

DEPARTMENT OF FIRE SERVICES Massachusetts Firefighting Academy



Rapid Intervention Teams An Introduction to Saving One of Our Own Day 1 September 2018

Instructors

- Lead Instructor –
- Instructors
 - A
 - B

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Why are we here?

- The Rapid Intervention Team is the Firefighters Safety Net
- Operating as the RIT requires additional skills and abilities beyond basic fireground training



Why are we here?

- Rapid Intervention is not just about responding for the distressed firefighters after an unforeseen event.
- Good, <u>*Proactive*</u> Rapid Intervention Teams can minimize the effects of the unforeseen event.

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Objectives

- By the end of this class, you should have a clear understanding of the following:
 - Types of fireground emergencies
 - Emergency Communications
 - RIT Team functions
 - RIT specific equipment
 - PPE from a RIT perspective
 - Real world events and the RIT application







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Project Mayday

- Study on MAYDAY activations between 2015 and 2018 Funded by private grant
- Analyzed 4,219 audio files and 679 video files - Dozens from Massachusetts
- Showed trends in staffing, conditions and types of MAYDAYS
- We can utilize that info to prepare for our Emergencies DEPARTMENT OF FIRE SERVICES Massachusetts Firefighting Academy







Project MAYDAY

- 57% of the MAYDAYS were the initial company
- 55% of the MAYDAYS were Engine Companies
- 42% of the MAYDAYS involved 4 person crews
- 30% of the MAYDAYS took place with 16-22 firefighters on scene
- 56% of the time, **<u>NO RIT ESTABLISHED</u>**

Types of Emergencies

- The complexity of the event will be effected by the type of emergency
 - Some MAYDAY events will be quickly resolved by crews in the area.
 - More complex events will require a single or multiple rapid intervention teams

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Lost / Separated

- 19.2% of MAYDAYS
- Early MAYDAY transmission – Recognizing trouble and requesting help
- Delayed MAYDAY transmission
 - Failure to recognize need for help
 - Denial that there is a problem
 - Fear of being 'poked fun of'

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Trapped

- 12% of the MAYDAYs
- May require additional equipment
- Primary focus is to locate and
- give air • May involve non traditional methods to access firefighter – Wall breach
- Someone still needs to fight the fire
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The Evolution of RIT

- After learning from our failures, RIT has evolved
- Identified the need for: - Dedicated crew
 - -4 is the efficient crew
 - Streamlined
 - -Finding and providing air
 - More proactive teams
 - -Soften the building
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The Evolution of RIT in Massachusetts

Then (pre 2000)

- RIT team 2 members (2in 2 out) RIT Tools
 - Laundry List + - 2 1/2" Hose line
- Stood out front with IC • Didn't manage the fireground or
- soften the building

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Now

- RIT team (4 members) • RIT Tools (Minimum)
- 200' Kevlar Rope
- Irons
- TIC
- Air Pack (RIT Pack)
- Tasked with softening the building on arrival
 - Minimize the MAYDAY potential



Dynamics of the Mayday

- Regardless of the cause, a MAYDAY will impact the fireground
- Suppression crews must not abandon their assignments
- Discipline can prevent an incident from spiraling out of control

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RIT is RIT

- RIT Team need to coordinate with Suppression Crews
- RIT is responsible for getting to the firefighter and retrieving them under the protection of the fire suppression forces





PPE for the MAYDAY / RIT

• Drag Rescue Device

SCBA

- PASS
- Emergency Breathing Supply System (EBSS)
- Universal Air Connection (UAC)Special Locator Devices
- (PackTracker)







Buddy Breathers (EBSS)

- Understand their operation before committing to them
- Connections vary by manufacturer and pack
- SCOTT –
 Both breathe lowest air first, then the higher pressure cylinder
- Tethers you to another person

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Universal Air Connection

- Designed to provide a standardized means to transfer air from one cylinder to another
- NFPA 1981 6.4.3 Requires UAC to be within 4" of Cylinder valve
- Considerations

 Cylinder Damage and Design Pressure
 Age of Pack (pre 2002, no UAC)



















System Pressures

- Manufacturers are building higher pressure systems
- UAC's fit on both systems
- UAC equalizes pressure in both cylinders
- "Fill pressures must not exceed operating pressures" (SCOTT 2013)



Pack Tracker Keys

- Keep the tracker horizontal, pointing towards area you are trying to search.
- Move slowly
- Be patient
- Number displayed is serial number of transmitter unless otherwise programmed
- Pack has to have a transmitter for it to work

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RIT Pack

- Pack specifically for bringing air to a downed firefighter
- Different designs for different manufacturers and years built
- Know your RIT Pack abilities and options
- Minimum 60 minutes of Air is preferred
 - New Scott Fast Attack packs have small air cylinders









RIT Pack

- Every RIT Team enters with a RIT Pack – If a specifically designed RIT Pack is not available –Bring an SCBA with straps tightened to prevent snags
- Never abandon the RIT Pack
 It is just as much for you as it is the firefighter you're
 - looking for – During RIT activations, many members have become low
 - on air and needed rescue themselves



Supplying Air to the Downed Firefighter

- Remove and Replace the Regulator
- Remove and Replace the Face Piece
- Universal Air Connection
- Buddy Breather*
 - Some new RIT Packs have Buddy Breather Connection
 - RIT Pack to Downed Firefighter Buddy Breather

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Harness Conversion

- Equipment and clothing can be pulled off an unconscious firefighter
- Relocating of the waist strap between the legs will keep the pack on the downed firefighter when you are dragging him / her and moving up stairs.
- Not a rated harness, emergency measure.

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Harness Conversion



- We will be converting the harness of the downed
- Provides for both horizontal and some vertical movement Not a class 3 harness





- Don't assume you have the right person
- Name
 - They tell you!
 - Top / Bottom of Coat
 - Shield
 - Radio Assignment



Firefighter Through Floor

- Use the tools you have
- Protect firefighter with hose line
- Send a bight down
- Pull the firefighter up
- Use a pencil ladder when possible
- Unconscious, use rope or ladder
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Pulling the Firefighter Up

- All members pull at once
- Two firefighters hold while others reset
- "Ready, Ready, Pull"





















Summary

- We must be prepared for a RIT incident at any fireground
- RIT incidents will vary in complexity
- PPE competence is a key to a successful rescue
- Train to the worst case scenario







FF Kyle Wilson

- Rapidly changing fire conditions resulted in his separation from crew (<4 minutes from arrival)
- In spite of multiple efforts crews were unable to make the second floor to get to Kyle
- Located just inside a second floor bedroom window





Steps in Risk Management

1. Identify Hazards

- 2. Evaluate Hazards
- 3. Prioritize Hazards
- 4. Control Hazards
- 5. Monitor Hazards (Dodson, 2007)



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Risk Management and RIT

- Cause of the MAYDAY
- Location in the structure
- Conditions in the structure
- Paths of ingress and egress
- Accessibility of supporting companies – Protective hose lines
 - Additional equipment

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Rescue vs Recovery

- We risk a lot to save a savable life.
- When conditions are not survivable, we must recognize our limitations to prevent additional losses.

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RIT EQUIPMENT, ORGANIZATION, RESPONSIBILITIES AND COMMUNICATION

Equipment Radio Flashlight 200' Kevlar rope in search bag Thermal Imager Irons RIT Pack (60 min) Stokes Basket*



RIT Organization

• Four Members

- Team Leader

– 2 Searchers

- RIT Pack / Air



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Team Responsibilities

- Size up and soften the building
- Monitor conditions and radios, supplement the safety role
- Enter at most suitable location upon activation
- Locate the firefighter
- Convert / apply air and remove

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Size-up

- What's the Alpha Side
- What's Division 1
- Where's the fire now and where's it going
- Where are the crews
- Structural considerations
- Access considerations







Team Leader

- Responsible for the actions and direction of the crew
- On arrival, report to Incident Commander and continue Size Up
- Determine best actions for softening building
- Maintains accountability of the crew at all times
- Communicates completed tasks to IC / RIT Branch
- Monitor air, manage accordingly

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Searchers (2)

Prior to activation- assists with softening of building
During the Search- Responsible for searching areas as directed by the Team Leader

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Searcher- at the downed firefighter

- Silence PASS
- Assess downed firefighter
 Need for air
 Identification
- Convert Harness
- Move Firefighter



RIT Pack / Air Carrier

- Prior to activation, checks RIT Pack and assists with softening the building
- Applies air to downed firefighter (if necessary)
- Assists with removal of downed firefighter
- May lead the way out

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Responsibilities

- The responsibilities of each member can change and will be dictated by the situation.
- Stick to your roles as much as possible
- Don't do anything unexpected

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Backup Team Responsibilities

- Rapid Size-up and briefing from IC or RIT Branch
- Stage at the entry door
- Monitor communications and conditions
- Enter when called upon to relieve primary RIT
- Reassess and remove downed firefighter

Conditions

- You're operating while the incident is not under complete control
- Everything is subject to change as the conditions dictate
- Team will have to adapt to situation

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Communications

- MAYDAY vs Urgent
 - MAYDAY is immediately life threatening
 - Urgent is other immediately important fireground information
- Victim vs Downed Firefighter
 - We are looking for downed firefighters
 - Victims are civilians and will present another set of challenges
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Communications

• Clear and concise - Completed Tasks

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- Provide information so the IC doesn't call for it
- Whenever possible, change fireground to a different channel
- Always minimize unnecessary radio traffic

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Communications

- As the operation develops, the RIT Branch may be established to oversee RIT Operations specifically
- Request additional resources through Command or through the RIT Branch







Searches

• RIT Rope

- 200 feet of Kevlar mix or Twaron

 Extremely high abrasion resistance

- High heat resistance

– Twaron @940f - Tie off low, in safe location



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Searches

- We are looking for a downed firefighter
- Basing a search on an active PASS Alarm
- Without a PASS Alarm your search will be slowed and more thorough



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Keys to the Rope Search

- Tie off in a safe location
 - Outside
 - Protected enclosure with direct access to exterior
 - Close to the ground
 - Won't move

Keys to the Rope Search

- Team Leader leads in / follows out
- Keep the rope tight to the floor
- Rope maintains:
 - Accountability
 - Pipeline for tools and personnel in and out

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Keys to the Rope Search

- Rope bag stays behind
- Tie search rope off in the area of the downed firefighter
 - Wall stud
 - Heavy furniture
 - Tool
 - Downed firefighter as a last resort

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Nevers of Rope Search

- Never tie off to start a search in a location that won't be clear when you return to it
- Never go in without an air source / RIT Pack of your own
- Never back track over line without managing it
- Never do anything unexpected



Camera Led Search

- Team leader leads in and utilizes camera to direct search
- Team leader can maintain visual contact with searchers off the line
- Used to minimize sending searchers off the line





























Camera Directed Searches

- Team Leader guides searchers checking area off line
- Monitors position of searchers
- Maintains visual accountability
- Operator continually maintains contact with RIT Rope
- Continually monitor conditions



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FINDING THE DOWNED FIREFIGHTER

Responsibilities

- Silence the PASS
- Check air
- Apply if neededIdentify
- IdentifyConvert
- Remove
- Remove



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Simple Tools

- All of the procedures we teach are adaptable to situations, tools for the toolbox
- You have to recognize the conditions in which they apply
 - Ex: Bad air is better than no air
 - -Not when that bad air is superheated

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THERMAL IMAGING FOR RAPID INTERVENTION

Thermal Imagers

- Every TIC has its limitations
 - Screen Resolution Shuttering
 - Screen Size

 - Colors
 - Battery Life









TIC for Accountability

- Use the TIC as you move through the structure to maintain accountability
- Watch searchers sent off the rope
- Watch the crew package the downed firefighter



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TIC for Search

- Six Sided Search – Top, bottom, all four sides
- Low Medium and High
- Looking for-
 - Downed firefighters
 - Holes / Obstructions
 - Fire Conditions





Key Considerations

- There is no rule book good for every RIT scenario!
- Be prepared to adapt to the conditions!
- If a company is trapped by fire, consider a hose over the rope!
- Always have a backup plan!
- Treat every IDLH incident as though it is the one where a MAYDAY will be called!

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Summary

- RIT activations will be stressful events
- Manage the stress and complete the mission
- Team members must know their roles
- Communication must be concise
- Rope management is a key to success
- RIT must be coordinated with fire suppression crews
- Downed firefighters need air!

Summary

- Utilize the proper search techniques for the structure
- Manage the team for efficiency
- Use the technology that is available to you, TIC's are required for each team.
- Know the risk and manage it