A fire that began in a home and garden supply area of a multi-tenanted warehouse building spread rapidly and eventually destroyed the building.

The fire was discovered after workers had left for the day. When fire department units arrived, portions of the outer walls of the building were collapsing.

The home and garden supply portion of the building was found to contain the storage of oxidizers, including pool chemicals, as well as fertilizers and pesticides.

Oxidizers pose unique storage and fire fighting challenges. Contamination by incompatible materials can cause all classes of oxidizers to undergo exothermic or explosive reactions.



National Fire Protection Association
Fire Investigations Department

On August 2, 2000 a fire was discovered in a multi-tenanted warehouse in Phoenix, AZ at approximately 4:58 p.m. By the time the fire was extinguished the next day, it had completely destroyed the 85,000 sq ft warehouse. The damage to property and the commodities stored inside from the fire has been estimated at over \$100 million.

Two tenants occupied the warehouse: a home and garden supply company and a pharmaceuticals distribution operation. The fire began in the home and garden supply portion of the building. Less than an hour after workers had left for the day, smoke was spotted coming from the south portion of the warehouse. Simultaneously, occupants from the pharmaceutical operation reported hearing banging noises from the home and garden supply portion of the building. Some employees, thinking it was a passing thunderstorm, went outside to look and then saw a column of smoke rising from the building. A Battalion Chief from nearby Tempe was traveling on the freeway adjacent to the warehouse when he noticed a large plume of smoke in the vicinity of Broadway and 40th Street. He notified the fire dispatch center and responded to the area to investigate further. At this time, two Department of Public Safety (DPS) deputies were stopped at the intersection of 32nd Street and Broadway when they noticed the column of smoke and notified their dispatcher center of the fire.

A first alarm structural response was assigned to the vicinity of 38th Place and Broadway as reports of the fire continued to pour into the 911 center. The Tempe Battalion Chief arrived shortly before the first Phoenix Fire Department units at 5:01 p.m. and reported a working fire in a warehouse building. The Tempe Battalion Chief established command and set up a temporary command post on 38th Place opposite the east side of the building.

Phoenix Engine 23 was the next to arrive at 5:02 p.m. E23 established a water supply and proceeded to a position at the southeast corner of the building and began to apply water on the fire with the deluge gun on the engine.

A second alarm was requested by command at 5:03 p.m.

Engine 272 arrived at 5:05 p.m. and then supplied the automatic sprinkler system within the building through the fire department connection on 38th Place. E23 was confronted with a rapidly spreading fire within the building and numerous exposure fires comprised of stored materials outside the southeast corner of the building.

Phoenix Battalion Chief 5 took command at 5:06 p.m.

At 5:07 p.m., Engine, Rescue and Ladder 22 arrived on the west side of the building and at 5:11 p.m. reported that a portion of the west tilt-panel concrete wall was leaning outward and a collapse hazard existed. By 5:17 p.m. most of the south wall had collapsed.

A third alarm was requested at 5:12 p.m.

At 5:30 p.m. the order was given that all personnel operating near the fire building were to be equipped with self-contained breathing apparatus (including apparatus operators), due to the amount of smoke being generated.

The smoke, which was originally traveling straight up, began to overrun E23's position. The crew of E23 had to retreat north along 38th Place toward the command post as their breathing air supplies were depleted.

Ladder 273 set up in the southeast corner of the property and continued to extinguish the

exposure fires in the materials stored in the yard and to protect the plastics fabrication facility. Ladder 11 and E 276 set up to protect the air conditioning facility located less than 100 ft. to the south of the fire building. Crews from Station 22 continued to extinguish the exposure fires from the east side at the same time.

Fire had now begun to spread throughout the home and garden portion of the warehouse. A solid concrete wall separated the two sections of the building. However, as large sections of the outer concrete panel walls began to collapse, the integrity of the wall between the two sections of the building became a concern.

Four alarms and numerous special requests for apparatus were dispatched to the scene throughout the next several hours and into the next day.

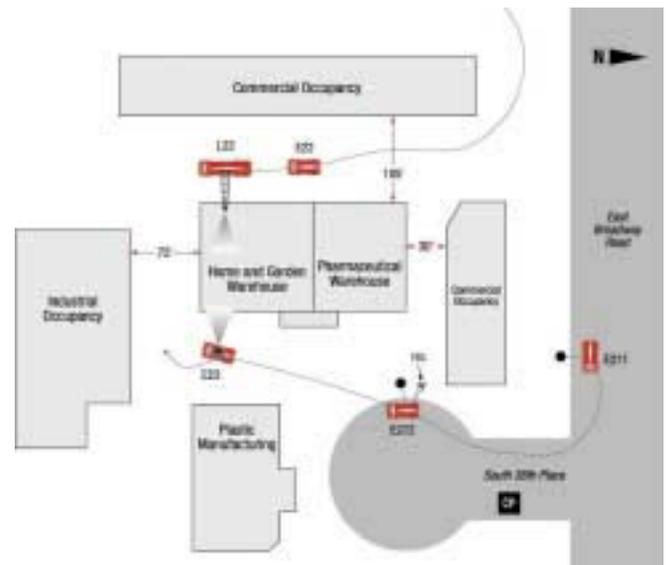
By morning, on August 3, the entire building and all contents were destroyed. The fire department maintained a fire watch for several days extinguishing hot spots and monitoring the hazardous contents.

Five fire fighters (including the crew from E23) were treated for smoke inhalation and heat exhaustion. Several police officers that were handling site access and traffic control were also treated for breathing related problems. At the height of the fire over 80 civilians from the surrounding neighborhoods were evacuated from their homes. All were allowed to return the next day.

Investigation into the cause of the fire continues as of this report. For their initial entry into the building, fire investigators had to don protective hazardous materials suits and were limited to only several minutes in the rubble due to the presence of hazardous materials and air temperatures above 100°F.

Based on this investigation and analysis of other incidents involving oxidizers, the NFPA has determined that the following significant factors may contribute to large losses in similar facilities:

- Lack of segregation between incompatible materials (i.e., oxidizers and hydrocarbon-based materials and other materials)
- Lack of proper storage configuration for oxidizers
- Inadequate sprinkler protection for commodities stored in the warehouse



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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:

- Quincy, MA – May 23, 1995
- Albany, GA – April 16, 1996
- West Helena, AR – May 8, 1997
- Pool Chemical Alert Bulletin July 1996

Full printed copies of this report or any other Fire Investigation Report can be ordered by contacting NFPA's Charles S. Morgan Library.

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