



Searching Techniques



Introduction

The following section gives a brief 'how to' with accompanying videos of many of the techniques that have been discussed in the manual. It is a starting point for training and hopefully a reference when there is discussion about best practices.

1. [Threshold Search](#)
2. [Slide vs Crawling](#)
3. [Punch Out](#)
4. [Anchoring Doors](#)
5. [Searching Furniture](#)
6. [Entering and Exiting Windows](#)
7. [Managing the Search Rope](#)
8. [3-Level TIC Scan](#)
9. [Can Slide](#)

[Top](#)

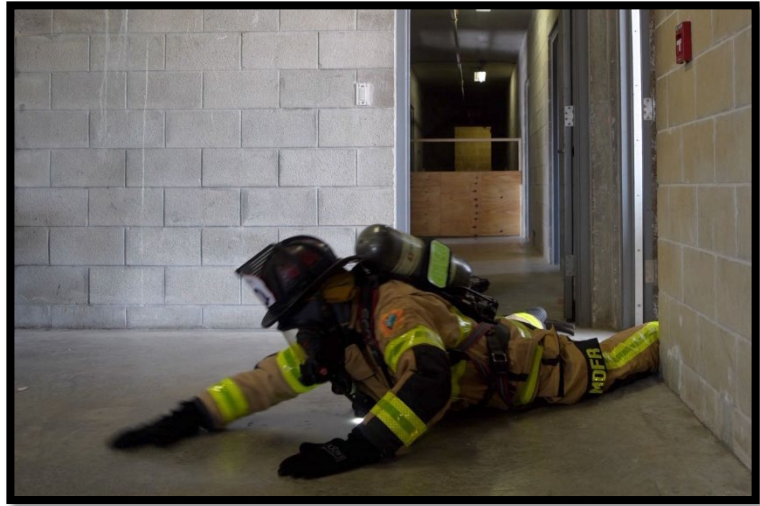


Threshold Search

Quite simply, a Threshold Search is conducted at each threshold or doorway the search team enters. This becomes even more important of residential occupancies as a large number of victims are often found near egress points.

How:

1. Slowly open the door while shielding yourself behind the wall, checking for conditions.
2. Enter and shine the flashlight under the smoke; try to see the layout of the room and check for victims.
3. Announce yourself, "This is the fire department, is there anyone here?" Stop and listen for a couple of seconds.
4. If visibility is less than 5ft, check for victims by hooking the door with your foot and sweeping as far as you can reach wall to wall. (Figure 1)
5. With a well-functioning TIC, you can avoid the Threshold Search, but it must be done properly. Know the limitations of the TIC and perform a good 3-level scan wall to wall and from your feet out.
6. Check behind the door.



(FIGURE 1) THE THRESHOLD SEARCH ALLOWS FOR A THOROUGH SEARCH OF THE IMMEDIATE AREA OF EGRESS, A COMMON AREA WHERE VICTIMS ARE FOUND.

Sliding vs. Crawling

MDFR Training is a proponent of sliding vs. crawling. Here are a few of the reasons. When crawling, the first part of your body to encounter an object will be your head. Lifting your head to look under the smoke or anything above you is also difficult and made nearly impossible by the tank on your back. Additionally, if you are crawling toward a fall hazard your body will be weighted forward, making it harder to stop a fall. Sliding to search solves these issues. The searcher has a leg leading the way. They are 'weight back' and less likely to tumble or fall forward.

[Top](#)



The searcher is also in a natural position to look up and around and to project their voice better. Additionally, it's a considerably faster technique.



IN THIS INSTRUCTIONAL VIDEO SHOWCASES THE SLIDE TECHNIQUE.
[VIDEO BY ROBERT HERNANDEZ]

How:

1. The leading leg is kept upright and will warn the searcher for objects and fall hazards in their path.
2. The searcher's back leg is bent under their torso, resting the bulk of their weight on their back foot with their torso leaning back. Their upper body weight behind their hips. The back hand is used like a tripod to hold the weight behind the hips.
3. As the searcher slides across the room, they will thrust their hips, propelling them forward.
4. When on a rug or rough surface, picking up your back knee as you slide forward will help.
5. As the Point during a Basic Search, the FF should keep a hand on the wall, swiping up and down the wall while they slide forward. The FF must lead with the foot that is closest to the wall, allowing them to keep their body close to wall in order to reach high windows.
6. As the GIB during a Basic Search, the FF will keep a foot on the wall while sliding forward and reach as far as possible into the middle of room with one hand. The FF must keep their foot slightly in front of their body in order to feel any obstacles ahead of them.

Things to Consider:

- Sliding gives the searcher confidence to move much faster.
- When sliding, it is the searcher's foot, not their head that will encounter everything first, which will make it safer to travel in zero visibility.
- It is easier to see under the smoke and at the ceiling level.
- It is easier to turn to your head and see behind you without having to stop, which will help to project your voice.
- Sliding does take more effort and requires better physical fitness, but the safety it provides is worth the extra effort!
- Sliding with a hand on the wall doesn't allow for much reach into the middle of the room.

[Top](#)



- Sliding while walking the wall makes it difficult to feel doors and windows.
- It requires a single searcher to go back and forth from reaching out to the middle with a hand then back to feeling the wall for doors and windows while searching a room on their own.

Punch Out

In the Basic Search, the primary task of the GIB is to thoroughly search the middle of the room as well as any furniture that is not against the wall. To ensure effective coverage of a large room, firefighters may need to periodically “Punch Out” into the center of the room. To grasp the significance of a “Punch Out” in this coordinated team search, refer to the “[Basic Search](#)” for a clear understanding when and why to perform this technique.

How:

1. Without ever turning their body around, the firefighter will transition from sliding forward on the wall, to sliding towards the center of the room, ‘punching out’.
2. To effectively cover all the space, a recommended guideline is to perform two slides forward on the wall followed by a two-slide punch out.
3. During the two-slide punch out toward the middle of the room, the firefighter will continuously sweep their arms in front of them, searching for victims. They will repeat this arm sweep when they reach the end of the punch out.
4. The firefighter will return to the wall without ever turning their body around.
5. The firefighter will communicate with their crew, indicating when they are “punching out” and when they are “back on the wall”.



THIS VIDEO DEMONSTRATES FIREFIGHTERS PERFORMING A PUNCH OUT MANEUVER. THE TECHNIQUE ENABLES THEM TO EXTEND THEIR REACH, EFFECTIVELY COVERING APPROXIMATELY 10 TO 14 FEET INTO AN OPEN AREA. [VIDEO BY ROBERT HERNANDEZ]

[Top](#)



Things to consider:

- As the GIB walks the wall their reach is approximately 5 to 7 feet, which can cover a 14-foot by 14-foot room as they search around the room. By incorporating a "Punch Out," the search range is extended by an additional 5 to 7 feet, effectively covering the middle of a room measuring approximately 28 feet by 28 feet.
- The searcher must communicate when they are on and off the wall.
- You can easily lose orientation if you turn your body around at any point.

Anchoring Doors

We have decided to include 'anchoring doors' in this section because it is an integral part of a residential search. When a search team moves into an area with doors (e.g., a hallway with bedrooms), it becomes imperative that someone on the team control the door. This person (usually the OIC) will stay by the door to guide the team verbally around the room and to the egress, but they are also responsible for controlling the flow path into the room and may close the door while the search of the room is being performed.



(FIGURE 2) UNITS DRILLING AT THE TRAINING CENTER. THE OIC ANCHORS THE DOOR OUT IN THE HALLWAY AS THE FIREFIGHTER SEARCHES THE ROOM. THE OIC MAINTAINS CONTROL OF THE DOOR, ASSISTS THE SEARCH WITH THE TIC, AND CONSTANTLY MONITORS THE FIREFIGHTERS' ACTIVITIES.

How:

1. When the searcher enters the room, the oriented person will, depending on conditions, decide if they will close the door to that room while it is being searched. (Figure 2)
2. If conditions dictate and the decision to close the door is made, the oriented person should control the door with a tool or hand, making sure it does not latch closed while the searcher is in the room.

Things to Consider:

- Anchoring the door is integral to a disciplined and motivated search crew.
- It keeps the crew always oriented to egress

[Top](#)



- It allows someone to control the flow while searching.
- It allows the 'door control' to maintain a watch on conditions in the hallway.

Searching Furniture (The TIC is Not Enough)

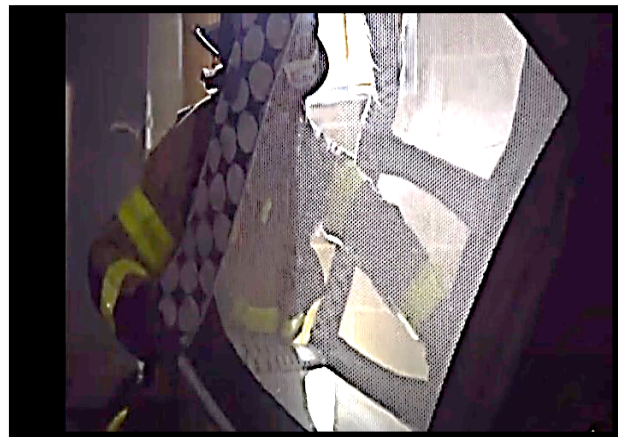
A methodical search of all furniture is required to complete a thorough search. A TIC cannot see what's under the blankets or shielded by pillows. It is necessary to search all beds, covers, blankets and furniture containing cushions. When searching through furniture it is important to envision any place a child or animal could potentially hide. This includes a crawl space under a bed or between furniture that can accommodate victims. Unlikely places like dresses drawers, inside a refrigerator etc., should not slow you down and can be left for the secondary search.

How:

1. Searchers should use sweeping motions with their arms, looking for irregularities in the surface. No tapping or padding.
2. The tops of dressers should be searched for cribs and/or baby carriers. All cribs should be slowly and carefully searched by drawing your hands over every inch of the crib. If required due to the depth of a crib, tilt the crib toward you to reach the bottom for a proper search. (Figure 3)
3. When searching under furniture, rescuers should always sweep with their hands and not with a tool or leg. Additionally, it is not advised to move furniture on a Primary Search. It slows the search and can cause confusion on egress routes because the layout of the room has been changed.
4. Cabinet doors should also be checked as well as closets and bathrooms.



THIS VIDEO DEMONSTRATES THE PROPER FURNITURE SEARCH AT THE TRAINING CENTER. [VIDEO BY ROBERT HERNANDEZ]



(FIGURE 3) WHEN SEARCHING FURNITURE, IT IS ESSENTIAL TO SWIPE ACROSS THE TOP TO ENSURE THAT YOU DON'T OVERLOOK A BABY CRIB. IF YOU CANNOT ACCESS THE BOTTOM OF A CRIB, YOU WILL NEED TO TILT IT TOWARDS YOU FOR BETTER SEARCH IT.

[Top](#)



Entering & Exiting Through a Window



(FIGURE 4) RESCUE 58 DRILLING AT THE TRAINING CENTER.
[PHOTO BY ROBERT HERNANDEZ]

During a VEIS evolution, the action of entering and exiting through a window must be quick and maximize practiced safe actions. Depending on where the fire is in its growth cycle, entering a window for a VEIS evolution can be one of the most dangerous evolutions on the fireground (Figure 4). The moment the window is taken there is a possibility of creating a flow path that will draw the fire to that room. It is imperative to move quickly to cut off the flow path by closing the bedroom door.

How:

1. Due to the bulky profile of turnout gear MDFR recommends entering head-first in most cases.
2. Having a hook to sweep the floor for victims and sound the floor for stability is a must.
3. Control your descent by wrapping your arm over the window sill and guiding your head to the side of the window. This should allow enough room to swing your legs over the sill.
4. Entering in this fashion allows for the firefighter's feet to touch the floor first which is preferred and safer.
5. Exiting the window can be done in the same fashion and requires the same cautious approach.
6. In very narrow windows, an alternative approach is to crawl in head-first and slow your descent by spreading your legs and exerting outward pressure against the window frame as you enter the room.
7. Entering and exiting a window takes practice. Don't let the fireground be the first time you try this technique.

[Top](#)

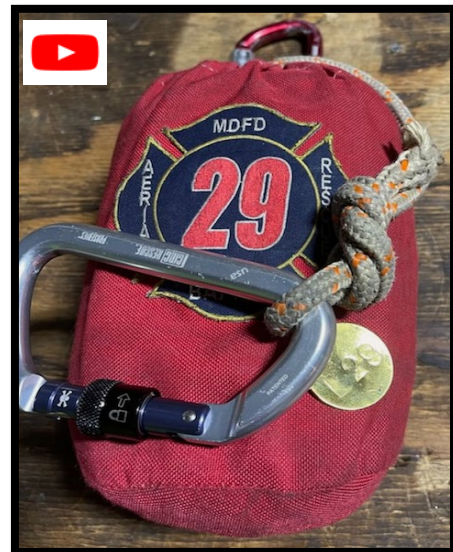


Managing the Search Rope

Managing the search rope is an important function that requires practice. In zero visibility conditions it is possible to allow the rope to go slack, lose the bag, and even dump the contents of the bag if not effectively managed. Here are a few tips to make sure that rope is deployed in a safe, effective way.

How:

1. Make sure the bag is cinched tight enough to keep from dumping its contents.
2. At all times, keep the rope bag controlled in one hand even if it is clipped to your gear. Your hand should always feel the rope as it exits the bag.
3. It is ideal to move in straight lines as much as possible. Let the OIC and the GIB search any small and off-angle areas off rope while you anchor in place. This is a great time to use your personal TIC if you have one and catch your breath.
4. At each stop, the Point should turn into the crew, pull the rope taut and off the ground.
5. At each turn or change of direction, the rope should be anchored if possible.
6. At every additional egress point the rope should be anchored if possible as close to the egress point as you can manage.
7. When adding an additional rope bag, the new rope bag should be connected directly to the search rope or directly to the second carabiner at the bottom of the first bag. Attaching anywhere to the bag is unacceptable as the search crew would be relying on the stitching of the bag to hold fast.



THIS ROPE MANAGEMENT VIDEO DEMONSTRATES TECHNIQUES AND MANEUVERS OF PROFICIENT SEARCH ROPE MANAGEMENT. [VIDEO BY MARIA CHIN]

3-Level TIC Scan

Performing a 3-level TIC scan should occur at the entrance of any new compartment space or at intervals when searching large commercial open areas. The purpose of the 3-level scan is to gather information such as:

[Top](#)



MIAMI-DADE FIRE RESCUE

SEARCH & RESCUE MANUAL



IN THIS VIDEO RESCUE 17 PERFORMS A TIC DIRECTED SEARCH SHOWCASING TIC OPERATIONS DURING A SEARCH AND RESCUE SCENARIO, FEATURING A COMPREHENSIVE 3-LEVEL SCAN. [VIDEO BY ROBERT HERNANDEZ]

- Roof level temperature readings
- Roof construction type
- Floor plan
- Room layout
- Origin of fire and heat signatures
- Clearing large open areas that would normally be searched blindly
- Locating door and windows
- Locating victims

How:

1. A 3-level TIC scan always starts at the ceiling level and sweeps slowly and smoothly from wall to wall. Slow and smooth is key because there is a lag on the TIC, and the searcher must allow time for the processor to translate the image. When the scan is too fast the picture will be jittery or jump frames.
2. The upper-level scan will gather information of roof construction and temperatures as well as providing a good mental picture on the size of the space and the floor plan.
3. The second scan will move down to eye level, scanning from wall to wall gathering information on furniture and layout as well as looking for possible victims that may be on top of furniture or bunk beds.
4. The second scan will also identify doors and windows—possible egress points for you and your crew.
5. The third scan is at floor level looking for victims and fall hazards.
6. It is important to develop discipline with the TIC. It should not be used while moving through the room. It should be used only in a stationary position where you scan, choose your next target to crawl to, and then scan again when you get there. By using the TIC in this fashion, you will avoid tunnel vision and allow your other senses to absorb the environment.
7. The TIC is a tool and has become an integral part of our search efforts. The TIC if properly used, provides safety and efficiency to your search effort. If it's not used properly, it can give a false sense of security and be detrimental to your safety.

[Top](#)



Can Slide

When used correctly, a Water Can is effective in suppressing or cooling down a small room and contents fire. It can provide temporary relief and create a favorable environment when combined with confinement, giving you additional time to conduct a thorough search. It's important to note that carrying a water can is not intended to replace the use of a hose line, but rather serves as a backup option when a hose line is unavailable.

The Water Can is a heavy, cumbersome tool, that requires proper carrying techniques while sliding along the floor. Sliding with the Can enables quick movement, freeing up your hands for searching, positioning the Can between your legs to prevent snagging, ensuring easy access for swift utilization, and facilitating a simple release if necessary to leave it behind.

How:



ENGINE 11 SHOWCASES A "CAN SLIDE" IN THIS VIDEO.

1. Pre-adjust the length of the MDFR issued strap to your liking. It is recommended to fully extend the strap to accommodate firefighters of all sizes.
2. Detach the strap from the bottom ring and attach it to the top ring, forming a loop.
3. Position your leading leg (the upright one) inside the loop and bring the strap up to your upper thigh as you kneel on the ground.
4. Carry the Can between your legs with the top slightly raised from the ground to minimize the risk of snagging as you slide towards your intended destination.
5. To operate the can, simply reach between your legs and pull on the strap, bringing the can to an upright position in front of you.
6. If you need to leave the can behind for any reason, smoothly remove the strap from your leg as you stand up or move away.

[Top](#)