

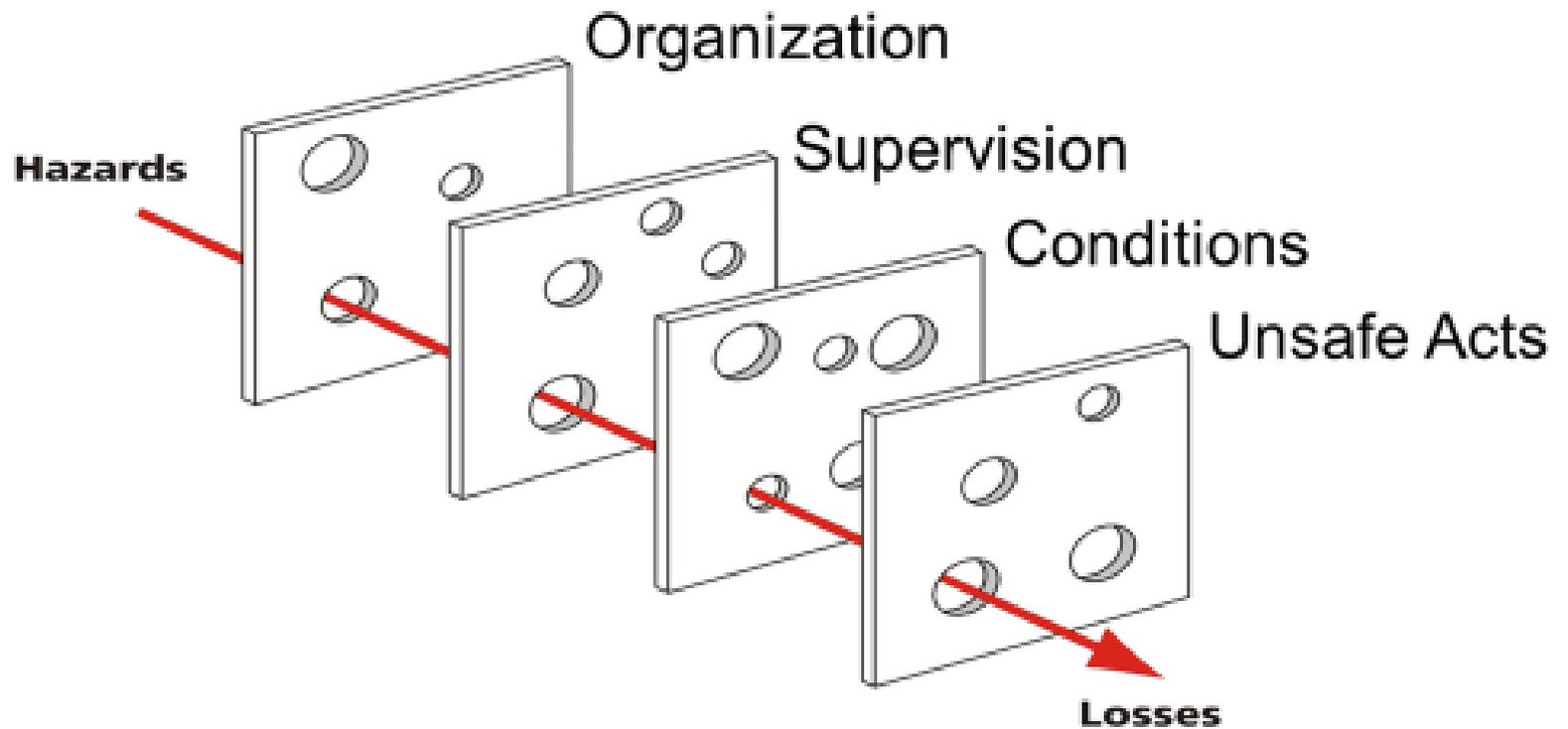
**PROJECT  
MAYDAY  
VOLUNTEERS  
2015-2021**

***UP DATED: JANUARY 1, 2022***

# Concepts

## “Cumulative Act Effect” (1990)

University of Manchester



## **Errors**

- ***Critical* ...** Difficult to recover from, (30-75 seconds)
- ***Serious* .....** Need to fix issue or *evacuate* (60 to 180 seconds)
- ***Minor* .....** Can be overcome with changes in strategy/ tactics, additional resources

# UNSAFE ACTS

## ERRORS

Decision Errors

Skilled Base Errors

Perceptual Errors

Risk Assessment During Operations

Task Misprioritization

Decision Making During Operation

Procedural Error

Error Due To Misperception

## VIOLATIONS

Routine Violations

Exceptional Violations

Violations of SOP/SOG, Orders, Regulations

Lack of Discipline

# UNSAFE ACTS

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Decision Errors

Skilled Base Errors

Perceptual Errors

Risk Assessment During Operations

Task Misprioritization

Decision Making During Operation

Procedural Error

Error Due To Misperception

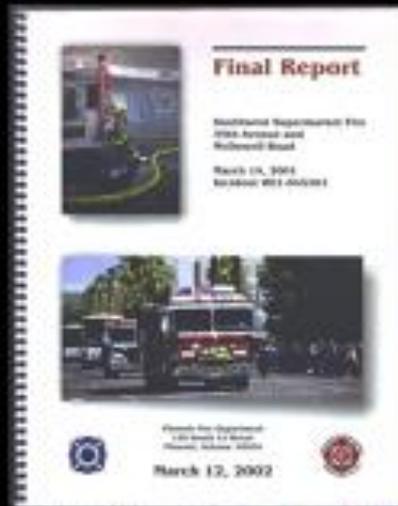
## VIOLATIONS

Routine Violations

Exceptional Violations

Violations of SOP/SOG, Orders, Regulations

Lack of Discipline



**This program honors  
the memory of Brett  
Tarver**



FOOD ITEMS ETC

207'-2"

6-FOOT-WIDE  
STEEL ROLL-UP  
DOOR

SOUTH  
ENTRANCES

STORAGE

MEAT  
COOLER

MEAT PREPARATION ROOM

MAIL STORAGE AREA

MAIL SUPERMARKET

3-FOOT-WIDE  
STEEL  
MAIL-DOOR

PRODUCE STORAGE  
AREA

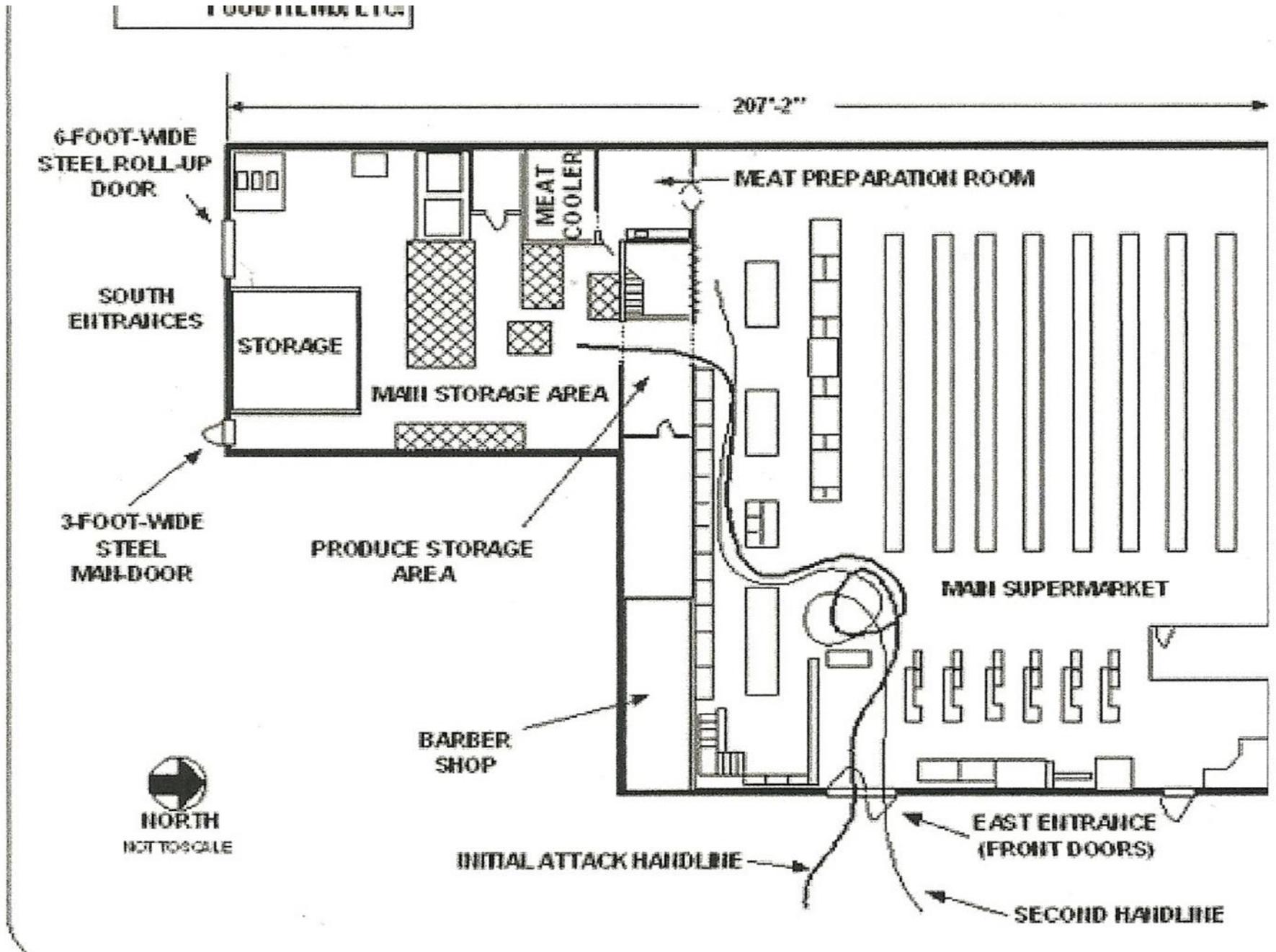
BARBER  
SHOP



INITIAL ATTACK HANDLINE

EAST ENTRANCE  
(FRONT DOORS)

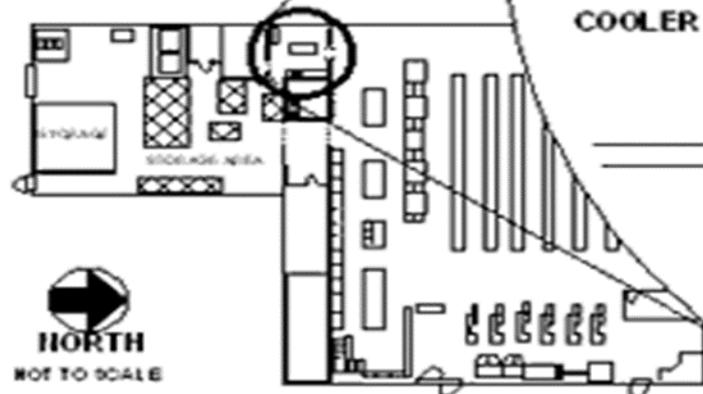
SECOND HANDLINE



**KEY**

Ⓥ LOCATION OF VICTIM WHEN FOUND

① LOCATION OF INJURED FIRE FIGHTER #1 WHEN FOUND

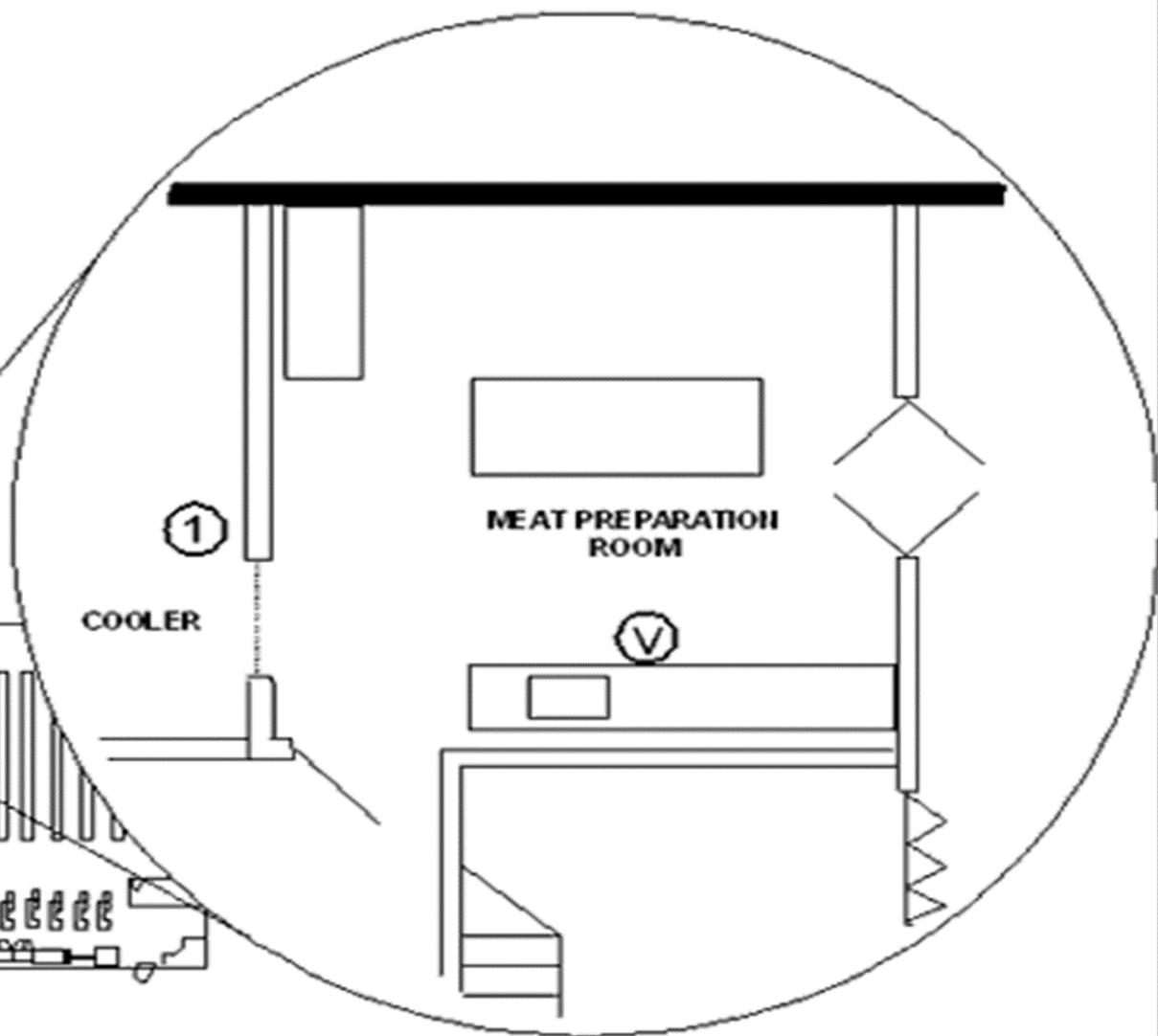


COOLER

①

MEAT PREPARATION ROOM

Ⓥ



**MEAT COOLER WHERE INJURED  
FIRE FIGHTER #1 WAS FOUND**

**VICTIM AND INJURED  
FIRE FIGHTER #1  
REMOVED THROUGH  
SWINGING DOOR TO  
MAIN STORAGE ROOM**

**APPROXIMATE  
LOCATION WHERE  
VICTIM WAS FOUND**

**NORTH**



**PALLETS OF  
PRODUCE VICTIM  
AND CREW TRIPPED  
OVER WHILE EXITING  
PRODUCE STORAGE  
AREA**

**DIRECTION THE VICTIM AND  
HIS CREW WERE HEADING  
WHEN THEY BECAME  
SEPARATED**

**MAIN STORAGE ROOM AND  
CONTENTS NEGOTIATED BY  
RESCUE CREWS DURING THE  
REMOVAL OF THE VICTIM AND  
INJURED FIRE FIGHTER #1**

**MAN-DOOR**

**STEEL ROLL-  
UP DOOR**

**NORTH**



- 1732hrs...E21 reports finding the victim (misunderstood) follow them out, collapses (respiratory arrest)
- 1734hrs... RIT-1 / RIT – 2, hear PASS unit but cannot locate (low air alarm) (1 MAYDAY)
- 1739hrs... RIT-3/ RIT-4, hear PASS unit, find SCBA, but NO FF (low air) (2 – MAYDAYS)
- 1741hrs... RIT-5 /RIT-6, find TRAVER, standing-up ..... walks away (2 MAYDAYS)
- 1746hrs...RIT-7/ RIT-8, locate TRAVER, unconscious respiratory arrest/ no pulse, begin to remove TRAVER (fire coat). (1 – MAYDAY)
- 1750hrs...RIT-9 / RIT -10 assistance, TRAVER is removed ... 1756hrs

Lots of free-lancing, not enough informative communications



March 2020 Logan County, Maryland















# **PROJECT MAYDAY**

**A forensic study focused on  
saving lives, through research  
and learning**

**PROJECT MAYDAY**



is  
of  
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ott

“You will be missed,  
Chief Cool Command”

**The “MAYDAY” Project is a comprehensive study of “mayday” incidents, responses, and prevention.**

**Funded for one year (2015) by a private foundation grant to:**

**CERT**

**Command Emergency Response  
Training, Glendale, Arizona  
Don & Bev Abbott**

**Dr. Vinton Bennett   Dr. Jason Bebermeier  
Dr. Albert Grisson   Dr. Allan McCourtee  
Dr. George Grant   Capt/Dr. Philip Stuart  
Dr. Matt Walker   Dr. Linda McNeil**

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**Participation in this project is voluntary and confidential, department names or individual names are not released or used in this project without their written permission.**

**We thank all these departments, Chiefs, Officers and Firefighters for their time and interest in furthering firefighter safety.**

# Mayday Project Surveys

Component 1: Survey of department information; organization, number members, apparatus, runs, response type/numbers, SOPs, and training.

**(78 questions)**

Component 2: Upon the completion of Component 1, Component 2 will be Sent, it deals with all the identified Components of your Mayday, size-up, Critical factors, IAP, communications, Response, etc.

**(154 questions)**

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**Component 3: Upon completion of Component 2, Component 3 will be sent, it Deals with the department's handling Post action response, critique, follow-up Training, etc.  
(78 questions)**

***“In order for a firefighter to survive the Dangers of firefighting, he must know how Other firefighters have died or been Seriously injured.”***

**Vinny Dunn, Deputy Chief FDNY (ret.)**

## **Component 2: Years of Service/Experience**

**“Project Mayday” has accumulated 2,961 volunteer radio traffic audio and 131 dash/video tapes, confirming almost all of our information and data**

**We hope that this “Mayday Project” will be the most complete informational analysis on “maydays” ever conducted and proven recommendations on communications, Command/operations, response, training, and follow-up.**

## *Establish the Terminology*

- **Priority Traffic**
  - **Urgent**
    - **Emergency**
      - **Emergency Traffic**
        - **MAYDAY**

**Initiation or transmission of a firefighter distress signal, “Mayday, Mayday, Mayday” produces more stress and potential chaos than any other single type of incident we may encounter throughout our careers.**

**A trapped or disoriented firefighter has two factors working against them.**

- 1) Limited air supply and, 2) flame impingement barring the fact that direct physical trauma is not involved.**

***“Mayday, Mayday, Mayday”***

**RED ALERT**

**PERSONAL EMERGENCY**

***A comment made often is about officer within a department not being qualified for the position, but they were the most popular. To reduce MAYDAY's in a volunteer department you must have qualified and trained members.***



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**OKOK! I'LL CALL A MAYDAY...**

**MAYDAY MAYDAY**

**MAYDAY**

**MAYDAY**

**MAYDAY**

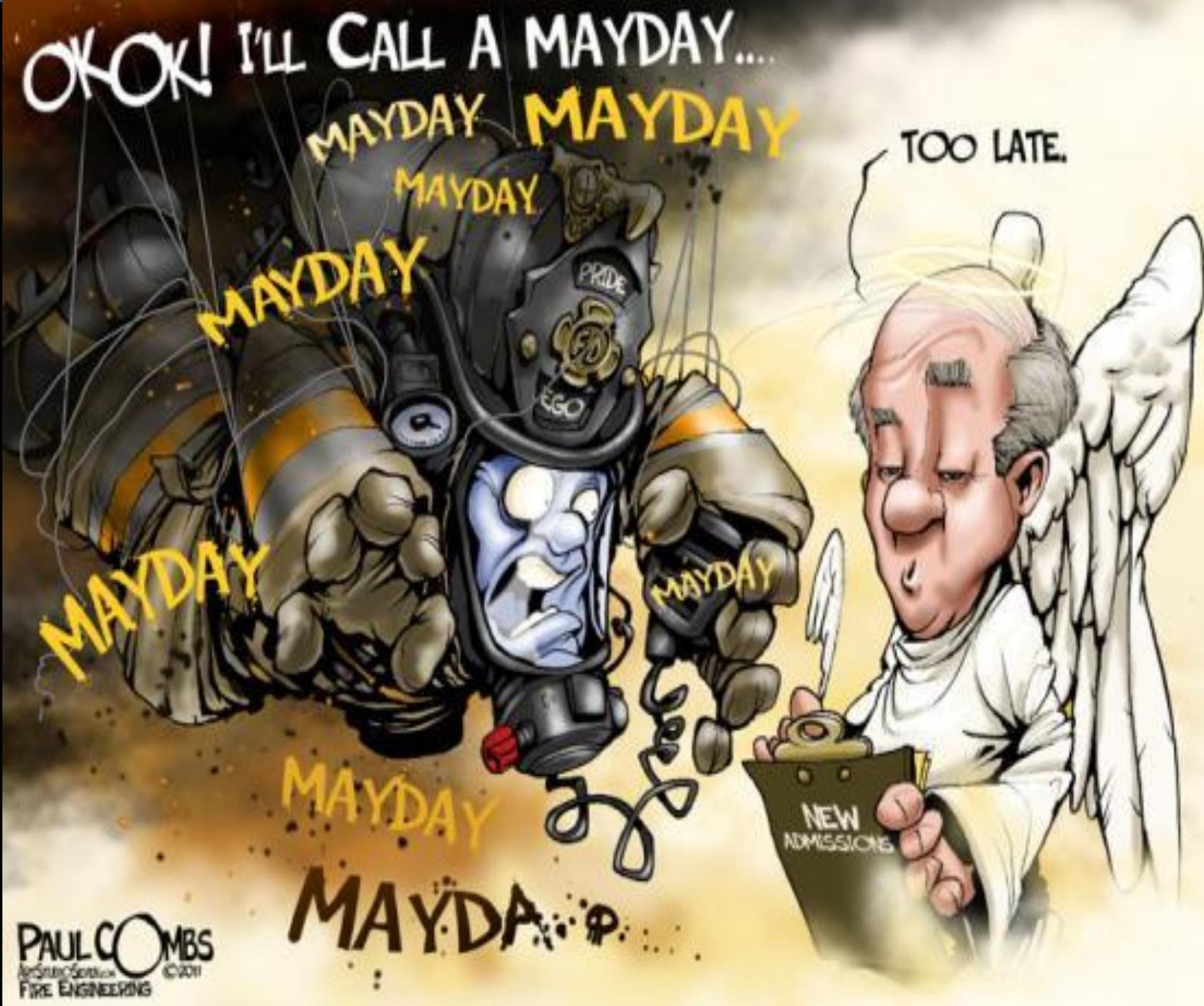
**MAYDAY**

**MAYDAY**

**MAYDAY**

**TOO LATE.**

**PAUL COMBS**  
Fire Engineering ©2011



# **VOLUNTEER**

**“Mayday” reports from 5,846 fire departments representing 50 states  
(as of December 31, 2021)**

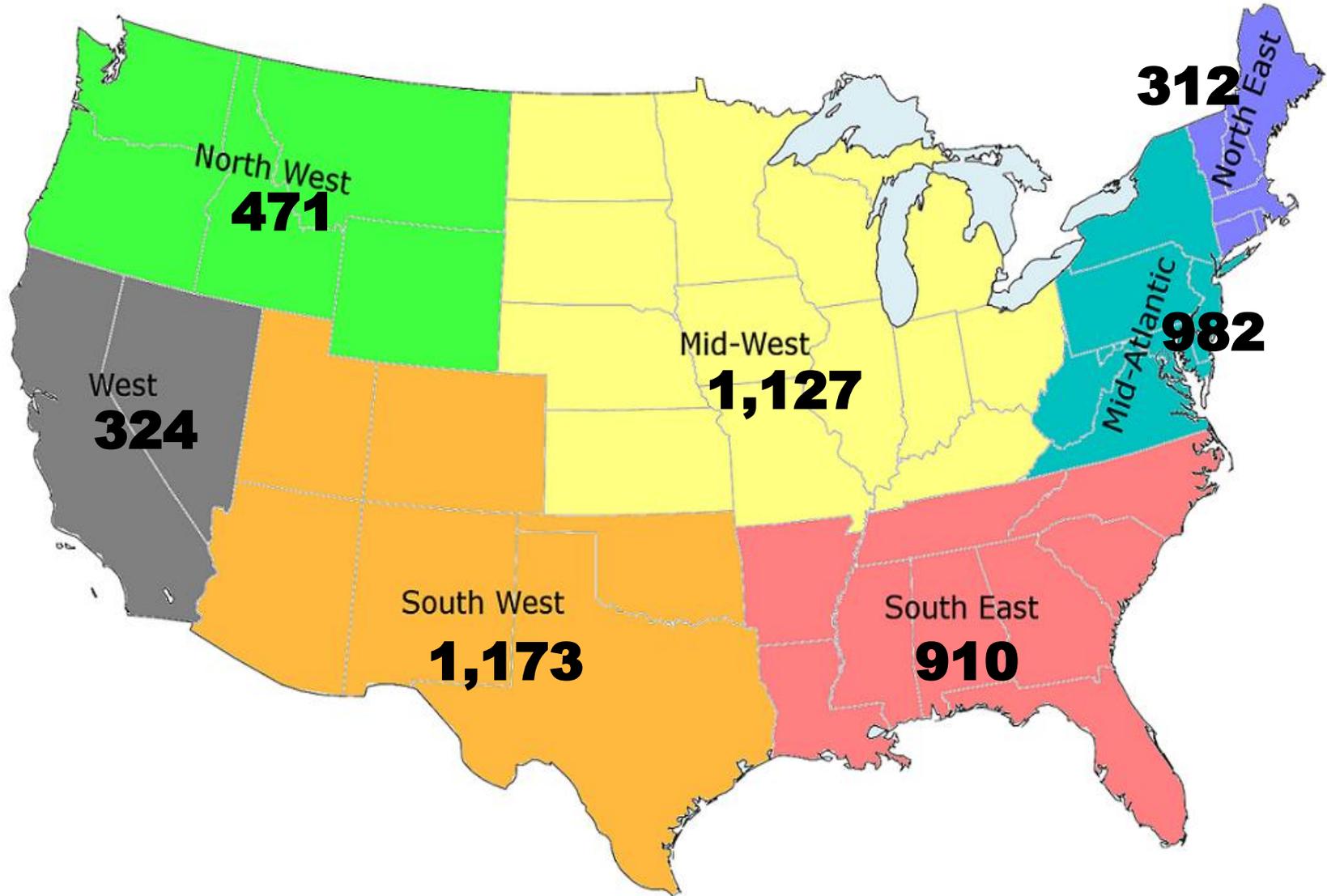
## **Completed Components**

**Component 1: 5,737 departments**

**Component 2: 5,281 department**

**Component 3: 4,364 departments**

# Reported MAYDAYS by Region ... Volunteer



# **“MAYDAY” PROJECT**



## **Component 1 : Department Manning**

### **Department Manning**

**Combination departments are difficult to categorize, therefore, volunteer departments with paid/career members, remained in the Volunteer Section if there were more volunteers than paid/career, or the paid/career were driver/operators only.**

**If there were more paid/career firefighters than volunteers or paid/career members served as command officers, they were placed in Career Section.**

# Volunteer Fire Department Manning

## Department Manning

<i>&lt; 24</i>	<i>277</i>	<i>5.2%</i>
<i>25-35</i>	<i>1,215</i>	<i>23.5%</i>
<i>36-45</i>	<i>1,142</i>	<i>21.6%</i>
<i>46-55</i>	<i>930</i>	<i>17.6%</i>
<i>56-75</i>	<i>848</i>	<i>16.5%</i>
<i>76-100</i>	<i>261</i>	<i>4.9%</i>
<i>&gt;100</i>	<i>337</i>	<i>6.3%</i>

**2015-2021**

*\* 253 pending*

**5,281**

# Age of Volunteer Firefighters

## Age of Firefighters

<i>18 – 22</i>	<i>482</i>	<i>9.1%</i>
<i>23 – 32</i>	<i>1,397</i>	<i>26.4%</i>
<i>33 – 42</i>	<i>1,071</i>	<i>20.2%</i>
<i>43 – 52</i>	<i>937</i>	<i>17.7%</i>
<i>53 – 62</i>	<i>833</i>	<i>15.7%</i>
<i>63 – 70</i>	<i>309</i>	<i>5.8%</i>
<i>&gt; 70</i>	<i>152</i>	<i>2.8%</i>

**2015-2020**

**5,281**

# Years of Service of Volunteer Firefighters

## Years of Service

<i>1 – 5</i>	<i>922</i>	<i>17.4%</i>
<i>6 – 10</i>	<i>1,279</i>	<i>24.2%</i>
<i>11 – 15</i>	<i>1,125</i>	<i>21.3%</i>
<i>16 – 20</i>	<i>962</i>	<i>18.2%</i>
<i>21 – 25</i>	<i>573</i>	<i>10.8%</i>
<i>26 – 30</i>	<i>241</i>	<i>4.5%</i>
<i>&gt; 31</i>	<i>178</i>	<i>3.3%</i>

**2015-2021**

**5,281**

# Time of Day of Volunteer Firefighters MAYDAY

<i>0001 – 0300</i>	<i>542</i>	<i>10.2%</i>
<i>0300 – 0600</i>	<i>668</i>	<i>12.6%</i>
<i>0600 – 0900</i>	<i>643</i>	<i>12.1%</i>
<i>0900 – 1200</i>	<i>1,117</i>	<i>21.5%</i>
<i>1200 – 1500</i>	<i>783</i>	<i>14.8%</i>
<i>1500 – 1800</i>	<i>596</i>	<i>11.2%</i>
<i>1800 – 2100</i>	<i>559</i>	<i>10.5%</i>
<i>2100 – 2400</i>	<i>673</i>	<i>12.7%</i>

**2015-2021**

**5,281**

## Component 2: Size-Up / Initial Radio Report

**Size Up / Initial Radio Report: (5,281)**

**360: NO 360: 2,492 (47.1%)  
Incomplete: 824 (15.6%)  
Completed: 1,729 (32.7%)**

**Address Confirmed: NO: 2,897 (54.7%)  
YES: 2,384 (45.3%)**

**Sides of Structure:**

- North, South, East, West 52%
- Alpha, Bravo, Charlie, Delta 44%

## Component 2: Size-Up / Initial Radio Report

**Building Description: (1,729)**

- **Size (small, medium, etc.): 44%**
- **Height (stories): 73%**
- **Construction Type: 28%**  
**(block, lightweight, etc.)**
- **Occupancy Type: 89%**  
**(residential, apartment, commercial, etc.)**

## Component 2: Size-Up / Initial Radio Report

### Problem Description:

- Smoke / Fire Conditions 79%
- Actual Location of F & S 67%%

### Initial Incident Action Plan

(reported by 1<sup>st</sup> unit on-the-scene)

- Task(s) 45%
  - Supply Line 59%
  - S & R (NO hose line) 17%
  - Pre-Connect 87%
- Location 76%
- Objectives 64%

## Component 2: Size-Up / Initial Radio Report

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### Assume and Name Command:

- Passed Command to next unit 19%
- Assumed command 69%
- Named command 51%
- In-coming units given assignment, location, tasks 44%
- Mobile Command 89%
- Stationary Command 11%

### RIT established:

- YES: 33%
- RIT Exception: 57%
- 2<sup>nd</sup> RIT established: 4.8%

## RESCUE TEAM BY ANY NAME

<b>IRIC</b>	Initial Rapid Intervention Crew
<b>RIC</b>	Rapid Intervention Crew
<b>RIT</b>	Rapid Intervention Team
<b>FAST</b>	Firefighter Assist and Search Team
<b>IRT</b>	Immediate Response Team
<b>RDU</b>	Rapid Deployment Team
<b>RICO</b>	Rapid Intervention Company Team
<b>RRT</b>	Rapid Response Team

## Component 2: Size-Up / Initial Radio Report

### Declare Strategy:

- Offensive 76%
- Defensive 12%
- NO strategy declared 12%

### Additional Resource:

- 1<sup>st</sup> Alarm 23%
- 2<sup>nd</sup> Alarm 6%

## **Component 2: Size-Up / Initial Radio Report**

### **Accountability Location:**

**- Location established 42%**

### **Transfer of Command:**

**- Announced new command location 17%**

**- Transfer of IAP 19%**

**- Confirm transfer and strategy 15%**

### **Strategic Shift:**

**- CAN Reports 21%**

**- Notified dispatch (emergency tones) 28%**

**- Announce shift of strategy 24%**

**- Announced abandon structure 57%**

**- PARs conducted after abandon structure 55%**

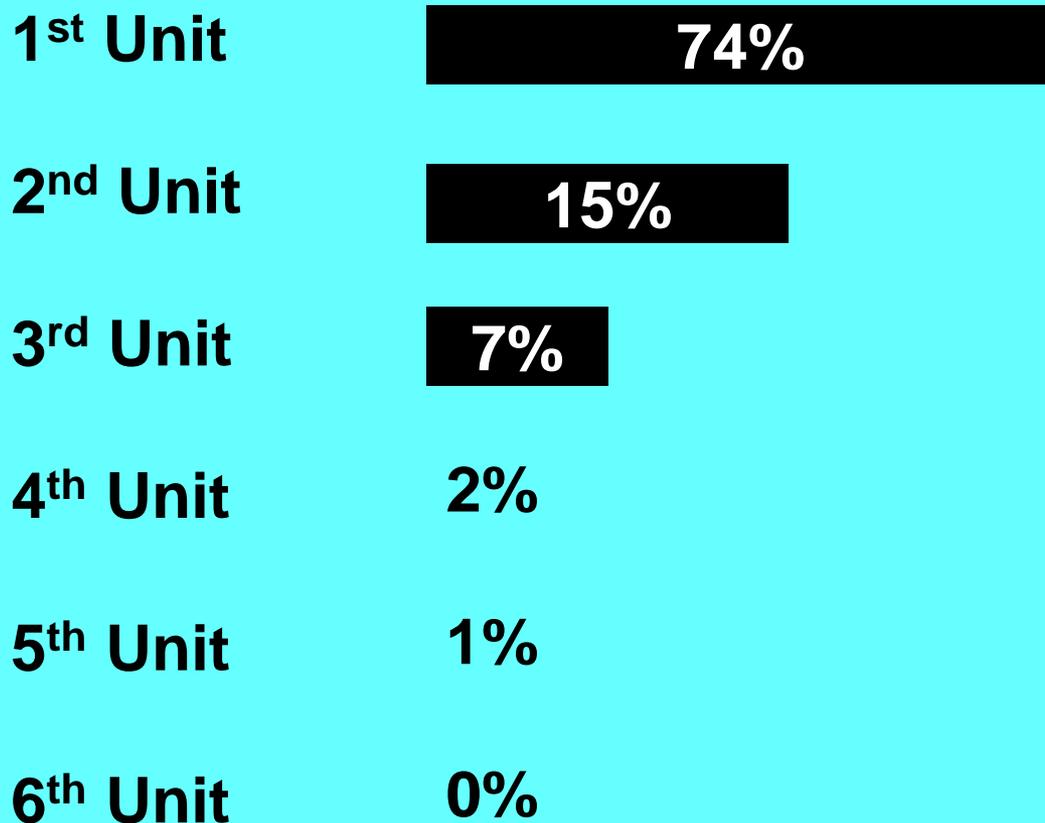
## **Component 2: Size-Up / Initial Radio Report**

### **Additional Information: Initial Operation**

- **Utilities Controlled:** **57%**
- **Forcible Entry required (announced)** **4%**
- **Ventilation:**
  - **Vertical** **17%**
  - **Horizontal** **21%**
  - **PPV** **26%**
  - **Door Control** **9%**
  - **Hydraulic** **18%**
  - **None** **27%**

## ON-SCENE INFORMATION

### UNITS / SCENE involved in “Maydays”



# ON – SCENE INFORMATION

## UNITS/SCENE involved in “Mayday”

Engines

92%

Ladders

7%

Rescue

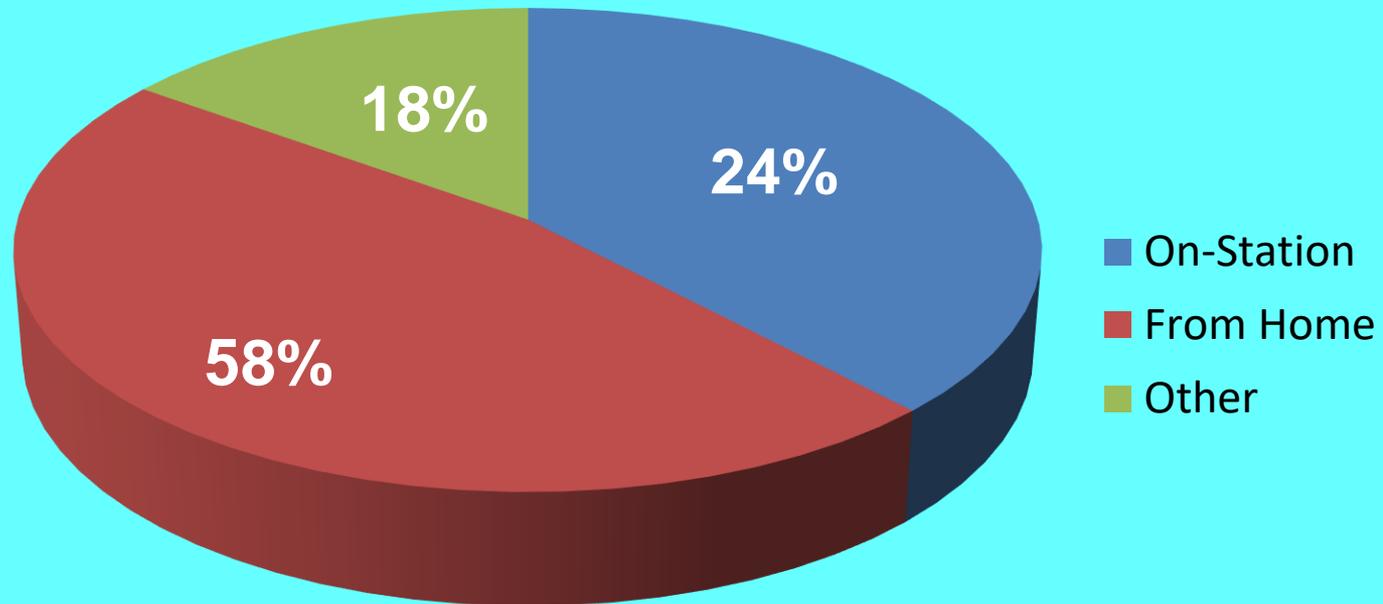
2%

## CREW SIZE

### *Crew Size/Status*

<b>2 .... Members</b>	<b>40%</b>
<b>3 .... Members</b>	<b>39%</b>
<b>4 .... Members</b>	<b>21%</b>

# STAFFING

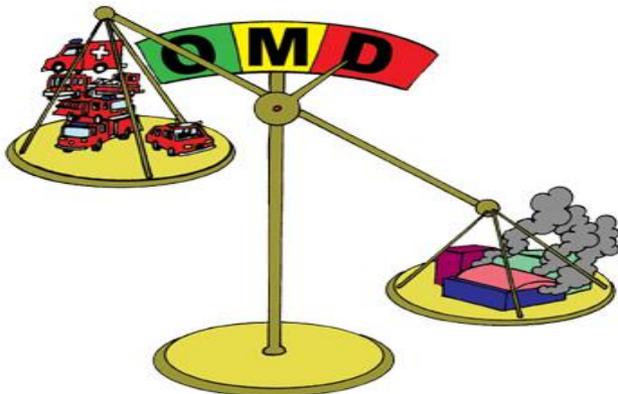


# RISK MANAGEMENT PLAN



**WE'LL RISK OUR LIVES A LOT, if necessary, TO PROTECT SAVABLE LIVES**

**WE'LL RISK OUR LIVES A LITTLE, in a HIGHLY calculated manner, TO PROTECT SAVABLE PROPERTY**



**We will NOT RISK OUR LIVES AT ALL, for what is already LOST (people or property)**

**NOT  
ALL  
MAYDAYS  
ARE CREATED  
EQUAL**

**Types of Maydays**

<b>Lost/Sep. from Hose</b>	<b>1,289</b>	<b>24,4%</b>
<b>Air Problems</b>	<b>918</b>	<b>17.4%</b>
<b>Falls/Collapse Basement</b>	<b>897</b>	<b>17%</b>
<b>Entrapment</b>	<b>731</b>	<b>13.8%</b>
<b>Medical</b>	<b>496</b>	<b>9.4%</b>
<b>Falls Off/Through Roof</b>	<b>462</b>	<b>8.7%</b>
<b>No Communications</b>	<b>273</b>	<b>5.1%</b>
<b>Other</b>	<b>219</b>	<b>4.1%</b>

**2015-2021****5,271**

**COMPONENT 2: Lost, Separated from Hose Line – MAYDAY**



**COMPONENT 2: Lost, Separated from Hose Line –  
MAYDAY**

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**Lost, Separated from Hose Line 1,259**

- **Lost (NO HOSE LINE) ..... 419 ..... (33.2%)**
  
- **Separated from Hose Line ... 840 ..... (66.7%)**
  - **150ft...(1 1/2-1 3/4) .....277 ..... (32.9%)**
  - **200ft...(1 1/2-1 3/4) .....319..... (37.9%)**
  - **250ft...(1 1/2-1 3/4) .....244..... (29%)**

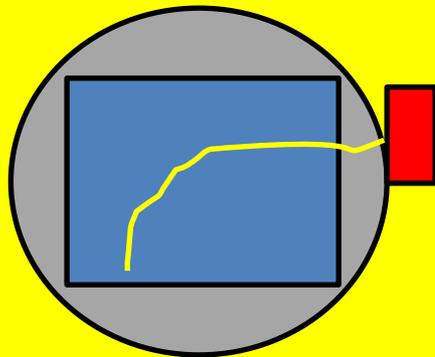
## **COMPONENT 2: Lost, Separated from Hose Line – MAYDAY**



**Hose training is critical to crew performance. each member has a role/ position that allows for a more effective use in advancing the hose line and providing potential safer and more efficient fire attack**

**COMPONENT 2: Lost, Separated from Hose Line – MAYDAY**

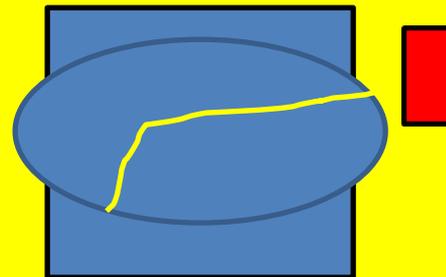
**SMALL - <1,200sqft**



**Covers 100%**

**MEDIUM – 1,201 - 2,400sqft**

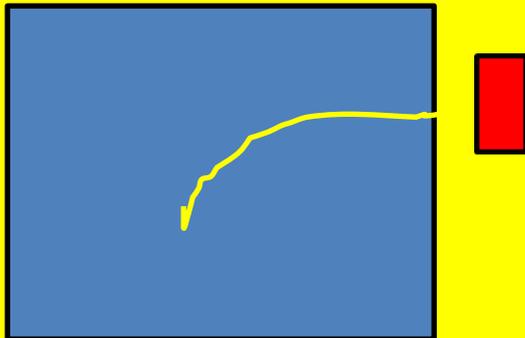
**30ft  
From  
structure**



**Covers 75%**

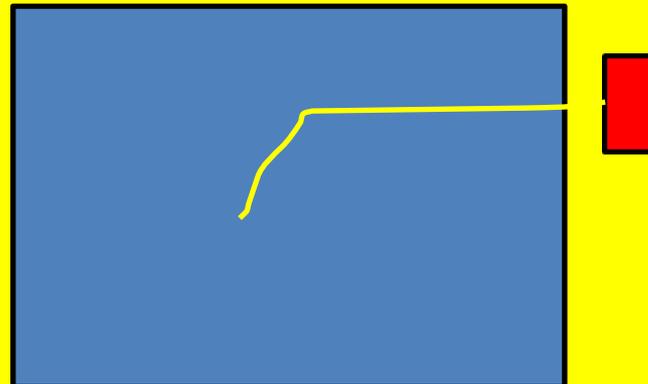
**200ft  
Handline**

**LARGE – 2,4001 – 5,600sqft**



**Covers 50-35%**

**MEGA - > 5,601**



**Covers – 25 – 10%**

***Preventing MAYDAYS ....  
BEST Practices***

## **Why do we take a hose line to the Interior?**

- *First line is our basic priorities, LIFE and property*
- That means the first line is stretched to protect our egress
- In commercial structures, find the door closet to the fire, the main entrance still needs to be protected this is where most customers will want to exit.
- **REMEMBER:** Estimate hose distances...
  - distance from apparatus to entrance
  - distance from the entrance to fire area
  - *amount of hose needed to cover entire area*

***Preventing MAYDAYS ....  
BEST Practices***

**Lost, Separated from Hose Line**

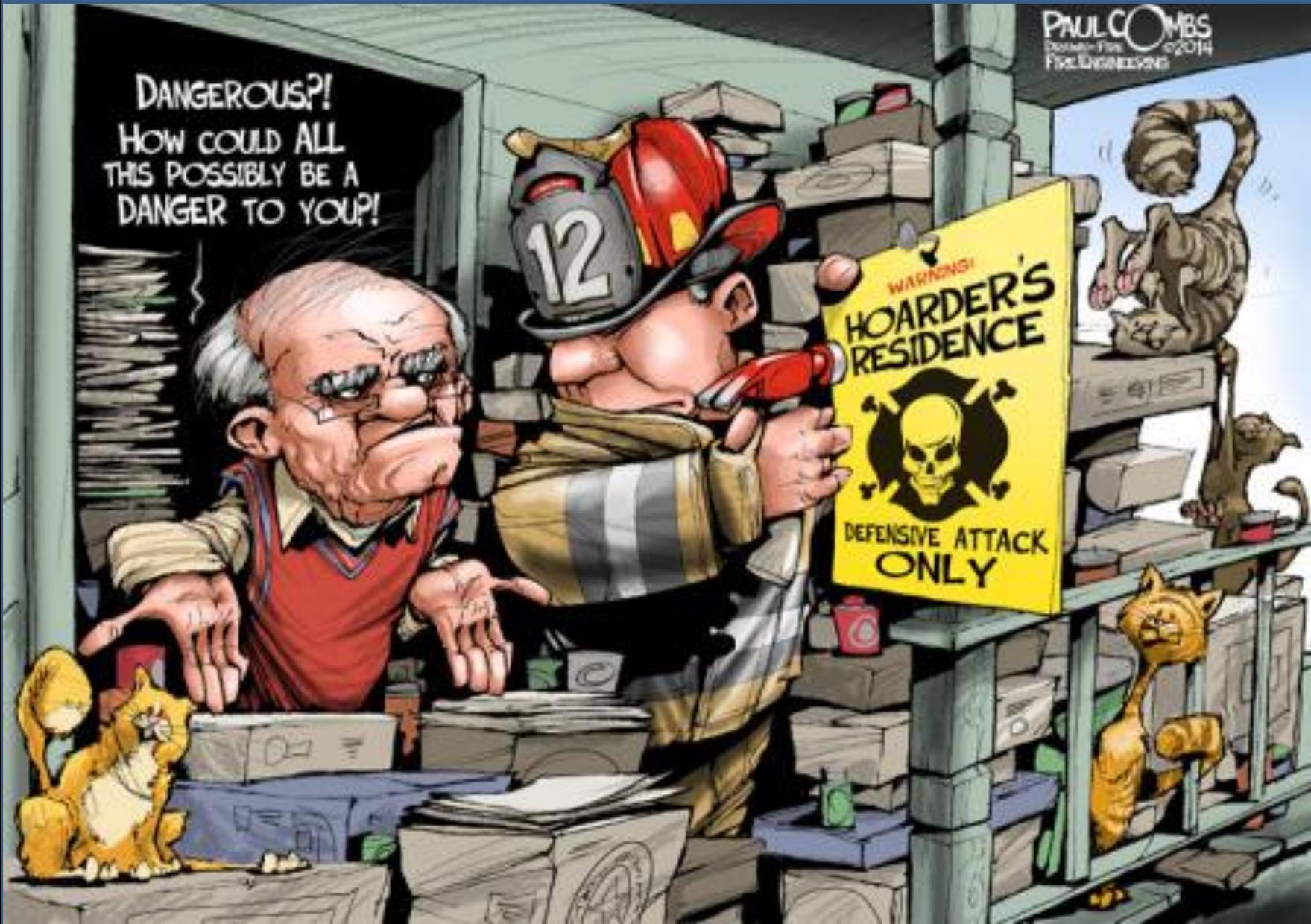
- **CONDUCT 360**
- **Prior to entry check nozzle setting**
- **Crews entering a working structure fire SHALL have a CHARGED fire attack hand line.**
- **Houseline is a lifeline to the outside**
- **Hose size depends on the size of the fire, structure, and potential fire behavior.**
- **Avoid kinks and loops (NO dry line)**
- **In commercial structures, pick the right size hose for the job, NO gated wye passed the door.**

***Preventing MAYDAYS ....  
BEST Practices***

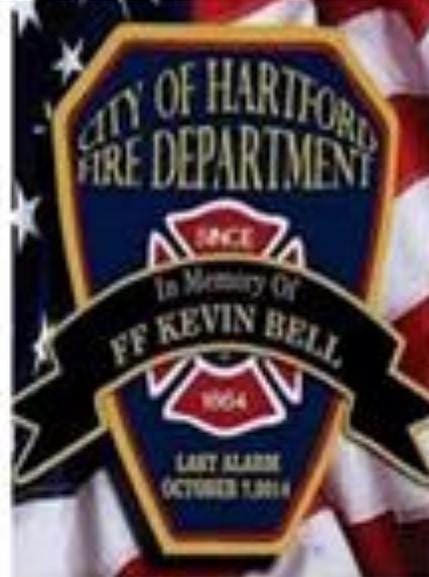
- In commercial structures, have adequate crew size and placement to advance the line and a FF at the door counting couplings and reporting (100ft , 150ft, 200ft....at the door).
- Choice closest entry point to the fire.
- DO NOT extend lines inside working structure fires.
- When making search, have FF come up on the hose line to take your place, maintain voice contact or tag line, distances NO more than 15-20ft.

# COMPONENT 2: Trapped or Unable to Move - Mayday

MAYDAY PROJECT



# TYPE OF MAYDAY – AIR ISSUE



## COMPONENT 2: Air Problems

### TYPES OF AIR PROBLEMS

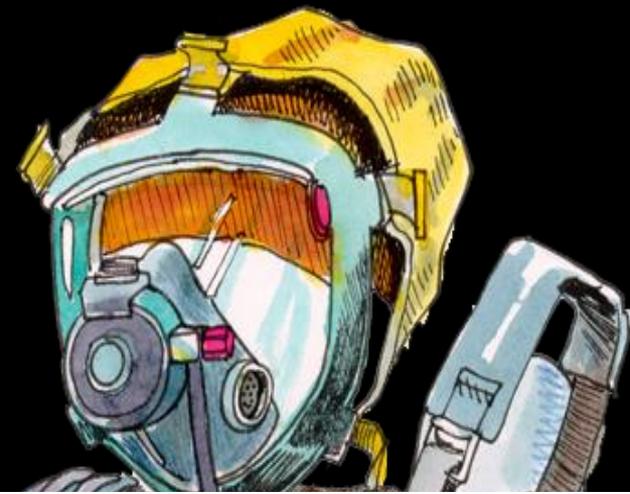
<b>Low Air</b>	<b>609</b>	<b>66.3%</b>
<b>Out of Air</b>	<b>256</b>	<b>27.8%</b>
<b>Facepiece</b>	<b>23</b>	<b>2.5%</b>
<b>Regulator</b>	<b>36</b>	<b>3.9%</b>

**2015-2021**

**24.4%%**

**918**

# TIME vs AIR = Survival



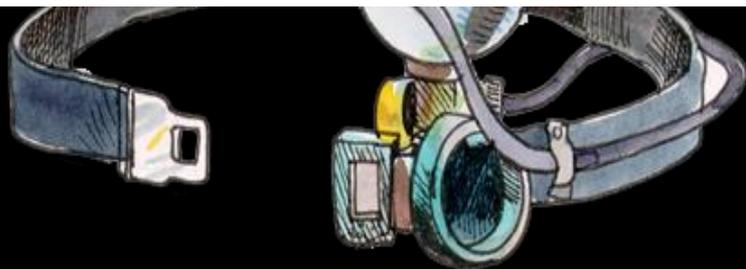
**LOW AIR ALARM**

**PSI vs Time**

**Wet Gear vs Dry Gear**

**Time = Options**

**Options = Survival**

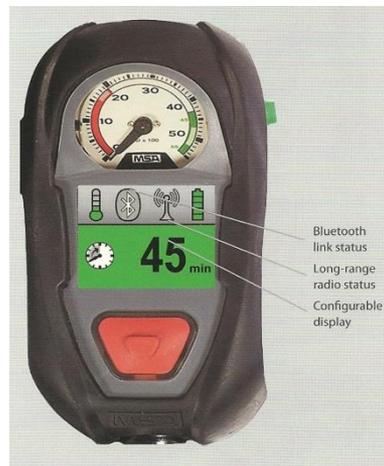




The first 1/3 of the air supply is to carry out assignment.



2018 Audio tapes we noticed a higher number of Firefighters speaking on the radio with low air alarms going off in the background that ever before.



The final 1/3 of the air supply is the safety margin.

## **Component 2: Types of Mayday - Air Problems**

### **PASS ALARM USE:**

**We can make a case for the constant activation of the PASS alarm Vs using the alarm intermittently. The constant alert of the PASS Device as in a “Mayday”, will add sensory overload, to which the Firefighter will respond physiologically with increases in anxiety, Heart rate, and respiratory rate, which ALL demands more air. Although the brain may represent only 2% of body weight (?), it Uses about 20% of the body’s metabolic energy.**

**Breathing techniques are only one technique used in classes in which we teach resiliency. We recommend a simple model: mindset controls, emotion, emotion will alter biology, and biology will effect performance. These establish mental toughness and acuity resiliency, helps establish the right frame of mind to achieve results because luck is not a sound fireground tactic.**

## Component 2: Types of Mayday - Air Problems

# PREVENTING MAYDAYS

## Low Air – OUT of Air Emergencies

---

- ALWAYS start work with a FULL cylinder
- Listen/Monitor for time
- Monitor heads-up display (air reports by light status/ **RED** report actual PSI
- CO should monitor crews air status
- If a crew members has a air emergency, DO NOT send them out alone, another crew member/or the crew should leave with the member.
- In a MAYDAY situation where YOU lose your mask seal... **STOP**... RESEAL, if resealing fails to fix the problem, let the IC know IMMEDIATELY.

- As soon as you reach **LOW AIR ALERT ALARM**, begin using **LOW AIR BREATHING TECHNIQUE EXIT** the structure.
- Buddy breathing/trans fill are last resorts
- Face piece replacement is a difficult procedure, make sure everything is ready, strap loose, face wipe, regulator attached – operating, tighten straps create a seal.  
If unconscious, crack by-pass valve, and remove consider, waist strap being place between the legs if NO webbing/rope is used as rescue harness.
- Attach air supply (RIT Bag) to the victim)
- Make sure during removal, cylinder does become closed.

## **Component 2: Types of Mayday - Air Problems**

**There are many factors that contribute to the length of time a firefighter takes to expend a full cylinder:**

- **Age**
- **Weight**
- **General health**
- **Size of person**
- **Fitness level**
- **Stress level**
- **Work intensity**

**We tell firefighters best way to save air is to:**

**- Sit down   - Don't move   - Breath slowly**

**NOT REAL !**

## Component 2: Types of Mayday - Air Problems

- **Three factors influence every breath...**
  - how fast or slow
  - deep or shallow
  - abrupt or smooth
- **During high work rate, the muscles need up to 100 times more oxygen than at rest, the heart must work 8 to 10 times harder.**
- **Physical work brings on many changes in the body:**
  - increased pulse
  - faster breathing
  - more blood per heart beat
  - perspiration
  - high blood pressure
  - higher body temperature
  - more blood to the muscles
  - greater lung absorption to maximize use of of red blood cells

## Component 2: Types of Mayday - Air Problems



**Component 2: Types of Mayday - Air Problems**

<b>30 minute</b>	<b>45cu.ft.</b>	<b>21lbs</b>
<b>45 minute</b>	<b>66cu.ft.</b>	<b>27lbs</b>
<b>60minute</b>	<b>87cu.ft.</b>	<b>32lbs</b>

- **30 minute cylinder ..... 10%**
- **45 minute cylinder ..... 63%**
- **60 minute cylinder ..... 27%**

**Average Air Usage: 80L/min to 100L/min, when involved in a MAYDAY, usage increases 110L/min to 140L/min**

*100 psi ... 8 – 12 breathes ..... Pressure /Volume ?*

## Component 2: Types of Mayday - Air Problems

- **Control**  
No specific technique, breathe slowly, conserve air  
OOA: Deep breath facepiece in place, two normal w/out facepiece
- **Skip breathing**  
A normal inhalation held for several seconds, followed by an additional inhalation before exhalation
- **Box breathing**  
A slow inhalation over 3-4 seconds, held for 3-4 seconds, exhaled over 3-4 seconds, and then held for 3-4 seconds before the next inhalation
- **Reilly Emergency Breathing Technique**  
A slow inhalation followed by an exhalation that was controlled by making a humming sound as the breath was released
- **Straw breathing**  
A slow inhalation followed by an exhalation that was controlled by pursing the lips to mimic breathing through a straw

## Component 2: Types of Mayday - Air Problems

NFPA 1981, 2018 Edition

Pneumatic Data-logging

- ▶ Minimum Requirements
- ▶ Initial Air Activation (pressure, date and time stamp)
- ▶ Data Logging @ 30 second intervals (pressure, date and time stamp)
- ▶ Data Logging of Pressure Milestones
- ▶ 100%, 75%, 50%, and 35% (EOSTI)
- ▶ Breathing Rate @ 30 second intervals (minimum 5 LPM resolution)
- ▶ HUD Deactivation (pressure, date and time stamp)
- ▶ Retain 36 hours of data
- ▶ Does not replace the PASS data-logging requirement for 2000 minimum events
- ▶ Output data to CSV file
- ▶ No requirement for temperature data log

## Component 2: Types of Mayday - Air Problems

- As soon as you reach LOW AIR **ALERT** ALARM, begin using LOW AIR BREATHING TECHNIQUE EXIT the structure.
- Buddy breathing/trans fill are last resorts
- Face piece replacement is a difficult procedure, make sure everything is ready, strap loose, face wipe, regulator attached – operating, tighten straps create a seal.  
If unconscious, crack by-pass valve, and remove consider, waist strap being place between the legs if NO webbing/rope is used as rescue harness.
- Attach air supply (RIT Bag) to the victim)
- Make sure during removal, cylinder does become closed.

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## COMPONENT 2: Falls into Basement/Stairs



## COMPONENT 2: Falls into Basement/Stairs

**Fall into Basement/Trapped ..... 897 .... 17%**

- **Floor above Basement Collapsed ... 294 .. (32.7%)**
- **Basement Stairway Collapse ..... 277 .... (30.8%)**
- **Underfloor/ceiling Collapse ..... 326..... (36.3%)**
  
- **Basement Visible during 360 .... 73%\***

## **COMPONENT 2: Falls into Basement/Stairs**

- **Basement**
  - **NO exterior windows .... 36%**
  - **Had a second exit ..... .8%**
  - **Finished interior..... 47%**
    - w/ multi-compartments ..... 68%**
  - **Bedroom (s) ..... 44%**
  
- **Basement Stairway**
  - **exposed steps ..... 73%**
  - **enclosed stairway ..... 46%**
  - **stairway had landings....27%**

**COMPONENT 2: Fall into Basement/Trapped –  
MAYDAY**



**Delayed Discovery =  
Delayed Notification =  
Delayed Response**

**Scott M. Peterson, 2005**

# COMPONENT 2: Falls into Basement/Stairs

MAYDAY PROJECT



# **PREVENTING MAYDAYS**

## **Basements**

- Conduct 360's
- Identify basement / potential area
- Identify initial conditions ( walk-crawl / note floor conditions ((rug- discolored, hard))(( tile - cracking/soft)) (( hard floor – separation, blugging, discolored))
- Probe floor (standing or crawling)
- Check stairway condition (identify landing at the bottom of the stairs) (maintain door control)
- Attack Line (NO kinks/loops) Back-Up at the top
- Basement compartment

**COMPONENT 2: Fall into Basement/Trapped –  
MAYDAY**

**6**

**minutes**

**amount of time to collapse for  
lightweight-construction floor assemblies**

**19**

**minutes**

**amount of time to collapse for floor  
assemblies built with “legacy”  
building materials**

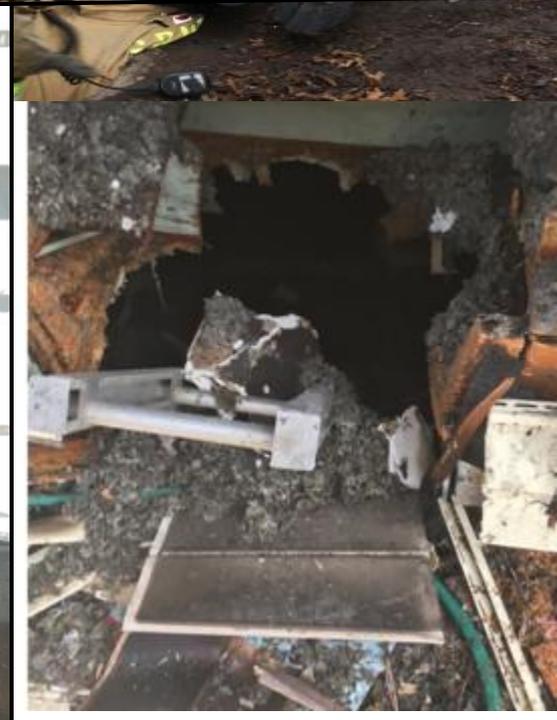
## **COMPONENT 2: Fall into Basement/Trapped – MAYDAY**

- Fire flows from basement fires developed in location other than the stairs, as the floor assembly often failed close to the location where the fire started.
- Flowing water at the top of the stairs had limited impact on basement fires. In cases it may spread the fire into hidden spaces and into the upper house or take out windows.
- Offensive fire attack through an exterior door was effective in cooling the fire compartment
- **Whatever hose line you take to a basement, needs of the length to cover the entire basement (apparatus to entrance, entrance to basement stairs, and cover the basement area**

**39%**

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**COMPONENT 2: Fall into Basement/Trapped – MAYDAY**



## **COMPONENT 2: Basements**

# **PREVENTING MAYDAYS**

## **Basements**

---

- Conduct 360's
- Identify basement / potential area
- Identify initial conditions ( walk-crawl / note floor conditions ((rug- discolored, hard))(( tile - cracking/soft)) (( hard floor – separation, blugging, discolored))
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**Rescue Team, RIT, Mayday Officer  
Training**



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**TRAPPED/UNABLE TO MOVE: 731 ..... 13.8%**

- **Wires, duck work, etc. .... 354 ... (41.3%)**
  - **Ceiling/floor collapse ..... 289 ... ( 42.6%)**
  - **Structure shift/collapse ... 138 ( 15.9%)**
- Occurred during salvage/overhaul  
..... 37%**

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# MEDICAL MAYDAYS



# MEDICAL MAYDAYS

## Medical Maydays

Heart Attack	341	68.7%
Seizure	33	6.6%
Diabetic Emergency	31	6.2%
Roadway	91	18.3%

**2015-2021**

**9.4%**

**496**

**COMPONENT 2: Falling through/off the Roof**



**COMPONENT 2: Falling through/off the Roof**



**COMPONENT 2: Falling through/off the Roof**

**FALLS THROUGH THE ROOF (462) 8.7%**

- Roof Travel 227 49.1%
- Vent Point 168 36.3%
  - Inspection Hole 29..... 18.7%
  - Vent hole 126 .....75%
- Off Roof 67 14.5%
  - Vent Hole Cut 16.5%

**NUMBER OF FF ON THROUGH ROOF:**

**1 FF Full... 67 Partial... 234 2 FF..... 44..... 3 FF..... 5**

**2015-2021**

**462**

## COMPONENT 2: Falling through/off the Roof

### **LADDERS: (462)**

- Ground ..... 278 ..... 60.1%
- Aerial ..... 66 ..... 14.2%
  - Stick ..... 35 ..... (50.7%)
  - Tower ..... 31 ..... (49.3%)

### **STRUCTURES:**

- Residential .....211 (45.6%)
- Apartments .....61 (13.2%)
- Commercial .....182 (39.3%)

**2015-2021**

**462**

## COMPONENT 2: Falling through/off the Roof

### TYPES OF ROOFS (462)

- Peaked... 326 .....70.5%
  - Asphalt .... 202 .... 43.7%
  - Wood ..... 54 ..... 11.6%
  - Tile ..... 47..... 10.1%
  - Metal ..... 23..... 4.9%
  
- Flat Roofs ..... 128 .... 27.7%
  - Rubber coated ..... 61 .... 47.6 %
  - Membrane ..... 43 .... 33.5%
  - Asp/Gravel ..... 24 .... 18.7%

**To the Rafters:**

- Did you lose your helmet/dislodged? 66%
- Could you self- rescue? 19%
- Did you have flame or heat impingement?  
Flame 23% Heat 77%

**What area of the structure were you on during collapse:**

**Residential:**

- Main structure 47%
- Garage 45%
- Porch 10 %

# **PREVENTING MAYDAYS**

## **Roof Operations**

---

- Conduct quality training for roof operation personnel
- **PREVENTION**
- Establish SOP's / with training that aligns with SOP's
- Make sure that roof operation has a plan and proper tools
- **COORDINATE** fire attack and ventilation operations
- **NO ROOF TRAVEL**, unless required (stay OFF garages and porches)
- Cut the hole, **GET OFF THE ROOF**

# COMPONENT 2: Air Problems

MAYDAY PROJECT



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## COMPONENT 2: NO Communications



## COMPONENT 2: NO Communications

NO Communications .....	273 .....	<b>5.1%</b>
- Radio OFF.....	36	
- Off Channel .....	70	
- Lost Radio .....	27	
- Dead Battery .....	83	
- Wet Radio .....	54	
- Simplex ... ..	(59.8%%)	
- 800 .....	(40.2%)	

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## COMPONENT 2: Other

Other: 219 ..... 4.1%

- Roadway/Traffic ..... 113 ... 51.5% (4 LODD)
- Assaults ..... 47 ... 21.4%
- Gunshots/Shootings ... 29 .....13.2%
- Other ..... 30 ..... 13.6%

## COMPONENT 2: Injuries from Maydays

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### Injuries from Maydays

Perm. Disability	27	.5%
72hrs in Hospital	820	15.5%
ER Visit	1,357	25.7%
Treated on Scene	3,073	58.2%

## COMPONENT 2: Injuries from Maydays

### PERMANENT DISABILITY

- Quadriplegic .... 1
- Paraplegic ..... 9
- Spinal injuries ..... 68
- Head Injury ..... 77
- PTSD ..... 2,372
  
- 3<sup>rd</sup> degree burns... 30 to 50% of the body ..... 11
- 3<sup>rd</sup> degree burns...50 to 70% of the body ..... 14
- 3<sup>rd</sup> degree burns...> 70% of the body ..... 9
- 2<sup>nd</sup> degree burns...> 30% of the body ..... 15
  
- multi-fractures lower body ..... 51

## COMPONENT 2: Mayday Rescues

### **MAYDAY Rescues**

<b>Self-Rescue</b>	<b>2,154</b>	<b>40.8%</b>
<b>Victims Crew</b>	<b>737</b>	<b>13.9%</b>
<b>Interior Crew</b>	<b>719</b>	<b>13.6%</b>
<b>RIT/RIC</b>	<b>264</b>	<b>5%</b>
<b>Other</b>	<b>1,098</b>	<b>20.8%</b>

**5,277**

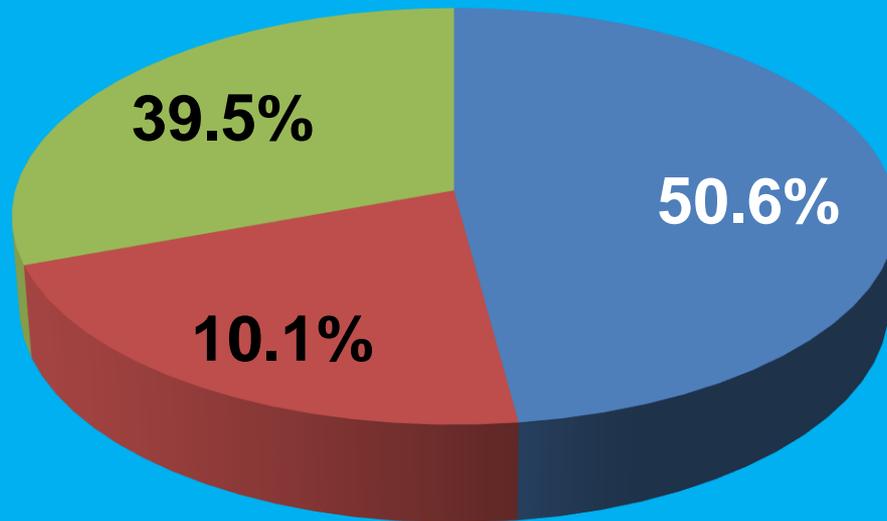


***“The capability of our protective gear can now consistently out perform the natural limits of our anatomy and physiology...just because you can go someplace on the fireground doesn’t mean you should go there ... simply our modern turnouts can live a lot longer than our old fashioned bodies.”***

***Chief Alan Brunacini***

## Types of Construction/Occupancy

**AB/VB  
35.4%**



Residential	(2,672)
Apartments	(538)
Commercial	(2,067)

**2015 – 2021**

**5,277**

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**COMPONENT 2: TYPES OF CONSTRUCTION/**  
**OCCUPANCY - Residential**

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**Types of Construction/Occupancy - Residential**

<b>&lt; 1,000sq.ft.</b>	<b>748</b>	<b>27.1%</b>
<b>1,000 – 2,400sq.ft.</b>	<b>892</b>	<b>32.4%</b>
<b>2,400 – 3,200sq.ft.</b>	<b>484</b>	<b>17.5%</b>
<b>3,200 – 4,500sq.ft.</b>	<b>271</b>	<b>9.8%</b>
<b>4,500 – 5,600sq.ft.</b>	<b>163</b>	<b>5.9%</b>
<b>&gt; 5,600 sq.ft.</b>	<b>114</b>	<b>4.1%</b>

**AB/VB**  
**28.2%**

**2015 - 3021**

**2,762**

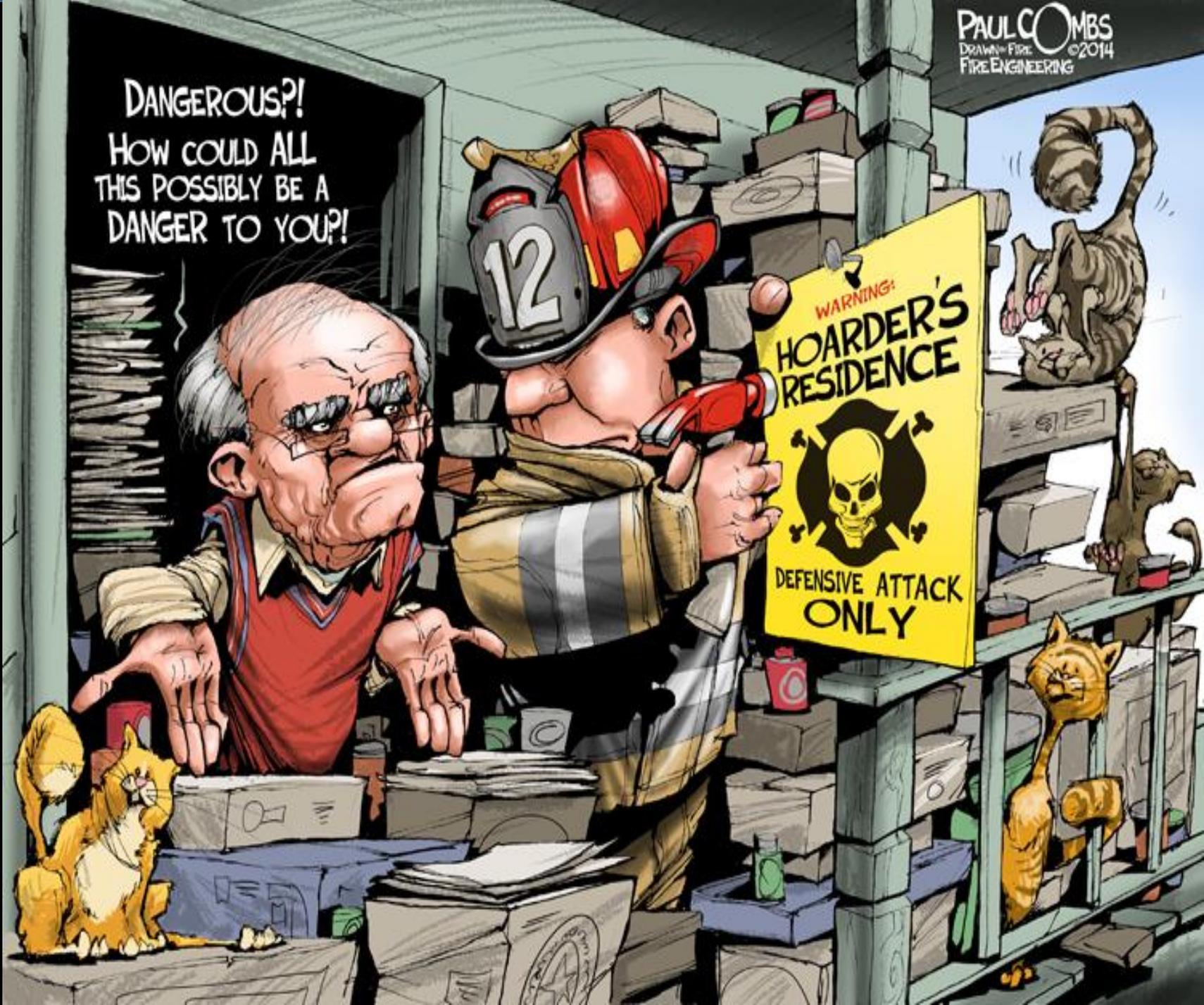
# HOARDER HOUSE

**HOARDER  
HOUSES  
731**



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DANGEROUS?!  
HOW COULD ALL  
THIS POSSIBLY BE A  
DANGER TO YOU?!



# COMPONENT 2: Apartment Construction/Occupancy



- **When dealing with apartment fires we struggle with .....**
  - **getting crews in the apartment above the fire**
  - **working the side with the most exposure**
  - **working mirrored apartments backside**
  - **working center enclosed utility chases**
  - **apartments with center hallways, attempting to make one end with a stairway as smoke free as possible for occupants exit**
  - **advancing lines over balconies and pulled to the fire floor**

# COMPONENT 2: Commercial Construction / Occupancy



## **TYPES OF CONSTRUCTION/OCCUPANCY Commercial**

<b>&lt; 35,000 sq. ft.</b>	<b>334</b>	<b>16.1%</b>
<b>35,000 – 50,000 sq. ft.</b>	<b>412</b>	<b>19.9%</b>
<b>50,000 – 100,000 sq. ft.</b>	<b>609</b>	<b>29.7%</b>
<b>&gt; 100,000 sq. ft.</b>	<b>601</b>	<b>29.4%</b>

**2,067**

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<b>Warehousing:</b>	<b>426</b>
<b>Schools:</b>	<b>27</b>
<b>Houses of Worship:</b>	<b>173</b>
<b>Manufacturing:</b>	<b>319</b>
<b>Storage (Self):</b>	<b>493</b>
<b>Retail:</b>	<b>629 (212-Strip Malls)</b>

**AB/VA**  
**24.1%**

**2,067**

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# **M A Y D A Y P R O J E C T**

- Entanglement, 200ft hose line
- Ceiling Collapse, 150ft hose line (3")
- SCBA Regulator problem, 200ft hose line
- Separated from hose line, 250ft hose line
- Shelving collapse, (2), 200ft hose line
- Flashover, (4) 200ft hose line
- Entanglement, 200ft hose line
- Ceiling Collapse, 150ft hose line (3")
- SCBA Regulator problem, 200ft hose line
- Separated from hose line, 250ft hose line
- Shelving collapse, (2), 200ft hose line
- Flashover, (4) 200ft hose line
- Fell through Roof (2)
- Lost off hose line, 200ft hose line
- Medical (diabetic)
- Separated from hose line, 250ft hose l

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**PREDICTABLE  
Is  
PREVENTABLE**

**Gordon Graham**

# MAYDAY VICTIMS

**SITUATIONAL AWARENESS 73%**

*TASK FIXATION* occurs when a firefighter fixates their attention on A task they are performing.

Usually involving physical activities, eye hand coordination. (DIFFICULT)

Its near impossible to multitask, in a dange

Visual contact task, crew, other crews, when not possible we relied on audio contact, but then again not paying attention to the radio.

Best Practice: STOP periodically and survey your environment.



# MAYDAY VICTIMS

**# 2 Disorientation**

**66%**

**Disorientation is “ the loss of direction due to the lack of vision in structure fire.”**

Types of Hazards that create disorientation:

- Zero visibility conditions - - -      **PROLONGED ZERO VISIBILITY CONDITIONS**
- Flashover sequence / Backdraft sequence
- Collapse sequence
- Wind driven fire sequence
- Conversion steam sequence
- **SEPARATION OR ENTANGLEMENT** of houseline encountered

# MAYDAY VICTIMS

## # 3 Decision Making 67%

The major problems in interior decision making:

- SLOW to respond to changing/deteriorating conditions
- SLOW to process the information (putting the pieces together)
- Slow in implementing the solution
- Not listening to the radio reports of other crews
- Inexperience (simulations)

IRIC, RIC, RIT Operations

**1 out of 10  
IRIC/RIC/RIT  
has a  
MAYDAY**

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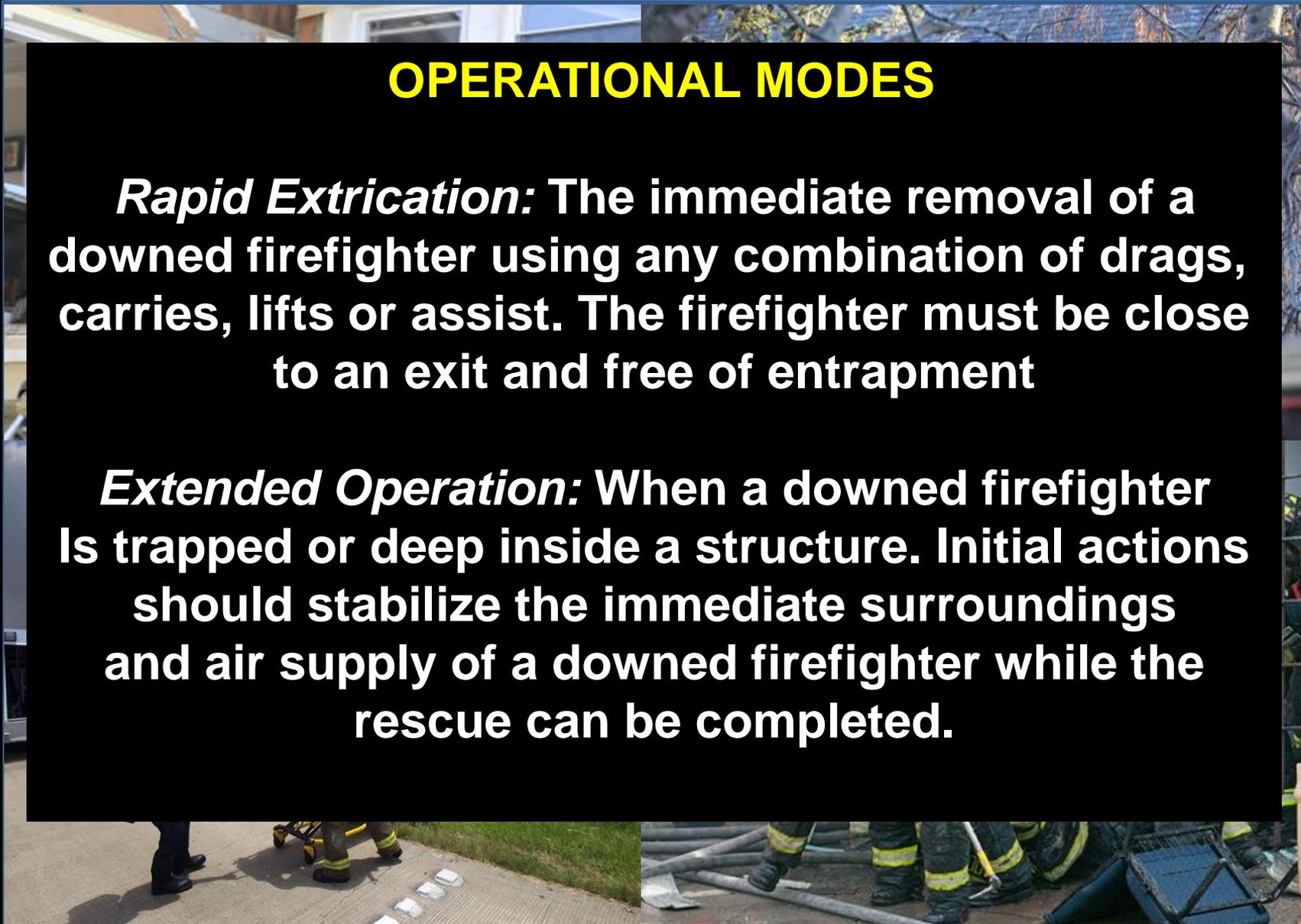
89%

of successful rescues  
come  
from within the  
structure

## **OPERATIONAL MODES**

***Rapid Extrication:*** The immediate removal of a downed firefighter using any combination of drags, carries, lifts or assist. The firefighter must be close to an exit and free of entrapment

***Extended Operation:*** When a downed firefighter is trapped or deep inside a structure. Initial actions should stabilize the immediate surroundings and air supply of a downed firefighter while the rescue can be completed.



**RIT / RIT Officers:**

- RIT officers conducts a 360 of the structure (if possible) and develop a plan
- Check-out RIT bag and other equipment
- Maintain air / time / conditions and situational awareness
- **HAVE A RESCUE PLAN**
- Make sure each member of the RIT knows the plan and their piece of the plan.
- **BE PREPARED** for anything
- Be realistic with the problem and the rescue

- Packaging should not be time consuming process. In most cases one firefighter should do the packaging. Multiple firefighters in ZVC is problematic. The AIR firefighter should have the most immediate contact with the victim.
- There are two factors which affect compromised victims in regards to removal. The enemy of a victim is “TIME” and the limited viable removal because of conditions/egress. If there are serious injuries, its packaging, not treatment. Removal quickly so they can receive treatment for treatment.
- Small staffed RIT/RIC have more work load on each member.

## IRIC, RIC, RIT Operations

### **PROACTIVE RIT TASKS**

- Perform RIT Size-Up
- Monitor fireground, structure, companies and communication
- Preparing the fireground
  - Provide secondary egress/access location
  - Remove any hazards and/or obstacles

### **MONITORING THE FIREGROUND:**

- Note building construction, size, number of floors, basement, type roof and fire behavior effect on construction.
- Crew location and assignment
- **CONDITION OF CREWS** as they **EXIT** the structure
- Things getting better or worst
- **TIME** / monitor radio channel(s)

## **MAYDAY VICTIM – PERSONAL ACTIONS**

- **Collect your thoughts and control your breathing**
- **Call the MAYDAY**
- **Advise the IC of your intentions**
- **Make noise without wasting air**
- **It's difficult to hear and talk (PASS alarm / Low air alarm)**
- **Monitor distance into the structure**
- **Always be accountable to someone**

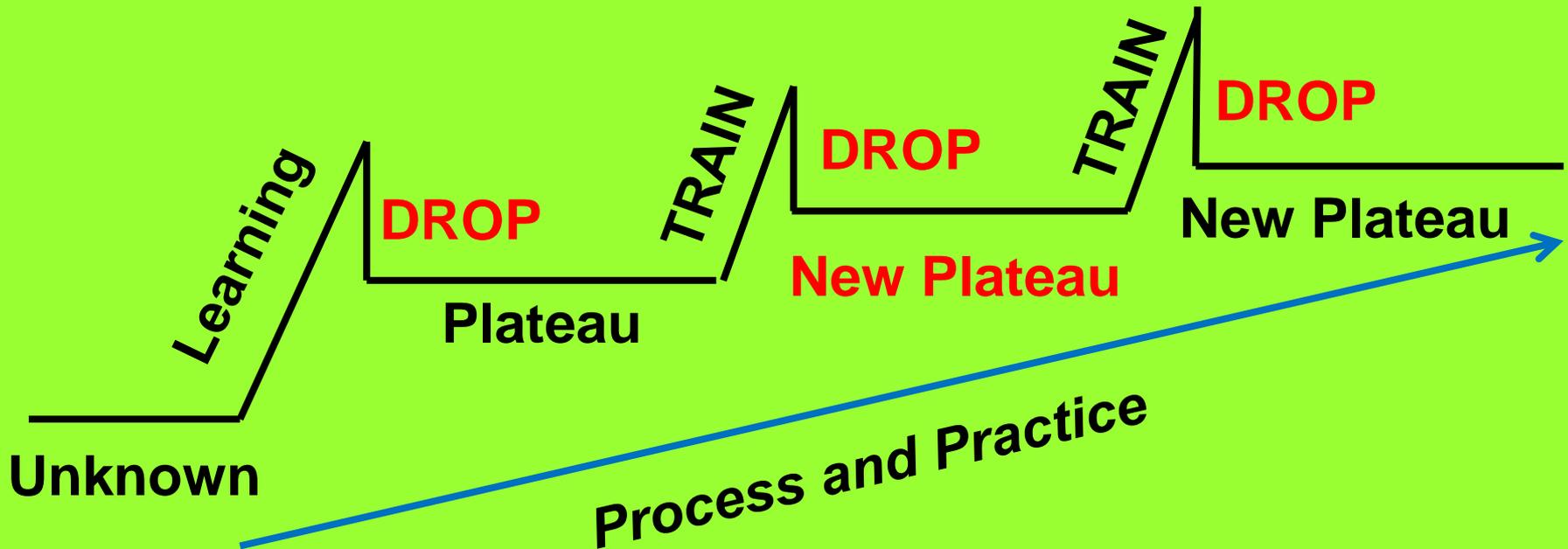
**AIR + TIME = SURVIVAL**

**MANY MAYDAYS (34%) OCCUR BEFORE  
A FORMAL RIT TO IS ESTABLISHED**

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**The only way to  
guarantee a successful  
outcome of a “MAYDAY”  
is to  
PREVENT IT !**

***“ You will not rise and stay to an occasion, but will sink to the level of your training”*** *Josh Medcalf*



**Path to Mastery**

## **INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM**

**In each individual personal survey – Mayday victim were instructed that the surveys were confidential, department name or victim’s name would NOT be shared with anyone. It was requested that all information be factual and honest.**

**A request was made to each fire department for permission, that each mayday-victim complete the *individual personal survey – mayday victim.***

**4,009 / 3,421**

**Male: 3,344 Female: 77**

# INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM



- Was 360 conducted by a crew member? YES ... 15%
- Was a water supply line layed and charged? YES ... 54%
- Were specific orders given to crew members by the CO? YES ... 41%
- Did each member of the crew have a radio? YES ... 21%
- Was accountability started? YES ... 19%
- Was their a basement identified? YES ... 31%

- **Was there any signs of a confirmed rescue? (dispatch information, someone on the scene confirming someone inside, etc.) YES: ... 9%**
- **Was there cars in the drive way, lights-on inside the structure? YES ... 17%**
- **Did the structure show signs of being vacant? YES ... 13%**
- **CO stayed outside to be the IC? YES ... 61%**

- **Were you masked up prior to structure entry?**  
Always ..... 71%    Most of the time .... 27%  
Seldom .... 2%
- **How often do you leave your hoseline by more than 10ft in near zero visibility?**  
Most of the time ..... 71%
- **How often do you check the nozzle setting prior to entry into the structure?**  
Most of the time .... 10%    Seldom ..... 37%

- Was quick attack made from the outside, if there was visible fire? YES ... 5%
- Was forcible entry required? YES ... 31%
- Did you enter with a handline? YES ... 88%
- Was handline charged before entry? YES ... 81%
- Was RIT established? YES ... 20%
- Did you enter standing up? YES ... 89%
- How long after entry, did you go to your knees?
  - Average: est... 5/6 mins (58%)
- Did you know actual location of the fire?  
YES ... 36%

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- Was ventilation performed prior to the MAYDAY?  
YES ... 45%  
Vertical: ... 48%                      Horizontal:... 52%
- Was there an effort to control the entry door in regards to air flow?    YES ... 14%
- Was PPV used prior to the MAYDAY? YES ... 31%
- When conditions changed, were they immediately reported?    YES ... 35%
- Was the “EA” radio button activated?    YES ... 56%

- Did you sound the floor on S/FA?  
YES: ... 23%
- Was water applied prior to the MAYDAY?  
YES ... 69%

- Was this your first MAYDAY?...YES...100%
- Did you consider calling your MAYDAY earlier?  
YES ... 9%
- Did you delay calling your mayday, because you thought you could fix the problem ... YES ... 45%
- Was your initial MAYDAY heard? ... YES ... 81%
  
- Did you give a MAYDAY report in your initial radio report? ... YES ... 26%
- What does your FD use for initial MAYDAY report?
  - LUNER ..... 41%
  - GRAB LIVES ..... 8%
  - PCAN ..... 11%
  - other ..... 40%

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- How many times did you communicate with command?  
1 ... 19%    2 ... 21%    3 ... 23%    4 ... 37%
- Did command offer reassuring advise? YES 67%
- Did you have adequate radio time for reporting:  
YES ... 41%
- Did you turn off or cover your pass device when talking with command? YES: ... 19%
- During your Mayday did you ...
  - make a pounding noise? YES: ... 7%
  - waved/ turn off/on flashlight? YES: ... 17%
  - moved to an outside wall? YES: ... 5%
  - don't remember what I did ... 45%

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- How were you handled by rescuers?  
GOOD ... 33%      ROUGHLY ... 77%
- Did they proper package you before removing you? YES: ... 34%
- Did rescuer have the proper equipment to perform rescue? YES: ... 39%
- Did you have confidence your ...
  - CO ..... 85%
  - IC ..... 64%
  - RIT ..... 34%

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- **Should have more people on the line or backing us up**
- **I was afraid of the consequences of calling a mayday**
- **Could not put into order some of the things I had been taught or practiced in mayday training**
- **Rescuers did not listen to what I had to say.**
- **Should be more aware of my environment.**
- **Never leave the hoseline**

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- **The three most common reasons firefighters need to be rescued:**
  - inadequate fire experience
  - inadequate survival training
  - inadequate fireground organization and management
- **DO NOT PANIC**
- **Most company officer felt that fatigue was a major contributing factor in making poor decisions.**

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- **Declaring a Mayday without a radio:**
  - **assume position that offers the most safety**
  - **activate the PASS**
  - **tape on hard objects, pipes, wall, etc.**
  - **shine flashlight at the ceiling**
  - **draw attention to your location**
- **Complete size-up, conduct a 360.**
- **Smoke and fire reports/information need to be consistent and actuate.**

## INDIVIDUAL PERSONAL SURVEY – MAYDAY VICTIM

- **Be realistic with your training needs, what is your weakest area, then work hard with your training.**
- **Become the rescuer that you want to be ... that would rescue yourself**
- **When working with a new officer or crew, understand they expectations.**
- **As a officer have fireground rules that your crew must follow.**

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- At a certain point a person must accept they need help and must know and follow the procedures to do so.
- **WHY DO WE WAIT SO LONG?**
  - tunnel vision, become to focus on the wroing things
  - under estimate existing conditions and NOT forecasting what they could become
- **YOU CALLED A MAYDAY ... NOW WANT?**
  - collect your thoughts, control your breathing
  - what are you intentions?
  - can you do those things ask by the IC?
  - keep mask on
  - have a plan when you start to run low on air!

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**PAUL COMBS**  
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Fire Enforcement



UH OH, LOOKS LIKE ANOTHER RECIPE FOR DISASTER!

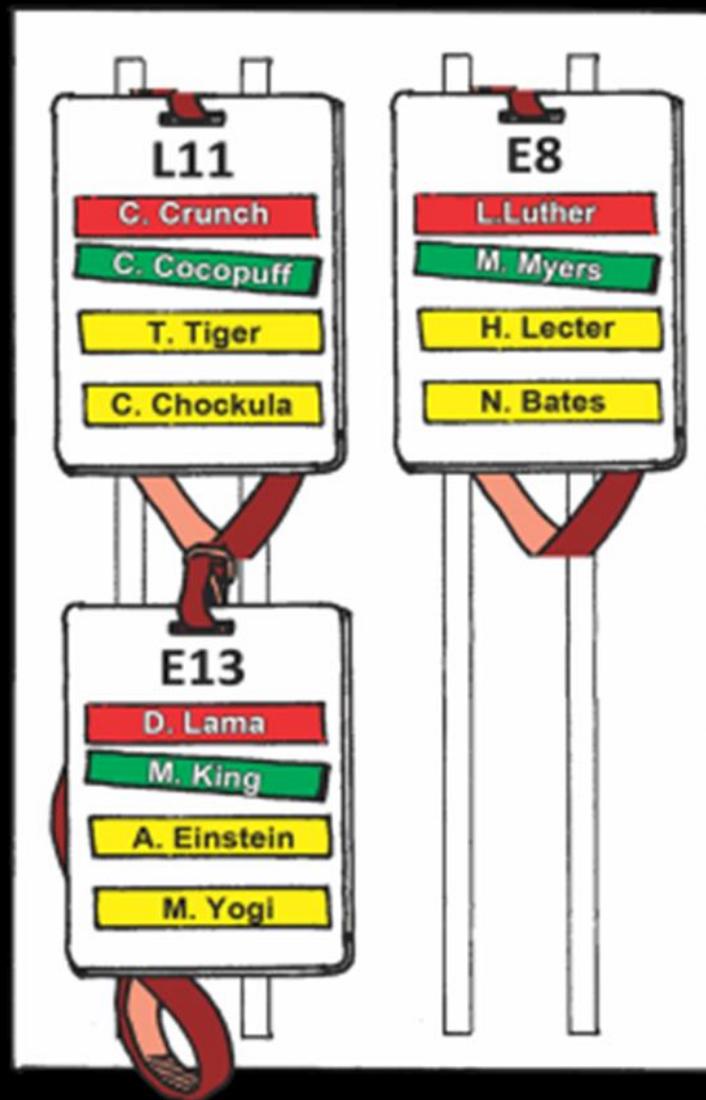
STANDARD OPERATING GUIDELINES

Outdated Practices

COMPLACENCY

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ICs will not view a  
“Mayday” as a  
possibility, but as  
a  
*probability*



**66% of Maydays  
had NO  
accountability  
process in  
operations  
at the time of the  
Mayday**



**THIS  
IS  
NOT  
ACCOUNTABILITY**

**DUMB LUCK**  
**is usually the**  
**result of**  
**DUMB**  
**DECISION**

## ***On Scene – Mayday Incident***

- **Were you able to position yourself to see two sides of the structure? YES: ... 54%**
- **Was the initial 1<sup>st</sup> engine, strategy correct (offensive/defensive) YES: ... 88%**
- **Had there been 360 conducted prior to your arrival? YES: ... 35%**
- **Had IRIC been established prior to your arrival? YES ... 19%, then do you establish one.... YES ... 81%**
- **Had accountability been established prior to your arrival YES ... 17%**
- **Do you have enough resources for the incident, prior to the Mayday? YES: ... 34%**

## **On Scene – Mayday Incident**

- **Could you have predicted a major problem during the incident? YES: ... 39%**
- **Should you have changed strategy earlier? YES: ... 65%**
- **Did you receive timely and good interior reports? YES: ... 15%**
- **Did you receive time checks from dispatch during the incident? YES: ... 27%**
- **Were you able to track personnel/tactics on a FD worksheet? YES: ... 16%**
- **At the time of the Mayday was major progress being made on the fire? YES: ... 45%**

## **On Scene – Mayday Incident**

- Was there too much radio traffic during the incident? ..... YES 52%
- Did you feel you had adequate crew and line placement? ..... YES 68%
- Did you switch radio channels for the Mayday? YES 77%
- Did you appoint another officer to run the Mayday for Fire Operations?
  - I kept Fire Operations, passed on Mayday Rescue. .... YES 9%
  - I kept Mayday Rescue and passed Fire Operations. .... YES 29%
  - I kept doing both. .... YES 62%

**Post Mayday Incident:**

- Did you conduct an on-scene briefing of the incident with all participants? ..... YES 29%
- Was PPE & SCBA worn by Mayday personnel secured for inspection? ..... 10%
- Was a critique conducted of the incident and shared with the department members? .... YES 36%
- Was a report written on the incident and audio radio traffic reviewed? ..... YES 12%
- If mutual aid was involved was this information shared with them? ..... YES 61%
- Were there any changes made to SOP's as a result of this incident? ..... YES 27%

**Post Mayday Incident:**

- **Did you make any changes to your Mayday training program as a result of this incident?  
YES 64%**
- **Was any further command level training conducted as a result of this incident? .... YES 26%**

**Your Comments:**

- **“ Let your gut and experience help drive your decision”**
- **“ Poor PTSD evaluations”**
- **“Manage work cycles”**
  
- **“The overwhelming majority of ICs believe they’re are prepared for a Mayday event, when they are NOT”**
  
- **“Its okay to have a lot of firefighters on-deck, in reserve, or staged, they can bitch all they want, when I need them, there here. I only hope they are mentally ready”**

**Your Comments:**

- **“ Think before you speak on the radio, its hard to take back”**
- **“Forecast the structure, the fire behavior and the resources you have to work with”**
- **“Nobody wanted to listen, CO were just as bad as the firefighter. Putting everyone together to regroup was a bad idea. Pick an officer who will DO THEIR JOB, stand their ground and not let anyone go back in”**

- Acknowledge the MAYDAY
- Communicate to victim “**remain calm and control your breathing**”
  - Report “Mayday” to dispatch
- Have victim activate their “PASS Unit” and shut the PASS unit OFF when talking to command, rescue officer, RIT
- Mayday victim may become more difficult to understand, once they activate PASS

unit  
**Command Supporting  
MAYDAY Victim**

## Functions of Command – 3. Communications

**41%** of Maydays  
were MISSED on  
their 1<sup>st</sup> CALL

**73% Mobile Command**

**27% Stationary/Vehicle**

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**Position  
in calling  
MAYDAY**



**BODY MASS  
BUILDING/STRUCTURE**

## **Considerations / Recommendation**

**The IC's tone of voice  
is going to set the  
rest of the Mayday**

- **Volume**
- **Quality**
- **Speed**
- **Feedback**

# Hearing & Listening



## Hearing VS Listening

### **HEARING vs LISTENING**

- **Do you think there is a difference between hearing and listening?**

**YOUR are RIGHT, there is!**

- Hearing is simply the act of perceiving sound by ear. If your hearing impaired, hearing just simply happens.
- Listening, however, is something you consciously choose to do. Listening requires concentration so that your brain processes meaning from words and sentences. Listening leads to learning

## Hearing Aids



**27 Reported Burns to the Ear (vol)**  
**23 Within PM Timeline**  
**(21 over the ear. 9 in the ear)**  
**1 Permeant Disability**  
**6 Lost Hearing in the injured Ear**  
**2 Total loss of hearing in one Ear**  
**3 Required major ear surgery/rebuild**

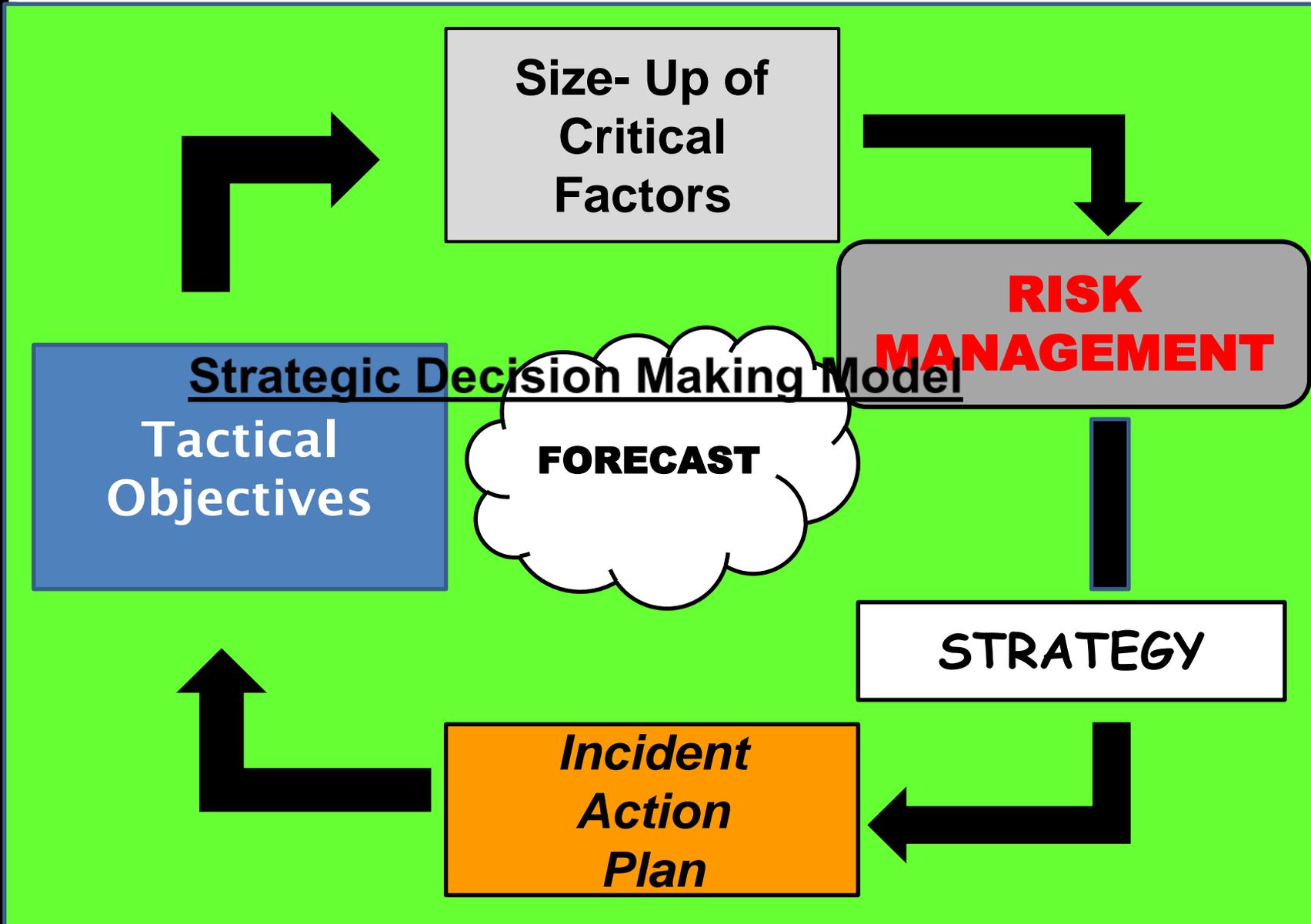


- Watch for operational delays
- Identified uncontrolled flow paths
- Lost of compartment integrity
- Protect means egress
- Smoke (angle of smoke plume – wind driven)
- Commercial buildings with no sprinklers should be considered highly dangerous operations

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- **Control radio communication, yelling and screaming becomes epidemic, confirm all radio reports.**
- **BIGGER the structure = more MAYDAYs**
- **Don't make every Mayday drill a rescue event have a body recovery, pull everyone out, do a PAR, regroup.**
- **Most IC's knew who the firefighter would be that would call a Mayday, they had a attitude, training, or experience deficiencies prior to the fire, it was predictable.**

# Strategic Decision Making Model



- **Expect emotional mutiny, react quickly and control freelancing, re-enforce this with company officers and other command officers.**
- **IRIT/RIT/RIC whatever, if it's a two or three person crew ... good luck! You have checked off the box and made a joke of any rescue attempt. It really will take 4,6 or 12 people.**
- **Never switch sides/division/sector names ... unless necessary**
- **Estimate a time factor for rescue**

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- **Be proactive with ladders and lighting**
- **Call an additional alarm when you have a mayday.**
- **Always expect ... the unexpected**
  
- **Ensure manageable span of control throughout the incident.**
- **Do not flood the inside with people, when NOT necessary.**
- **Forecast and review, be prepared to switch strategy.**
- **Maydays are HIGH priority rescues**
- **Have a heightened awareness with vacant, abandon, hoarder structures, especially when deciding strategy.**

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- **If we want safe and effective incident operations we must connect and align the three operational levels (strategic, tactical and task). This allows the IC to control and position all operating resources.**
- **Two types of Maydays**  
**Strategic and localized task level**  
**Strategic maydays result from operating in offensive positions under defensive fire conditions, normally kills firefighters in bunches. Task level maydays are localized events that occur to a firefighter or crew. These are situations typically involve becoming lost, trapped or missing.**

- **As the IC enforce fireground SOPs/SOGs**
- **As the IC conduct tailboard debriefings after each structure fire. When there is a problem or things don't go as expected, re-walk each companies actions in the fire structure.**
- **Listen to audio dispatch/fire alarm reports, re-visit the communications and seek improvements as necessary.**
- **On occasion have crews visit a burn center as a reminder of the worst consequences that can occur with poor personal decision making.**

# PROJECT MAYDAY



## FISHERS FIRE



- INITIALS
- 1. COMMAND
  - 2. FIRE
  - 3. LOCATION
  - 4. UNIT
  - 5. NAME
  - 6. AIR
  - 7. RES
  - 8. HAV
  - 9. DEPT
  - 10. NOT
  - 11. REQ
  - 12. MAIN
  - 13. CON
  - 14. ASS
  - 15. ASS
  - 16. ASS
  - 17. STA
  - 18. CRE
  - 19. DEV
  - 20. CON
  - 21. CON
  - 22. CON
  - 23. CON
  - 24. NOT
- MAYDAY HAS BEEN DECLARED
- RIT COMMITTEE --

**BUILDING EVACUATION (ALERT TONE)**- Command To All Companies (EVACUATE OR ABANDON) The Building Immediately OR ABANDON) The Building Immediately And Conduct A Company Level PAR.

**EMERGENCY TRAFFIC (ALERT TONE)**- Activate Tone- Clear Radio For EMERGENCY TRAFFIC- Message To Be Transmitted.

MAYDAY TIME

and. Stop all assigned to the Prepare for

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(ress), by (Unit established on xt alarm and

EMS Group

Supervisor:

MAYDAY		
MAYDAY		
Trapped, Missing, Injured, Out of Air		
	Life Threatening Emergency Occurs "MAYDAY, MAYDAY, MAYDAY"	
	The Firefighter should use the acronym <b>L.U.N.A.R.</b>	
	L- Location: _____	
	U- Unit Number: _____	
	N- Name: _____	
	A- Assignment: _____	
	R- Resources Needed?	
	Has the Firefighter activated his emergency button on his radio? <b>Yes/No</b>	
	IC should announce that a <b>MAYDAY</b> has been declared.	
	Deploy RIT (w/TIC)	
	Except for RIT, Mayday Personnel & Command Assign Different Frequency	
	All radio communications should be held unless responding to a direct question from the IC.	
	IC should obtain any information available from the firefighter declaring the Mayday.	
	Utilize SCBA PAK-Tracker	
	Support/ Protect/ Beef Up RIT	

MAYDAY RESOURCES		
UNIT	ASSIGNMENT	PAR

Catastrophic Event, Collapse, Loss of Water	
	To Clear Radio Frequency call "Emergency Traffic" 3 times
	Determine Nature, Type of Emergency, Last Location
	<b>Evacuate</b> - Chauffeurs (3) Blast on Air Horns
	Call for <b>PAR</b>
	If PAR Incomplete Deploy RIT (w/TIC) <b>Go to MAYDAY checklist</b>
	Utilize SCBA PAK-Tracker
	Structural Risk/Benefit Analysis

**NOTES:**

# RIT/RIC

PAUL COMBS  
ARTISTIC SERVICES  
FIRE ENGINEERING ©2011



**The essence of  
training is to allow  
*error* without  
*consequence***

# RIT/RIC

## Pre-Mayday Actions:

- RIT formed with members:  
1FF ..... 22%    2FF ..... 36%    3FF .....31%    4FF..... 11%
- Was rescue/RIT given specific instructions on ....
  - the problem: YES ..... 41%
  - method of rescue: YES ..... 47%
  - removal techniques: YES ..... 27%
- Was RIT bag obtained? YES .... ( 77%
  - was more than one bag immediately available:  
YES 21%
  - was the following in the bag:
    - SCBA cylinder w/regulator YES .... 98%
    - SCBA facepiece YES .... 6

## **RIT/RIC**

- **What was some of the problems that occurred during the rescue:**
  - **recommmend, turning pass unit off and on for short periods of time**
  - **have a backup plan**
  - **don't except much help from the victim**
  - **we took short cuts and cut corners, without regard for our own safety**
  - **more training, with sounds, debris, and radio traffic.**
  - **know your needs before you go**

**MAYDAY RESPONSE:**

- Was you're the initial rescue group: YES .... 77%
- The initial response was:
  - Mayday crew: .... 41%
  - Another Interior crew: .... 39%
  - RIT: .... 20%
- Did you have difficulty locating Mayday victim?  
YES .... 53%
- Did entanglement occur? YES .... 22%
- Did victim require packaging? YES ..... 36%

**RIT POST MAYDAY**

- What was some of the problems that occurred during the rescue:
  - recommend, turning pass unit off and on for short periods of time
  - have a backup plan
  - don't expect much help from the victim
  - we took short cuts and cut corners, without regard for our own safety
  - more training, with sounds, debris, and radio traffic.
  - know your needs before you go

## **RIT/RIC LEADERS**

**“Personally, perhaps the most Important issue brought to light through this incident is the realization that my expectations and assumptions concerning the deployment of a RIT were both inaccurate and unrealistic. While my previous Assumptions were totally Born out of a commonly held perspective from training, they were nonetheless ineffective and and tragic”**

## **RIT/RIC**

- **Equipment for a IRIT/RIT/FAST can be divided into two categories:**
  - **personal gear carried by a RIT member**
  - **team resources staged and ready**
- **Have a tarp, pre-marked with equipment location, everything that may be required for a RIT rescue (it will be noted what's needed, missing or being used for the next RIT.**



## **RIT/RIC**

- Listen to radio communication as what may be required for rescue, more air cylinders, special equipment.
- Don't take short cuts and become another mayday
- RIT officer should know the strength and weakness of crew members, making sure each person has the right assignment.



## **RIT/RIC**

- **Locating a firefighter in distress:**
  - **stop, listen, at times cease all activities**
  - **look for discarded tools and equipment**
  - **check ceiling for beams of light**
  - **use a TIC**

# ***Rapid Rescues are NOT rapid ....***

***slow down, do it RIGHT the first time, be aware of your environment, don't be surprised by anything. Be calm and reassuring, take the time to think through anything that you have never done before or hadn't been trained to do. There is a first time for everything.***

**IF YOU WISH TO SUBMIT A “MAYDAY”**

[Click Here](#)

**If you wish to view the 2015 Annual “Project Mayday” General Report,  
click on either CAREER or VOLUNTEER REPORT.**

**2015**

**2015**

**[http://projectmayday.net./](http://projectmayday.net/)**

**CAREER**

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**“Saving Lives, Through Research and Learning”**

**“PROJECT MAYDAY”**

***CERT***

**5301 W. Puget Avenue  
Glendale, Arizona 85302**

**O-623-915-7833**

**C-623-764-7276**