

1 Problem

What	Problem(s)	Fire, people trapped in stairway
When	Date	October 17, 2003
	Time	5:00 p.m.
	Differences	Stairway doors locked automatically
Where	Physical Location	12th floor, Cook County Administration Building, Chicago, IL
		Fire began in storage closet
Impact to the Goals		
	Safety	Deaths of 6 people

HIGH RISE FIRE

Cook County Administration Building, Chicago

A fire begins and can't easily be put out. Occupants evacuate down the stairs, only to find it blocked at the 12th floor. The firefighters are busily fighting the fire and send the occupants back up. But the doors are locked until the 27th floor.

Properly addressing any one of the four key factors would have changed the outcome of this incident and prevented loss of life. -Witt Report

Cause Map

TIMELINE

4:00 p.m.	Fire Safety Director leaves building
5:00 p.m.	Fire alarm signal at fire alarm control panel
5:02 p.m.	Front desk security officer calls 9-1-1
5:03 p.m.	Emergency Voice/Alarm Communications (EVAC) system activated
5:06 p.m.	Chicago Fire Department (CFD) units arrive on scene
5:15 p.m.	9-1-1 call saying people trapped in the building
5:16 p.m.	Initial fire attack from SE stairway
5:18 p.m.	Several calls to 9-1-1 reporting people trapped in stairway
5:19 p.m.	Dispatch advises CFD that there are people trapped on the 21st floor
5:21 p.m.	Call leads dispatch to believe people trapped on 27th floor
5:22 p.m.	Dispatch advises CFD that people are strapped in the NW stairway
5:25 p.m.	Trapped person in stairs stops responding to 9-1-1 operator
5:40 p.m.	Fire Safety Director returns to building
5:52 p.m.	Interior attack team withdrawn, exterior fire attack initiated
6:06 p.m.	Exterior fire attack concluded
~6:30 p.m.	Persons trapped in stairway found

2 Analysis

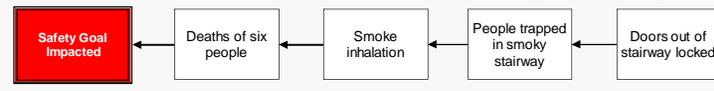
Basic Level Cause Map - Start with simple Why questions.

Basic Cause-and-Effect
Six people were killed from smoke inhalation when they were trapped in a smoky stairway because the doors out of the stairway were locked during a fire.

More Detailed Cause-and-Effect

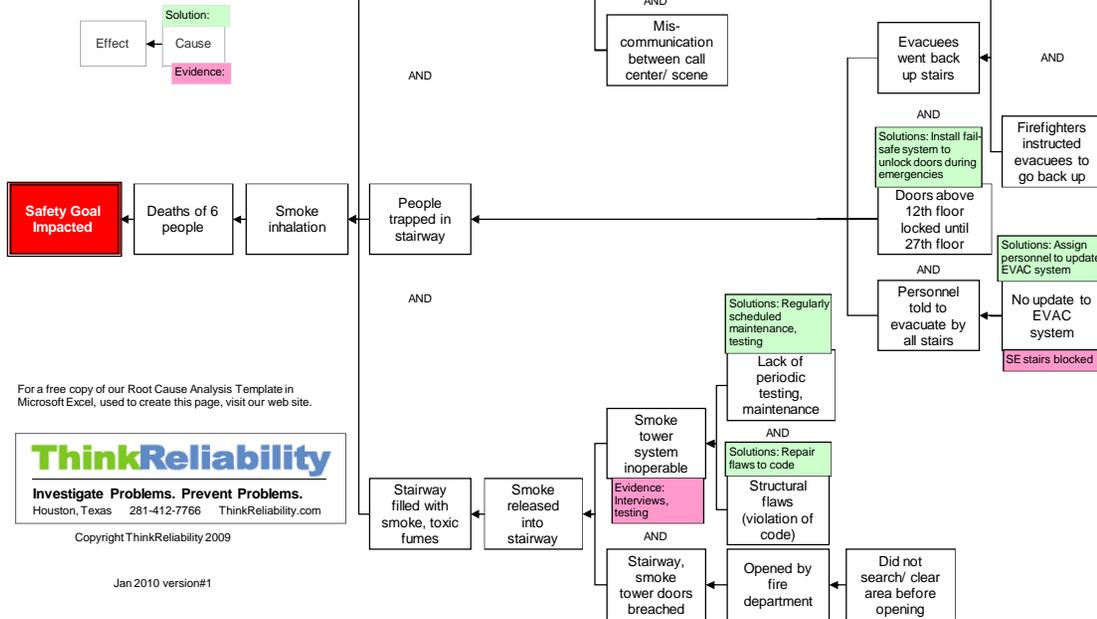
At approximately 5:00 p.m. on October 17, 2003, a fire began in a storage closet on the 12th floor of a Cook County Administration Building in Chicago. Personnel were informed that they should evacuate the building using any set of stairs. Personnel evacuating from above the 12th floor in the southeast stairway were stopped at the 12th floor by firefighters and told to go back. When they did, they found all the doors locked up to the 27th floor. Then the firefighters opened the stairway door to fight the fire.

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.



More Detailed Cause Map

- Add detail as information becomes available.



CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

- Step 1 Problem** - What's the Problem?
- Step 2 Analysis** - Why did it happen?
- Step 3 Solutions** - What will be done?

3 Solutions

No.	Cause	Action Item
1	Inadequate personnel searches	Prioritize, train on personnel searches
2	Lack of Fire Safety Director personnel	Appoint Deputy Fire Safety Director
3	Lack of Fire Safety Director on premises or within 20 minutes	Fire Safety Director on premises or within 20 minutes
4	Lack of evacuation instructions, guidance	Develop, publish, train on evacuation procedure
5	No mandatory fire drills	Hold mandatory fire drills
6	Doors above 12th floor locked until 27th floor	Install fail-safe system to unlock doors during emergencies
7	No sprinkler system	Install automatic sprinklers
8	No update to EVAC system	Assign personnel to update EVAC system
9	Lack of periodic testing, maintenance	Regularly scheduled maintenance, testing
10	Structural flaws (violation of code)	Repair flaws to code

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.



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