

MARIPOSA COUNTY FIRE DEPARTMENT TRAINING CENTER

March In-Station Training is not mandatory. If you choose to utilize this training it would be best done in a multi-station format. The lesson plan discusses issues that should be considered in a search and rescue situation. Take an hour or so and go through the lesson plan with your firefighters, then have your firefighters go through a search and rescue drill.

1. In setting up for your drill remove your engine and other equipment from your apparatus bay. Lay out a maze utilizing items like tables put on their side, chairs, desks, or whatever you might find around your station to lay out a simple, not complex maze. Do not let your firefighters see the maze.
2. Have something to simulate a victim that the firefighters are going to search for. Let them see and touch the "victim" so that they will know what they are looking for in their search.
3. Have the firefighters in full PPE including SCBA, and black out the mask with paper. They should not be able to see in this drill. This is a touch and feel drill while attempting to maintain orientation.
4. In pairs of two have the firefighters enter the apparatus bay entering either right or left (their choice) and continue in a systematic method. Breathing air should be on if you have enough backup to maintain your minimum needs for emergency response. As proctor you should remain silent and let the rescue team work on their own. At a given time into the drill ask each crew member to identify a direction such as which way is the street or? This will help them focus in the future on maintaining their orientation.
5. Once the firefighters found their victim the drill is over.

The drill should be simple and not intended to trick the firefighters. It should give the firefighters the knowledge of how easy it is to become disorientated in a dark environment where they have no visibility.

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MARIPOSA COUNTY FIRE
FIREGROUND SEARCH AND RESCUE

TOPIC: SEARCH AND RESCUE

TIME FRAME: 3:00 hours

LEVEL of INSTRUCTION: Level 2

AUTHORITY: MPA

BEHAVIORAL OBJECTIVE:

Condition: Verbal information followed by hands on training

Behavioral: Given information from the discussion, describe and recognize the aspects of search and rescue and its uses in an emergency situation.

Standard: With a minimum 80% accuracy and completion of all hands on material.

MATERIALS NEEDED:

Instructional

- Writing board with markers/erasers

Hands-on

- Full structure turnouts
- SCBA with attached mask
- Rope and webbing
- Pike pole and structural fire hose

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REFERENCES:

- **NFPA 1670 SPECIAL REQUIRMENTS**
- **NFPA 1001, 1500, AND 29 CFR 1910.134 firefighter must conduct search and rescue in a structure**
- **NFPA 1982 standard on personal alert safety systems (pass)**

PREPARATION:

Having the proper tools and equipment in good working order and knowing were it is and how to use it. Knowing the regulations and skills needed for search and rescue.

I. BASICS OF FIREGROUND SEARCH AND RESCUE

**What are the needed resources to conduct an effective and safe search and rescue?
What are the two types of fireground search and rescue?**

1. To be successful in fireground search and rescue, fire/rescue units need the following resources:

- Sufficient manpower
- Proper equipment
- Information about the situation
- A logical rescue plan coordinated with correct suppression operations
- Training, courage, discipline, and determination to carry out the rescue plan.

2. There are two types of fireground search and rescue:

- Rapid intervention used to locate and rescue firefighters in distress inside a burning building.
- The conventional primary and secondary searches used to locate and remove building occupants.

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II. BUILDING SEARCH AND RESCUE.

What is the initial need of doing a building size-up for use in search and rescue? What is the observations to be made during initial size up?

- 1. While size-up is one of the responsibilities of the first arriving officer all members of the rescue crew should look at the entire building and its surroundings.**
- 2. The initial exterior size-up helps the crew inside maintain their orientation within the building. Firefighters should identify their alternate escape routes i.e.**
 - Windows**
 - Doors**
 - Fire escapes**
- 3. Some of the observations that should be made from the outside include:**
 - Age of the building**
 - Building construction**
 - Building contents**
 - Size of fire and its location**
 - Whether the building is occupied**
 - Entry and egress points and obstructions**
 - Structural integrity**
 - Amount of time and persons it will take to search the structure**
- 4. Obtaining information from anyone outside of the building as to if anyone is inside the building as well as fire location and intensity is advisable.**

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III. BUILDING SEARCH (CONVENTIONAL SEARCH)

**What are the two main objectives to a conventional building search?
What is the use of a secondary search after the fire is out?**

- 1. The two main objectives of a conventional building search are:**
 - **Finding victims**
 - **Obtaining information on the extent of the fire**

- 2. In most structure fires, the search for life requires that two types of search be done a primary search done before or during the fire activity, and a secondary done after the fire is under control and the hazards are neutralized.**

- 3. A primary search is usually done under extremely adverse conditions:**
 - **During a primary search always use the buddy system.**
 - **By working together ensures a quick search and maintaining their own safety.**
 - **The search should be done as quickly and as safely as conditions allow.**
 - **A search team is a valuable asset in keeping informed on the fire conditions.**

- 3. Teams assigned to primary search should always carry with them hand tools to avoid wasted time returning to the engine. But tools should also be carried to reduce the risk of firefighter entrapment.**

- 4. At all times at least one member of the rescue crew should carry a radio and constantly report back their position and situation.**

- 5. Depending on conditions rescuers may walk or crawl to conduct a search, while walking is the fastest way to conduct a search due to smoke or heat may be an unsafe choice.**

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- 6. When searching in a room rescuers should search systematically room to room. In addition firefighters should stop often and listen to see if they can hear a victim.**
- 7. On the fire floor rescuers should start their search as close to the fire as possible and move away to search for the victim that will be overtaken by the fires extension while the rest of the search was in progress.**
- 8. Rescuers should make sure that they search in many different areas that children or disoriented victims may hide including:**
 - Bathrooms**
 - Bathtubs**
 - Shower stalls**
 - Closets**
 - Under beds**
- 9. Rescuers should always start their search on the outside of the room following the walls and in small rooms may use hand tools to extend off the walls to search the middle of the room. In a large empty room a rope may be extended from wall to wall to sweep the middle. In a large room with shelves or aisles a firefighter should maintain contact with the wall while another firefighter ties a tag line and searches down the aisles.**
- 10. During the primary search visibility may be extremely limited. Rescuers may have to identify objects by touch and this may provide the only clue to what type of room you are in. Low visibility should immediately be reported to the I.C. to provide for immediate ventilation.**
- 11. During the primary search negative information is as important as positive information. Should fire conditions become too intense or structural integrity deteriorate to unsafe levels inform the I.C. and reevaluate the situation for the continued search.**

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- 12. The secondary search is used after the fire is under control and hazardous conditions have been minimized. While it should not be the crew that performed the primary search or the RIC team it should be done soon after. It should be as thorough and systematic as the primary search while keeping in contact with the I.C. to inform on unsafe hazards and rekindle spots in the fire.**

IV. SEARCH SAFETY

What are some of the typical search and rescue tools used during an operation? What are some of the hazards that will be encountered during a search and rescue operation?

- 1. While searching for victims in a burning building rescuers must always consider their own safety. Fireground commanders also must consider the hazards to which the search team will be exposed. A risk/ benefit analysis should be conducted and a conscious decision should be made whether to take a charged hoseline in with them.**
- 2. Some of the most common search tools are:**
 - Rope (tag line)**
 - Marking devices e.g. (webbing, tape, glow lights)**
 - Portable radios**
 - Forcible entry tools (to aid in entry and egress and enlarge sweep area)**
- 3. Critical judgments can be made easier during a search operation if the personnel involved are familiar with the age, construction, and the contents of the building.**

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- 5. As personnel search a burning building when visibility is limited due to smoke and darkness, they must always be alert for weakened and hazardous structural conditions especially floors. Firefighters should continuously sound the floor with tools or hands to ensure the floor is still intact and to search for unseen holes and stairways.**
- 6. Using marking devices on the doors of searched rooms lets other rescuers know that the room had been searched and is empty and not waste time rechecking an area for victims.**
- 7. Should a rescuers get disoriented a quick trick is to find a hoseline and find the nearest coupling the firefighter can check as the female coupling will lead to the nozzle and the male coupling will lead to the water source.**
- 8. Rescuers especially should always check the door using the back of the hand as to avoid burning the palm in a burning building. If excessive heat is found a charged hoseline should be brought up before any attempt is made to gain entry into the room.**

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V. SEARCH METHODS

What are the typical search methods used in a building? What are the advantages in using a search door marking system?

- 1. When rooms or apartments extend from a central hallway both sides of the hallway must be searched. If manpower permits two teams should be used to search both sides of the hallway.**
- 2. Upon entering the structure the search team turns right or left and follows the wall to the first doorway. Upon entering the room they must follow the wall all the way back to the starting doorway they entered from. As they exit the room they turn the same way as they entered the room.**
- 3. When using a two- person search team one rescuer may stay at the door while the other progresses around the room. The rescuer at the door should keep in constant contact with the rescuer in the room and relay their positions as to avoid disorientation.**
- 4. When the search is complete the rescuers should exit and close the door behind them and if possible mark the door before continuing to avoid any other searchers to enter to avoid a duplication of effort.**

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VI. VICTIM REMOVAL

What are some of the situations that may occur that you need to remove the victim before assessing? What are some of the common drags used in victim removal?

- 1. Once a victim is found he or she must be moved out of the hazardous area or sheltered in place.**
- 2. The victim should not be moved before treatment is provided unless there is an immediate threat to the lives of the victims or rescuers e.g.:**
 - There is fire or an imminent threat of fire spread to the area.**
 - Explosives or other hazardous materials are involved.**
 - It is impossible to protect the rescue scene.**
 - It is impossible to gain access to other victims who need immediate lifesaving care.**
 - The victim is in cardiac arrest and must be moved to a different area.**
- 3. The chief danger of moving an injured victim quickly is the possibility of spinal injury. However in extreme emergencies the threat of spinal injury is secondary to the preservation of life.**
- 4. If it is necessary to move a victim they should always be pulled in the direction of the long axis of the body never sideways. Jack knifing a victim should always be avoided.**
- 5. One rescuer can be used to drag a small child but two to four rescuers may be need to safely and quickly drag a large adult.**
- 6. Regardless of how many rescuers you have avoid an techniques that is slow and causes the rescuers to run out of breathing air and put themselves at risk or force them to abandon the patient.**

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7. Some of the most common drags are:

- **Incline drag**
- **Blanket drag**
- **Litter drag**
- **Strap drag**

VII. SUMMARY

- 1. There are two types of search conducted on the fireground: rapid intervention used to locate and rescue firefighters in distress and conventional search and rescue operations used to locate and remove civilian occupants of a burning building.**
- 2. Statistically, most firefighter fatalities in structure fires result from smoke inhalation after their SCBA runs out. Therefore, rapid intervention crews must try to locate distressed firefighters as quickly as possible and maintain the firefighters air supply during extrication from the hazardous environment.**
- 3. In conventional search and rescue operations, the need for speed is no less important. The faster that firefighters can locate building occupants and remove them from the hostile environment, the greater the chances of the victims surviving.**
- 4. To perform these operations successfully, firefighters may have to use a variety of search and rescue methods. Once the victim has been located, a variety of removal techniques may have to be employed. To perform all of the required search and rescue procedures safely and efficiently, firefighters must learn all of these techniques and practice them regularly to maintain their skills.**