



Fire Ground Survival

Chapter 2: Being Ready for the Mayday



Objectives

Students will be able to:

- Identify three key requirements that make a fire department “Mayday Ready”.
- Explain how to use Personal Safety Equipment to be “Mayday Ready”.
- Describe the communication system necessary during a Mayday.
- Identify recommended radio equipment and use.
- Describe the personnel accountability system.

Mayday Readiness Requirements



- Requires a Team
- Requires Safety Equipment
- Requires Training



Integrated Team Effort

A Mayday involves all personnel assigned to an incident, and all must know their roles as well as the roles of the others on the fire ground:

- Fire fighters
- Company officer
- Chief officer
- Dispatcher
- Incident commander
- Emergency medical service personnel





Preparation for the Mayday

- First experience should NOT be when the actual emergency happens – must train for Mayday.
- Not all fires are the same – fire fighters must be ready for situations that cannot be anticipated.
- Fire fighters must be properly outfitted with appropriate safety equipment – the equipment selected for donning can determine survivability.



Training for the Mayday

- The United States Navy doesn't think training once a year is enough
- Mayday skills are perishable.
- Train to be an EXPERT.



Training for the Mayday

Open Video File: "Navy Captain Interview"





Are You Ready for the Mayday?

Savannah Fire & Emergency Services

Put It to the Test

Prepare firefighters for their own worst day...



Are You Ready for the Mayday?

“If we know what a firefighter’s reaction might be in a specific situation (due to proper training and standardization), we can react appropriately and with a higher degree of success (predictable actions = manageable rescue).”



Are You Ready for the Mayday?

- 160 fire fighter participants.
- Simulated shopping center fire with a Mayday.
- Participants told...



Are You Ready for the Mayday?

“You and your crew are stretching a 1 ¾” handline into a structure when you encounter cold smoke and zero visibility. While maintaining voice contact with your crew, you begin searching for the fire. Suddenly, you no longer have voice contact with your crew and become lost and disoriented. This is not a training scenario; your life depends on your actions.”



Are You Ready for the Mayday?

FINDINGS:

Test Actions	% Performing Action
Attempted radio contact	52%
Activated PASS	38%
Search for exit	82%
Noise with tool	8%
Signal with flashlight	3%
Follow hoseline	9%
E-trigger activation	4%



Are You Ready for the Mayday?

FINDINGS:

Test Actions	% Performing Action
Initiated breathing techniques	1%
Lost PPE (glove, boot, etc.)	1%
Lost radio	<1%
Covered PASS to listen	<1%
Passed over hose line	<3%
Removed glove(s)	15%
Exited building to safety	<4%



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Training for the Mayday

Mayday drills to include:

- All fire ground personnel
 - Fire fighters
 - Apparatus operators
 - Dispatchers
 - Company Officers
 - Chief Officers

- Exercising all facets of a Mayday during a drill will help personnel create mental images.
- Mental images help in the recall of information during an actual incident.





Training for the Mayday

How much training is necessary for skill retention?

NFA, Executive Fire Officer Program
Research paper:

“An Assessment of Skill Retention in Personnel Trained in Rapid Intervention Crew and Saving Our Own Techniques”

*Deputy Chief Robert Metzger
Toledo Fire Department*



Training for the Mayday

How much training is necessary for skill retention?

Findings:

Mayday skills deteriorate if not well maintained with an on-going training program. Reviewing Mayday skills once per year is inadequate.

*Deputy Chief Robert Metzger
Toledo Fire Department*



Alphonse X. Dellert Fire Fighter Austin Fire Department

Open Video File: "FF Ax Dellert Incident"





Personal Protective Equipment

NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting:

- Helmet
- Protective hood
- Protective coat and trousers
- Gloves
- Boots





Personal Safety Equipment

NFPA 1500, Standard on Health and Safety Program:

- Self Contained Breathing Apparatus (SCBA)
 - Fire fighters are Mayday ready when able to don, doff, and manipulate all parts of SCBA in zero visibility with gloved hands.





Personal Safety Equipment

NFPA 1500, Standard on Health and Safety Program:

- Personal Alert Safety System (PASS)
 - Fire fighters able to activate and deactivate PASS device using gloved hands.
 - Necessary so communications can be heard on radio.

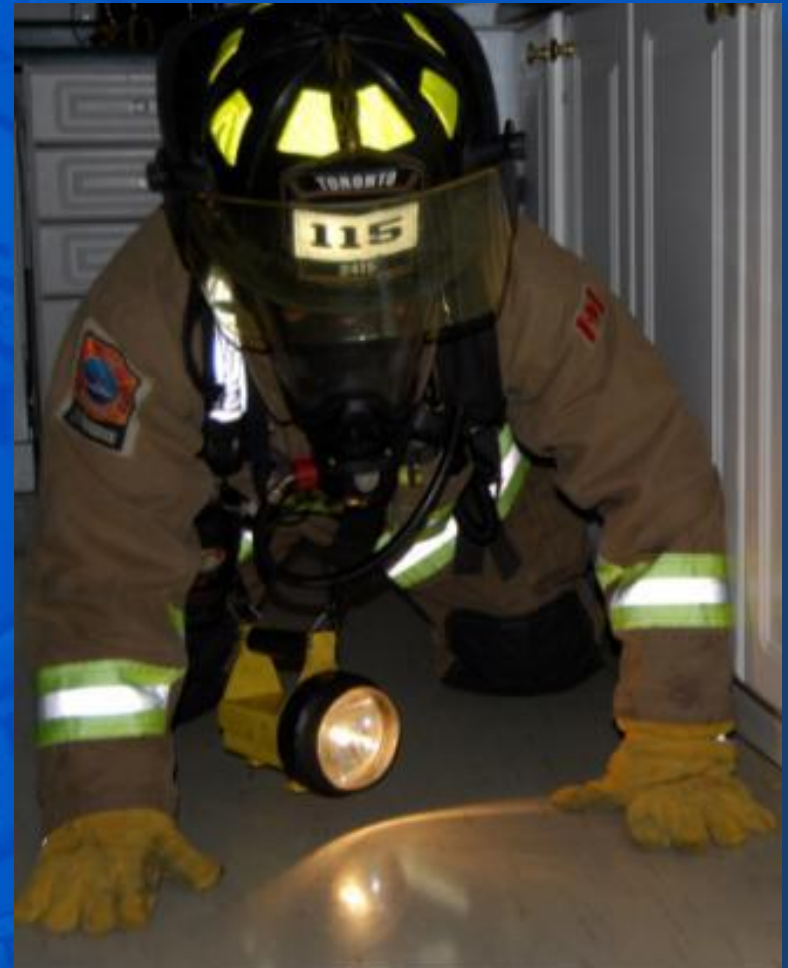




Personal Safety Equipment

Flashlight:

- Not listed within an NFPA standard.
- Due to smoke shutting out light, flashlight should be turned on even during the day.
- Hands free = most versatile.





Additional Recommended Equipment

Tools:

- Rescue Ropes/Bail Out System
 - For above ground emergency egress.
 - Rope systems selected for use should meet NFPA 1983, *Standard on Life Safety Rope and Equipment for Emergency Services.*





Additional Recommended Equipment

Tools:

- Thermal Imaging Camera (TIC)
 - Useful for locating victims in smoke filled spaces.
 - DANGER - Insulative properties of select building materials may prevent TIC from reading temperatures inside walls, floors and ceilings.





Additional Recommended Equipment

Tools:

- Hand Tools
 - Short handled axes carried around the waist can prove useful in breaching a wall.
 - Other hand tools can be used to create noise to get the attention of rescuers.





Additional Recommended Equipment

Tools:

- Hose Lines:
 - Deployed to protect fire fighters and to extinguish the fire.
 - In place on lower level when operating above the fire.
 - Should be viewed as a cooling device for fire fighters.
 - Is a lifeline - it connects the fire fighter to safe area outside.





Additional Recommended Equipment

Tools:

- Search Lines
 - Search lines keep fire fighters connected to a point of egress.
 - The search line must be anchored to a fixed point that leads directly to a safe egress.





Additional Recommended Equipment

Tools:

- Wire Cutters
 - Used to cut wire creating an entanglement hazard.
 - Large enough to cut multiple wires.
 - Stored in turnout for easy access – side of dominant hand. Attach tether to make it easier to grab.





Additional Recommended Equipment

Tools:

- Ladders
 - Ladder upper floor egress points where fire fighters working.
 - Ladder angle determined by type of ladder used and upper floor egress technique.





Communication

3 - Way Communication



Possible setups: Mayday call is sent via -

- Dispatch frequency to both the IC and Dispatch.
- Tactical frequency to IC, who notifies Dispatch.

Incident Commander orders resources and assigns companies to rescue.



Communication

Role of Dispatch:

- Able to receive portable radio communications from all locations of service area.
- Radio communications recorded.
- Equipped with emergency traffic tone.
- Back-up staffing plan.





Communication

Role of dispatcher:

- Voice of calm.
- Listen – Monitor tactical channel for Mayday.
- Authorized to communicate with IC.
- **DO NOT REQUIRE MAYDAY FF TO SWITCH CHANNELS – too difficult.**





Communication

Role of dispatch continued:

- Can notify all incident personnel of Mayday.
- Automated Mayday response:
 - Additional alarm - engines, trucks, rescues.
 - More Chiefs needed to augment Command.





Communication

Role of dispatcher continued :

- Automated Mayday response continued:
 - Other resources – heavy rescue, hazmat, mobile air, EMS and safety officer.
 - Additional tactical channel.
 - More Chiefs needed to augment Command.



IAFF and IAFC Personal Radio Position



It is the position of IAFF and IAFC that every fire fighter operating on the fire ground be equipped with a portable radio/two-way communications device (hereafter referred to as “portable radio”), preferably with an attached lapel microphone. Having a portable radio allows each firefighter to immediately report, or be notified of, hazardous conditions or emergencies such as a missing or injured firefighter or potential or impending structural collapse.



Communication

Radio Communications Training

- 2003 NIOSH FF Radio Report
 - Topic: Inadequate Training.

“...how to use the radio while wearing SCBA, and how radio communications are affected by a Mayday event.” (Pg. 17-18)

**Radio training must begin with probationary fire fighters
and extend through field Chiefs**

Communication



Radio Discipline:

- Face to face when possible.
- Limit communications so frequency remains open so Emergency Traffic messages and Maydays can be communicated.





Communication

Communication Order Model

- Radio transmission:

“E27 from E3, you’re assigned RIC”

1st

2nd

Unit making the request

Unit attempted to be reached

“E3 from E27, copy...assigned RIC”

E27 acknowledges assignment



Communication

Portable Radio System Design

- Accessibility to Fire Fighter when using gloved hands:
 - Ability to change channels.
 - Ability to access push to talk (PTT).
 - Ability to access Emergency Alert/Identification Button (EAB/EIB).
 - Have lapel microphone with all buttons and functions.
 - First and last channels monitored by Dispatch.



Communication

Portable Radio System Design:

Portable Radio Features



Lapel Microphone Features





Communication

Location of Portable Radio

- 2008 USFA Radio Report:

“When a portable radio is worn at waist level, such as with a belt clip or holster, the user’s body absorbs some of the signal transmitted or received by the radio. In addition, the antenna is at a much lower level than if the user were holding the radio to his or her face for transmitting.” (Pg.11)



U.S. Fire Administration

Voice Radio Communications Guide for the Fire Service

October 2008



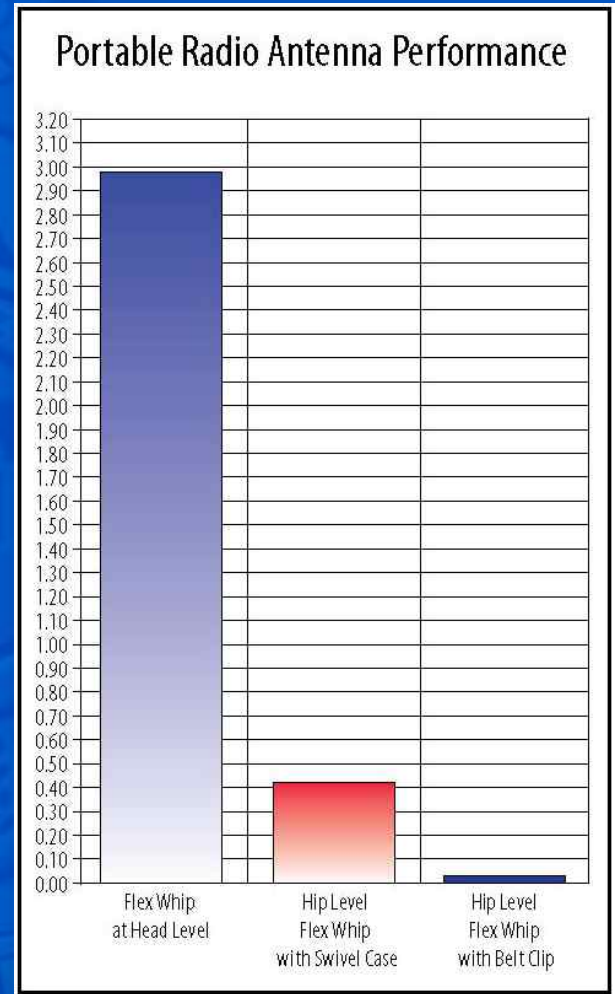
FEMA



Communication

Location of Radio:

- Radio worn at hip in holster significantly reduces radio strength due to interference with body.



Communication



Location of Radio:

- No Lapel Microphone
 - PTT and mic accessible with gloved hands.
 - Radio positioned near upper chest where radio can be spoken into and heard.



Communication



Location of Radio:

- Radio should be secured in a pocket in the vertical/ upright position.
- Radio should be positioned so antenna extends near shoulder for minimize interference with body.





Communication

Common Term: MAYDAY

- Universally accepted by:
 - National Incident Management System (NIMS)
 - NFPA 1561
 - FIRESCOPE ICS-910
 - National Search and Rescue Committee (NRSC)



Communication



Common Term: MAYDAY

- Why MAYDAY?
 - Most fire fighters (75% of 14,000 polled) state they would use “Mayday, Mayday, Mayday”.
 - Easy to hear over radio.
 - Easily remembered by a fire fighter in distress.
 - Easy to pronounce, regardless of language or accent.



Accountability System

- 2008 NFPA 1561 requires an accountability system established on every incident.
- When a fire fighter is in distress, IC must identify name, assignment and location.
- System necessary so PAR can be completed.





Summary

- Knowing how to use your equipment can determine survivability.
- Mayday involves all personnel assigned to an incident, and all must know their roles.

