

# Surviving The Fireground



# 2011

# Safety Week

# June 19 through June 25



The International Association of Fire Chiefs (IAFC) and several partnering fire service organizations are calling for all fire departments in the nation to observe “Safety, Health and Survival Week”. This year’s theme is “Surviving the Fireground.” The Department continues to make a long term investment into the safety of its members. The ultimate goal is to institute a strong culture of health and safety within the Fire and EMS service.

The recommended focus of this year’s Safety Week will incorporate four key areas where standard operating procedures, policies and initiatives — along with the training and enforcement that support them — can limit fire and EMS personnel’s risk of injury or death:

- Preventing The MAYDAY
- Being Ready For The MAYDAY
- Self-Survival
- Firefighter Expectations Of Command

Material available to be referenced and utilized consists of:

- The “Surviving the Fireground” booklet
- A Near-Miss Calendar issued in conjunction with the National Fire Fighter Near-Miss, International Association of Fire Chiefs
- Daily Safety Messages specifically related to this weeks topics
- The Safety Week Video “ Surviving The Fireground”

It is the intent that all members participate in discussions centered on the main issues of the week:

- Preventing The MAYDAY
- Being Ready For The MAYDAY
- Self-Survival
- Firefighter Expectations Of Command

# Preventing



# The Mayday





## CHAPTER 1 PREVENTING THE MAYDAY



With this year's safety week's emphasis of Surviving the Fire Ground, this first section is dedicated to provide some safety tips for you to drill and expand on to *Prevent the Mayday*.

1. **MAYDAY Transmissions**
2. **Three Rules Of Survival**
3. **Situational Awareness**
4. **Planning & Preparedness**
  - **Roll Call**
  - **Training**
  - **Familiarization of Response Area**
5. **Size Up**
  - **C.O.A.L. W.A.S. W.E.A.L.T.H.**
  - **CIDS Information**
6. **Air Management**
7. **Defensive Operations**
8. **Fitness for Survival**





## CHAPTER 1 PREVENTING THE MAYDAY



### **MAYDAY Transmissions**

Situations that are life threatening and require a MAYDAY transmission are:

- Imminent Collapse Feared
- Structural Collapse has Occurred
- Member Unconscious or has Life Threatening Injury
- Member Missing
- Member Trapped or Lost



## CHAPTER 1 PREVENTING THE MAYDAY



### **THREE RULES OF SURVIVAL**

- Never put yourself in a position where you are depending on someone else to come and get you.
- Always know where your escape route is.
- Always know where your second escape route is.

***You might violate one of these rules and survive, but if you break all three, your chance for survival will plummet!***

***John Norman, FDNY  
Chief of Special Operations (RET.)***





## CHAPTER 1 PREVENTING THE MAYDAY



### **SITUATIONAL AWARENESS**

How closely does your *perception* of an operation match *reality*? What is your Situational Awareness (SA)? Certainly you have heard the term before, but do you really understand it?

Situational Awareness (SA) involves being aware of what is happening around you to understand how information, events, and **your own actions** will impact your goals and objectives, both now and in the near future.

Our actions, or in some instances our inaction, can directly impact our safety and the safety of others. We decide whether or not to take action after weighing our options against tactical knowledge, previous experiences, and information we gather. The time it takes to make a decision will vary depending on the urgency of the situation. As professionals, we are sometimes expected to make quick, accurate decisions. This requires a clear understanding of what is happening around us. Are you seeing the BIG PICTURE or just a fragment? We all begin with an initial perception of any given situation. Take this article for instance. When you began reading, you formed your initial perception of the article content. Perhaps it seemed interesting and informative, or perhaps it just doesn't make sense. As we gather information your perception evolves.

**WARNING:** Be vigilant. A missed cue may result in serious injury or death. Indications that you are losing SA must not be ignored. The SA cycle exists in an extremely fluid environment - rapidly changing. Once a high level of SA is attained, it will immediately begin to deteriorate. Constant attention and updating is paramount in terms of safety and effectiveness.

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#### **Good Situational Awareness is:**

- ***The correct perception of the situation as it actually exists***
  - ***When you wage perception against reality, reality always wins***



# CHAPTER 1 PREVENTING THE MAYDAY



## SITUATIONAL AWARENESS

### **OBSTRUCTIONS TO SITUATIONAL AWARENESS:**

- Fixation (Tunnel Vision)
- Overconfidence
- Complacency
- Information Overload
- Stress Levels
- Lack of Experience
- Fatigue/illness
- Overreliance on Technology
- Conflicting Reports
- Attitude

Can you list some other distractions & obstructions to situational awareness?

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### **ENHANCEMENTS TO SITUATIONAL AWARENESS:**

- Incident Command System / Chain of Command
- Clear & Concise Communications
- Adherence to Procedures
- Teamwork – 2 in / 2 out
- Rotation of Units Operating
- Optimal Level of Fitness
- Current C.I.D.S.
- Gut Feeling
- Attitude
- Pre Incident Guides

Can you list some other techniques & tips to enhance situational awareness?

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*Lack of situational awareness is consistently the highest contributing factor in Near-Miss Reports.*





## CHAPTER 1 PREVENTING THE MAYDAY



### **PLANNING & PREPAREDNESS**

#### **ROLL CALL**

- ***Riding Lists***
  - Members position and experience level
  - Reflect spare SCBAs and handie-talkies, this may be crucial to identify a member calling for help
  - Update as changes are made
    - The electronic riding list (EBF-4) is critical for the Electronic Fireground Accountability System (EFAS) to properly identify a member in distress
  
- ***Exchange Information***
  - Weather & street conditions
  - Status of tools & equipment
  - Surrounding units possibly out of service
  - Forcible entry team on the same page
  - Engine chauffeur & control firefighter on the same page
  - ***Everyone*** on the same page so ***Everyone*** will go home at the end of the tour
  
- ***Assignments***
  - Which member is assigned to monitor FAST Radio
  - Which FAST member is assigned to monitor air supply of an unconscious firefighter
  - Remind members of their designations as Safety Team Members
  
- ***Check Tools and Equipment***
  - Flashlight (fully charged)
  - Handie-Talkie, SCBA's (including personal facepiece)
  - CO Meter
  - Partner Saws, Rabbit Tool, etc.



# CHAPTER 1 PREVENTING THE MAYDAY



## TRAINING

- Prepares for an actual occurrence
- Members need to be well versed in emergency procedures
- Instills safer operating performances
- Enables team synergy
- Exercise your mind & motor skills to keep yourself sharp
- Stay up-to-date on trends, hazards, & technology
- Maintain your fitness to be an asset on the fireground



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## CHAPTER 1 PREVENTING THE MAYDAY



### **FAMILIARIZATION OF RESPONSE AREA**

- Opportunities to identify potential problems:
  - Lightweight construction
  - Major alterations
  - Fuel loads
  - Overhead weight hazards
  - Congested areas
  - Roads closed due to construction
- A centralized location (FDNY Intranet) ensures easy access to important information by all members, for example:
  - Pre Incident Guidelines
  - Electronic Critical Information Dispatch System (eCIDS)
  - Department of Buildings Resources
- Pre-planning is the process of gathering and recording information that could be critical for emergency personnel on an incident involving a specific occupancy.
- Pre-plans allow members to understand and identify hazards at a location **before** they respond to an emergency.
- Pre-plans need to be completed objectively, consistently and accurately.
- Pre-plans can assist in hazard assessment and hazard identification improving safety and wellness for firefighters.
- A thorough pre-plan process can greatly reduce the risk of injury and/or death to firefighters.
- An annual review of plans should be conducted for validity and reliability.





## CHAPTER 1 PREVENTING THE MAYDAY



# SIZE UP

**(C.O.A.L. W.A.S. W.E.A.L.T.H.)**

### **CONSTRUCTION**

- Fireproof (CL1), Fireproof Protected (CL2), Non Fireproof (CL3), Wood (CL4), Metal (CL5), Heavy Timber (CL6)
- Lightweight vs. legacy
- Alterations effecting structural stability & anticipated room layout

### **OCCUPANCY**

- Determines life hazard & the fire load
- For example: A commercial occupancy with an increased fire load on the first floor with apartments above

### **AREA**

- Large open areas requiring search ropes, 2½" hoselines, etc

### **LIFE**

- The most serious factor at any fire
- Firefighters always bring a life hazard to the fireground
- What is the location of the life hazard in relation to the fire?

### **WATER SUPPLY**

- Hydrant vs. booster water
- Length of the stretch

### **APPARATUS & EQUIPMENT**

- Arrival order
- Units out of service

### **STREET CONDITIONS**

- Access for the ladder company to the fire building and engine company to a hydrant

### **WEATHER**

- Snow & freezing conditions
- Wind velocity & direction



## CHAPTER 1 PREVENTING THE MAYDAY



### ***EXPOSURES***

- May be adjoining buildings or areas within the fire building itself (auto exposure) e.g., floor to floor via windows, and across shafts or adjoining apartments

### ***AUXILIARY APPLIANCES***

- Standpipe/sprinkler systems
  - Location of outlets, O S & Y, and/or check valves

### ***LOCATION & EXTENT OF FIRE***

- A fire in the cellar, shaft, or apartment on the top floor will determine access and areas to be searched

### ***TIME***

- Governs the life hazard. Night fires mean poor visibility; buildings locked effecting delay in access. A tenement fire is more serious at night than in daytime

### ***HEIGHT***

- Building height will govern the use of the Aerial and/or Tower Ladder and portable ladders

## CIDS

*Critical Information Dispatch System (CIDS) can provide size-up en route; providing that it is up to date & the address is correct.*

```
UCT911- 1ST ALARM - COMMERCIAL
E297 E273 E274 L130 BC52

BOX 4522 - 112-7 14 AVE

112 ST 114 ST
C=OTHER COMMRCCL
ANI-ALI-0009110000 COS:N-A LAT:
CIDS:
FACTORY 2 STY 150 X 200 CL2 HAZ
SPKR THRUOUT-GYPSUM ROOF
UNPROTECTED OPEN WEB STEEL JOIS
500 SOLAR PANELS ON ROOF
INCIDENT# 180
FDID: 11140-4522-03-5-0180
05/20/11 112548
```

The diagram illustrates the mapping of CIDS data fields to specific information categories. Four red ovals highlight the fields 'FACTORY', '2 STY', '150 X 200', and 'CL2'. Yellow arrows point from these ovals to labels in red-bordered boxes: 'OCCUPANCY' (from 'FACTORY'), 'HEIGHT' (from '2 STY'), 'AREA' (from '150 X 200'), and 'CONSTRUCTION' (from 'CL2').

Field	Category
FACTORY	OCCUPANCY
2 STY	HEIGHT
150 X 200	AREA
CL2	CONSTRUCTION



# **AIR MANAGEMENT**

Know how much air you have in your SCBA, and manage that air, so that you are prepared to leave the hazardous environment when your low air alarm activates. The vibralert is an End of Service Time Indicator (EOSTI) that activates at approximately 25% of the cylinders air capacity, alerting the member to exit the contaminated area.

You should dedicate  $\frac{3}{4}$  of your air cylinder to the citizens of New York, but the remaining  $\frac{1}{4}$  should to be solely for yourself & your family.

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## ***Work & Exit Time of the SCBA Depends on Certain Factors:***

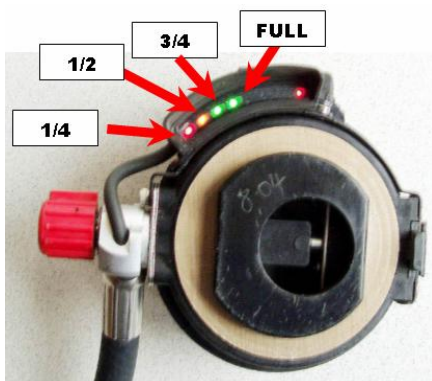
- Physical activity of the user
- Physical conditioning of the user
- Excitement, fear or other emotional factors
- Degree of training and familiarity the user has with this equipment
- Whether or not the cylinder was full at the start of the work period
- Loose facepiece. All members should be wearing their properly fitted personal facepiece
- The condition of the SCBA

***It is important to understand your individual consumption rate and limitations of your SCBA.***

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## ***VERIFY AMOUNT OF AIR IN YOUR SCBA, PRIOR & DURING USE***

- ***TWO QUICK METHODS TO VERIFY:***



**HEADS-UP DISPLAY OPERATION (HUD)**



**REMOTE CONSOLE (GAUGE)**

# **DEFENSIVE OPERATIONS**

**“In situations where the risk to ... members is excessive, activities shall be limited to defensive operations (NFPA 1500)”**

## ***Some Defensive Tactics:***

- Protecting the interior stairs, while the 2<sup>nd</sup> hose line attacks the fire
- A truck company withdrawing to the hall and keeping control of the fire apartment door
- Complete withdrawal of members and operating large caliber streams
- Roof trenching operations

Can you name some other examples?

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***“We will risk a lot to save a lot,  
We will risk little to save little,  
We will risk nothing to save nothing.”***

# **FITNESS FOR SURVIVAL**

*The fireground places extreme stress on our bodies. Staying fit and healthy is the primary defense to combat this hostile environment. Physical fitness can increase your cardiac efficiency and enhance your capabilities for better air management.*

- ***In 2010, 60% of fire fighter deaths were caused by heart attacks or strokes (USFA).***

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## ***THE FITNESS UNIT RECOMMENDS AT A MINIMUM:***

- Aerobic training at least five times a week for 30 – 45 minutes
  - Running
  - Biking
  - Swimming
- Strength training at least three times a week



***In addition the International Association of Fire Fighters (IAFF) have provided some online resources:***

IAFF Online Behavioral Wellness Manual

<http://www.iaff.org/ET/JobAid/EAP/EAP.htm>

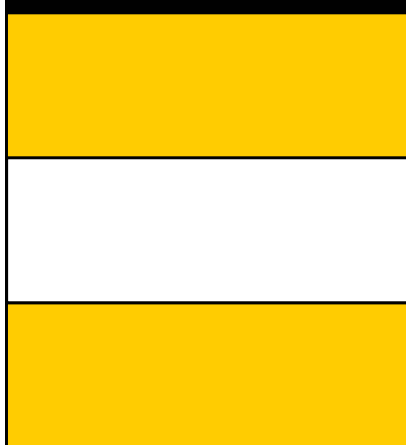


IAFF Firefighter's guide to health & nutrition

<http://www.iaff.org/hs/FTS/ftsdefault.asp>

A screenshot of the IAFF Firefighters website's 'Fit to Survive' section. The header includes the IAFF logo and navigation links: 'Health &amp; Safety Home', 'Contact Us', 'Alerts', and 'FTS'. The main content area is titled 'Fit to SURVIVE The fire fighter's guide to health and nutrition'. It features four main articles on the left: 'MENU PLANNER' (Plan ahead for each day, week and month! Each day's meals add up to 2,200 calories, and include recipes with complete nutrition information. This month's menus), 'FTS ON THE RUN' (Fast food menus include many high carb, high calorie foods with dangerous levels of sodium and fat. It is important to make the best possible choices when eating on the run. Find out more), 'STOP, DROP, AND CONTROL' (High blood pressure is one of the contributing factors in line of duty cardiovascular deaths among fire fighters. This site is a resource for fire fighters and their families to better understand the risks associated with high blood pressure and to help them manage their condition. Find out more), and 'SMOKING CESSATION' (Smoking is the number-one cause of premature death and the leading cause of fires. Some health benefits of quitting are immediate. The IAFF). On the right, there is a 'SUCCESS STORIES and Wellness Articles' section with a link to 'Countryside Fire Fighters Strive to Lose Weight' and a 'Read more...' link. Below that is a 'FTS FIRE DRILL' section with a poll question: 'What vegetable do you eat most often?' with radio button options for Potatoes, Tomatoes, Broccoli, and 'I eat an equal amount of all'. A 'VOTE' button is at the bottom.

# Being Ready



# For The Mayday





## CHAPTER 2 BEING READY FOR THE MAYDAY



### **BEING READY FOR THE MAYDAY**

1. **Personal Safety Equipment**
  - A. **Bunker Gear**
  - B. **Helmet**
  - C. **SCBA**
  - D. **Donning Facepiece**
2. **Communications**
3. **Be Proactive**
4. **Safety Team Designations**
5. **Firefighter Assist & Search Team**
  - **Operations When Assigned To FAST Unit Duties**
6. **Managing Firefighters in Distress or Missing**
7. **Accountability Systems**
  - A. **Electronic Riding List**
  - B. **Electronic Command Board**
  - C. **Electronic Firefighter Accountability System**
  - D. **Pak-Tracker**
  - E. **Radio Frequency Identification**
8. **Emergency Roll Call Procedures**
9. **Emergency Fireground Accountability System**
10. **Identifying a Verbal Mayday**







## CHAPTER 2 BEING READY FOR THE MAYDAY

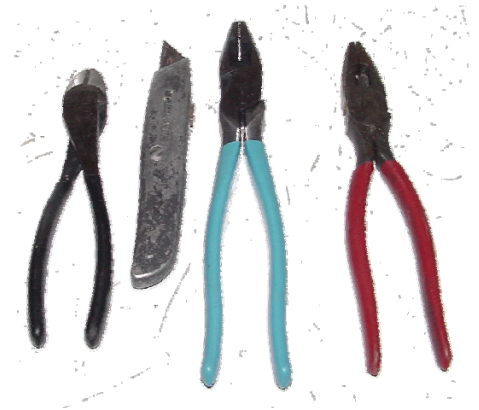


# PERSONAL SAFETY EQUIPMENT



Staten Island Box 75-934, 125 Eaton Place, May 20<sup>th</sup> 2005. When the Ladder 80 chauffeur went in the window conditions were not severe. There was a medium smoke and heat condition. He was inside about three minutes at most. During that time, conditions changed dramatically in this 2½-story, 20 by 40-foot frame, detached private dwelling and the entire attic flashed over. He was forced to dive back onto the aerial through the window, which already had fire venting from it. His helmet became dislodged when he hit the aerial. The firefighter had his facepiece, hood and gloves on. His bunker coat was discolored by heat over a large area of his back. He sustained minor first-degree burns. The photo reflects how successful FDNY PPE is when worn properly.

- Ensure the serviceability of your own equipment at the beginning of each tour.
  - SCBA, bunker gear, PSS, helmet, handie-talkie, etc. Gear should be in a position where it can be safely donned.
  - Have a cutting tool, in case of entanglement.
  - Best kept in left pocket of bunker coat as not to interfere with your PSS on the right.



## A. Bunker Gear



## PASS IT ON PROGRAM

*Bureau of Operations*

*Issue 6/2010*

*Date 9/2010*



**Properly Donned PPE  
Can Save Your Life**

### ***PARTICULARS OF THE INCIDENT:***

At approximately 0430 hours, units responded to a fire in a CL-3, 20' x 50' 3 story Brownstone type MD. The building had 4 stories in the rear. The fire originated in the 2<sup>nd</sup> floor hallway approximately 10' inside the front door. Fire quickly extended up the open unenclosed stairway to the 3<sup>rd</sup> and 4<sup>th</sup> floors. The OV was notified that a civilian was last seen at a 3<sup>rd</sup> floor front window on the exposure 4 side. The Chauffeur positioned the aerial ladder to the window. The OV, with properly donned PPE, climbed the aerial and removed a trapped civilian from this window and assisted him down the aerial ladder. The civilian informed the OV that another person was still in the apartment. The OV donned his facepiece and hood and entered the fire area to search for the second person. Another firefighter, now positioned on tip of the aerial ladder, completely cleared out the window to allow for a rapid egress.

The OV made his way through the fire apartment, locating the trapped civilian at a rear window. With conditions rapidly deteriorating, waiting for a portable ladder or life saving rope was not an option. The OV assisted the civilian back to the front room that was now involved in fire and venting out the front windows. The OV and civilian crouched down and rapidly made their way to the window where the aerial ladder was positioned. The OV shielded the civilian from the fire as much as possible while removing him onto the aerial. Firefighters on the aerial assisted the civilian as the OV dove head-first out of the fire apartment onto the aerial. Both the civilian's clothes and the OV's bunker gear were on fire. A hoseline in the street was directed onto the civilian and OV to extinguish fire and cool them.

The OV sustained 2<sup>nd</sup> degree burns to his back and 1<sup>st</sup> degree burns to the side of his face. His bunker gear was examined by the Safety Battalion and was found to be subjected to heat in excess of 1000°F. Without question, the OV would have received life threatening burn injuries had he not properly worn all of his PPE.

### ***LESSONS LEARNED OR REINFORCED:***

1. To effectively furnish the desired level of protection, all elements of the PPE must be worn properly.
2. Bunker Gear should be kept clean. Dirty Bunker Gear can absorb more heat, causing the degree of protection to become reduced, and may actually cause the material to ignite. All members must follow the cleaning schedule set up by the Department to have BOTH sets of bunker gear cleaned annually.
3. Bunker Gear when properly used and maintained will afford a limited period of protection to exit an area which has become or is about to become untenable. In a flashover situation, a Bunker Gear equipped member must be within 5 to 10 feet of an exit in order to survive.
4. Prior to entering a window for a search, it is imperative that the window and the cross pieces be completely removed to provide unimpeded egress.
5. Aerial ladders, when properly positioned, allow for unimpeded access and egress at a window. The ladder tip should be less than 6" over the window sill.
6. The aerial ladder should not be moved without approval of the member conducting the search.
7. Members must weigh the Risk vs. Reward factor for all operations. This particular operation had a high risk but also possessed a high reward. A life was saved.



# **PASS IT ON PROGRAM**

*Bureau of Operations*

*Issue 21*

*Date: 1998*

## **PROPER PPE PREVENTS SERIOUS INJURY**



### ***PARTICULARS OF THE INCIDENT:***

At approximately 0430 hours, units responded to a report of fire in a 6-story NFP 40' x 75' dwelling. On arrival they observed a front fire escape and six windows indicating two apartments. A slight orange glow could be seen through a thermo-pane window located on second floor corner, exposure two-side. There were people on the fire escape coming down from the upper floors. The first Ladder Company Forcible Entry Team quickly ascended the stairs and entered the fire apartment through the open door. The OVM and chauffeur raised a portable ladder adjacent to the corner window where the glow of the fire could be seen.

The FE Team located the fire in an 8' x 10' front bedroom and the Can position was directed into this room to search and use the can on the fire. Shortly after entering the fire area, the room flashed over and enveloped the firefighter. The can man was wearing all his protective equipment, including his hood. He sustained very minor burns to his wrist. His bunker gear was examined by Safety Battalion, confiscated, and was found to be subjected to heat in excess of 1000 Degrees F. The mask cylinder was also severely damaged.

The Engine Company had a line at the door to the fire apartment but did not have water at the time of flashover; water was supplied immediately after and the fire was quickly extinguished. The OVM positioned on the portable ladder vented the thermo-pane window in the fire room prior to the hose line being charged. In this case the uncharged line could be seen from the portable ladder.

### ***LESSONS LEARNED OR REINFORCED:***

1. Wearing all of your protective equipment will help you to survive an unanticipated event such as occurred at this fire.
2. Venting of the Fire Floor Windows from the outside must be coordinated with the inside team.
  - Use handie-talkie to contact Officers.
  - Observe Hose Line in street where possible.
  - Review ABC 1-96



## CHAPTER 2 BEING READY FOR THE MAYDAY



It cannot be emphasized enough that over the years a number of injuries and possibly fatalities could have been prevented if members properly used and donned their PPE.

### B. Helmet

- If a member's helmet is knocked off it will prevent them from effectively performing their assigned duties until they can locate and replace the helmet. This will not happen when the helmet chin strap is secured properly.
- If the helmet is donned properly, with the chin strap secured, even if it gets knocked off, the helmet will not get lost because the closed chin strap will be around the low pressure hose of the SCBA.
- Get in the habit, or re-train yourself to always attach your chin strap.
- Many of the investigations conducted by Safety Command found that a Firefighter escaped serious injury from a fall or the helmet being knocked off in a fire apartment because the chin strap was secured properly.

### C. SCBA

- We should never run out of air in an IDLH. When the vibralert of your SCBA activates, do not continue to operate. Leave the IDLH immediately. Thinking that you still have plenty of air left could be a fatal mistake. You never know what obstacles or problems you will encounter attempting to exit the IDLH. Notify your Officer and exit the IDLH with another member. We must always operate in pairs while in an IDLH. This is the “**Two In**” of the *Two In – Two Out* Department Policy and OSHA requirement.
- In an extreme emergency, when a member runs out of air there is a natural tendency to remove the SCBA facepiece. It is more conducive to the member's safety to remove the regulator and leave the facepiece on. This would help protect the member's face from burns and enables a quick connection to the Fast Pak.
- Don't assume that you'll remember to do this if you are caught in an out of air situation. In order to overcome your first instinct and remove the whole facepiece, practice removing the regulator while leaving the facepiece on, over and over until it becomes automatic. This emergency procedure will help prevent panic in an out of air situation and increase the member's chance of survival.
- In the event that a member runs out of air the member must leave the facepiece on and only remove the regulator. This way the member will not be forced to remove his/her helmet and hood. The hood and helmet will continue to provide thermal protection to the member's head. In the event the member becomes unconscious, the Safety Team/FAST Unit will be able to quickly supply air to the member. Every second counts.

Modern day fires contain highly toxic smoke with high levels of carbon monoxide and hydrogen cyanide. Don't be fooled, you will quickly be overcome by the toxic smoke and increase the possibility of serious injury and even death. We cannot survive breathing this toxic smoke. Wear your mask, **IT'S YOUR LIFE!**



## CHAPTER 2 BEING READY FOR THE MAYDAY



### D. DONNING FACEPIECE

- Be sure cylinder valve is fully turned on, check amount of air and listen for any air leaks
- Helmet on the head with chin strap loosely buckled
- With the head net on the inside of the facepiece, bring the facepiece to your face with your left hand & hold it there
  - Keep your left thumb on the purge valve, so the chinstrap won't get hung up on it and cause a loss of air supply
- With your right hand pull your helmet over your facepiece and allow the chinstrap to slide down your left forearm
  - Allow your helmet to hang from your left arm as you don your facepiece & hood
- After your facepiece & hood are donned, place left hand back on the regulator with left thumb on the purge valve
- Grab helmet with right hand and place on your head.
- With left hand, grab chin strap and tighten.





## CHAPTER 2 BEING READY FOR THE MAYDAY



### **COMMUNICATIONS**

Handie-talkie & direct verbal communications are essential for fireground safety.

- They need to be clear and concise so as not to monopolize the handie-talkie frequency or cause a distraction from another's situational awareness.
- They need to be acknowledged to be considered complete; this may require some assertiveness in your delivery.
- Before entering a dangerous area, communications must be made, especially if an individual determines that there is a known life hazard and their immediate action could prevent the loss of life.
  - If conditions deteriorate, members can be aware that other members might be in an adverse location, such as the floor above or an area of collapse.
- Listening is just as important, if not more so, than making transmissions. Certain fire ground tactics can alert members that conditions may soon change. Such as:
  - Hearing the engine officer call for water or announcing the initial fire attack is about to commence, while operating opposite or above the hoseline.
  - Outside team requesting permission to vent.
  - Window curtain being deployed, etc.



## CHAPTER 2 BEING READY FOR THE MAYDAY



### **BE PROACTIVE**

- **Systematic approach to identify & remove potential hazards:**
  - Confirming utilities are secured.
  - Assess for fire extension in the overhead and concealed areas.
  - Assist in attack line deployment (straighten hose lines, assess friction points.)
- **This effort includes reducing the risk on the fireground by creating opportunities for firefighter extraction and/or self-rescue.**
- **This may include, but is not limited to:**
  - Providing External RECON information (Situational Awareness) to the IC.
  - Providing additional means of egress for roof operations or companies operations above the ground floor.
  - Removing security bars/devices.
  - Coordinating the opening of doors and windows.
  - Illuminating entrance and exits.



As additional egress points (large opening for commercial structures) are created, they should be announced to all interior personnel over the tactical and command channels to benefit of those who may need them.

#### **Note:**

Care and coordination must be taken when creating additional openings (access points) due to the adverse and dangerous affects it may have on ventilation efforts. Incident intensity, discretion, common sense, and professionalism should be considered determining how much destructive action could take place at an incident. For example; food on the stove should not result in cutting metal roll down doors.

It is imperative that personnel assigned to the FAST Unit being proactive to help make the fireground safer for those operating. This includes completing some of the tasks listed while maintaining unit integrity.

[http://sdnorthzone.net/NZTrainingManual/Engine\\_Section900\\_RIC.pdf](http://sdnorthzone.net/NZTrainingManual/Engine_Section900_RIC.pdf)



CHAPTER 2  
BEING READY FOR THE MAYDAY



**SAFETY TEAM DESIGNATIONS**  
**PRIOR TO THE FAST TRUCK'S ARRIVAL**

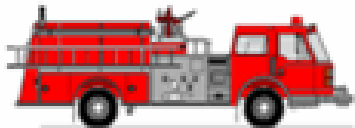
1 Engine Company on the scene



4 FF Engine Company

**TWO FFs AS DESIGNATED  
BY THE OFFICER**

1 Engine Company on the scene



5 FF Engine Company

**CONTROL  
&  
DOOR FF**

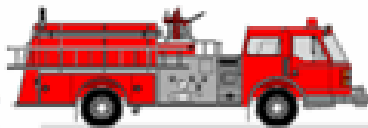
1 Ladder Company on the scene



**5 FF  
FE  
&  
OV FF**

**4 FF  
FE  
&  
LCC**

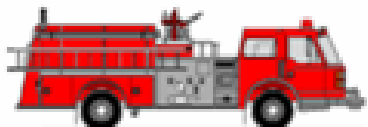
1 Engine Company & 1 Ladder Company on the scene



**5 FF LADDER  
CONTROL  
&  
OV FF**

**4 FF LADDER  
CONTROL  
&  
LCC**

2 Engine Companies on the scene



**CONTROL FFs OF 1<sup>st</sup> AND 2<sup>nd</sup>  
ARRIVING ENGINES**





## CHAPTER 2 BEING READY FOR THE MAYDAY



# **FIREFIGHTER ASSIST & SEARCH TEAM**

## **PURPOSE**

- To be immediately available to assist a member trapped or in distress.

## **NOTIFICATION**

- **Dispatcher will notify company of its designation as the "FAST" Unit, and relay:**
  - building type & height
  - location of the fire
  - CIDS information for the building & any other information which could pertain to rescue duties



## **POSITION**

- **Officer announces arrival to the IC, via handie-talkie.**
- **Report to Command Post:**
  - Operations Post for high-rise fires, unless otherwise directed by the IC
- **"Stand fast," near the Command Post, ready for immediate deployment as directed by the IC:**
  - Member with FAST Unit radio 20-30 feet away, but within line of sight

## **DUTIES WHILE STANDING FAST**

- **Conduct a size up of the involved occupancy or incident:**
  - Progression of fire operations
  - Expected paths of fire travel
  - Hazards posed by the building's construction & occupancy
- **Monitor all handie-talkie transmissions.**
- **Determine availability of aerial, tower and portable ladders. FAST chauffeur shall be available to reposition if needed.**
- **Determine the location of EMS personnel at the scene.**
- **One member shall be designated to manage air supply of distressed member.**
- **Check other tools & equipment which might be needed:**
  - Rebar cutter for window bars
  - Flotation devices for operations on or near bodies of water, etc.





## CHAPTER 2 BEING READY FOR THE MAYDAY



### **OPERATIONS WHEN ASSIGNED TO FAST UNIT DUTIES:**

- **Upon deployment they shall consult with the IC or his designee to form a plan of action.**
- **Ascertain the distressed member's assigned position.**
- **Try to determine the location of the distressed member and where you would anticipate them to be.**
  - If you can communicate with the distressed member, use that information to help determine their location.
- **Determine the best access to the distressed member and an alternate access point.**
- **Work with the other units assigned to the FAST Group and follow the directions of the FAST Group Supervisor.**
- **Determine the tools needed to assist in the operation.**
- **Location of member, type of distress, tools required for rescue and whether additional help may be required should be clarified before the FAST Unit is deployed.**

### **TOOLS/EQUIPMENT**

- **In addition to normally assigned Ladder Company tools, the FAST Unit shall report to the Command Post / Operations Post with the following equipment:**
  - FAST handie-talkie (obtained from any Battalion vehicle on the scene)
  - FAST Pak
  - Life Saving Rope/Life Belt
  - Search Rope
  - Stokes Stretcher with long backboard. The long backboard shall be placed in the Stokes stretcher first and additional equipment placed on top.
  - Thermal Imaging Camera
  - Water Extinguisher



## CHAPTER 2 BEING READY FOR THE MAYDAY



### **MANAGING FIREFIGHTERS IN DISTRESS OR MISSING**

Any situation involving a missing, lost, trapped or seriously injured member is likely to be a high-stress scenario, filled with confusion, uncertainty, and strong emotions.

It is imperative that members be deployed in a controlled fashion to maximize efficiency, minimize unnecessary and unproductive duplication of effort.

---

#### **Upon notification of a Mayday or other call of distress from a member:**

- **IC will take control of the handie-talkie channel(s):**
  - All non-essential handie-talkie traffic shall cease
  - Radio discipline at incidents of this type is critical
- **If contact is made with the member in distress:**
  - Instruct them to activate their Emergency Alert Button (EAB), if not done already, to increase their transmitting wattage, or switch to channel 16 on their HT.
  - Obtain as much information as possible before instructing them to activate their PASS alarm.
  - Ascertain their physical condition & status of their air supply.
  - Try to have them pinpoint their location:
    - Last known location or reference point e.g., “Just past the oil burner room”.
    - Where they entered the building.
    - What sounds they are hearing: glass breaking, doors being forced, walls being breached, saws operating, etc.
  - If not located by this time, distressed member should activate their PASS alarm and maintain the remote microphone close enough to continue to monitoring handie-talkie messages.
  - Communications should be maintained with the distressed members and changes, adverse or improving, be reported.



## CHAPTER 2 BEING READY FOR THE MAYDAY



- **If contact cannot be made with the distressed member, the reporting member should relay:**
  - Last known location or reference point
  - **U**nit the member is working in that tour
  - **N**ame of affected member
  - **A**ssignment (e.g., roof, nozzle)
  - **R**esources needed
- **Confirmation of the distress member's Name, Unit working in & Assignment must be attained:**
  - Direct contact with the distress member or member reporting
  - FAST Unit, via the FAST handie-talkie
  - Emergency Roll Call
  - EFAS, via their monitoring screen
  - Inquire on handie-talkie, whether anyone knows, only positive responses shall be given

### LOCATING MISSING / LOST MEMBER(S)

- **Continuous & Uninterrupted Communication with Distressed Member**
- **PASS Alarm**
- **Emergency Alert Beacon**
- **Feedback Assisted Rescue**
- **Emergency Alert Tone Assisted Rescue**
- **Six-Sided Approach –**  
*(front, rear, right, left, above & below)*
- **“Round the Clock” – calling & listening**
- **Team Search with search rope**
- **Breach walls, floors, or roofs**
- **Scott Pak-Tracker**  
Refer to Training Bulletins SCBA Addendum 8

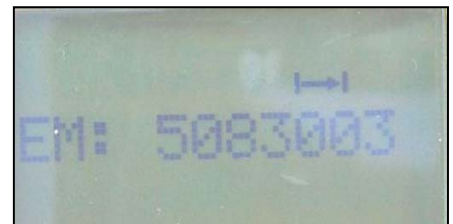




## CHAPTER 2 BEING READY FOR THE MAYDAY



- **When the distressed firefighter is found:**
  - Notify the IC or FAST Group Supervisor
  - Immediately implement protection priorities:
    - Remove firefighter from imminent danger (fire)
    - Check air supply
    - Provide patient care once out of the IDLH
    - Transfer patient care to EMS
- **Assurance must be made that there isn't another member in distress**
- **To identify an *UNCONSCIOUS* member once removed from the IDLH:**
  - Tools & equipment might provide clues for their assignment / position
  - Helmet front piece – Unit ID & Temporary Front Piece
  - Name on tail of bunker coat or inside helmet
  - Activate the firefighter's Emergency Alert Button on their handie-talkie
    - (This will display 7-digit I.D. code on LCD screen for positive identification.)
    - The members name, unit and assignment will also be displayed on EFAS screen
  - Check engraved identification on the side of the handie-talkie.



The above picture depicts that the Emergency Alert Button has been pressed on Engine 83 – Nozzle H.T.



## CHAPTER 2 BEING READY FOR THE MAYDAY



- To identify an **UNCONSCIOUS** member once removed from the IDLH:  
(cont.)
  - Check engraved identification on the side of the Pressure Reducer Assembly (PRA) – mounted on left side of back frame.
  - Pak-Tracker's screen will display the member's unit & assignment from their PASS alarm's signal.



The above picture depicts the Ladder 110 Irons Firefighter's SCBA PASS device is in full alarm mode.

**Notify & keep the Incident Commander informed of the firefighter's condition and removal progress.**



## CHAPTER 2 BEING READY FOR THE MAYDAY



# **ACCOUNTABILITY SYSTEM**

A critical goal of the Fire Department is to maintain the safety and accountability of each FDNY member during every fire incident. The ultimate goal is to ensure that each firefighter return from their respective assignments unharmed. With numerous handie-talkie equipped members, all operating on the same frequency, maintaining accountability is an extremely difficult task.

Accountability begins with an officer's supervision of their members, operating either in close proximity as well as in remote locations. Each individual member must understand the importance of remaining in contact with their next level of command. In addition, members should be familiarized with our *Emergency Roll Call Procedures*.

Through the use of technology, FDNY has designed a suite of applications that work to improve fireground accountability and increase the safety of each firefighter while on the job. These applications range in function from creating an electronic riding list, to enabling quick recognition of firefighters in distress, to the use of a search tool when a firefighter becomes disorientated, to identifying firefighters on the apparatus.

As new technology advances, so does FDNY's drive to develop applications that provide us with the functionality to increase awareness, accountability and safety for each FDNY member.



## CHAPTER 2 BEING READY FOR THE MAYDAY



### **A. Electronic Riding List, EBF-4:**

A web-based application that requires FDNY Chiefs and Officers to prepare, submit and print an electronic version of the paper based BF-4 riding list form. This is a time-saving application used to streamline the process of identifying personnel assignments when twice daily changeovers occur for the standard 9X and 6X tour shifts, consisting of nearly 11,000 uniformed members. Refer to All Unit Circular 346

### **B. Electronic Command Board, ECB:**

A portable computer that displays unit deployment and personnel accountability in real-time. The ECB will provide the Incident Commander the ability to exchange information among Chiefs on scene and remotely at the Fire Department Operations Center (FDOC). This device is a Network Command platform that is able to receive data from the EBF-4 and EFAS at the command post. This device will be entering the Pilot Program phase in Spring/Summer 2011.

### **C. Electronic Fireground Accountability System, EFAS:**

The EFAS project is an application to register Mayday calls from distressed firefighters. Once the distressed member depresses the emergency alert button on the handie-talkie, the EFAS system displays the firefighter's name and assigned radio information, gathered from the EBF-4 application, notifying those on scene that a fellow firefighter needs assistance. Refer to All Boro Circular 1-2011

### **D. Pak-Tracker:**

The Scott Pak-Tracker firefighter locator is a firefighter down system designed to help locate a distressed firefighter. This is accomplished using 2 components: (1) Locator device in the PASS Alarm of all FDNY SCBA. This device emits a signal unique to that SCBA. (2) A hand held tracking device that can track the unique signal of a specific SCBA. Presently all Rescue and Squad companies are equipped with the hand held tracking device. Refer to Training Bulletin SCBA, Addendum 8





## CHAPTER 2 BEING READY FOR THE MAYDAY



### **E. Radio Frequency Identification, RFID:**

The Radio Frequency Identification (RFID) Project has the ability to automatically recognize which firefighters are riding on an apparatus and responding to an incident by using radio frequency identification tags located in the firefighter's bunker coats. The first phase of the RFID program is the EBF-4 component project which was deployed citywide after a successful Pilot Program. The second phase of the RFID program is the EFAS component project which has successfully completed the Pilot Program and is currently being deployed in Queens and Manhattan.



## CHAPTER 2 BEING READY FOR THE MAYDAY



### **EMERGENCY ROLL CALL PROCEDURES**

- The Incident Commander will activate the Emergency Alert button & announce:  
**“COMMAND TO ALL UNITS PREPARE FOR A ROLL CALL”**
  - Member conducting roll call will be designated as the **“Roll Call Officer (RCO)”**:
    - Preferably a Chief Officer, but may be delegated to *any* firefighting rank
    - This member will need:
      - a list of all companies on the scene
      - an assistant that will monitor the roll call & record the results
      - a higher wattage radio (*POST, UHF, or the Cross Band Repeater*)
      - to be in an area that is away from the command post and is clear of smoke, inclement weather, radio feedback and other distractions.
  - The roll call shall start with the most seriously exposed units first.
  - Companies will be called individually.
  - Officers shall respond with:
    - the number of firefighters they responded into the incident with
    - account **only** for members underneath their immediate supervision (*within sight or hearing*)
    - if staffing level is less than normal, the officer should inform the RCO which position is missing
- “Roll Call Officer to Ladder 129, account for your members”**  
**“Ladder 129 to Roll Call Officer, Ladder 129 responded with 5 firefighters, my Can and Irons firefighters are accounted for.”**
- After communicating with the Company Officer, the **Roll Call Officer** shall then contact the remaining members of that unit & ascertain their exact location.  
**“Roll Call Officer to Ladder 129 Chauffeur”**  
**“Ladder 129 Chauffer is operating on the L-129 turntable”**  
**“Roll Call Officer to Ladder 129 OV”**  
**“Ladder 129 OV and Roof Firefighter accounted for operating on the roof of the fire building”**
  - Before moving on to the next company, the RCO shall re-contact the Company Officer and notify them that all members of their company are accounted for.
  - In the event the RCO is unable to account for or have another member account for a member, the IC must be notified and the required actions for a Missing Member must be taken.





## CHAPTER 2 BEING READY FOR THE MAYDAY



# **ELECTRONIC FIREGROUND ACCOUNTABILITY SYSTEM (EFAS)**

Have you ever been at a job with a legitimate Mayday? How about multiple Maydays? Were you the member assigned the FAST radio? Did you ever take part in a roll call? These are one of the most stressful parts of our job. Research and Development took the initiative to build a system that would help in these critical situations.

EFAS is currently being implemented in ALL Boroughs as well as Field Comm. Every Division and Battalion vehicle will be outfitted with EFAS.

EFAS comes in a portable unit for deployment at high rise and subway incidents and also runs on the Mobile Data Terminal.



Portable EFAS Unit



EFAS on the MDT

The Electronic Fireground Accountability System (EFAS) is designed to improve the accountability of members at all operations. EFAS allows the IC to instantly identify members in distress and dispatch the FAST Unit to members location.

## **SAVING SECONDS SAVES OUR LIVES**



## CHAPTER 2 BEING READY FOR THE MAYDAY



The Electronic Fireground Accountability System (EFAS) is displayed on a computer screen identifying the members name, unit and assignment of handie-talkie transmissions being made in real time.

It is incorporated into the MDT and is currently being installed in ALL Division and Battalion vehicles, including the Rescue, Safety and Haz Mat Battalions along with Marine Companies. It has the additional capabilities to:

- Automatically identify a member(s) that have activated their Emergency Alert Button
- Manually identifying a member(s) transmitting a verbal MAYDAY % activating their EAB
- Conducting an emergency roll call
- Reviewing handie-talkie transmission

The accuracy of this system is critically dependent on officers maintaining an updated electronic riding list (EBF-4) and radio depots updating the Spare Radio Database.

---

### PROCEDURES

- Upon arrival to an incident officers must “key” their handie-talkie mic to have their unit checked in and recognized by the EFAS.

**Note:** “Key” your remote mic means to depress & hold the transmit button for 1 second and release.

- The EFAS screen is split into three separate sections: “RADIO STATUS,” “COMPANIES,” & “MAYDAYS”
  - The “RADIO STATUS” will display all handie-talkie transmission activity





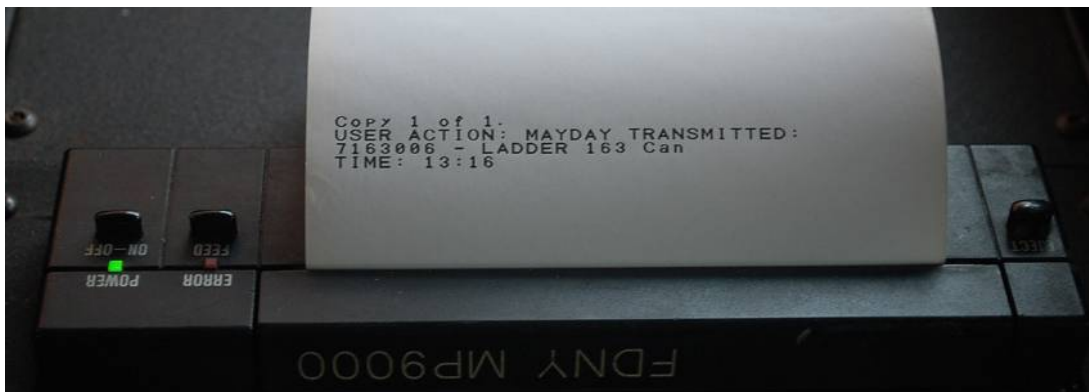
## CHAPTER 2 BEING READY FOR THE MAYDAY



- If a member activates their EAB or if they are manually assigned into a Mayday status, they will be highlighted in **RED** and also added into the “MAYDAYS” section of the EFAS screen.
  - In addition, a hard copy will automatically print out



**Multiple Maydays**



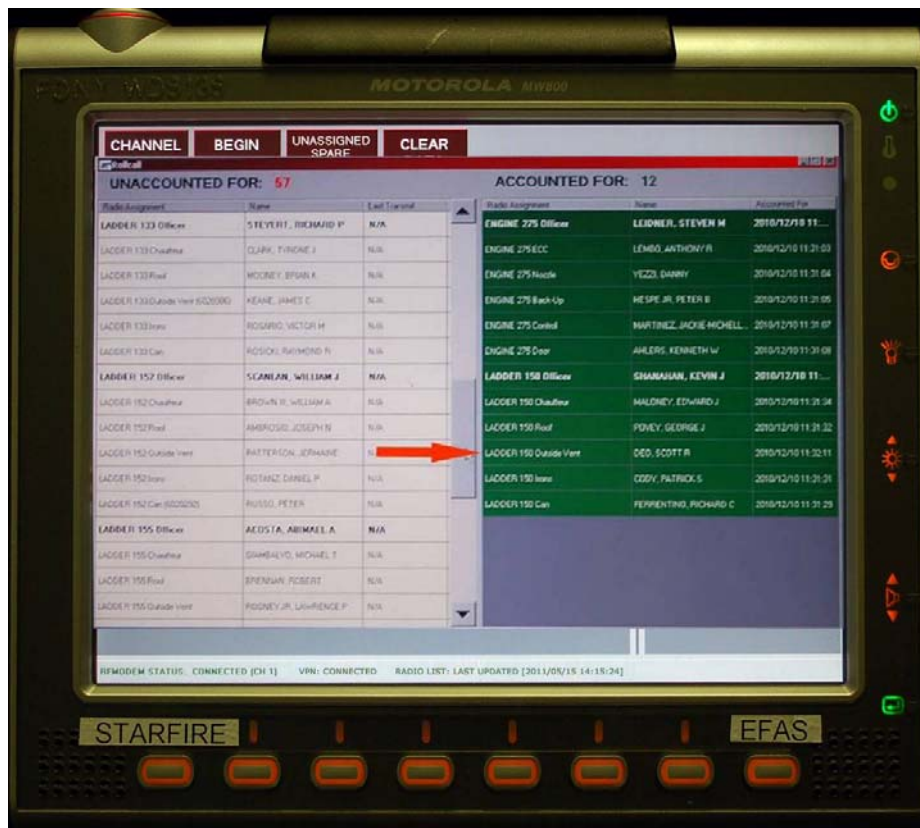
**Mayday Printout**



## CHAPTER 2 BEING READY FOR THE MAYDAY



- **Roll calls can also be conducted with the EFAS**
  - The Incident Commander (IC) or Resource Unit Leader (RUL) shall instruct all units to prepare for an electronic roll call.
  - The member operating the EFAS will change the screen into the “ROLL CALL” screen, which is split into two sections: “UNACCOUNTED FOR” (*left side*) and “ACCOUNTED FOR” (*right side*).
    - The “UNACCOUNTED FOR” section will display all members at the incident.
  - Starting with the most severely exposed sector, the IC or RUL will order all members of the selected sector to key their remote mics three times.
    - When members key their mics three times, their name will move from the “UNACCOUNTED FOR” section to the “ACCOUNTED FOR” section.



***EFAS does not preclude the use of the roll call procedure that is currently established and outlined in Communication Manual Chapter 9 Addendum 2.***

***Nor is it a substitute for the FAST Radio.***



## CHAPTER 2 BEING READY FOR THE MAYDAY



### Identifying a Verbal Mayday

There are times when a member might give a verbal Mayday without depressing their Emergency Alert Button. The EFAS can be used to pick up and identify a verbal Mayday.

Radio discipline during this time can sometimes be a problem as we all know. Members on the scene will be keying their mics, causing the verbal Mayday transmission to drop lower and lower on the EFAS screen. If we use the FAST Unit radio as a marker after a verbal Mayday is given, it can help narrow down and subsequently identify the member who transmitted the verbal Mayday on the EFAS screen.

For example, a verbal Mayday is given and the transmission is cut off resulting in the FAST Unit being unable to identify the member. The IC tries to contact the member to no avail. If the member monitoring the FAST Unit radio immediately keys the mic, the FAST Unit radio identification marker will be listed directly above on the screen within a few transmissions of the member giving the verbal Mayday, narrowing the field down from everyone on the scene to only a few members.

# Self-Survival



# Skills







## CHAPTER 3 SELF-SURVIVAL SKILLS



**In the unfortunate event you find yourself in MAYDAY situation.**

### SELF-SURVIVAL SKILLS

1. **Avoiding Panic**
2. **Transmitting the MAYDAY**
3. **If Lost or Trapped**
  - **Make Some Noise**
  - **Light The Way**
  - **Control Your Breathing**
4. **Find Your Exit**
  - **Breaching A Wall**
  - **Bumps To The Pumps**
  - **Search Rope**
5. **SCBA Familiarization**
6. **Emergency Procedures**
7. **Disentanglement**
8. **SCBA Emergency Procedures**
  - **Quick Release Escape**
  - **Low Profile**
  - **Reduced Profile**
  - **Swim Move**
  - **Damaged Facepiece**
  - **Out of Air**
9. **Upper Floor Escape Techniques**
10. **Activation of Emergency Alert Button (EAB)**
11. **Mnemonic Learning Aid "GRAB LIVES"**
  - **Actions a firefighter can take to improve survivability**



## **AVOID PANIC**

### **THE RESCUER PANIC & FEAR SOLUTION:**

#### **1. STOP**

- Your actions might be creating panic

#### **2. BREATHE**

- Focus on your breathing; this is the initial step that calms anxiety
- Check your air supply

#### **3. THINK**

- Evaluate your Situational Awareness
- By now you should be operating in the zone where training & education pays off

#### **4. ACT**

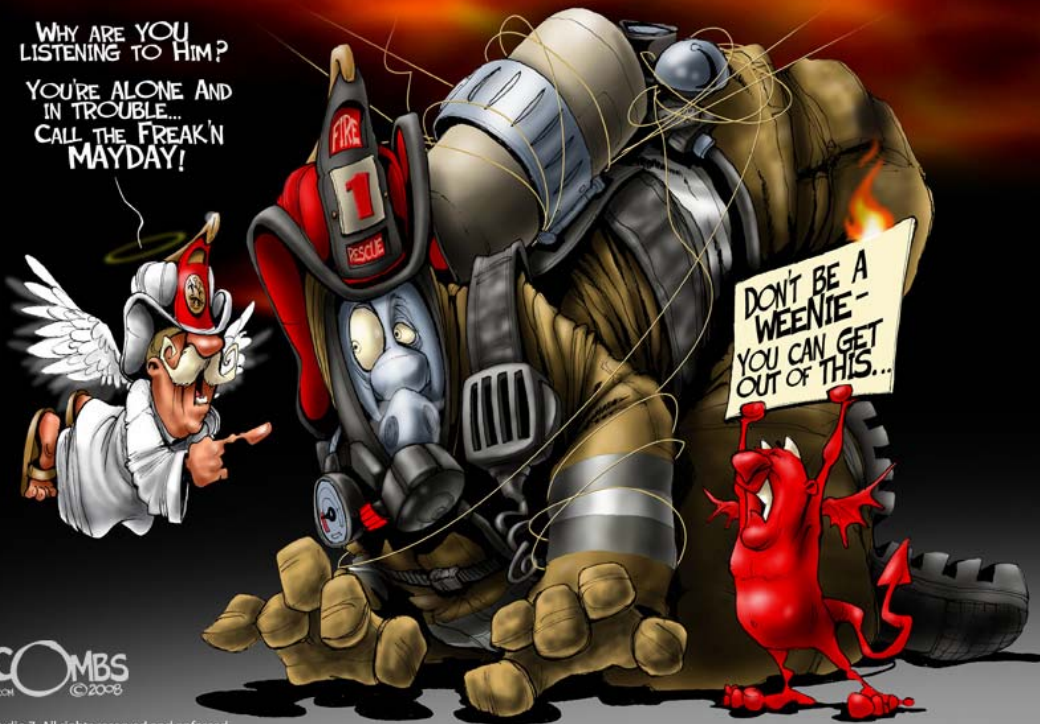
- Select a preferred course of action

### **Hesitation in performing these tasks may:**

- **Cause delay in receiving necessary assistance for survival**
- **Deplete your air supply necessary for survival**
- **Delay your recognition of your ability to self-survive**
- **Cause you to fail to realize you are in serious danger**

# ARE YOU **BRAVE** ENOUGH TO CALL THE **MAYDAY**?

WHY ARE YOU LISTENING TO HIM?  
YOU'RE ALONE AND IN TROUBLE...  
CALL THE FREAK'N MAYDAY!



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**paulcombs**  
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## **TRANSMITTING THE MAYDAY**

- **Activate your Emergency Alert Button (EAB):**
  - This will send an **EMERGENCY ALERT TONE** at maximum volume to everyone else's handie-talkie
  - You will now be transmitting in the "*Emergency Alert Mode*":
    - Your transmissions will be at maximum wattage
    - "EM" will precede your seven-digit ID on the FAST Radio
    - Your unit, assignment & name will be highlighted on EFAS
    - A printout of your unit & assignment will be generated
    - A beacon will be heard from your radio every four seconds
  
- **Say "Mayday" three times (3X), identify yourself to "Command," then repeat "Mayday" once more.**

**EXAMPLE: "MAYDAY-MAYDAY-MAYDAY"**  
**"Ladder 4 Roof to Command, MAYDAY"**
  
- **Wait for an acknowledgment from the Incident Commander:**
  - When contact is made, relay your situation:
    - Trapped, lost, injured, etc.
    - Last known reference point or location (if known)
    - Air supply
    - Surroundings may give you a clue of your location, e.g. furniture, noise of saws or hose lines operating, etc.
    - Resources needed
  
- **The IC might direct you to switch to Emergency Channel 16:**  
*(turn your tactical channel switch clockwise until it stops)*
  - You will still be transmitting in the "**Emergency Alert Mode**," provided that you previously activated your EAB and did not reset it

## **IF LOST OR TRAPPED**

### **MAKE SOME NOISE**

- **After you give your information to the Incident Commander, activate your PASS alarm, so that others may hear you:**
  - Your PASS alarm will also send a signal to a Pak-Tracker that can help others locate you.
- **Bang a tool or nearby object to make some additional noise**
- **Keep the remote microphone close enough to monitor handie-talkie messages**

### **LIGHT THE WAY**

- **Make sure your flashlight is on**

### **CONTROL YOUR BREATHING**

- **If you are not in imminent danger, stay in place:**
  - Best way to conserve your air is to reduce your physical activity
  - A moving target is harder to find

## *FIND YOUR EXIT*

### **BREACHING A WALL**

If evacuation is required, the member(s) will have to withdraw by means of interior stairs, fire escapes or ladders. When these means of escape are cut off an emergency means will have to be considered, such as breaching a wall or partition to an uninvolved area or to a safe means of egress.

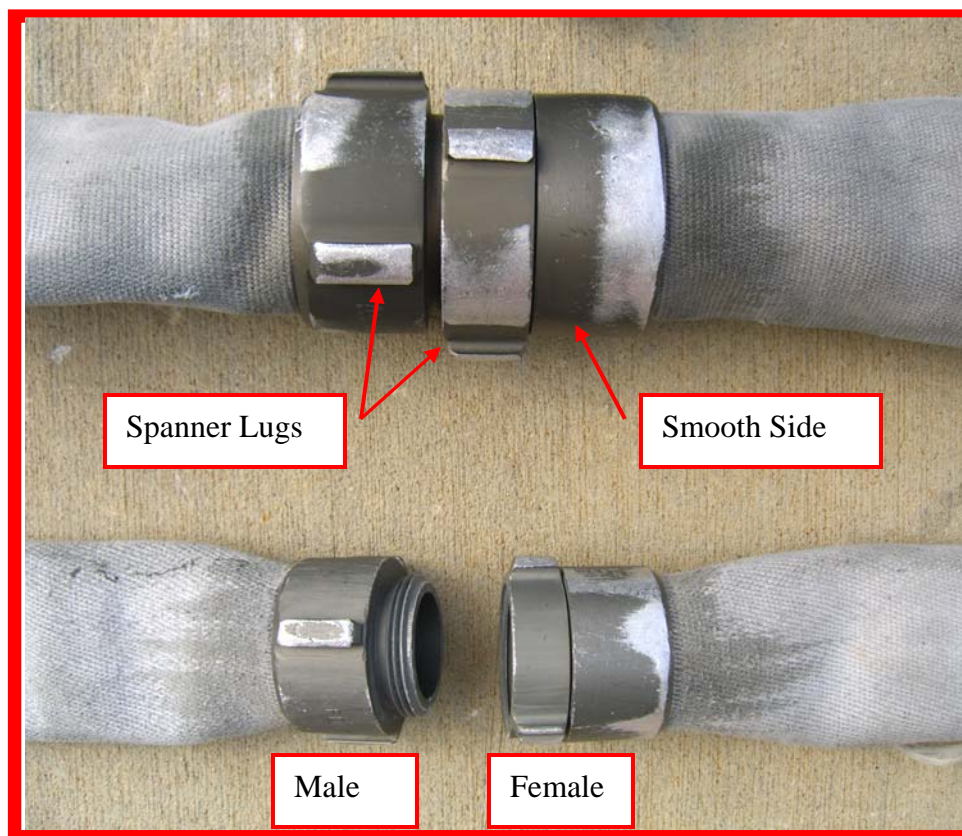
To accomplish this:

- Use the halligan, hook or axe. This is the order of preference but all can do the job.
- Start low. Punch a hole slightly below waist level:
  - This places hole under possible fire stopping between studs
  - Work is less punishing at this level
  - It is easier to push the opposite side of the wall off the studs
- The tool is placed in a bay with the bottom anchored against the opposite side of the partition. The firefighter then pulls the tool towards them, using short strokes to snap the lath off on their side. Best results are obtained when the opposite side is kept intact until near side is completely removed.
- With the sole of his/her boot, the member can kick the lath off the far side of the bay.
- The member then uses the reduced profile for his/her mask and places their head between the studs, turning their body sideways and quickly moving through the opening.



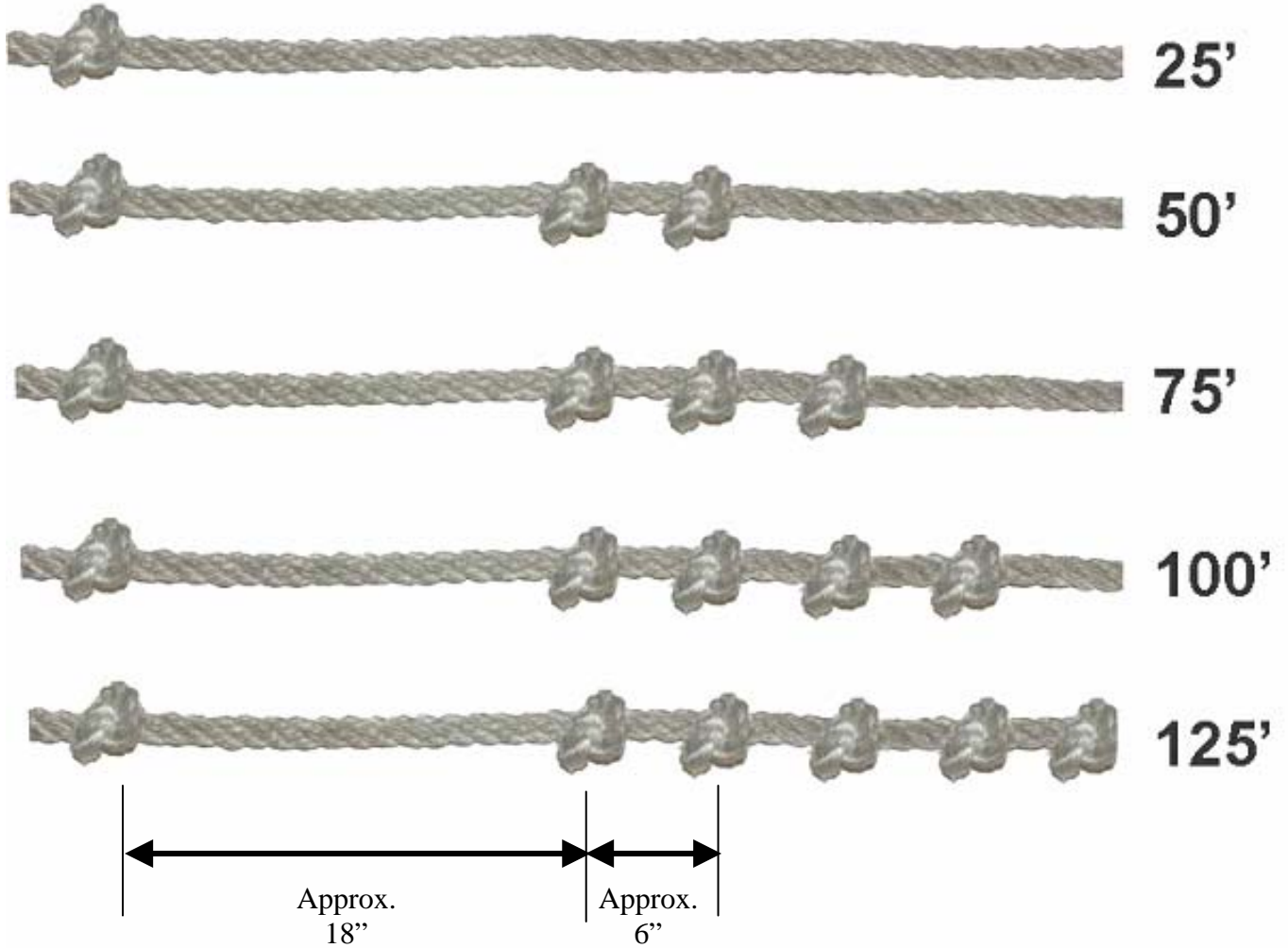


## FOLLOW THE LUGS OUT



**IF YOU ARE ABLE TO REACH A HOSELINE SLIDE YOUR HANDS ALONG THE HOSE UNTIL YOU REACH A COUPLING. FEELING THE ATTACHED COUPLING, THE FEMALE BUTT HAS A SMOOTH SIDE WITH LUGS. THE MALE BUTT HAS LUGS ONLY. FOLLOWING THE LUGS (AWAY FROM THE SMOOTH SIDE) WILL LEAD YOU OUT TO SAFETY.**

**SEARCH ROPE DIRECTIONAL KNOTS**



## **SCBA FAMILIARIZATION**

- Firefighters need to be familiar with their SCBA.
- Daily checks should be performed by the member assigned to the SCBA to ensure your pack is fully operational.
- Checks should include inspection of air volume, straps, belts, hoses, batteries and integrity of the cylinder.
- Personal facepiece.
- SCBA cylinder valves should be opened fully when performing “on air” operations.
- Emergency use of SCBA should be understood.

## **EMERGENCY PROCEDURES**

- An understanding of SCBA emergency procedures improves survival and safety in emergency situations.
- All members should have knowledge and train on the quick release escape emergency procedures and the low profile maneuver.

## **DISENTANGLEMENT**

- Entanglement is a risk to firefighters operating on a fireground, but may also present hazards to EMS personnel as well.
- Carry at least one type of cutting tool capable of cutting wire, rope and other materials in case of entanglement.
- If tangled, control your breathing, notify command and if conditions warrant, follow SOP's transmit a Mayday.

## **SCBA EMERGENCY PROCEDURES**

- When a member becomes entangled or trapped in a collapse where he/she needs to do an emergency procedure, that person MUST give a MAYDAY radio transmission.
- Waiting to give a MAYDAY transmission after you have attempted to free yourself may be too late for fellow firefighters to assist you.
- If you manage to free yourself from the danger and are no longer threatened, notify the IC and cancel the MAYDAY

### **QUICK RELEASE ESCAPE**

#### **If SCBA Becomes Entangled in the Rear**

- Fully extend both shoulder straps
- Left hand grasp the left shoulder strap as high as possible
- Slip the right arm thru the right shoulder strap & unbuckle the waist belt
- Maintain left hand grip on the left shoulder strap
- Turn to the left 180 degrees to face the entangled SCBA
- With the right hand sweep the entire SCBA to locate the obstruction
- Free the SCBA from the entanglement:
  - Use you cutting tool
- Place both hands on the shoulder straps and back away from the obstruction
- Re-Don your SCBA. Buckle waist belt then tighten shoulder straps



## **LOW PROFILE MANEUVER** **TO CRAWL BENEATH OBSTRUCTIONS**

- Fully extend both shoulder straps
- Left hand grasps the left shoulder strap as high as possible
- Slip the right arm thru the right shoulder strap & unbuckle the waist belt
- Maintain left hand grip on the left shoulder strap
- Allow SCBA to swing over the left shoulder to front of body
- Lay the SCBA assembly down on the cylinder & push ahead, as your body follows behind
- Once overhead obstruction is cleared Re-Don your SCBA
- Buckle your waist belt then tighten shoulder straps



## **REDUCED PROFILE MANEUVER** **TO MANEUVER PAST AN OBSTACLE**

- Fully extend the right shoulder strap
- Slip the right shoulder arm thru & grasp the waist belt without unbuckling
- With the right hand grasp the waist belt buckle
- With the left hand grasp the cylinder at the rubber bumper
- Twist the entire SCBA assembly to the left
- Use the right hand as a guide while passing through the obstacle
- After passing the obstacle, return the SCBA assembly to normal position and secure straps



## SWIM MOVE

**TO GET THROUGH A NARROW OPENING SUCH AS WALL STUDS, WITHOUT REMOVING THE SCBA**



- Place the right knee, right shoulder & head through the studs:
  - Placing left through first, may cause low pressure hose to get pinched on the object you are trying to pass, cutting off air supply.
- Bring the left arm over the left shoulder in a swimming motion.



**IF THIS MOVE BECOMES UNSUCCESSFUL, USE THE REDUCE PROFILE MANEUVER**

## **DAMAGED FACEPIECE**

- **Notify your officer and immediately attempt to leave the IDLH accompanied by another member.**
- **Leave the facepiece on:**
  - The positive pressure feature will compensate for a leak; this will result in an outward flow of air
- **Cover the damaged area with a hand.**
- **Press the MANUAL SHUT OFF SWITCH after each breath to further limit the loss of air.**
- **If the damaged area is too large to allow the MANUAL SHUT OFF SWITCH to release, use the PURGE VALVE in an on & off motion for each breath.**



**MANUAL SHUT OFF SWITCH**



**PURGE VALVE**



## **OUT OF AIR**

- **Notify your officer and immediately attempt to leave the IDLH accompanied by another member.**
- **Stay low for better visibility & air**
- **Remove the regulator from the facepiece:**
  - Bad air is better than no air
  - The donned facepiece will provide some protection to the skin on the face
- **Pull the hood over the regulator opening**
- **Use your glove over the regulator opening**



## UPPER FLOOR ESCAPE TECHNIQUES

- Certain situations may lead to a fire fighter having to exit a structure from an above grade level.
- Various methods could include: ladders, PSS, exiting to a roof area, etc.
- When performing an upper floor escape, command should be notified of your present location, fire conditions and the mode of egress you are attempting.
- If possible, and conditions warrant, wait for the arrival of a ladder to safely exit a window.





Where and when a fire fighter may call a Mayday is unpredictable. Fire fighters must possess the skills necessary to save themselves if they are trapped on an upper floor when ladders are present and when they are not.

### **EMERGENCY RAPPEL USING A PERSONAL ESCAPE SYSTEM**

FDNY has been a leader in researching the application of PES technology within the fire service. Through a collaborative effort of FDNY personnel and manufactures of rescue devices specializing in mountaineering, rescue, fire fighting, and heavy construction the Personal Safety System (PSS) was designed. The PSS allows a fire fighter to descend from an upper floor using rope and a lowering device carried on a safety harness. The self deployed system is used when no ladders are available and the fire fighter needs immediate rescue from an upper floor. Since its introduction, additional manufactures have begun producing similar fire fighter PES's with varying degrees of safety and reliability.

There is often a misconception about these systems. Many fire fighters believe that they are only needed in mid and high-rise buildings. While exiting from a lower (second to fourth) floor window may not result in death, it can end a fire fighter's career. It is recommended that fire departments operating in buildings with more than one story equip personnel with a PES.

### **A LIFE SAVED IN THE F.D.N.Y. WITH THE USE OF THE PERSONAL SAFETY SYSTEM**

In December of 2007 a Brooklyn fire fighter became trapped while operating on the top floor of a four story wood frame structure. The fire fighter was positioned at the top floor window in the front of the building when his egress was cut off by fire. Two ladder company apparatus were positioned in front of the building with the aerial devices raised but not at the window of the trapped fire fighter. As the fire intensified, the fire fighter was forced to evacuate before the aerial could be positioned at the window. To escape the heat the fire fighter safely exited the fourth floor window by activating his Personal Safety System.

This self rescue was successful because the fire fighter was properly trained. Without the proper equipment, and without the skills necessary to perform the "Bail Out" technique, the fire fighter may have suffered serious or even fatal burns. Mayday situations come suddenly and require the fire fighter to react quickly. In this case the fire fighter saved his own life because he performed the survival skill exactly as he had practiced.



## ***PASS IT ON PROGRAM***

*Bureau of Operations*

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### **Personal Safety System (PSS) Deployment**

#### ***PARTICULARS OF THE INCIDENT:***

Fire was located on the second floor of a 3 story 25' x 75' wood frame building. There was a nail salon on the first floor with apartments above. The second and third floors were setback approx. 20' from the first floor. The first due LCC positioned the apparatus, overhead electric wires prevented the use of the aerial ladder. The LCC positioned a portable ladder on the Exposure 4 side of the nail salon. He proceeded to Exposure 3 where he teamed up with another member for VES. Entry was made to the top floor rear apartment via a portable ladder positioned on the set-back. The LCC immediately initiated his search working toward the front of the building. While searching the front rooms on the third floor conditions began to deteriorate. The IC transmitted a HT message for all members to withdraw from the building in preparation for an outside operation. Hoselines remained in place on the second and third floors to protect members withdrawing from the building. Because of the expanding fire conditions the LCC was unable to exit via the interior stairs or return to the portable ladders in the rear. A MAYDAY was transmitted informing the IC that he was deploying his PSS from the third floor window on the Exposure 1 side to evacuate an untenable position. The PSS hook was anchored to the window frame and the member descended to the first floor roof of the nail salon. He disconnected the PSS rope from his personal harness and descended a portable ladder to the street.

#### ***LESSONS LEARNED OR REINFORCED:***

1. While searching always keep in mind a second means of egress. Size up should always include identifying a second means of egress or area of refuge.
2. When going above the fire, be cognizant of the status of the hoseline(s). Loss of water, insufficient pressure, or inability to hit hidden fire could cause a rapid change in fire conditions.
3. Two-In-Two Out policy must always be adhered to. Members should team up prior to entry for VES.
4. Communication enhances firefighter safety. Advise your officer of your status at frequent intervals.
5. When a point of safety is reached after deploying the PSS the IC must be notified. All members should be prepared to quickly disconnect the carabiner from the PSS "D" ring and move to an area of safety. Refer to Evolution 24.
6. It is extremely important for members to depress the emergency alert button prior to transmitting a MAYDAY. The MAYDAY transmission will be sent out at maximum wattage and your identity will also be recorded on the Electronic Fireground Accountability System (EFAS), for the IC to ensure rapid identification of the member.

## **ACTIVATION OF THE EMERGENCY ALERT BUTTON** **(EAB)**

- Whenever the emergency alert button has been pressed, and/or a MAYDAY or Urgent are transmitted, all handie-talkie communications on the frequency are to cease, except those between the member initiating the emergency transmission and the incident commander.
- Note: the Incident Commander may instruct the member transmitting the emergency message to switch to channel 16, the dedicated 5-watt emergency channel. The Incident Commander may do this to free up the primary tactical channel and have communications continue with the member at 5 watts. When the member switches to channel 16, his/her "beacon" continues unless the "emergency alert" is cancelled. The Incident Commander may instruct the member to deactivate the tones if they are hampering communications.
- Radio channels have to remain clear and only used for relevant transmissions, once a MAYDAY is called.
- Establishing a dedicated radio channel for the MAYDAY rescue will assist the Incident Commander in timely intervention.

This chapter just provided self-survival tips & procedures for a firefighter trapped or lost. Below is a mnemonic learning aid to bring them all together.

This is not a check list to memorize when you are in a MAYDAY situation. However, if you drill on it consistently it will be second nature in the event you do get into a MAYDAY situation.

**“GRAB LIVES”**

<b>G - Gauge</b>	<b>Check your air</b>
<b>R - Radio</b>	<b>MAYDAY given on Radio</b>
<b>A - Activate</b>	<b>Activate your PASS</b>
<b>B - Breathe</b>	<b>Control your breathing</b>
<b>L - Low &amp; Listen</b>	<b>Stay low to the ground / LISTEN for members operating</b>
<b>I - Illuminate</b>	<b>Shine your light</b>
<b>V - Volume</b>	<b>Make noise</b>
<b>E - Exit</b>	<b>Search for an exit</b>
<b>S - Shield</b>	<b>As a last resort, with no air, remove your regulator and shield your airway to filter the smoke</b>

# Firefighter Expectations



# Of Command







## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



What does a firefighter in a Mayday situation expect from the IC? The obvious answer is to coordinate the overall rescue effort by:

- **Listening:** so their call for help will be heard.
- **Acting:** sending the FAST Unit quickly to locate & remove the distressed firefighter.
- **Responding:** providing medical care to the distressed firefighter.

According to the many articles, books, and protocols written on the topic of MAYDAY, the firefighter who calls the MAYDAY expects the IC, above all, *to Command!*

As the number of fires steadily decreases, it is becoming more difficult for our firefighters to gain experience. Without experience, firefighters are forced to rely on their training and education. Firefighting is a high-risk/low-frequency event. MAYDAYS are even less frequent and certainly put firefighters at higher risk.

**The FDNY conducts annual Incident Command training for Battalion and Division Chiefs.**





## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### **INITIAL ACTIONS TO BE TAKEN BY THE INCIDENT COMMANDER**

- The IC must take control of the handie-talkie (HT) frequency by one of the following methods. All of these options provide the IC with the ability to transmit at a higher wattage, which may assist in gaining control of the HT network.
  - Utilize the Emergency Alert Tone on the HT. [Once your communication with the distressed member is concluded,] you must deactivate the emergency alert button after gaining control of the HT. Failure to do so will cause the letters “EM” to be displayed every time a transmission is made from your HT. Your beacon tone will also continue to sound every 4 seconds.
  - Utilize the POST radio on the tactical channel (45 watt transmissions).
  - Use the UHF radio in a Battalion or Division vehicle on the tactical channel (40 watt transmissions).
  - Use the Cross Band Repeater radio installed in some Battalion Vehicles on the tactical channel (40 watt transmission).
- It is imperative that the IC be forceful when transmitting and taking control of the HT network. Without control, it will be difficult to conduct an emergency roll call in an efficient and timely manner. The distressed or transmitting member may need several seconds to complete their transmission. The IC should refrain from immediately “jumping on” or answering any MAYDAY/URGENT transmission.
- Acknowledge and confirm MAYDAY/URGENT transmissions as per established procedures.
- Assign the FAST Unit and deploy available units/personnel to assist the member(s) in distress.
- Assign specific members the job of Safety Team, or assign an available company as the FAST Unit, while awaiting the replacement of the initial FAST Unit.
- Notify the dispatcher that the FAST Unit is being put to work, request an additional FAST Unit and transmit appropriate signals as needed (e.g., 10-66, 10-60).



## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Fire Fighter Expectations of Command

Fire/EMS Safety, Health & Survival Week

June 19-25, 2011

# Surviving the Fire Ground



Fire Fighter,  
Fire Officer  
& Command  
Preparedness

[www.iafc.org/safetyweek](http://www.iafc.org/safetyweek)



## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Firefighter Expectations of Command



Command officers should be properly trained in all aspects of emergency and Mayday operations.





## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Command Level Mayday Training



- ▶ Incident Commanders need to be trained and well versed in Mayday operations.
- ▶ Command and control are the backbone to any operation.
- ▶ The [Command Element] needs to accurately assess risks, make tactical decisions and maintain control during Mayday operations.
- ▶ Continuing education and training will ensure a proper level of Mayday operation proficiency by the [Command Element].



## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Post-Rescue



Consideration must be given for a Critical Incident Stress Debriefing for the members involved in the Mayday.





## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Communications



- ▶ Clear and deliberate communication by command for the tasks to be performed are essential to maintain safety on any emergency scene.
- ▶ In the event a Mayday is transmitted, the Incident Commander may instruct the member transmitting the emergency to switch to channel 16, the dedicated 5-watt emergency channel. This may be needed to free up the primary tactical channel.
  - If the Mayday is for missing member and the IC orders a Feedback or Emergency Alert Tone Assisted Rescue to locate the member, operations will have to move to another channel, for instance channel 3, the secondary tactical.
- ▶ Excessive, un-needed, communications can lead to a Mayday not being able to be transmitted.





## CHAPTER 4 FIREFIGHTER EXPECTATIONS OF COMMAND



### Defensive Operations



- ▶ Ensure all interior personnel are out of the structure *before* operation of exterior Master Streams.
- ▶ Maintain accountability to prevent freelancing.
- ▶ Ensure structural stability before re-entering structure .

*"We will risk a lot to save a lot, We will risk little to save little, We will risk nothing to save nothing."*