

## **2024 MI Fire Service Instructors Association Conference Presentation Ideas By Rich Mahaney**

### **1. Designing hazmat training programs per OSHA 1910.120 And MIOSHA Part 432.**

What do the rules say you as a trainer are required to do and teach? How long are training programs required to be? Who must be trained? What about annual refresher training requirements? Have you ever paged through these documents to read the actual rules? Are there differences between the OSHA/MIOSHA rules and the NFPA rules/recommendations?  
2 hours long

### **2. What do placards tell you and what do they not tell you about hazardous material hazards?**

For years emergency responders have been told that we need to look for the placards to find out about the hazards of loads being transported. But do placards really give us all of the hazards and dangers? What do placards not tell us? How could we be injured or killed by the lack of information that we might not get from placards?  
2 hours long

### **3. Basic Chemical Information, Characteristics and Hazards?**

What do all of those terms mean when you teach basic hazmat terminology and hazards. How can better help students learn this information, remember and retain this information and use this information? Is there a good order to teach this basic information? Does it really need to be complicated? Do many of these terms and characteristics fit together and a hand-to-hand way? Why do we need to scare students off at the beginning of their hazmat training?  
2 hours long

### **4. Railroad Tank Cars 101.**

You have been asked you to present a pre-incident survey class on tank cars, before a railroad hazmat incident occurs. What do you tell them? What do you know about the types of tank cars found in use on railroads, their features and how to identify them from a distance. What are DOT 105, 117, 111, 112, 111-CPC1232, 120 tank cars? What do they look like? What do you see when the tank cars are passing you at a railroad track crossing?  
2 hours long

### **5. Trucks Transporting Hazmat Cargo's On MI Highways**

Do you look at trucks transporting hazmat loads when you are driving on roads or on the highways? There are lots of trucks designed to transport hazardous materials and sometimes they are involved in accidents, now you are called, and you arrive first on the scene to make a difference. What are the DOT types of trucks, what are the hazards, what are they transporting, does the shape tell you anything, what about the placards?  
2 hours long

## **Building the Bridge Cross Generational Training and Education**

**Training Name: Origin Stories Presenter/Instructor: J. Robertson**

Length: 2 Hrs.

Standards: NFPA 1041 4.3.2, A4.3.3, 5.2.6, 5.4.3, 6.3.3. NFPA 1021 4.2.3, 6.2.7, 7.2.3

Related Topics: Educational Techniques, Leadership, Retention, Recruitment.

Related Classes: New Blood (Infusion of legacy), The Farm-ily (Leadership past the pigsty—Scenario-Based Learning), Origin Stories (Teaching, Applying and Evaluating Affect).

Resources: Projector, computer, speakers, internet connection

Student Needs: Note-taking materials.

Training Type: Cognitive

Audience/level: All levels

Prerequisites: None, Fire Fighter II (suggested)

Assessment: Debrief

### Overview

In today's modern fire service, many fire departments are experiencing notable generational gaps between the veteran and new responders. This gap can often lead to communication issues within the department. Ineffective communications between generations can lead to a whole host of potential challenges: diminished response efficacy, departmental participation decline, human resource issues, responder demoralization, etc.

Building the Bridge, Cross Generational Training and Education aims to help remedy or prevent some of those issues by empowering teams, through training officers, command and administrative officers, and fire service educators, with the right tools for the right job.

Through this class, participants will discover the characteristics of different generations, the unique and/or common motivations that live behind individual perspectives, and ways to build communicative bridges that give value to all responder experience levels.

Participants will learn new ways to stimulate cognitive learning within their teams—across generational divides, explore new technology that satisfies the young, while stimulating the veteran.

Students will learn how to incorporate different levels of psychomotor skills, with appropriate and relevant levels of physical acuity, into their training and continuing education programs. Training officers, instructors and command officers will learn how to elicit desired “Affective” responses to a wide range of training offered in a team setting.

Students will learn how to measure and evaluate the progress of their teams by clearly defining important communicative terms, setting realistic, but global, expectations, and giving value to both progress and areas that need improvement.

All of this to cement the shore, secure our foundations and build a bridge (training program) that can span our ever-changing team dynamics.

### Goal

By the end of this class, Fire Instructors, Fire Officers, and trainers will be able to develop ways to train and educate all generations of firefighters by using effective communication and generational gapping techniques.

## Objectives

By the end of this class, all participants will successfully:

- Define the different generations within their fire departments (departments) or teams through non-bias means.
- Objectively describe the learning realms of the students/responders within their home departments.
- Compare current learning action verbs by analyzing appropriate generational definitions.
- Discover different cognitive teaching strategies through team teaching, technology (not YouTube), and mixed generational group work.
- Validate past and current psychomotor teaching practices (in-part or in-whole) by evaluating best practice operative models relevant to current educational and operational standards.
- Create micro-evolutions to facilitate dialogue by engaging in small group activities.
- Devise ways to measure and assess “affect,” using communication consensus rubrics.
- Build an **accessible** training that encompasses all domains and experience levels by using scenario-based learning.

## Outline

### Introduction

#### Defining the Team

- Define the different generations within our departments.
- Define the learning realm of the student/responder.
- Review the different learning domains.
- Compare Maslow's Hierarchy of Needs with different generational perspectives.

Group Question-cognitive-group-transition (3 minutes)

- What are some words that you grew up with that mean something different now?

#### Cognitive Domain

- Summarize and review Bloom's Taxonomy
- Compare current action verbs with our generational definitions.
- Discuss the term “Teaching to the Test.”
- Discover different cognitive strategies—team teaching, technology (not YouTube), etc.

Group Question-cognitive-group-transition

- Are young folks better at technology—good or bad and why?

#### Psychomotor Domain

- Evaluate the physical acuity of our current teams.
- ***Validate*** past and current practice (in-part or in-whole).
- Devise evolutions that value all experience levels.
- Do we ask *Why* or *How*?

#### Group Question-cognitive-group-transition

- Is doing something “by the book,” bad?

#### “Affect”

- Develop a common language.
- Create micro-evolutions to facilitate dialogue.
- Devise ways to measure and assess “affect.”
- Build an accessible training that encompasses all domains.

#### Summary and Questions

Thank You!

#### **Falling from the Skies**

##### Introduction (10 minutes)

Instructors

Students (where and why?)

Course Introduction/Overview

Sign-in Sheets

##### Background (30 minutes)

###### A. Most Fire Departments Have a GA Airport in their area

Even the 378 ARFF stations on airports may need mutual aid.

15,000+ small airports, air strips, helipads, and etc. count on their local FDs to respond.

Michigan has the ninth-most number of aircrafts (based per state) in the United States (2017;  
FAA Airports Dataset)

78% of all GA aircraft are single-engine, fixed-wing aircraft. No backup power. Fuel in the wings.  
Construction leaves no room for error (leaving the plane under their own power).

Where do planes crash? What is the concern for you?

**B. The Planes and Helicopters – Review most common types of GA (and others) you may encounter locally**

Cessna

Cessna Corporate Model

Piper Cherokee

Piper

Beechcraft

Mooney

Cirrus

Commercial Airlines

Helicopter

Coast Guard/NFAM

Guardian Air (Medical Planes)

**C. Parts and Systems of General Aviation Planes**

Emergency Operating Systems/Plane Diagrams from TVC to view (consider downloading to USB or Google Drive for Participants) for specific planes

Cockpit

Engine

Landing Gear

Fuselage

Wing

Alleron

Fuel Tank

Flaps

Navigation Light

Rudder

Horizontal Stabilizer

Materials used in construction: aluminum, magnesium, beryllium, titanium, steel, and composite materials (i.e.: carbon/graphite or boron/tungsten).

MAYDAY! MAYDAY! MAYDAY! Fallen from the sky...the crash... (30 minutes )

A. Preparing for the crash...

1. Mirror a response to a vehicle fire except...very high velocity crash!
2. Information provided to the ATC or responsible party (souls, fuel, flight plan)
3. You know when you get those headers/"smoke visible in the area" calls, and you can't pinpoint the location. May have the same issues trying to locate a crash.
4. Determine the location and type of terrain you may be facing; the closest may not be the fastest.
5. Access for the personnel and equipment –"Time is money"; lives are on the line. Resources that can clear a road for you?
6. Personnel Protection – Fuels, hazmat, biohazards, cargo, heat, fire, etc.
7. Maintaining crash security (caution tape, sprinkler flags, security); Detail crash site
8. Photo Chain-of Custody (Kobe Bryant)
9. Curious citizens and Media!
10. Potential for separate I/Cs depending on debris field/personnel working
11. Hot Zone (banner tape each zone; check in and out)
12. Warm Zone
13. Cold Zone

B. "Cactus 1549...we can't do it...We're gonna be in the Hudson"

Potential Location of Crashes

Field (discussion and examples)

Wooded Terrain (discussion and examples)

Water (discussions and examples)

Roadway (discussion and examples)

In structures (discussion and examples)

At the airport (small discussion) or immediately off-site

Types of Hazards/Concerns

Accessing the scene it same as a haz-mat or vehicle fire

Approach instructions for other units – don't create a blockade – its okay to get eyes on it, with a few resources, and then have the rest of the resources work in. If you aren't familiar with the terrain look for a spot for turnarounds, ICP, staging, etc.

Consider the training your crew has received, the effectiveness of your equipment, speed and efficiency of your crew and equipment and how it can be put to use. Effective rescue plans and fire suppression techniques can save lives.

Smoke, gas, fire, toxic, cargo, oxygen (NFAM, USCG, and/or medical planes & helicopters) and explosion hazards.

### C. Fire Suppression/Rescue

May be still powered

GA are small spaces

Your tools will work... extrication tools, saws, hoses, work with what you have.

The Use of Foam

Throttle, Bottle, and Batteries

The cut zones - (dos and don'ts)

A piercing Nozzle through the airplane's skills (dos and don'ts)

Working the door (upswing, side swing, and the chutes)

Searching the plane – systematic, lavatories, the cockpit, and hidden areas.

#### Scenarios 40 minutes

- A. Crash Video # 1 (to be determined as we get closer to the presentation to make sure the information is up to date)
- B. ATC Traffic; video with traffic/plane response and flight patch combined (Instructor 1 class video) of Miracle in the Hudson.

NTSB Crash Animation (YouTube) 4:34

- C. Florida Crash on the Highway – Tampa (May 2024)
- D. Simushare Class Scenario

More information on this project as we approach the conference. Divide into IC, fire suppression group, and a rescue group. Work through scenario

#### Conclusion 10 minutes

- A. Restate Topic: Consider the training your crew has received, the effectiveness of your equipment, speed and efficiency of your crew and equipment and how it can be put to use. Effective rescue plans and fire suppression techniques can save lives.
- B. Confirm Sign-in Sheets were completed

#### **“Fire On The Water – Planning for the Challenges of Marine Vessel Fires” Presenter: Lisa Burton**

Based on NFPA 1405 Guide for Land-Based Fire Departments That Respond to Marine Vessel Fires  
License Level: Do not Fill Date: Time: Credits: Format: 4 hour lecture Objectives: Fire On the Water – Planning for Challenges of Marine Vessel Fires discusses 5 essential areas of information to help prepare land-based fire department to create a safer, more effective firefighting response during a marine fire incident or response. This presentation is geared towards firefighters wishing to enhance response capabilities to vessel fires through review of the following 5 key areas of information: I. Establish an understanding of the maritime industry II. Establish a framework for individual organizations to plan their specific training needs III. Identify special hazards associated with vessels and vessel fires and enhance understanding of strategies and tactics through review of maritime incidents and facilitated discussions on lessons learned IV. Identify key organizations and stakeholders in the maritime industry V. Potential Problems with Marine Firefighting Outline for Lecture Presentation: 0:00-0:05 I. Introduction 0:05-0:25 II. Marine Environment 0:25-0:45 III. Vessel Familiarization 0:45-1:00 V. Vessel Stability BREAK 1:10-1:35 VI. Organizational Resources 1:35-2:00 VII. Vessel Plans BREAK 2:10-2:30 VIII. Training 2:30-2:40 VIII. Communications 2:40-3:00 X Strategies and Tactics BREAK 3:10-3:20 XI Role of the Coast Guard 3:20-3:40 XII Potential Problems with Marine Firefighting 3:40-3:50 XIII Post Incident Activities 3:50-4:00 XIII Summary and Questions Student Evaluation Method: No formal evaluation of participants will occur.



Evaluation of Presentation: Standard Program Evaluation form will be filled out by participants.  
Rationale for Presentation: This maritime focused presentation is specifically designed to improve the overall understanding of fire service personnel who desire to strengthen their knowledge of the challenges of marine vessel fires. "Fire On The Water – Planning for the Challenges of Marine Vessel Fires" will provide attendees with current information which will address the unique challenges of the marine environment as well as offer immediately actionable steps for preparation in their home department

C. Obtain EMS CEU Review for EMS people

### **High School Academy Instructional Techniques and Measurement & Evaluation Processes**

**Presenter: Jason Morin**

**Credit Category: Do Not Fill in**

**Specific Topic: Instructional Techniques and Measurement & Evaluation**

**License Level: Do not Fill**

**Date: 12/04/2021**

**Time: 8A-12P**

**Credits: 4 (2 Instructional Techniques, 2 Measurement & Evaluation)**

**Format: 4 lecture**

**Objectives:** The participant of the CE session will:

- I. Describe techniques for an instructor to maximize their capabilities through influence of positive instructional techniques with today's high school students. **Maslow's Hierarchy of Needs**
- II. Explain leadership characteristics of an instructor who can motivate and inspire today's high school learners.
- III. Describe how the instructor is a strong component of any successful program by blueprinting/aligning the high school learning experience with that of the local county programs.
- IV. Explain didactic instructional best practices.
- V. Describe techniques for assessing practical skills in a scaffolded and stackable way.
- VI. Discuss how '**crawl, walk, run**', '**see, do, teach**', and '**slow is smooth and smooth is fast**' can help high school students develop their practical skills.

#### **Outline for Lecture Presentation:**

0:00-0:10 I. Introduction

0:10-0:25 II. Describe techniques for an building trust to help positively influence high school cadets.

- 0:25-0:35 III. Explain leadership characteristics of an instructor and how to provide real-world positive experiences for high school cadets.
- 0:35-0:45 IV. Describe how the instructor is a strong component of any successful program.
- 0:45-1:00 V. Explain how to put into place a positive, credible and motivational practical instructional practices.
- 1:00-1:35 VI. Discuss how to motivate and inspire high school cadets through building and developing their practical skills.
- 1:35 – 2:00 VIII. Summary and Questions

**Student Evaluation Method:**

No formal evaluation of participants will occur.

**Evaluation of Presentation:**

Standard Program Evaluation form will be filled out by participants.

**Rationale for Presentation:** Understand the importance of an influential positive Instructor in any program.

**Technically Speaking: Preparing you and your department for a technical rescue response Presented By: John Lapenta; Rescue Squad Officer/Rescue Specialist (Western Wayne Urban Search and Rescue)**

Imagine lying in bed at 3am and receiving a call for the report that a semi hauling gravel crashed into an apartment building. Or rising flood waters cause families to be stranded in their homes. Are you AND your department ready to handle the logistics for a situation like that? This course is a lecture-based “intro” to technical rescue/ working with technical rescue teams, intended for any Fire Department personnel looking to better understand the definition of a “Technical Rescue” as well as mitigation of such events. This will be achieved through discussions on case studies, available resources (Local/State and Federal), Current Department SOP’s/SOG’s, and most importantly through student participation. We will discuss the various disciplines associated with “Tech Rescue” (Rope Rescue; Trench Rescue, Confined Space Rescue, and Structural Collapse), including the “commonly forgotten” Vehicle Extrication and Machine Rescue. Although this course will not make you a “Certified Rescue Guru”, It will certainly better prepare you for “The All Hazards” calls that may occur during your fire service career.