



Search & Rescue Introduction

Search and rescue operations on the fireground are vital components of firefighting efforts, as they prioritize the rapid location and safe removal of individuals who are trapped or endangered by fires. Successful execution of these operations relies on a deep understanding of fire behavior, thorough building size-up, and accurate risk assessment. This introduction section aims to provide an overview of the critical components necessary for a comprehensive understanding of this manual, highlighting the key factors in conducting a safe and efficient search and rescue operation.

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CREWS PREPARING THEIR ATTACK ON A HOUSE FIRE IN STATION 2'S TERRITORY.

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Responsibility

When you took the oath to become a firefighter, you swore to protect life and property. When performing a search, we primarily search for victims but also try to locate the fire. Identifying the fire's location (and confining it if possible) and relaying that information to Command are equally important. As we all know, when the fire goes out, everything gets better. Bypassing the fire and not radioing the location to attack crews and Command is a serious misstep that can significantly delay extinguishment. However, most of this text will focus on searching for life and the necessary tools and strategies to accomplish the mission.

Given the size of our department, it is crucial to differentiate the role of each firefighter in order to establish a standard and assign responsibilities effectively for various scenarios. All strategies outlined in this text are based on a crew consisting of three individuals. Either at the beginning of the shift or prior to commencing a search and rescue task, the Officer-in-Charge (OIC) will assign specific designations to each crew member. The following designations have been chosen to help you remember your role:

- **OIC** – Officer-in-Charge
- **Point** - Firefighter #1
- **GIB** - The individual positioned in the back of the search and not necessarily the back of the truck, Firefighter #2

The responsibilities associated with each position will be explained in detail throughout the text.

Search & Rescue Size-Up

How do firefighters know there is a life inside of a burning structure? Is it in the notes on the MCU? Is it from the screams of hysterical neighbors or excited police officers? The answer is often that we don't know with certainty if someone is inside, but we always assume there are savable lives, and we rely heavily on clues to determine the likelihood that there may be a victim inside and where that victim might be located. Here are some of the cues and clues for size-up:

- **Time of day.** Most residential homes are occupied in the evening. Conversely, businesses are generally occupied during the day. However, it is worth noting that a large portion of Miami-Dade's citizens work evening jobs and sleep during the day. Never take one singular clue to determine your rescue profile.

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- **Notes and information relayed from dispatch.** Is the caller trapped? Is the caller someone who has received a phone call from someone who is trapped? Both situations have occurred in Miami-Dade County. In 2014, Aerial 11 responded to an advanced fire that had already burned through the roof in the rear bedroom. Dispatch relayed that the 911 caller was the victim's daughter. The mother had called the daughter instead of calling 911. The victim was found in respiratory arrest just to the right of the front door.



E2 PERFORMING A 360 SIZE-UP AT A HOUSE ASSIGNMENT.

- **Vehicles in the driveway or parking lot.** Vehicles in the driveway or multiple vehicles occupying the parking lot of a business is a sign that there is a higher risk of people trapped inside.
- **Witnesses on scene.** While not always reliable, the accounts of witnesses on scene should be heard. This takes discipline and focus. Is it the neighbor telling you who lives there, or is it a person who lives in the house telling you that there are still family members trapped inside? As you're about to learn, their words might change the rescue profile immediately from a high to an urgent rescue profile. In this case, you should get information as to where they were last seen, where the closest access point is, or where they might be in reference to where you are entering the structure. These few seconds of focused questions may help you save their life.
- **Fire conditions.** Identifying searchable spaces on our 360 is crucial. To prioritize our search and avoid potential loss of life, we must consider the fire's location, where it's been, and its flow paths. When deciding where to begin, assessing smoke's color, volume, velocity, and density in relation to the entry point should guide your decision. If we are not cautious and do not control the flow path, it will impact our safety as well as the survivability of anyone within the structure.

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- **Other cues and clues.** Handprints on soot-stained windows or an open door with no victim or witness in the front yard are some other clues that may increase your suspicions. An open door with no one who lives there on scene can indicate that they went back into the structure, perhaps to try and save someone else. Additionally, abandoned homes that have been compromised at entry points, often on the Charlie side are indications that a squatter might be trapped in the residence.

We cannot complete all the functions of the fireground by ourselves. Often, we must rely on the first-due for a thorough 360. Before you make entry to start your search, you should make sure that what you are seeing is in line with what was reported. If it's not, you should do your best to complete your own 360. Layouts of the common single-family homes in most territories are very similar. Learn to recognize exterior clues that will tell you where bedrooms are often located.

Rescue Profiles and Risk Assessment

Pre-arrival information and a completed size-up that includes a 360 will help the crew performing the search to determine the rescue profile (low, high, or urgent). The MDFR Rescue Profile is a quick and easy way to determine potential or known life hazards and any subsequent tactics that are chosen, particularly if they are going to change the search crew's immediate actions on the fireground.

1. Low Rescue Profile

The low rescue profile exists when firefighters, through their size-up, believe that the occupancy is empty. This could be a business that is closed after hours or a well-sealed abandoned structure. It could even be a single-family home that firefighters suspect is unoccupied based on the clues from the size-up. Even with a low rescue profile, **an aggressive thorough search will be completed.**

The fire may occur in the middle of the day with no cars in the driveway and no evidence of occupation. We will search and clear the occupancy as soon as possible because even if the size-up is perfect, it is understood that at least 10% of the residents in Miami-Dade County work night shifts and sleep during the day. Additionally, while the cause for fire could be anything from electrical to a lightning strike, a good firefighter will consider the location of the fire as a clue to possible occupancy. For example, a kitchen fire originating from the stovetop indicates that someone was cooking. Did they forget they were cooking and left the house, or did they forget they were cooking and went to bed or to take a shower? All three situations have happened on the Miami-Dade County fireground.

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2. High Rescue Profile

A high rescue profile exists when firefighters believe or highly suspects the residence is occupied. Based on the search size-up, crews believe there are victims trapped in the building.

These clues (cars in the driveway, toys in the front yard, and bystander information to name a few) should guide all MDFR firefighters to choose an aggressive interior search when and where they can. These situations can be very stressful. There may be reports of multiple callers from dispatch. There may be bystanders or even police officers yelling and screaming for you to do something, but it is important to remember that all of this information is still secondhand. Maintaining discipline and trying to choose the appropriate search based on the information are the keys to effectively searching the occupancy as efficiently as possible.

3. Urgent Rescue Profile

An urgent rescue profile exists when firefighters have first-hand information that someone is trapped inside a structure. This could be as clear as seeing someone at the window or a confirmed call from 911 that the caller is trapped inside. An urgent rescue profile is extremely stressful, and it is often very hard to stay calm and focused. The OIC may change tactics after determining that removing the person is more urgent than the task they would normally perform. The urgent rescue profile is the 'risk a lot to save a lot' scenario.

No matter which profile an MDFR crew finds themselves working in they still need to acknowledge the variables that can occur on the fireground prior to deciding what action to take.

- What is the size, location and direction the fire is heading?
- What is the size and structural integrity of the occupancy?
- Is there any searchable space and where is it?
- What is the available manpower? Do you have enough people to accomplish the rescue?
- Is the engine crew advancing hose simultaneously or are you searching ahead of them?
- What is the experience level of your crew and the firefighters on scene?
- What are your access options, and which one will lead you to the victim faster?
- How should the OIC use their crew and which search would be the most advantageous?

Using the clues provided by your size-up will give each crew the best chance of success when seconds count.

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MIAMI-DADE FIRE RESCUE

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In November 2022, the units of Battalion 5 responded to a house assignment, where their combined efforts allowed R202 to make a grab of an elderly woman who was asleep in the rear bedroom. While the initial dispatch did not report any individuals trapped, a neighbor informed E2 that there might be an elderly woman trapped in one of the back bedrooms. While conducting a thorough 360, it was determined that the fire was located at the Bravo/Charlie corner, with a potential searchable room at the Charlie/Delta corner.

The 360 also revealed the presence of security bars on the windows and that the home was relatively small. The well-performed size-up immediately raised the rescue operation to a high-rescue profile and gave R202 a target point for the search effort as they were assigned to the primary (Figure 1). Initially, R202 searched ahead of the hose. Upon approaching the targeted bedroom with a closed door, they hesitated to open it too soon, knowing the fire located directly across the bedroom was spreading into the hallway, which could have rendered the room unsafe. R202 allowed E2 who was trailing behind them, to mitigate the fire's threat before entering the bedroom for a search. While E2 extinguished the fire, R202 temporarily isolated the victim until conditions improved before finally carrying her out low to the ground. During the entire sequence of events, the elderly woman remained conscious and unharmed.



(FIGURE 1) PERSONNEL FROM BATTALION 5 TRANSFERRING THE INFORMATION COLLECTED DURING THEIR SIZE-UP ON A HOUSE ASSIGNMENT, DURING WHICH THEY SUCCESSFULLY RESCUED AN ELDERLY WOMAN.

R202 demonstrated remarkable discipline through various actions, including targeting the bedroom based on information gathered during the size-up, opting against using the window which had security bars, allowing the attack team to improve conditions prior to opening a door to a searchable space, controlling doors throughout the rescue efforts, isolating the victim in a tenable room, and ensuring the victim was carried out close to the ground. These combined efforts ensured timely rescue and a safe removal of the woman (Figure 2).

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(FIGURE 2) THESE PHOTOGRAPHS ARE OF THE BATT 5 GRAB MENTIONED ABOVE. THEY SHOWCASE THE IMPRESSIVE CAPACITY OF A SIMPLE RESIDENTIAL INTERIOR DOOR TO EFFICIENTLY WITHSTAND SMOKE AND FIRE. BY MAINTAINING DISCIPLINE AND TAKING ADVANTAGE OF THIS POTENTIAL, WE EMPOWER OURSELVES TO REACH OUR HIGHEST LEVEL OF PERFORMANCE, AS R202 DID ON THIS FIRE WHICH RESULTED IN A SAVED LIFE.

Systematic Searching and Crew Discipline

Based on the orders of the Incident Commander (IC), the tactics chosen by the searching OIC will determine where and how you will search. Here are some basic guidelines to ensure accountability and efficiency during your search.

- The search leader (usually the OIC) should have their radio turned up to listen for pertinent radio information. The rest of the crew should have their radios on, but turned down, and on the correct frequency. This not only prevents feedback, but if the need arises for the firefighter to use the radio, they will not have to wait for the radio to cycle up after being turned on.
- The search leader will choose the style of search (Vent Enter Isolate Search [VEIS]; Thermal Imaging Camera [TIC] Directed Search; etc.) and announce it to the crew.
- The search leader will verbalize the plan and direction before entering the structure. That being said, most residential homes and apartments will be divided into two major areas - bedrooms (main hallway and bedrooms off that hallway) and living areas (everything away from the main hallway which could include a bedroom, office or garage) (Figure 3) and/or 1st and 2nd floor. Thinking of a standard home in this way will allow for a systematic approach and for easy transfer of information.

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(FIGURE 3) DIVIDING A SINGLE-STORY HOUSE INTO TWO DISTINCT SECTIONS, NAMELY BEDROOMS AND LIVING AREA, FACILITATES A SYSTEMIC SEARCH AND ENABLES STRAIGHTFORWARD COMMUNICATION AMONG THE TEAMS. IN THE CASE OF TWO-STORY HOMES, WHERE MOST OF THE ROOMS ARE SITUATED ON THE SECOND FLOOR, THESE SECTIONS CAN BE DESIGNATED AS THE FIRST AND SECOND FLOORS ACCORDINGLY.

- The crew must adhere to the plan and communicate which areas have been cleared (example: “the couch is clear”, “the room is clear”).
- The entire crew will maintain verbal communications throughout the search using a closed loop system. Constant verbal communication is key to an effective, rapid search in low or no visibility situations and closing the loop ensures that all communications have been received. [Example of Closed loop communication.](#)
- Firefighters should **not** perform any ventilation that could adversely change the flow path of the fire without advising their OIC. The days of opening all the windows and doors as you search are over and the unintended consequences could be detrimental. In fact, we have learned that the opposite approach of closing all encountered doors except when coordinated with the fire attack crew and the IC for ventilation, can be extremely beneficial (Figure 1).
- The search leader, no matter what type of search is chosen, will be mainly responsible for crew accountability and compartment orientation as the search progresses.
- Aggressive, effective searches are done on the ground. There is no way to search thoroughly on your feet in low or no visibility situations. Furthermore, it is unsafe at best particularly in commercial structures which may have fall hazards and floor openings (work bays). Also, when there is partial visibility, a searcher may be able to put their face to the ground and see across the floor space below the smoke. You will never know what you’re missing until you get down there.

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The Rules of Engagement

No matter what method or how you choose to conduct your search, there are a few rules that cannot be broken. These rules not only ensure efficiency, but more importantly they are the cornerstones of safety.

- 1. Never lose voice contact with your crew.** On the modern fireground, we have been given tools that allow for a faster, more effective search than ever before. Between the TIC and technological advances in gear, we can go deeper and clear a building faster than ever before. It is an easy mistake to let the TIC dictate the search and allow crews to spread out farther than they should. If the TIC fails, crews should be able to be called back to the search leader and continue the search in a traditional fashion. When you add more than one TIC to the equation, the risk of getting too far apart becomes even more prevalent. ***Voice contact is the tether that should never be broken.***
- 2. Never extend into a new compartment space without your crew intact.** While this rule seems obvious and interrelated with the first rule, multiple drills have shown crews overextending themselves as they spread out to cover the area. A door that opens into an unidentified space that is larger than a closet or bathroom should be announced, and the crew should be gathered prior to moving forward into the space. It may seem excessive, but even when changing directions, such as turning a corner on the wall, it is necessary to wait for your crew. If you find yourself tracking back looking for a crew member, then you're not searching for a victim. Constant accountability equals safety and efficiency.
- 3. Constant announcements and closed-loop communication is imperative.** Announce whenever you are on a new wall, have reached a window or door, or have come across a piece of furniture or building feature that is new. Announce all actions including when a space is clear of any victims. The receiver of the announcement *must* repeat it back, not only to ensure that that the sender's message was received, but also to allow for constant crew accountability without interrupting the search process. During blacked-out drills where there is no talking, how often have you needed to interrupt the search to ensure your crew's proximity? This form of communication, where everything is announced and repeated back by the crew, eliminates the need to interrupt the search, thus enhancing efficiency.
- 4. If you cannot complete the search as planned, the IC must be notified.** The fireground is a dynamic place, and sometimes our best intentions are just not possible. If a search cannot be completed for any reason (e.g., hoarder house), or if there is a change to the original plan, the IC must be notified.

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5. **Close all doors.** If possible, the door to the bedroom should be closed during the search and again after the room is searched. The intention of the search crew should be to not disturb the flow path and to give any possible victim that might be in the room a better chance at survival. If the intent is not a coordinated effort to ventilate, all doors you come across should be closed.
6. **Announce when you enter a room and take a moment to listen.** It sounds too obvious to mention, but countless drills have proven that crews forget to announce their presence. Additionally, taking a moment to listen not only will give you a chance to hear conscious victims, but will allow the crew to listen for the crackling of the fire or any other clues that might be within earshot. When conducting a search, the only senses most searchers have at their disposal are touch and sound. Make sure to use your ears as well as your hands.
7. **If you can't see your feet, you should be on the ground searching.** The hallmark of a terrible search is a crew that stumbles their way through an occupancy. Not only will you most certainly not feel a victim, but the fall hazards of trying to walk through an occupancy with zero visibility is inviting injury.

Primary and Secondary Search

Primary Search

The Primary Search is a rapid thorough search of a structure for victims to confirm and/or find the location of the fire. Based on the size-up, the conditions, and the capabilities of the crew, the search may start with a search for the fire and work back toward the entry point looking for victims. Or it may start in a few other ways. The key is to plan the search and search the plan. The OIC, with just a few directives to their crew, should be able to outline the plan as the crew is masking up. Verbalizing the plan is imperative because it helps each member of the crew visualize and prepare for the order of events they can expect. Knowing the plan also allows each member of the crew to anticipate where the search will proceed, the flow paths for fire, and where they might expect to find victims.

The aggressiveness of the Primary Search is based directly on the rescue profile. The urgent or high rescue profile will be fast and focused, normally proceeding directly to where the intel indicates the victim is or should be located. Low rescue profiles can be more methodical.

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After completing the Primary Search, crews should exit the structure and radio immediately, “Unit XX, Primary Search complete. We have exited the structure and have a par.” This benchmark on every fire must be completed and will allow the IC to move to the next phase of the firefight. Delaying this message, delays everything that must follow.

Secondary Search

The Secondary Search is a more methodical search that should occur immediately after the Primary Search is complete. The purpose of a Secondary Search is to make a *complete* search of the structure and to ensure that *nothing* was missed. Oftentimes the visibility is better because ventilation has already occurred. Ideally, the Secondary Search should be completed by a different crew than the one who performed the Primary Search. The purpose is to get a whole new perspective on the search. If the IC chooses the same crew to complete the Secondary Search, the OIC can allow a senior firefighter to lead the search. This will at least allow the crew to be guided in a different way by a different person.

Upon completing the Secondary Search and exiting the structure, the OIC must radio, “Unit XX, Secondary Search complete. We are outside the structure with a par.” This is the final benchmark of Search & Rescue and allows the IC to conclude the search for victims.

Victim Removal

Safe victim removal relies on many variables. A rapidly changing fireground demands that the OIC make the most informed choice for removing the victim from the structure. Removal could mean anything from sheltering in place with a conscious victim in a clean environment to isolating an unconscious victim and removing them through a window, which is labor intensive and will more than likely require additional crews to complete the evolution. Choosing the right path to the exterior should not be reactionary but something the OIC is constantly evaluating throughout the search. It is safe to say that if your search path to the victim did not include any major obstacles, then following that same path out of the structure may be the best choice. However, one thing is certain, unless the victim is in a clean environment, rapid removal is the only choice.



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Crews must be prepared with a plan for all situations (large victims, multiple victims, narrow path, window rescues, a smoked-out path, ladder apparatus rescues, firefighter rescues, etc.). It is important to know how to use techniques and equipment to perform rescues efficiently. Further into this document you'll find the [Victim Removal Techniques](#) section with step by step instructions that will assist in most situations. The following are a set of basic steps a crew can take to facilitate the victim removal.

When you find a victim:

1. Announce to the crew that you found a victim ("I got a victim.") and make sure they have received the message.
2. Quickly search around the victim for other victims. People who are trying to escape a fire will often take their loved ones with them.
3. The OIC should quickly determine an egress point and radio to the IC that they have a victim and where the egress point will be located. Unless the victim is a firefighter, this message is a 'priority message' and will allow the IC to prepare for the victim transfer at the egress point.
4. If necessary, the OIC should give a CAN report. Some needs the crew may ask for include a second crew to assist with the removal of heavy victims, or a crew to assist in removal through a window.
5. Victims should be removed as quickly as possible through the least hazardous environment. The OIC may choose to protect the victim in place. Sometimes, if the room is clean, it may be better to wait with the victim for the hose team to extinguish the fire. Choosing to remove a conscious victim through an IDLH environment can do more harm than good.
6. In order to choose your tactic of removal, quickly assess the victim size, the position they are in, your surroundings and conditions.
7. Start positioning victim for removal and determine how to remove the victim, e.g., one-person or two-person drag, webbing or no webbing, window or front door etc. Let your crew know what technique or tactic will be used.
8. No matter what method of egress is chosen. The officer should guide the egress by leading from the front.
9. If the IC was notified early, a crew should be waiting at your egress point to provide medical assistance; but if no one is there, it's the responsibility of the crew who removed the victim to initiate medical care.

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