



Searching Residential Structures



STATION 54 GOES IN ON A SEARCH AT A 3-STORY APARTMENT BUILDING FIRE.

Introduction

Residential fires comprise the vast majority of fires in Miami-Dade. They also account for the largest loss of civilian life on the fireground.

The category of residential structures is broad and encompasses everything from mobile homes to multi-story residential high-rise buildings. It is impossible to describe every type of layout the search crew might encounter, but what follows are some broad guidelines that can help in your size-up:

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Residential Single-Family Home

There are two layouts that every firefighter should be familiar with. The single story 'ranch' style and the two-story home.

1. Single-Story 'Ranch'

- Generally, the kitchen is adjacent to the garage and located toward the rear of the home.
- Bedrooms are usually found on the opposite side of the garage.
- Split bedroom designs on larger ranch homes often put the master bedroom on the opposite side of the remaining rooms
- Equally spaced and equally sized windows are exterior clues commonly indicating you are on the bedroom side of the house. The pattern will often be broken with a smaller glazed window indicating a bathroom.



2. Two-Story Homes

- Bedrooms are located on the second floor but can have additional bedrooms or office space on the first floor usually toward the front of the house. Larger homes can have a first-floor master bedroom located toward the rear of the home.
- Kitchens and living areas are generally located to the rear on the first floor.
- Stairs are usually located closer to the front of the home and are generally open type stairwells, meaning that they act as a chimney for smoke and rising heat.

Apartments

While the crews of Battalion 1 can attest that apartments can come in all shapes and sizes, this document will focus only on the general single-story layout.

- Kitchens are almost universally located near the front of the apartment.

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- Living areas are located to the rear, near the balcony.
- Bedrooms can be split, but most will be on one side.

A Word on Multi-Residential Buildings with Enclosed Hallways

It's true that searching an apartment requires the same tools and skills as a single-family home. Generally speaking, the size of the rooms and the layouts should be similar, and the tactics you should use will be the same. The differences are what surrounds that apartment.

First, if the hallway leading to the apartment is 'dirty', meaning that it is charged with smoke, your search must start at the entrance to the hallway. The crew will be searching for victims who exited the apartment but were overcome before the exit to the stairwell.



BATT 5 DRILLING AT WARD TOWERS, A MULTI-RESIDENTIAL BUILDING WITH ENCLOSED HALLWAYS

Additionally, the search crew should be ahead of the Attack crew. Their task at this point is to locate the fire apartment and radio that location back to the Attack crew. This will ease the stretch and confirm the suspected location of the fire. At this point, a choice must be made. Does the search crew enter the apartment, or do they close the door, isolate the fire and wait for the hose team? The conditions will dictate the answer to this question.

In 2006, MDFR battled a stubborn apartment fire at the Melton Apartment Complex. L29, hampered by a difficult hose stretch was not able to reach the fire and ultimately the fire was extinguished by Captain Jack Swerdloff's crew on E9 advancing to the fire from a different direction. The fire burned freely for over 20 minutes while units were on scene. During that time the crew from E47 located the apartment and searched the apartment early on while it was just a bedroom fire. They isolated the bedroom which was fully involved and searched the remainder of the apartment. Later, when the fire had burned through the bedroom door, they opened the balcony slider, and closed the apartment door isolating the apartment from the hallway. These two actions allowed time for the crews stretching hose to overcome initial errors, add some visibility to the hallway and overcome difficulties with the stretch.

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The function of Search in a multi-residential building with enclosed hallways can be daunting. Here are a few tips to make sure you operate safely.

- A dirty hallway is a sign of two possible scenarios. First, the apartment door was left open or propped open (as they should be self-closing). Second, the fire has burned through the apartment door. If the Search crew discovers a door that has been burned through, they should not open it and should immediately radio to Command their discovery. This generally indicates a fire that has vented and may need multiple lines for extinguishment.
- In a dirty hallway, you should count doors as you make your way to the fire apartment. This information should be radioed to the Attack crew and will eliminate any doubt on their stretch.
- A Water Can should be a part of your tool package for multi-residential searches. “The Can” can put out quite a bit of fire when used by a skilled operator.
- If the officer decides to isolate the fire and wait for the hose crew, the Search crew should close the apartment door and force the door to an adjacent apartment as an area of refuge if needed.
- Once the search of the fire apartment starts, crews should be hyper-aware of air consumption. Safety and clean air for the crew is not at the front door to the apartment but could be over 100’ away at the entrance to the stairwell.
- If search crews locate a victim, it is imperative that they let the IC know which stairwell they are moving towards.
- After the search of the fire apartment is complete, crews should search the adjacent apartments next. Often, if the apartments are clear of smoke, sheltering citizens in place is the correct and safest choice.
- The decision to deploy a search rope should only occur in confusing or atypical hallway arrangements. If the hallway is straight and logical, the rope will only get in the way of other crews and slow the search down.
- Just as the hose crew sizes up and stretches on the floor below, the search crew should also get a visual of the hallway layout on the floor below.

It can't be stressed enough how important a good, aggressive Search crew is on multi-residential fires. Locating and isolating a fire early in the incident can buy time for the Attack crew and potentially slow the spread of smoke through the building. The MDR Search crew should be the tip of the spear on multi-residential, enclosed hallway fires.

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Command and Control on a Residential Fire

While it is true that quick and effective extinguishment of the fire saves more lives than any other action on the fireground, the importance of Search cannot be understated. The role of Command on the Miami-Dade fireground is to maintain accountability of all members and to ensure that the proper strategy has been chosen for that particular fire. When it comes to Search & Rescue the IC must ensure that the search is started early in the incident and that the unit assigned to the task is searching the entire home but focusing on areas of high probability. Areas of high probability are determined by a thorough and continuous size-up of the fireground.

There are things the IC can do to ensure searchers perform the most effective and safe search possible. What follows are some tips for driving an aggressive residential fireground search.

- **Utilizing Size-Up to Base your Decisions.**

The initial size-up of a fire incident serves as the primary indicator for determining the type of search required and how aggressive the IC will be in assigning units. A high or urgent rescue profile, a larger home, a two-story home are some examples where you may necessitate the deployment of multiple crews to support the search effort or provide other forms of assistance. For instance, a house fire occurring late at night with cars in the driveway, an absence of residents in the front yard, and the presence of burglar bars over the windows should prompt the IC to adopt an aggressive stance, prioritizing the removal of these security bars to facilitate swift access for firefighters.

- **Optimizing Available Resources**

Miami-Dade Fire Rescue benefits from an abundance of resources and a wealth of manpower. However, these resources may not reach the scene in time to save victims. Therefore, it is incumbent upon the IC to leverage the information gathered on scene to immediately deploy resources that can do the most amount of good immediately. Acting swiftly with available assets can make the crucial difference between a successful rescue and a tragic outcome.

- **Consider a Second Alarm for Urgent Rescue Profiles**

An urgent rescue profile may divert a crew from their task to affect an immediate rescue. In this case, the IC should strongly consider a 2nd alarm. Depending on the entrapment, it may take multiple crews (including a medical rescue) to remove one victim. A strong, forward-thinking commander is prepared for this possibility and will request resources early.

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Assigning the primary search early and the secondary immediately afterwards, puts the crews in the most advantageous position to 'make a grab'. This is the best action an IC can take regarding the search for a residential house fire.

Search Options

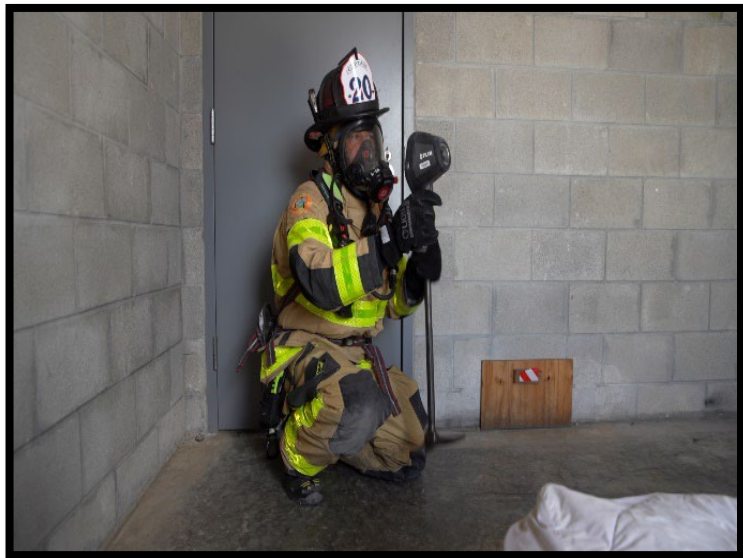
After completing the search and rescue size-up, the OIC must determine what kind of search is most appropriate based on the structure, how advanced the fire is, and the information they were able to garner from the size-up. The different options are:

1. [TIC Directed Search](#)
2. [Basic Search](#)
3. [Dade County Search](#)
4. [Searching Off the Attack Line](#)
5. [Vent, Enter, Isolate, Search \(VEIS\)](#)

Whichever search option is chosen will always be performed in an aggressive, systematic, and oriented manner. All of these searches maintain accountability and crew discipline and *never break* [The 7 Rules of Engagement](#).

TIC Directed Search

The TIC directed search is MDFR's bread and butter operation. There is no faster way to search and clear a structure than with a well-trained crew with a functioning TIC. The TIC allows the officer to 'clear' more area without the need to touch every square inch of the structure as you would in a basic search. The TIC can also be used as an element of crew accountability by letting the OIC keep 'eyes' on the crew while maintaining voice contact.



ENGINE 20 PERFORMING AN ORIENTED TIC SEARCH IN A BEDROOM, WHILE ANCHORING THE DOOR.

In the TIC directed search, the crew will maintain the same crew structure as the basic search, but the OIC may place themselves behind or in front of their crew based on different situations that will be discussed more in depth shortly.

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Compartment size-up and wall numbering

The TIC gives searchers sight where there was none. The hurdle the OIC must overcome is that only they get to use it constantly, so only the OIC can see. After hundreds of hours of training and testing, MDRF strongly suggests compartment size-ups as you move through the structure. A compartment size-up is a pause at a new threshold that allows the OIC to scan the space and show the searching firefighters a quick view of the room.



(FIGURE 1) WALL NUMBERING. '1' WALL IS THE ENTRY WALL THAT CONTAINS THE DOORWAY THE SEARCHERS CURRENTLY OCCUPY. THE '2', '3', AND '4' WALLS GO CLOCKWISE AROUND THE SPACE.

In this fashion, the OIC will lead the search from the front. When a new compartment is reached, the OIC will scan the room. It is at this point that the OIC can provide the searchers with a view of the room as they look over the OIC's shoulder. Quick identification and verbal confirmations of key elements in the room (e.g., bunk beds, couches, windows, etc.) will give the searcher a mental image of the room they are about to enter. To this end, it is important to use closed loop communication and have a uniform method of calling out key elements in a room or compartment space.

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Wall numbering is a uniform method of identifying a compartment space. Similar to naming the exterior sides of a structure Alpha, Bravo, Charlie, and Delta, the interior walls should be numbered. As the searchers enter a compartment space, the '1' wall is the entry wall that contains the doorway the searchers currently occupy. The '2', '3', and '4' walls continue clockwise around the space (Figure 1). The purpose is to create a common language that everyone understands. So, if the OIC is scanning the room with the searcher looking over their shoulder, they can say, "Do you see the bunk bed on the '2' wall? Go search it." The searcher would respond, "Searching the bunkbed on the '2' wall," in order to close the communication loop. This eliminates the confusion of statements like, "go to the far wall," or, "search over there." These seemingly innocent and innocuous statements can be misinterpreted. The searcher may head off in the wrong direction, slowing the search, and/or potentially go somewhere that the OIC may not want them to go.

Dos and Don'ts of Compartment Size-up and Wall Numbering

- Always use and enforce closed-loop communications.
- Ideal configuration is the OIC in front and allowing the searcher to pass after the size-up of the room.
- Number walls in a clockwise fashion.
- **Do not** use the 'alpha', 'bravo' lettering system interior as this may cause confusion.
- The wall numbering system may not work for large open areas. The size-up for the room is only as good as the picture presented by the TIC. If this is the case, it might be better to dissect the space into living areas and search them together one at a time (i.e., living room, dining room, kitchen, family room).

When to and Why Perform a TIC Directed Search:

- Always the first option on residential searches.
- Anytime visibility is limited or no visibility.
- Allows sight when there would be none.
- Allows the OIC to observe other clues of rapidly changing fire conditions.
- Allows for open areas to be 'scanned' and cleared quickly to keep the search progressing at a rapid pace.

Tool Package Considerations – TIC Directed Search:

- TIC
- Set of Irons
- 6' Metal Hook
- Water Can when required.
- Rope bag

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It is recommended that each search crew carry a set of Irons as they search, which can be split among the firefighters and/or OIC. These tools are for light self-extrication and not for 'extending' the searcher's reach. A pike pole or hook should be left at the door. Generally speaking, while the crew should carry a rope bag most residences are too small to deploy the bag efficiently, but its use is highly recommended in large homes and homes beyond one story. When anticipating a delay on an attack line, a Water Can should be carried on the search.

Crew Responsibilities – TIC Directed Search:

1. OIC

- a. Considered the *Oriented Firefighter*.
- b. Maintains radio communications with Command.
- c. Determines the 'type' and direction of search.
- d. Scans all new compartments prior to entering and gives the searchers a view of the TIC. This will ensure they have seen the same thing the OIC has seen.
- e. Verbally guides firefighters while staying oriented to the overall layout of the structure.
- f. Constantly sizes up different areas for rapid egress.
- g. **Maintains voice distance at all times with their crew.**
- h. Uses the wall numbering system when appropriate to eliminate confusion when communicating directives.
- i. 'Anchors' the hallway when searchers are clearing multiple bedrooms.
- j. Maintains air supply accountability.
- k. Monitors fire conditions.
- l. Controls the flow path of the fire by closing doors whenever possible.
- m. Coordinates egress procedures with the IC when a victim is located.
- n. Tries to avoid TIC tunnel vision by putting the TIC down to listen for fire or victims and maintain orientation. The TIC is best used when the OIC is a stationary position and not in motion.

2. Point and GIB Firefighters

- a. Closes the communication loop by repeating all directives back to the officer.
- b. Complies with all specific orders from the OIC. The goal is to touch all the areas the TIC cannot see.
- c. Announces when the directed area is 'clear.'
- d. Constantly announces landmarks as they pass them. "Passing a window" or "I'm at a doorway."

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- e. **All closets, bathrooms, beds, and couches must be hand-searched.** The TIC cannot see through objects like pillows and blankets and is not sufficient to clear these vital areas.
- f. If asked to view the OIC's TIC before entering the space, it is imperative that they confirm what they are seeing before venturing out into the space. **Close the communication loop!**

Step by Step – TIC Directed Search:

There is nothing written in stone about where a search should begin, but in the absence of hard intelligence or an urgent rescue profile, it is always advisable to start the search near the fire or in areas of high probability. With that being said, the following section is broken into the two major areas of most residential homes/apartments - the bedroom and living areas.

Living Area

1. Generally speaking, most searches usually begin at the front door, but that may not be where the OIC will choose to start the search. Conditions and information will dictate whether the search should start in the living areas or in the bedrooms.
2. After forcing the door, the OIC should complete a threshold search with the TIC and look behind the door for victims.
3. The OIC should complete a 3-level scan with the TIC - the upper scan will give you a floor plan, will check conditions, temperatures, and flow path at the ceiling level; the middle scan will give the OIC a view of the room; and the lower scan is for searching for victims. This is also a perfect time for the OIC to drop to their belly and see if there is any visibility at floor level.
4. If it hasn't already been completed, the attic space should be checked by pulling an inspection hole by the front door.
5. When a clear picture of the living space has been seen, the OIC should show the crew the picture to orient them and announce what and where they are going to search first. Based on the size and layout of the living area, the OIC has a few options available to clear the space.
6. In smaller living areas, the OIC can split the crew to search different areas of the living space while moving through the living area toward the next objective. For example, one searcher may be tasked with clearing the living room while the other searcher works to clear the adjacent dining room. The OIC would move between both spaces, coaching and guiding the crew to the next objective.

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7. In a larger open concept living area, it is safer for the OIC to divide the space into sections and have the crew remain together in each section. For example, if the OIC scans a living room and dining room, they could send one searcher to the living room and keep the other searcher at their hip. As the OIC calls out the space, he or she will move to the next objective and:
 - Stay in voice distance.
 - Change the angle of view into that space, increasing visual footprint.
 - Finally, the OIC can release the fresh searcher, who has been at the OIC's hip, to search the new space and recall the first searcher to their side to await the next assignment.
 - As each section of the living area is cleared, the OIC should announce it, and the firefighters should close the communication loop.

8. Open spaces like the kitchen and dining area should and can be cleared rapidly, as these areas have open spaces and hard surfaces. If the TIC is working properly, there is no need to send firefighters to 'touch and feel' every inch of these spaces.



LARGE ROOM TIC DIRECTED SEARCH [VIDEO BY ROBERT HERNANDEZ]

9. Closets must be searched and while it is very important to locate secondary means of egress, it is equally important not to open doors and windows unless ordered to do so.
10. When passing a secondary egress point (side or back door), make sure the door is unlocked and can be opened easily, then close it and move on.

Bedrooms

1. Generally, the OIC will 'anchor' the bedroom door and the firefighters will search the bedrooms as directed by the OIC. As stated before, this is necessary because crews cannot rely on the TIC to clear beds that are covered in pillows and blankets and the TIC cannot see through closet or bathroom doors.

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2. Another benefit is that often, bedrooms filled with furniture are small and searching the space with two or even three firefighters is cumbersome and slows down the operation.
3. The OIC can pause at the threshold to give the searchers a 'picture' of the room with the TIC, or they can send them in quickly without the TIC view and describe to them what they are about to encounter as they are completing a wall-oriented search of the room. Both methods have proven very effective.
4. The OIC can split firefighters into multiple bedrooms to search them simultaneously, but the doorways must be next to one another allowing the OIC to 'straddle' the rooms in the hallway and maintain voice communications with both firefighters.
5. If the doorways to the bedroom are not directly next to each other, the crew should stay together as it would be impossible to maintain voice contact.
6. The size of most modern master bedrooms will necessitate that two firefighters, or even the entire crew may need to search the bedroom together. The two ways that you will know that the room is too large for a single firefighter is either with a scan of the room with the TIC or an initial floor sweep into the room. As the firefighter stretches into the floor space of the room and does not encounter the bed, it indicates that the bed is more than 5-6' feet from the entrance, letting the searchers know that this is not the average sized bedroom. **It must be searched as a team.**

Key Points – TIC Directed Search:

- **Voice communication must be maintained at all times.**
- A three-firefighter search crew is preferable but can be done with two.
- A TIC can be used to locate important structural landmarks (doors, windows) that can be used for rapid egress or victim removal.
- Understand the limitations of the TIC. It can be slow to react and should only be used in a stationary position. Do not rely on it when you're on the move. This is the number one way to create TIC tunnel vision.
- If the TIC is unclear or the TIC fails, then the crew should revert back to a wall and continue a Basic search as directed by the OIC.
- Never advance to the next room or compartment without your crew. This discipline maintains accountability.
- When possible, close all doors to control the flow path.
- Keep at least two tools among the crew for self-extrication and/or rapid egress.
- Try to keep all egress points 'reversible'. This means that all egress points are also ventilation points. We want to be able to control the flow path. When a window is broken or a door is taken off the hinges we can't control that ventilation point anymore.

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- A TIC directed search requires a strong OIC who will 'drive' the search forward and guide the searchers through open areas quickly. This is where the most time is saved. The best searches always have a vocal OIC who coaches the crew and verbally guides them to their next objective.
- Avoid searching while traveling through open spaces. If the OIC gives you a directive to go and search the couch you shouldn't be searching on the way over there. This slows down the search. Remember the TIC is clearing open spaces until you've reached your objective; at that point searching areas that TIC can't is imperative.
- A well-run TIC directed search is fast and clears space quickly. Sending your searchers to quickly clear necessary 'touch spaces' (beds, couches, bath tubs) and clearing open areas with the TIC is undoubtedly the best way to search a residence. Getting good takes practice.
- At times, it is necessary to recall the searchers back to the OIC's location. Many OICs call out for their searchers back "come back to me" in conjunction with a tapping of a tool on a hard floor or surface. This repetitive tapping gives the searchers a sound to quickly draw back to. It is a great way to reset your crew or gather them to move to the next area to be searched.

Basic Search

The Basic Search is the search all others expand from. It is the search you learned in the academy, with a slight modification. The Basic Search is performed with an oriented team search mentality. The Basic Search gives each crew member a specific responsibility that is not duplicated by the others. This allows for a fast and thorough search. **The Basic Search is used when the TIC is inoperable or is not reading correctly.** And as many of you already know, this type of search remains viable because a TIC can be temperamental.



ENGINE 6 DRILLING AT THE TRAINING CENTER [PHOTO BY COREY LOGAN]

The Basic Search also demands that at least one crew member is always on a wall and oriented to the exit and other areas of egress. The Basic Search is the slowest of all searches, but if done correctly can be just as thorough as any other search.

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When to Perform a Basic Search:

- When the TIC fails or is inoperable.

Tool Package Considerations – Basic Search:

- Set of Irons
- 6' Metal Hook
- Water Can (when required)
- Rope Bag

While tool choice is a preference, there are some tools that may slow down or hinder your search. It is recommended that each search crew carry a set of Irons as they search, which can be split among the firefighters and/or OIC. These tools are for light self-extrication and not for 'extending' the searcher's reach.

A pike pole or hook should be left at the door. Generally speaking, the crew should carry a rope bag, but most residences are too small to efficiently deploy the bag, but it is highly recommended for large homes and homes beyond one story. When anticipating a delay on an attack line, a Water Can should be carried during the search.

Crew Responsibilities – Basic Search:

1. OIC

- a. Considered the *Oriented Firefighter*, their job is to lead the crew while staying oriented to the overall layout of the building.
- b. Determines a 'right' or 'left' handed search pattern
- c. Makes sure a threshold search is completed of any new compartment space before proceeding forward.
- d. Makes verbal and mental notes of important structural layouts and calls them out to the crew as they move. This not only includes windows and doors, but when a new room is discovered (living room, kitchen, etc.).
- e. Constantly communicates with the crew and ensures that the crew closes the loop with every call out. It is imperative that both members of the crew repeat everything that is spoken by the OIC. This ensures accountability.
- f. Maintains air supply.
- g. Controls doors to maintain flow path.
- h. Maintains radio communications with command.
- i. Monitors fire conditions.
- j. May send firefighters into bedrooms to search while staying oriented at the doorway. This is also known as an oriented search.

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- k. Upon finding a victim, plans and coordinate egress procedures by placing themselves ahead of the crew and guiding them to a safe environment.
- l. Radios to the IC that 'we have a victim' and where the crew plans to take the victim. Example: "We are taking the victim to a door on the Charlie Side."
- m. Declares "Primary Search Complete" only after the entire structure has been searched.

2. Point (Firefighter #2)

- a. One firefighter will be pre-assigned as the Point. (Figure 2)
- b. Maintains contact with the wall and searches along the wall including any furniture that is against the wall. (Figure 3)
- c. Relays and repeats all information from the OIC.
- d. If assigned to search a bedroom, expands their effort to search the whole room while the OIC waits at the bedroom door. Once back in the hallway, they will resume their normal responsibilities.
- e. Can assist the GIB by searching furniture that is within reach of the wall.



(FIGURE 2) ENGINE 20 DRILLING. THE POINT KEEPING HAND ON THE WALL AS HE SLIDES USING THE AXE TO PIVOT FORWARD.



(FIGURE 3) ENGINE 20 FIREFIGHTER ASSIGNED AS THE POINT METHODICALLY SEARCHES ALL FURNITURE FOUND AGAINST THE WALL.

3. GIB (Firefighter #3)

- a. The anchor of the search is the GIB Firefighter.
- b. Maintains contact with a foot on the wall and lays out searching toward the middle of the room. They will 'walk' the wall, a method of sliding (Figure 4).
- c. Search furniture that is found off the wall.
- d. Repeats all communications and observations from the OIC.

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- e. Will **'punch out'** into open space to clear open areas, then slide back to the where they started (Figure 5).
- f. If ordered to search a bedroom while the OIC stays oriented at the doorway, they will search the entire room.



(FIGURE 4) ENGINE 20 FIREFIGHTER ASSIGNED AS THE GIB WALKING THE WALL. THIS TECHNIQUE GIVES HIM A 5 - 7FT REACH INTO THE MIDDLE OF THE ROOM.



(FIGURE 5) ENGINE 20 IS ENGAGED IN DRILLING OPERATIONS. THE GIB SEARCHES A COUCH POSITIONED OFF THE WALL AND THEN PROCEEDS TO "PUNCH OUT" INTO THE CENTER OF THE ROOM. BY UTILIZING THIS TECHNIQUE, THE GIB EXTENDS HIS REACH BY APPROXIMATELY 10 TO 15 FEET, ENABLING HIM TO SEARCH THE MIDDLE OF THE ROOM EFFECTIVELY.

Step by Step – Basic Search:



BASIC SEARCH VIDEO AT THE TRAINING CENTER WITH ENGINE 11 [VIDEO BY ROBERT HERNANDEZ]

The direction (left or right) to begin a Basic Search should be chosen after performing a 360 and a Search & Rescue size-up. The OIC should try to answer these questions: Do I know where the fire is? Can I identify the bedrooms? Based on the answer to these two questions and the other clues from the size-up, the OIC should be able to aim the search from the ingress point toward the area of greatest probability for victims. That said, the following section is broken into the two major areas of most residential homes and apartments - bedrooms and living areas. The approach of splitting the home up into these two sections will allow for a systematic and oriented search.

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Living Areas

1. After forcing the door, the crew should complete a threshold search and look behind the door for victims.
2. If it hasn't already been completed, the attic space should be checked by pulling an inspection hole by the front door.
3. Assuming the OIC has completed the 360, they should then decide whether to go left or right from the entrance based on the information gathered from the exterior. They may want to search toward the bedrooms based on the time of day and other clues, or they may want to search toward the fire and then work back if they were able to identify the fire compartment on the size-up.
4. The OIC will lead the crew on a right-hand or left-hand pattern, stay oriented to the overall structure, announce structure landmarks and layouts, keep a systematic approach to the search and keep the crew together within voice distance. In small living areas, the OIC can treat it as a bedroom and anchor the door or hallway wall as the firefighters conduct their search.
5. As they turn a corner, the OIC will announce the turn (e.g., "turning left") allowing the crew a little time to catch up and reach the turn. The OIC should always hear the loop closing with both firefighters repeating, "turning left."
6. The Point (Firefighter #2) will follow the OIC, and the GIB will anchor the crew, only performing their responsibilities.
7. The GIB (Firefighter #3) is responsible for any furniture off the wall but can coordinate with the Point to assist them.
8. As each section of the living area is cleared, the crew should announce it and the firefighters should close the communication loop by repeating the callout.
9. Closets must be searched by the Point and while it is very important to locate secondary means of egress, it is equally important not to open doors and windows unless ordered to do so.
10. When passing a secondary egress point (side or back door), announce it to the crew, make a mental note, make sure the door is unlocked and can be opened easily, then close it and move on.

Bedrooms

1. The hallway is considered part of the bedroom area of the home. While in the hallway, the crew will continue to push forward and continually close the communication loop.

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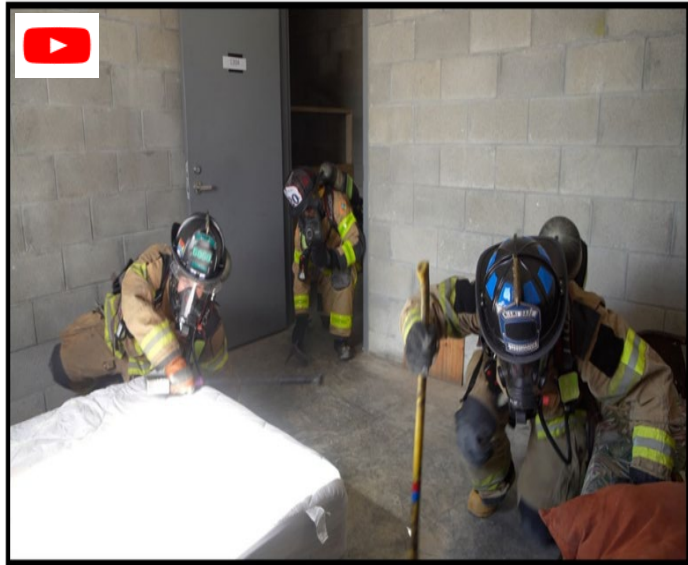


2. When the OIC finds a door, they will send a firefighter into the room to perform a threshold search. If it's a bathroom or closet, the firefighter will quickly search it on their own as the OIC anchors the door.
3. For bedrooms, the OIC will 'anchor' the egress door of the room and the firefighters will search the bedrooms as directed by the officer.

4. The OIC can split firefighters into multiple bedrooms to search them simultaneously, but the doorways must be next to one another, allowing the OIC to 'straddle' the rooms in the hallway and maintain voice communication with both firefighters.

5. If the doorways to the bedroom are not directly next to each other, the crew should stay together as it would be impossible to maintain voice contact otherwise. In this case they could alternate searchers from room to room or send in both firefighters.

6. If two firefighters are searching the same room, one will go left and the other right. When they meet somewhere in the middle, they will announce, "The room is clear" and return through the middle of the room as the OIC calls out for them with voice and tool.



VIDEO OF ENGINE 20 PERFORMING A ORIENTED SEARCH OF A BEDROOM WITH 2 SEARCHES AT THE TRAINING CENTER.



VIDEO OF A ROOM WITHIN A ROOM SEARCH PERFORMED AT THE TRAINING CENTER WITH THE TRAINING CAPTAINS.

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7. The size of most modern master bedrooms will necessitate that two firefighters, or even the entire crew, may need to search the bedroom together. As the firefighter stretches into the floor space of the room and does not encounter the bed, it indicates that the bed is more than 5-6 feet from the entrance, letting the searchers know that this is not the average sized bedroom. **It must be searched as a team.**
8. When a door is found within a room, the searcher will perform a threshold search and announce if it is a large room. Any room beyond a bathroom or closet is considered a large room. In this case, the searcher will ask for a move-up “I have a door, large room, move up” and wait for one crew member to move up before searching the room. This approach establishes a human chain to their egress as well as keeping them within voice distance.
9. When exiting a room, announce when you’re out and when the door is closed.

Key Points – Basic Search:

The Basic Search is slow and methodical. It relies on the best methods learned over decades of firefighting. Here are some of the most important things to remember:

- Crew members must always maintain voice contact. This is how you maintain constant accountability.
- All crew members must make verbal and mental notes of important structural layouts and call them out to the crew as they move. They must also announce when an area has been cleared, when a door has been closed, when entering or exiting a room, when moving to a new wall, and when a victim is found.
- The GIB can and must punch off a wall when they feel an open space. Generally, two large lunges into open space, feel around, and slide back.



(FIGURE 6) ENGINE 6 DRILLING. DEMONSTRATING HOW TO MODIFY THE BASIC SEARCH BY REPLACING THE GIBS PUNCH-OUT FOR A HUMAN CHAIN IN ORDER TO REACH THE MIDDLE OF THE ROOM. [PHOTO BY COREY LOGAN]

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- There should be at least two tools amongst the crew. Remember, these tools are not meant for sweeping and should not be used as search aids. They are meant mainly for self-rescue and/or egress if the need occurs.
- All open doors should be closed to slow the fire's progress and control the flow path.
- This search technique can be modified with webbing or other techniques. Just remember that all these techniques and modifications must be practiced over and over again. (Figure 6)

Dade County Search

Due to the overwhelming number of homes in Miami-Dade County that either have impact glass, security bars or both hardening the structure, there are times when the 'Dade County' Search will be necessary and the ideal choice. Simply put, the Dade County Search leaves the third firefighter as door control and outside vent, while the OIC and the second firefighter search the residence. The outside firefighter, referred to as the outside vent (OV), will monitor smoke conditions and can remove security bars if necessary. Additionally, the OV can perform coordinated horizontal ventilation if called for by the crew attacking the fire.



ENGINE 7 GOING IN ON A SEARCH AT A HOUSE ASSIGNMENT. MASK FLIPPY CAUGHT ON CAMERA.

While the IC at MDFR may use any on-scene unit to conduct a search of a structure, typically and traditionally, this role is often filled by the first arriving Rescue. The OV position on a Dade County Search is perfectly suited to the driver of the Rescue for two reasons. First, the driver is often the senior person on the rescue. Secondly, the driver is often the slowest to get dressed because they cannot don any gear while enroute to the fire. When a suppression is assigned Primary Search, the OIC should leave the most seasoned, experienced firefighter as the OV.

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During search and rescue, the OV should be called that over the radio. For example, “E-20 OV, I need you to remove the security bars on the Charlie bedroom.” “E-20 OV, copy. Removing security bars on the Charlie Side bedroom.”

When to choose the Dade County Search:

1. A first-arriving rescue or assigned suppression encounters a high or urgent rescue profile, and the home has security bars or impact glass. In this scenario, the Dade County Search becomes an ideal tactic. If a Rescue is tasked with the search, there may not be time to wait for the delayed firefighter getting dressed. They should be assigned OV.
2. Smaller occupancies that are hardened on the exterior by security bars or impact glass. These smaller occupancies can be easily and quickly searched by two people while the OV softens the structure and makes it safer for all units operating interior (Figure 7). Often it is too little too late by the time crews recognize a need to remove security bars.
3. A coordinated horizontal vent is necessary for an extremely hot or wind-driven fire. The OV can coordinate via radio through the IC that they are breaking glass in the fire room when the attack crew calls for it.



(FIGURE 7) SQURT 2 SOFTENING THE STRUCTURE BY FORCING SECURITY BARS

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Tool Package Considerations – Dade County Search:

- 2 Sets of Irons
- 6' Metal Hook
- Water Can (when required)
- Rope bag
- Extra Box Light
- Rotary Saw

The search crew performing a Dade County Search will need hand lights, a TIC, a rope bag, and a set of irons for light self-extrication and emergency egress. Ideally, the OV will need a New York Hook, a striking tool (or another set of Irons), a box light and should consider bringing the battery powered rotary saw with a diamond blade attached. With this tool package, the OV can perform bar removal and coordinated ventilation.

Crew Responsibilities – Dade County Search:

1. OIC

- a. The OIC must determine if this is a high or urgent risk profile and if the home has security bars or impact windows.
- b. The OIC must announce that they will be performing a “Dade County Search” and where they are entering from. This will signal the IC that the search will be leaving an OV exterior of the structure.
- c. The OIC must confirm the delayed firefighter received the message and is now the OV.
- d. The OIC must stay oriented in order to properly send the OV to the correct area if needed.
- e. All other responsibilities are the same as our other searches. See [TIC Directed](#) or [Basic Search](#).
- f. If a Basic Search is required, the OIC will take on the responsibilities of the Point.

2. GIB Firefighter (Firefighter #2)

- a. Either firefighter can go in as the GIB with the OIC on the search, but it is preferable to keep the junior or less experienced firefighter with the OIC. As mentioned, the delayed firefighter most likely will be assigned as the OV.
- b. Will perform all search functions as directed by OIC.
- c. All other responsibilities are the same as the Basic and TIC Directed Search.

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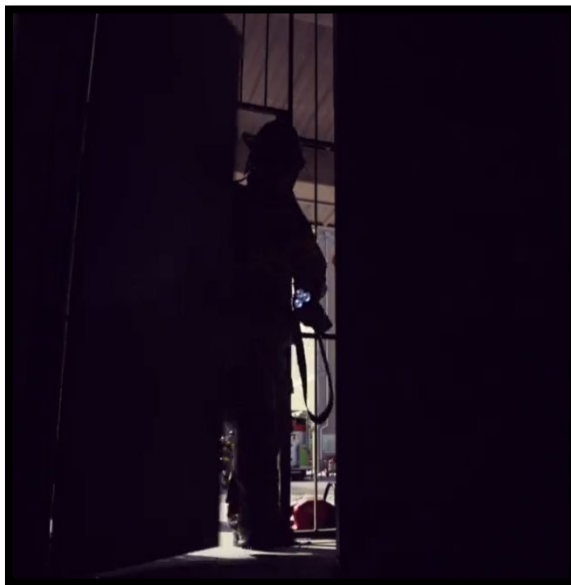


3. OV Firefighter (Firefighter #3)

- Must be disciplined and experienced enough to work independently outside the structure.
- Will be in full PPE and equipped with a set of irons, hook, box light and saw if required.
- In the absence of an assignment, must stay by the ingress point of the search crew.
- Must monitor smoke conditions and stay by the ingress point unless ordered to soften the structure or perform a coordinated horizontal ventilation with the Attack crew.
- Will not perform horizontal ventilation** unless requested by IC via the Attack crew.
- Will respond to all radio transmissions as 'OV'. For example, "R20 OV, to R20 OIC, I have removed all the security bars on the Charlie Side."



(FIGURE 8) FF CAMERO IS WORKING IN COORDINATION WITH THE ATTACK TEAM TO EFFECTIVELY VENT THE FIRE COMPARTMENT. AS WELL AS CLEARING OUT THE ENTIRE WINDOW, CREATING A SAFE SECONDARY MEANS OF EGRESS FOR THE INTERIOR FIREFIGHTERS.



(FIGURE 9) RESCUE 58 OV IS IN CHARGE OF DOOR CONTROL AND IS POSITIONING A BOX LIGHT JUST INSIDE THE DOORWAY, SERVING AS A GUIDING BEACON FOR THE INTERIOR CREW.

- Can soften the structure by removing security bars and hurricane panels without direction from Command as long as these actions do not change the flow path of the fire. (Figure 8)

Step by Step – Dade County Search:

- The OIC must announce that they will be performing a "Dade County Search" and then go in on a TIC or Basic Search with one of the firefighters. They must announce what door they entered from.

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2. The OIC will confirm that the 3rd firefighter received the message that they are now the OV.
3. When the OV (3rd firefighter) finishes dressing out, they will bring their tool package to the front door.
4. The 3rd firefighter will stay holding the door of their point of entry as the oriented firefighter and await any commands. They will place the box light by the door as an egress indicator for the searching crew and control the flow path by keeping the door closed (Figure 9).
5. The actual search will be performed as described above in the Basic or TIC Directed Search.
6. If required the 3rd firefighter will soften the structure as directed by the OIC, to assist in forcing glass or security bars.

Keys points – Dade County Search:



CAPTAIN BILL GUSTIN WORKING ON SOFTENING UP THE STRUCTURE AS HE CUTS BARS OFF A WINDOW

- The Dade County Search should be performed by a search crew when there is an urgent or high rescue profile and seconds matter. Dropping a firefighter to OV while they are still getting dressed may allow the search to start more quickly.
- The Dade County Search is ideal for smaller homes when there is a need to either soften the exterior and/or coordinate horizontal ventilation with the Attack crew.
- The Dade County Search is ideal for high or urgent rescue profiles when the attack line is delayed. The OV can control the door and the flow path of the fire while the hose crew stretches and gets in place.
- The Dade County Search may not be ideal for large residences where the efforts of all three crew members will be necessary to clear the larger structure.
- The 3rd firefighter must listen to the radio for the announcement of a Dade County Search and the entry point by the OIC. They will confirm that they received the message by responding as the “OV”.

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- The OV should bring a second set of Irons, a box light and rotary saw if required with them.
- Communication between the OIC of the Attack crew and outside vent is paramount to help force the proper window.
- The OV should be a senior firefighter who can work independently. But in no situation would the officer stay outside as the OV. Separating a crew should be done judiciously as it can create accountability issues. The Dade County Search should be trained and discussed prior to using it on the fire ground.
- The OV can assist in removing victims from windows and immediately begin resuscitation efforts.
- The IC **cannot** call for a 'Dade County Search' as they are not acquainted with the readiness of the crew and typically should not choose the unit's tactic. The OIC of the unit assigned to search and rescue **will be the only one** to announce a 'Dade County Search.' This ensures that the OIC feels comfortable with it and chooses the tactic that is the most appropriate for the situation. Example: "Command to R-20, I'm assigning you to search." "R-20, assigned to search. Be advised we will be conducting a 'Dade County Search.'"

Searching Off the Attack Line



ENGINE 7, FIRE ATTACK AT A 2 STORY TOWNHOUSE, REPORTS OF CHILDREN TRAPPED. ATTACK CREW SEARCHES OFF THE HOSE ON THE SECOND FLOOR IMMEDIATELY AFTER FIRE WAS CONFINED.

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There is no single action on the fire ground that saves more lives than a well-placed hose line. Rapid extinguishment of the fire makes everything better. Unless a high or urgent rescue profile is presented during size-up, fire attack should always be the first assignment for any suppression unit. Rapid extinguishment of the fire stops the greatest threat to both victims and firefighters. MDFR believes in this concept and that is why, unlike many other fire departments, we start our fire fights with a booster tank instead of waiting to secure a static water supply before beginning an attack.

Ideally, most fire fights in Miami-Dade start with a crew attacking the fire and a second crew performing an aggressive search for victims. The expectation is always that a static water supply is not far away. Occasionally, the suppression finds themselves alone fighting fire, with the next crew still minutes away. After the fire is darkened down, and while the crew waits for resources and help, they can start a search off the hose line. Moreover, in the case of small-sized apartment fires and limited resources, the hose crew can search the fire apartment by starting a search off the attack line.

When to Perform a Search off the Hose Line:

1. Generally, the Attack crew is responsible for searching the fire compartment. Additionally, in smaller apartments where the fire has been suppressed but no search has been assigned, or if there is a delay in initiating the search, the hose crew can conduct a Primary Search. When seconds matter, a hose crew that is sitting idle in a darkened down apartment waiting for a search to start does the victim no good.
2. When there is a delay to start the search, the Attack crew after confinement and darkening down the fire, can begin a Primary Search Off the hose line.

Tool Package Considerations – Search off the Hose Line

- TIC
- Set of Irons
- 6' Metal Hook
- Required attack hose

During a house fire assignment, the Attack crew will carry a TIC while advancing the hose, and a set of Irons and a hook may be left at the door.

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Crew Responsibilities – Search Off the Hose Line:

1. OIC

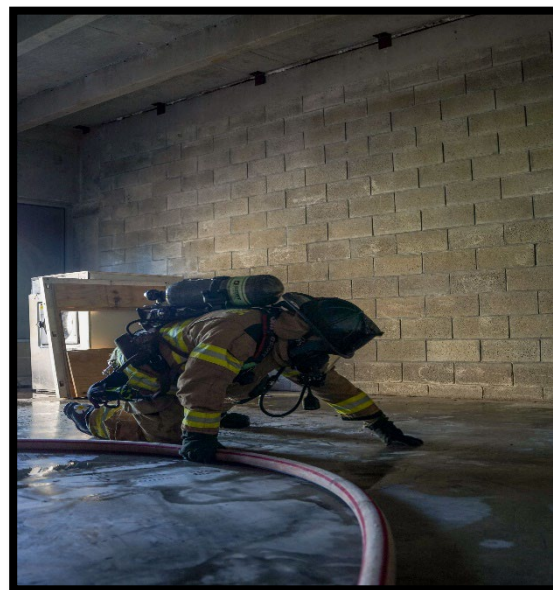
- a. Serves as the backup for the nozzle person and assumes all the responsibilities of an Attack crew's OIC.
- b. Must determine when the fire is confined and controlled enough to venture out away from the fire.
- c. Must determine where to leave the nozzle person in order to protect the crew during their search.
- d. Must determine in what order to search the residence (bedrooms or living area).
- e. Positions where they are able to stay in voice contact with both members of the crew, meaning that if the nozzle firefighter is anchored and protecting from flare-ups, the OIC will call the door firefighter up to coordinate a search of the immediate area.

2. Nozzle Firefighter

- a. Confines and controls the fire with proper use of water supply.
- b. Cools the area as needed.
- c. Positions the nozzle to protect the unburned area for searching.

3. Door Firefighter

- a. When called by the OIC, searches while moving up the line (Figure 10).
- b. Methodically searches any area ordered by the OIC.
- c. Keeps oriented to where the hose line is at all times.
- d. Keeps oriented to any egress found during the search.



(FIGURE 10) E58 SEARCHING OFF THE HOSE DURING A DRILL AT THE TRAINING CENTER. [PHOTO BY ROBERT HERNANDEZ]

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Step by Step – Searching off the hose line:

1. The Attack crew will position the nozzle in place to confine and start extinguishing the fire.
2. When the fire is deemed confined and extinguishment has started, the OIC will call the door firefighter up and the OIC will search around the immediate area with the TIC. Take advantage of the light the fire gives you while you have a chance.
3. While moving up on the hose line, the door firefighter will search but never lose contact with the hose line.
4. Once the immediate area around the fire is clear, the crew will systematically start searching the rest of the home from the fire back.
5. The OIC will communicate to IC that they are starting a Primary Search off the line.



ENGINE 2 DRILLING AT THE PORK AND BEANS



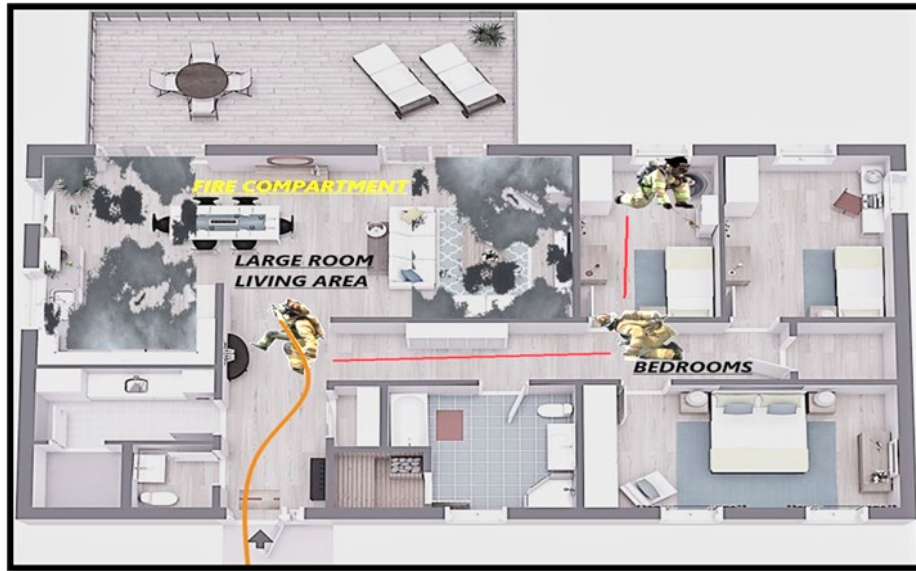
(FIGURE 11) AFTER THE INITIAL KNOCK DOWN IN A BACK BEDROOM, THE NOZZLE CAN BE PULLED BACK TO THE HALLWAY ENTRANCE TO SHIELD THE SEARCHING FIREFIGHTERS FROM ANY SUDDEN BURSTS OF FLAMES AND ENABLE CLEAR COMMUNICATION WITH THE OIC AS THEY SEARCH THE LIVING AREA.

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(FIGURE 12) ONCE THE FIRE HAS BEEN CONFINED OR EXTINGUISHED, THE NOZZLE OPERATOR TAKES A STRATEGIC POSITION ALLOWING THE CREW TO GET OFF THE HOSE AND SEARCH THE BEDROOMS. THE OIC MAINTAINS A CLEAR VIEW OF THE NOZZLE OPERATOR, EQUIPPED WITH A TIC, AND STAYS WITHIN VOICES DISTANCE OF THE ENTIRE CREW.

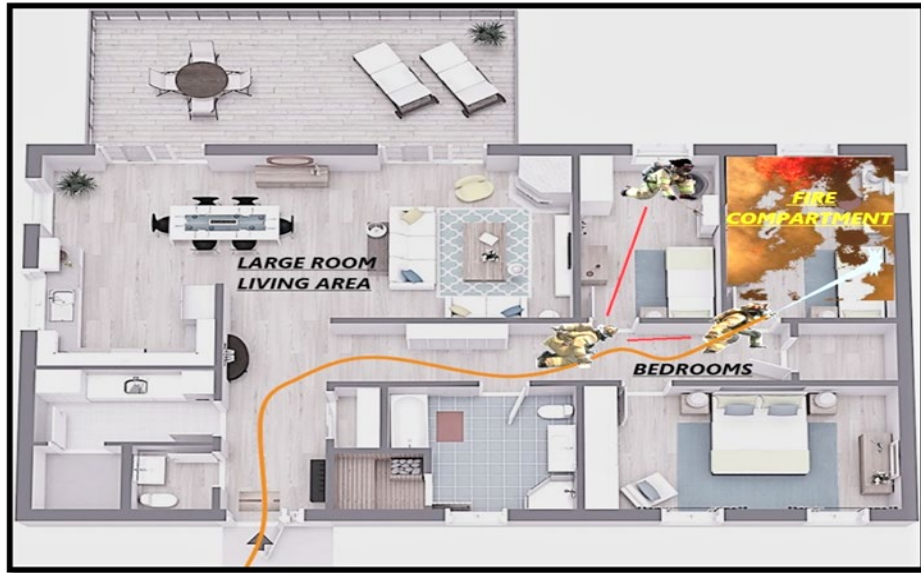
7. When searching the living area, place the nozzle in position to protect the area being searched. The OIC can move down the line with the door firefighter and perform a TIC search off the line, keeping within voice distance between both firefighters (Figure 11).
8. When searching the bedrooms, place the nozzle in position to protect the unburned bedrooms starting with bedrooms between the fire and the main door. If the fire is in the living area, the OIC should position themselves in the hallway by the bedroom door, while the nozzle is at the entrance of the hallway and the door firefighter is searching the bedrooms (Figure 12, 13, 14).
9. When a two-story house is attacked by fire a search off the hose line becomes very dangerous, particularly if the fire started on the first floor. In this case, a backup line is needed to protect the first floor and stairwell while the primary attack line moves upstairs. In many cases, it will be impossible to maintain voice communication with your crew and protect them from a flare-up of fire either below or above the crew. In this situation, it is not advisable or safe to search away from the hose line.

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(FIGURE 13) WHEN THE FIRE IS LOCATED IN THE BEDROOMS AND HAS BEEN CONFINED, THE OIC WILL MOVE THE DOOR FIREFIGHTER UP THE LINE AND ANCHOR THE DOOR WHILE THE FIREFIGHTER SEARCHES THE BEDROOMS. THE NOZZLE SHOULD BE POSITIONED STRATEGICALLY TO SAFEGUARD THE HALLWAY. ONCE THE BEDROOMS HAVE BEEN THOROUGHLY SEARCHED, THE OIC AND THE DOOR FIREFIGHTER CAN RETREAT TO THE LIVING AREA AND CONTINUE SEARCHING THAT SECTION. THE OIC WILL REMAIN ANCHORED AT THE ENTRANCE TO THE HALLWAY, MAINTAINING VISUAL CONTACT AND VERBAL COMMUNICATION WITH BOTH FIREFIGHTERS.



(FIGURE 14) IF THE FIRE IS LOCATED IN ONE OF THE INITIAL BEDROOMS, THE NOZZLE FIREFIGHTER WILL DARKEN DOWN THE FIRE AND ANCHOR IN THE DOORWAY OF THE FIRE COMPARTMENT. THE OIC AND THE DOOR FIREFIGHTER WILL SEARCH THE REMAINING BEDROOMS. IT IS IMPORTANT TO NOTE THAT THIS APPROACH PLACES THE FIRE IN BETWEEN THE SEARCHES AND THEIR EGRESS. THEREFORE, THE OIC SHOULD IDENTIFY ALTERNATIVE ESCAPE ROUTES IN CASE UNFORESEEN CIRCUMSTANCES ARISE. IT IS CRUCIAL TO IMPLEMENT THIS STRATEGY ONLY AFTER SIGNIFICANT PROGRESS HAS BEEN MADE IN EXTINGUISHING THE FIRE.

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10. If, at any time, a Search crew arrives and starts a Primary Search report what section of the home you have clear. It's best to split the home into two sections: the bedrooms and the living area. In most cases this method of communication works.
11. The Search crew should double over the Attack crew's searched area after finishing what wasn't already done. They will duplicate the efforts of the Attack crew, before announcing that the Primary Search is complete. This tactic ensures a thorough Primary Search.
12. Remember, a search is not complete until the garage is clear. Consider the garage and any rooms off the living area as part of the living area.

Keys Points – Search Off the Hose Line:

- If the decision by the OIC is to place the first hose line into service, then the primary responsibility is to attack and extinguish the fire. A Primary Search should not commence until the fire is confined and extinguishment has started.
- The Attack crew should always be alert for victims as they advance the hose line.
- If there are plenty of resources on scene to start a Primary Search, then the Attack crew should concentrate on the fire and search the fire compartment only.



CREWS SEARCHING OFF THE HOSE LINE AFTER THE INITIAL KNOCK DOWN OF THE FIRE

- When there is a delay in starting a search, whether through lack of resources on scene or other factors, the Attack crew should consider a search off the attack line as soon as the bulk of the fire is knocked down.
- The OIC must remain within voice distance of their crew at all times. Maintaining voice distance might require safely repositioning the hose line and the nozzle person to protect the unburned area and the searchers.

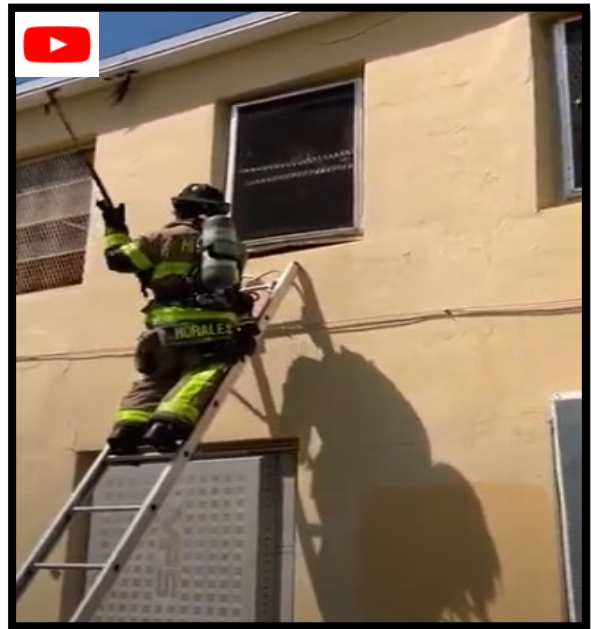
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- It is important to communicate your progress and tactics to the IC. For example, “E-6 to Command, be advised we’ve darkened the fire in the bedroom and are searching the adjacent rooms.”
- Communicate with the later-arriving search crew the areas that have already been cleared.
- The later arriving search crew should start their search where the Attack crew left off and then duplicate the efforts of the Attack crew before advising that Primary Search is complete.
- IC should assign the Primary Search to a crew other than the fire attack crew before calling an all clear, even if the attack crew called Primary Search completed.
- When seconds count, searching off the attack line may save a life where a delay in searching could be detrimental to possible victims.

Vent, Enter, Isolate, Search (VEIS)

VEIS is a tactic that allows firefighters to search survivable spaces while a residence is actively being attacked by fire. VEIS is a “risk a lot to save a lot” scenario and is utilized in high or urgent rescue profiles. VEIS provides searchers quick access to a viable bedroom where victims can be located, isolated from the fire and removed from a window or balcony. Choosing VEIS can reduce the time between arrival and contact with that victim who may be cut off from an exit path by the fire. It is the clear choice when a normal search is blocked or hindered by heavy fire. VEIS is also a good choice when hoarder conditions in the living areas of the house or apartment are encountered.



ENGINE 6 AT THE PORK AND BEANS PRACTICING VEIS TECHNIQUES. [VIDEO BY ROBERT HERNANDEZ]

When to Perform VEIS:

1. VEIS is primarily used when the main means of ingress is blocked by fire or debris (hoarder house).

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2. In a high rescue profile to a bedroom with a possible lengthy interior path to that bedroom. Large homes and multi-story homes are ideal for this tactic, but VEIS can be performed in any home.
3. In an urgent rescue profile, when the searchers have firsthand knowledge of the victim's location, VEIS can provide the fastest and safest route to the victim for immediate rescue.
4. VEIS can only be performed in a room that can be isolated from the fires flow path by closing a door. Meaning, you cannot VEIS a living area of the house or apartment because most likely you will not be able to isolate from the fires flow path.



HOUSE FIRE IN BATTALION 3'S TERRITORY. HEAVY FLAMES IMPEDING THE NORMAL PATH OF EGRESS. FIREFIGHTERS ASSESS POTENTIAL NEED FOR A VEIS.

Tool Package Considerations – VEIS:

- Set of Irons
- 6' Metal Hook
- Rope Bag
- Rotary Saw (when required)
- Ladder (when required)

The searcher should ascend the ladder with a Hook and a Halligan. These tools are good for breaking glass safely and clearing windows. The Hook is also good for checking the floor for stability and for victims prior to entering. A striking tool and a rotary saw (if available) are great additions at the foot of the ladder. Consider bringing a ladder (VEIS ladder, Little Giant) even for a ground floor assignment due to the height of some of our first-floor windows.

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Crew Responsibilities – VEIS:

1. OIC

- a. After the size-up and a rescue profile is chosen, the OIC must quickly decide whether to target a bedroom from the exterior (VEIS) or access it via a standard search through the interior.
- b. If, based on the information, the OIC chooses to VEIS the structure, he or she must notify Command. “R-36 to Command, be advised we will be performing a VEIS on the Charlie bedroom.” Command needs to know this immediately



(FIGURE 15) OIC ORIENTED AT THE WINDOW WITH THE TIC

because they will have to assign another crew to complete the Primary Search. The call for VEIS from either command or the search crew may necessitate the dispatch of additional units to support the fire fight.

c. The OIC is considered the oriented firefighter as they would stay at the vented window with the TIC, guiding the firefighter searching inside (Figure 15). The only time the OIC should enter the room would be to assist with victim removal if required.

d. Should be on air at the window so he or she can enter quickly if needed.

e. Monitors conditions at the window and ensures the searching firefighter isolates the room by closing the door.

2. Point

- a. Dons gear first. Doesn't throw ladders or take part in anything that might slow their ascent into the window or up the ladder.
- b. Once the Point is masked up, they will ascend the ladder if necessary, vent the window, remove the sash, clear all the glass and remove any drapery that might be blocking the window.
- c. After the window is clear, the Point enters the room, completes a threshold search of the doorway, isolates the room, and searches the entire room.
- d. As soon as the search of the room is complete, the Point will exit the window they entered.

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3. GIB

- a. At a ground level VEIS, the GIB will safely vent and clear the window while the crew is donning their masks.
- b. Dons mask and waits to assist in the rescue if required.
- c. At a ground level VEIS, the GIB plugs in, enters through the window, and assists with the victim removal if necessary.
- d. Responsible for throwing the ladder if necessary. Ideally, this should be a single-person throw, but the OIC should assist if that's not possible.
- e. While footing the ladder, dons mask, but does not plug-in.
- f. If required, starts the rotary saw and passes it up to the OIC, who will then pass up to the Point.
- g. Will be ready to ascend the ladder if the OIC goes in through the window to assist in the rescue. If necessary, the GIB in this situation must make sure the ladder is secured, either by another crew or other means.
- h. Plugs in, ascends the ladder, and receives the victim in the window if necessary.

Step by Step – VEIS:

1. Once the decision is made to target a bedroom, the crew will bring a set of Irons, a 6' metal hook, a rotary saw (only if required), and a ladder (only if required).
2. At a single-story home, the GIB will vent the window while the Point and the OIC don their masks. As soon as the window is ready, the firefighter on air will prepare to enter. (Figure 16)
3. If working from a ground ladder is necessary, the GIB will throw the ladder and place the hook on one of the upper rungs and Halligan at a lower rung while the Point and the OIC don their masks. As soon as the ladder is ready, the Point will climb up with the Halligan, begin venting, and prepare to enter. The GIB will foot the ladder and don their mask while focusing on the window looking for any change in conditions. (Figure 17)
4. Once the window is ready, the Point will quickly sweep inside the room with the hook, looking for victims below the window.
5. Once the area below the window has been cleared of victims, the Point will quickly sound the floor with the hook to check its integrity. (Figure 18)



(FIGURE 16) RESCUE 202 DRILLING AT THE PORK AND BEANS

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MIAMI-DADE FIRE RESCUE

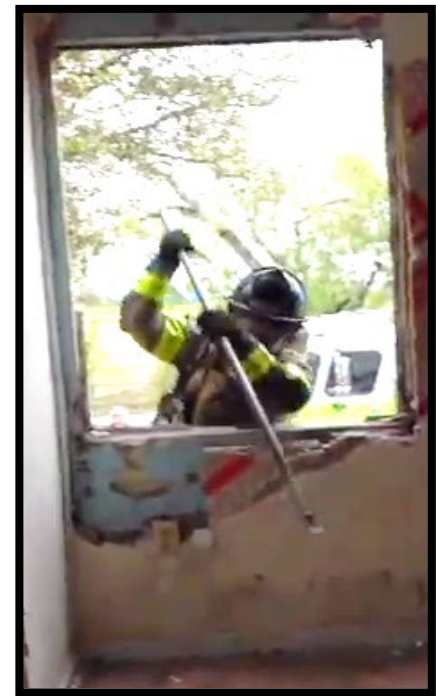
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6. The Point will hook the metal hook onto a corner of the window sill. This will give the firefighter a point of reference to the egress when they're performing a wall oriented search of the room. The hook protruding from the window also allows outside crews to easily determine when someone is working inside that room.
7. Enter the room by diving head first, hook the corner of the window with one arm and softly bring in one foot at a time. Use the metal hook or wall to support your upper body. This maneuver will quickly get you into the room but is gentle enough to feel any floor issues. Keeping your arm in the window sill will help you stay oriented to the window in case you need to quickly bail out. (Figure 19)
8. The OIC will move up to the window with a TIC and a flashlight to guide and assist the firefighter in their search.
9. The Point will quickly move to the door and sweep the hallway for victims, performing a threshold search. The Point should quickly check conditions and fire location from the door. Never venture past the immediate area of the door unless a victim is located. Return into the room and close the door.
10. After ensuring the door is closed, the searcher can begin an aggressive search of the room.
11. Making sure the room is isolated is the number one priority, even if a victim is found prior to reaching the door.
12. If a victim is found, immediately announce it to the OIC and confirm they received the message. The OIC will radio Command and request assistance.
13. During a first-floor rescue, the OIC will send the GIB to assist with the victim removal.



(FIGURE 17) ENGINE 2 DRILLING AT THE TRAINING CENTER



(FIGURE 18) ENGINE 40 VEIS TRAINING AT AN ACQUIRED STRUCTURE BEHIND STATION 17

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SEARCH & RESCUE MANUAL



(FIGURE 19) RESCUE 58 DRILLING AT THE TRAINING CENTER
[PHOTO BY ROBERT HERNANDEZ]

14. When working off a ladder, the OIC will enter and assist with the victim removal.

15. The OIC and Point will determine the appropriate drag(s) and lift to get the victim up to the windowsill.

16. Once the victim is on the windowsill, the firefighter outside will take over the commands for lifting and removal through the window.

17. If the room hasn't been completely searched after the victim is outside, the crew must complete the search. See video below of a VEIS evolution.



DOWN AND DIRTY VIDEO OF ENGINE 30 PERFORMING A FULL VEIS EVOLUTION AT AN ACQUIRED STRUCTURE

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Keys Points – VEIS:

- VEIS is a tactic where firefighters can search savable spaces in residences that are being actively attacked by fire or are blocked by hoarder conditions that cannot be safely passed.
- Fire conditions can quickly change once the window has been vented, so it is imperative that everyone monitors the smoke and heat, even when donning their mask.
- You can determine if the door to the room is open by noting a significant increase in smoke velocity after venting the window. Immediately closing the bedroom door will buy the searcher time to clear the room.
- Always send in a second person to assist with victim removal, as very few firefighters can remove an adult through a window by themselves.
- If an adult victim is located, the OIC should call for help early and quickly, as removal through a window is a labor-intensive process that often requires many firefighters to complete.
- The ability to throw a 24-ft ladder by yourself will aid in making a VEIS evolution go smoothly and quickly.
- The quicker the searcher enters the room after venting the window, the quicker they can isolate the space and 'safe' the room for a search.
- Venting the window with a ladder is not recommended because it would delay getting into the room to close the door and isolate the space from the fire.
- Once inside the room, venting a second window will help clear the room of smoke. This must be done after the room has been isolated and it should not delay the search.

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