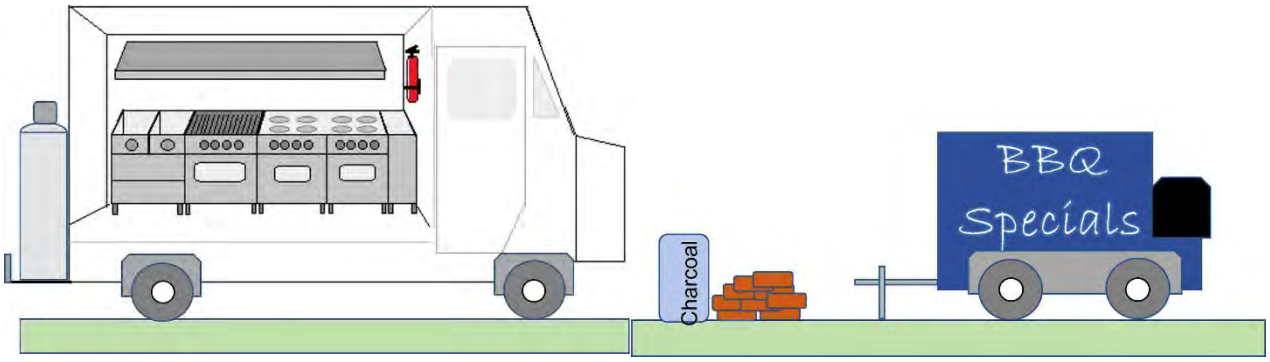
Mobile Food Truck Safety Training



Modules

1) Introduction to OSHA
2) General Safety Considerations
3) Fire Safety in Cooking Operations
4) Propane Safety
5) Fire Extinguishers
6) Owner/Managers- Developing Written Plans

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Mobile Food Truck Safety Training

Introduction and OSHA Basics

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1

Welcome!

- Introductions
- Logistics of our Space
  - Exits, Restrooms
- Today's Outline/Agenda
  - Introduction to OSHA
  - General Worker Safety
  - Fire Safety in Cooking Operations
  - Propane Safety
  - Use of Fire Extinguishers

2

Why Training? Food Truck Incidents in News

Philadelphia, 2014: Propane tank aboard a food truck explodes, killing two and injuring over a dozen people nearby. Prompted serious discussion about the need for specific fire safety, propane safety regulations for the Food Truck Industry

North Carolina

- Charlotte 2022- no injuries, home lost
- Charlotte (South End) 2020- 1 injured
- Greensboro 2021- firefighter injured
- Raleigh 2018: no injuries

Other Accidents

- Newport News Jan 2023- 2 injured
- Fresno 2022- 2 injured with burns
- Tallahassee 2022- 2 injured
- Orlando 2022- woman critically injured
- Alabama 2022- 1 injured
- Many more- Google Food Truck Fire (News)

3

Why Worker Training for Food Trucks?

- Tremendous growth in food truck industry over the last 15 years
- Covered by multiple regulatory agencies: DOT (vehicle), local health departments (food Safety), local fire departments
- NFPA (National Fire Protection Administration) updated their standards to better address Food Truck Fire Safety in 2018, but safety standards may be different, even in neighboring communities
  - Example: Clarksville (TN) police say propane gas leak caused food truck explosion
    - Food Truck was permitted in Nashville (2022), gas detectors not required
    - Explosion occurred at owner's home in nearby Clarksville, where CO/propane detectors required

4

Why Food Truck Worker Training?

- Some similarities to restaurants, vulnerable to cooking fires
  - ~7500 Restaurant fires/year, averaging 3 deaths, 110 injuries, and $165 million in property damage each year (NFPA 2017)
  - 61% of the fires involved cooking equipment (NFPA 2017)
- Unique hazards as well
  - Propane Tanks- potential to create explosive conditions
  - Small spaces inside trucks/trailers
  - Mobile, potential for different locations, road hazards
- Small Businesses have unique challenges
  - Rarely able to have a designated safety professional
  - Lack of Safety/Health Resources
- Other reasons?

5

Purpose of this Training

- **Purpose:** To educate owners, management, and workers in food truck operations in order to prevent injuries, loss of life, and financial losses due to workplace safety hazards, specifically fire and related hazards.

- With classroom education and hands-on fire extinguisher training, we aim to increase trainees' confidence in addressing work safety hazards.

6

Introduction to OSHA

7

Who is OSHA and What Do They Do?

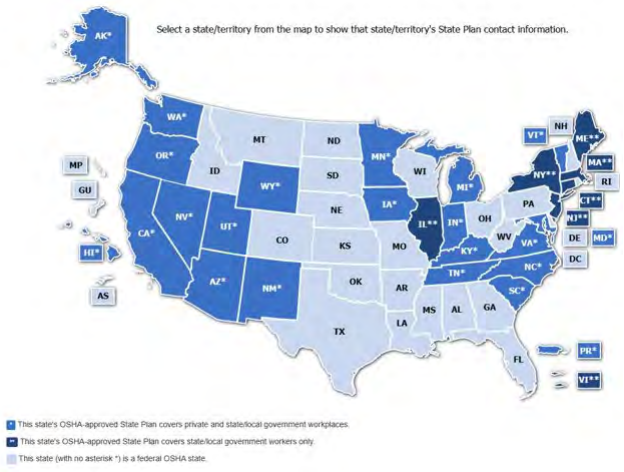
OSHA = The Occupational Safety and Health Administration

- Part of the U.S. Department of Labor
- Established in 1970 (Williams Steiger Occupational Safety and Health Act)
  - Mission: To save lives, to prevent injuries, and to protect America's workers against workplace safety and health hazards
- Establishes responsibilities and rights for both employers and employees
- Maintains a reporting/recordkeeping system for workplace injuries, deaths
- Establishes safety training programs
- Develops and enforces safety standards

8

Federal and State OSHA

- The OSH Act covers employers and their employees either through federal OSHA or through an OSHA-approved state program
- 22 states have approved plans covering both private sector and local government workers (as of January 2023)
  - State plans must be at least as effective as OSHA in protecting workers

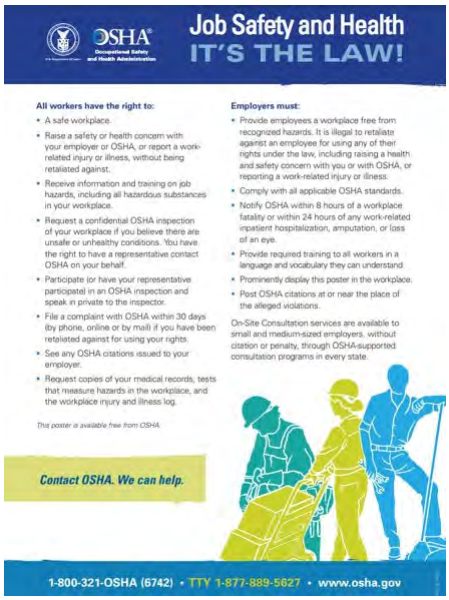


https://www.osha.gov/stateplans

9

Worker Rights

- All workers have the right to:
- A safe workplace
- Raise safety or health concerns with their employer or OSHA, without retaliation
- Receive information and training on job hazards
- File a complaint with OSHA within 30 days if retaliation has occurred for using your rights (Whistleblower Protection Law)



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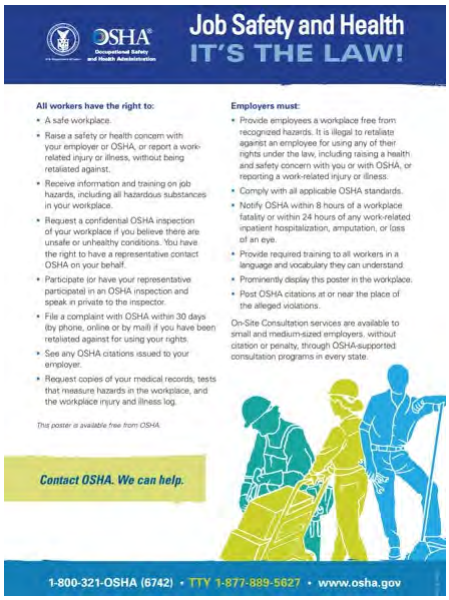
Employer Responsibilities

Employers must:

- Provide a workplace free from recognized hazards
- Comply with all applicable OSHA standards
- Provide training to workers on job hazards in a language and vocabulary they can understand
- Notify OSHA about workplace fatalities or severe injuries such as hospitalizations or amputations
- Post OSHA citations at/near violation locations
- It is illegal to retaliate against an employee for using any of their rights, including raising a safety or health concerns with their employer or OSHA (Whistleblower Protection)



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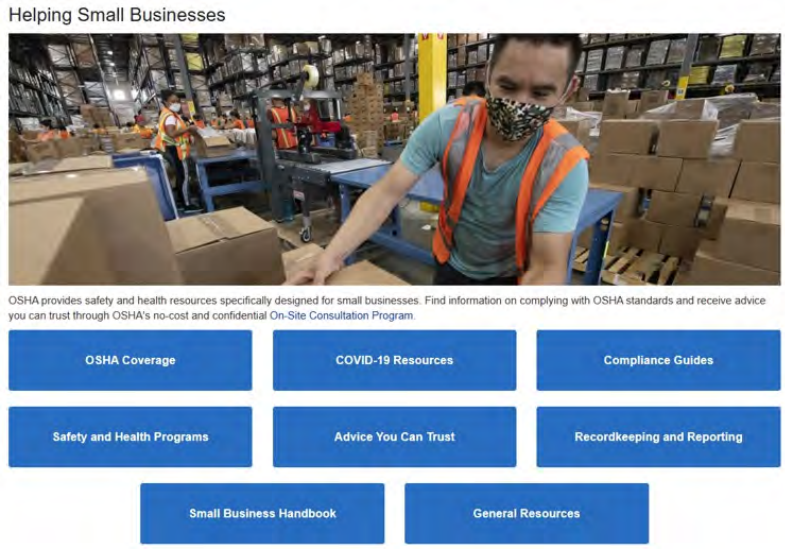
OSHA provides small business assistance



https://www.osha.gov/smallbusiness

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OSHA's On-Site Consultation Program, SHARP

https://www.osha.gov/consultation

- Free Worker Safety/Health consulting services to small businesses
- Consulting services are separate from enforcement to assist employers on establishing, improving safety/health programs and achieving compliance

https://www.osha.gov/sharp

- SHARP recognizes small business employers who have used the On-Site Consultation Program and operates exemplary safety and health programs.

13

Compliance vs Best Practices

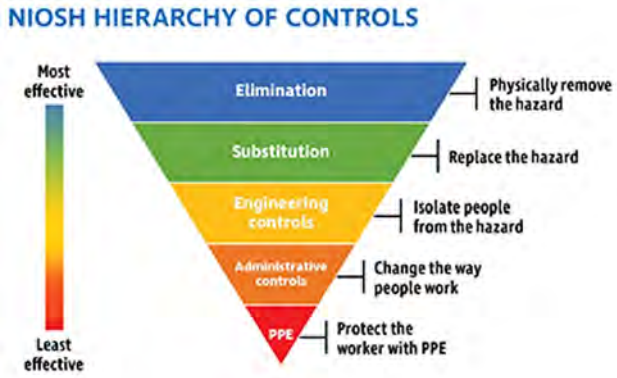
- OSHA Regulations = The Minimum Level for Compliance
- Other organizations/guidelines may have guidance with levels above compliance → Best Practices
- Why might they not be the same?
  - OSHA regulations take considerable time to change/update
  - New industries/conditions to work in, new products being used, new science to evaluate- changes to guidance takes time, often reactive

14

Goal: Implement Effective Solutions

NIOSH's Hierarchy of Controls:

- Provides a framework to control hazards in the workplace
  - Elimination
  - Substitution
  - Engineering
  - Administrative (Work Practices)
  - Personal Protective Equipment (PPE)
- Multiple controls may be more effective than implementing just one



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Take Home Message

- OSHA's Mission is to protect workers
- OSHA can accomplish that mission in multiple ways and provides resources to assist small businesses who may have limited resources
- Many effective solutions exist to address hazards in the workplace
  - Engineering and Administrative Controls are highly recommended
- Information and assistance can help you protect your workers, your company, and your property.

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Mobile Food Truck Safety Training

Part 2: General Safety Hazards

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1

General Worker Safety

- Emergency Action Plans
- Means of Egress
- Medical Services, First Aid
- Slips, Trips, Falls
- Finding Additional Resources that May Apply to Your Food Truck Business

2

Why does planning and preparation matter?

Planning for the Unexpected

- January 2, 2023- NFL Game between Cincinnati Bengals/Buffalo Bills
- Damar Hamlin made a tackle, stood up, swayed, collapsed backwards
  - Medical personnel rushed onto field, assessed condition, used CPR and defibrillator to restart heart
  - Received needed medical care within a few minutes, increased odds of survival and recovery
- NFL had an **Emergency Action Plan (EAP)**- rehearsed before each season
- Team/Medical Personnel meet before each game to discuss Health/ Safety Procedures
- The EAP may not be needed every play, every game- but it is essential when needed
- Are you ready if an emergency occurs? Do you have emergency plans for your business?

3

Emergency Action Plans (EAP)

- Purpose: Describe actions to be taken to ensure employee safety during an emergency
- Benefits:
  - Less confusion when written document organizes actions
  - Fewer and less severe injuries
  - Less structural damage
- What are reasonable emergencies for your business?
  - Fire? Tornado or other severe weather?
  - Customer violence? Civil disturbances?
  - Others?

4

Emergency Action Plans (EAP)- Requirements

Main Requirements:

- Ways to report fires and other emergencies
- Evacuation methods (Fire vs Tornado vs Other Emergencies)
- Rescue and Medical Duties for employees
- Accounting for all employees after emergency evacuation
- Emergency Contact Information

Not required, but may be helpful:

- An offsite location to store originals or copies of essential records

5

EAP Requirements (continued)

- **Reporting Fires and other Emergencies:** 911, possibly others
  - How will first responders know your location?
  - **Recommendation**: Clip a pocket folder onto exit door, easily taken when exiting
    - Front page: **Detailed location** of the truck/trailer/tent/cart for that shift
    - Contact information for Fire, Police, Ambulance, Owner/Manager
    - Procedures for all emergencies (Fire, Tornado, Violence)
- **Evacuation Methods** (Fire vs Tornado vs Other Emergencies)
  - Fire- when to evacuate, where to evacuate/safe distance
  - Tornado/Flooding/Severe Weather- Shelter in place? Evacuate?
  - Violent Acts- Shelter in place? Evacuate?
  - Will you assist visitors/customers?

Methods may need to change, depending on your location and conditions

6

EAP Requirements (cont.)

- **Rescue and Medical Duties for Employees**
  - Remove from immediate danger, call emergency personnel for assistance
  - If someone is injured, who is present to assist them?
  - Training for First Aid? Choking? CPR?
- **Accounting for All Employees after Emergency**
  - Central meeting location? Phone call/text?
  - Who is responsible for verifying?
  - **Items needed:** List of workers on site, contact information for all workers
- **Emergency Contact Information**
  - If someone is taken to the hospital, how will you contact their family?
  - **Items needed:** ICE information for all workers (ICE= In Case of Emergency)

7

Emergency Action Plans (EAP)- Training

Training Employees:

- Review the plan with each employee
  - Upon hiring of employee
  - If changes to plan or employee actions/responsibilities
- Educate/train:
  - Types of emergencies
  - Courses of action (evacuate or shelter-in-place)
  - Location/use of emergency equipment
  - Special hazards (generators, propane)
  - Fire hazards and fire prevention plan
  - Emergency shut-down

8

Emergency Action Plans (EAP)- Fire Response

The most common type of emergency for most businesses is a fire.

Decision: Should employees evacuate or be prepared to fight small fires?

	Option 1	Option 2	Option 3
Who uses fire extinguishers?	Nobody	Only designated workers can use	All employees are authorized to use
Who evacuates?	Everyone	All others not authorized	Anyone not authorized
EAP, Fire Prevention, and Training Required?	Yes	Yes	Yes
Worker Fire Extinguisher Training Required?	No	Each authorized employee must be trained annually	All authorized employees must be trained annually
Additional Requirements	Fire Extinguishers must be inspected, tested, and maintained.		

9

Fire Hazards and Fire Prevention Plans

Purpose: Prevent a fire from occurring in a workplace.

- Describes the fuel sources that might start or contribute to the spread of a fire AND equipment in place to control a fire (alarms, extinguishing systems)

Requirements:

- List of all fire hazards, potential ignition sources, and fire protection equipment
- Procedures to control accumulations of flammable/combustible waste materials
- Regular maintenance of safeguards on heat-producing equipment
- The name/job title of person responsible for fuel sources, equipment maintenance
- Employees must be informed of the fire hazards to which they are exposed and methods of self-protection

More information during Fire Safety Module

10

Egress (Exits)

Requirements:

- Exits need to be permanent, marked, unlocked, and unobstructed
- No materials or equipment can be placed (permanently or temporarily) within the exit route.
- Doors must be unlocked from the inside and workers must be able to open an exit door at all times without keys, tools, or special knowledge
- A side-hinged exit door must be used and must swing outward in direction of exit travel

11

Medical Services, First Aid Kits

Requirements:

- Medical facility readily available or person trained in First-Aid at work site
- Communication system for contacting ambulance services
  - Emergency numbers must be posted
  - Must have the Location ID of worksite posted
- First-Aid supplies
  - Materials approved by a consulting physician
  - In a weatherproof container with individually sealed packages for each item
  - Periodically checked to ensure that materials are replaced after use

12

Slips, Trips, Falls

- Often are the most common hazards in many workplaces
  - Cooking areas may be cluttered (trips) or the floors may be slippery from oil, water, or food on them (slips)
- Severity of the outcome may depend on what else is present:
  - Hot surfaces that may be contacted during the fall
  - Sharp objects that someone may contact
- Solutions:
  - Clean up all spills immediately
  - Do not store cooking oil on the floor
  - Eliminate cluttered or obstructed work areas (No exit path clutter!)
  - Use non-slip mats
  - Repair any uneven floor surfaces

13

In Summary

- A variety of general safety hazards may exist in food trucks, with some more universal, some specific to individual workplaces.
- Emergency Action Plans (EAPs) are needed for every workplace so that workers know how to respond in an emergency.
- Means of Egress must always be kept clear and available for quick exits in emergencies like fires.
- Medical Services and First Aid must be planned for in case of emergency
- Slips, Trips, and Falls are a common source of injury and should be addressed with a variety of hazard controls.

14

Additional Safety Information Available

OSHA's website has many resources available, specifically for EAPs and related topics:
https://www.osha.gov/etools/evacuation-plans-procedures

OSHA has additional safety materials for Restaurant Worker Safety (Youth)
https://www.osha.gov/etools/young-workers-restaurant-safety/posters

- Clean-up Safety
- Safe Knife Handling
- To Prevent Burns
- Safer Lifting
- Drive-thru
- Child Labor Laws

- See also the Additional Resources Handout Provided

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Mobile Food Truck Safety Training

Module 3: Fire Safety in Cooking Operations

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1

Objectives

After this module, the trainee will be able to:

- Recognize the 3 hazards identified as most serious for food trucks
- Recognize that the hazard controls needed will depend on the types of heating and energy sources present
- Identify ways to control general fire safety hazards
- Identify ways to control hazards associated with generator use
- Identify ways to control hazards with solid fuel use

2

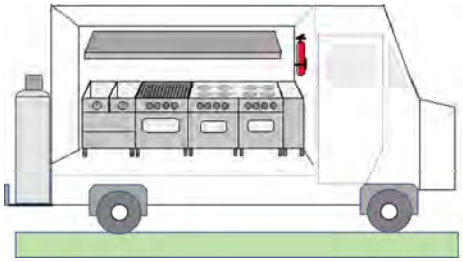
What energy/heat sources do you have?

Type of Vendor

- Food Truck
- Food Trailer
- Cart or Tent

Heating and Energy Sources

- Propane
- Solid fuel (wood, charcoal, etc)
- Electricity (Generator)



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Focus Areas in Food Truck Safety

Propane:

- NFPA statistics indicate that ~60% of Mobile Food Vehicle fires are related to propane, and most injuries/deaths have involved propane explosions

Generators:

- Two issues are present: electrical hazards and carbon monoxide, both of which can be deadly when not prevented.

Cooking Appliances/Hood Suppression Systems:

- Multiple kinds of cooking appliances may be present and methods of extinguishing fires for each must be present as well.

- All of these items may need consideration in a Workplace Fire Prevention Plan

4

Fire Prevention Plans

Purpose: To prevent a fire from occurring in a workplace.

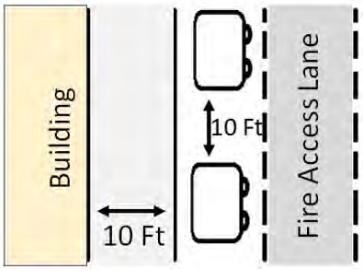
- A Fire Prevention Plan must be in writing, be kept in the workplace, and made available for employees to review.
- Requirements:
  - A list of all major fire hazards, proper handling/storage of hazardous materials, potential ignition sources and controls, and the type of fire protection equipment needed for each hazard.
  - Procedures to control accumulations of flammable/combustible waste materials.
  - Procedures for regular maintenance of safeguards on equipment.
  - The name of employees responsible for maintaining equipment to prevent fires and for controlling fuel source hazards.

https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/fire-prevention

5

General Fire Safety Guidelines

- Obtain license or permits from local authorities
- Ensure clearance of at least 10 feet from buildings, structures, vehicles, and any combustible materials
- Verify fire department vehicle access is provided for fire lanes and access roads
- Ensure access to fire hydrants
- Ensure that power sources are separated from the public by barriers, physical guards, fencing.



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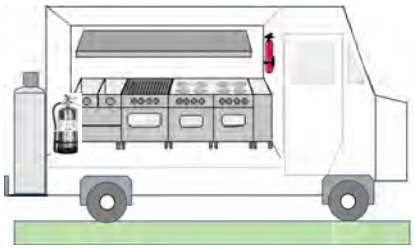
General Fire Safety Guidelines (continued)

- Check that appliances using combustible media are protected by an approved fire extinguishing system.
- Verify that portable fire extinguishers have been selected and installed in cooking areas.
- **Note:** Propane Safety will be covered separately in Module 4



7

Solid Fuel Safety Checklist (Wood, Charcoal)

- Do not store fuel above any heat-producing appliance or vent.
- Do not store fuel closer than 3 ft to any cooking appliance.
- Do not store fuel near any flammable liquids, ignition sources, chemicals, and food supplies or packaged goods.
- Do not store fuel in the path of the ash removal or near removed ashes.
- Remove ash, cinders, and other fire debris from the firebox at regular intervals and at least once a day.
- Remove ashes, cinders, and other fire debris, place in a closed, metal container.

8

Generators and Electrical Safety

- Wilson, NC Sept 17, 2021
- A 57-year-old worker was electrocuted in a food trailer, apparently by an extension cord. Passerby who found him felt a shock when she turned him over. NC Medical Examiner's Office listed electrocution as cause of death.
- OSHA fined the food truck company for 8 violations
  - Food truck was cluttered with supplies and appliances
  - Water was on the floor of the truck
  - Multiple extension cords were used to run electricity from building to inside of truck
  - Both end of the extension cords appeared to have been replaced
- Previously, an electrical issue with a generator caused a fire that burned the inside of the truck in Aug 2020, and the truck was now pulling the trailer that was involved.
- https://restorationnewsmedia.com/articles/local-news/business-cited-fined-after-workers-electrocution/?pub=wilsontimes

9

Generator Safety

- Portable electric generators power many food trucks but they need to be installed and operated correctly
  - Contact a licensed electrician to install your generator and to make sure it meets local codes
  - Make sure the generator is properly grounded and that an appropriate transfer switch is used to connect the generator to the mobile kitchen
  - Do not overload the generator
  - Ensure that it is shut down and cool to the touch before refueling from a portable container
  - Use Ground Fault Circuit Interrupters (GFCI) to prevent electrocutions and shock injuries

10

Generator Safety- continued

- Additional Guidelines
  - Generators should be at least 12 ft from openings and air intakes into trailers/trucks (and any means of egress)
  - Do not operate the generator in enclosed or partially enclosed spaces → carbon monoxide
  - Directed away from all buildings and other cooking vehicles and operations
  - Use carbon monoxide detectors in nearby enclosed spaces to monitor levels

11

Gas Detectors inside the Truck/Trailer

Gases can gather inside enclosed areas like food trucks and trailers

- Carbon monoxide (CO)
  - An invisible, odorless gas that can cause carbon monoxide poisoning, death
  - Can be produced from generators or other engines
- Propane, other flammable gases
  - Can result in explosions
  - Can come from leaks in piping between tanks, burners
- Gas detectors can save lives!

Note: May not be applicable to open air carts/tents.

12

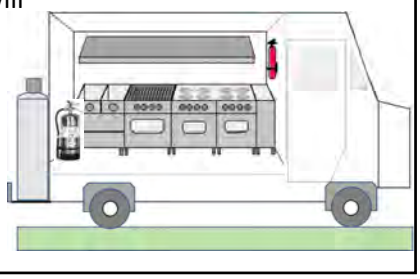
Cooking Surfaces

- In brick-and-mortar operations, cooking fires represent a major source of loss
  - Several food truck fires have occurred after burners were left on unattended
- Checklist:
  - Do not leave cooking equipment unattended while it is still hot
  - Operate cooking equipment only when all windows and ventilation sources are fully opened
  - Close gas supply valves when equipment is not in use.
  - Keep cooking equipment, including the ventilation system clean by regularly removing grease.

13

Fire Suppression Systems and Hoods

- Fire Extinguishing/Suppression Systems are commonly used to protect cooking areas where fires may start and quickly spread
- Goal: Quickly extinguish a developing fire and alert occupants before extensive damage occurs
- Guidance:
  - Hire a professional service to install- the best system for your workplace may depend on multiple factors that the installer will review
  - The system should be inspected annually and operated/maintained in a working condition.
  - Notify employees how the system works. If the system potentially exposes a worker to chemicals, hazard communication about the chemical's hazards is needed.



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In Summary

- Multiple hazards exist for food operations, including food trucks/trailers
- A fire prevention plan should be in place to list the fire safety hazards and ways to control them.
- Generators pose both electrical and carbon monoxide hazards- use electrical safety controls and gas detectors inside enclosed spaces to notify of the presence of dangerous gases
- Fire Suppression Systems are required in most jurisdictions to quickly extinguish kitchen fires but inspections and maintenance are required.

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Mobile Food Truck Safety Training

Part 4: Propane Tank Safety

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1

Objectives

After this module, the trainee will be able to:

- Identify basic properties of propane and hazards associated with propane tank usage
- Recognize and use hazard controls to reduce the risk from those hazards

2

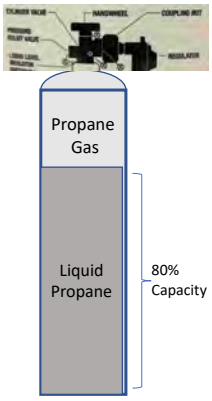
Propane Tank Safety

- Propane: A Hazardous Material that Deserves Respect
  - Propane is one kind of Liquefied Petroleum Gas (LP-Gas) that may be transported in tanks and is used in cooking operations
  - According to NFPA, 68% of food truck fires are the result of leaks or structural failures of propane tanks
  - A 20-pound propane tank = explosive energy of 120 sticks of dynamite
- Note: Personal Injury Lawyers are starting to add Food Truck Accidents as a specialty litigation service

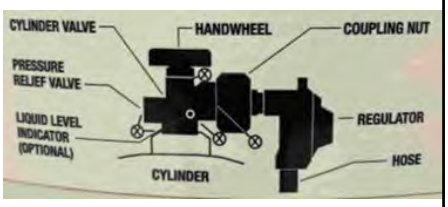
DISCLAIMER: State and Local Regulations may vary; the guidance provided here are based on NFPA guidance AND the expectation that managers will refer to local authorities and properly trained professionals when necessary.

3

What makes a propane tank hazardous?



- Propane is a gas at room temperature
  - Priced by the gallon, but sold by the weight
  - 1 pound of propane = 0.236 gallons (60°F), so 100 lb= 23.6 gallons
  - 1 gallon= 4.24 lbs (gas is heavier than air, but lighter than water)
- Propane is pressurized to be in liquid state inside the tank
  - As the valve is opened, propane in gas phase travels to burners
  - Heating a tank holding propane causes it to expand, increases the pressure inside the tank
- Challenges:
  - Hot Climates: need room for gas expansion in tank
  - Cold Climates: low pressures may require refilling even when tank is not empty



4

What caused the 2014 Philadelphia Accident?

July 1, 2014: Philadelphia Food Truck Explosion kills 2, injures 13

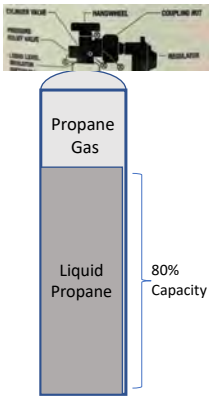
Explanation: https://youtu.be/1YLLfOreaVE

Factors/Sequence of Events:

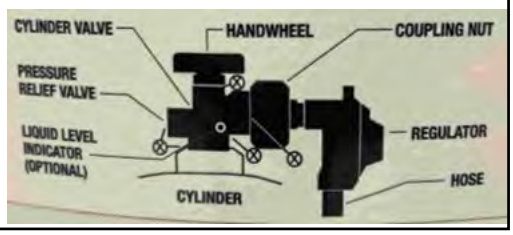
- The 100-gallon propane cylinder was dated 1948, had no relief valve
- High temperatures cause the propane to expand, pressure builds without the relief valve
- Eventually, the cylinder ruptures, liquid propane escapes, turns to gas
  - Split second on video where vapor cloud is seen before ignition
- Any ignition source nearby ignites the propane

5

What makes propane hazardous?



- Propane is pressurized to be in liquid state inside the tank
  - As the valve is opened, propane in gas phase travels to burners
- Controls to prevent accidents (Engineering, Work Practices)
  - Do NOT fill more than 80%
    - On a hot day, the propane needs space to expand without posing a threat
  - Pressure Relief Valve
    - Allows for release of propane if interior pressure rises
  - White/Reflective Exterior
    - Reflect heat rather than absorb it
  - Keep distance from ignition sources
    - Released propane gas is denser than air, can travel



6

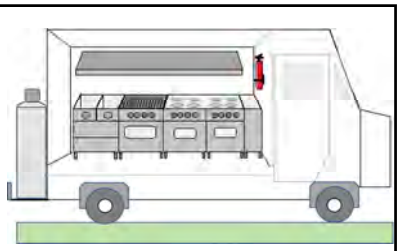
Propane Tank Safety Checklist-General

Check	Description
	LP-Gas containers cannot exceed 200 gallons individually or total combined capacity
	Tanks must be made of a corrosion-resistant material (such as aluminum) and be free of any rusted areas or physical damage
	If painted, there is not a required color, but it is suggested that it is a light reflective color
	Containers must be within a current qualification date. -1st Requalification: Within 12 years of the date of manufacture -All Others: Within 5 years after
	Cylinders cannot be inside the vehicle for any reason, including during use or for transport.

Propane Safety Video 1 (WorkSafe BC): https://youtu.be/rHRwS2B3Vv0
Propane Safety Video 2 (WorkSafe BC): https://youtu.be/vCSi6tXcRJs

7

Propane Tank Location/Mounting



Check	Description
	Containers must be mounted securely to the exterior of the vehicle in an approved area. They cannot be on the front or the side of the unit.
	Ensure that portable gas containers are in the upright position and secured to prevent tipping over. Containers must be securely mounted to prevent jarring loose, slipping, or rotating.
	All containers must be protected from damage from loose objects and from damage due to overturns or similar vehicle accidents.
	A bumper protecting containers mounted on the rear shall extend at least six inches beyond the container and be of substantial fabrication matching or exceeding the strength of the existing bumper for protection of the container in the event of a rear end collision.
	Path of Egress not blocked in case of emergency
	Must be at least 10 ft from any ignition source

8

Propane Lines/Piping Systems

Check	Description
	Check that the main shutoff valve on all gas containers is readily accessible.
	Ensure that portable gas containers are in the upright position and secured to prevent tipping over.
	Perform leak testing on all new gas connections of the gas system.
	Perform leak testing on all gas connections affected by replacement of an exchangeable container.
	Document leak testing and make documentation available for review by the authorized official.
	Ensure that on gas system piping, a flexible connector is installed between the regulator outlet and the fixed piping system.

9

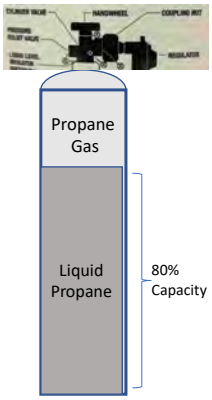
Propane Lines/Piping Systems (cont.)

Check	Description
	Piping materials used must be approved for LP Gas service. Install a flexible connector between the regulator outlet and the fixed piping system.
	Piping must be protected from vibration, abrasion, and damage.
	Piping systems must be tested for leaks at the normal operating pressure to ensure a gas-tight system.
	Leak tests must be performed after every transit event. Vibrations and bumps may cause fittings to loosen.
	Leak tests are performed by spraying the joints with an approved liquid leak detecting solution. (Bubble test)
	If leaks are found, the unit will not be operated until permanently fixed

Bubble Test: https://youtu.be/2GA4vwg8ay4

10

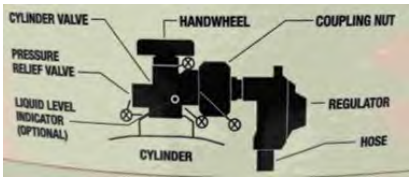
Refilling Tanks: The 80% Fill Rule



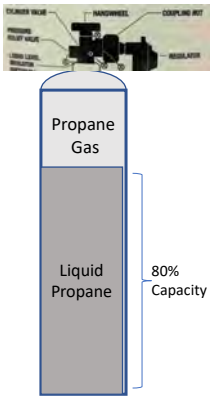
- Propane, like water, will expand when heated but the amount of propane expansion is 17x greater! (For the same volume and temperature change)
  - If the tank measures 80% full (by volume) on a mild April day, the same tank might be 85% or higher (by volume) at the 4th of July.
  - Same MASS of propane, but it is taking up a greater VOLUME
- Leaving 20% space in the tank is a cushion against pressure buildup during hot weather
- Who is refilling your tanks? What method do they use?
  - Only use professionals who are trained to handle propane, not a local gas station or box store (i.e. can they explain how it works?)

11

Refilling Tanks- Overflow Valve



**Do NOT fill the tank full, and then allow Overflow Valve to release "extra" into the air.



Dangerous in multiple respects:

- Will its release be predictable?
  - When you expect it and in open air? or
  - When you are at an event with people around?
- Where does the released propane go?
  - It will sink and flow on ground. If an ignition source is nearby…

12

Refilling- How can I tell if a tank is 80% full?

- Find the "Tare Weight" of the tank
  - Weight the tank when it is empty
- Weigh the propane tank before refilling
  - If tank weighs >Tare Weight, some propane remains
- Calculate how much total weight is needed
  - Tank Weight (Tare) + Propane Weight x 80%
  - Ex. 18 lb empty + (20 lb x 80%) = 18 lb + 16 lb = 34 lb

Tare: 15 lb
(= tank empty)

Current: 17 lb
(= 15 lb Tank + 2 lb LP)

Total Weight=
Tare Wt + Propane Wt x 80%

13

Refilling Propane Tanks- Discussion of Challenges

Topic 1: Small or large tanks (20-100lb)?

- Option 1: Smaller tanks
  - Events? Convenience?
- Option 2: Larger tanks
  - More capacity for busy events?
  - How easily removed for refill?
  - Required to be removed for refill?

Issue 2: When and how will tanks be filled?

Option 1: One tank-not full prior to event
- "Topping off" tank- acceptable?

Option 2: Two 100 lb tanks
- Use one until it's low, then switch to 2nd tank and fill up 1st tank later

Owners: When you consider options, do you consider safety? And what risks are you willing to expose your business to?

14

To Summarize:

- Propane tanks present a unique hazard to the food truck industry compared to brick-and-mortar restaurants.
- Multiple hazard controls should be used to control propane tank hazards.
- When refilling propane tanks, the 80%-Fill Rule should be followed.
- Companies should only use professionals with propane training and experience for refilling needs and piping installation.

15

Mobile Food Truck Safety Training

Part 5: Fire Extinguisher Training

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1

Objectives

After this module, the trainee will be able to:

- Review the EAP Decision whether employees will fight fires or evacuate
- Identify the three requirements for a fire to continue
- Classify types of fires by their characteristics
- Identify the types of fire extinguishers needed for their business
- Operate a fire extinguisher
- Identify conditions when NOT to fight a fire

2

Purpose of a Fire Extinguisher

Two functions:

1. To control or extinguish small or incipient stage fires and,
2. To protect evacuation routes that a fire may block directly or indirectly with smoke or burning materials.

- Fire extinguishers are designed to put out or control small fires
- If not controlled immediately, small fires can spread out of control
- Facilities need the proper types and placement of fire extinguishers as part of a fire protection plan

3

Review: Emergency Action Plans (EAP)

Decision: Should employees evacuate or be prepared to fight small fires?

- This module will address Fire Extinguisher Training for those authorized to use them

	Option 1	Option 2	Option 3
Who uses fire extinguishers?	Nobody	Only designated workers can use	All employees are authorized to use
Who evacuates?	Everyone	All others not authorized	Anyone not authorized
EAP, Fire Prevention, and Training Required?	Yes	Yes	Yes
Worker Fire Extinguisher Training Required?	No	Each authorized employee must be trained annually	All authorized employees must be trained annually
Additional Requirements	Fire Extinguishers must be inspected, tested, and maintained.		

4

Definitions

OSHA

- "Incipient stage fire" means a fire in the initial or beginning stage and can be controlled or extinguished by portable fire extinguishers, Class II standpipe, or small hose systems without the need for protective clothing or breathing apparatus.

NFPA

- "Incipient stage fire"
  A fire is **beyond** the incipient stage when the use of thermal protective clothing or self-contained breathing apparatus is required...

5

Fire Triangle: Fire Needs 3 Elements

Fire requires 3 Elements:

- **Take one away → fire cannot survive**

1. **Fuel:** Without fuel, a fire will stop.
2. **Oxygen**: Without sufficient oxygen, a fire can't begin, and it can't continue.
3. **Heat:** Without sufficient heat, a fire can't begin, and it can't continue.

Our strategy in Fire Extinguisher use:
→Remove one or more of the elements before a fire can spread out of control.

6

Five Fire Categories

What's Present in Your Operation?

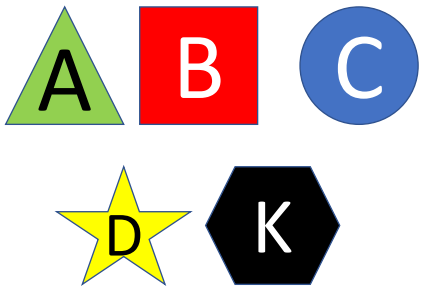
Yes	No	Fire Class	Materials
		Class A Fires	Combustible materials (wood, cloth, paper, rubber and many plastics)
		Class B Fires	Flammable Liquids (gasoline, kerosene, propane, alcohols)
		Class C Fires	Electrical equipment
		Class D Fires	Metals (magnesium, sodium, lithium)
		Class K Fires (Kitchen)	Grease/Cooking Oils

How likely for each to be present in most Food Trucks?

7

Types of Fire Extinguishers

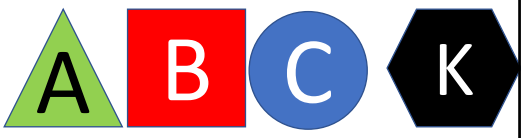
- Fire extinguishers must be matched to the hazards present
- Types:
  - Class A- Wood, Paper, Plastics (Water)
  - Class AB- Wood, Paper, and Flammables (CO_2)
  - Class BC- Flammables + Electrical (CO_2)
  - Class ABC- Multipurpose (Chemical Powder)
  - Class K- Kitchen Fires (Wet Chemical)
  - Class D- Metal Fires
- Simplify?



8

Fire Extinguisher Types

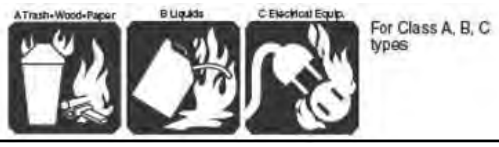
- Fire extinguishers must be matched to the hazards present
- Types:
  - ~~Class A- Wood, Paper, Plastics (Water)~~
  - ~~Class AB- Wood, Paper, and Flammables~~
  - ~~Class BC- Flammables + Electrical (CO_2)~~
  - Class ABC- Multipurpose (Chemical Powder)
  - Class K- Kitchen Fires (Wet Chemical)
  - ~~Class D- Metal Fires~~



9

Class ABC Extinguisher

- Multipurpose
  - Wood, paper
  - Flammable Liquid
  - Electrical
- Contains Dry Chemical
- Fire retardant powder separates the fuel from oxygen
- Pressure Gauge Verifies Fill Level
- Note: Mildly Corrosive (Electronic Equipment)



10

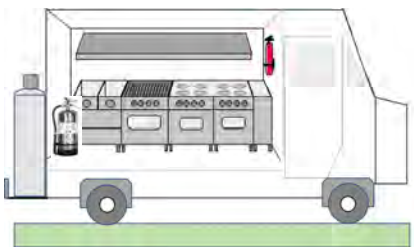
Class K Extinguisher

- Class K= Kitchen
  - Cooking Oils/Fats
  - Required for all solid fuel cooking with a fire box volume of 5 cubic feet or more (Regardless of whether hood present)
- Mixture of dry and wet chemicals
  - Electrically conductive
  - Electrical power to the appliance must be shut off first
- Pressure Gauge Verifies Fill Level
- Fires burn at very high temperature
  - Agent cools and separates fuel/oxygen

11

Location and Placement

- Must be readily accessible and visible if fire occur
  - Near kitchen locations, no more than 30 ft away
  - Bottom must be at least 4 inches off the floor
- Fire extinguisher weighing < 40lb (Lighter)
  - Top cannot be more than 5 ft from floor
- Fire extinguisher weighing > 40lb (heavier)
  - Top cannot be more than 3.5 ft from floor



12

Procedures to Respond to a Fire

If nobody is authorized to use a fire extinguisher, everyone must evacuate

<u>If someone is authorized and trained to use a fire extinguisher:</u>

1) Sound an alarm, call the fire department
2) Identify a safe evacuation path before approaching a fire.
   - Do not allow the fire, heat, or smoke to come between you and evacuation path
3) Select the appropriate fire extinguisher
   - To use Class K Extinguisher, electricity must be off to that appliance
4) Discharge the extinguisher using the P.A.S.S. technique
5) Back away from an extinguished fire if it reignites

**Evacuate immediately if the extinguisher is empty and fire is not out

**Evacuate immediately if the fire progresses beyond the incipient stage

13

Is it safe to fight a fire?

Criteria	Safe	NOT Safe
Size of Fire	• Fire has not spread • Flames not higher than head	• Fire has spread beyond origin • Flames reaching the ceiling
Air Conditions	• Smoke present, but clear view of the fire • No respiratory protection needed	• Smoke blocking view of fire • Air is difficult to breathe • Respiratory protection needed
Exit Path	• Clear exit path behind you	• Exit path behind you is not safe • Fire is not contained, spreading

If you have the slightest doubt about your ability to fight a fire or the conditions present, EVACUATE IMMEDIATELY!

14

Use P.A.S.S. for Small Fires

- **P**ull — Pull the pin.
- **A**im — Aim extinguisher nozzle or hose at the base of the fire.
- **S**queeze — Squeeze handle to release the extinguishing agent.
- **S**weep — Sweep sideways at the base of the fire until it is out.

Watch the area.

If the fire re-ignites, repeat the above.

15

Inspection, Maintenance, and Testing

- The employer is responsible for the inspection, maintenance, and testing of portable fire extinguishers in the workplace
  - Monthly inspections
  - Annual Inspections

16

Monthly Inspections

Check/Date	Description
	Is the Fire Extinguisher in its designated place?
	No obstruction to access or visibility?
	Is the pressure gauge showing that the extinguisher is fully charged (the needle should be in the green zone)?
	Is the pin and tamper seal intact?
	Is the extinguisher in good condition and showing no signs of physical damage, corrosion, or leakage?

*Tag on Extinguisher or Paper/Electronic Files are both acceptable
*Need: Month/year of inspection and person conducting inspection

17

Annual Inspections

Annually:

Use a 3rd party for annual maintenance checks

-Annual fire department inspections

Ensure backup protection when fire extinguishers are removed for maintenance or recharging

Hydrostatic Testing:

This is a pressure-testing technique used to test for strength and leaks in pressure vessels like gas cylinders.

- Must be performed by someone with suitable equipment/facilities.
- Performed every 5-12 years, depends on extinguisher

18

Training on Fire Extinguisher Use

- Authorized Workers must be trained on how to use a fire extinguisher
- This training does not have to be performed on live fires.
- Our training will begin in a few minutes

19

To Summarize:

- EAPs must describe whether workers will use fire extinguishers for fires
- Fire extinguishers are only to be used on small (incipient) fires and when a clear exit path is present.
- The type(s) of fire extinguishers needed depends on the materials present.
- For most food trucks, a Class ABC (dry powder) extinguisher will be needed, and possibly a Class K extinguisher if cooking oils are present.
- The P.A.S.S. method should be used to extinguish small fires.
- Employees must be trained on how to use fire extinguishers.

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Mobile Food Truck Safety Training

Part 6: Specifics for Owners/Managers

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1

Objectives

After this module, the trainee will be able to:

- Recognize the benefits of having a proactive safety program
- Find resources to develop their own Health and Safety Plans for their workplaces

2

Today may have a lot of information

- Past accidents may scare you
- OSHA may scare you
- Future lawsuits may scare you
- But… you have an opportunity to keep those from happening!

- "If you can't be a good example, you may have to be a terrible warning." Catherine Aird

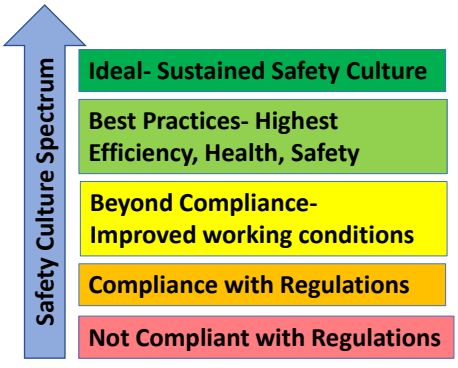
- You have already taken the first step to improving the safety of your business by attending this course! Keep the momentum going!

3

Safety Management Mindset

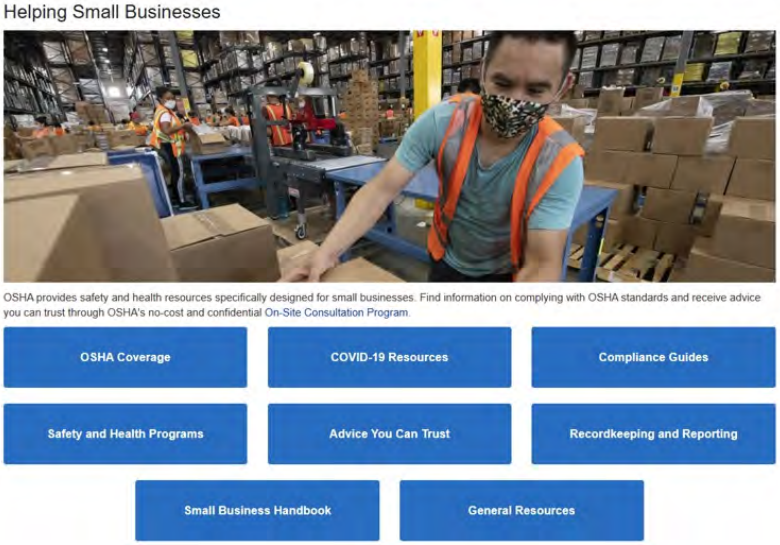
- Where are OSHA standards (and others)?
- If your only goal is compliance, how easy is it to fall short? What are the consequences?

- Where are you on this scale today?
  - Can workers bring problems to you, knowing they will be addressed?
  - Is there a tendency to be proactive or reactive?
- What is your goal? How will you get there?
- What challenges/barriers exist?



4

OSHA provides small business assistance



https://www.osha.gov/smallbusiness

5

OSHA's On-Site Consultation Program, SHARP

https://www.osha.gov/consultation

- Free Worker Safety/Health consulting services to small businesses
- Consulting services are separate from enforcement to assist employers on establishing, improving safety/health programs and achieving compliance

https://www.osha.gov/complianceassistance/cas

- Assistance is available from Compliance Assistance Specialists
- OSHA's website has many resources for small businesses
- After you get started, you may want to request assistance for more complicated topics

6

Sample Plans and Templates are Available

These will only work if you apply them to YOUR individual workplace

Emergency Action Plans (EAPs):

- OSHA e-Tool to create your own
- OSHA Sample EAP Template

Fire Prevention Plans:

- OSHA e-Tool
- Sample Fire Prevention Plan Template (NC DOL)

Additional plans are available but may depend on your company's needs and actual hazards present (i.e. Hazard Communication, Bloodborne Pathogens, etc)

7

Checklists for Fire Safety, Propane, Fire Extinguishers

- https://www.nfpa.org/Codes-and-Standards/Resources/Standards-in-action/Food-truck-safety
- You should also check your local jurisdictions- even if they have not updated their fire codes yet, they may sometime in the future
  - By being proactive, you can be ahead of changes when they occur
  - You can also be a leader in promoting safer work practices with your colleagues- many of them may be neighbors at a future event!

8

Employer Requirements for Training

- Employers must provide training to employees on the hazards present at the worksite. Ensure that workers are trained on:
  - Proper procedures for emergencies (Emergency Action Plan)
  - Proper procedure for notifying the fire department
  - The fire hazards that are present and how to control them
  - Proper method of shutting off fuel sources
  - Proper procedure to perform leak test on gas connections
  - Proper use of portable fire extinguishers and extinguishing systems
  - Any other hazards that may affect them in the workplace
- If there is not documentation that training occurred, then it didn't happen.
- Keep written records of trainings and other important checks that may back you up if an accident does happen.

9

Additional Topics that May Apply

- Hazard Communication Standards
  - Chemicals with Safety Data Sheets (SDSs) including cleaning chemicals
- Bloodborne Pathogens (BBP)
  - Is there potential exposure to blood or other bodily fluids during an accident? How will this be handled?
- OSHA Recordkeeping
  - This requirement may depend on the size of your company, how many employees you have

10

Summary

- Employers have several requirements to provide a safe workplace for their workers
- OSHA recognizes that small businesses have limited resources, offer their consultative services as assistance

- Conclusion: Resources are available to help you make your workplace a safe one for yourself and your workers. Take advantage of it and share your knowledge with others!

11

Additional Resources for Food Truck Worker Safety

General Safety and Health Programs: https://www.osha.gov/safety-management

Small Business Safety and Health Handbook: https://www.osha.gov/sites/default/files/publications/small-business.pdf

Business Case for Safety and Health: https://www.osha.gov/businesscase/benefits

Small Business Resources: https://www.osha.gov/smallbusiness and https://www.osha.gov/publications/bytopic/small-business

Small Business Consultation: https://www.osha.gov/sites/default/files/publications/3357consultation-sm.pdf

Worker Rights:
https://www.dol.gov/sites/dolgov/files/ofccp/regs/compliance/factsheets/FACT_Workplace_Aug2016_ENGESQA508c.pdf

Safety Rights: https://www.worker.gov/rights/safety-rights/

Worker Protections: https://www.worker.gov/

Emergency Action Plans (EAPs)

General: https://www.osha.gov/etools/evacuation-plans-procedures

What is an EAP? https://www.osha.gov/etools/evacuation-plans-procedures/eap

Do I need an EAP? https://www.osha.gov/etools/evacuation-plans-procedures/eap/develop-implement

Fire, Rescue, and Medical Services: https://www.osha.gov/etools/evacuation-plans-procedures/eap/fire-rescue-medical

Create Your Own Emergency Action Plan: https://www.osha.gov/etools/evacuation-plans-procedures/expert-systems/create-eap

OSHA Sample EAP: https://www.osha.gov/sites/default/files/2019-03/sample_emergencyactionplan.doc

Fire Prevention Plans:

Requirements: https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/fire-prevention

Sample Template 1: https://www.mass.gov/doc/fire-prevention-plan/download

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Sample Template 2: https://connect.ncdot.gov/resources/safety/Teppl/TEPPL%20All%20Documents%20Library/W38_EAandFirePrev.pdf

Exit Routes:

Design and Construction Requirements: https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/design-construction

Maintenance, Safeguards, and Operational Features: https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/maintenance-safeguards-features

General Fire Safety/Cooking Safety:

Young Worker Safety in Restaurants: https://www.osha.gov/etools/young-workers-restaurant-safety/cooking

> Topics: Burns, Deep Fat Fryers, Electrical Hazards, Fire Hazards, Heat Hazards, Slips/Trips/Falls, Strains and Sprains

Posters: https://www.osha.gov/etools/young-workers-restaurant-safety/posters

> Topics: Same as Above + Clean-Up Safety, Safe Knife Handling, Safer Lifting, Drive-Thru, Rights, Child Labor Laws

Fire Suppression Systems: https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/fixed-extinguishing

Propane Tank Safety:

Food Truck Propane Safety: Hazards on the Move (80s): https://youtu.be/rHRwS2B3Vv0

Propane Tank Safety Warning Signs (WorkSafeBC, 85s): https://youtu.be/vCSi6tXcRJs

Soap Test (WorkSafeBC, 130s): https://youtu.be/2GA4vwg8ay4

Food Truck Operation Awareness Flyer- Compressed Gas Tank Requalification (US Dept of Transportation): https://www.nfpa.org/-/media/Files/Public-Education/By-topic/Food-trucks/FoodTrucksOperatorAwarenessFlyer.ashx

- Cylinders are required to be requalified or replaced every 5-12 years, depending on the cylinder type, condition, and previous requalification method

Requalification Guidance for Propane Cylinders (US Dept of Transportation): https://www.nfpa.org/-/media/Files/Public-Education/By-topic/Food-trucks/FoodTrucksrequal_propane_cylinders.ashx

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Fire Extinguishers

Portable Fire Extinguishers: https://www.osha.gov/etools/evacuation-plans-procedures/emergency-standards/portable-extinguishers

Guide to Fire Extinguisher Inspection, Testing, Maintenance (NFPA): https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2020/10/30/guide-to-fire-extinguisher-inspection-testing-and-maintenance

Location and Placement of Fire Extinguishers Fact Sheet (NFPA): https://www.nfpa.org/fireextinguisherfactsheet

NFPA Documents:

NFPA Food Truck Safety: https://www.nfpa.org/Codes-and-Standards/Resources/Standards-in-action/Food-truck-safety

Food Truck Fact Sheet: http://www.nfpa.org//-/media/Files/Public-Education/By-topic/Food-trucks/FoodTruckFactSheet.pdf

Structure Fires in Eating and Drinking Establishments: https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Building-and-life-safety/oseating.pdf (Statistics for Brick/Mortar Restaurants, which are different but relevant)

Note: 61% of restaurant fires involved cooking equipment (2010-2014)- 3 deaths, 110 injuries, $165 million in property damage each year

- Deep fryers involved in 21% of fires, ranges/cooktops accounted for 14%
- 68% of fires were small and did not spread beyond the original source
- Cooking materials were the item ignited in 43% of fires
- Failure to clean was a factor in 22% of the fires

Food Truck Fire Safety (Audience= Fire Departments or when buying a new Food Truck): https://www.youtube.com/watch?v=ReXCNq2MbLk&t=915s

Hazard Communication Standard: https://www.osha.gov/sites/default/files/publications/OSHA3695.pdf#page=36

Propane Safety Data Sheet: https://www.amerigas.com/-/media/project/amerigas/files/propane-sds--phillips-propane-sds-2020.pdf

Model Plans and Programs for the OSHA Bloodborne Pathogens and Hazard Communication Standard: https://www.osha.gov/sites/default/files/publications/osha3186.pdf

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Food Truck Accidents (Examples from the last 10 years)

Philadelphia, 2014

Philadelphia 2014 Video 2: https://www.youtube.com/watch?v=fBv5eFyJiwA

Animation of Cause: https://www.youtube.com/watch?v=1YLLfOreaVE

North Carolina

- Charlotte 2022- no injuries, home lost
- Charlotte (South End) 2020- 1 injured, Food truck explosion in North Carolina caught on camera | WAVY.com
- Greensboro 2021- firefighter injured
- Raleigh 2018: no injuries

Other Accidents

- Newport News Jan 2023- 2 injured
- Fresno 2022- 2 injured with burns, 2nd Article
- Tallahassee 2022- 2 injured
- Orlando 2022- woman critically injured, Article 2
- Alabama 2022- 1 injured, Video
- DC Food Truck Fire with Explosion (10 min video)
- Fire Destroys N. Portland Food Carts
- 3 people injured in Wyoming food truck explosion
- Eugene, OR Explosion
- Portland, OR Food Truck Fire
- Utah (2nd degree burns)
- Clarksville, TN Nov 2022: Food Truck Propane Leak
- Lafayette, LA- Oct 2022: Food Truck fire overnight after burner left on

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