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FROM THE EDITOR

“Mayday! Mayday! Mayday!” While no one wants to hear these words on the fireground, everyone must be prepared to respond when that transmission hits the airwaves.

The success of last year’s [“Your Mayday Survival Guide”](#) special coverage series highlighted the demand for even more mayday resources geared toward firefighters of all ranks. As such, in this latest series, we transition from operational efforts to the evolution of mayday training, from building a culture of mayday training to designing rookie-, basic- and advanced-level drills.

Beyond reading and sharing this digital edition, I encourage you to review the full Mayday Training Evolution series at [FireRescue1.com/mayday-training-evolution](#). There you’ll find additional mayday training content on a host of important topics, like commanding a mayday event, supporting a firefighter post-mayday event, and much more.

Use these resources to level-up your own mayday training KSAs, then make sure to spread the knowledge with your team.

Stay safe and take care.

— Janelle Foskett, Editor-in-Chief, FireRescue1

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DEVELOPING A CULTURE OF MAYDAY TRAINING WITHIN YOUR DEPARTMENT

From prevention to data-driven decision-making, department leaders must set the tone for mayday-minded training

Rapid intervention team (RIT) and mayday training in the fire service present a variety of unique challenges, particularly as, within our culture, we struggle to admit and act on our own vulnerabilities. We read, study and dissect near-miss and LODD reports, often concluding that similar events won't repeat within our own realm.

It's easy, particularly during difficult times, to lose sight of the standards we set for training and performance. Staffing and budget shortages, task saturation and other challenges often toss RIT training onto the backburner. However, chief officers must understand that developing and maintaining a culture of mayday and RIT training will result in a safer workforce and improve their department's performance overall.

Invest in prevention

The importance of RIT training is irrefutable, but a parallel effort must be made to develop policies and training that will help to prevent the mayday. Your department must focus first on training that prepares firefighters to make good decisions that will keep them out of trouble in the first place.

It begins with recruit and new member training programs, which must be fully supported by fire department administrators.

Understanding and executing the basics sets the foundation for success. Modern fire behavior, knowledge of building construction, hose stream selection and placement, orientation, ventilation, and ongoing risk assessment are fundamental to good decision-making. A solid focus on mastery of the basics provides the tools that firefighters need to reduce the risk of a mayday.

When developing department training schedules, training officers should prioritize safety and survival skills that will enhance the confidence and ability of firefighters when operating on the fireground. Don't fall into the trap of waiting for resources that may never come. No amount of funding or staffing can change the culture of RIT training overnight.



Photo/Scott Ebbert



Embrace the concept of “active RIT” to play an integral part in mayday prevention. Training should include best practices and tactics that can be employed by the active RIT. Ground ladder deployment, forcible entry, removal of window bars, and handline deployment are all mastery skills that the troops can get behind.

The devil is in the data

The fire service has made significant strides in the collection of information. Funding, staffing, resource allocation, and training all heavily rely on data. Historical data from programs such as [Firefighter Near Miss](#) and [Project Mayday](#) provide resources for real-world close call scenarios and statistics from which training officers can draw to develop current and relevant training programs.

Further, command staff should take interest in mayday, near-miss and LODD data, not only specific to their own departments, but within the region as well. A deep dive into LODD and injury reports can reveal holes in your own SOP/SOGs. Our ability to learn from those we’ve lost is the ultimate show of respect and honor.

While working behind the scenes to firm up those policies, communication to the firefighters is essential. Easy-to-read safety or near-miss bulletins can be shared to draw attention to incidents of interest and bolster member buy-in to subsequent training programs. Remember, members are more likely to engage in training and education programs if they know and understand the “why.” The collection and analysis of data will help to identify trends and create purposeful training and educational opportunities within your department.

ENGINE CO. 16

OIC	JACKSON	T.I.C.
DRIVER	RICE	AIR
BACK-UP	HEINZELMAN	IRONS
NOZZLE	WURZBACHER	ROPE

When setting the rundown for a shift, assign specific RIT duties to the members of your crew. Taking a moment to discuss those assignments clarifies what you expect and provides the opportunity to confirm that your team understands those responsibilities and owns them.

Set the tone

The development and execution of department-wide RIT training must be based on clear, achievable objectives that align with the culture you wish to strengthen. Company and chief officers must reinforce SOP/SOGs and consistently hold members accountable in order to cultivate the success of RIT on the fireground. Lay out the expectations you have for your team, and clearly define the non-negotiables. For example, when setting the rundown for a shift, assign specific RIT duties to the members of your crew. Taking a moment to discuss those assignments clarifies what you expect and provides the opportunity to confirm that your team understands those responsibilities and owns them.

Leaders should emphasize the importance of remaining disciplined and resist the urge to freelance or abandon their assignment when a mayday is called. RIT training programs should include scenarios that challenge members to remain focused and engaged on their assigned task. Delays in fire suppression or searches exacerbate fire conditions, add to the victim count, and complicate RIT efforts.

From the top down

The development of RIT/mayday training does not need to be overly complex or daunting. Basic RIT competencies can be built upon with a recurrent training plan. The measure of success in RIT/mayday training is predicated on how crews routinely perform on every fireground. Therefore, leaders cannot allow RIT policies and procedures to become stagnant. Don't hesitate to evaluate how you do things and tweak it whenever necessary. An incessant focus on training and unwavering support from the top down will help to develop a strong culture of safety and survival within your organization. **1)**

About the author

Scott Ebbert has over 28 years of experience in both the career and volunteer fire service in Baltimore County, Maryland. He is the chief of training for the Baltimore County Fire Department as well as a former captain and life member of the Providence Volunteer Fire Company. Ebbert has a background in fire investigation and serves on the International Association of Arson Investigator's Health & Safety Committee. He is also a department safety officer and has dedicated much of his time and effort into occupational cancer awareness and prevention.



How to introduce

NEW MEMBERS

to mayday training

CONTENT BY
Drew Neal

Four simple steps to teach rookies about the seriousness of mayday incidents

Getting a job as a firefighter is a daunting process. From the fire academy and medical certifications to the application process, interviews and physical agility testing, prospective members must work to prove their mettle. And when they are hired on, they face the intimidating reality of being on their game 24/7, all while chomping at the bit to get that first fire.

For some new firefighters, there may also be that little bit of fear or hesitation. They have heard about firefighter fatalities and injuries, and of course the infamous mayday. There is nothing better than quality training and mentorship to alleviate the worries that a new hire might have regarding getting injured, or worse, while on the job.

While a mayday situation might seem like a far-fetched nightmare for some, the truth of the matter is that there is a very real risk of being in a situation that necessitates calling a mayday, and it is up to the senior staff to prepare their newest members. While we need to equip all of our members to respond to our citizens on the worst day of their lives, we must also prepare our members to be able to take care of themselves and each other on their worst day.

STEP 1: Lay the groundwork

What is the best way for us, as leaders and instructors, to convey the importance of self-survival, mayday and RIT operations to our newest members? In reality, this messaging should start before they are ever hired. It starts with department culture.

Every department should have a culture of safety that allows members to be aggressive to an acceptable degree. The notion that aggressive means freelancing is simply inaccurate. There is a difference between a tactician with sound decision-making and a cowboy operating on the fireground like it is the wild west. An aggressive, methodical and well-trained firefighter is safer than a timid (or overly confident), unmotivated recliner-riding firefighter.

Bottom line: If we establish that culture and mentality from the get-go, then we are bringing new members into a well-thought-out and defined environment where the risks have already been calculated, and we know how to maneuver them.

STEP 2: Start in the training room

Many fire academies spend limited time on mayday operations and self-survival, or they hit on only textbook solutions. While there is nothing wrong with that textbook learning, coupling this learning with on-the-job training is the best way to instill the lessons. It is the job of the senior members to introduce new members to as many forms of learning as possible, including means of survival.

This introduction starts in the training room. This environment offers the perfect setting to captivate new members and establish the seriousness of what you are teaching them. By reviewing the policies and procedures, worksheets, equipment and historical data, such as NIOSH reports, this is your opportunity to tee-up the practical, hands-on training that comes next. This is a great place to teach them that most mayday situations are resolved not by a rapid-intervention team, but rather by another crew or member that is working in proximity to the downed firefighter.

Teach new members that realistic problems need realistic solutions, and train on your realistic scenarios.



Use data and studies from other incidents to show new members several factors:

1. These events are avoidable.
2. We must learn from these events.
3. Maydays are not specific to geographical location.
4. These events can happen to them, and your fire department is not special or exempt from tragedy and disaster.

Bottom line: New members must understand that complacency does not discriminate, and this one action has been linked to a large number of firefighter fatalities and injuries. The training room is the place to underscore this essential lesson.

STEP 3: Simulate the real world in training

Once we have the classroom portion under our belts, we must put the lessons into practical application. How does that work? Teach new members that realistic problems need realistic solutions, and train on your realistic scenarios.

The town that my organization covers is approximately 63 square miles with a population approaching 50,000. Our tallest building is four stories in height, a mid-rise. We do not train on high-rise fire tactics regularly, nor do we train on operating a mayday in that setting. It is just not realistic for us because we do not respond to high-rise fires. Sure, we learn techniques and will take in any nugget of knowledge we can get, but our focus is on the majority of what is within our response district – warehouses, residential dwellings and strip malls.

One of our lieutenants, Lt. Carrasco (aka “Dak”), is always training and doing his best to make it real. Station #1 includes “Dak’s Fun House,” which can be almost anything you want it to be. The 12x50 room can be easily transformed into a variety of mazes and scenarios. Carrasco created the area so that walls can be moved, doorways can be added or taken away, floors can collapse, and you more than likely will become entangled

in something. When the room is filled with artificial smoke, there are lights that mimic the glow of a flame.

While we cannot put our members in real-life structure fires for training (burn buildings aside), we can still make the environment one that will be useful when working on a real-life fireground, complete with the low visibility and loud, interrupting noises that can impede communications, plus the cumbersome task of removing a downed firefighter in a setting where space is limited.

In our new hire academy, individuals run these drills over and over and over. Different layouts, different situations, all following our policies and procedures, making sure that they understand the exact steps of calling out a mayday as a victim, as well as responding to a mayday as a fellow firefighter. The instructors begin with the lights on, allowing the students to see what they are feeling, where they are going, and to understand the dynamics of the situation. Then the room may be changed up, setting them up for a scenario they have not yet seen just as if responding to a house fire.

Once the repetitions are maxed out and the members are exhausted, we debrief. What went well? What didn’t go well? What did you learn? What is a scenario that you think would be worth trying out?

Bottom line: Real-world scenarios are where the rubber meets the road. Teams are best built in moments of exhaustion, after putting in serious work as a crew, and building upon one another. This is important for not only new hires, but current members as well.

STEP 4: Focus members on continued learning

We hired them, they finished the recruit class and graduated the probie year. Now what?

We know that any training done once isn’t enough. Their skills will atrophy. It’s vital to keep members focused on the importance of items like

maydays, self-survival and RIT operations, and we do this with step 1: laying the groundwork. Your department culture should provide the atmosphere and mindset for constant honing of skills.

Bottom line: Furthering knowledge is not only an expectation, but a privilege and tool used to continue to build your team. With that kind of culture and mentality in place members are more likely to maintain the skills necessary to work in this profession.

Final thoughts

While firefighters cover myriad disciplines, and our responsibilities grow day by day, we must always maintain the most important skill – taking care of ourselves and our brothers and sisters. After all, if we do not take care of ourselves, we cannot take care of our customers.

Remember to stay humble, be aggressive and maintain the skills of your profession. Whether it's your first day or your 30th year, someone is counting on you. **1)**

About the author

Drew Neal is a battalion chief with Hutto (Texas) Fire Rescue, Williamson County Emergency Services District #3. He joined the organization as a volunteer in 2006 and became a full-time career member in 2010. Neal currently sits on the IFSTA 7th Edition Validation Committee and is a graduate of the Texas Fire Chief's Academy.

Teach new members that realistic problems need realistic solutions, and train on your realistic scenarios.



Practice makes automatic:

**SIMPLE
MAYDAY
TRAINING
TO INSTILL
GOOD HABITS**

Starting with mayday basics, like when and how to call a mayday, primes them for actual emergencies and sets a foundation for more advanced training

WRITTEN BY
Andrew Beck

When was the last time you drilled on how to call a mayday? No one likes to admit that they might find themselves in that situation, but it can happen to any of us.

While fireground fatalities are down, the rate of fireground injuries from the 1970s through today is virtually unchanged. This means that the odds of finding ourselves in a mayday situation are just as likely now as ever, regardless of improvements in turnout gear and other fireground technologies.

Looking at trends from fireground injuries and fatalities, it's clear that failure of building construction components is increasingly the cause of firefighters becoming injured or trapped. Plus, larger floor plans and open spaces in homes can be challenging to search, leading to disorientation. The fire environment has become more volatile, and we can find ourselves in a flow path with untenable temperatures. All of these situations can lead to a mayday call.

Once this happens, we enter a completely new place. Stress levels increase, sometimes to a point where we are incapable of rational thought. We can easily miss visual and audible cues. Our minds revert to skills that are "hardwired" into us – our training. And if our mayday training doesn't match the situation we find ourselves in, we could be in serious trouble.

How we learn

Training on calling a mayday is not difficult, but it must be done correctly to be effective.

When faced with a problem in a stressful, time-compressed environment, our brain uses a different process than our everyday decision-making. A normal decision-making process will see us develop multiple options, weighing the pros and cons and deciding on the best option. In a mayday situation, our brains shift to [recognition-primed decision-making \(RPDM\)](#).

First described by Dr. Gary Klein in 1993 while studying military officers, in RPDM, the brain – outside of conscious awareness – tries to match the current situation with a prior experience. Your brain essentially runs a short simulation of past experiences, and if one seems like a fit, you are prompted to go with that path of action.

Practice makes automatic

How do we build this library of experiences so we can rely on them later? We practice as many situations as possible in realistic conditions.

At the simplest level, in recruit school, we train on turning on the SCBA bottle and clicking on the regulator so often to ensure that in any interaction with your SCBA, your brain knows what can happen if you forget those steps. If it happens again, you instantly know what's wrong (the bottle is off) and how to remedy it (turn it on) without thinking about it. It's been drilled into your memory.

The key for the process to work: The experience has to match the actual situation. Your brain will throw out the match if it thinks it's different from your situation. The good news is that we don't need to have an entire crew, a live-fire training center and simulated victims every time we conduct mayday training. Those elements can be helpful, but the individual experiences can be simulated even more simply.



Props can be easy to construct. Just remember to use adequate padding, such as a mattress, to prevent injury or equipment damage in these scenarios.

Start by determining when you would expect a firefighter to call a mayday. We can't expect firefighters in that situation to make a calm, rational decision about whether they should call a mayday. As such, we need to predetermine and front load those situations to automate them. Plus, let's be honest, we are not always the best at admitting we need help, so having a predetermined list of mayday situations simplifies the decision-making process, and removes some of the ego that could interfere.

Here's the list of mayday situations I have used in training:

- If you are lost or disoriented and can't immediately recover, call a mayday.
- If you have a fall of any distance, call a mayday.
- If your low-air alarm sounds and you are still in an IDLH environment, call a mayday.
- If you are stuck or trapped and can't free yourself immediately, call a mayday.

Read through LODD or serious incident reports that involve a mayday or RIT/RIC assignment. In some situations, the person involved may rescue themselves quickly. That's OK. There's no reason to wait to call a mayday. Time is not on our side, and it always takes many more responders than we can imagine to effect a rescue. The best scenario is to call the mayday early, then self-rescue, and run into the RIC crew on the way out, or be able to call and cancel the need for assistance.

Remember: When we are stuck, fall or are disoriented in a fire environment, we are generally unaware of how stuck or lost we are or the distance of our fall. So, rather than spending time trying to analyze these details, just call the mayday and get help coming. This gives rescuers and you, the downed firefighter, more time and more options.

Training time: How to call a mayday

Knowing that we need to train under realistic conditions, we can develop a plan to recreate these situations in the station. This is easy to do

and can be accomplished as stand-alone training or integrated into other training evolutions.

STEP 1: Gear up. Ensure firefighters are in their full PPE, wearing SCBA and have a department radio. This is an important step because we need the training to match the potential mayday situation. They aren't going to be in a mayday situation wearing shorts and a T-shirt while using an invisible radio.

Step 2: Select each mayday parameter you want to train on – and recreate it. We want to elevate stress slightly so they have to work in a stressful situation that degrades their ability to reason. Notice I said slightly. I do not advocate over-the-top training designed to scare members. There are near-miss reports of firefighters that suffered from PTSD due to a violent training scenario. This is unacceptable and not professional. Removing some vision and having firefighters work until they get hot in their gear is enough to stress almost anyone. Have members make a radio call and set off their SCBA PASS alarm to help cement the situation. Many times there is an on-scene, tactical or even a training channel that can be used for this. Just make sure to coordinate with dispatch and neighboring agencies.

Step 3: Practice what to say on the radio. Again, standardizing the response is key here. Use an acronym, such as UCAN or LUNAR, or the simple “Who, What, Where” model.

UCAN

- **Unit** – Apparatus or ICS assignment (E-21 captain or Division 2 search)
- **Conditions** – What are you experiencing? What triggered the mayday?
- **Actions/Air** – How much air do you have?
- **Needs** – What assistance do you need?

LUNAR

- **Last name**
- **Unit**
- **Needs**
- **Actions/air**
- **Resources that are needed**

Who, What, Where

- **Who** – Identify yourself
- **What** – What happened?
- **Where** – Where are you? Or where do you think you are?

No matter which model you employ during training, having a standardized approach will help ensure that the member's experience will default to these words so they don't have to think too hard to remember what information to relay. You could even come up with your own list. Just pick one, stick with it, and train to it.

Training time: After the call

The next step in training is to simulate what happens after the mayday is called.

PASS devices: Have firefighters practice turning on their PASS device so others can locate them. Also, have firefighters practice turning their PASS off if they need to make further radio calls. Even these motor skills can be difficult to remember under stress. Plus, remind members that if they can't reach the alarm for some reason, they should remain motionless so the PASS automatically activates.

Orientation: Have a firefighter search a room or apparatus bay to simulate being lost. They can keep working to solve the problem and become oriented. At some point, the instructor can spin the firefighter around while they are crawling or



Once firefighters have trained and practiced on mayday basics, you can integrate these skills into a larger scenario to better simulate how it would develop on an actual incident. A more advanced drill might involve an acquired structure – a single-family house – where crewmembers must remove a downed firefighter from the structure and begin treatment.

move them to a new area, then ask the firefighter to find the exit or another landmark. If firefighters can't answer correctly, they need to call a mayday.

Props: A fall prop can be easy to construct, allowing the firefighter to feel themselves falling a short distance to trigger the proper mayday response. A prop with steps, a trap door that can be triggered, or a teeter-totter type prop are good options. Just remember to use adequate padding, such as a mattress, to prevent injury or equipment damage in these scenarios.

Low air: Simulating a low-air alarm can be as simple as giving the firefighter in full gear a bottle with a depleted air supply. You don't need the firefighter to entirely run out of air; just hit their low air alarm. If you start a search training with a bottle less than half-full, you should quickly hit your low-air alarm, prompting the member to call a mayday. Note: Sometimes this is the training – just getting the member to call the mayday, nothing more.

Trapped: To simulate being stuck or trapped, have a firefighter search in a degraded visual environment and then put the firefighter in an entanglement prop, or use a salvage tarp or small mattress to push and hold the firefighter down. This will require them to determine that they are stuck and to call the mayday. In addition, they may be in a difficult position to access their radio or PASS, further simulating an actual scenario. Watch out, though; this can be a trigger for some to panic, so take it easy.

Instructor guidance

In all of these situations, observe the students. We want to dial the stress down and coach people before they make a wrong move. Taking gloves off or ripping off an SCBA mask creates a slide that could resurface in a real emergency. Don't let it get to that point. Start slow, and when someone is struggling, stop the scenario and have them calm down before being told step by step what to do. Then, on subsequent evolutions, you can pick up speed and intensity.

No one learns anything getting yelled at in a stressful, mock emergency, and we can even ingrain bad habits that could be fatal later. There have been many fallen firefighters found without gloves and air masks. The drive to breathe is powerful, but we don't want to predispose someone to take this action because of an ill-managed training scenario.

Recent training evolutions

Once firefighters have trained and practiced these situations, you can integrate them into a larger scenario to better simulate how it would develop on an actual incident. My department's recent training was an example of how to accomplish this.

Our department used an acquired structure – a single-family house – for our training. With a very short timeline before demolition, we decided to use it for a hands-on simulation of a standard fire response while integrating mayday parameters. We planned the following evolutions:

- Initial attack to a bedroom fire using a fire simulation system and smoke machine. Crews entered and practiced locating and flowing water on the fire.
- Upstairs search team to back up the initial attack crew.
- Vertical ventilation team on the roof.
- Basement search team.
- RIT/RIC crew that responded to a mock mayday.

The scenario started with the apparatus arriving at the incident location in a staged fashion to simulate an actual response. As the crews deployed to the house and accomplished training goals, instructors prompted crews that encountered mayday parameters to call a mayday. We had one instructor acting as dispatch to answer radio traffic as well.

Once the mayday was declared, command conducted a PAR and instituted radio channel changes. All the while, the mock dispatcher continued to add a level of stress to the situation. The RIT team moved into the home, and located and packaged the patients and removed them from the structure.

This resulted in an excellent opportunity to rehearse our emergency and mayday procedures in a realistic situation and build the correct experiences for our crews. It was very low cost and relatively easy to plan and organize. We kept the scenario simple as a standard room and contents fire, and used realistic mayday parameters. It was evident by the crews' reactions at times that the training felt genuine, and they were absorbing the lessons.

Make it happen

It's not challenging to provide high-fidelity mayday training for your firefighters, and doing so may offer a vital experience for them to recount during a fireground emergency. Define your parameters, practice the procedures, and ensure it's realistic. You will prepare your folks to succeed when it's truly life or death. **1**)

About the author

Andrew Beck is a firefighter/EMT and shift training officer with the Mandan City (N.D.) Fire Department. Beck is a live burn instructor and teaches thermal imaging and fire dynamics across N.D. He is also the Mountain Operations manager at Huff Hills Ski Area, where he leads the outside operations teams. Beck has a background in crew resource management and has completed research on how people and organizations operate in stressful environments. Beck was previously a staff member for the Firefighter Near Miss Reporting System.



ADVANCED RIT TRAINING: REMIX YOUR DRILLS

WRITTEN BY
Chris DelBello

This unique mayday drill is highly realistic and physically demanding

Many in the fire service seem to have lost the sense of urgency that comes with mayday operations. Our goal should be a quick removal, not necessarily an easy removal. This means we must have a snatch-and-grab mindset driven by physical strength, not the latest gadget. I would say if you're using anything more than a short piece of webbing to remove a firefighter, you are adding unnecessary complication to the operation, prolonging removal of the downed

firefighter. As such, our training should be focused on strength and speed.

What's more, too many RIT drills and scenarios are overly sanitized, meaning conditions are conducive to an easy and predictable outcome – not conducive to a good learning opportunity or even close to the worst possible conditions we could experience during our routine interior attack activities. Of course, there is the learning curve that we should all expect, and initial training for new members should be in a “clean” setting where successful outcomes are prioritized. The problem: For most agencies or companies, the training ends there – for all members.

It is time to up your RIT game.

Setting the stage

There are countless RIT drills and scenarios that we could run with our members, but the one we'll

review here is focused on getting our members comfortable with being uncomfortable for more than 5 minutes. In fact, I would say it is the most realistic and physically demanding drill of all the ones I've seen online.

The scenario requires more than a RIT; it requires three teams – an attack team, a search team and a RIT. Taking it a step further and adding an additional attack team or backup team will enhance the realism and increase the communication difficulties that are frequently experienced during a mayday event. Note: Don't let the multi-team element hold you back. A single engine or tuck company can train on individual aspects of RIT operations during a shift, but bringing multiple companies together provides the opportunity for realistic drills where we can put it all together.

The scenario involves zero-visibility (blackout masks) for all teams involved, low air, a collapse,

communications difficulties, and either a crew or firefighter removal.

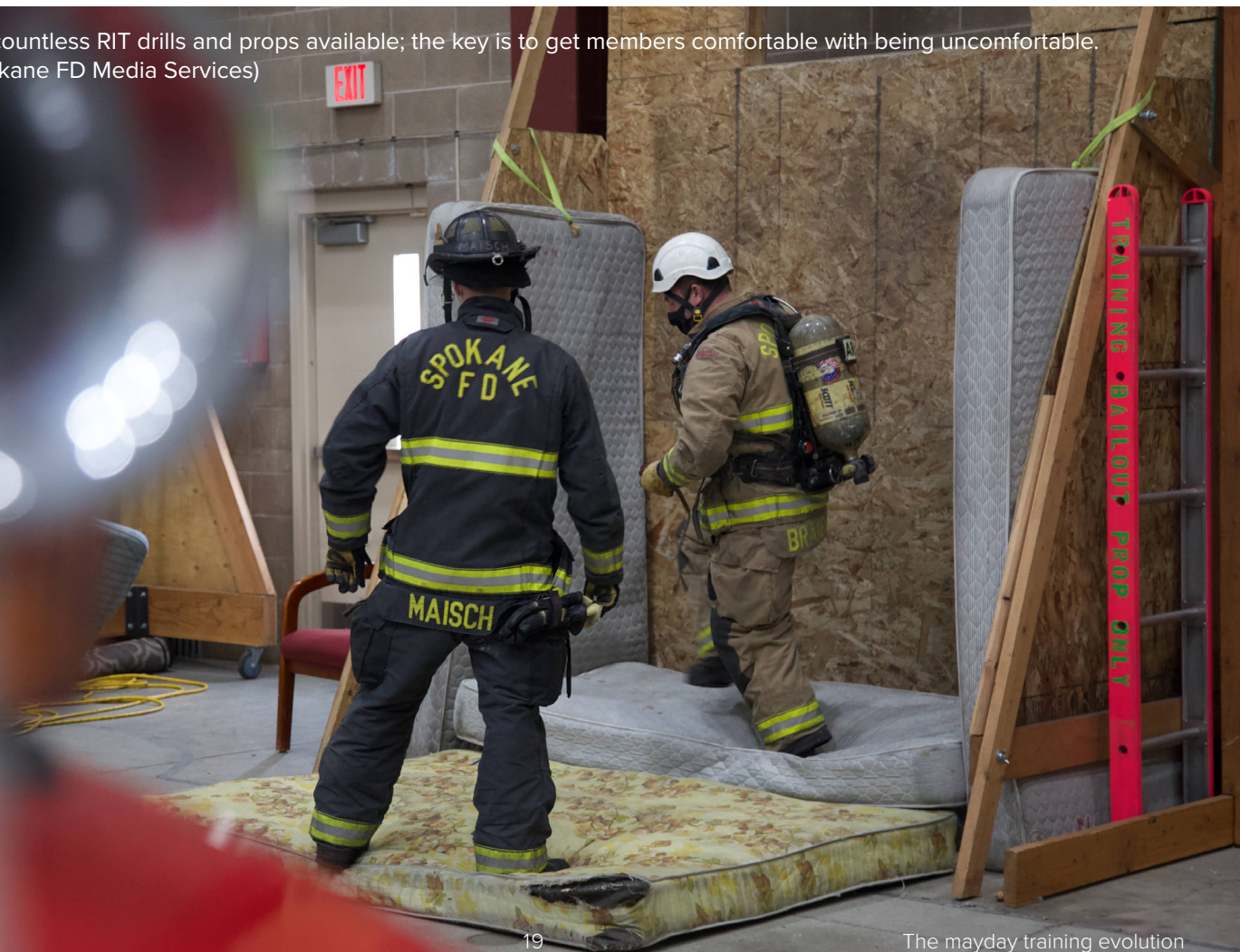
Try to avoid performing this scenario in a building that simply has four walls; however, if that's all that's available, you can, as we have, build multiple props simulating various collapse scenarios. The ideal training environment would be an acquired structure or a compartmentalized training building.

Start strong, then mix it up

The scenario starts with the attack team making a push, and the search team performing a search – straightforward enough.

At any point during these operations, the director of the scenario, who will also serve as the IC, will call for a mayday and verbalize the collapse at or near the point of entry. At this point, the director can call for either crew – the attack team or the search team – to become

There are countless RIT drills and props available; the key is to get members comfortable with being uncomfortable. (Photo/Spokane FD Media Services)





If your department has RIT bags, train on them regularly. Be familiar with them and knowledgeable on their proper deployment. (Photo/Chris DelBello)

the crew in distress. Then, the IC will order the other team to locate and escort the other team out, all while simultaneously deploying the RIT from a different point of entry. Also, at any point during the event, the director/IC can add that additional attack team.

Another consideration for the scenario: Without warning to anyone involved, the IC removes a member, preferably the team leader, from one of the teams, then waits for the rest of the team to realize that a member is missing. The hope is that the team will realize the situation, call a mayday, react appropriately and not spiral out of control. Either way, it is a good learning opportunity even for the observers.

Another good addition to any drill is to simply add an additional crew to the scenario – a crew that has any random assignment other than locating the crew in distress. The IC/director of the scenario needs to make sure these two crew's cross paths. This little gem creates more confusion than one would think, and it requires

good communications and solid leadership abilities to keep the two separate crews intact when they go on about their original assignments.

One way we make it even more realistic is to monitor everyone's air usage and manipulate the available air through the regulator. Having everyone's low-air alarms activating during a RIT scenario, while completely blacked out, adds an element that many have not considered, trained for or experienced.

Another way to manipulate the available air and increase the individual member's level of being comfortable in uncomfortable environments for extended periods is by having them find their way out. Remember, the initial entry point is blocked, and you as the IC can control or determine where they will have to exit.

We also use blackout masks to not only complicate and add realism to the scenario and communications process but also to require



One idea for a RIT drill involves blocking the initial entry point, so members must find an alternate route out. (Photo/Drew Neal)

the company officers to actually learn how to physically guide their teams in a zero-visibility environment, rather than simply saying “come here, go there, over there, over here, right here, etc.” This form of communication simply does not work in a zero-visibility environment. Communications will require a hands-on approach from the team leaders.

If the RIT finds the crew in distress first, this provides an opportunity to deploy the RIT bag and fill everyone’s bottles in a zero-visibility environment prior to leading them to the exit. Each member should have a go at it at this point. If you have not tried this previously, you are missing a key element in your training program. This process requires not only knowing your equipment intimately, but also a good amount of finesse to seat the connections timely and properly.

In this scenario, we are not concerned who finds the crew or member in distress first, but that they

perform as they are trained and with urgency in removing the downed firefighter as the priority.

Don’t forget the common sense

I encourage you to use this drill in your next mayday training, and apply as much common sense as you can to your training and tactics. For that matter, all of your training and tactics should incorporate a good deal of common sense. 1)

About the author

Chris DelBello is a senior captain with the Houston Fire Department, working in the Midtown District. He is also the district training officer, which encompasses all the stations in downtown and midtown. DelBello holds a Training Officer II certification and serves as an adjunct instructor with Houston Community College.

‘Pop quiz, hotshot’:

Photos/L3 Harris



IS YOUR PORTABLE RADIO UP TO THE TASK?

Question No. 1: What actions must a firefighter take when they find themselves in a mayday situation?

- A. Verbally declare “Mayday, mayday, mayday!” using their portable radio.
- B. Push the emergency activation (mayday) button on their portable radio or remote microphone.
- C. Activate the PASS on their SCBA or standalone PASS device.
- D. Following mayday acknowledgment by the incident commander (IC), transmit your status over your portable radio using a pneumonic like LUNAR (location, unit, name, air supply, resources needed) or a simple “Who, what, where?” model.
- E. All the above.

Answer: All the above.

Question No. 2: What do those answers have in common?

Answer: A portable radio.

Question No. 3: Are you and your portable radio up to the task?

WRITTEN BY
Robert Avsec

Here's how L3Harris's new model meets the new NFPA 1802 standard

While only you know the answer to that last question, if your portable radio is the [L3Harris XL Extreme fire solution \(400P portable radio and speaker mic\)](#), then you're halfway to answering that question in the affirmative. But to get full credit for a correct answer, you must know and understand all the features of the XL Extreme Fire Solution 400P.

New NFPA standard

When it comes to interior firefighting operations, everything you use when entering a hazardous area must comply with the applicable NFPA standard:

- NFPA 1971 for your helmet, coat, pants, boots and gloves
- NFPA 1981 for your SCBA
- NFPA 1801 for your thermal imaging camera

But this left a hole in coverage for your portable radio and remote speaker microphone (RSM). The hole was closed in January 2021, when NFPA published [NFPA 1802: Standard on Two-Way, Portable RF Voice Communications Devices for Use by Emergency Services Personnel in the Hazard Zone](#).

An important addition to NFPA 1802 was the definition of a hazard zone mode of operation as, "The area where members might be exposed to a hazard or hazardous atmosphere; or a particular substance, device, event, circumstance or

condition that presents a danger to members of the fire department."

With that definition, the technical committee for NFPA 1802 created requirements for radio and RSM use in a hazard zone that required devices to have:

- An ergonomic "glove-friendly" design to ensure ease of operation by a firefighter in full structural firefighting PPE.
- A larger emergency activation button (EAB) for use with a gloved hand.
- Loud audio volume by default for use in loud environments.
- A confirmed power-off feature to prevent any accidental powering down.
- Multiple new voice announcements to indicate the unit is powering off, is over temperature, has a low or dead battery, or a failed RSM has been attached.
- A cable fault-detection feature that assesses if the RSM cable has been compromised by heat or mechanical force and alerts the firefighter via a voice announcement that the radio has automatically reverted to its internal microphone and speaker.
- An over-temperature detection feature that alerts the firefighter that they are operating the radio and RSM outside their safe temperature range.
- Support for Bluetooth-capable accessories such as a microphone in the SCBA facepiece.

Firefighters speak up

When firefighters were asked what they didn't like about their fire department's portable radios, the most frequent answers were:



1. “I can’t operate the controls with my gloves on.” This is a common occurrence that leads many firefighters to remove their glove to operate their radios – not a good thing to do when operating in a high-temperature environment.
2. “I have a tough time ensuring I’m on the correct channel.” This is not a good situation to be in when you’re in a mayday situation and trying to get help.
3. “I can’t easily access all the functionality because of the accessories needed to make it rugged.” Our tools shouldn’t work in only one way that’s helpful, compromising other features.

It’s precisely those problems, and the new requirements of NFPA 1802 for portable radios and RSMs, that drove the engineers at L3Harris in bringing to market the XL Extreme 400P portable radio – an NFPA 1802-compliant radio designed

for ease of use, especially in a mayday situation. No firefighter should find themselves struggling with their portable radio – their lifeline – when trying to survive a mayday event.

‘Crawl, walk, run’ through radio training

As with any piece of critical firefighting equipment, it’s important that firefighters become skilled in using the key safety features of the XL Extreme 400P. First, don’t assume any previous experience using a portable radio is applicable to using this new generation of fire service radios. Thoroughly review the [operations manual provided by](#) L3Harris to become informed and educated about all the radio’s capabilities.

Next, learn to “crawl” before you try to “walk.” Practice using the radio’s features with your structural firefighting gloves on and your eyes open to develop the necessary muscle memory to flawlessly operate the radio. When you’re comfortable using the features with your eyes

open, begin to learn to “walk” by operating the features with gloved hands while blindfolded.

Finally, learn to “run” by operating the radio’s features while wearing all your structural firefighting PPE, breathing cylinder air from your SCBA, in an atmosphere with ambient noise (e.g., near running fire apparatus or a small gasoline-powered engine). Having the ambient noise will aid in developing your ability to use the volume controls, switch channels and understand warning signals, like when you disconnect the RSM and the radio reverts to its internal microphone.

Safety features benefit the IC

The XL Extreme 400P has some equally robust features to aid the IC in responding to a mayday declaration safely, effectively and efficiently.

When a firefighter declares a mayday, the IC must take two critical actions, and both involve a radio:

1. Assign fire operations to a separate tactical channel and have everyone except the distressed firefighter move to that second channel.
2. Remain in direct radio contact with the distressed firefighter on the original radio channel until the mayday has been resolved.

The XL Extreme 400P has several features that make it easier for the IC to execute those critical actions following a mayday declaration and during the ongoing rescue:

- A Visual Zone Detection Indication feature that provides the IC and everyone on the fireground with quick visual confirmation that all users are on the same radio group or channel. It also delivers loud, clear audio with noise cancellation for added clarity.
- LTE operations capability that gives the IC the ability to transmit and receive voice or data over FirstNet, AT&T or Verizon networks. The XL Extreme 400P also has

Wi-Fi, Bluetooth and GPS capabilities built in, and the dual SIM design allows multiple carriers on the same device.

- The XL Extreme 400P that provides interoperability during multiagency responses (these are much more common today, especially in areas served by volunteer-staffed departments), as well as secure voice and data transmission.
- Data-logging capability that allows the radio to function as a “black box,” like the flight data recorders carried aboard commercial aircraft, that enables the radio to store critical data (the last 200 events) for after-action reviews.

Two47 solution bolsters command

In concert with the development of the XL Extreme 400P, L3Harris developed the [Two47 Incident Command Solution](#), which provides ICs with enhanced situational awareness by linking on-scene P25 portable radios and SCBA components with an incident command dashboard. This gives the IC immediate notifications and updates for critical firefighter safety elements, including:

- Air supply levels for on-scene operating SCBAs
- Remaining battery power levels for on-scene portable radios
- Physical locations for all personnel operating on scene using portable radios
- The ability to run personnel accountability reports (PARs) with all P25 user devices

With its customizable, interactive dashboard, fire departments can pair the Two47 Incident Command Solution with existing applications and devices to deliver a comprehensive view of any incident.

Tough talk

NFPA 1802 addresses not only what a portable radio should be able to do, but also what it

should be able to withstand when being used in the hazard zone to ensure it continues to operate. The XL Extreme 400P – without any added protective lining – met those performance and durability standards through testing that included being:

- Dropped from a height of 10 feet multiple times
- Broiled at 500 degrees Fahrenheit for five minutes
- Shocked at 350 degrees Fahrenheit for 15 minutes six times
- Torched at 1,700 degrees Fahrenheit for 10 seconds
- Frozen
- Drowned at five meters for four wet hours
- Abraded with corrosive salt water and humidity
- Tumbled for three dizzying hours
- Vibrated for up to three hours
- Stretched up to 35 pounds
- Compressed up to 442 pounds

That's what it takes to become an NFPA 1802-compliant portable radio. Can your fire department's current portable radios stand up to that sort of punishment? If not, then consider adding the XL Extreme 400P to your radio pocket or carry strap. Because in a mayday situation, you'll need nothing less. **1)**

About the Author

Battalion Chief (ret.) Robert Avsec served with the Chesterfield (Virginia) Fire & EMS Department for 26 years. He was an instructor for fire, EMS and hazardous materials courses at the local, state and federal levels, which included more than 10 years with the National Fire Academy. Avsec earned his bachelor's degree from the University of Cincinnati and his master's degree in executive fire service leadership from Grand Canyon University. He is a 2001 graduate of the National Fire Academy's EFO Program. Avsec authors the blog [Talking "Shop" 4 Fire & EMS](#).



ABOUT THE SPONSOR L3HARRIS®

L3Harris Public Safety and Professional Communications is a leading supplier of communications systems and equipment for public safety, federal, utility, commercial and transportation markets. The business has more than 80 years of experience in public safety and professional communications and supports more than 500 systems around the world.

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WATCH: BETTER EVERY SHIFT – MAYDAY TRAINING

Listen in as the podcast hosts talk to Andrew Beck about when and how to call a mayday, plus simple training evolutions that any department can run no matter the budget.



WATCH: BEYOND 1403 – SIMPLE WAYS TO EXCEED THE STANDARD

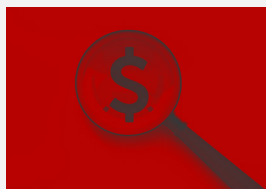
In this on-demand webinar, Battalion Chief Jake Barnes and Captain Gilbert Pedroza break down simple ways that fire departments can not only meet NFPA 1403 requirements for live-fire training but actually exceed the standard to heighten safety for the students and instructors alike.

[View the digital event here.](#)

1 View the complete mayday special coverage series at firerescue1.com/mayday-training-evolution



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