Approved and Adopted by the Office of the State Fire Marshal

Recommended for adoption by the Statewide Training and Education Advisory Committee and the State Board of Fire Services

INSTRUCTOR and STUDENT GUIDE
Draft 2010
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Mission Statement

The mission of State Fire Training is to enable the California fire service to safely protect life and property through education, training, and certification.

Fire Service Training and Education Program

The Fire Service Training and Education Program (FSTEP) was established to provide specific training needs of local fire agencies in California. State Fire Training coordinates the delivery of this training through the use of approved curricula and registered instructors. The FSTEP series is designed to provide both the volunteer and career fire fighter with hands-on training in specialized areas such as fire fighting, extrication, rescue, and pump operations. All courses are delivered through registered instructors and can be tailored by the instructor to meet your department's specific need. Upon successful completion of an approved FSTEP course, participants will receive an Office of State Fire Marshal course completion certificate.

Acknowledgments

State Fire Training coordinated the development of the material contained in this guide. Before its publication, the Statewide Training and Education Advisory Committee (STEAC) and the State Board of Fire Services (SBFS) recommended this guide for adoption by the State Fire Marshal (SFM). This guide is appropriate for fire service personnel and for personnel in related occupations.

Special acknowledgement and thanks are extended to the following members of State Fire Training for their diligent efforts and contributions that made the final publication of this document possible.
The material contained in this document was compiled and organized through the cooperative effort of numerous professionals within, and associated with, the California fire service.
We gratefully acknowledge the following individuals who served as principal developers for this document.

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We also thankfully acknowledge the following individuals who served as contributors to this document.

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"We gratefully acknowledge the hard work and accomplishments of those before us who built the solid foundation on which this program continues to grow."
RIC OPERATIONS

Course Outline

Course Objectives: To provide the student with...

a) Rapid intervention crew terminology.
b) Fire fighter fatality case study recommendations to enhance rapid intervention crew training to handle fire fighter emergency situations on the fireground.
c) Techniques and training in developing the “RIC mindset” and steps taken before a RIC deployment occurs (predeployment) to increase the chances of a successful outcome.
d) Techniques and training in conducting a RIC deployment, including search operations and thermal imaging.
e) Techniques and training in conducting rescue operations once a downed fire fighter is located, including assessment and extrication from the structure.

Course Content.................................................................................................................................................................................................24:00

1. Orientation And Administration.........................................................................................................................................................1:00
2. The RIC Mindset ......................................................................................................................................................................................0:45
3. Predeployment Concepts...........................................................................................................................................................................0:45
4. Deployment Concepts...................................................................................................................................................................................0:45
5. Rescue Operations .....................................................................................................................................................................................0:45
6. RIC Operations Skills ..............................................................................................................................................................................12:00
   ▪ #1: Assembling A Mobile Tool Cache
   ▪ #2: Downed Fire Fighter Assessment
   ▪ #3: RIC Air Delivery
   ▪ #4: Commercial Search Line Deployment
   ▪ #5: Dragging A Downed Fire Fighter, One Rescuer Method
   ▪ #6: Dragging A Downed Fire Fighter with a RIC
   ▪ #7: Dragging A Downed Fire Fighter Utilizing Rescue Loops
   ▪ #8: Dragging A Downed Fire Fighter Utilizing A Drag Sled
   ▪ #9: Dragging A Downed Fire Fighter Utilizing A Mast
   ▪ #10: Dragging A Downed Fire Fighter Down Stairs
   ▪ #11: Dragging A Downed Fire Fighter Up Stairs
   ▪ #12: Feet First Ladder Carry
   ▪ #13: Seated Ladder Carry With SCBA Removal
   ▪ #14: Head First Ladder Carry
   ▪ #15: Rescue From A Confined Area
   ▪ #16: Rescuing A Conscious and Uninjured Fire Fighter Through The Floor – Hose Method
   ▪ #17: Rescuing A Conscious And Injured Fire Fighter Through the Floor – Hose Method
   ▪ #18: Rescuing An Unconscious Fire Fighter Through the Floor – Hose Method
   ▪ #18: Rescuing A Downed Fire Fighter Through The Floor – Rope Method
7. RIC Operations Evolutions................................................................................................................................. 8:00
   ▪ #1: Pittsburg Evolution
#2: Tarver Evolution
#3: Scenario-based Site-specific Evolutions

Texts and References
- Building Construction for the Fire Service, Francis L. Brannigan and Glenn P. Corbet
- Collapse of Burning Buildings, Vincent Dunn, 1988
- Confined Space claims the life of a Denver Firefighter in a tragic building fire, Fire Engineering Magazine, April 1993
- Firefighter Fatalities in the United States, U.S. Fire Administration, September 2009
- http://www.firefighterclosecalls.com/
- ICS 910: Firefighter Incident Safety and Accountability Guidelines, FIRESCOPE, July 2008
- NFPA 1852: Standard On Selection, Care, And Maintenance Of Open-Circuit Self-Contained Breathing Apparatus (SCBA), 2008 Edition
- NFPA 1983, Standard On Life Safety Rope And Equipment For Emergency
- NIOSH #20000349: Commercial Structure Fire Claims The Life Of One Fire Fighter – California
  http://www.cdc.gov/niosh/fire/reports/face9807.html
- NIOSH #20022921: Supermarket Fire Claims The Life Of One Career Fire Fighter And Critically Injures Another Career Fire Fighter – Arizona
  http://www.cdc.gov/niosh/fire/reports/face200113.html
NICHE OPERATIONS

Course Outline

- NIOSH #20029424: Career Captain Dies After Running Out Of Air At A Residential Structure Fire – Michigan
  http://www.cdc.gov/niosh/fire/reports/face200505.html
- NIOSH #20035012: Nine Career Fire Fighters Die In Rapid Fire Progression At Commercial Furniture Showroom – South Carolina
  http://www.cdc.gov/niosh/fire/reports/face200718.html
- NIOSH #20035173: A Career Captain And An Engineer Die While Conducting A Primary Search At A Residential Structure Fire – California
  http://www.cdc.gov/niosh/fire/reports/face200728.html
- NIOSH Publication No. 2007-133: Preventing Fire Fighter Fatalities Due To Heart Attacks And Other Sudden Cardiovascular Events, June 2007
- OSHA-Occupational Safety & Health Administration Services, 2006 Edition
- The Art of Reading Smoke, David W. Dodson (DVD), 2007
- The Murder of John Nance, Columbus Monthly Magazine, December 1987
- Too Little Too Late, Fire Chief Magazine, September 2005
  http://www.woodaware.com
Topic 1: Orientation and Administration

Terminal Learning Objective (TLO): At the end of this topic, the student will be aware of the course goals, and the requirements for successfully completing the course.

Enabling Learning Objectives (ELO):
1. Describe the course objectives.
2. Define the intent of the RIC Operations course.
3. Describe student’s safety recommendations and personal protective equipment.
4. Describe the student evaluation process.

Course Objectives
The Rapid Intervention Crew Operations course is designed to train fire fighters to rescue a downed fire fighter in an immediately dangerous to life and health (IDLH) environment and was developed in the continuing effort to reduce the number of fire fighter injuries and deaths that occur regularly. The evolutions and scenarios you will be trained with are based off tragedies suffered by fellow fire fighters from departments across the country and you will be shown how to locate and use these LODD studies as training and prevention tools throughout your career.

The course focuses on the three phases of a RIC operation: 1) predeployment, 2) deployment, and 3) rescue. During the class, you will also gain a greater understanding of RIC operations terminology and the RIC mindset.

It is a 24-hour class delivered in a three-day format. You must effectively complete the class in its entirety to receive a course completion certificate.

Student Evaluations
You must successfully perform all RIC operations skills and evolutions in order to pass the class.

☐ #1: Assembling A Mobile Tool Cache
☐ #2: Downed Fire Fighter Assessment
☐ #3: RIC Air Delivery
☐ #4: Commercial Search Line Deployment
☐ #5: Dragging A Downed Fire Fighter, One Rescuer Method
☐ #6: Dragging A Downed Fire Fighter with a RIC
☐ #7: Dragging A Downed Fire Fighter Utilizing Rescue Loops
☐ #8: Dragging A Downed Fire Fighter Utilizing A Drag Sled
☐ #9: Dragging A Downed Fire Fighter Utilizing A Mast
☐ #10: Dragging A Downed Fire Fighter Down Stairs
☐ #11: Dragging A Downed Fire Fighter Up Stairs
☐ #12: Feet First Ladder Carry
☐ #13: Seated Ladder Carry With SCBA Removal
☐ #14: Head First Ladder Carry
#15: Rescue From A Confined Area
#16: Rescuing A Conscious and Uninjured Fire Fighter Through The Floor – Hose Method
#17: Rescuing A Conscious And Injured Fire Fighter Through the Floor – Hose Method
#18: Rescuing An Unconscious Fire Fighter Through the Floor – Hose Method
#18: Rescuing A Downed Fire Fighter Through The Floor – Rope Method
Evolution #1: Pittsburg Evolution
Evolution #2: Tarver Evolution
Evolution #3: Scenario-Based Site-specific Evolutions

The skill sheets in this manual will serve as a guide to both the students and instructors in documenting proficiency. You are expected to work as an active and proficient crewmember, with effective teamwork and communication as essential factors in the success of the RIC.

Safety/Injury Reporting
Safety is of paramount importance in any training evolution. Fire fighter emergency escape methods will be practiced in accordance with the NFPA 101: Life Safety Code, 2009 Edition. Get OSHA info from Jake. Notify your instructor if you have any condition or limitation that may affect your participation in a training evolution. In addition, notify your instructor immediately if you sustain an injury during the class.

Sample Calendar of Events

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<th>DAY</th>
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Sample Calendar of Events

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Minimum course hours = 24:00.
If additional skills or evolutions are to be conducted, adequate time and materials must be added.

*Command and Control of the RIC Deployment Operational Level students may participate in Day 3.
**Topic 2: The RIC Mindset**

**Terminal Learning Objective (TLO):** At the end of this topic, the student will be able to describe the importance of having the proper mindset and attitude to successfully complete the rescue of a downed fire fighter.

**Enabling Learning Objectives (ELO):**
1. Describe the importance of developing the RIC mindset.
2. Describe the steps taken before being assigned to RIC in developing a RIC mindset.
3. Describe the magnitude of being a proactive RIC.
4. Describe the value of learning from past RIC deployments and fireground tragedies.
5. Describe the significance of not becoming part of the RIC emergency.

Far too often, we have seen companies standing in front of a structure unhappy they are assigned as a RIC; maybe you have even felt this way yourself. Fire fighters want to fight fire, and we know that is not going to happen for the rapid intervention crew. When this happens on the fireground, it becomes too easy to lose motivation and focus. This type of unhappy mindset can never be displayed by the RIC. Though it is not always the glamorous assignment on the fireground, and thankfully is rarely deployed, the RIC is tasked with one of the most important jobs in the fire service – saving our own! Displaying the necessary frame of mind and determination is the first step in becoming a successful rapid intervention crew.

“The price of success is hard work, dedication to the job at hand, and the determination that win or lose, we have applied the best of ourselves to the task at hand.” Vince Lombardi

**Developing the RIC Mindset**

Developing the RIC mindset begins well before any incident; it begins your first day on the job when you join your fire service family. Your company and coworkers are no more than an extension of your immediate family, and nothing can be more tragic than harm coming to a family member. Developing the proper mindset continues with ongoing training and the desire to constantly improve your own knowledge, skill, and ability (KSAs).

**< KNOWLEDGE >**

**< SKILL >**

**< ABILITY >**

**Training**

Not only are your own KSAs paramount, but also those of your crew. To be an effective RIC, the entire crew must be trained to the highest level possible. Put yourself in the shoes of a downed fire fighter. Wouldn't you expect the RIC who is coming to rescue you to be highly
proficient and motivated? Be that fire fighter who motivates the crew to train, train, and then train again.

Equally important to RIC operations training, is fire fighter skills training. When a fire fighter calls a fire fighter emergency on the third floor, now is not the time to remember how to throw a ladder. A strong foundation in fireground skills is one of the first steps in RIC operations.

**Physical Fitness**

Some of the most physically demanding tasks on the fireground are that of the RIC. Maintaining a high level of physical fitness is critical. When a fire fighter emergency is called, it is time to go to work as rapidly as possible, into a hostile environment with a task at hand that will require every ounce of energy you have. If you are not physically fit, you will be ineffective if you have nothing left when you reach a downed fire fighter. Or worse yet, you never reach the downed fire fighter because you ran out of air yourself and exited the structure.

**Learn from the Past**

Developing the RIC mindset also means learning from the past. Though tragic, reviewing incidents in which fire fighters have been injured or lost their lives on the fireground is invaluable information. Learn from the past.

- How can we prevent these tragedies from happening again?
- How can a RIC effectively mitigate these situations if they occur again?

Utilize case studies and NIOSH reports as learning tools. They may help you save a fellow fire fighter someday.

> “Problems cannot be solved with same level of awareness that created them.” Albert Einstein

**Proactively-Reactive**

There is now way to know when and where a fire fighter emergency situation may occur. It is the job of the rapid intervention crew to react at a moment’s notice. This does not mean, however, waiting on the A-side of the structure with your hands in your pockets.

The RIC needs to be proactive and reactive at the same time. We do not know who will need help or where they will be when they need help, but we can take steps to rapidly and efficiently rescue them if the need arises. The goal of the RIC should be to make their reaction as efficient as possible. The mindset is the system for success. The moment your crew is assigned as the RIC, your mindset should be to learn everything possible about the structure, fire conditions, crews inside, and hazards or obstacles that may hinder rescue operations.

Once this information has been obtained, take steps to mitigate any problems. For example; 

- If crews are working on upper floors, place ladders to support them.
Know where crews are working and locate ingress and egress to support the operation.

Where the structure poses access issues, soften the structure.

If there are multiple crews inside a large or complex structure, consider requesting multiple RICs.

Continuously monitor radio traffic.

The list is endless and the situation will dictate your preparation. However, the goal is the same every time you are assigned as the RIC. Be proactive and reactive at the same time. Be dynamic, not static. The RIC with their hands in their pockets are not displaying the right mindset.

Don’t Compound the Problem

The fire service has always displayed a "can-do" attitude. This is an excellent mindset to have. However, it can also be downfall for a rapid intervention crew. The RIC must understand that if they become part of the problem at hand they are reducing the chance of saving a fellow firefighter. Studies conducted by the Phoenix Fire Department showed that it typically takes 12 fire fighters to rescue one downed firefighter and one out of every five would-be rescuers become distressed at some point. (See Appendix #.)

So what does this mean for the RIC? It means that they must begin their deployment knowing in the back of their minds that they may not be the ones that bring that downed firefighter out. There is nothing wrong with this. Steps taken by the initial RIC can be as equally as important as removing the downed firefighter from the structure.

For example, your RIC may locate the downed firefighter and place them on-air, but then you may have to exit the structure due to low air levels. This will understandably be hard to do even though that downed firefighter has a greater chance of survival due to being located and having air to breathe. A subsequent RIC can now rapidly deploy to the downed firefighter your RIC located and remove them from the structure. If your RIC stays, expends all their air, and becomes overcome by carbon monoxide, you still will not be able to complete the rescue and you have compounded the problem. Have the mindset that you may require help in completing the rescue, and then call for it early.

Summary

At all times, a rapid intervention crew must engage the proper mindset in order to have a greater chance of success in the event of a deployment. Developing the proper mindset begins well before the incident with training, physical fitness, learning from the past, and most importantly being proactive. Gone are the days of being assigned to RIC and being unprepared and unmotivated. The fire service is still losing approximately 100 firefighters a year. Why is this? We have better equipment, new technology, and more formalized training. We are fighting industry as well as ourselves. Current construction practices do not withstand fire as well as in the past. We also need to consider all materials and furnishings as “fuel.” Many items that were made of Class A combustibles are now made of plastics and other synthetic materials, which burn hotter and facilitate early flashover. With newer PPE and
equipment, we get deeper into structures faster and put ourselves into more hostile environments that we cannot always get out of. As taught in the Fire Fighter Survival course, situational awareness is not a "buzz word." You need to develop true situational awareness. We are in harm’s way more than ever. Developing the proper mindset and understanding the enemy may be the difference between a RIC being effective or failing.
Topic 3: Predeployment Concepts

Terminal Learning Objective (TLO): At the end of this topic, the student will be able to describe the importance of conducting the necessary steps leading up to a RIC deployment.

Enabling Learning Objectives (ELO):
1. Understand the importance of and procedures for conducting a RIC size-up.
2. Identify the importance of assembling a functional RIC tool cache.
3. Identify the importance of softening a structure.
4. Describe predeployment concepts and procedures.

Size-up
In any fire department emergency, a thorough and ongoing size-up is necessary to ensure fire fighter safety and strategically coordinated efforts. In a RIC emergency, size-up also applies and includes further steps and investigation to allow the RIC to be effective in the event of deployment.

On every fire, you should take into account three main aspects when conducting a size-up:
- The interior of the structure.
- The exterior of the structure.
- Their own situation.

The RIC must account for all these factors to maintain their own safety as well monitoring the situations of the crews engaged in fire suppression. By monitoring the situations encountered by companies involved in fire suppression, the RIC can be better prepared, have the right tools, be in the right position, and deploy in rapid fashion.

Critical Information
The RIC size-up begins the moment a company is assigned to the incident. It is important that the RIC Leader obtain information that will help influence later decisions in the event of a RIC deployment.
- What fireground radio channels are being used?
- What is the RIC radio identifier?
  - Truck 3 RIC, Engine 2 RIC, etc.
- Are there other RICs assigned to the incident?
- What are the landmarks?
  - A-side, B-side, C-side, D-side
  - Divisions
- How many companies are inside the structure?
- Where did the interior crews enter the structure?
  - This may assist the RIC in deciding where to make entry.
- How long has the fire been burning?
- Potential for collapse.
- In the event of a large-scale RIC emergency, will the RIC have enough personnel?
- Where are fire suppression companies currently assigned on the incident?
  - This will give the RIC a general idea of where a distressed fire fighter may be in the event of a fire fighter emergency.

**Exterior Size-up**
After obtaining this information, the RIC should conduct a walk-around of the structure’s exterior. This allows the RIC to identify critical factors that will influence the RIC’s tactics in the event of a deployment.
- Consider using a TIC.
- Type of construction.
  - Potential for collapse.
  - Required tools.
- Ingress and egress.
- Potential exits.
  - Go over, around, and through if necessary.
  - Consider using portable lights as indicators for interior crews.
- Openings requiring softening.
  - Remove obstacles.
- Hazards.
- Approximate square footage.
- How many meters, mailboxes?

**Interior Size-up**
After the exterior size up, it is also important the RIC size-up the interior of the structure. This will identify what the RIC will encounter in the event of a RIC deployment. Conducting an interior size-up can be difficult depending on fire conditions.
- Interior lay out.
  - Large open areas.
  - Compartmentalized.
  - Type of search required.
- Type of occupancy.
  - Residential.
  - Hazardous.
  - Fabrication.
  - Storage
RIC OPERATIONS

Topic 3: Predeployment Concepts

☐ Fire conditions.
  ▪ Heat.
  ▪ Visibility.
  ▪ Recognition of critical fire behavior.

☐ Smoke.
  ▪ Volume.
  ▪ Velocity.
  ▪ Density
  ▪ Color.

☐ Potential hazards.
  ▪ High-piled storage.
  ▪ Haz Mat 704.
  ▪ Pack-rat syndrome.

The RIC can use other means to assist with both the exterior and interior size-up, such as preincident plans, building plans, and on-site representatives.

Interior Crew Size-up

It is also crucial that RIC size-up the situation of the crews inside the structure. The RIC must continuously monitor the radio and gather information on what is going on inside the structure. The more the RIC knows, the quicker and more efficient they will be.

☐ Where are the interior crews located?
  ▪ Identify how the RIC will get to them.
  ▪ How the RIC get them out.
  ▪ What will be the travel time to get to them.

☐ What is their air situation?
  ▪ Listen to PARs and CAN reports.
  ▪ When did they make entry, have a mental clock.
  ▪ If they are low on air, will the RIC have enough air to complete the task?

☐ Where are they going to exit in the event of an emergency?
  ▪ Can the RIC get to where they are trying to go?

☐ What kind of conditions are they encountering?
  ▪ What kind of situation will the RIC be encountering?

It is crucial to remember that the RIC size-up is the first step of good predeployment practices. The size-up must be ongoing and thorough. The situation may change, but the RIC must be able to react at a moment’s notice. Be prepared, listen to the radio traffic, have a plan, understand the structure, and understand the situation.
Utilizing a RIC Tactical Worksheet can be advantageous. This allows the RIC Leader to paint a picture of the incident and structure before a RIC deployment occurs, then brief the RIC members. A common acronym utilized on a tactical sheet is RECON.
RIC RECON / SIZE-UP / 360° SURVEY

RIC Group Supervisor ID: _______  CMD Channel: _______  TAC Channel: _______

**Rescue of Fire Fighters**
- Identify Locations of Companies/Fire Fighters
- Identify Potential Entrapments, Hazards, and Problems

**Egress for Fire Fighters**
- Security Bars or Doors – Remove as needed
- Ground or Aerial Ladders as needed

**Construction Type**
- Construction Type: ___________________________________
- Lightweight/Truss Type: ___________________________________

**Outside Survey**
- Approximate Dimensions: ___________________________________
- Irregular Shape/Basement: ___________________________________

**Nasty Hazards**
- Haz Mat/Placards: ___________________________________
- Electrical/Gas: ___________________________________
- Other: ___________________________________

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A-side  B-side  C-side  D-side
**RIC TAC SHEET**

**Arrival**
- Face-to-face with the IC
- Confirm which crews are on-scene and their assignments
- Confirm radio channels to use
- Advise IC of RIC's staging location
- Brief RIC with information from IC

**Size-up**
- 360° of the structure including use of TIC
- Occupancy and type
- Building construction
- Structural triage
- Note any additions or remodels
- Note any other hazards or fire conditions present or changing
- Complete multiple size-ups as the incident progresses.

**Soften the Structure** (communicate this with Operations and Command)
- Remove security bars and doors
- Forcible entry on doors and windows
- Place a box light, turned on, in the openings to denote an exit
- Throw additional ladders to the roof (minimum two ladders at all times)
- Places ladders to all floors of the operation

Any other tasks to assist in exiting the structure

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<table>
<thead>
<tr>
<th><strong>Minimum Equipment</strong></th>
<th><strong>Other Equipment Based on Incident</strong></th>
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<tbody>
<tr>
<td>- Appropriate EMS equipment</td>
<td>- Air bags</td>
</tr>
<tr>
<td>- Chainsaw</td>
<td>- Atmospheric monitor</td>
</tr>
<tr>
<td>- Flat-head axe</td>
<td>- Cribbing</td>
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<tr>
<td>- Haligan</td>
<td>- Hoseline</td>
</tr>
<tr>
<td>- Pick-head axe</td>
<td>- Hydraulic tools</td>
</tr>
<tr>
<td>- Pike pole</td>
<td>- Ladders</td>
</tr>
<tr>
<td>- Radios</td>
<td>- Portable lights/generator</td>
</tr>
<tr>
<td>- Rescue saw with metal blade</td>
<td>- Pry bars</td>
</tr>
<tr>
<td>- RIC pack</td>
<td>- Reciprocating saw</td>
</tr>
<tr>
<td>- Search rope pack</td>
<td>- Rescue litter</td>
</tr>
<tr>
<td>- Sledge hammer</td>
<td>- Spare SCBA bottles (full)</td>
</tr>
<tr>
<td>- Thermal imaging camera (on)</td>
<td></td>
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</tbody>
</table>
Tools and Equipment
In the event of a RIC deployment, it is essential to have the correct tools and equipment for the job at hand. Typically, the required tools and equipment will be dictated by the complexity of the RIC emergency. Unfortunately, oftentimes the true complexity of the RIC emergency is not known until the downed fire fighter is located. This is why it is essential to assemble a fully functional and adequate tool cache every time your company is assigned to a RIC.

Five Considerations
When assembling a tool cache, five main considerations must be addressed:
1. Ingress/Egress
2. Search
3. Air delivery
4. Gaining access to a downed fire fighter
5. Packaging a downed fire fighter
The proper tools and equipment must be part of the RIC tool cache to address these five areas on every RIC deployment. The exact tools and equipment may vary from department to department, but the important thing to remember is that the RIC has the proper tools for the job. An ongoing and thorough size-up of the structure will also dictate any other tools or equipment that may be required. For example:
- Saw type.
  - Based on construction.
- Heavy lifting.
  - Fire fighter states they are trapped under a heavy object.
- Entanglement.
  - T-bar/drop ceiling, wires, etc.
- Extended operations.
  - Extra SCBA bottles.
  - RIC packs.
These are only a few examples, but the important concept is to BE PREPARED!

Placement of the Tool Cache
Along with selecting the proper tools and equipment for the RIC deployment, placement of the RIC tool cache is also of the utmost importance. The A-side of the structure near the main entrance is not always the best place for the RIC to stage their equipment. The point of
entry of the Interior Attack Team is also not always the best place. It is impossible to know where a fire fighter emergency may occur. Consider staging at the corner of the structure to monitor two sides at the same time. It also important to remember, that structural collapse or extreme fire behavior collapse may have cutoff the egress of fire fighters leading to the fire fighter emergency. It is important that the RIC be able to rapidly deploy to any area of the structure with their tool cache. This can be accomplished by using a mobile tool cache. A mobile tool cache also allows the RIC to stay dynamic on the fireground.

Another key concept to remember is the **RIC tool cache belongs to the RIC**. Do not allow other resources to remove any items from your cache. The tools and equipment used by the RIC could mean the difference between life and death for a downed fire fighter. The RIC tool cache needs to be fully equipped and ready to be deployed at all times. When a fellow fire fighter goes down, that is not the time to be looking for the tools and equipment to get them out.

**Ingress and Egress Tools**

- **Irons (flathead axe and Haligan).**
  - Forcible entry.
  - Creating an opening.
- **Chain saw.**
  - Removing doors.
  - Enlarging openings.
  - Creating an opening.
- **Circular saw.**
  - Removing bars.
  - Removing metal doors.
  - Removing locks.
  - Enlarging openings on masonry/metal buildings.
  - Creating openings on masonry/metal buildings.
- **Reciprocating saw.**
  - Removing bars.
  - Removing locks.
  - Enlarging openings.
  - Creating an opening.
- **Cutting torch.**
  - Removing bars.
  - Removing rebar.
  - Removing locks.
- **Through the lock tools.**
  - Removing locks and hardware.
Bolt cutters.
- Removing chains.
- Removing pad locks.

Search Tools
- Handled tools.
  - Allows further reach from anchor points.
  - Allows for greater person-to-person reach.
- Standard rope.
  - Provides an anchor in a rapid search.
- Commercial search lines.
  - Provides an anchor for a rapid search.
  - Provides a reference of depth into the structure.
  - Provides directional reference for the RIC once inside the structure.
  - Provides multiple anchor points for the RIC once inside the structure.
- Webbing.
  - Allows further reach from anchor points.
  - Allows for greater person-to-person reach.
- Thermal imager.
  - Allows for greater visibility within the structure during search.
  - Allows the RIC to identify hazards, exits, and fire fighters within the structure.
  - Allows the RIC to identify temperatures within the structure.

Air Delivery Tools
- Spare SCBA.
  - Equipped with spare mask.
  - Allows for regulator or mask changeover.
- Commercial RIC air.
  - Equipped with spare mask.
  - Equipped with a universal air connector (UAC).
  - Identify whether your department and neighboring departments comply with NFPA 1981: Standard On Open-Circuit Self-Contained Breathing Apparatus For Emergency Services, 2007 Edition, stating that all new SCBAs will have a standard universal air connection (UAC) regardless of the manufacturer.
  - Equipped with an additional mask mounted regulator (MMR).
  - Allows victims to have their own air to breath.
Trans fill lines.
  - Utilized for SCBAs with UAC.
Buddy breathing system.
  - Present on many newer SCBAs.
  - Downed fire fighter is now utilizing the same air as a RIC member.
Plastic tubing.
  - Can be used as a mask-to-mask buddy breathing system if no other air delivery equipment is available.

Access Tools
Wire cutters.
  - Retrieval of an entangled fire fighter.
  - Spring loaded.
Pneumatic lifting tools.
  - Heavy lifting in an entrapment situation.
Hydraulic lifting tools.
  - Heavy lifting in an entrapment situation.
Pry bars.
  - Heavy lifting in an entrapment situation.
Saw (chain, circular, or reciprocating).
  - Removal of debris from around a downed fire fighter.

It is important to understand that much of the equipment used to remove heavy debris off a trapped fire fighter is heavy and cumbersome. In many instances, the RIC is not fully aware of the extent of the rescue at hand. It is not suggested that a RIC conduct a search with these heavy items as it will slow progress and cause fatigue. The equipment should be staged at a strategic point for rapid deployment when needed.

Packaging
Tubular webbing.
  - Lightweight and versatile.
  - Can be used as a harness.
  - Can be used as a drag handle.
Rescue loops.
  - Lightweight and versatile.
  - Rapidly deployed.
  - Provides drag and lifting handles.
Commercial drag devices.
- Typically lightweight and versatile.
- Rapidly deployed.
- Protects the downed fire fighter from any further entanglement by encapsulating them.

Rescue litter
- Strong and sturdy.
- Large and cumbersome.
- Securing the victim in the basket can be difficult in a limited visibility environment.
- Provides a means to move tools and equipment.

SKED
- Slides well on most surfaces.
- Lightweight but bulky.
- Provides multiple drag and carrying handles.
- Can be difficult to deploy and secure a downed fire fighter in a low visibility environment.
- Protects the downed fire fighter from any further entanglement by encapsulating them.

Tool Cache Placement
Once the RIC tool cache has been assembled, it is important that it be placed in a strategic and advantageous location. A RIC deployment may need to commence from any point around a structure. There is no way to know where the RIC emergency may occur, and the key is to be prepared when it does. In many cases, it may be
necessary to stage a RIC tool cache on multiple sides of the structure, typically the A- and C-sides. Corners also provide an excellent option for staging. On multiple alarm incidents, it may be advantageous to have multiple RICs with their own tool cache staged on multiple sides of the structure. Many departments are utilizing RIC tarps that may be staged where needed and identify the tools and equipment that will be utilized in the RIC tool cache. This identifies that the tools and equipment are for use by the RIC only and ensures that no equipment is left out of the cache.

**Staying Mobile (Staying Rapid)**

Having the correct tools and equipment in the RIC tool cache is of little use if they are not ready to be deployed in a rapid fashion at any point in and around the structure.

In many cases, it is important that the RIC be able to stay mobile and deploy the RIC tool cache where needed at any point around the structure. For example, the initial RIC assigned to the incident. Again, there is no way of knowing exactly when or where a RIC deployment may be necessary. The key is to be ready when it does occur and get there rapidly. The front door is not always the best access and the RIC does not always have to follow the hose in. The best access may be directly on the other side of the building from your location. The RIC can deploy from any point around the structure. By utilizing a mobile tool cache, the RIC can have all of the necessary tools and equipment with them at all times, and get to where they need to go in a rapid fashion.

**Staying Rapid inside the Structure**

It is essential that the RIC does not overload themselves with tools and equipment. They need to be able to search and move in a rapid fashion. Numerous tools and equipment make up the tool cache and need to be ready for deployment, but they each have a different role. For example, saws that are used to soften the structure and create ingress and egress may not be needed inside the structure. By creating a RIC pack, a RIC can cover two main areas that must be addressed when involved in a RIC deployment. These two areas are air delivery and downed fire fighter packaging.

- Air delivery.
  - RIC air.
  - Spare SCBA.
  - Trans fill lines.
Packaging.
- Webbing.
- Drag devices.
- Rescue loops.

Though the equipment options may vary by department, the goal is always the same - the ability to deliver the victim air and package the victim for extrication. To accomplish this, the RIC pack needs to be set up appropriately. The equipment is relatively lightweight and can be moved quickly by one RIC member. This allows the other RIC members to conduct a thorough search using thermal imagers and commercial search lines. The RIC emergency may become more complex as a RIC locates a downed fire fighter and assesses the situation. The downed fire fighter may be entrapped or entangled requiring heavy lifting or cutting tools. By earlier staging the RIC tool cache in a strategic location, any other required equipment is also ready for rapid deployment when needed.

**EXAMPLES OF SETUP (JIMMY)**

**Tools and Equipment Summary**
The tools and equipment used in a RIC deployment will vary by department. The important concept to remember when assembling the RIC tool cache is to make sure that the five main considerations are covered on every RIC deployment: 1) ingress and egress, 2) search, 3) air delivery, 4) gaining access to a trapped fire fighter, and 5) victim packaging. It also of the utmost importance that RIC tool caches are staged in strategic locations around the structure, or set up in a fashion that allows for mobility and rapid deployment. Set up your equipment in a manor that does not impede your mobility and slow your RIC down. It is also important to remember that having the equipment on your apparatus is only the first step. Train and know how to use the tools and equipment in your RIC tool cache. During the RIC deployment is not the time to learn how to use a piece of equipment.

**Softening the Building**
After conducting a thorough and ongoing size-up of the situation and assembling the RIC tool cache, the next step in the predeployment phase of RIC operations is softening the structure. Softening the structure is a term used to describe the steps taken to create ingress and egress for the RIC, as well as other fire fighters inside the structure. Too often during firefighting efforts, fire fighters rely solely on one point of egress, typically the way they entered. In many cases, this might be the worst route of egress in an emergency. By softening the structure, the RIC can identify multiple points of egress, create points of egress, and remove any obstacles impeding egress. By softening the structure, the RIC is reducing the reflex time it will take to get a downed fire fighter out of a situation, increasing the chance of survival in a RIC emergency. The goal of softening the structure is to make sure the structure does not beat us.

Exterior crews must always coordinate with interior crews to assure they do not change the fire behavior and endanger personnel engaged in fire attack.
Existing Points of Ingress and Egress

During the RIC size-up and while conducting a thorough walk-around of the structure, it is important to identify every door and window. It is also necessary to identify what type of doors and windows are in place. This will allow the RIC to identify the complexity of the situation and what tools will be necessary.

- Doors
  - Type
    - Wood
    - Metal
    - Electric
    - Double doors/French doors
    - Rollup
  - Construction
    - Solid core
    - Hollow core
    - Panelized
    - Pressed metal
    - Slat style
  - Locking mechanism
    - Dead bolt
    - Mortis lock
    - Rim lock
    - Chained
    - Panic hardware
  - Hinges
    - Exposed and unexposed
  - Security Bars

- Windows
  - Glass type
    - Paned
    - Tempered
    - Security
  - Height
    - Feasible for rescue
  - Width
    - Feasible for rescue
  - Security bars
Again, by identifying the type of existing ingress egress point during the size-up process, the RIC will be aware of challenges they may face in softening the structure and utilize the necessary tools for the job.

**Softening Existing Ingress and Egress Points**

After identifying the existing points of ingress and egress, the RIC must now remove any obstacles that will hinder rapid deployment into the structure. This can range from basic forcible entry techniques using irons to complex cutting operations using power saws and cutting torches. The structure will dictate the complexity of the softening operations.

- **Methods of softening doors**
  - Through the lock
    - Can be effective when dealing with metal and heavy solid core doors with no hinge access or security plates
  - Forcible entry with irons
  - Removing hinge pins
  - Cutting hinges
  - Cutting the locking mechanism
  - Breaching exterior walls to gain access to the lock
    - Effective on wood frame construction
  - Removing glass on windowed or glass paneled doors
  - Center cut of door
    - Can create enough flex in the door push the door of the locking mechanism

- **Methods of softening rollup and garage doors**
  - Cut the locking mechanism
    - Can be difficult to locate from the exterior
  - Inverted L (sheet curtain)
  - Single cut
    - Removal of slats
  - Inverted V cut
    - Effective on doors with electric lowering and raising mechanisms
    - Quick but opening is limited in size
  - Large square cut
    - Effective on doors with electric lowering and raising mechanisms

- **Methods of softening windows**
  - Break the glass
  - Remove window frame
    - Can be effective when dealing with security glass
Cut the glass
  - Can be effective when dealing with security glass
  - Reciprocating saw can be effective

Methods of removing security bars and gates
- Remove the pad lock if utilized
- Remove any hardware holding the bars or gates in place
- Cut with circular saw
- Cut with reciprocating saw
- Cut with a cutting torch
  - Effective on case hardened locks and other hard metals

Creating Ingress and Egress Points
In some cases, using existing ingress and egress points may not be an option. It may be necessary to soften the structure in a manner that creates ingress and egress points. For example, in a large structure with minimal doors and windows it will be necessary for the RIC to create openings. This can be accomplished easily on wood frame and lightweight metal construction by cutting from the exterior using hand tools and power saws. When undertaking these operations, it is important to minimize any further structural compromise. Just like in vertical ventilation operations, identify the structural members before making cuts and minimize any further damage to the structural integrity. Keep in mind that structures will typically be the strongest at the corners.

Many types of structures will present challenges and create lengthy operations when creating ingress and egress points. For example, when dealing with masonry, concrete tilt-up, and thick metal exterior walls it is important that the RIC have the right tools for the job. In addition, it is equally important that the RIC places the ingress and egress points in strategic locations around the structure. Unlike lightweight construction in which an opening can be created in a matter of minutes, cutting through thick concrete, masonry, and metal can be very time consuming.

Enlarging Openings
It may be necessary for the RIC to enlarge existing ingress and egress points to allow for more efficient and rapid operations. Like on the highway, more cars can travel through an area faster when there are four lanes versus one lane. Why have a bottleneck when there can be a freeway? The goal of the RIC is to get in and get a downed fire fighter out as quickly as possible. This can be hampered if RIC tries to fit through tight areas with all their equipment to move a downed fire fighter. By enlarging openings, the RIC can help reduce lost time.
Strategic areas of a structure that the RIC can utilize to enlarge an opening include existing doors and windows. When dealing with doors and windows, half of the work has already been completed. Typically, an enlarged opening can be made rapidly with only 2-3 cuts with a power saw.

Softening the structure can be the difference between life and death for a downed fire fighter. Do not let the structure beat the RIC or the fire fighter who you have been assigned to rescue. When a fire fighter emergency is called, is not the time to force doors or windows, seconds count.

**Predeployment Summary**

By using good predeployment practices, the RIC can be adequately prepared and ready to deploy in a rapid and efficient fashion. Without performing a thorough and ongoing size-up, assembling the appropriate tools for the deployment, and softening the building, the RIC is not setting up for success. Remember, that the success of a rapid intervention crew is measured on everyone going home at the end of the day.
**Topic 4: Deployment**

**Terminal Learning Objective (TLO):** At the end of this topic, the student will be aware of the importance of deployment procedures and the techniques utilized during a RIC deployment.

**Enabling Learning Objectives (ELO):**
1. Describe the concepts of a RIC deployment.
2. Describe the different search techniques.
3. Describe commercial search line techniques.
4. Describe point-to-point search techniques.
5. Describe specific search area techniques.
6. Describe the advantages and disadvantages of using a hoseline during a search.
7. Describe alternate means of search.
8. Describe RIC air management procedures.
9. Describe thermal imaging operations and techniques.

Deployment is the phase of RIC operations that encompasses the search for the downed fire fighter. In the event that a RIC is deployed, they must locate the downed fire fighter, potentially package, and then extricate the fire fighter from the structure. Remember that, based on the event, more than one RIC could be deployed into the structure to complete the RIC operation and extricate the downed fire fighter. In some instances, the location of the downed fire fighter may not be known.

For this reason, fire departments need to have established standardized search procedures for RIC deployments. These procedures must be adhered to anytime a RIC is deployed to locate a downed fire fighter. During the search for a downed fire fighter, the RIC could use a commercial search line system. The commercial search line system identifies the entrance and location of a RIC, and provides a known path to the downed fire fighter and an exit for RIC personnel.

Once deployed, speed and time become essential. In order to expedite this process, crewmembers should have predetermined roles. The initial RIC assigned to search and locate the downed fire fighter should consist of a minimum of three members. Companies assigned to assist in the packaging and removal of the downed fire fighter may utilize the number of members available to them. It is recommended that all RICs work with a minimum of three personnel. Each team member will have a radio, and shall carry the equipment listed below. Any additional RIC entering the structure may require additional equipment based upon the level of entrapment of the downed fire fighter.

**Commercial Search Lines**
Commercial search lines typically consist of a rope bag stuffed with 210 feet of 3/8" Kevlar rope. This allows the RIC to anchor the search line approximately 10 feet outside the entry point and still have 200 feet of working rope to search with. The rope will have various numbers of knots and metal rings spaced evenly along the rope. Each set knot represents the depth that the RIC has progressed into the structure. Typically, each knot will represent...
20 feet. For example, four knots equals 80 feet inside the structure. The distance between knots may vary between departments. It is your responsibility to know your department's policy. The rings provide the RIC with a directional reference (similar to the couplings on a hose). When progressing into the structure, the RIC will contact a ring first. If trying to exit the structure, the RIC will feel a knot first, hence the term "ring out." The rings also provide the RIC an anchor point to clip into if necessary.

**Tether**

Search tethers are 20 feet long. Each tether is constructed with a slipknot and ring at one end and a snap hook or nonlocking carabineer at the other end. The slipknot is placed over your wrist or hand during deployment, and the snap hook is used to clip onto the search rope or rings.

**Company Identifier Recommendation**

The recommended company identifier is a 12"x12" weighted cloth. One side of the cloth has a place for the company T-card(s); the other side will be labeled with the company it is assigned to. Upon commercial search line deployment, all RICS should use a company identifier. The company identifier should be clipped to the search rope, at the entry point, prior to entering the structure.

**3-Person RIC Deployment Formation**

- Position #1: Rope Deployment
  - Search rope bag
  - Shall be responsible for knowing depth and direction of travel and communicate it to the crew at all times
- One rescue loop or webbing in a pocket
- Position #2: RIC Leader (located on right shoulder of the rope deployment person)
  - Thermal imaging camera (TIC), with spare battery if available
  - One 20-foot tether in a pocket
  - Personal escape tool (recommend a pick-headed axe)
  - One rescue loop or webbing in a pocket
- Position #3: Air/Equipment
  - One rescue loop or webbing in a pocket
  - One 20-foot tether in a pocket
  - Personal escape tool
  - RIC bottle with mask and regulator
  - Packaging equipment

RIC Search Procedures

Prior to entry, the RIC Leader ensures that all RIC personnel don full PPE, turn on their radios using the correct channel(s), select and carry the correct tools, and anchor the search line.

Point-to-point Search (Preferred Method)

Once activated, the RIC enters the building based on best access and last known location of the downed fire fighter from the LUNAR/NUCAN report.

The search line is secured outside the structure, at least three feet off the ground and 10 feet from the door (cannot be secured on the entry door). If a knot is located at the threshold upon entry, communicate this to the RIC Group Supervisor. The search line is kept tensioned at all times during deployment. To maintain tension, it may be necessary to wrap the search line around objects inside the structure to accomplish this.

Crewmembers entering the structure will hold the search line in their left hand and should think of it as a road. The search line should be loaded into the bag so a ring comes out first, followed by a knot. As a result, the ring is situated next to the exit. Remember, "ring out" or the rings will lead you out.

Once inside the structure, the RIC will stop and listen for a PASS alarm or other sounds. The RIC will move directly toward the PASS alarm or the last known location of the downed fire fighter. This is called a point-to-point search.

The RIC Leader will have a TIC, if available, and use it to guide Rope Deployment to the downed fire fighter while also scanning the area for hazards and potential exits. The RIC Leader should be located over the right shoulder of Rope Deployment, utilizing the TIC to establish their point-to-point search plan. Certain situations may momentarily require the RIC Leader to be positioned slightly ahead of Rope Deployment.
The third person in the RIC is Air/Equipment. This crewmember remains on the search line unless directed otherwise by RIC Leader.

**Example of a Commercial Search Line Deployment**

Make bigger and reverse ring and knot and anchor to something else, and make more commercial.

**Specific Area Search**

Though specific area search is not the preferred method of searching for a downed fire fighter, it may be necessary because of the unknown location of the downed fire fighter. The situation will dictate how the RIC accomplishes the goal of locating a downed fire fighter. One crewmember can search the area using a tether as a reference. The RIC Leader and Air/Equipment can search by connecting their tethers together to cover a larger area.

- The RIC Leader will clip to the primary search line and extend his or her tether off the primary search line.
- If an area is beyond the RIC Leader’s reach, Air/Equipment moves down the first tether and connects to the ring on the RIC Leader’s tether.
  - It is recommended that the tool and equipment that is being brought in by Air/Equipment be left at the primary search line since it may be cumbersome.
Air/Equipment then can extend the search up to 40 feet from the primary search line. The two crewmembers will always be within 20 feet of each other and remain in voice contact.

When the search is completed, both crewmembers will return to the primary search line or the primary search line will be advanced towards them.

Situations may dictate that a specific area search must be conducted at a location without a ring nearby. The crewmember searching must connect the tether to the primary search line using a friction knot (two wraps and clip back onto the tether) prior to extending the search. The snap hook/nonlocking carabiner must never be held in the hand of another crewmember to act as a tether anchor. It is always clipped into a ring or wrapped around the primary search line using the tether itself.

**Search Utilizing a Hoseline**

If a hoseline was deployed by a fire fighter who becomes lost, trapped, or disoriented and he or she cannot get free or is better off staying in place, the RIC may use an existing hoseline as their path/anchor point to assist them in searching and locating the downed fire fighter.

**Advantages**

- The existing hoseline leads them directly to the fire fighter who called the fire fighter emergency.
- The existing hoseline may allow the RIC to locate the downed fire fighter as they are trying to exit the structure.
- The RIC knows that the hoseline will lead them back out to a known entry location.
- The RIC will have protection of a hoseline if needed at or near their location.
- The RIC does not need to deploy another hoseline or search line as an anchor leading them outside the building.

**Disadvantages**

- Hoseline may not be in working condition.
  - May have failed due to an event (i.e., flashover) causing the fire fighter emergency to occur.
  - Cannot be used if needed for protection from fire.
- If more than one hoseline is deployed, the chances that the RIC gets on and stays on to the correct line diminish immensely.
- The RIC can only estimate how far they have traveled into and around the structure since the hoseline does not have any landmarks.
- Poor choice for land marking the downed fire fighter if the RIC needs to leave.
- Hoseline can travel over and/or in the area of structural compromise with limited knowledge of where the RIC is heading.
Alternate Search Techniques
The following methods are not preferred and not as effective, but may be necessary in the event that the commercial search line system or hoseline is not available.

Directed Search
The directed search is the technique that fire fighters are taught in their fire academy using the basic "right hand, left hand" search pattern. Though this method may sometimes be necessary, it is not an effective means of search for a RIC since this method is slow. The RIC will travel to unnecessary areas of the structure while searching for the downed fire fighter. A direct search also presents more opportunity for the RIC to become disoriented, lengthens the time it takes the RIC to exit the structure, as well as utilizes more of the RIC’s valuable air.

Standard Rope Search
A standard rope search may be necessary if a commercial search line system is not available. A standard rope search does not provide the RIC with any depth gauge or directional references as does the commercial search line system. If utilized, the standard rope search should be secured 10 feet outside of the entry point (same as commercial search line system), the rope should be kept tensioned at all times by Rope Deployment, and if necessary secure a tether to the rope utilizing a friction knot.

Air Management Procedures
Whenever a RIC is assigned to locate a downed fire fighter, an air management tracking system should be established. Air management will ultimately be the responsibility of the RIC Group Supervisor. The air level of the RIC is equally as important as that of the downed fire fighter. If a RIC runs out of air, they have only compounded the problem.

When the RIC enters the IDLH atmosphere, the RIC Group Supervisor will start the clock. This is announced over the radio on the designated channel so that all personnel involved with the deployment are aware of what is occurring.

The RIC Group Supervisor will use the 1/3-1/3-1/3 rule. One third of your air is consumed to enter the structure, one-third of your air is consumed to exit the structure, and one-third of your air is remaining as your emergency air reserve (per NFPA 1404). This rule determines when to exit the structure. The RIC Group Supervisor may choose to not use this air management rule, but he or she must understand that the potential for the RIC to run out of air is increasing. It is the responsibility of the RIC Leader to monitor the SCBA pressures of the RIC.

☐ 5-minute elapsed time
  ▪ RIC Group Supervisor informs the RIC Leader.
  ▪ Records the lowest air pressure of the crew, PAR, and knots inside the structure.

☐ 10-minute elapsed time
  ▪ RIC Group Supervisor informs the RIC Leader.
Based on the amount of air remaining, current conditions, and their location, the RIC Group Supervisor will continue to use the current RIC, order them out of the structure while deploying another RIC, or deploy another RIC to continue the RIC deployment.

**Thermal Imaging Camera Operations**

A thermal imaging camera, also known as a TIC, is an invaluable tool for any rapid intervention crew. A TIC allows the RIC to see objects that are not visible to the naked eye. The RIC can scan for hazards, exits, and victims in reduced visibility in order to locate a downed fire fighter.

So how does it work? A TIC is actually an imager, it is not a camera. It uses infrared energy not visible to the eye to display the temperature of an object. The TIC displays hotter objects as white and cooler objects as black. However, newer TICs can be equipped with colorization. It is up to you to understand the TIC used in your department. Without proper training, a TIC can be interpreted incorrectly and not used to its full potential.

The TIC should be carried by the RIC Leader, but he or she should not be "glued" to it since your peripheral vision is greatly reduced. Though the TIC is an invaluable tool, it does not replace your senses.

**Proper Use of a TIC during Deployment**

- After entering the structure, the RIC Leader scans the area wall to wall starting at the top, moving to the middle, and ending at the floor looking for hazards, exits, and downed fire fighters.
  - This will improve the safety of the RIC, identify alternate means of egress, and potentially locate the downed fire fighter.
Once the RIC Leader is satisfied with the scan, he or she shares selects a reference point that is well identified and shares the screen with Rope Deployment for room orientation and direction of travel.

After reaching the reference point, the RIC Leader tells the RIC to stop and performs a second scan in the same manner: high to low, looking for hazards, exits, and victims.

This process repeats until the downed fire fighter is located or the RIC needs to exit the structure.

The TIC will also assist the RIC in identifying the fire environment. Most TICs are equipped with a temperature gauge and can help the RIC identify extremely hot areas. It is important to remember that the TIC cannot predict flashover or collapse and you must always use your prior training and knowledge in conjunction with the TIC. Images may become distorted and difficult to interpret when steam is created by suppression operations. It can also be misinterpreted if the downed fire fighter’s heat signature is close to that of the room. A good technique to practice is identifying what a SCBA cylinder looks like, as it will typically be cool if the downed fire fighter is still breathing. Most importantly is to remember that a TIC is an electronic piece of equipment.

**Communicating with the Downed Fire Fighter**

Whenever possible, the RIC and the RIC Group Supervisor should maintain constant communication with the downed fire fighter. Any assistance that the downed fire fighter can provide is vital information. Be cognizant of the downed fire fighter's air level and keep radio traffic to necessary information to help the downed fire fighter conserve air.

Well-trained fire fighters begin their personal survival procedures when they experience a fire fighter emergency situation. This will include a LUNAR/NUCAN report and any other information that may assist the RIC. The RIC should be monitoring the radio at all times on the fireground. In the event that this is the only transmission the downed fire fighter can make, the RIC needs to gather all of the information provided as this will be all they have to act upon.

Communication does not always have to be over the radio. A downed fire fighter should be told to activate the PASS, turn on a flashlight, and create periodic loud noises if possible to help guide the RIC. If multiple fire fighters are down and in the same area of each other, they can place two portable radios close together to create radio-assisted feedback in order to guide a RIC. This procedure also helps the downed fire fighters conserve air.

A downed fire fighter will be under extreme emotional distress. All communication should avoid any negative comments to help reduce the anxiety level. Panic will cause the downed fire fighter to use more air and potentially cause bad decisions that can hinder the RIC’s efforts. Remain cool, calm, and collective when communicating with a downed fire fighter.

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*Carry A Spare Battery Whenever Possible!*
Summary
In order to maintain the "rapid" in rapid intervention crew, the RIC needs to be versed in a multitude of skills that will expedite the search for a downed fire fighter. Good deployment techniques can make the difference of reaching downed fire fighters before they run out of air and fire conditions worsen. Deployment techniques should be second nature to a RIC when the need arises.
Topic 5: Rescue Operations

Terminal Learning Objective (TLO): At the end of this topic, the student should be able to perform an assessment on a downed fire fighter and deliver that fire fighter air if necessary.

Enabling Learning Objectives (ELO):
1. Describe and demonstrate a PAC CAN assessment.
2. Describe and demonstrate the five air delivery options.
3. Describe and demonstrate “last resort” air delivery options.
4. Describe and demonstrate the different methods of removing a downed fire fighter from a structure.
5. Describe and demonstrate the different techniques of rescuing a fire fighter who has fallen through the floor.
6. Describe and demonstrate how to remove a downed fire fighter from a confined area.
7. Describe and demonstrate how to rescue a downed fire fighter from an entanglement situation.

After locating a downed fire fighter, the rapid intervention crew will now begin a rescue operation. A rescue operation can be as simple as locating a lost fire fighter with no injuries and escorting them out of the structure, or as complex as removing an injured fire fighter from a significant structural collapse or entrapment.

It is essential the RIC assess the area for any structural compromise and fire activity. This will dictate the initial actions taken by the RIC. If the environment is unstable or there is a potential for collapse, the RIC will be inclined to "grab and go" to a more stable area where they can assess the downed fire fighter or begin assessing immediately.

Downed Fire Fighter Assessment and Air Delivery
It is important that a rapid intervention crew be able to perform a rapid and complete assessment of a downed fire fighter and supply that fire fighter with air if necessary. By performing a PAC CAN assessment, a RIC can determine the state of distress the downed fire fighter is in, as well as determine if the downed fire fighter will require emergency air and how to deliver that air.

Remember, a large majority of fireground fatalities are directly related to carbon monoxide poisoning and asphyxiation. Investigations have shown that even in the events of entrapment and disorientation, fire fighters are dying from lack of air before sustaining fatal burn injuries. Carbon monoxide can make a fire fighter confused and possibly combative making rescue even more difficult. If there is any chance that a downed fire fighter's SCBA will become low on air during rescue operations, that downed fire fighter should be delivered air by the RIC.

It is equally important that the rapid intervention crew be conscious of their own air situation and continuously monitor their SCBA pressure. The rule of thirds should be used at all times, one-third to get in, one-third to get out, and one-third in reserve. The RIC has only as much air as the lowest member's SCBA pressure. At no time should the RIC compound the problem by becoming part of the emergency.
PAC CAN
Once a downed fire fighter is located, the RIC performs a PAC and delivers a CAN report. By utilizing PAC CAN procedures, the rapid intervention crew can perform a rapid assessment and report their findings and needs to the RIC Group Supervisor.

Pass
Deactivate the downed fire fighter's PASS device. This allows the RIC to listen for other PASS devices and reduce yelling and confusion. Yelling increases air consumption.

Air/Assess
During this stage, the RIC will determine the downed fire fighter's air situation, name, rank, and company identifier. Any malfunctions, damage, or accessibility problems to the downed fire fighter's SCBA will dictate the way the air is supplied. The RIC should also determine if the air situation would allow them to extricate the downed fire fighter from the structure effectively. Throughout the assessment, the RIC Leader must continuously assess the structure and the fire environment for any changes.

Conscious Fire Fighter
☐ Check the psi while silencing the PASS device.
  - If the psi is low or rescue operations will be extensive, supply the downed fire fighter with air via a RIC air pack.
☐ In the event that the downed fire fighter experienced a fall, entrapment, or any other mechanical trauma, inspect the SCBA for damage beginning at the face piece and working down toward the bottle pressure gauge.

Unconscious Fire Fighter
☐ Determine if the downed fire fighter is breathing, starting at the face piece.
  - Listen for exhalation.
  - Look for condensation in the mask.
☐ Check for airflow to the mask by cracking the bypass valve.
  - The mask seal may be broken in the event the bypass valve does not activate or is not accessible.
☐ Check the face piece and MMR for damage and compromised integrity.
☐ Check the hose working back towards the second stage regulator.
☐ Check the second stage regulator gauge for psi and damage.
☐ Check the high-pressure hose working back to the SCBA bottle.
☐ Check the psi of the SCBA bottle pressure gauge.
☐ Inspect the SCBA bottle for damage.
Communicate
The RIC communicates their findings and other critical information to the RIC Leader. These findings will assist the RIC Leader in delivering their CAN report to the RIC Group Supervisor.

Conditions
The RIC Leader will report the conditions to the RIC Group Supervisor. This report should include:

- The findings of the downed fire fighter assessment.
  - Air situation.
  - Name.
  - Rank.
  - Company identifier.
- The environment the RIC is encountering.
- The condition of the structure.
- Their location inside the structure.
- The RIC’s air pressure (SCBA pressure of the lowest member) and PAR.

Actions
The RIC Leader will then report the actions the RIC will take in order to extricate the downed fire fighter or stabilize in the event they will not be able to remove the fire fighter on their own. This is the general plan that includes where the RIC will be going and how the RIC will do it.

Needs
The RIC Leader will then report any needs the RIC has and make the necessary requests. By utilizing this process, the RIC can make a rapid and concise assessment, mitigate any SCBA or air deficiencies, and deliver a concise report to the IC communicating their plan and needs for extricating the downed fire fighter.

Five Air Delivery Options

Option 1: Universal Air Connection (UAC)
This option is the most rapid and is used in the event the downed fire fighter has run out of or is low on air. This option should never be used if the SCBA has sustained significant damage or has a compromised bottle. The UAC is a "quick connect coupling" the downed fire fighter’s SCBA is equipped with and uses a male coupling to receive the female coupling from the RIC air pack. Once connected, the two couplings will click and lock into place. This allows the downed fire fighter’s SCBA bottle to "cascade" with the RIC air pack bottle.

According to NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) For Emergency Services, 2007 Edition, the UAC will be located within six inches of the bottleneck on all SCBAs. A standardized coupling must be used by all SCBA manufacturers, making all SCBA UACs compatible.
It is important that you are aware if the SCBA used by your department was manufactured before the NFPA 1981 Standard was in place (2002), as well as the SCBAs utilized by neighboring departments.

**Option 2: Emergency Breathing System (EBS)**
The EBS uses a low psi hose to the downed fire fighter's SCBA. This option may be used in the event the downed fire fighter's UAC is not accessible or has a damaged SCBA bottle. Locations of the EBS may vary by manufacturer.

**Option 3: Low Pressure Hose to Mask Mounted Regulator**
Many mask-mounted regulators (MMRs) are equipped with a coupling to connect the low-pressure hose. With these types of SCBAs, the low-pressure hose from the RIC air pack may be connected to the downed fire fighter's mask. This option may also be used in the event the downed fire fighter's UAC is not accessible or has a damaged SCBA bottle.

**Option 4: Regulator Exchange**
This option is used when the downed fire fighter's regulator has been damaged. This option should only be implemented when Options 1-3 are impossible. Glen to change this sentence (6/1)

**Option 5: Full Mask Exchange**
This option should only be used when the downed fire fighter's SCBA face piece has been damaged or the difference in SCBA manufacturers does not allow for any other option.

**Last Resort Air Delivery Options**
The following air delivery options should only be used in extreme situations and no other means of delivering air to a downed fire fighter are available, such as a RIC air pack malfunction. The following options can also be used to prevent a fire fighter emergency situation in the event a fellow fire fighter becomes distressed in your presence.

**Vinyl/Rubber Tubing**
Some fire fighters are now carrying tubing as a means for buddy breathing. When belt-mounted regulators were prevalent, a fire fighter who is out of air can place tubing into another fire fighter's mask and use that fire fighter's air supply. The fire fighter supplying the air opens their bypass valve to help force air into the other fire fighter's mask. This will expend air rapidly and will leave each fire fighter with a compromised mask seal. It should be utilized in extreme situations.

**Shared Regulator**
In an emergency, a fire fighter can supply air to another fire fighter by sharing the MMR. The two fire fighters remain shoulder to shoulder. The fire fighter supplying the air maintains possession of their MMR at all times. The fire fighter who is out of air will tap the supplying fire fighter on the shoulder when they need a breath. The supplying fire fighter passes their MMR. The supplying fire fighter signals that they are taking the mask back with a tap on the
shoulder. Each fire fighter holds their breath between cycles when they are not using the regulator. This process repeats as the two fire fighters exit the structure or receive further assistance.

**Shared Face Piece**

In an emergency, two fire fighters can also share one mask. This poses more of a threat to both fire fighters than sharing a regulator since they will be exposed to more heat and smoke. Again, the two fire fighters must remain shoulder to shoulder. The fire fighter supplying the air remains in control of the face piece and passes it to the fire fighter in distress when signaled by a tap on the shoulder. The supplying fire fighter will signal taking back the face piece with a tap on the shoulder. This process repeats as the two fire fighters exit the structure or receive further assistance.

Remember, these "last resort" options are only utilized in extreme situations when the RIC is confident they will be able to extricate the downed fire fighter without placing a second fire fighter in distress.

**Moving a Downed Fire Fighter**

The rapid intervention crew should be versed in numerous methods of moving a downed fire fighter in variety of different situations. These methods can range from drags and carries using packaging tools to simply using the downed fire fighter's SCBA as a drag device. Time, situation, and RIC staffing will dictate what method is utilized.

As well as moving a downed fire fighter on level ground, the RIC needs to be proficient in moving downed fire fighters in more challenging situations such as up and down stairs, narrow areas, low overhead areas, and down ladders. Fire fighters train regularly on drags and carries used to rescue civilian victims, however, these operations become more challenging when faced with a downed fire fighter. SCBAs, bulky PPE, and the fact that the RIC is typically faced with more complex and hostile situations create the need for all fire fighters to be highly proficient in the rescue procedures used to remove a downed fire fighter.

**Single Fire Fighter Drag**

When faced with a situation when only one RIC member will be moving a downed fire fighter, the following options should be utilized.

- Drag rescue device (DRD).
  - Turnout coats produced after March 1, 2007 are equipped with a built-in drag device located just below the collar and between the shoulder. (NFPA 1971: Standard On Protective Ensembles For Structural Fire Fighting And Proximity Fire Fighting, 2007 Edition)

- Webbing.
  - Use webbing to secure the downed fire fighter's SCBA straps.
  - Place the webbing just above the SCBA bottle and gather both straps.
  - Use a Lark's foot to gather the straps.
☐ SCBA straps
  ☐ Use the SCBA straps as grab points if a DRD or webbing is not available.

**Two Fire-fighter Drag**
The recommended method for two fire fighters to move a downed fire fighter is the push/pull method.

**Rescue Loops**
- Essentially long Prusik loops made of 9mm or 10mm cord.
- Can be used to attach to the downed fire fighter's SCBA straps and legs by creating a Lark's foot around them.
- Once the Lark's foot is created, the RIC now has straps to pull or lift the downed fire fighter.
- Rescue loops can be used by up to four rescuers.

**Multi Application Service Tool (MAST)**
A MAST device has five, color-coded sewn loops interlinked together. The color codes identify a specific use.
- ☐ Red loops are used for the legs.
- ☐ Yellow loops are used for the arms and torso.
- ☐ Green loops are used as a pull loop.

Once the MAST device is in place, a harness is created that is used to drag, raise, or lower the downed fire fighter. The MAST device is rated for technical rope rescue operations and can also be used by up to four rescuers.

**Drag Tarps**
Drag tarps provide another option for moving a downed fire fighter. When used appropriately, drag tarps provide a rapid means of packaging, then dragging or carrying a downed fire fighter. Drag tarps can be used by up to four rescuers.

**Stairs**
Stairs can present a challenge to a RIC while removing a downed fire fighter from a structure. When dealing with stairs, the RIC should proceed with caution. Attention should be paid to the downed fire fighter's head when descending stairs. It should be cradled at all times to prevent injury or face piece damage. Gravity may assist you when descending stairs, but will create challenges when ascending. A minimum of two RIC members should be used when maneuvering stairs, utilizing one as a spotter to prevent falls.

**Ladders**
Different methods can be used to remove a downed fire fighter from a structure with a ground ladder. The method selected depends on multiple factors.
- ☐ The need for the downed fire fighter to remain on air.
☐ SCBA removal.
☐ Size of the downed fire fighter.
☐ Size of the window and sill height.
☐ Number of RIC members.

Feet First Method
With this method, the SCBA is not removed and the downed fire fighter can remain on air. The feet first method is effective on narrow windows as the downed fire fighter’s profile is reduced while transitioning out the window feet first. The downed fire fighter will be carried down the ladder horizontally across the beams of the ladder.

Head First Method
Using the head first method also allows the downed fire fighter to remain on-air at all times. Two RIC members transition the downed fire fighter to the windowsill and out the window. A single fire fighter on the ladder will receive the downed fire fighter and descend the ladder using the cross beam method.

Seated Carry Method
The SCBA is removed inside of the structure when using the seated carry method. The downed fire fighter’s regulator remains attached until his or her head is transitioned out the window and away from the IDLH atmosphere. The downed fire fighter is lifted to the sill by two RIC members. The fire fighter on the ladder receives the downed fire fighter in a sitting position, legs over the shoulders, with the back against the ladder.

Collapse
Collapse situations can range from a small-scale collapse in which a fire fighter has fallen through the floor, to a large-scale collapse in which large sections of the structure have collapsed. When dealing with collapse situations, the RIC must keep in mind that a significant structural compromise is present. The dead load that the building was engineered for has been altered and further collapse is highly possible.

Before a RIC begins operations in a collapse environment, the area should be thoroughly assessed for integrity. When dealing with large-scale collapse where extrication time will be lengthy, the RIC should be prepared to assess the downed fire fighter and place on a RIC air pack while extrication takes place. The RIC should also be prepared to request equipment for cutting operations and heavy lifting (saws, torches, air bags, etc.).

Fire Fighter through the Floor
When faced with a downed fire fighter who has fallen through the floor, the RIC needs to be cognizant of further floor collapse because the RIC will be placing more weight on an already compromised floor. If the only means of rescue is to raise the downed fire fighter back up through the floor, the RIC should consider cutting another whole in a more structurally sound area or bridging the floor with materials to distribute weight (doors, table tops, ladders, etc.).
The two primary methods of rescuing a downed fire fighter who has fallen through the floor are the rope method and the hose method.

**Rope Method**

The RIC can create a sling to lower a RIC member to the downed fire fighter. To create the sling, a bight of rope is passed through the RIC member's SCBA strap, through the SCBA waste strap, and around the leg opposite the side of the SCBA strap be utilized. The remaining RIC members lower the rescuer into the hole using their bodies as friction devices. Once the RIC member reaches the downed fire fighter, he or she will use the rope to create the same bight the downed fire fighter. If there is not enough remaining rope to create a second sling, the RIC member can put their sling on the downed fire fighter so the RIC can perform the rescue. The sling is lowered back down to the RIC member and used again. If a second rope is not available, the RIC can tie off their search line and use the remaining rope to complete the rescue. Consider the height of the floor at all times to ensure enough rope is available. Remember that creating the bight will require twice as much rope.

**Hose Method**

Structure fires typically have a hoseline nearby. The RIC can use this hoseline to their advantage when time is of the essence. A hoseline provides the RIC a rapid means of retrieving the downed fire fighter.

If uninjured, a bight of hose can be lowered to the downed fire fighter who can then step into the bight or place the bight under the arms in order to be raised through the floor.

If the downed fire fighter is injured and unable to perform self-rescue, a RIC member uses the hoseline as a pole and slides down to the injured fire fighter. Other RIC members are used to anchor the hoseline. The RIC member secures the downed fire fighter in the bight of the hoseline and calls for the RIC to raise. The bight of the hoseline is sent back down to the RIC member and used again.

**Rescue from a Confined Area**

Rescuing a downed fire fighter from a confined area can pose a difficult challenge to the RIC. Due to the lack of working space, tight quarters, and the weight of a downed fire fighter, standard drags and carries may not be effective. The RIC should be trained in the methods of removing a downed fire fighter from confined areas on ground floors as well as multistory structures.

"Denver Drill"

The "Denver Drill" was developed by the Denver Fire Department after the line-of-duty death of Mark Langvardt and has been a standard RIC drill for over ten years. The "Denver Drill" is often practiced on a flat ground prop outside or in a single-story structure. It is important, however, that confined area rescues also be practiced on multi-story structures.

In the case of Mark Langvardt, he was located in a confined area on an upper story. Transitioning a downed fire fighter out a small window to a ladder can be accomplished by using a two-ladder system with two rescuers on the exterior of the structure. The RIC should
keep in mind that in many cases the window could be enlarged by making two cuts with a chain saw. By placing a vertical cut just inside the edge of the windowsill on each side from floor to sill, the cripple wall below the window can be pulled away creating a door.

**Entanglement**

The RIC should be prepared for the possibility of rescuing a downed fire fighter from an entanglement situation on all types of structures. Drop ceiling suspended by wire is prevalent in commercial occupancies, as well as wiring and ducting. Residential occupancies can also present entanglement hazards from heat ducting and electrical and communication wiring. The RIC should be prepared to rescue a downed fire fighter from these situations, as well as have to work through these situations while trying to locate or gain access. The RIC should be equipped with cutters capable of cutting large diameter wire and cable. On a well-equipped RIC, all members will be equipped with wire cutters. Be cautious, however, of energized wiring.

**Summary**

Once a downed fire fighter is located, the RIC will begin rescue operations. The RIC must be trained and capable of adapting to a multitude of situations. The techniques utilized by the RIC will be dictated by the situation at hand; packaging, drags and carries, removal techniques, etc. Remember that air is paramount. Supplying a downed fire fighter with air may be the difference between a successful rescue and a body recovery. The RIC must also constantly monitor their surroundings to ensure they do not become part of the situation. Fire conditions and structural integrity will dictate if the RIC has time to perform detailed operations or "grab and go" to a safer location where assessment and packaging can be performed. Keep the "rapid" in rapid intervention.

It is also important to remember that once a RIC is deployed, other RICs are assembled in order to complete the rescue if necessary or in the event of another fire fighter emergency.
**Topic 6: RIC Operations Skills**

**Terminal Learning Objective (TLO):** At the end of this topic, the student should be able to overcome a variety of obstacles faced by a Rapid Intervention Crew and conduct efficient an RIC operation.

**Enabling Learning Objectives (ELO):**
1. Demonstrate a RIC size-up of the training structure.
2. Demonstrate assembling a RIC tool cache.
3. Demonstrate RIC search techniques.
4. Demonstrate thermal imaging techniques.
5. Demonstrate a downed fire fighter assessment and deliver a CAN report.
6. Demonstrate downed fire-fighter packaging.
7. Demonstrate downed fire-fighter drags and carries.
8. Demonstrate downed fire-fighter ladder carries.
9. Demonstrate rescuing a downed fire fighter who has fallen through the floor.
10. Demonstrate rescuing a downed fire fighter from a confined area from single-story and multistory structures.

**Student's Eligibility to Participate**
Students attending a RIC Operations class may be asked to provide the Primary Instructor verification of the following prior to participating in any skill or evolution.

- Authorization to attend the training, including a statement of insurance for the student.
  - If the class will be coordinated through a community college, the college may provide additional insurance for participants and instructional staff.
- Access to approved personal protective equipment including competency in donning and using the personal protective equipment.
- Current fit test documentation.

**Safety Briefing**
- Maintain hydration.
- Break often or as needed.
- Remove PPE when not participating, especially on warm days.

**Medical Briefing**
- Students will notify the instructor if you have any condition or limitation that may affect their participation in a training evolution.
- Students will notify the instructor immediately if they sustain an injury during the class.
- Instructors will advise students of the location of available medical equipment.

**Personal Protective Equipment, Tools, and Equipment**
- Students will wear full personal protective equipment for all skills.

☐ Recommended tools and equipment to be carried by each fire fighter.
  ■ Spring-loaded wire cutters
  ■ Extra flashlight
  ■ Door wedge
  ■ Webbing

**SCBA Component**


☐ Students will be familiar with all components of their SCBA.

☐ Students must show competency in the use of their SCBA.

**Site Preparation**

☐ The training site will be free of all hazards, i.e., glass, nails, etc.

☐ Instructor will perform a final safety check prior to training on each skill.

**What's in your Pockets?**

Ask any fire fighter what is in the pockets of their gear and each one will have a different explanation for the choice of equipment they decide to carry. Think carefully when selecting the items you will carry in the pockets and consider the following:

☐ Portable radio

☐ Extra flashlight

☐ Wire cutters

☐ Webbing sling (approximately 20 feet)

☐ Door stops/chocks

☐ Vise grips

Once you make the decision on what you will carry, ask yourself where you will carry these items and why. If these items are carried in pockets that are difficult to access, they are of little use to you when you really need them. Take the time when deciding where you will carry these items. Put on your bunker gear, don your SCBA, put on your gloves, and experiment with accessing these tools. Can you easily get to your radio’s emergency activation button? Can you access your wire cutters for an entanglement? Can you grab a door chock to complete a primary search? A little preplanning on what tools you will carry and where you will carry them will pay big dividends when you need to access them in the heat of battle.
RIC Size-up
Throughout this class, the student should continuously perform a size-up on the training structure. Prior to every skill or evolution, the RIC Leader shall perform a RIC size-up. The findings of the size-up will be communicated to the RIC prior to deployment.

PAC CAN
After completing the Skill #2: Downed Fire Assessment, students will conduct a PAC CAN assessment on every downed fire fighter they encounter for the remainder of the class.

Fall Protection

Any skill or evolution that has a potential fall hazard above 6 feet or could lead to injury of a student requires fall protection. Instructors will ensure that students are connected to an approved fall protection system when performing training evolutions off ladders or out upper floor windows. Personnel/students assigned to fall protection positions will be competent in the system’s operation.

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Anchor point in compliance with Title 8, Section 1670</td>
</tr>
<tr>
<td></td>
<td>• Class 3 harness</td>
</tr>
<tr>
<td></td>
<td>• Various webbing</td>
</tr>
<tr>
<td></td>
<td>• ½” static kernmantle rope</td>
</tr>
<tr>
<td></td>
<td>• Pulley</td>
</tr>
<tr>
<td></td>
<td>• Two prusiks</td>
</tr>
<tr>
<td></td>
<td>• Three carabiners</td>
</tr>
<tr>
<td></td>
<td>• Edge protection (as needed)</td>
</tr>
</tbody>
</table>

Fall Protection

1. Start with an anchor point assembled with double prusiks on the safety line to arrest any student’s possible fall.
2. Use a Class 3 harness that properly fits each student.

3. Establish a change of direction above and inline with the descent of the student. This is an example with webbing and a pulley to form a change of direction over the prop.

4. Secure the student to the safety line and harness before attempting any skill.
5. Monitor the student closely during the entire descent.
Skill #1: Assembling a Mobile Tool Cache

**Skill #1: Assembling a Mobile Tool Cache**

During the predeployment phase of RIC operations, the RIC will assemble their tool cache. The size-up of the structure will determine many of the tools required. However, the RIC will always have search, air delivery packaging, and basic extrication equipment. By assembling a mobile tool cache, the RIC can rapidly deploy to most appropriate entry point.

**Time Frame:**

0:30

**Students (Minimum):**

One company

**Materials Needed:**

- Appropriate training structure
- Tools and equipment used in assembling a mobile tool cache
- Ground ladder appropriate for the structure
- Full personal protective equipment

**Site Preparation:**

Ensure that site is free of all hazards.

**Instructor Directions:**

1. Review the skill.
2. Assign personnel to appropriate positions.
3. Ensure all students are wearing full personal protective equipment.
4. Ensure appropriate tools and equipment are available.

**Student Directions:**

1. Select a ground ladder
   - Appropriate size for the structure
2. Bed the ladder on the ground
### Skill #1: Assembling a Mobile Tool Cache

3. Place a salvage cover or hall runner on the ladder
   - Extending the salvage cover the full length of the ladder and rest between the rungs

4. Select and place the appropriate tools and equipment on the ladder
   - Dispersing the weight evenly

5. RIC picks up the ladder
   - One crewmember on each corner of the ladder
   - Using proper lifting techniques
   - If three-person RIC, crewmember at either the tip or rear of the ladder will hold both beams
Skill #1: Assembling a Mobile Tool Cache

6. Deploy the tool and equipment cache to the appropriate location
Skill #2: Downed Fire Fighter Assessment (PAC CAN)

<table>
<thead>
<tr>
<th>Skill #2: Downed Fire Fighter Assessment (PAC CAN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a downed fire fighter is located it is essential that the RIC performs a PAC assessment and delivers a CAN report to the exterior of the structure. At the end of this skill, the student will be able to conduct a PAC CAN and will continue to do so for the remainder of the class every time a downed fire fighter is encountered.</td>
</tr>
</tbody>
</table>

| Time Frame: | 0:45 |
| Students (Minimum): | One company |
| Materials Needed: | • Appropriate training structure  
• Simulated downed fire fighter with SCBA  
• Full personal protective equipment |
| Site Preparation: | Ensure that site is free of all hazards. |
| Instructor Directions: | 1. Review the skill.  
2. Assign personnel to appropriate positions.  
3. Ensure all students are wearing full personal protective equipment.  
4. Perform a final safety check prior to performing the skill. |
| Student Directions: | 1. Locate the downed fire fighter.  
2. RIC Leader monitors the fire and structural conditions. |
### Skill #2: Downed Fire Fighter Assessment (PAC CAN)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Deactivate the downed fire fighter's PASS device.</td>
</tr>
</tbody>
</table>
| 4. | Assess the downed fire fighter for breathing and SCBA pressure.  
|    | - Beginning at the SCBA mask and working back towards the second stage regulator and cylinder gauge. |
| 5. | Assess the downed fire fighter for significant injuries. |
| 6. | Assess for name. |
| 7. | Assess for unit identifier. |
| 8. | Assess for any entrapment issues. |
Skill #2: Downed Fire Fighter Assessment (PAC CAN)

11. Crewmember reports the assessment findings to the RIC Leader.
   - Using "lens to ear" communication whenever possible.

12. RIC Leader delivers a CAN report to the IC.
   - Conditions.
   - Actions.
   - Needs.
Skill #3: RIC Air Delivery

<table>
<thead>
<tr>
<th>Skill #3: RIC Air Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplying a downed fire fighter with air can mean the difference between life and death. During this skill, the student will demonstrate the primary methods of supplying a downed fire fighter with air from a RIC air pack or SCBA with a transfill line.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Frame:</th>
<th>0:45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (Minimum):</td>
<td>One company</td>
</tr>
</tbody>
</table>

**Materials Needed:**
- Appropriate training structure
- Simulated downed fire fighter with SCBA
- RIC air pack or SCBA with transfill line
- Full personal protective equipment
- Don't think you've included all the equipment in the skill steps

**Site Preparation:**
1. Ensure the site is free of all hazards.

**Instructor Directions:**
1. Review the skill.
2. Assign personnel to appropriate positions.
3. Ensure each student is wearing full personal protective equipment.
4. Perform a final safety check prior to performing the skill.

**Student Directions:**
1. Perform PAC CAN assessment
   - To determine the appropriate air delivery method to use

   For universal air connection (UAC)

2. Access the downed fire fighter's UAC.
   - Repositioning the fire fighter if necessary.
3. Make the connection to the UAC.
<table>
<thead>
<tr>
<th>Skill #3: RIC Air Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For mask-mounted regulator (MMR) exchange</strong></td>
</tr>
<tr>
<td>2. Access the downed fire fighter's MMR.</td>
</tr>
<tr>
<td>- Repositioning the fire fighter if necessary.</td>
</tr>
<tr>
<td>3. Place one hand around the regulator where it connects to the face piece.</td>
</tr>
<tr>
<td>4. Leave in place.</td>
</tr>
<tr>
<td>- Allowing the RIC member to have a point of reference when making the regulator exchange.</td>
</tr>
<tr>
<td>5. Place the RIC's MMR where it is readily accessible.</td>
</tr>
<tr>
<td>- Within reach.</td>
</tr>
<tr>
<td>- Close to the downed fire fighter's face piece.</td>
</tr>
<tr>
<td>6. Remove the downed fire fighter's regulator.</td>
</tr>
<tr>
<td>- If the downed fire fighter is conscious, advise to hold breath during the exchange.</td>
</tr>
<tr>
<td>7. Replace with the RIC's regulator.</td>
</tr>
<tr>
<td>- As quickly as possible.</td>
</tr>
<tr>
<td>- Reducing IDLH exposure to the downed fire fighter.</td>
</tr>
<tr>
<td>8. Remove the downed fire fighter’s SCBA if necessary.</td>
</tr>
</tbody>
</table>
Skill #3: RIC Air Delivery

For the low-pressure hose to MMR

2. Access the downed fire fighter’s low-pressure hose connection.
   ▪ Repositioning the fire fighter if necessary.

3. Remove the downed fire fighter’s low pressure hose from the SCBA.
4. Simultaneously replace with the RIC air pack’s low pressure hose.

For the full face piece exchange

2. Move the downed fire fighter into a sitting position.
3. RIC member is behind the downed fire fighter.
   ▪ Accessing the entire SCBA mask.
### Skill #3: RIC Air Delivery

4. Place the RIC air pack’s face piece where it is readily available.
   - Regulator attached.
   - Harness and straps pulled over the front of the mask.

5. Remove the downed fire fighter’s helmet.

6. Pull the hood down.

7. Loosen the downed fire fighter’s face piece straps.

8. Remove the downed fire fighter’s face piece.
   - Using one hand.

9. Simultaneously replace with the RIC air pack’s face piece.
   - Using the other hand.
Skill #3: RIC Air Delivery

10. Tighten the face piece straps.
11. Replace the hood and helmet.
12. Remove the downed fire fighter's SCBA if necessary.

All methods - Secure the RIC air pack

13. Place the RIC air pack on the lap of the downed fire fighter.
14. Secure the RIC air pack to the downed fire fighter.
   - Clipping to the downed fire fighter's waist using a carabiner.
   - Ensuring it does not pull away from the downed fire fighter.

Last Resort Air Delivery (Optional Skills)

The following skills are best used when a downed fire fighter is ambulatory and packaging is not necessary. The skills should only be used in the event a RIC air pack is not available.
Skill #3: RIC Air Delivery

<table>
<thead>
<tr>
<th>Method</th>
<th>Steps</th>
</tr>
</thead>
</table>
| Vinyl/Rubber Tubing     | 1. RIC member with available air places one end of the tubing inside of his or her face piece.  
                             2. RIC member positioned directly next to the downed fire fighter.  
                             3. RIC member places the other end of the tubing inside the downed fire fighter's face piece.  
                             4. RIC member slightly opens bypass valve to ensure airflow.  
                             5. Keep the tubing in place while exiting the structure. |
| Shared Regulator Method | 1. RIC member and downed fire fighter position shoulder to shoulder.  
                             - Wrapping arms around each other's shoulder.  
                             2. RIC member maintains contact with the regulator at all times.  
                             3. Downed fire fighter removes his or her regulator. |
# Skill #3: RIC Air Delivery

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Downed fire fighter taps the RIC member's shoulder when air is needed.</td>
</tr>
<tr>
<td>5.</td>
<td>RIC member places the regulator on the downed fire fighter's face piece.</td>
</tr>
<tr>
<td>6.</td>
<td>RIC member holds breath.</td>
</tr>
</tbody>
</table>
| 7.   | RIC member taps the downed fire fighter's shoulder when air is needed.  
   - Indicating taking the regulator back. |
| 8.   | RIC member takes back the regulator. |
| 9.   | Downed fire fighter holds breath. |
| 10.  | Continue cycle until RIC member and downed fire fighter have exited the structure. |
Skill #4: Commercial Search Line Deployment *(To be updated)*

<table>
<thead>
<tr>
<th>Skill #4: Commercial Search Line Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>During this skill the student will be introduced to the commercial search line system. These systems provide the RIC a rapid means of searching while maintaining an anchor point with the exterior of the structure.</td>
</tr>
<tr>
<td><strong>Time Frame:</strong></td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong></td>
</tr>
</tbody>
</table>
| **Materials Needed:** | • Appropriate training structure  
• PASS device to simulate location of downed fire fighter  
• Full personal protective equipment |
| **Site Preparation:** | 1. Ensure that site is free of all hazards. |
| **Instructor Directions:** | 1. Review the skill.  
2. Assign personnel to appropriate positions.  
3. Ensure all students are wearing full personal protective equipment.  
4. Perform a final safety check prior to performing the skill. |
| **Student Directions:** | 1. Ensure the search line is anchored appropriately outside the structure.  
• Approximately 10 feet outside and 3 feet off the ground.  
• Exterior identifier showing at the point of entry. |
### Skill #4: Commercial Search Line Deployment

| 2. | Place taglines where they will be easily accessible if needed during a RIC deployment. |
| 3. | Confirm radio channel. |
| 4. | Enter the structure. |
| 5. | RIC Leader stops the crew at an ideal location to determine where the PASS device is sounding.  
   - If having difficulty pinpointing the direction of the PASS device, have crewmembers cover one ear at a time to assist in cognitive training.  
   - Coordinated by the RIC Leader. |
| 6. | Use a TIC if available. |
### Skill #4: Commercial Search Line Deployment

| Picture | 7. Deploy the search line bag.  
|         | ▪ Ensuring the line is coming out the front of the primary search line bag. |
|         | 8. Exit the structure when the search is completed.  
|         | ▪ Downed fire fighter located.  
|         | ▪ Lack of air.  
|         | 9. Breach a wall, find a solid object to tie-off to or wrap a pillar or post. |
| Picture | 10. Deploy a tagline.  
|         | 11. Wrap the tagline around the wrist or hand. |
Skill #4: Commercial Search Line Deployment

12. Connect the tagline to a metal ring of the primary search line if possible.

13. If the RIC is not located at a ring and they do not want to move forward or back to a ring then they should use a friction wrap.

14. Once the downed fire fighter is located, the crewmember deploying the search line moves past the downed fire fighter and ties-off or wraps the search line
   - 5 feet to once side if possible and past the RIC.
   - Keeping the search line out of the way while packaging the downed FF.
   - Ensuring any other crews deploying will not have any issues locating the downed fire fighter.
<table>
<thead>
<tr>
<th>Skill #4: Commercial Search Line Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture</td>
</tr>
<tr>
<td>15. If a RIC is deploying into a structure and they know that the area they are going to be deploying in is meant for foot travel then they can allow the search line to follow them without using a change of direction point.</td>
</tr>
<tr>
<td>Picture</td>
</tr>
<tr>
<td>16. If the RIC is deploying into an area where they do not know if the area is meant for foot travel then they should use solid objects as change of direction point.</td>
</tr>
<tr>
<td>17. Do not take time to actually wrap or tie-off.</td>
</tr>
<tr>
<td>18. Do not use a chair or an object that will not be moved by the search line.</td>
</tr>
</tbody>
</table>
Skill #5: Dragging a Downed Fire Fighter, One Rescuer Method

<table>
<thead>
<tr>
<th>Skill #5: Dragging a Downed Fire Fighter, One Rescuer Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>This method can be used if your partner goes down inside the fire building.</td>
</tr>
<tr>
<td><strong>Time Frame:</strong></td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong></td>
</tr>
<tr>
<td><strong>Materials Needed:</strong></td>
</tr>
<tr>
<td>- Appropriate training structure</td>
</tr>
<tr>
<td>- Simulated downed fire fighter with SCBA</td>
</tr>
<tr>
<td>- Full personal protective equipment</td>
</tr>
<tr>
<td><strong>Site Preparation:</strong></td>
</tr>
<tr>
<td>1. Ensure that site is free of all hazards.</td>
</tr>
<tr>
<td><strong>Instructor Directions:</strong></td>
</tr>
<tr>
<td>1. Review the skill.</td>
</tr>
<tr>
<td>2. Assign personnel to appropriate positions.</td>
</tr>
<tr>
<td>3. Ensure all students are wearing full personal protective equipment.</td>
</tr>
<tr>
<td>4. Care should be taken to minimize damage to PPE and SCBAs.</td>
</tr>
<tr>
<td>5. Perform a final safety check prior to performing the skill.</td>
</tr>
<tr>
<td><strong>Student Directions:</strong></td>
</tr>
<tr>
<td>1. Locate the downed fire fighter.</td>
</tr>
<tr>
<td>2. Perform a PAC CAN assessment.</td>
</tr>
<tr>
<td>3. Place the downed fire fighter’s SCBA waist strap between his or her legs.</td>
</tr>
<tr>
<td>- Creating a seat harness.</td>
</tr>
<tr>
<td>4. Stand on the same side as the downed fire fighter’s SCBA air tank</td>
</tr>
<tr>
<td>- Minimizing the chances of the downed fire fighter’s face mask being kicked off by the rescuer</td>
</tr>
<tr>
<td>5. Grab the shoulder strap of the SCBA.</td>
</tr>
<tr>
<td>- Strap without the low-pressure hose to the MMR.</td>
</tr>
<tr>
<td>6. Drag the downed fire fighter where visibility and/or fire conditions allow.</td>
</tr>
<tr>
<td>- Using the sideways crab walk if needed due to fire conditions.</td>
</tr>
<tr>
<td>- Using the sit-and-tug method if needed due to a large stature or friction complicating the drag.</td>
</tr>
<tr>
<td>7. Continue to drag the downed fire fighter to an area of refuge or out of the fire building.</td>
</tr>
<tr>
<td>Skill #5: Dragging a Downed Fire Fighter, One Rescuer Method</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
</tbody>
</table>

8. Rescuer can also use a MAST device, rescue loops, or webbing attached to both shoulder straps of the downed fire fighter.
Skill #6: Dragging a Downed Fire Fighter using a RIC

<table>
<thead>
<tr>
<th>Skill #6: Dragging a Downed Fire Fighter using a RIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>As part of a RIC, you may need to drag a downed fire fighter to safety under harsh or threatening conditions.</td>
</tr>
<tr>
<td><strong>Time Frame:</strong> 0:15</td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong> One company</td>
</tr>
<tr>
<td><strong>Materials Needed:</strong></td>
</tr>
<tr>
<td>● Appropriate training structure</td>
</tr>
<tr>
<td>● Simulated downed fire fighter with SCBA</td>
</tr>
<tr>
<td>● Full personal protective equipment</td>
</tr>
<tr>
<td><strong>Site Preparation:</strong> 1. Ensure that site is free of all hazards.</td>
</tr>
<tr>
<td><strong>Instructor Directions:</strong></td>
</tr>
<tr>
<td>1. Review the skill.</td>
</tr>
<tr>
<td>2. Assign personnel to appropriate positions.</td>
</tr>
<tr>
<td>3. Ensure all students are wearing full personal protective equipment.</td>
</tr>
<tr>
<td>4. Care should be taken to minimize damage to PPE and SCBAs.</td>
</tr>
<tr>
<td>5. Perform a final safety check prior to performing the skill.</td>
</tr>
</tbody>
</table>

**Student Directions:**

1. Locate the downed fire fighter. |
2. Perform a PAC CAN assessment. |
3. Place the downed fire fighter's SCBA waist strap between his or her legs. |
  ▪ Creating a seat harness.
Skill #6: Dragging a Downed Fire Fighter using a RIC

<table>
<thead>
<tr>
<th>Pull/Pull Method for Unobstructed Clear Air and/or Visibility Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Rescuers face each other at the downed fire fighter's head.</td>
</tr>
<tr>
<td>5. Rescuers grab the downed fire fighter's respective SCBA shoulder strap</td>
</tr>
<tr>
<td>▪ With the inside hand.</td>
</tr>
<tr>
<td>▪ Facing toward the direction of travel.</td>
</tr>
<tr>
<td>6. Drag the downed fire fighter toward an area of refuge or out of the fire building.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Push/Pull Method for Poor Visibility Conditions or Narrow Passages</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. One rescuer at the downed fire fighter's head.</td>
</tr>
<tr>
<td>5. One rescuer at the downed fire fighter's feet.</td>
</tr>
<tr>
<td>6. Rescuer at the head grabs the downed fire fighter's SCBA shoulder strap.</td>
</tr>
<tr>
<td>▪ Positioning on the air tank side.</td>
</tr>
<tr>
<td>7. Rescuer at the feet lifts the downed fire fighter's leg and places it over the shoulder.</td>
</tr>
<tr>
<td>▪ Using proper lifting techniques.</td>
</tr>
<tr>
<td>▪ Downed fire fighter's knee is directly on the rescuer's shoulder</td>
</tr>
<tr>
<td>▪ Rescuer straddling the other leg.</td>
</tr>
<tr>
<td>8. Rescuer at the head gives command and pulls on the shoulder strap.</td>
</tr>
<tr>
<td>▪ Using the sideways crab crawl towards the egress.</td>
</tr>
<tr>
<td>9. Rescuer at the legs pushes on the leg over his or her shoulder.</td>
</tr>
<tr>
<td>▪ Staying as low as possible to keep from pushing the leg downward.</td>
</tr>
</tbody>
</table>
Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops

<table>
<thead>
<tr>
<th>Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this skill, the student will be taught how to apply and utilize rescue loops with one to four only show up to three?? RIC members. Rescue loops provide a rapid means of packaging a downed fire fighter.</td>
</tr>
<tr>
<td>Time Frame:</td>
</tr>
<tr>
<td>Students (Minimum):</td>
</tr>
<tr>
<td>Materials Needed:</td>
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<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Site Preparation:</td>
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<tr>
<td>Instructor Directions:</td>
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<td></td>
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<tr>
<td>Student Directions:</td>
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<td></td>
</tr>
</tbody>
</table>
Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops

4. Loosen and unbuckle the downed fire fighter's waist strap.
5. Fasten the waist strap together between the downed fire fighter's legs.

6. Grasp the rescue loop.
7. Drag the downed fire fighter 10 feet towards the exit.
   - Standing in a crouch.
   - Using proper body mechanics. *(How will they know what these are???)*

Two Rescuers

1. Rescuers take position at the head of downed fire fighter.
2. Assess the downed fire fighter.
   - Delivering a PAC CAN report.
3. Rescuers attach a rescue loop to each shoulder strap of the downed fire fighter's SCBA.
   - Using a Lark's foot to pull tension on the loop
Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops

4. Loosen and unbuckle the downed fire fighter's waist strap.
5. Fasten the waist strap together between the downed fire fighter's legs.

6. Rescuers grasp a rescue loop.
7. Rescuers drag the downed fire fighter 10 feet towards the exit.
   - Standing in a crouch.
   - Using proper body mechanics.

8. One rescuer reduces the length of the rescue loop when a narrow opening is encountered.
   - Folding the rescue loop back on itself.
Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops

9. Rescuers stagger themselves through the narrow opening.

Three Rescuers

1. One rescuer takes position at the waist of the downed fire fighter.
2. Two rescuers take position at the head of downed fire fighter.
3. Assess the downed fire fighter.
   - Delivering a PAC CAN report.
4. Rescuers at the head attach a rescue loop to each shoulder strap of the downed fire fighter's SCBA.
   - Using a Lark's foot to pull tension on the loop.
5. Rescuer at the waist attaches a rescue loop around both legs of the downed fire fighter.
   - At the thighs.
   - Using a Lark's foot to pull tension on the loop.
Skill #7: Dragging a Downed Fire Fighter Utilizing Rescue Loops

6. All rescuers grasp a rescue loop.
7. **Lift and carry** the downed fire fighter 10 feet towards the exit.
   - Standing in a crouch.
   - Using proper body mechanics.
## Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled

**Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled**

Drag tarps provide another option for moving a downed fire fighter. When used appropriately they can provide a rapid means of packaging and dragging or carrying a downed fire fighter. The drag sled can be used by up to four rescuers.

**Time Frame:** 0:30

**Students (Minimum):** One company

**Materials Needed:**
- Appropriate training structure
- Simulated downed fire fighter in full personal protective equipment
- **Commercial** drag sled
- Full personal protective equipment

**Site Preparation:**
1. Ensure that site is free of all hazards.

**Instructor Directions:**
1. Review both methods of the skill.
2. Assign personnel to appropriate positions.
3. Ensure each student is wearing full personal protective equipment.
4. Perform a final safety check prior to performing the skill.

**Student Directions:**

One Rescuer

1. Log roll downed fire fighter on side.
2. Lay out drag sled along side the downed fire fighter.
3. Roll the downed fire fighter on to the drag sled.
   - Ending face down.
4. Attach a carabineer to the sled’s handles between downed fire fighter’s legs.
Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled

6. Grasp the top handles of the drag sled.
7. Drag the downed fire fighter 10 feet towards the exit.
   ▪ Using proper body mechanics.

Two Rescuers

1. Log roll downed fire fighter on side.
2. Lay out drag sled along side the downed fire fighter.
3. Roll the downed fire fighter on to the drag sled.
   ▪ Ending face down.
4. Attach a carabineer to the sled's handles between downed fire fighter's legs.
Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled

6. Rescuers grasp the top handle of the drag sled.
7. Drag the downed fire fighter 10 feet towards the exit.
   - Using proper body mechanics.

Three Rescuers
1. Log roll downed fire fighter on side.
2. Lay out drag sled along side the downed fire fighter.
3. Roll the downed fire fighter on to the drag sled.
   - Ending face down.
4. Attach a carabineer to the sled's handles between downed fire fighter's legs.
Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled

6. Two rescuers grasp the top handles of the rescue sled.
7. One rescuer grasps the bottom handles.
8. Lift and carry the downed fire fighter 10 feet towards the exit.
   - Lifting in unison.
   - Using proper body mechanics.

Four Rescuers
1. Log roll downed fire fighter on side/
2. Lay out drag sled along side the downed fire fighter.
3. Roll the downed fire fighter on to the rescue sled.
   - Ending face down.
4. Attach a carabineer to the sled's handles between downed fire fighter's legs.
Skill #8: Dragging a Downed Fire Fighter Utilizing a Drag Sled

How and when does he get face up???

6. Two rescuers grasp the top handles of the drag sled.
7. Two rescuers grasp the bottom handles.
8. Lift and carry the downed fire fighter 10 feet towards the exit.
   - Lifting in unison.
   - Using proper body mechanics.
Skill #9: Dragging a Downed Fire Fighter Utilizing a MAST

A MAST provides another option for packaging and moving a downed fire fighter. In this skill, the student will be taught the proper application and techniques in utilizing a MAST to drag or carry a downed fire fighter.

**Skill #9: Dragging a Downed Fire Fighter Utilizing a MAST**

- **Time Frame:** 0:30
- **Students (Minimum):** One company
- **Materials Needed:**
  - Appropriate training structure
  - Simulated downed fire fighter in full personal protective equipment
  - Multi application service tool (MAST)
  - Full personal protective equipment
- **Site Preparation:**
  - Ensure that site is free of all hazards.
- **Instructor Directions:**
  1. Review the skill.
  2. Assign personnel to appropriate positions.
  3. Ensure all students are wearing full personal protective equipment.
  4. Perform a final safety check prior to performing the skill.

**Student Directions:**

- **One Rescuer**
  1. Log roll downed fire fighter on side
  2. Lay out MAST loops in front of the downed fire fighter
  3. Attach a red loop to each of the downed fire fighter's legs
  4. Attach a yellow loop to each arm
  5. Place a green loop over the head and behind the neck
  6. Tighten loops from red to green to fit snugly
### Skill #9: Dragging a Downed Fire Fighter Utilizing a MAST

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Grasp the green loop.</td>
</tr>
<tr>
<td>8.</td>
<td>Drag the downed fire fighter 10 feet towards the exit.</td>
</tr>
<tr>
<td></td>
<td>- Crouching.</td>
</tr>
<tr>
<td></td>
<td>- Using proper body mechanics.</td>
</tr>
</tbody>
</table>

#### Two Rescuers *(How is this different than the one rescuer?)*

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Log roll downed fire fighter on side.</td>
</tr>
<tr>
<td>2.</td>
<td>Lay out MAST loops in front of the downed fire fighter</td>
</tr>
<tr>
<td>3.</td>
<td>Attach a red loop to each of the downed fire fighter's legs.</td>
</tr>
<tr>
<td>4.</td>
<td>Attach a yellow loop to each arm.</td>
</tr>
<tr>
<td>5.</td>
<td>Place a green loop over the head and behind the neck.</td>
</tr>
<tr>
<td>6.</td>
<td>Tighten loops from red to green to fit snugly.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>Grasp the green loop <strong>Do they both do this?</strong></td>
</tr>
<tr>
<td>8.</td>
<td>Drag the downed fire fighter 10 feet towards the exit.</td>
</tr>
<tr>
<td></td>
<td>- Crouching.</td>
</tr>
<tr>
<td></td>
<td>- Using proper body mechanics.</td>
</tr>
</tbody>
</table>
Skill #9: Dragging a Downed Fire Fighter Utilizing a MAST

<table>
<thead>
<tr>
<th>Three Rescuers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. One rescuer takes position at the thighs of the downed fire fighter.</td>
</tr>
<tr>
<td>2. Two rescuers take position at the head.</td>
</tr>
<tr>
<td>3. Log roll downed fire fighter on side.</td>
</tr>
<tr>
<td>4. Lay out MAST loops in front of the downed fire fighter.</td>
</tr>
<tr>
<td>5. Attach a red loop to each of the downed fire fighter's legs.</td>
</tr>
<tr>
<td>6. Attach a yellow loop to each arm.</td>
</tr>
<tr>
<td>7. Place a green loop over the head and behind the neck.</td>
</tr>
<tr>
<td>8. Tighten loops from red to green to fit snugly.</td>
</tr>
</tbody>
</table>

9. **All rescuers** grasp the green loop.
10. Lift and carry the downed fire fighter 10 feet towards the exit.
   - Lifting in unison.
   - Using proper body mechanics.
Skill #9: Dragging a Downed Fire Fighter Utilizing a MAST

Four Fire-fighter Drag

1. Two rescuers take position at the thighs of the downed fire fighter.
2. Two rescuers take position at the head.
3. Log roll downed fire fighter on side.
4. Lay out MAST loops in front of the downed fire fighter.
5. Attach a red loop to each of the downed fire fighter's legs.
6. Attach a yellow loop to each arm.
7. Place a green loop over the head and behind the neck.
8. Tighten loops from red to green to fit snugly.

9. Grasp the green loop.
10. Lift and carry the downed fire fighter 10 feet towards the exit.
   - Lifting in unison.
   - Using proper body mechanics.
Skill #10: Dragging a Downed Fire Fighter Down Stairs

<table>
<thead>
<tr>
<th>Skill #10: Dragging a Downed Fire Fighter Down Stairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>In this skill, the student will be taught how properly drag a downed fire fighter safely and efficiently down stairs when packaging equipment is not available. <strong>Adjunct devices like a rescue sled, MAST device or Phoenix Loops can also be used if time permits.</strong></td>
</tr>
<tr>
<td><strong>Time Frame:</strong></td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong></td>
</tr>
</tbody>
</table>
| **Materials Needed:** | • Appropriate training structure  
• Simulated downed fire fighter in full personal protective equipment  
• Full personal protective equipment |
| **Site Preparation:** | 1. Ensure that site is free of all hazards. |
| **Instructor Directions:** | 1. Review the skill.  
2. Assign personnel to appropriate positions.  
3. Ensure all students are wearing full personal protective equipment.  
4. Perform a final safety check prior to performing the skill. |

**Student Directions:**

Two Rescuers

1. Position the downed fire fighter
   - On side  
   - Head first  
   - Stomach toward any anticipated inside bends
2. Rescuer #1 takes position below the downed fire fighter's head
   - Staying low
3. Rescuer #2 takes position behind Rescuer #1
4. Rescuer #2 grasps Rescuer #1's SCBA frame or waist strap with one hand
   - Preparing to guide down the stairs
5. Rescuer #1 grasps both SCBA shoulder straps of the downed fire fighter
   - Using a cross grasp to cradle the head
Skill #10: Dragging a Downed Fire Fighter Down Stairs

6. Rescuer #1 pulls the downed fire fighter down the stairs
   - Leaning into the downed fire fighter to gain control
   - Shielding from falling debris if necessary
   - Using proper body mechanics

7. Rescuer #2 guides the descent
   - Maintaining physical and verbal contact other RIC member
   - Using proper body mechanics
Skill #11: Dragging a Downed Fire Fighter Up Stairs

### Skill #11: Dragging a Downed Fire Fighter Up Stairs

In this skill, the student will be taught how properly drag a downed fire fighter safely and efficiently up stairs when packaging equipment is not available.

<table>
<thead>
<tr>
<th><strong>Time Frame:</strong></th>
<th>0:45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students (Minimum):</strong></td>
<td>One company</td>
</tr>
</tbody>
</table>
| **Materials Needed:** | • Appropriate training structure  
  • Simulated downed fire fighter in full personal protective equipment  
  • Full personal protective equipment |
| **Site Preparation:** | • Ensure that site is free of all hazards. |
| **Instructor Directions:** | 1. Review the skill.  
  2. Assign personnel to appropriate positions.  
  3. Perform a final safety check prior to performing the skill.  
  4. Ensure all students are wearing full personal protective equipment. |
| **Student Directions:** | Two Rescuers  
  1. Position the downed fire fighter  
     • Face up  
     • Head first  
  2. Create a seat harness for the downed fire fighter  
     • Placing the SCBA waist strap between the downed fire fighter's legs  
  3. Rescuer #1 takes position at the downed fire fighter's head  
  4. Rescuer #1 grasps both SCBA shoulder straps of the downed fire fighter  
  5. Rescuer #2 takes position at the downed fire fighter's feet |
Skill #11: Dragging a Downed Fire Fighter Up Stairs

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>Rescuer #1 where does the rope come from in the picture?</td>
</tr>
<tr>
<td>7.</td>
<td>Rescuer #2 lifts the downed fire fighter’s legs using an appropriate method</td>
</tr>
<tr>
<td></td>
<td>Grabbing both legs at the knees while standing between them</td>
</tr>
<tr>
<td></td>
<td>Using a Lark's foot and webbing, rope, or rescue loop around the legs at the knees</td>
</tr>
<tr>
<td>8.</td>
<td>Both rescuers carry the downed fire fighter like luggage.</td>
</tr>
<tr>
<td></td>
<td>Slung over the shoulder</td>
</tr>
<tr>
<td></td>
<td>Legs over the shoulders</td>
</tr>
<tr>
<td></td>
<td>Using proper body mechanics</td>
</tr>
</tbody>
</table>
Skill #12: Feet First Ladder Carry

<table>
<thead>
<tr>
<th>Skill #12: Feet First Ladder Carry</th>
</tr>
</thead>
<tbody>
<tr>
<td>In an event that a fire fighter becomes injured and/or unconscious, it may be necessary for other crewmembers or a RIC to remove the downed fire fighter. To expedite this issue in a multistory structure, the fire fighter may be removed down a ladder. This skill may require additional exterior and possibly interior assistance depending on air levels of the crewmembers and the work that may be needed i.e., searching, packaging, dragging, carrying, window or door egress preparation, etc. to remove the fire fighter to a safer location.</td>
</tr>
<tr>
<td><strong>Time Frame:</strong></td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong></td>
</tr>
</tbody>
</table>
| **Materials Needed:** | - Appropriate training structure  
- Simulated downed fire fighter in full personal protective equipment  
- Ladder  
- Full personal protective equipment |
| **Site Preparation:** | 1. Ensure that site is free of all hazards. |
| **Instructor Directions:** | 1. Review the skill.  
2. Assign personnel to appropriate positions.  
3. Perform a final safety check prior to performing the skill.  
4. Ensure all students are wearing full personal protective equipment. |
| **Student Directions:** |
Skill #12: Feet First Ladder Carry

1. Position the downed fire fighter so head is facing away from the window
2. Drag the downed fire fighter to the window
   a. The best way to drag a firefighter using this method is to place one hand on the downed firefighters waist strap. Using the other hand, grab the downed firefighter cuff at the bottom of their turnout pants. Work together using the “ready, drag” method.
   b. This is a skill within a skill.
3. Two rescuers place the downed fire fighter's feet on to the window sill
   ▪ Maintaining contact with the downed fire fighter
4. One rescuer takes position on the ladder outside the window
   ▪ Preparing to manage the downed fire fighter
Skill #12: Feet First Ladder Carry

5. Both rescuers lift and place the downed fire fighter's thighs on the window sill
   - Controlling the lift
   - Using the "Ready, Lift" method
   - Readjusting their hands
     - The hand grabbing the pant cuff moves to the waist strap
     - The hand holding the waist strap moves to under the downed fire fighter's chest
     - Grabbing the other RIC member's hand

6. Finish lifting the downed fire fighter out the window
   - Placing a leg underneath the downed fire fighter to help hold the weight if necessary

7. Rescuer on the ladder performs a basic leg lock on the downed fire fighter
   - Moving the downed fire fighter's legs to one side of his or her body
   - Placing one hand between the downed fire fighter's legs
Skill #12: Feet First Ladder Carry

- Wrapping the other hand around the opposite beam for stabilization
- Resting underneath the downed fire fighter’s armpit

11. Inside rescuers continue to assist the downed fire fighter until completely secured on the ladder
12. Ladder rescuer and downed fire fighter descend the ladder
   - Controlling the decent by wrapping both hands around the beams
Skill #13: Seated Carry with SCBA Removal

<table>
<thead>
<tr>
<th>Skill #13: Seated Carry with SCBA Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilizing the seated carry method, the SCBA is removed inside the structure. The downed fire fighter's regulator remains attached until the head is transitioned out the window and away from the IDLH atmosphere. The downed fire fighter is lifted to the window sill by two RIC members. The fire fighter on the ladder receives the downed fire fighter in a sitting position, legs over the shoulders, with the back against the ladder.</td>
</tr>
</tbody>
</table>

| Time Frame: | 0:30 |
| Students (Minimum): | One company |

<table>
<thead>
<tr>
<th>Materials Needed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Appropriate training structure</td>
</tr>
<tr>
<td>• Ladder</td>
</tr>
<tr>
<td>• Fall protection system</td>
</tr>
<tr>
<td>• Simulated downed fire fighter in full personal protective equipment</td>
</tr>
<tr>
<td>• Full personal protective equipment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Preparation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ensure that site is free of all hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instructor Directions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Review the skill.</td>
</tr>
<tr>
<td>2. Assign personnel to appropriate positions.</td>
</tr>
<tr>
<td>3. Ensure all students are wearing full personal protective equipment.</td>
</tr>
<tr>
<td>4. Perform a final safety check prior to performing the skill.</td>
</tr>
</tbody>
</table>

| Student Directions: |
Skill #13: Seated Carry with SCBA Removal

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Picture</strong></td>
<td></td>
</tr>
</tbody>
</table>

1. Position the downed fire fighter on the shoulder were the SCBA low pressure air hose is located
   - Head facing the window (as if he/she was drug to this location)
2. Disconnect the downed fire fighter's SCBA waist strap
3. Loosen both SCBA shoulder straps
4. Maneuver the upper arm of the downed fire fighter through the SCBA shoulder strap
5. Roll the downed fire fighter face down
6. Slide the SCBA off the opposite arm
   - SCBA is only connected to the mask by the low air pressure hose
7. Roll the downed fire fighter face up
### Skill #13: Seated Carry with SCBA Removal

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Rescuers take position on either side of the downed fire fighter</td>
</tr>
<tr>
<td>9.</td>
<td>Each rescuer grabs a shoulder and one leg of the downed fire fighter</td>
</tr>
<tr>
<td>10.</td>
<td>Both rescuers lift the legs 90 degrees</td>
</tr>
<tr>
<td>11.</td>
<td>Rescuer on the side of the SCBA grabs the SCBA</td>
</tr>
<tr>
<td>12.</td>
<td>Spin the downed fire fighter so the legs are facing the window</td>
</tr>
</tbody>
</table>
| 13.  | Push the downed fire fighter until his or her buttocks is up against the wall and the legs are vertical  
|      |   - While maintaining their grip |
| 14.  | Disconnect the regulator or remove the face piece |
| 15.  | Place the downed fire fighter's arms across his or her chest |
| 16.  | One rescuer positions one hand near the buttocks and the other hand up by the collar  
|      |   - Gripping as low as possible  
|      |   - Palm facing up |
| 17.  | One rescuer gives the command, "Ready, Lift" |
| 18.  | Both RIC members lift and place the downed fire fighter's buttocks on to the window sill  
|      |   - Lifting in unison  
|      |   - Using proper body mechanics |
| 19.  | Rotate on the leg next to the window |
| 20.  | Lift the other leg and put the knee under the buttocks to assist with the lift |
| 21.  | Maintain control of the downed fire fighter to prevent falling out the window |
Skill #13: Seated Carry with SCBA Removal

22. Rescuer ascends the ladder
   ▪ Stopping short of the window sill until downed fire fighter is placed on the sill
   ▪ Preventing the downed fire fighter's feet from hitting the RIC member

23. Rescuers take position on the ladder to receive the downed fire fighter
   ▪ Shoulders below the window ceil
   ▪ Maintaining three-point contact, both feet and one hand
Skill #14: Head First Ladder Carry

<table>
<thead>
<tr>
<th>Skill #14: Head First Ladder Carry</th>
</tr>
</thead>
<tbody>
<tr>
<td>In an event that a fire fighter becomes injured and/or unconscious, it may be necessary for other crewmembers or a RIC to remove the downed fire fighter. To expedite this issue in a multistory structure, the fire fighter may be removed down a ladder. This skill may require additional exterior and possibly interior assistance depending on air levels of the crewmembers and the work that may be needed i.e., searching, packaging, dragging, carrying, window or door egress preparation, etc. to remove the fire fighter to a safer location.</td>
</tr>
</tbody>
</table>

| Time Frame: | 1:00 |
| Students (Minimum): | One company |

**Materials Needed:**
- Appropriate training structure with an aboveground door or window
- Fall protection system
- Minimum two (2) fire service ladders
- Mechanical footing for each ladder used
- Simulated downed fire fighter in full personal protective equipment
- Full personal protective equipment

**Site Preparation:**
1. Ensure the site is free of all hazards.
2. Confirm an appropriate anchor can be constructed in accordance with the fall protection system.
3. Consider an instructor on the second ladder to ensure safe removal and to coach students through the operation.

**Instructor Directions:**
1. Review the skill.
2. Review the fall protection system requirements.
3. Assign personnel to appropriate fall protection positions.
4. Review the fall protection system with all personnel/students.
5. Ensure all students are wearing full personal protection equipment.
6. Ensure downed fire fighter is wearing a full-body harness attached to a safety line in accordance to the fall protection system requirements.
7. Perform a final safety check prior to performing the skill.
## Skill #14: Head First Ladder Carry

**Student Directions:**

1. Package the downed fire fighter
2. Move the downed fire fighter to the emergency egress point
   - Dragging or carrying
3. Orient the front of the downed fire fighter towards opening facing the egress point
4. Prepare egress point by removing the window
   - Ensuring the opening is as large as possible
5. Call outside for assistance
6. Direct ladder placement from exterior crews (recue position)
7. Ask for assistance from exterior fire fighters
8. Position downed fire fighter below the egress point
   - Sitting upright
   - Knees bent
   - Positioned as close as possible to interior wall
Skill #14: Head First Ladder Carry

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Lift downed fire fighter to the egress point</td>
</tr>
<tr>
<td>10.</td>
<td>Confirm communications between interior rescuer(s) and exterior rescuer on ladder</td>
</tr>
<tr>
<td>11.</td>
<td>Inside rescuers grasp the bottom of the downed fire fighter’s SCBA harness or turnout coat with one hand and the shoulder strap or turnout collar with the other hand</td>
</tr>
<tr>
<td></td>
<td>- Using legs to lift downed fire fighter to egress point/window sill</td>
</tr>
<tr>
<td>12.</td>
<td>Inside rescuers position downed fire fighter's waist on the window sill</td>
</tr>
<tr>
<td>13.</td>
<td>Transition downed fire fighter onto the ladder</td>
</tr>
<tr>
<td></td>
<td>- Rotating the downed fire fighter until lower armpit rests on exterior rescuer's forearm</td>
</tr>
<tr>
<td>14.</td>
<td>Exterior rescuer grasps the ladder beam to support upper torso of the downed fire fighter</td>
</tr>
<tr>
<td></td>
<td>- Firmly</td>
</tr>
<tr>
<td>15.</td>
<td>Rotate and bend the downed fire fighter's legs to maneuver through the opening</td>
</tr>
<tr>
<td>16.</td>
<td>Exterior rescuer grasps the other beam of the ladder between the legs of the downed fire fighter</td>
</tr>
<tr>
<td></td>
<td>- Firmly</td>
</tr>
<tr>
<td></td>
<td>- May need to step down one rung for leg transition</td>
</tr>
<tr>
<td>17.</td>
<td>Interior rescuers assist throughout the transition</td>
</tr>
<tr>
<td></td>
<td>- Maintaining contact with the downed fire fighter as long as possible</td>
</tr>
</tbody>
</table>
Skill #14: Head First Ladder Carry

18. Exterior rescuer lowers the downed fire fighter to the ground
   - Maintaining control of the downed fire fighter until assisted by rescuers on the ground
   - Controlling the speed of descent by pressing the downed fire fighter against the ladder with your upper body
   - Communicating to the interior rescuers that you have control of the downed fire fighter

19. Additional personnel on the ground prepare to receive the downed fire fighter and foot ladder
Skill #15: Rescue from a Confined Area

In this skill, the student will be taught how to rescue a downed fire fighter from a confined area as was encountered by the Denver Fire Department in the LODD of Mark Langvardt. The student will be taught removal from level ground as well as how to transition the downed fire fighter to a ladder carry for multistory application.

**Time Frame:** 2:00 (1:00 ground school, 1:00 ladder operations)

**Students (Minimum):** One company

**Materials Needed:**
- Appropriate training structure
- Confined area prop (Appendix)
- 3 ladders appropriate for structure
- Fall protection system
- Simulated downed fire fighter in full personal protective equipment
- Full personal protective equipment

**Site Preparation:**
1. Ensure that site is free of all hazards.

**Instructor Directions:**
1. Review the skill.
2. Assign personnel to appropriate positions.
3. Ensure all students are wearing full personal protective equipment.
4. Perform a final safety check prior to performing the skill.

**Student Directions:**

1. Position the downed fire fighter
   - Head against exterior wall
   - Face down
### Skill #15: Rescue from a Confined Area

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>First rescuer enters through window</td>
</tr>
</tbody>
</table>
| 3.   | First rescuer moves to the downed fire fighter's feet  
  - Controlling the descent into the window to prevent further injury |
| 4.   | First rescuer turns the downed fire fighter face up |
| 5.   | First rescuer moves the downed fire fighter’s knees toward his or her buttocks  
  - Standing on the downed fire fighter's feet to prevent slipping and provide leverage |
Skill #15: Rescue from a Confined Area

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>6.</td>
<td>First rescuer locks knees against the downed fire fighter</td>
</tr>
<tr>
<td>7.</td>
<td>First rescuer grabs the downed fire fighter's SCBA shoulder straps</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Firm grip</td>
</tr>
<tr>
<td>8.</td>
<td>First rescuer pulls the downed fire fighter to a sitting position</td>
</tr>
<tr>
<td>9.</td>
<td>Second rescuer enters behind downed fire fighter</td>
</tr>
<tr>
<td>10.</td>
<td>Second rescuer positions behind the downed fire fighter</td>
</tr>
<tr>
<td></td>
<td>- SCBA straps loosened</td>
</tr>
<tr>
<td></td>
<td>- Bottle offset to corner</td>
</tr>
<tr>
<td></td>
<td>- Knees close together</td>
</tr>
<tr>
<td>11.</td>
<td>Both rescuers lift the downed fire fighter in a semicircular onto the knees of the second rescuer</td>
</tr>
</tbody>
</table>
### Skill #15: Rescue from a Confined Area

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 12.  | First rescuer stands up and positions between the legs of the downed fire fighter  
   |   - Firm grip under the thighs of the downed fire fighter |
| 13.  | Second rescuer places palms under the downed fire fighter’s SCBA bottle  
   |   - Preparing to push up |
| 14.  | Exterior rescuer on the ladder reaches in to help lift the downed fire fighter up and on to the window sill |
| 15.  | All rescuers lift the downed fire fighter on to the window sill simultaneously |
Skill #15: Rescue from a Confined Area

Begin Ladder Operations

16. Ensure the downed fire fighter's upper body is completely out of the structure
   - Sitting position
   - Thighs resting on the window sill

17. Interior rescuer holds the downed fire fighter's SCBA strap
   - To maintain control
18. Exterior rescuer rotates the downed fire fighter sideways
19. Exterior rescuer pulls the downed fire fighter's chest into the exterior of the structure

20. Exterior rescuer at the head of the downed fire fighter reaches under the arm and grabs the ladder beam
21. Exterior rescuer at the legs steps down one rung below the other rescuer
   - Grabbing the beam between the downed fire fighter's legs
Skill #15: Rescue from a Confined Area

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<tbody>
<tr>
<td>22.</td>
<td>Interior rescuer maintains grip on the SCBA straps and assists to lower as long as possible</td>
</tr>
<tr>
<td>23.</td>
<td>Interior rescuer pulls the downed fire fighter's chest against the beams of the ladder</td>
</tr>
<tr>
<td></td>
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<tr>
<td>24.</td>
<td>Exterior rescuers lower the downed fire fighter to the ground</td>
</tr>
<tr>
<td></td>
<td>- Rescuer carrying the legs remaining one rung lower during the descent</td>
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<td></td>
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</tr>
<tr>
<td>25.</td>
<td>Additional exterior rescuers assist lowering the downed fire fighter to the ground</td>
</tr>
</tbody>
</table>
Skill #16: Rescuing Conscious and Uninjured Fire Fighter Through the Floor - Hose Method

Skill #16: Rescuing Through the Floor - Hose Method

If operating on a floor or roof and a collapse occurs sending a fire fighter below, a charged hoseline may be used to get them out by crews operating in the area. It must be understood that this skill, while valuable, may require additional personnel and all factors must be considered as to the safety and/or stability of the floor or roof being worked on. Consideration should also be made by additional crews interior and exterior to consider any and all other options for the rescue of the downed fire fighter. This may include other egress options, such as doors or windows, breaching exterior and/or interior to gain access to the downed fire fighter. Lifting a crewmember with a hoseline should be the last option after all other better options are considered.

**Time Frame:**
1:00

**Students (Minimum):**
One company

**Materials Needed:**
- Appropriate training structure
- Fall protection system
- 1¾" charged hoseline
- Simulated downed fire fighter in full personal protective equipment
- Full personal protective equipment

**Site Preparation:**
1. Ensure that site is free of all hazards.
2. Ensure the area is safe to work on or is the floor too weakened by fire to support weight? Interior doors may be used to span floor for additional support
3. Confirm an appropriate anchor can be constructed in accordance with fall protection system.
4. Consider assigning an instructor at the downed fire fighter to ensure a safe operation.

**Instructor Directions:**
1. Review the skill.
2. Assign personnel to appropriate positions.
3. Perform a final safety check prior to performing the skill.
4. Ensure all students are wearing full personal protective equipment.

**Student Directions:**
Skill #16: Rescuing Through the Floor - Hose Method

1. Make contact with the downed fire fighter
2. Determine status
3. Obtain a CAN report
4. Lower a bight of the hose into the opening
   ▪ Leaving enough hose on both ends for personnel to grab and pull from
5. Fire fighter positions into bight of hose
6. Topside crew directs fire fighter into position over hose
7. Step into the bight of the hose
8. Secure feet on hose
9. Grab and hold hose firmly against chest on each side of body
Skill #16: Rescuing Through the Floor - Hose Method

10. Topside rescuers walk parallel to the opening
   - Using caution to avoid spreading apart the bight

11. Front rescuer assists the downed fire fighter from opening

12. Entire crew evacuates collapse area
Skill #17: Rescuing a Conscious and Injured Fire Fighter Through the Floor - Hose Method

If operating on a floor or roof and a collapse occurs sending a Fire Fighter(s) below a charged hose line may be used to get them out by crews operating in the area. It must be understood that this skill while valuable may require additional personnel and all factors must be considered as to the safety and/or stability of the floor or roof being worked on. Consideration should also be made by additional crews interior and exterior to consider any and all other options for the rescue of the Fire Fighter involved in the collapse. This may include other egress options, such as doors or windows, breaching exterior and/or interior to gain access to the Fire Fighter(s). Lifting a crew member with a hose should be the last option after all other better options are considered.

Time Frame: 1:00

Students (Minimum): One company

Materials Needed:
- Appropriate training structure
- Fall protection system
- 1¾” charged hoseline
- Full personal protective equipment

Site Preparation:
1. Ensure that site is free of all hazards.
2. Confirm an appropriate anchor can be constructed in accordance with fall protection system.
3. Consider an instructor at the down fire fighter to ensure a safe operation.

Instructor Directions:
1. Review the skill.
2. Review fall protection system requirements.
3. Assign personnel to appropriate fall protection positions.
4. Review the fall protection system with all personnel/students.
5. Ensure all students are wearing full personal protection equipment.
6. Ensure all students are wearing a full-body harness attached to a safety line in accordance to the fall protection system requirements.
7. Perform a final safety check prior to performing the skill.

Student Directions:
Skill #17: Rescuing a Conscious/Injured Fire Fighter Through the Floor - Hose Method

1. Make contact with the downed fire fighter
2. Obtain a CAN report if possible
3. Lower hose.
4. Determine if you have enough hose to complete the operation
5. Lower a bight of the hose into the opening
6. Ensure that you have enough hose left topside on both ends for personnel to grab and pull from

7. Topside rescuers direct the downed fire fighter into position
   - Arms and upper torso through the bight on the hose
   - Hose across front of upper torso and under the arm pits
8. Downed fire fighter advises topside rescuers when in position
Skill #17: Rescuing a Conscious/Injured Fire Fighter Through the Floor - Hose Method

9. Downed fire fighter secures position
   - Pressing upper arms downward against sides chest
   - Securing hose across front of chest and into arm pits

10. Topside rescuers raise downed fire fighter

11. Topside rescuers hold position near the opening
   - Using caution to avoid spreading the bight

12. Rear rescuer holds hoseline and assists in lift as able

13. Front rescuer assists downed fire fighter from the opening

14. Entire crew evacuates collapse area as soon as possible
Skill #18: Rescuing an Unconscious Fire Fighter Through the Floor - Hose Method

If operating on a floor or roof and a collapse occurs, a charged hoseline may be used to get the downed fire fighter out. It must be understood that this skill while valuable may require additional personnel and all factors must be considered as to the safety and/or stability of the floor or roof being worked on. Consideration should also be made by additional crews interior and exterior to consider any and all other options for the rescue of the fire fighter involved in the collapse. This may include other egress options, such as doors or windows, breaching exterior and/or interior to gain access to the fire fighter. Lifting a crew member with a hose should be the last option after all other better options are considered.

<table>
<thead>
<tr>
<th>Time Frame:</th>
<th>1:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (Minimum):</td>
<td>One company</td>
</tr>
</tbody>
</table>
| Materials Needed:  | - Appropriate training structure  
                     - Fall protection system  
                     - 1¾" charged hoseline  
                     - Full personal protective equipment |
| Site Preparation: | 1. Ensure that site is free of all hazards.  
                      2. Confirm an appropriate anchor can be constructed in accordance with fall protection system.  
                      3. Consider an instructor at the down fire fighter to ensure a safe operation. |
| Instructor Directions: | 1. Review the skill.  
                           2. Review fall protection system requirements.  
                           3. Assign personnel to appropriate fall protection positions.  
                           4. Review the fall protection system with all personnel/students.  
                           5. Ensure all students are wearing full personal protection equipment.  
                           6. Ensure all students are wearing a full-body harness attached to a safety line in accordance to the fall protection system requirements.  
                           7. Perform a final safety check prior to performing the skill. |
| Student Directions: |
Skill #18: Rescuing an Unconscious Fire Fighter Through the Floor - Hose Method

1. Make contact with the downed fire fighter
2. Obtain a CAN report if possible
3. Lower hose.
4. Determine if you have enough hose to complete the operation
5. Lower a bight of the hose into the opening
6. Ensure that you have enough hose left topside on both ends for personnel to grab and pull from

7. Anchor hose for rescuing fire fighter while rescuer positions over opening
   - Minimum of two rescuers firmly grasp hose to anchor hose for slide
   - Rescuer closest to hole kneels while rear rescuer sits on hose while firmly grasping with both hands
   - Rescuer sits on edge of hole and lowers legs into hole
Skill #18: Rescuing an Unconscious Fire Fighter Through the Floor - Hose Method

8. Rescuer slides down hose
   - Grasping hose firmly with both hands
   - One hand above edge of hole and one hand lower than hole
   - Hose between legs creating a Figure 4 Leg Lock
   - One leg in front of hose
   - Second leg locked behind hose pressing on opposite leg
   - Squeezing hose with thighs
   - Controlling descent with more or less pressure on the hose
   - Hands should be a secondary safety and not the primary factor controlling descent
   - Slowly transitioning upper hand past opening to avoid getting caught between edge and the hose
Skill #18: Rescuing an Unconscious Fire Fighter Through the Floor - Hose Method

9. Locate and package downed fire fighter
   - Listening for PASS device or visually search for illumination from flashlight
   - The rescuing Fire fighter must maintain contact with hose if down Fire fighter is not directly in reach of rescuing Fire fighter

10. Position down Fire Fighter directly under hole

11. Cross hose making a loop that will go under and around down Fire fighter at the chest level.

12. Manipulate loop under the down Fire fighters head and arms inside of the armpits

13. Pull hose tight at the cross section assuring all slack is out of the hose and tight against down Fire fighter

14. Secure hose at the cross section with webbing or rope utilizing overhand knots and half hitches keeping hose as tight as possible against down Fire fighter
Skill #18: Rescuing an Unconscious Fire Fighter Through the Floor - Hose Method

15. Raise downed fire fighter from hole
16. Advise top side crew when ready
17. Top side fire fighters begin to lift hose
   (recommend 2 firefighters on each side of hose to assist with lifting)
18. Rescuer in the hole provides maximum assistance lifting and steadying down fire fighter until out of the reach of the rescuer
19. Top side fire fighters may need to maneuver down fire fighter to avoid injury to head or neck and keep SCBA from being caught on edge of hole
20. It is helpful to have a fifth side top fire fighter to assist maneuvering and lifting down fire fighter from hole

21. Clear downed fire fighter from hole
22. When down fire fighter begins to clears hole at chest level rear fire fighters on hose move to front to lift down fire fighter from hole
23. Remaining firefighters on hose securely hold hose to anchor down fire fighter in position during the transition
24. Bring rescuer out of hole
25. Lower loop back in to hole
26. Utilize the “Conscious Uninjured Fire Fighter” skill to remove rescuer
Skill #19: Rescuing a Downed Fire Fighter Through the Floor - Rope Method

<table>
<thead>
<tr>
<th>Skill #19: Rescuing a Conscious and Uninjured Fire Fighter Through the Floor - Rope Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary goes here</td>
</tr>
<tr>
<td><strong>Time Frame:</strong></td>
</tr>
<tr>
<td><strong>Students (Minimum):</strong></td>
</tr>
</tbody>
</table>
| **Materials Needed:** | - Appropriate training structure  
- Fall protection system  
- Rope  
- Simulated downed fire fighter in full personal protective equipment  
- Full personal protective equipment |
| **Site Preparation:** | 1. Ensure that site is free of all hazards.  
2. Confirm an appropriate anchor can be constructed in accordance with fall protection system.  
3. Consider assigning an instructor at the downed fire fighter to ensure a safe operation. |
| **Instructor Directions:** | 1. Review the skill.  
2. Assign personnel to appropriate positions.  
3. Perform a final safety check prior to performing the skill.  
4. Ensure all students are wearing full personal protective equipment. |
| **Student Directions:** |  
... |
Rescuing a downed firefighter from the floor below is an extremely physically and mentally challenging task. It is important to note that every attempt should be made to locate another avenue to locate and remove the downed firefighter from first. We will base this evolution and the tasks associated with it as if you were running with a company of at least four firefighters. As with everything in the fire service, the more you are prepared before the emergency the higher likelihood of you and your company being successful. Pre-set assignments describing roles and responsibilities during this evolution will help the successful outcome. The success of this drill lies in the training done prior and the communication and teamwork during this evolution.

2. Make sure the hole and surrounding area is safe enough to effect rescue. The use other resources to reinforce the surrounding area might be required.

3. Once the area is identified FF#2 will attempt to communicate with the downed firefighter. If possible, FF#2 needs to determine injuries associated with the downed firefighter and any other information that might assist in a successful outcome. FF#2 needs to determine the depth and approximate length of rope needed to reach the downed firefighter, then communicate this to FF#3.

4. FF#1 will make a bight in the rope. First place the bight of rope under the right or left SCBA shoulder strap. Secondly, continue with the bight and go under the waist strap of the SCBA. Lastly, place the bight around the opposite leg and pull the slack out of the rope. For example, if you went under your right shoulder strap, then you will place the bight of rope around your left leg. The firefighter needs to prepare to enter the hole by sitting on the edge. Once the crew is ready to lower the firefighter, he will roll to the shoulder that the rope went through.
5. Once the FF#1 is ready to enter the hole it is important for the rest of the crew to get into their assigned positions before lowering. Once FF#1 is ready to be lowered, the crew will slowly lower him into the hole and allow enough slack for FF#1 to locate the downed firefighter.
Firefighter #2 (preferably the company officer)- Once FF#1 is lowered to the floor below, he will be the primary contact person to FF#1
Firefighter #3- notice how he is on the opposite side as FF#1 and FF#4. If space and condition permit, this will allow better control when removing the rescued firefighter. His responsibility will be to direct the rope and crew above so that the rescued firefighter will not get caught on floor joist or any other thing.

Firefighter #4- Will be on the same part of the rope as FF#2. He will assist with lifting efforts and will be responsible for getting the rescued firefighter out of the lowering system once he is out of the hole.

5. Once FF#1 has been lowered into the hole and reached the ground it is important for him to stay in the system. If the FF#1 removes himself from the system and something happens were he need to immediately get out, there is no time to waste to get back into the system. FF#1 needs to locate the downed firefighter, assist in a PAC and drag the
firefighter back under the hole. Once the downed firefighter is under the hole FF#1 can remover himself from the system and begin to place the downed firefighter into the system.

6. It is easier for FF#1 to put the downed Firefighter into the system when he is lying down. Place the bight of rope through the high shoulder, then through the waist strap and lastly through the opposite leg. Once the rope is secure on the down firefighter place him in the sitting position under the hole.
7. FF#1 with both hands needs to place them under the bottle of the downed firefighter. FF#1 objective is to assist as much as possible with the lift. It will be very uncomfortable for FF#1 during the process. The idea is too relieve any amount of weight possible for the firefighters lifting above.

8. This is the most critical point in the evolution. If improper communication is being used the evolution will become extremely difficult. Once FF#1 has the downed firefighter package and under the hole, FF#1 needs to call up to the firefighters above “ready”. Once the firefighters above are ready the will call back down “ready”. FF#1 will then call out “lift”. After the initial lift the commands will now come from FF#3. The reason for this is that FF#3 is in a better position to observe and get the downed firefighter around the obstacles. When FF#3 is ready he will call “ready, lift, ready, lift” until FF#1 is as far out of the hole as possible. Once FF#3 is satisfied with the downed firefighters position he will call for FF#2 to release the rope and grab the downed firefighter. Once FF#2 has a hold the downed firefighter than the rest of the crew can assist with the removal of the victim. Once the downed firefighter is out of the hole, one person needs to get him out of the system and hand the rope back down the hole to FF#1.

9. Once the rope is back down to FF#1, he needs to place himself back into the system. Once in the system he calls out, “ready”. Once the crew above is ready the will call back down, “ready”. FF#1 calls “lift”. After the first lift all commands will go through FF#3. He will call “ready, lift, ready lift” until FF#1 is out of the hole. FF#1 can assist as much as possible to get out of the hole.
Topic 7: RIC Operations Evolutions

Evolution #1: Pittsburg Evolution
Evolution #2: Tarver Evolution
Evolution #3: Scenario-based Evolutions
Evolution #1: Pittsburg

<table>
<thead>
<tr>
<th>Evolution #1: Pittsburg</th>
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</table>
The "Pittsburgh Drill" was developed by the Rapid Intervention Training Associates (RITA) to teach rapid intervention crewmembers to work as a team. |

<table>
<thead>
<tr>
<th>Time Frame:</th>
<th>0:20 per student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students (Minimum):</td>
<td>One company</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials Needed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Appropriate training structure with limited visibility (or use wax paper in the mask)</td>
</tr>
<tr>
<td>- One (1) 4'x8' sheet of ½&quot; plywood oriented strand board (OSB)</td>
</tr>
<tr>
<td>- Six (6) 2&quot;x4&quot;x8' (used for support/legs)</td>
</tr>
<tr>
<td>- Three (3) standard size shipping pallets</td>
</tr>
<tr>
<td>- Three (3) 55-gallon drums or one (1) 10-20 foot plastic 36&quot; diameter tube</td>
</tr>
<tr>
<td>- Two (2) 2&quot;x30&quot; flat plat stabilizers with 6&quot; uprights</td>
</tr>
<tr>
<td>- Simulated downed fire fighter in full personal protective equipment</td>
</tr>
<tr>
<td>- Full personal protective equipment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Preparation:</th>
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<tbody>
<tr>
<td>1. Ensure that site is free of all hazards.</td>
</tr>
<tr>
<td>2. The course is 50 feet in length with three (3) separate obstacles (under, over, and through).</td>
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<tr>
<td>3. The first obstacle is a low profile opening.</td>
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<tr>
<td>4. The second obstacle is an A-frame.</td>
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<tr>
<td>5. The third obstacle is a 10-12 foot tube.</td>
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<tr>
<td>6. A section of 1½&quot; (1¾&quot; optional) hoseline is stretched from the entrance of the course through all three obstacles to the downed fire fighter at the end.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Instructor Directions:</th>
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<tbody>
<tr>
<td>1. Review safety protection system requirements.</td>
</tr>
<tr>
<td>2. Assign personnel to appropriate positions.</td>
</tr>
<tr>
<td>3. Perform a final safety check prior to performing the skill.</td>
</tr>
<tr>
<td>4. Ensure all students are wearing full personal protective equipment.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Student Directions:</th>
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<tbody>
<tr>
<td>1. Each company is made up of 3-4 members</td>
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<tr>
<td>2. Each company is limited to 20 minutes to complete the exercise.</td>
</tr>
<tr>
<td>3. Participant’s face pieces are covered with wax paper to simulate limited visibility.</td>
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</tbody>
</table>
Evolution #1: Pittsburg

4. Each crewmember must maneuver through all three obstacles to access and return the downed fire fighter while on air.
5. At the entrance to the third obstacle (the tube), two crewmembers will low profile crawl through the tube to the downed fire fighter while the remaining crewmembers wait in place at the entrance of the tube.
6. Once through the tube, the downed fire fighter is assumed to have a good air supply but is unconscious.
7. Crewmembers prepare the downed fire fighter for a low profile drag back through the tube using a handcuff knot or similar rescue technique.
8. Once the crew is back through the third obstacle, the crew works together to maneuver the downed fire fighter over the second obstacle (A frame), then on to the first obstacle (wall breach/narrow opening).
9. The crew must send two members through the breach first to pull from the opposite side.
10. The remaining crewmembers position the downed fire fighter into the breach opening and push the victim through as the crewmembers on the opposite side pull the victim through.
11. The rest of the crew get through the breach and assist getting the downed fire fighter to the starting point where the time will stop.

Special Notes:
1. The downed fire fighter’s face piece must remain in place throughout obstacle course.
2. If it dislodges, the crew is stopped and given instructions to reposition the face piece.
3. If a crewmember’s low air alarm sounds, another crewmember must escort him or her to the spare cylinder (outside) to change out before being allowed back in to assist with the extraction.
4. The drill is terminated after 20 minutes regardless of where the downed fire fighter is in the course. The average time is 18 to 20 minutes. The importance of the Pittsburgh Drill is not in completing the course in 20 minutes or less, but rather to make the crew work together while in an effort to sharpen their rapid intervention crew rescue skills. While not an easy exercise, it is not impossible.
Evolution #2: Tarver

<table>
<thead>
<tr>
<th>Evolution #2: Tarver</th>
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<tbody>
<tr>
<td>Following the LODD of Bret Tarver, the Phoenix Fire Department conducted drills to determine how to more effectively complete a rescue of similar nature.</td>
</tr>
</tbody>
</table>

**Time Frame:** 2:00

**Students (Minimum):** Two companies

**Materials Needed:**
- Appropriate training structure with limited visibility (or use wax paper in the mask)
- RIC tool cache
- RIC air pack
- Commercial search line system
- 1¾" charged hoseline (minimum size)
- Two (2) simulated downed fire fighters in full personal protective equipment
- Full personal protective equipment

**Site Preparation:**
1. Ensure that site is free of all hazards.

**Instructor Directions:**
1. Review the evolution.
2. Assign personnel to appropriate positions.
3. Perform a final safety check prior to performing the skill.
4. Ensure all students are wearing full personal protective equipment.

**Student Directions:**
1. The RIC will conduct a size-up of the training structure and assemble a tool cache.
2. One RIC member will assume the role of RIC Leader.
3. One RIC member will act as the IC/RIC Group Supervisor on the exterior.
4. The IC/RIC Group Supervisor will track and maintain accountability of the resources, as well as perform PAR checks.
5. A fire fighter emergency will be called by an Instructor.
6. Assistant instructors will play the role of the downed fire fighters.
7. The fire fighter emergency will consist of two fire fighters disoriented and low on air, who believe they are just off the hoseline.
8. The first downed fire fighter will be located just off of the hoseline, alert but low on air.
9. The second downed fire fighter will be located approximately 40 feet off the nozzle and unconscious.
10. The RIC will deploy in an attempt to locate the downed fire fighters.
11. The RIC may choose to utilize a commercial search line system or the hoseline as a
Evolution #2: Tarver

<table>
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<tr>
<th>reference point.</th>
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<tbody>
<tr>
<td>12. The RIC will perform a PAC CAN after locating the each downed fire fighter.</td>
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<tr>
<td>13. The RIC will deliver RIC air.</td>
</tr>
<tr>
<td>14. The RIC will package the downed fire fighter in the method of their choice.</td>
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<tr>
<td>15. The RIC will extricate the downed fire fighters from the structure</td>
</tr>
<tr>
<td>16. The RIC will manage their air at all times.</td>
</tr>
<tr>
<td>17. If a RIC member runs out of air, they are now a downed fire fighter.</td>
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<tr>
<td>18. The RIC may request any assistance or resources that they may require.</td>
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<tr>
<td>19. The drill will conclude when all downed fire fighters and RIC members exit the structure.</td>
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Site-specific Evolutions

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<tr>
<th>Site-specific Evolutions</th>
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<tr>
<td>The Instructors will design RIC Operations evolutions based on the training facility. Each evolution will encompass all phases of RIC Operations; Pre-Deployment, Deployment, and Rescue Operations. The evolutions will be dynamic and incorporate 3-4 RICs. The evolutions will be conducted in reduced visibility utilizing smoke machines, darkness, or wax paper inside of face pieces. RIC Command and Control students will be act as IC/RIC Group Supervisor to successfully complete task book if present. The instructor will ensure that evolutions 3 and 4 differ and present different challenges to the RIC’s.</td>
</tr>
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</table>

| Time Frame: | 2:00 |
| Students (Minimum): | 3-4 companies |
| Materials Needed: |
| 1. Appropriate training structure |
| 2. 3-4 simulated Downed Fire Fighters with SCBA |
| 3. Full personal protective equipment |
| 4. RIC Tool Cache |
| 5. Commercial search line system |
| Site Preparation: | 1. Ensure that site is free of all hazards. |
| Instructor Directions: |
| 1. Review the skill. |
| 2. Assign personnel to appropriate positions. |
| 3. Ensure all students are wearing full personal protective equipment. |
| 4. Perform a final safety check prior to performing the skill. |
| Student Directions: |

<table>
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<tr>
<th>Predeployment</th>
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<tr>
<td>1. RIC Leader conducts a RIC size-up.</td>
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<tr>
<td>2. Assemble a mobile tool cache</td>
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<tr>
<td>3. Soften the structure if necessary</td>
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<tr>
<td>4. Monitor radio for fire fighter emergencies and listen for LUNAR/NUCAN reports</td>
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</table>
## Site-specific Evolutions

### Deployment

1. The RIC may utilize a search technique of their choosing
2. TICs may be utilized if available
3. The RIC leader will be expected to deliver status reports, PAR checks, and maintain crew accountability.
4. The IC/RIC Group Supervisor is expected to maintain accountability of all RICs and perform PAR checks, as well as communicate with the downed fire fighter
5. The instructor may place downed fire fighters throughout the structure separated from one and other.

### Rescue Operations

1. Upon locating a downed fire fighter, perform a PAC CAN
2. Deliver RIC air
3. Remove downed fire fighters from debris, collapse, and entanglement situations
4. Package the downed fire fighter utilizing RIC drags and carries
5. The instructor will incorporate different aspects of rescue operations
   - Multi story evolutions utilizing ladder rescue
   - Collapse
   - Entanglement
   - Fire Fighter who has fallen through the floor
   - Rescue from a confined area
   - Stairs
Appendix A: Glossary

1/3-1/3-1/3 rule......................... A baseline parameter to determine working time for a RIC involved in large-area search operations. The rule implies good air management practices based upon consumption rates. One-third of a cylinder to get in, one-third of a cylinder to get out, and one-third of a cylinder remaining for safety.

2-in/2-out rule......................... Provision in OSHA 1910.134 that outlines deployment of first arriving fire personnel and provision of personnel available for their rescue if needed.

90-degree angle collapse.......... Wall collapse where a large portion or even the entire wall falls outward at a 90-degree angle.

A-frame collapse...................... Collapse that result when a floor separates from the exterior wall creating a void space toward the center of the structure.

Backdraft............................. When oxygen is introduced into an area holding superheated products of incomplete combustion resulting in an immediate ignition of the products.

Balloon frame construction....... Wood-stud framing system that runs continuously from the ground-level to the attic that provides channels that allow for rapid fire spread.

CAN....................................... Conditions-actions-needs

Convected heat currents.......... Heat transfer by the movement of air currents.

Conventional construction....... Framing with conventional joists, rafters, and wall studs. This construction has solid structural elements that will result in a longer burn time before failing.

Curtin wall collapse............... Wall collapse where a wall crumbles or collapses upon itself straight downward.

Dead load............................ The weight of a building an any permanent feature, including structural members and building materials such as floors, walls, HVAC systems, etc.

Deployment operations............. Procedures and actions utilized by the RIC in searching for and locating a downed fire fighter.

Disorientation....................... Mental state that a fire fighter may experience if he or she becomes lost or confused while working in a hazardous atmosphere.
EBS ............................................ Emergency breathing system.
Engineered I-joist ...................... Structural member which uses a center portion composed of wood chips held together with glue. I-beams are used to span large areas and can fail very quickly if unprotected and exposed to high heat.
Emergency breathing system (EBS) A feature on some SCBAs that allows one user to share their air supply with another.
Emergency radio traffic .......... Used to signify that a priority message is to follow on the radio.
Flashover .................................. Gases trapped at the ceiling that reaches their ignition temperature spontaneously involving the entire interior space.
IDLH ........................................... Immediately dangerous to life and health.
Immediately dangerous .......... An atmosphere that when entered could result in immediate fire fighter or civilian injury or death.
Lean-to collapse ...................... Collapse caused when the supports for the roof or floor of a building fall to one side.
Lightweight truss................. Type of construction that obtains its strength from compression and tension of materials used in its construction as opposed to mass. Pieces of truss are held together with metal gusset plates, nails, or glue that fail under high heat conditions resulting in failure of the truss.
Lightweight construction......... Type of construction in which the structural members that provide framework and support are fabricated out of composite materials made up of wood chips and glue. These materials will degrade very quickly when exposed to heat.
LUNAR ........................................ Acronym used by a lost or trapped fire fighter during a fire fighter emergency to relay the following pertinent information, L - last know location, U - Unit, N - Name, A - Assignment, and R - Resources Needed.
Mayday ..................................... Term used only to signify that a person is in a life threatening situation and needs immediate assistance. A Mayday can be declared by anyone having knowledge of someone in distress.
Metal frame construction .......... Type of construction in which the structural members that provide framework and support are fabricated out of metal components. These materials will degrade very quickly when exposed to heat.

Mule kicking......................... A technique performed by a distress fire fighter for penetrating a wall for emergency egress from one area to another when the use of a tool is not available.

NFPA...................................... National Fire Protection Association

NIOSH ..................................... National Institute for Occupational Safety and Health

OSHA ..................................... Occupational Safety and Health Administration


Oriented search ...................... A systematic search technique that provides good coverage of a small or medium sized open area in place of a complete right or left-hand search.

PAC-CAN............................... Systematic process used by RIC personnel when they find a downed fire fighter. Pass - silence alarm, Assess - fire fighter to determine whom it is and what their air level is, Communicate - critical information to RIC Leader who then communicates the critical information to the RIC Group Supervisor. Followed by Conditions of fire, Actions - what is RIC going to do, Needs - what needs to be done to be successful.

Pancake collapse.................... Collapse that results from the failure of a structure's bearing wall causing the roof and floors to collapse upon each other.

PAR...................................... Personnel accountability report.

PASS..................................... Personal accountability safety system.

PASS Device.......................... Personal alarm safety system worn by each fire fighter that will go into an audible alarm if the fire fighter fails to move. This alarm should alert other fire fighters of a possible emergency.

Penciling ................................ Technique used during fire attack to determine heat levels within the room. Short bursts of water are directed at the ceiling to determine heat conditions. If water droplets fail to fall back down, flashover may be imminent. Effective penciling can help prevent flashovers from occurring.
Personnel accountability .......... Roll call of companies operating at an emergency incident. Commonly performed when mode of operation changes (i.e., offensive to defensive), or a significant event such as a fire fighter emergency or collapse.

PIA ........................................... Post-incident analysis.

Point of no return ....................... Refers to a fire fighter's individual management of air supply. It is determined by the amount of air consumed going into a structure versus the amount of residual air needed to exit the structure.

Positive pressure ventilation .... Utilization of fans to force air into an enclosure or void by creating pressure differentials. This method of ventilation can affect fire behavior inside a structure; therefore, it must be coordinated closely with interior crews.

Post-incident Analysis ............... A recap and in-depth review of an incident or training session to seek out information to address areas that went well as well as areas that need improvement.

PPPN........................................ Acronym used to determine a crew's Personnel accountability, Position on the incident, Progress made, and Needs to be successful.

Predeployment operations ......... Procedures and actions that prepare the RIC in deploying in the event a fire fighter emergency occurs.

Preincident planning ........... A building walk-through, inspection, or survey prior to an emergency taking place that provides knowledge about the building, potential fire behavior, pre-established strategic and tactics scenarios.

Radio-assisted feedback .......... A procedure using two portable radios that are placed closely together and keyed to the talk position, creating a high-pitched feedback sound. This feedback sound can be heard over a downed fire fighter's radio and be used to assist a RIC team in finding the downed fire fighter's location.

Rapid intervention crew .......... Team of specially trained fire fighters who are solely responsible for the safety, search, and rescue of trapped or lost fire fighters at an emergency incident. Ideally, the RIC should be made up of four fire fighters.

Rapid intervention crew operations Techniques and methods utilized by a crew of fire fighters whose sole purpose is to rescue downed fire fighters who are in distress or incapable of rescuing themselves.
Rescue operations ................... Procedures and actions utilized by the RIC to stabilize and extricate a downed fire fighter from the structure.

RIC ........................................... Rapid intervention crew.

Risk management process ....... A method used to recognize and then reduce the risks to fire fighters. The process includes situational awareness, hazard assessment, hazard control, decision point, and evaluation.

Roof decking ......................... Materials that make up the construction of a roof before covering materials such as asphalt are applied.

RPD ........................................... Rapid prime decision-making.

Sheathing ................................ Material applied to wood-frame structure over structural framing to which exterior material finish is applied.

Skip breathing ....................... Technique used by a fire fighter when lost or trapped that maximizes their SCBA air supply.

Size-up the building ............... The process of providing multiple visible structure type indicators, such as, shape and size, construction type, egress points on a structure; which may include, doors, security gates, rollup doors, barred windows, etc., fire conditions outside and inside the structure. Your own mental blue-print of the building.

Support lean-to collapse ........... Collapse that results from the failure of one side of a roof or floor that falls until it rests and is supported by substantial objects inside the structure.

Thermal imaging camera ........... Device that used infrared energy technology that allows fire fighters the ability to ascertain objects by shape in conditions that do not allow normal vision. Some models also monitor heat conditions.

TIC ........................................... Thermal imaging camera.

Unsupported lean-to collapse .. Collapse where one side that has failed is without any support. This failed side floats freely and is very unstable and could result in a secondary collapse.

Void search .......................... A physical search that is conducted in a collapse environment by rescuers moving over and around debris, locating spaces created by the collapse of building materials.
V-shaped collapse .................... Collapse that is caused by the failure of an interior support, resulting in void spaces on both sides of the collapse toward the bearing walls.

Walk-out basement .................... Architectural feature in the construction of a building with an elevation difference between the grade at the front the building and the back of the building.

Wall breach .......................... The penetration of a wall through various methods for the purposes of emergency egress by a lost or trapped fire fighter or entry by RIC personnel for rescue purposes.

Wood frame construction .......... Type of construction in which the structural members that provide framework and support are fabricated out of wood. Most common type of construction.