



Tools & Tool Packages



RESCUE 37 PREPARED WITH A BASIC SEARCH & RESCUE TOOL PACKAGE (SET OF IRONS, METAL HOOK, ROPE BAG AND TIC)

Introduction

While the choice of tools needed for Search & Rescue is subjective and personal, the goals they should accomplish and the purpose for their use are not up for debate. Modern Search & Rescue techniques largely accept the need for speed and efficiency. Opting for an overly ambitious tool package will slow the search down. On the other hand, a search crew should always have the minimum tools necessary for light self-rescue.

It is also important to understand that a tool is not used to directly extend the reach of the searcher. Meaning, extending an axe or Halligan ahead of you will not help you find a victim. A Halligan will not be able to differentiate between a pile of laundry and an unconscious person's leg, only the hand of the searcher will be able to do that.

What follows are definitions of tools and how they are used during a search, as well as recommended tool packages for certain searches.

[Top](#)



MIAMI-DADE FIRE RESCUE

SEARCH & RESCUE MANUAL



1. [The Irons](#)
2. [Rope Bag](#)
3. [Pike Pole / Hook](#)
4. [Webbing](#)
5. [Hand Lights](#)
6. [Water Can](#)
7. [RIC Bag](#)
8. [Tool Packages](#)

The Irons

The Irons consist of a flat-head axe or sledgehammer and a Halligan Pro Bar. The purpose of this toolset for Search & Rescue is mainly for self-rescue and forcible entry/exit, but they can also be used to extend the reach of the searcher by resting the tool against the wall and extending your body out across the floor with your foot anchored to the tool.

It is extremely cumbersome for one searcher to efficiently search with a “married” set of Irons. In this scenario, the recommendation is to split the pair and each searcher carries one of the tools and maintains a free hand to feel for victims. Another option is for the OIC to carry the “married” tools during the search if they are planning on being the anchor. This will require the OIC to maintain the TIC and the Irons. This is a challenging proposition, but it may allow the searchers to move even more rapidly through each compartment.

A final option is for the OIC to carry one tool and one firefighter to carry the other. This leaves the third firefighter with two free hands. Whatever you and your crew choose, it is important that the Irons are with the search crew and can be put to work if needed.

You can strategically place tools at bedroom doors and windows or against furniture as markers for your starting/ending point and to facilitate a rapid search. However, be cautious not to forget to retrieve them, once you have completed the search of the particular area.

Rope Bag

MDFR equips every position with a rope bag. The bag consists of 100' of kernmantle rope tied to a carabiner on the working end. Often there is an overhand knot either tied to a loop in the bag or protruding through a hole on the other side of the bag. The purpose of this is to keep the rope from pulling out of the bag without the searcher realizing it. If the rope bag is being used as a tag line, it should *not* be clipped to the gear of the firefighter, it should be held in hand and the rope should play through the fingers and be controlled. Multiple drills have shown that if the removal of the rope from the bag is not closely monitored in zero visibility conditions, the bag will either dump its contents, or the search crew won't be able to maintain proper tension on the tag line.

[Top](#)



MIAMI-DADE FIRE RESCUE

SEARCH & RESCUE MANUAL



Safety suggestion: Some of the crews around the county have placed a unit identifier next to the carabiner. The identifier allows people outside the structure to know who the bag belongs to when tied off and immediately render assistance down the line if needed.

TIC

There is no tool other than the SCBA that has changed the fire service so dramatically. The TIC has allowed us to see where there is no visibility. The TIC has created a margin of safety we have never known before and allowed us to search faster and more effectively than ever before.

Even after all of that, the TIC is not perfect. It malfunctions. It gets confused by different thermal planes. It is not the answer to all of our problems and the TIC if relied upon solely to guide a crew into and safely out of a structure, can get a crew lost or allow an overly confident crew to push farther than they should.

MDFR currently uses the [FLIR K65](#) which is smaller and more robust than the previous MSA TIC we used. It is fully NFPA compliant and has multiple modes to help the searcher. The field of view is 51 degrees laterally, and the battery can last over an hour on the fire scene. Finally, it can record photos and videos.

Most users will power the unit on before starting their search and leave it in Basic Mode. Basic Mode is multipurpose and can be used for initial fire attack and lifesaving operations. The other mode that the authors of this document recommend is Search & Rescue mode which is identified as a stick figure (the third option on the TIC). This mode increases the contrast and may make it easier to spot a victim that has only a slight temperature difference from their surroundings.

If you would like to see the PowerPoint created by the Training Division which covers the highlights of the K65, you can click [here](#).

Pike Pole / Hook

The Pike Pole or Hook is often used for overhaul or light prying. Its value for Search & Rescue is very limited as it is cumbersome to carry in low visibility situations. However, a Hook can be valuable in a VEIS scenario. It's the preferred tool to force windows because of its reach. It can be used before entering a window to sweep for victims, sound the floor for integrity, and left as a marker at the window so the searcher knows when they've completed their search. Additionally, a hook showing from a window is a marker to anyone on the exterior that the room is occupied by a searcher.

The Hook is ideal as a leading tool during advancement in a large area search, this tactic gives the Point confidence to move quicker as the Hook will warn the Point of any fall hazards or objects ahead.

[Top](#)



Webbing

Every firefighter should carry a length of webbing that is a minimum of 10' tied off in a loop. Webbing can be used to fan out during a search with one searcher as the anchor, but mostly it is used to capture a victim and aid in their removal. An unconscious victim is not only limp and extremely difficult to manage but often they are sooty and or burned. The sooty skin is extremely slippery and makes what is already one of the most difficult jobs even more so.

Hand Light

Firefighters should always have a light on them when entering an IDLH environment. A light can not only be used to cut through smoke and increase visibility, but it can be used as a beacon for other firefighters, and it is very effective in identifying searchers wearing reflective gear. It is the opinion of the authors that the right-angle light is appropriate for firefighters and keeps their hands free and that a lantern style light with a removable shoulder strap may work well for OICs. Modern LED lights are very powerful and should not be under estimated in terms of their usefulness.

Water Can

The 2 ½ gallon water extinguisher is an extremely valuable tool in the hands of a competent firefighter and has been used to hold back and confine fires while waiting for the suppression. The decision to take the Water Can should be based on the situation. What you lose is in mobility and speed, you gain in safety. Furthermore, the Water Can should be outfitted with a strap that can free up the hands during a search.

RIC Bag

The RIC Bag is located on all battalion vehicles as well as SQ-69. The bag includes a 60-minute bottle, multiple attachment points to connect to another firefighter and some light tools and webbing. Generally speaking, the RIC bag will not be a part of your tool package unless you are assigned to a RIC team with the purpose of saving one of our own. For that reason, this document will not go further into RIC bags.

[Top](#)



Tool Packages

Throughout this text, the reader will find suggested tool packages for various evolutions. These packages always contain the TIC and hand light. Additionally, any crew that is going to be interior should always have a set of Irons for self-rescue. These suggestions have been made after hundreds of hours of practice. The purpose is to balance speed and mobility with safety. Ultimately, it is the searcher and crew who must make the final decision on what to carry for the search. As previously stated, in most scenarios the tools are only there for self-rescue as the bulk of Search & Rescue is performed without the need for hand tools.



R17 ARE ENGAGED IN DRILLING ACTIVITIES AT THE TRAINING CENTER, FIRST DUE ON AN APARTMENT FIRE. THEIR TOOL PACKAGE INCLUDES A SET OF IRONS, A METAL HOOK, ROPE BAGS, A WATER CAN, AND A TIC. IN ADDITION TO THESE TOOLS, EACH FIREFIGHTER IS EQUIPPED WITH THEIR ASSIGNED SEEK DEVICE, AS WELL AS PERSONAL LIGHTS AND WEBBING.

[Top](#)