



# Confined Spaces

Unique Hazards and Urban Legends  
Presented by Bruce Donato  
of K&A First Aid and Safety

**We will be starting at on the hour  
Please mute yourself upon entry**

## ASSP NOVA Board



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# ASSP-NOVA Calendar



## 2021-2022 Chapter Meeting Schedule

| Date                                | Topic*   | Speaker*                     | Location                           |
|-------------------------------------|--|------------------------------|------------------------------------|
| August 25-27, 2021                  | 35th Annual ASSP Region VI PDC                               | Various                      | Myrtle Beach, SC                   |
| Sep 23, 2021 12:00-1:00 p.m.        | NFPA 70 E Update   | Jerry Rivera                 | Free Webinar                       |
| Oct 14, 2021 12:00-1:00 p.m.        | Confined Space Unique Hazards and Urban Legends              | Bruce Donato                 | Free Webinar                       |
| Oct 18, 2021 7:30 a.m. – 12:00 p.m. | Golf Benefit   |                              | Forrest Greens Golf Course         |
| Nov 4, 2021 8:00 a.m. – 12:00 p.m.  | Confined Space Competent Person                              | George Stallings             | Sprint Training Center, Reston, VA |
| Nov 18, 2021 12:00-1:00 p.m.        | Crisis Management  | Andrew Geisert Dave Chandler | Free Webinar                       |
| Dec 8, 2021 12:00-1:00 p.m.         | Drone Safety (joint with WMACSA)                             | Chris Wright                 | Free Webinar                       |
| Dec 2021 Dates/Times TBD            | TopGolf Networking Event                                     |                              | Ashburn TopGolf                    |
| Jan 20, 2022 12:00-1:00 p.m.        | IH – "I am not an expert, but these are good things to know" | TBA                          | Free Webinar                       |
| Feb 17, 2022 12:00-1:00 p.m.        | ISO 45001 – The Practical Approach, Value & Implementation   | Erika Frank                  | Free Webinar                       |
| Mar 17, 2022 12:00-1:00 p.m.        | Known and Unknown Hazards Around Heavy Equipment             | TBA                          | Free Webinar                       |
| April 21, 2020 12:00-1:00 p.m.      | Environmental Regulation Overview                            | TBA                          | Free Webinar                       |
| May 19, 2022 7:00 – 9:00 a.m.       | Annual VOSH Update   | Daniel Wells                 | Free Webinar                       |
| Jun 16, 2022 12:00-1:00 p.m.        | Legal Update   | Adele Abrams                 | Free Webinar                       |



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# Calendar

"Biosafety for containment and handling of arthropods: training program using a virtual reality (VR) tool."  
(Joint meeting with ChABSA)

10/14/2021 - 9:00am to 10/14/2021 - 10:30am

"Biosafety for containment and handling of arthropods: training program using a virtual reality (VR) tool." The design and setup of laboratories intended for the use of pathogens affecting animal and human health and handling of infected live arthropods (e.g. mosquitoes), requires various...

Confined Space - Unique Hazards and Urban Legends (Joint meeting with ASSP NOVA Chapter)

10/14/2021 - 12:00pm to 10/14/2021 - 1:30pm

Bruce Donato of K&A First Aid and Safety, Inc. will review hazards that are unique to confined space entry and work that are often forgotten and he will discuss misconceptions about confined spaces.

Fleet Safety (Joint Meeting with WMACSA)

11/10/2021 - 5:00pm to 11/10/2021 - 6:30pm

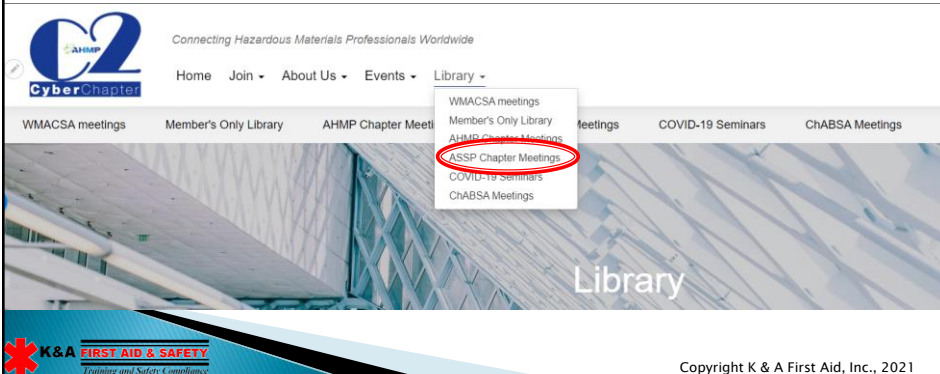
Philip Thomas the director of the Eastern Service Center of the Federal Motor Carrier Safety Administration (FMCSA) will discuss applicability of regulations, commercial zones, drug and alcohol testing, hours of service, and vehicle maintenance and more.



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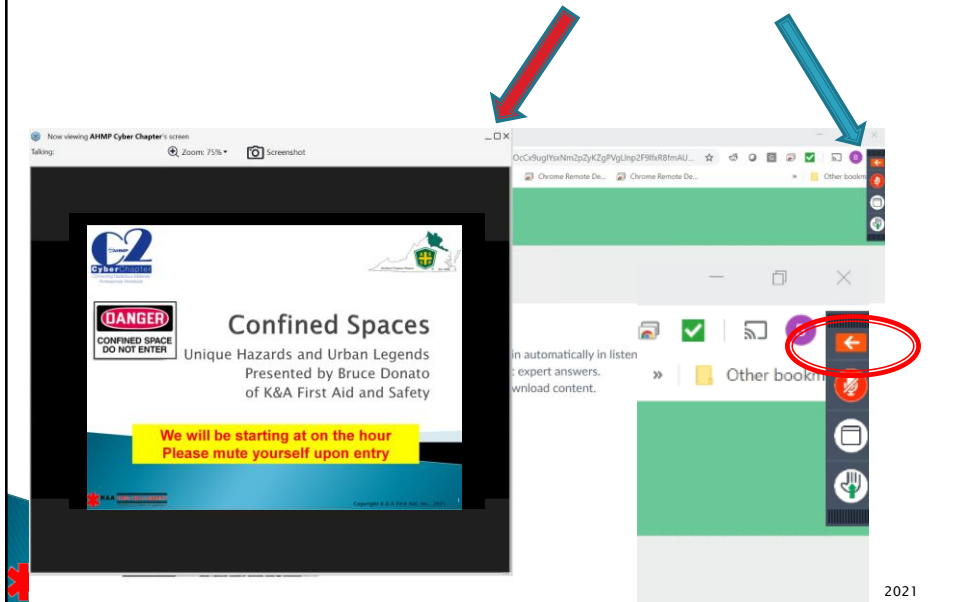
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- ▶ Go to [www.ahmpcyber.org](http://www.ahmpcyber.org)
- ▶ Library Tab, drop down menu e.g. "ASSP"



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# How to use dashboard



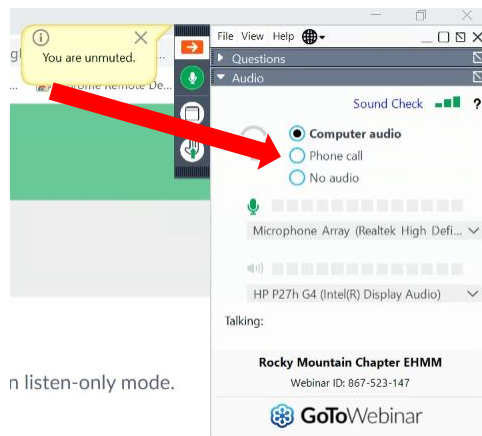
# Troubleshooting Audio

If your speaker is not working it may be that your system picked the wrong device. This may reset it.

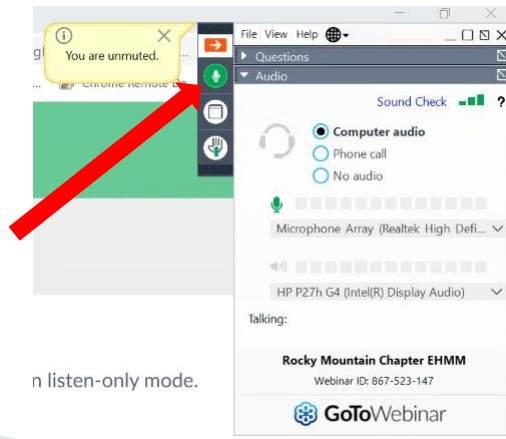
1. Click on "phone call"
2. Click back on "computer audio"
3. If that does not work use the drop down menu to pick the correct speaker.

If your microphone you can do the same thing. This may reset it.

1. Click on "phone call"
2. Click back on "computer audio"
3. If that does not work use the drop down menu to pick the correct microphone.
4. You also can choose "phone call" and call in.



# How to self-mute

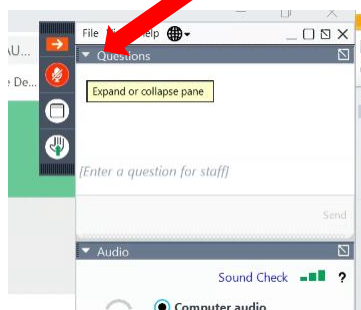


n listen-only mode.



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# How to ask questions



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# Continuing Education

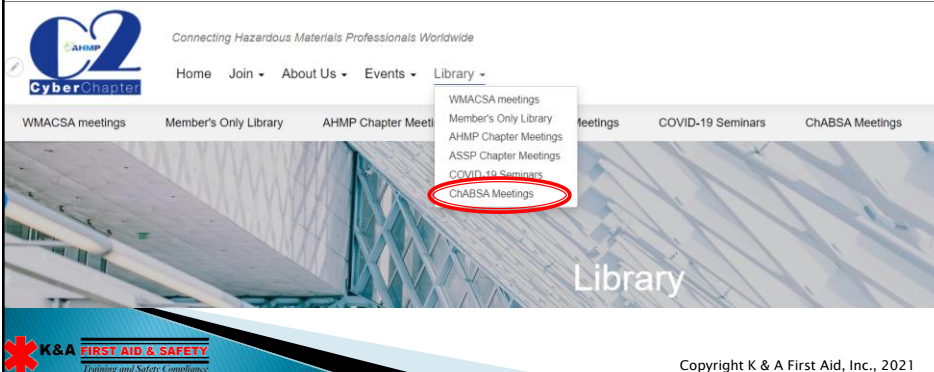
- ▶ The Cyber Chapter offers a free service to anyone who registers on the website to track attendance at events and allows participants to download a transcript.
- ▶ Transcripts are updated at least quarterly.



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## Ground Rules/ Webinar Directions

- ▶ All attendees will be muted. Feel free to come off mute to ask a question.
- ▶ During the presentation you will also be able to raise your hand to request to be recognized.
- ▶ Questions can also be posed using the “question/chat” function in your dashboard and Eva will answer as appropriate.



## Confined Spaces

Unique Hazards and Urban Legends

## Contact Information

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## TRAINING DISCLAIMER

These materials were developed by K & A First Aid, Inc. and are intended to assist employers, workers, and others as they strive to improve workplace health and safety. While we attempt to thoroughly address specific topics, it is not possible to include discussion of everything necessary to ensure a healthy and safe working environment in a presentation of this nature. Thus, this information must be understood as a tool for addressing workplace hazards, rather than an exhaustive statement of an employer's legal obligations, which are defined by statute, regulations, and standards. Likewise, to the extent that this information references practices or procedures that may enhance health or safety, but which are not required by a statute, regulation, or standard, it cannot, and does not, create additional legal obligations. Finally, over time, regulators may modify rules and interpretations in light of new technology, information, or circumstances; to keep apprised of such developments, or to review information on a wide range of occupational safety and health topics, you can visit regulatory web sites such as the Department of Transportation at [www.dot.gov](http://www.dot.gov) or OSHA's website at [www.osha.gov](http://www.osha.gov).



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# Agenda

- ▶ Basics of Confined Spaces
  - What it is?
  - What is entry?
  - What makes something permit required?
- ▶ Unique hazards (not mentioned in the standard)
- ▶ What do you really know (urban legends)

## WHAT IS CONFINED SPACE

A confined space is an area large enough and so configured that an employee can enter bodily and perform their work

**AND**

A confined space has a limited or restricted means of entry or exit

**AND**

A confined space is not designed for continuous human occupancy.

\*\*\*To be considered a confined space, all three conditions must exist\*\*\*

## Bodily Enter vs. Breaking the Plane of Entry

### Bodily entry

- ▶ Whole body
- ▶ Can perform work



### Breaking the plane

- ▶ Intentional act
- ▶ Any part of the body
- ▶ May have an exemption for inspection if accidental entry cannot occur.



## Two Options for Entering Confined Spaces:

- ▶ **Permit-required confined space entry**
  - For hazardous or potentially hazardous confined space work
- ▶ **Non-permit confined space entry**
  - For non-hazardous confined space work

# Unique Confined Space Hazards

- ▶ The following slides are examples of hazards that may not be obvious.
- ▶ This is not intended to be a comprehensive list.
- ▶ Feel free to add in personal experiences, comments or ask questions about each situation.

## Excavations

- ▶ Utilities
- ▶ Oxygen
- ▶ Cave-in
- ▶ Equipment
- ▶ Asphyxiation
- ▶ Explosion



## Fixed and Entry Ladders

- ▶ Stability
- ▶ Restriction
- ▶ Retrieval
- ▶ Rescue



## Portable Ladder Entries

- ▶ Stability
- ▶ Restriction
- ▶ Retrieval
- ▶ Rescue



# Sewers

- ▶ Storm water vs. sanitary
- ▶ Oxygen
- ▶ Biologicals
- ▶ Isolation
- ▶ Hazardous atmosphere
- ▶ Explosion
- ▶ Engulfment



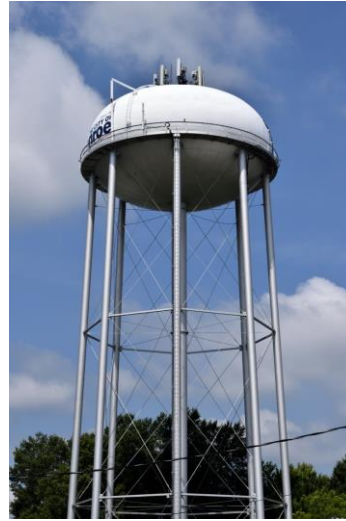
# Secure Facilities

- ▶ Depth of dual cover
- ▶ Weight of cover
- ▶ Emergency response



# Elevated Structures

- ▶ Fall protection
- ▶ Retrieval system
- ▶ Rescue team position
- ▶ Lowering of victim
- ▶ Training



# Horizontal Entry (short)

- ▶ Physical hazards – heat, sharp edges
- ▶ Retrieval
  - Harness?
  - Winch?
  - Anklets/Wristlets



# Horizontal Entry (long)

- ▶ Sewer, Tunnels, Culverts, etc.
  - Retrieval
  - Engulfment
  - Equipment
  - Asphyxiation
  - Explosion



# Retrieval

- ▶ One person?
- ▶ Stability of tripod
- ▶ Disconnection from tripod
- ▶ Multiple retrievals
- ▶ Fall protection





# Welding

- ▶ Oxygen
- ▶ Fire
- ▶ Shielding
- ▶ Asphyxiation
- ▶ Explosion



# Configuration Hazards

- ▶ Suspension trauma
- ▶ Slipping/struck by





# Fall Protection

- Outside of the space



# Urban Legends

- The following slides will be interactive using surveys/polls.
- Let's see how smart we are as a collective

## An underground storage vault is a confined space

- ▶ True
- ▶ False

An underground storage vault is a confined space.

It is not a necessarily a permit required confined space.

## The atmosphere in a confined space can never change in less than 10 seconds

- ▶ True
- ▶ False

Yes, the atmosphere in a confined space can change, but it will usually change at some rate. If the space is monitored continuously with an appropriately selected instrument that has been properly calibrated and set to alarm at a specified contaminant concentration, the alarm will sound when the contaminant level reaches that prescribed level, signaling the entrants that they need to evacuate.

Exceptions to this rule are when you can have a catastrophic release of a gas such as steam or a cryogenic gas.

## A permit is required to enter all confined spaces

- ▶ True
- ▶ False

Only permit required confined spaces.

## A designated rescue team is NOT always required when entering a permit required confined space (construction)

- ▶ True
- ▶ False

The construction standard always requires a rescue team to be available.

## A designated rescue team is NOT always required when entering a permit required confined space (general industry)

- ▶ True
- ▶ False

The general industry standard only requires a rescue team to be available if there is a foreseeable need (e.g. fully tethered for retrieval would not need a rescue team).

## A permit required confined space can be reclassified as non-permit required but a non-permit required space can not be reclassified as permit required.

- ▶ True
- ▶ False

Both can be reclassified. For example a non-permit space may need to be reclassified if hazardous chemicals were brought in (or welding was done, etc.).

## Permits are never permitted to be extended or suspended.

- ▶ True
- ▶ False

The general industry standard does not permit this but the construction standard does.

## The supervisor cannot be the attendant

- ▶ True
- ▶ False

Cross training is permitted and the supervisor can be the attendant or entrant. The entrant cannot be the attendant at the same time 😊.

## All permit required confined spaces must be labeled.

- ▶ True
- ▶ False

**EM-385 has this requirement.  
OSHA allows for alternative  
notification.**

## You are not permitted more than 4 entrants in a PRCS.

- ▶ True
- ▶ False

**There is no limit**

# Fatal Facts

## OSHA FATALFacts No. 12 – 2015 Asphyxiation in Sewer Line Manhole

U.S. Department of Labor Occupational Safety and Health Administration www.osha.gov (800) 321-OSHA (6742)

### INCIDENT SUMMARY

Incident type: ..... Confined space asphyxiation  
Weather conditions: ..... Sunny, 61-67°F  
Type of operation: ..... Sanitary sewer system installation  
Size of work crew: ..... 4  
Worksite inspection conducted: ..... Unknown  
Competent safety monitoring on site: ..... No  
Safety and health program in effect: ..... No  
Training and education for workers: ..... No  
Occupation of deceased worker: ..... Foreman/Operating Engineer  
Age/Sex of deceased worker: ..... 46/M  
Time on job: ..... 15 years  
Time at task: ..... Less than 1 hour  
Employment classification (FT/PT/Temporary): ..... Full time  
Language spoken: ..... English  
Union/Non-Union: ..... Union

### BRIEF DESCRIPTION OF INCIDENT

A construction foreman died from asphyxiation after entering a manhole with an uncontrolled hazardous atmosphere. Four construction workers were working in an inactive sewer system

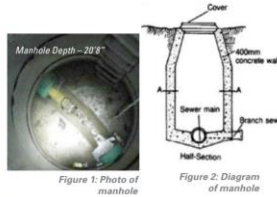


Figure 1: Photo of manhole

Figure 2: Diagram of manhole

### You Have a Voice in the Workplace

The Occupational Safety and Health Act of 1970 affords workers the right to a safe workplace (see OSHA's Worker Rights page, [www.osha.gov/workers](http://www.osha.gov/workers)). Workers also have the right to file a complaint with OSHA if they believe that there are either



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# Fatal Facts

## OSHA FATALFacts No. 16 – 2018 Confined Space Entry on a Farm

U.S. Department of Labor Occupational Safety and Health Administration www.osha.gov (800) 321-OSHA (6742)

Confined spaces are areas large enough for a worker to enter and perform work, have a limited or restricted means of entry or exit; and are not designed for continuous employee occupancy. The purpose of this Fatal Facts is to highlight the importance of identifying confined spaces in agricultural workplaces to prevent another fatality.

The General Duty Clause requires employers to provide employees with workplaces, including confined spaces, which are free from recognized hazards likely to cause death or serious physical harm. Agricultural operations are covered by several Occupational Safety and Health standards including Agriculture (29 CFR 1928) and parts of General Industry (29 CFR 1910), as well as the General Duty Clause of the Occupational Safety and Health Act (section 5(a)(1)). OSHA's confined spaces standard at 29 C.F.R. 1910.146 does not apply to agricultural operations, but serves as a guide for how to prevent these accidents.

### BRIEF DESCRIPTION OF INCIDENT

A farm maintenance worker died after entering an 8,000-gallon polyethylene storage tank that was not marked to indicate a potential uncontrolled hazardous atmosphere. At the time of the incident, the tank contained liquid whey, known to produce carbon dioxide gas as it decomposes. A broken ball valve inside the tank needed



Figure 1: The hole cut into the side of the whey tank was used for the rescue operation.

### Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the



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# Fatal Facts

## OSHA FATALFacts No. 10 – 2015 Engulfment in a Sugar Hopper

U.S. Department of Labor Occupational Safety and Health Administration www.osha.gov (800) 321-OSHA (6742)

### INCIDENT SUMMARY

Incident type: ..... Engulfment of a temporary worker in a sugar hopper  
Weather conditions/Time of day: ..... Indoors/approx. 1:30 p.m.  
Type of operation: ..... Marine cargo warehousing and bagging  
Size of work crew: ..... 10  
Worksite inspection conducted: ..... Yes  
Competent safety monitoring on site: ..... No  
Safety and health program in effect: ..... No  
Training and education for workers: ..... None  
Occupation of deceased worker: ..... Laborer  
Age/Sex of deceased worker: ..... 49/M  
Time on job: ..... Approximately 9 months  
Time at task: ..... 2-3 times/shift  
Employment classification (FT/PT/Temporary): ..... Temporary  
Language spoken: ..... Spanish  
Union/Non-Union: ..... Non-Union

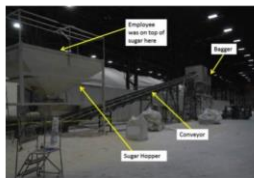


Figure 1: Hopper-conveyor-bagger system

### BRIEF DESCRIPTION OF INCIDENT

A temporary worker was fatally injured after falling through a sugar hopper and becoming engulfed by sugar. The fatality occurred in a marine cargo warehouse operation, where bulk

### You Have a Voice in the Workplace

The Occupational Safety and Health Act of 1970 affords workers the right to a safe workplace (see OSHA's **Worker Rights** page, [www.osha.gov/workers](http://www.osha.gov/workers)). Workers also have the right to file a complaint with OSHA if they believe



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