



# P.I.T. CREW PROJECT

---

**"Partners In Training"**  
for Firefighter Hazmat Awareness,  
Preparedness, and Response

---

**INSTRUCTOR TOOLKIT**



U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

---

# INTRODUCTION

Hazardous materials (hazmat) are in our homes, on our roads, and in our communities. Regardless of community size or demographics, first responders will at some point be involved in hazmat mitigation and response. The nation's volunteer first responders face common risks and threats such as fuel spills, carbon monoxide emergencies, and other industrial responses. Increasingly, they are now also facing new risks and threats, including flammable refrigerants, potential hydrogen fluoride (HF) exposures, lithium-ion batteries; high-hazard flammable trains (HHFT), and others. Without proper training, these incidents pose immediate threats to the health and safety of both firefighters and civilians.

According to the National Fire Protection Association (NFPA), in 2020 there were 17,050 first responder exposures to hazardous conditions such as asbestos, radioactive material, chemicals, and fumes. A 2018 study on acute chemical incidents (Melnikova, Wu, Yang, Orr) showed that firefighters are the most frequently injured group of responders and that most injuries were caused by human error or equipment failure. The report concluded that ALL responders should have at least basic awareness-level hazardous material training to recognize and avoid exposure.

The National Volunteer Fire Council (NVFC) is the leading nonprofit membership association representing the interests of the volunteer fire, EMS, and rescue services. The NVFC serves as the voice of the volunteer in the national arena and provides critical resources, programs, education, and advocacy for first responders across the nation. In 2008, the NVFC formed a Hazmat Response Committee whose design and intent is to improve the response posture and resilience of the nation's volunteer fire service in the area of hazardous materials. Now, the NVFC is training the trainers nationwide to multiply the opportunities for first responders to receive crucial hazmat training.

Through this “Partners in Training” – P.I.T. Crew – project, first responders nationwide will receive training and then be able to use the knowledge and skills gained to teach this important information to others in their departments and communities. The P.I.T. Crew project provides key skills to existing hazmat trainers as well as works to develop new hazmat trainers for the delivery of regional, local, and individual department level trainings. This work will result in the preservation of lives and property.

**For more information on the P.I.T. Crew project, visit [www.nvfc.org/hazmat](http://www.nvfc.org/hazmat).**

---

*Part of the NVFC's Supplemental Public Sector Training Project*

## **Disclaimer**

The NVFC's P.I.T. Crew Project Instructor Toolkit, course instructor guides, and curriculum have been developed to help first responders learn more about hazardous materials preparedness and response. The information provided is not a directive nor does it enforce any codes or standards. Content is not a substitute for local, state, or federal regulations or statutes. Consult your local authority having jurisdiction for information pertaining to applicable laws and code enforcements. It is also not an endorsement for any product. The NVFC and its sponsors, speakers, contractors, partners, and affiliates are not liable for any damages that result from participation in the P.I.T. Crew project.

## **Acknowledgements**

Funding for the NVFC's P.I.T. Crew project came from the Pipeline and Hazardous Materials Safety Administration (PHMSA) Award #693JK32240003HMPS. We are grateful to PHMSA for their support and assistance. We are indebted to the NVFC Hazmat Response Committee for their contributions, leadership, and direction. Additionally, we would like to thank all the organizations and subject matter experts whose ideas, experience, and input have helped shape this resource.

# OVERVIEW

The NVFC P.I.T. Crew Instructor Toolkit provides an overview of the components of the PIT Crew project, expectations for participants, and teaching best practices. Together with the other web-based components, including individual course instructor guides, the Toolkit provides resources in a train-the-trainer format that can be used to teach various aspects of hazmat awareness, preparedness, and response.

There are toolkit components, course elements, and project requirements that enable the NVFC to support instructors teaching P.I.T. Crew courses. The components included in this Instructor Toolkit are applicable to every course included in the P.I.T. Crew project. Toolkit components include:

- Getting Started
- Training Considerations
- Instructor Best Practices

Additionally, everyone who completes a P.I.T. Crew course will receive access to the online course components for the course they completed, which contains the tools needed to teach a class. Course elements can be tailored to address regional data and local information, codes, and standards. Course components include:

- Instructor guide for slides
- Slides
- Supplemental resources
- Quiz
- Quiz key
- Course evaluation
- Certificate template

Students who wish to teach what they learned to others are asked to adhere to project requirements after they have completed the instructor training. Project requirements include:

- Register in the NVFC hazmat trainer database.
- Utilize the training notification form to inform the NVFC of any trainings you plan to host and request supplemental resources.



- Complete post-course debrief for each course taught and submit student evaluations to catalog completed trainings.
- For the two-year period following course completion, report to the NVFC any courses you've taught using NVFC training materials.

The information provided in this Toolkit and the web-based course components are set up in a train-the-trainer format so you will be able to successfully teach the curriculum. It is important you have a clear understanding of all toolkit components, each courses' technical information, and available resources so you feel comfortable instructing. Take time to read through these documents as you prepare to instruct.

# PROGRAM

Through the P.I.T. Crew project, the NVFC developed 15 train-the-trainer courses on hazmat response. Courses are 3 hours or 7 hours in length. Courses were developed by nationally known subject matter experts in the hazmat response field.

## 7-Hour Courses

- Teaching Hazmat Basics
- Tools in Hazmat Training
- Scenario-Based Hazmat Training
- Risk-Based Hazmat Training
- Understanding Regulations and Standards Affecting Hazmat Training
- Teaching Basic Decon

## 3-Hour Courses

- Teaching Hazmat on a Budget
- Teaching Cargo Tank Awareness – MC 306 & DOT 406
- Instructor Training on Placards, Labels, and Markings
- Instructor Training for Flammable Gases
- Instructor Training for Flammable Liquids
- Instructor Training for Ammonia
- Instructor Training for Chlorine
- Instructor Training for Methanol
- Instructor Training for Vinyl Chloride



# TRAINING CONSIDERATIONS

**Audience:** This curriculum was designed for emergency service departments in high-risk areas prone to hazmat emergencies. As a participant, you can take this curriculum back to your respective agency and other agencies in your region and train members in specified subjects relevant to your community. Lessons learned will help responders proactively mitigate potential risks and better prepare for hazmat incidents.

**Room set-up:** The optimal arrangement for the presentation portion of each course is classroom style (with desks or tables facing the trainer) with an open end for the trainer. A laptop, LCD projector, and screen are required for viewing the presentation slides. Hyperlinks and other web resources are included in the curriculum; access to internet will allow you to view these resources first-hand with students but is not mandatory. Most resources are also provided in a thumb drive for easy access offline. Hands-on training set up will vary by course; detailed notes are included in the course components.

**Print and online resources:** Every student that is being trained as a trainer will receive a thumb drive with key hazmat resources, guides, and documents. All students who register in the database after the course will receive access to the online course components, allowing them to teach the course to others.

**Training quiz:** Participants should be left enough time at the end of each course to complete a quiz and return it to the instructor. Each course has its own quiz. Students who achieve 70 percent or higher on each respective quiz will be issued a certificate for the corresponding course.

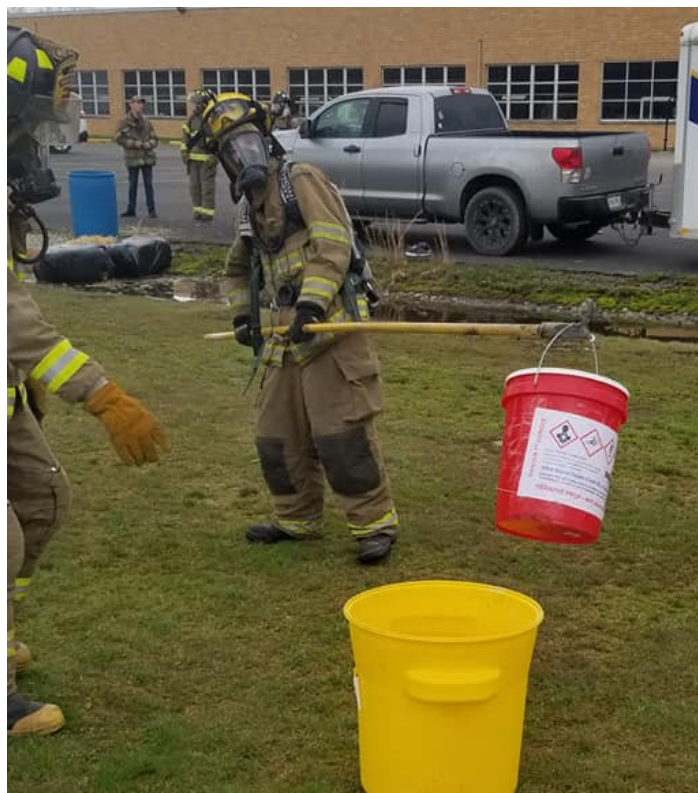
**Training evaluation:** Participants should be left enough time at the end of each course to complete a course evaluation and return it to the instructor. Each course has its own evaluation to gauge content retention for that subject. All evaluations are anonymous. The instructor will be required to upload evaluations in the post-course assessment form or utilize an online form and share results with the NVFC.

# GETTING STARTED

On the day of the presentation, get started by breaking the ice and getting to know your audience. This will allow participants to feel like they can engage in discussion throughout the presentation and ask questions or request clarity about information with which they may be unfamiliar.

Here are some helpful hints to start off the session:

- Introduce yourself and share your background in the fire service and hazardous materials.
- Allow for introduction of participants (what type of department or organization they are with and what they expect to get out of the class).
- Review housekeeping items, including breaks, restrooms, exits, etc.
- Include information on any hands-on training components, including schedule and what to expect.
- Encourage questions and feedback.
- Inform participants there will be a quiz at the end of each module. Reassure them that you will be covering questions and answers throughout the presentation.



# INSTRUCTOR BEST PRACTICES

## Size Up the Scene

- **Know the facility.** Get to know the facility where you're teaching. Arrive early enough to do a test run. Depending on your environment, you may need to make some last-minute adjustments, such as moving tables or using an alternate technology. Test all links, videos, and Wi-Fi.
- **Know your resources.** If you are using technology to teach an electronic resource, be sure you test technology in advance, and know both the resource that you are teaching and the program with which you are teaching, such as PowerPoint, as well as any handouts, hands-on training (HOT) tools, etc.
- **Be prepared.** Instructors are much more effective when they have prepared a plan and are focused on the material they are presenting. Participants appreciate well-organized lectures. Being prepared also helps you anticipate possible questions, difficult concepts that may need additional examples, and points in a presentation or lecture which may require a change of content, delivery, or pause.

## Initial Attack

- **Know your audience.** Train to their needs in addition to covering the curriculum objectives. Try to ascertain what the course can offer them as individuals. What is their interest? What is their motivation? Why are they in the room? How can you adapt to meet their needs?
- **State your goals.** Clearly outline the course goals and objectives at the beginning of your session. This ensures that everyone knows what they're there for. You'd be surprised at some people's misconceptions about what they are there to learn.
- **Outline expectations.** People focus and learn better when they know what to expect. Start the day with an agenda, including when attendees can expect meal and bathroom breaks. Then stick to that schedule. Be sure not to go over your allotted time and allow room for discussion, quiz, and evaluation.

## On Scene

- **Be adaptable.** The Instructor Toolkit and course guides are not a directive. Adapt the discussion to meet the needs of the participants.
- **Don't panic.** They may not know exactly what you're going to teach, so if you miss something small, they won't know unless you panic about it. Be aware that mistakes will happen; it's how you handle them that counts. You can circle back and add in any key overlooked information later in the program.
- **Show respect.** Use titles/ranks and preferred names as appropriate – Chief, Captain, Mr., Mrs., Ms., etc. Address everyone in a respectful manner. Create a supportive environment where students can ask questions and share ideas. Understand that different strategies can sometimes work in different locations or situations.
- **Strike a balance.** Find the balance between the attention being focused on you, the attention being focused on something else (the screen, whiteboard, etc.), and student interaction in a classroom setting. At the same time, be sure you make eye contact with your participants, especially those who seem to be drifting away.
- **Be engaging.** Make your audience want to listen to you by being an effective public speaker. Inflections, intonations, and voice emphasis are key engagers. Make sure you're speaking at an appropriate volume for everyone in the room. Move around.
- **Share your experience.** Build your anecdotal stories into the curriculum as you are teaching. Bring your full professional self to the training.
- **Be truthful.** Do not guess at answers or proclaim to know something that you do not have the knowledge about. Be completely honest in your responses to questions. If someone asks a question you cannot answer, write it down along with their contact information. Send it to the NVFC national office and a staff member will respond to them. You can reach the NVFC at 202-887-5700 or [nvfcoffice@nvfc.org](mailto:nvfcoffice@nvfc.org).



## Fully Involved

- **Engage your audience.** Encourage them to share stories and provide feedback. Involve students in demonstrations and activities. Incorporate group work. Find ways to get them up and moving when appropriate.
- **Connect with their experience.** Adults learn best when they connect what they are learning with their lived experience and what they already know. Give prompts for students to connect the lesson with their own lives. Encourage students to give examples.
- **Check in frequently.** Allow space for questions and comments throughout. Clarify points as needed. Take breaks between content-heavy sections to allow time to process. Never underestimate the power of a quick stretch break!
- **Be accommodating.** Be considerate of participant needs – is there anything you can do to make the content more accessible for attendees who are having trouble seeing or hearing information? Are there any students who are struggling to keep up who could be supported better? How can you make sure that everyone can participate in hands-on training (HOT)?
- **Manage participation.** Manage disruptive participants at an individual level. Attempts to block, monopolize, or dominate the group require facilitator intervention if the group does not deal with them. Invite quieter students to contribute directly – they may be waiting for the invitation. Find ways to engage everyone that don't involve speaking to the full group for your quieter students (such as small group discussions).
- **Understand and respect diversity.** Be open and accepting of differing cultural, philosophical, and organizational perspectives that may impact hazardous materials instruction and response.
- **Promote continued learning and personal development.** Encourage attendees to continue to develop their own personal skill sets and training. Promote other training programs that can help attendees continue on the path of professionally developing as hazmat trainers.



## Debriefing

- **Give them next steps.** Summarize the day with clear next steps. What would you like them to do with this information immediately? How can they learn more?
- **Get feedback.** Encourage students to complete the course evaluation. Teaching is an iterative process – we should always be learning and updating our methods based on attendee feedback. Share feedback with the NVFC for continued program improvement.

