

Fires at Food Establishments

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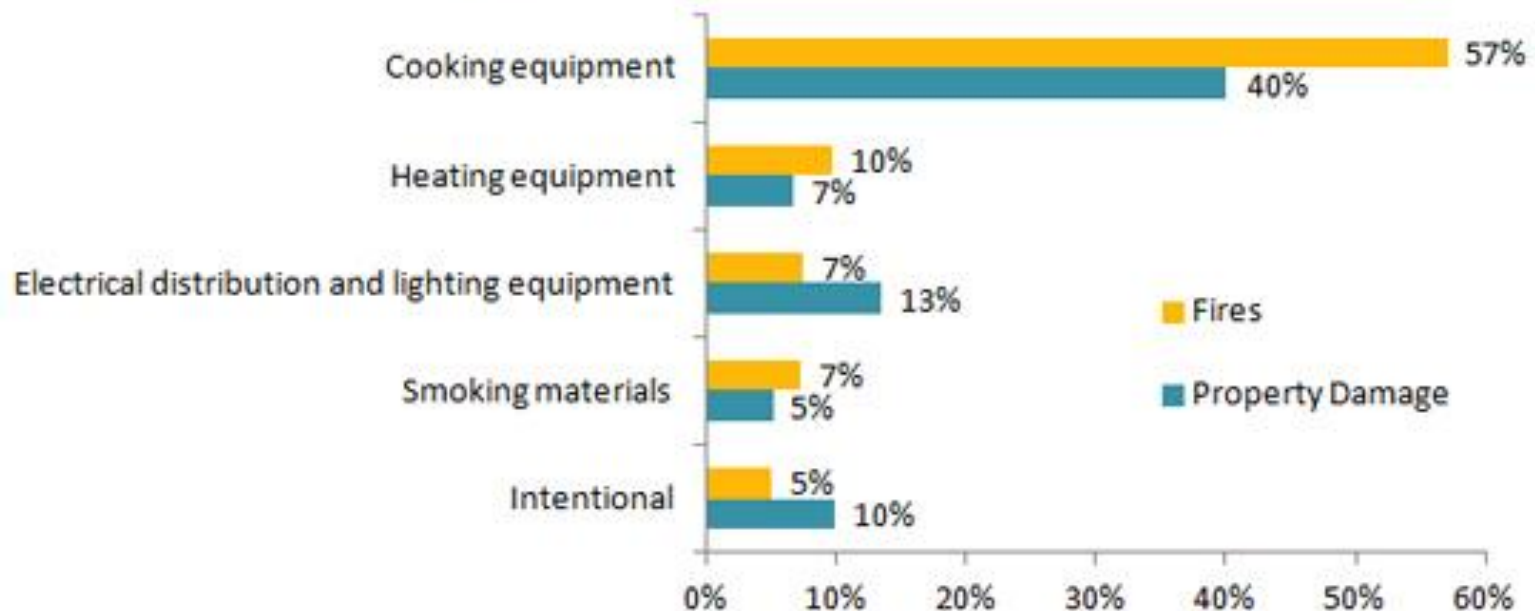
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Introduction

- Fire departments responded to an estimated average of 7,640 structure fires per year in eating and drinking establishments in 2006 – 2010.
- These fires caused annual averages of:
 - 2 civilian deaths
 - 115 civilian fire injuries
 - \$246 million in direct property damage

Top 5 Causes

**Structure Fires in Eating and Drinking Establishments:
By Major Cause: 2006-2010 (Top 5 shown)**



Causes of Fire

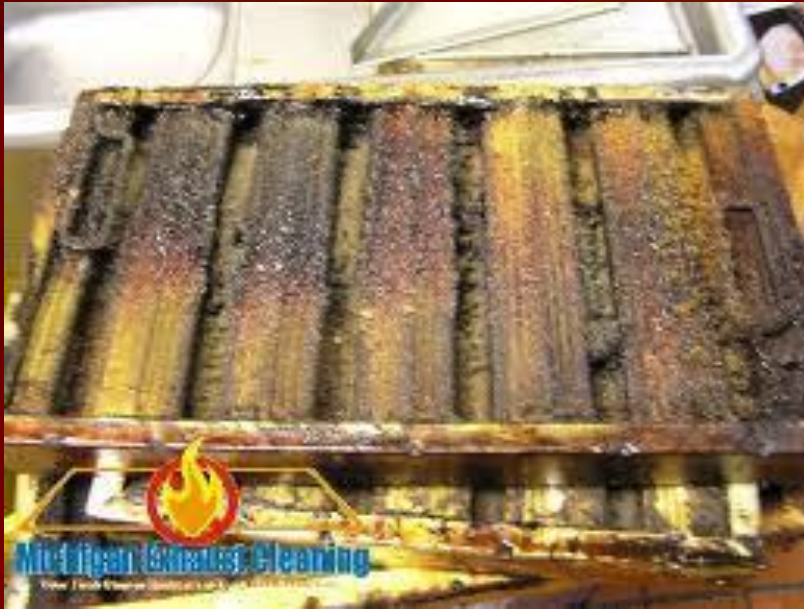
- 7 out of 10 (71%) didn't spread beyond object of origin
- Direct property damage per fire was 75% lower when a wet sprinkler system was present
- Failure to clean was a factor in 21%

Sprinkler System Present

- Wet pipe sprinklers operated in 94% of fires and operated effectively in 88% of fires.
- When failure occurred, lead reasons were:
 - System was shutoff (51%)
 - Manual intervention defeated system (15%)
- When operating equipment was ineffective, leading reasons were:
 - Water did not reach fire (69%)
 - Not enough water released (31%)

COMMON CODE VIOLATIONS

Grease Accumulation On Hood Filters



Grease Accumulation Behind Fryers



Gaps Between Hood Filters



Use of Sterno-Type Heating Devices



Blocked Exits



Locked Exit Doors



Sprinkler Head Clearance – Minimum 18” Clear Space



Nozzle Pushed Out Of Place



Equipment Placement



Equipment Placement



Fryers – Splash Guards

- NFPA 96 2002 edition - 8" splash guard or a 16" separation must be present on a fryer if it sits next to an open-flamed, gas-fired appliance



COMMON CAUSES OF FIRE

Common Causes of Fires

- Overheated cooking oils
 - Cooking oils have changed and are now hotter
 - Oil and grease is splattered on surroundings and into the duct work
 - Unattended heating of cooking oils*
 - Direct flame contact
 - Too close to open flame*



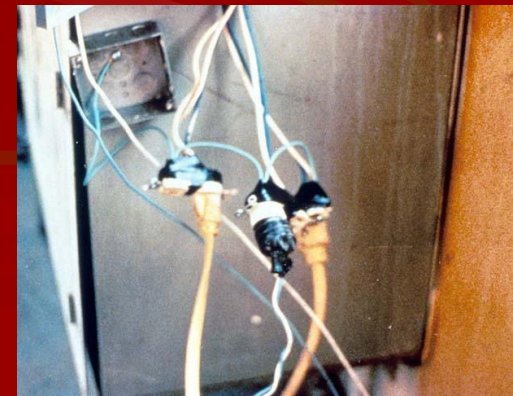
Common Causes of Fires



Common Causes (cont.)

■ Electrical

- Use of extension cords
- Overloaded electrical outlets
- Cords cut, taped or otherwise repaired
- Appliances too close to combustibles



Electrical



Decathlon Club



Open Flame Sterno-Type Product



Spontaneous Combustion



Combustibles Too Close To The Water Heater



Common Causes (cont.)

- Natural gas and propane
 - Hoses or pipes leaking
 - Hoses and/or piping pulled away from equipment
 - Improper igniting techniques
 - Lack of attention to manufactures instructions
- *** Natural gas and propane can cause violent explosions!!

Natural Gas Piping



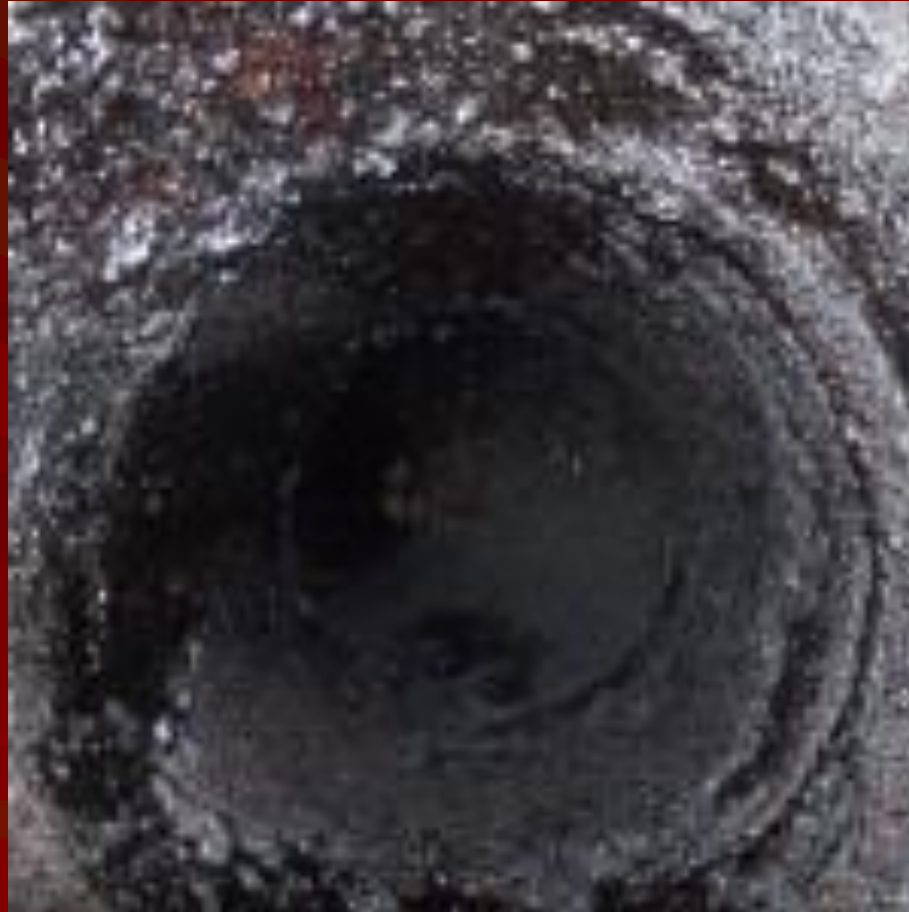
Natural Gas Piping



Human Causes

- Unattended cooking
- Trash
- Housekeeping
- Loose clothing
- Leaving combustibles on burners*

Grease Accumulation in Duct



Grease Accumulation on Floor



Grease Accumulation Under Hood



Grease Accumulation Under Hood



Grease Accumulation Under Hood



Grease Accumulation Behind Equipment



Grease Accumulation Inside A Wall Mounted Salamander



Unattended Cooking



Combustibles Too Close To A Heat Source



Fire Suppression Systems

- Wet sprinkler system
- Dry chemical suppression system
- Wet chemical suppression system with water backup from wet sprinkler system
 - Piranha

Wet Sprinkler Systems



Filters out of the system



Wet Chemical Suppression System

Suppression Nozzles



Chemical Tanks



Piranha systems



Dry Chemical Suppression System

Nozzles



Canister



Typical Dry Chemical system

- <http://www.youtube.com/watch?v=8j2RwurF9gk&feature=related>

Fire Extinguishers

- ABC
- Sodium Bicarbonate*
- Wet Chemical
- CO2*
- “K”

Demo

<http://www.fireextinguisher.com>



PREVENTION & TRAINING

Prevention & Training

■ Preventive Maintenance

- Install a UL listed kitchen hood suppression system
- Insure fire extinguishers are maintained, checked monthly and are accessible
- Schedule regular maintenance on electrical equipment
- Have kitchen hood exhaust inspected for grease buildup

Clean Hoods And Duct

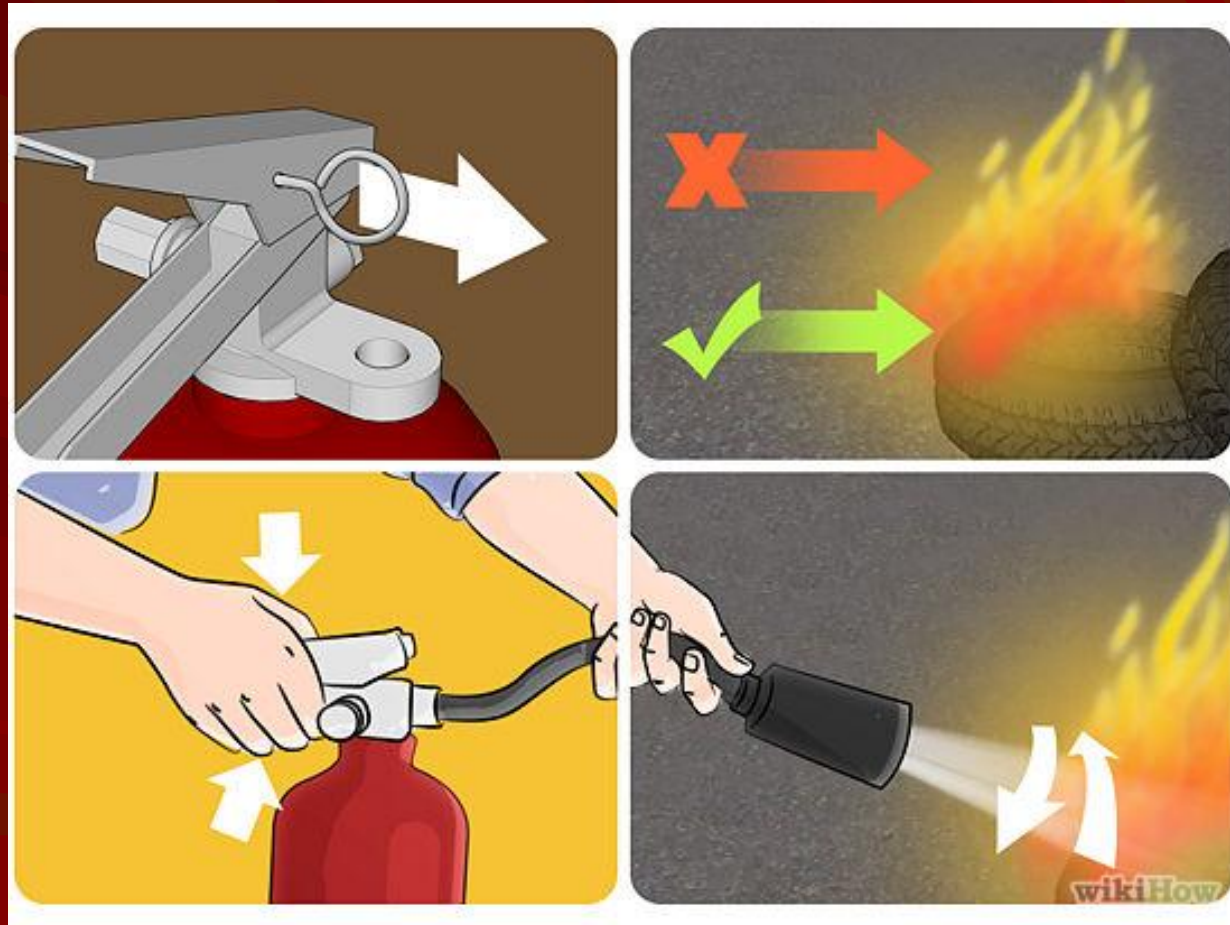


Prevention & Training

■ Staff training

- Know where and how to use a fire extinguisher
- Know what kind of hood suppression is installed and how to manual activate it
- Clean up grease
- Never throw water on a grease
- Wood or charcoal ovens
 - Empty ash daily
 - Store outside in a metal container

Fire Extinguishers - PASS



Wet Chemical Suppression System

Automatic – Fusible Link

Manual - Pullstation



Prevention & Training

■ Staff training (cont)

- Make sure cigarettes are out before dumping them in a trash receptacle
 - Never smoke in or near storage areas
- Store flammable liquids properly in a well vented area away from supplies, food, food-preparation areas or any sources of flames
- Store paper products, linens, boxes and food away from heat sources

Prevention & Training

■ Staff training (cont)

- Properly dispose of soiled rags, trash, cardboard boxes and wood pallets at least once a day
- Use chemical solutions properly
- Know the equipment
- Know the proper oil temperature for products being used
- Have an evacuation plan

After the Fire

1. Customer and employee safety.
Make sure everyone is safe.
2. Close?
 - City officials and your insurance company
 - *Document losses - camera or camcorder
3. Stay closed until personal safety as well as food safety can be assured.
 - *Must have approval to reopen from the City Environmental Health.



Discard foods and single-service items

Start with:

- Produce and food in opened containers
- Ice
- Food in paper or cardboard
- Unprotected single-service items
- All foods and containers that show heat or water damage
- Thin or air permeable packaged food
- Food containers w/screw-type lids
- Damaged canned goods
- Ingredients in bulk bins

Discard refrigerated or frozen food if:

- Any food that is above 41F due to loss of power or mechanical malfunction (unless there is a temp tracking device)
- Any food that was exposed to smoke/fire .

If in doubt, throw out!

Any food or single-service item that may have been contaminated with sprinkler water, sewage, smoke, fumes or chemicals.

Equipment considerations

- Evaluate condition
- Clean and/or repair
- Remove unusable equipment



Clean up prior to re-opening

- Wash, rinse and sanitize all surfaces that have come into contact with fire suppression chemicals, sprinkler water or smoke including counters, cabinets drawers etc.



Ready to re-open?

- Check all coolers (between 36F and 39F) and freezers (below 0F) are operable before taking food deliveries.
- Call your area inspector or first responder for a pre-opening inspection.

Questions?