AMERICAN HEAT

AND

U.S. Fire Administration

National Fire Academy

present

Calling the Mayday: Hands on Training for Firefighters

AHVP-463-1301

This National Fire Academy training module was made possible in part by sponsorships from the following partners in Firefighter Safety:

- Volunteer and Combination Officer's Section of the International Association of Fire Chiefs
- WHP Training Towers
- Pierce Manufacturing

This program is also endorsed by the National Fallen Firefighter's Foundation.

FETN
FIRE & EMERGENCY TRAINING NETWORK

a division of

TRINITY WORKPLACE LEARNING

AHVP-463-1301

Notes:

This page has been intentionally left blank.

Notes:

I. SYNOPSIS

The target audience for this program is anyone who is involved in emergency activities. This activity is designed to increase the awareness of both career and volunteer firefighters and related emergency service personnel who may be required to call a mayday or respond to a mayday incident. This activity is not designed to supplant local operation procedures and does not purport to instruct firefighters in all aspects of mayday response. This training video does not replace the need for hands-on training and for practice in calling for or responding to mayday incidents.

II. OBJECTIVES

Upon completion of this activity, the participant should be able to:

- ❖ define a mayday situation.
- ❖ identify why firefighters fail to or delay calling a mayday.
- ❖ identify mayday decision-making parameters and calling procedure.
- ❖ identify mayday training and drill needs for the fire service.

III. INTRODUCTION

Why is getting a firefighter to call a mayday such a problem? First, no national standards exist in relation to calling a mayday. Second, we do not teach or practice calling a mayday, and third, we do not have specific parameters, or rules, for when a firefighter must call a mayday. The final problem is how we make decisions on the fire ground. Those decisions do not include a system that outlines when they should call a mayday. Thus, firefighters can use the Recognition Primed Decision-making (RPD) to give firefighters those parameters.

IV. LESSON 1: DEFINE A MAYDAY SITUATION

No national standards exist that clarify when firefighters should call a mayday. The way firefighters react to any situation is based on their former training and experience. One system that can help firefighters make that decision is called Recognition Primed Decision-making (RPD), which is when the firefighter recognizes a situation and makes a decision based on prior situations and experiences. RPD explains how firefighters make decisions on the fire ground.

Notes:

If they do not have "mayday calling" in their RPD experience, calling the Mayday will not come naturally when needed. Only through training and drilling can firefighters get the mayday calling RPD experience and response.

What Is a Mayday?

Mayday comes from the French term "m'aider," an imperative that means "Help me." Mayday was adopted as a distress call by the International Radio Telegraph Convention in 1927. In international radio language, "Mayday, mayday, mayday," means "Life is in danger. Immediate help needed!"

What Are the Standards?

Firefighter 1 and 2 standards do no use the word "Mayday," and the job performance requirements (JPRs) do not prepare a firefighter to make the decision to declare a mayday or to successfully execute the mayday calling skill. Other standards recommend that the fire service not use the phrase "Mayday, mayday, mayday."

According to the National Search and Rescue Committee, a federal agency working group composed of the U.S. Coast Guard, the Federal Aviation Administration, the Federal Communications Commission, and others; fire service can use "Mayday, mayday, mayday" as the radio call signal that indicates a firefighter's life is in danger and immediate help is needed.

In general, firefighters are not taught to call mayday in rookie school or as part of company drills. They practice tying knots more than they practice calling mayday. The firefighters' mayday calling system, which includes a radio, a firefighter, and a dispatcher, is not tested and drilled to ensure the system works. If a task has a low frequency of use but high consequences for failure, the task must be taught to the mastery level of performance and drilled to continually maintain competency.

At the end of this activity is a link to a good example of a mayday calling standard. Mayday SOPs that read like the one in the example do not help the firefighter make the decision to call a mayday. First, what one firefighter believes about something may be different than what the next firefighter believes. Second, what are the standards for determining when a firefighter's life is in danger? Remember the letters IDLH (Immediately Dangerous to Life and Health). When a firefighter puts on a self-contained breathing apparatus (which has a limited supply of air) and enters a burning building, his or her life is in danger. This situation is the world he or she works in every day. Thus, only under specific situations SHOULD a mayday be called.

Chief Allen Brunacini of the Phoenix fire department said, "the hardest thing to do is to put a firefighter in reverse." This action is difficult because fire-

Notes:

fighters are only taught to attack. Tactical DIS-engagement with the fire can be a correct decision. Firefighters must give themselves permission to call a mayday before getting on apparatus. Calling a mayday must not be considered giving up or failing. The fire department must develop rules for when a firefighter must call a mayday. Finally, past experiences in getting out of tight spots may put firefighters in danger. Because they delay calling the mayday by trying to first fix the problem, fire conditions can get worse, and air supply can run out. If the mayday calling response is missing from the Recognition Primed Decision-Making experience, firefighters will not call mayday immediately when needed.

V. LESSON 2: IDENTIFY WHY FIREFIGHTERS FAIL TO OR DELAY CALLING A MAYDAY

Ejection Doctrine

Now that the mayday problem has been outlined, where can the solution be found? The idea of comparing a firefighter calling mayday to a fighter pilot ejecting is a good place to start. Fighter pilots and firefighters are about equal in terms of macho. Both are taught to be aggressive, and both want to win. Both play for high stakes, which includes their own lives. The military takes pilot ejection very seriously. They do not want the pilot to go down with the plane. The plane can be replaced; the pilot cannot.

The Ejection Doctrine is made up of parameters that include:

- when to eject.
- training to make sure aircraft flight crews have the cognitive, affective, and psychomotor competencies to eject.
- drills to maintain a pilot's ejection knowledge, skills, and ability throughout his or her career.

Even with this level of commitment to the ejection doctrine, pilots and crews sometimes delay or fail to eject.

Through extensive research, the military has identified 10 reasons why pilots fail to or delay ejecting when they must. These same conditions may be applicable to firefighters who do not call a mayday when they must:

- Temporal distortion (time seems to speed up or slow down)
- Reluctance to give up control
- Channeled attention
- Loss of situational awareness
- Fear of the unknown
- Fear of retribution
- Lack of knowledge

Notes:

- ❖ Attempting to fix the problem
- ❖ Pride
- ❖ Denial

These conditions show how easily they may apply to firefighters who fail to or delay to call a mayday.

The *Military Ejection Doctrine* is made up of standards, training, and drills—all intended to get pilots and their crew to survive. For example, under the ejection standards, specific ejection parameters or rules dictate under what condition a pilot or crew must eject. The parameters are written in if/then logic statements. For example:

- ❖ "If the plane is out of control at 10,000 feet, then eject."
- ❖ "If the nose gear is not down, then eject."
- ❖ "If you lose hydraulic pressure, then eject."

A dozen parameters can exist that are different for each type of aircraft. These parameters are rules that must be followed. Pilots are never disciplined for ejecting, hence no-fault ejection. If they do not eject when confronted with an ejection parameter but are able to survive, they are disciplined for not ejecting. These standards help reduce the problems associated with:

- ❖ pride.
- ❖ denial.
- ❖ fear of retribution.
- ❖ reluctance to give up control.

As firefighters, we can use this military model to develop a firefighter mayday standard model.

During rookie school, flight crews must memorize ejection parameters. They will confront these conditions during simulator training, which requires them to make the ejection decision as often as 60 percent of the time. Once pilots have the ability to fly, they and their crew must re-certify every 6 months on ejection in the simulators. Bimonthly, they re-certify on flying, during which times, they will face ejection parameters. Finally, before every takeoff, the crew discusses ejection in their preflight preparation. All ejection training and drilling must be mastered at the 100 percent competency level to help reduce the risk of the pilot's delaying or failing to eject.

For the fire service to develop a mayday doctrine, it needs to write mayday parameters, or the rules and conditions under which all firefighters must call mayday. Training systems must be created to put the mayday calling response in every firefighter's RPD experience, and the training needs to be

Notes:

at the mastery level of performance in the cognitive, affective, and psychomotor domains. The firefighters' mayday knowledge, skills, and ability must be drilled throughout their active time in the fire service.

VI. LESSON 3: IDENTIFY MAYDAY DECISION-MAKING PARAMETERS

Over the past 4 years, hundreds of firefighters across the country have helped develop the mayday doctrine that will be presented in this activity. The doctrine includes sample mayday parameters for a single-family dwelling, universal mayday parameters, mayday training props, and mayday drills. This work has been published for everyone to critique, use, and build upon. Until national standards are created or until firefighters' own fire department develops its mayday program, every firefighter who rides on apparatus and enters IDLH conditions must be able to use the system they have available to help them now. Because we know that every firefighter on the fire ground may not have a portable radio, firefighters need to address this issue with their fire department and community. Portable radios are life safety equipment.

The first attempt to develop a mayday decision parameter was for a single-family dwelling. This occupancy was chosen because this dwelling is very dangerous for firefighters, is describable, and most firefighters have some of them in their response areas. A team of trainers developed nine parameters, or conditions under which they agreed a firefighter must call a mayday at a SFD fire with IDLH conditions. The trainers then asked (using a "yes" or "no" format) about 340 firefighters from across the country if they agreed with the parameters. No conditions existed under which everyone agreed a mayday must be called. Only 88 percent of the polled firefighters indicated they would call a mayday if they fell through a floor. However, 94 of the firefighters said they would call a mayday if they fell through a roof. If a firefighter falls through a floor or roof, they must call a mayday immediately.

Only 69 percent of the firefighters agreed that if their low air alarm activated and they were not at an exit (door or window) in 30 seconds, they would call a mayday. Remember, single-family dwellings are relatively small structures, and most rooms have an outside window. Fire conditions can get worse very quickly. The window of survivability can be small, and other firefighters will have to risk their lives to come get another firefighter in need of help.

From the original work, universal mayday parameters were developed so firefighters can be trained with them. Four mayday parameters were created:

- ❖ Fall—no matter what it is through
- ❖ Collapse—having something collapse on a firefighter

Notes:

- ❖ Lost or Trapped—if a firefighter gets lost or trapped
- ❖ Stuck—if a firefighter is stuck

The first step a firefighter should take when confronted with a mayday parameter is to call the mayday. Only then can they try to fix the situation themselves, if possible. The mayday can always be canceled if it is not needed. But if firefighters wait to call, the window of survivability can close quickly. Mayday must be called immediately because the window of survivability is small. Carbon monoxide quickly reduces your thinking and motor skills, which can cause you to do things that make the situation worse—like standing up, taking your face mask off, or going toward the fire without knowing it. All this time the fire can get bigger.

To simulate these mayday conditions, four props were created. These props will be discussed in the following section.

VII. LESSON 4: IDENTIFY MAYDAY TRAINING AND DRILL NEEDS FOR THE FIRE SERVICE

One effective type of simulation training that can prepare a firefighter to decide when to call a mayday is called the mayday simulator. The mayday simulator makes use of props to simulate common danger scenarios.

The props were designed to interact with the firefighters by suddenly creating a mayday parameter, which would stimulate the mayday decision in firefighters and give them the opportunity to demonstrate their mayday knowledge, skills, and ability in all three of the following domains:

- ❖ Cognitive—related to having the knowledge in the firefighter's brain to call the mayday
- ❖ Affective—related to having the belief that it is under the firefighter's obligation, duty, and right to call the mayday
- ❖ Psychomotor—related to the firefighter's hands, fingers, and voice being able to perform the tasks needed to use the radio to call the mayday

The Mayday Simulator in Action

Here are some examples of how the mayday simulator works:

- ❖ Falling through a Floor or Roof
  - The first prop is the ball pit, which simulated falling through a floor or roof. The idea was generated by watching children play in a ball pit. By interacting with conditions created by the prop, the firefighter adds to his or her Recognition Primed Decision-making experience and response.

Notes:

- The blindfolded firefighters crawl up a ramp. At the end of the ramp is a teeter board.
- The board suddenly dumps them into the ball pit. The props cause the firefighter to be in a mayday parameter.
- This prop safely simulates falling and triggers the mayday decision and response. Remember, with this simulation, the firefighter is in a burning building that is IDLH. Thus, he is in a mayday parameter and must call the mayday.

❖ Collapse
- The next prop simulates a collapse. In this case, the collapse of a ceiling is simulated. Chain link fencing was used to simulate the collapsing ceiling.
- The fencing was dropped over the firefighter. This firefighter did nothing wrong, but the building put him in the mayday parameter.
- Two instructors stood on the fence. The firefighter had no way of getting free.
- This prop creates the situation intended to trigger a mayday decision and the mayday calling response. After successfully calling the mayday, the firefighter can attempt to cut himself or herself loose.

❖ Trapped or Lost
- Becoming trapped or lost was simulated by firefighters following a hose line into a small bathroom and chocking the door shut.
- They were told to follow the line into the kitchen, but the line actually led them to the bathroom.
- Because they ended up in the bathroom and not the kitchen, they were in the wrong place and therefore were lost.
- Because the door was chocked shut, the firefighters could not go back the way they came, and they had no other way out of the room. They were trapped.

❖ Becoming Stuck
- The last prop simulated becoming stuck by using a piece of wire rope with a slip loop.
- The loop was dropped over firefighters' SCBA bottles. When it tightened up, the firefighters' forward movement was stopped, and they were stuck.
- For this drill, class pass alarm activation was not part of the process because the noise would interfere with the mayday calling over the radio.

Notes:

One Department's Story

The training and props were tested on 1,000 firefighters with the Anne Arundel Fire Department by Battalion Chief Dave Berry. The class room portion of the training was based on the various mayday articles. In addition, video tapes of close calls were presented.

Chief Berry developed a pocket card for the firefighters that listed the mayday parameters on one side. In the pocket card, he identified six situations in which a firefighter should call a mayday:

- Fall
- Collapse
- Activated (Low air alarm)
- Caught
- Lost
- Trapped

The back of the card listed the information the firefighter needed to be ready to give after calling the mayday. For example:

- Push EIB (emergency identifier button). With their new radio system, pushing the EIB notifies communications of the emergency. It also captures the radio channel for the caller for 20 seconds and lets communications and everyone on the channel hear the mayday call. The EIB then activates a hands-free feature so the firefighter does not need to key the talk button on the radio.
- Give LUNAR (Location, Unit number, Name, Assignment [what you were doing], Resources needed [what you need]). For the best results, firefighters should use the normal everyday radio talking procedure when calling the mayday since under the stress of a mayday situation, difficulty remembering a different or special radio talking procedure may arise.

Calling mayday is complicated. It takes a lot of practice. The mayday is not completed until it is confirmed by communications and command and the RIC is deployed. Until the firefighter gets this confirmation, he or she cannot assume his or her mayday call for help was heard. K S A (Knowledge, Skills, Abilities) Cognitive, Affective, Pyschomotor.

Firefighters have to practice calling mayday by using the equipment available and the systems in their organization. For example:

- Can they push the EIB with gloves on?
- When the EIB is activated, who is notified?
- How do firefighters carry the radio?

Notes:

- ❖ Will the radio still be in position after falling?
- ❖ Can firefighters get to the radio when they are covered with debris?
- ❖ How often should firefighters practice calling mayday?

Just remember how often firefighters practice tying knots. Firefighters need to drill on mayday throughout their time in the fire service. If a skill not used very often is critical to get right the first time, plenty of drilling and practice needs to be undertaken.

When practicing the mayday, firefighters should use the radio they would use in a fire, not a practice radio. They should also be required to carry the radio how they would actually carry it in a fire (radio pocket, lapel microphone in a certain position, etc.). This will ensure that what they recall from practice translates correctly to a real-life situation.

VIII. CONCLUSION

Calling a mayday involves a system of radios and people. The entire system needs to be trained, drilled, and tested to make sure the equipment and personnel's knowledge, skills, and ability all work together with 100 percent accuracy when a firefighter calls mayday. This process needs to be undertaken because a firefighter's life depends on calling the mayday.

IX. BIBLIOGRAPHY

Anne Arundel Fire Department video

Calling the Mayday (webcast). [Online]. Available: www.Firehouse.com

Seattle Fire Department video

X. ACKNOWLEDGEMENTS

The following people deserve the credit for this project. Through their efforts, this information has been created. Special thanks to:

Dr. Burton A. Clark, EFO, CFO
Principal Mayday Doctrine Researcher

Steve Auch, Indianapolis FD
Raul Angulo, Seattle FD
Donny Boyd, MD Fire Rescue Institute
Dave Berry, Anne Arundel County FD
Phil Clinard, Laurel FD

Notes:

NFA Dec. 2004—Training Program Mgt
Gerry Bassett, Training Specialist
Carolyn Smith-Clark, Instructor
Robert Cambas, Instructor

Brent Batla	Tom Connors	Craig Elmer
Robert H. Field	Sanford K. Hughes	Kevin Jump
Skip Jump	Dennis Leon	Dave Manthei
Jonathon Mattingly	Mike Miles	Mathew Miller
Morey Morris	C.W. Munson	Tony Piontek
Robert Schipper	Herman Simpson	Dale Skinner
Joe Stapp	Matt Wiedmeyer	Dean Wrobbel

NFA Jan. 2005—Fire Service Communications
J. Paul Burkhart II, Phd., Instructor
Sarah N. King, Instructor

John Barnes	Robert Brewer	Keith Crawford
Anthony Crouch	Dennis Culbertson	Brian Gulant
Robert Hale	David Hollinger	Eric Johnson
Forrest Kuiper	Jon Misewicz	Fred Ness
Jerome Palmer	Jeffrey Peterson	Robert Pickering
Harold Plitt	William Quinlan	George Smith
James Wenzel	Scotte Wilde	Nathaniel Wilson

Motorola
Cynthia Leighton
Director, Government Relations Office and Fire Market

Mark Krizik
Senior Staff Engineer

Anne Arundel County Fire Department

TrainingDivision.com

Cortez Lawrence
Division Director
USFA

XI. TEST

1. The term Mayday originates from a _____ word meaning, “Help me.”
   A. English
   B. French
   C. Italian
   D. Spanish

2. The Authority having jurisdiction over use of the term Mayday is:
   A. Federal Emergency Management
   B. National Fire Protection Association (NFPA)
   C. National Search and Rescue Committee (NSRC)
   D. United States Coast Guard (USCG)

3. Mayday is recognized internationally as a signal meaning:
   A. Immediate assistance required
   B. Life is in danger
   C. I’m Lost
   D. A & B combined

4. The term Mayday is acceptable for the fire service to use.
   A. True
   B. False

5. Firefighters must give themselves permission to declare a Mayday:
   A. Enroute
   B. After attempting self survival skills
   C. Before getting on apparatus
   D. When their partner requests it

6. Pride can be a factor in a firefighter’s delay or failure to call a Mayday.
   A. True
   B. False

7. Carbon Monoxide affects:
   A. Judgment
   B. Motor Skills
   C. Sensory perception
   D. All the above

8. Which of the following conditions is not one of the parameters for a Firefighter declaring a Mayday?
   A. Lost
   B. Stuck
   C. Zero Visibility
   D. Trapped

9. Of the following which is a parameter for calling a MAYDAY?
   A. Collapse
   B. Searching
   C. Venting
   D. Extinguishing

10. What are MAYDAY parameters?
   A. Distress signals for boats
   B. Rules for calling a Mayday
   C. Distress signals for a aircraft
   D. Rules for establishing RIC

11. Who is the Firefighter calling a Mayday compared to?
   A. A firefighter breaching a wall
   B. A pilot ejecting from his or her airplane
   C. A hockey player defending the goal
   D. An officer making a decision to evacuate

12. When must a firefighter call a Mayday?
   A. When evacuating the building
   B. When a Mayday parameter is met
   C. When their officer authorizes them to
   D. When the RIC is set up

13. An example of a Mayday calling process is: Activate EIB, Announce MAYDAY, MAYDAY, MAYDAY, and Give LUNAR.
   A. True
   B. False

14. A memory queue for the information to be transmitted after calling Mayday Mayday Mayday is:
   A. MOON SHOT
   B. SOLAR
   C. LUNAR
   D. MARS

15. What is the first step you should take when you are in a situation that meets one of the Mayday Parameters?
    A. Turn on your PASS device
    B. Call the Mayday
    C. Proceed to an exit
    D. Attempt self rescue

16. When does a firefighter call a Mayday?
    A. When entering a structure
    B. At the station
    C. In smoke situation
    D. None of the above

17. Firefighters need to train and drill on Mayday.
    A. In rookie school
    B. Throughout their career
    C. When they believe so
    D. A & B

18. Mayday Training Props are intended to:
    A. Embarrass firefighters
    B. Stimulate a mayday decision
    C. Exercise the RIC
    D. Exercise communications

19. Mayday training involves what learning domain?
    A. Cognitive
    B. Affective
    C. Pychomotor
    D. All the above

20. Mayday Training and Drilling must include:
    A. Firefighting personnel
    B. Communications personnel
    C. Radio Systems
    D. All the above

This page has been intentionally left blank.

XII. ANSWER KEY

1. The term Mayday originates from a _____ word meaning, “Help me.”
   A. English
   B. French
   C. Italian
   D. Spanish

2. The Authority having jurisdiction over use of the term Mayday is:
   A. Federal Emergency Management
   B. National Fire Protection Association (NFPA)
   C. National Search and Rescue Committee (NSRC)
   D. United States Coast Guard (USCG)

3. Mayday is recognized internationally as a signal meaning:
   A. Immediate assistance required
   B. Life is in danger
   C. I’m Lost
   D. A & B combined

4. The term Mayday is acceptable for the fire service to use.
   A. True
   B. False

5. Firefighters must give themselves permission to declare a Mayday:
   A. Enroute
   B. After attempting self survival skills
   C. Before getting on apparatus
   D. When their partner requests it

6. Pride can be a factor in a firefighter’s delay or failure to call a Mayday.
   A. True
   B. False

7. Carbon Monoxide affects:
   A. Judgment
   B. Motor Skills
   C. Sensory perception
   D. All the above

8. Which of the following conditions is not one of the parameters for a Firefighter declaring a Mayday?
   A. Lost
   B. Stuck
   C. Zero Visibility
   D. Trapped

9. Of the following which is a parameter for calling a MAYDAY?
   A. Collapse
   B. Searching
   C. Venting
   D. Extinguishing

10. What are MAYDAY parameters?
   A. Distress signals for boats
   B. Rules for calling a Mayday
   C. Distress signals for a aircraft
   D. Rules for establishing RIC

11. Who is the Firefighter calling a Mayday compared to?
   A. A firefighter breaching a wall
   B. A pilot ejecting from his or her airplane
   C. A hockey player defending the goal
   D. An officer making a decision to evacuate

12. When must a firefighter call a Mayday?
   A. When evacuating the building
   B. When a Mayday parameter is met
   C. When their officer authorizes them to
   D. When the RIC is set up

13. An example of a Mayday calling process is: Activate EIB, Announce MAYDAY, MAYDAY, MAYDAY, and Give LUNAR.
   A. True
   B. False

14. A memory queue for the information to be transmitted after calling Mayday Mayday Mayday is:
   A. MOON SHOT
   B. SOLAR
   C. LUNAR
   D. MARS

15. What is the first step you should take when you are in a situation that meets one of the Mayday Parameters?
    A. Turn on your PASS device
    B. Call the Mayday
    C. Proceed to an exit
    D. Attempt self rescue

16. When does a firefighter call a Mayday?
    A. When entering a structure
    B. At the station
    C. In smoke situation
    D. None of the above

17. Firefighters need to train and drill on Mayday.
    A. In rookie school
    B. Throughout their career
    C. When they believe so
    D. A & B

18. Mayday Training Props are intended to:
    A. Embarrass firefighters
    B. Stimulate a mayday decision
    C. Exercise the RIC
    D. Exercise communications

19. Mayday training involves what learning domain?
    A. Cognitive
    B. Affective
    C. Pychomotor
    D. All the above

20. Mayday Training and Drilling must include:
    A. Firefighting personnel
    B. Communications personnel
    C. Radio Systems
    D. All the above

This page has been intentionally left blank.