



ANN ARBOR FIRE DEPARTMENT

Standard Operation Procedure - 3.09 Search



SEARCH

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Approved: Fire Chief Mike Kennedy

I. PURPOSE

Establish procedures on residential fires to prioritize life by locating and occupying all searchable areas within a structure. It shall be understood that the assignment of search is a fireground priority and includes both searching for fire victims and the fire itself.

II. DEFINITIONS

All Clear - A benchmark made by the IC, when a primary and secondary search has been completed on the entire structure.

Fire attack - (engine company search) - While advancing the initial attack line and if it does not delay in hose line advancement, the fire attack team will search the immediate area of hose line travel as well as the fire room or area of origin. This is not an additional tactical objective, but the expectation of the fire attack team. This is accomplished by the heel position or company officer periodically performing a “belly search” (the area a person can search while laying on their stomach and sweeping around them as far as the arms can reach). This should be done given any opportunity or pause in line movement. Once in the room of origin or fire area, the nozzle firefighter will focus on complete extinguishment while the heel firefighter or company officer obtains a primary search of the immediate area around them. The application of this technique by fire attack increases the opportunity to locate life within their operating area as well as paths of travel victims may take while trying to exit the structure.

Search - An orderly and systematic examination of a building or area for the purpose of locating persons or locating fire and extension of fire.

Primary Search - Immediate and rapid yet thorough and systematic search through all affected areas, to locate victims or verify the removal and/or safety of possible occupants.

Searchable Space - Any space within a structure that we can occupy with our training, experience and PPE.

Secondary Search - A secondary search is a thorough and complete search for life. It includes all areas that required a primary search. This includes the outside perimeters of the structure, and any other potential spaces not hit by a primary search. The secondary search is assigned after the initial fire suppression has occurred and ventilation is completed. The visibility in the structure must be adequate to ensure that all possible locations of life can be accessed and searched.

Targeted Search - Starting a search at a place within the structure that has the highest potential for civilians, which are typically bedrooms, egress and with six (6) feet of an exterior door.



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Window Entry Search (VES or VEIS) - Technique used to start a primary search. It allows a crew to start a search from a beneficial entry point, given the information obtained by a search size up.

III. EQUIPMENT

- Halligan or other useful hand tool. Search with your hands, tools are used for taking windows or doors and other needed tasks, if you choose to probe with a tool during a search, you must investigate further with your hands!
- Flashlight (chest light or box light at minimum)
- Thermal Imager
- Radio
- Water can, if searching ahead of a hose line
- At least one form of victim removal ability, e.g., webbing, rescue strap.

IV. RESPONSE

Search size up begins upon receipt of the alarm. Further information will be gathered by all responding units from dispatch. This includes statements from the reporting party, where the fire started, reports of victims etc. Responding units will also use the CAD system for updated information, location of other responding units, occupancy type and any other pertinent information.

V. REPORTS OF VICTIMS

Positive reports of victims will be quickly investigated to help prioritize the search area within a structure. The unit receiving this report will immediately announce they are in “rescue mode” and will gain access to the structure to perform search and disregard two-in / two-out.

On-scene reports will be repeated if the report is “positive.” Positive reports are suggestive of civilians inside. Examples include: “My baby is inside” or “They are home.” Anyone receiving such a report should try to get any information that can aid in the search. Do not take too much time with them, get necessary information, and proceed inside to search. Such information should be passed on to someone else who has more time to question them further. Questions include:

- How many people?
- Where might they be?
- Age?

First party information reporting everyone is out of the structure will be communicated via radio. However, the occupancy type and circumstances will determine the need for continued primary and secondary searches. Stating this over the radio is a piece of the decision-making process for and by the IC, not the entirety. The structure is not “all clear” until the fire department has completed a primary and secondary search.

Example 1: 1,500 ft², single family residence with a couple in their 40’s with no children indicating that everyone is out. There is a low probability of anyone else being found in the structure. In this situation, the IC will need to balance this report with fire conditions and ongoing risk to members.



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Example 2: 10,000 ft² off-campus housing in the downtown area. There is no accountability in these occupancies and thorough primary and secondary searches will be necessary despite any occupant information.

Cars in the driveway or a lack of vehicles will not guide search priority. Occupants may bike, bus, park in the garage or take other types of transportation, making this “clue” not relevant. With work from home, occupants may be found at any time. It is assumed that every structure is occupied until a primary and secondary search reveals otherwise.

VI. ASSIGNING SEARCH

Search will be a priority assignment on any fire as aggressive search tactics combined with fire attack and ventilation is what supports our primary incident objective of life safety. Please reference SOP 3.23 Working Fire Assignments.

Any company may be assigned search, as it is not apparatus specific. Whichever company is assigned search needs to communicate any changes, findings or additional needs to command.

In situations where the fire has not been located, the IC may assign the search team to the objective of helping locate fire, in this situation updates to command will be made using a LCAN report. However, it is the general intention to assign separate resources to fire attack and search respectfully when possible. This intention does not eliminate the responsibility of every member to keep the objective of life safety in the forefront while conducting other tasks and reporting or immediately addressing any life safety component found.

Secondary searches will be completed by a separate crew that was not assigned to a primary search. Secondary searches will be assigned after fire conditions and visibility allow for a thorough search of the entire structure. Only after the completion of a secondary search will a structure be deemed “All Clear”.

VII. ASSIGNMENT OF SEARCH

The priority is to locate both life and fire. The crew will perform a search size up and decide the priority areas to start the search. Search will not always be performed by entering through the front door as the best way to search for victims is from the best entry point to them.

Search crews shall attempt to locate the fire first then target rooms or areas based on conditions and high occupancy potential, such as bedrooms. Consideration shall be given to the size of the structure as multiple search teams may be needed and search can be performed simultaneously by each team. Please reference SOP 3.03 Situation Evaluation for size-up factors.



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The search team will decide how and where to enter the structure after their initial size up. Conditions and experience will dictate the crew's entry point and search technique. When searching ahead of a hose line, it is important for the search team to locate the fire, communicate its location with fire attack, isolate and extinguish using a water can if possible. Searching for the fire allows the search team to gain situational awareness and potentially mitigate the incident. Searching with a water can shall be something every crew performing search is proficient in.

Search teams must ventilate for life but be mindful not to change the ventilation profile of the structure. When a search crew enters a room, they will isolate the space before starting the search (providing the room is isolatable), upon finding a window in that space, ventilation should take place by opening or taking out the window. So long as the space is isolated, it does not have an impact of flow path and allows for improved conditions and visibility as well as higher survival odds for potential victims.

Upon exiting the room, the search crew should close the door and move to the next location to search. Doing so creates an area of refuge for firefighters and victims as well as improved conditions which allow secondary searches to be completed more efficiently.

VIII. COMMUNICATION AND ACCOUNTABILITY

The search team will communicate their entry point to the incident commander. It is the responsibility of the search team to communicate with the IC the areas that a primary has been completed once the crew has exited the structure. When a search team splits inside a structure, they must keep accountability by voice or vision. When a company splits to search, they are expected to work independently of each other to maximize the efficiency of their search.

IX. WHEN AN OCCUPANT IS LOCATED

When an occupant (victim) is located, the searcher who found the victim will state "VICTIM, VICTIM, VICTIM" to let others around know a victim has been located and that they will likely need help with the removal process. Do not delay the rescue by waiting for radio time. If able, the positive presence of a victim shall be radioed by a crew member other than the one who's dealing with the victim. Upon hearing of a victim location, the IC shall immediately assign another crew to assist with removal.

When multiple searches are happening at the same time, searchers are expected to finish the search of their area prior to assisting another searcher with removal. This is to avoid the high potential to miss other victims who may be in the same area. During this time, the searcher who has a victim will package them for removal and start working on the removal process until others are able to come and assist. Victim's airways will be kept as low as possible for as long as possible during the removal to increase survival odds of the victim.

When deciding to take a victim out a window or back through the structure, consider time to make the rescue and the conditions.



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“Remove the occupant as fast as practical and with the head at the lowest functional elevation. Removal of an occupant lower in the space (1 ft above the floor) was shown to result in a lower accumulated exposure compared to higher elevations (3 ft above the floor) even if the higher elevation egress occurred at a rate that was 3 times as fast.” UL FSRI, Analysis of Search and Rescue Tactics in Single-Story Single-Family Homes

If assistance is needed via ladder, a window conversion, a hose line or additional personnel, then request it from the IC. Keep radio traffic to a minimum.

After handing off the victim, if searchers have enough air to continue the search, they shall do so whenever possible. It is easier to hand off a victim than to try and communicate what has or has not been searched. Unless no one else is on-scene, the search crew should not perform a patient assessment; that should be the job of another crews or EMS.