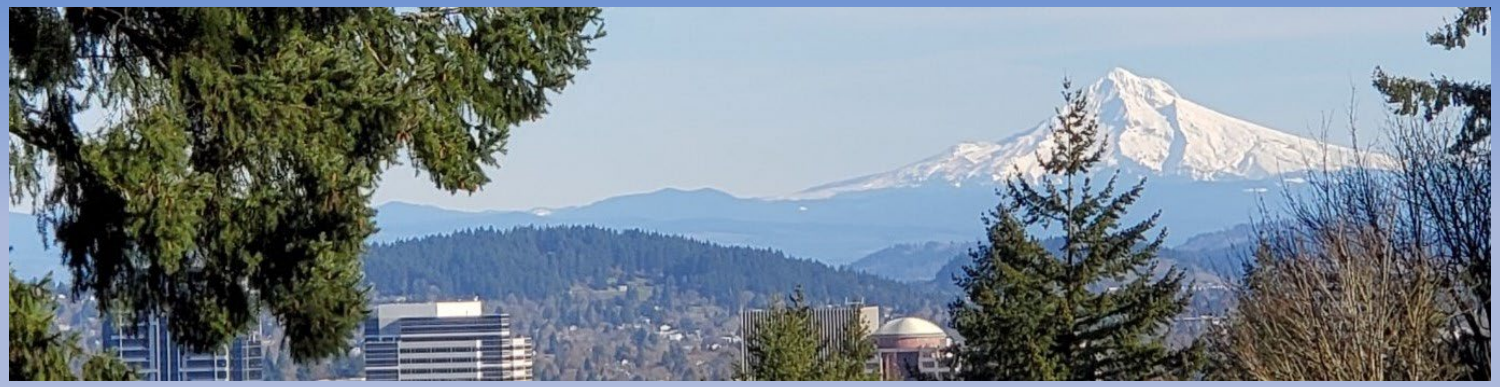
Portland NET Basic Training

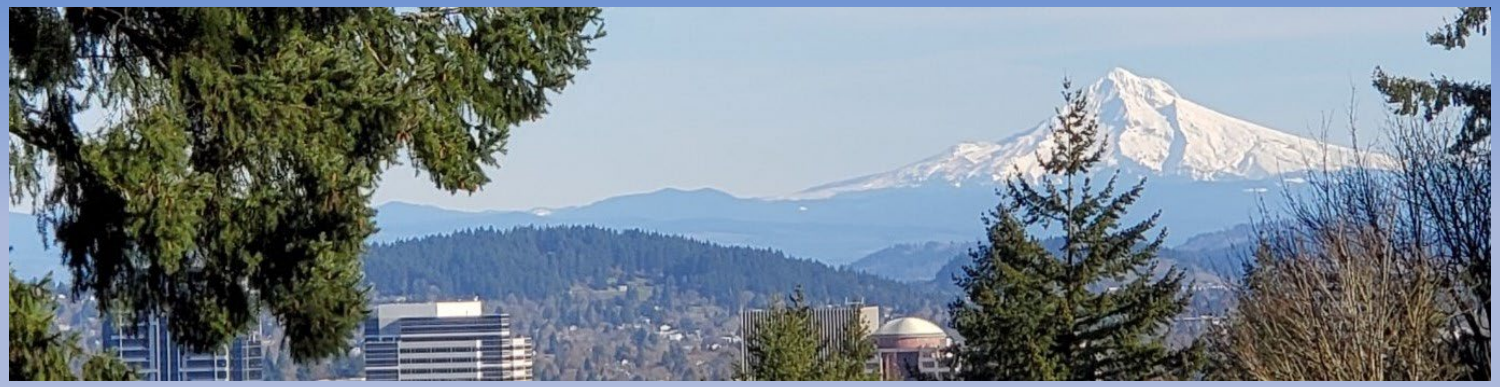
*Neighborhood Emergency Team



Unit 7: Light Search & Rescue Operations

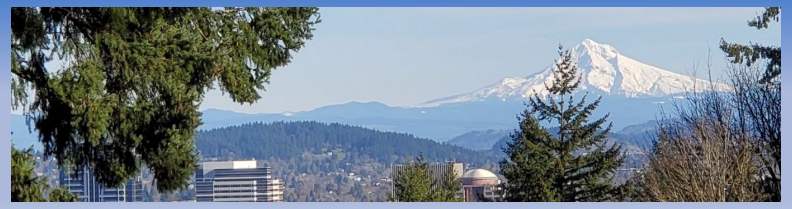
Incorporating FEMA CERT 2019 course material, with expanded content due to our regional challenges.

Unit 7: Light Search & Rescue Operations



Part 1: Size-up & Search Methodology

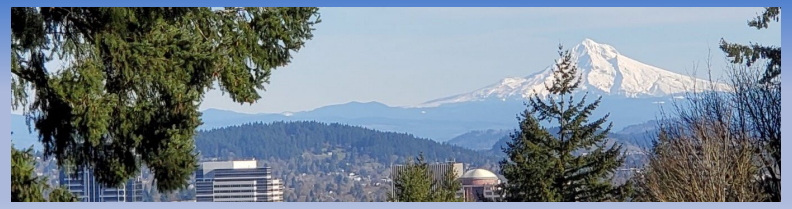
Unit 7 Objectives



- Identify and apply size-up requirements for potential search and rescue situations
- Demonstrate common techniques for light search and rescue
- Demonstrate safe techniques for survivor extraction

PM 7-1

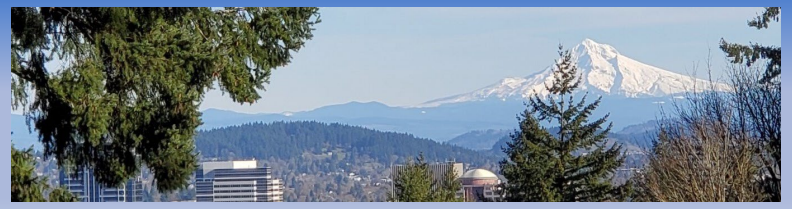
Unit 7 Topics



- Search and Rescue Size-up
- Conducting Interior and Exterior Search Operations
- Conducting Rescue Operations

PM 7-1

Search and Rescue…

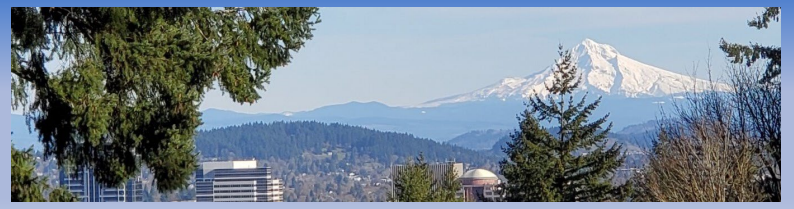


Consists of three separate operations:

- Size-up: Using 9-step, continual model
- Search: Locating survivors and documenting
- Rescue: Extricating survivors

PM 7-1

Deciding to Attempt Rescue

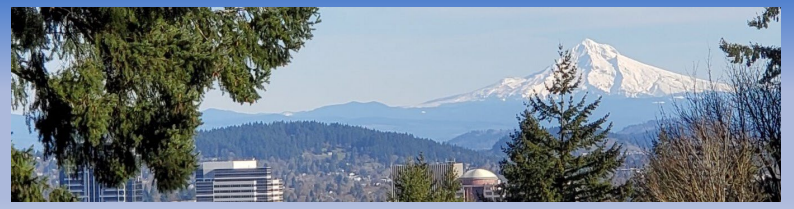


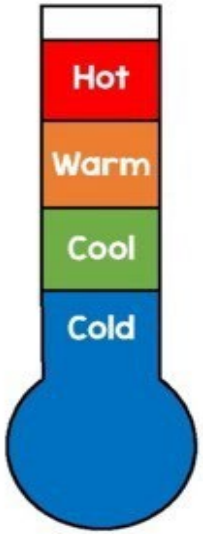
Decision is based on three factors:

- Risks involved for the rescuer and survivor
- Greatest good for the greatest number
- Resources and manpower available

PM 7-1

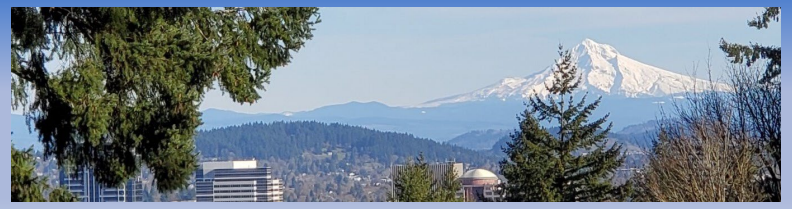
What's my Zone?





- HOT: Unsafe for operations—Evacuation only.
- WARM: Safe enough for essential operations
- COOL: Safe for medical treatment and command
- COLD: No operations needed or pending

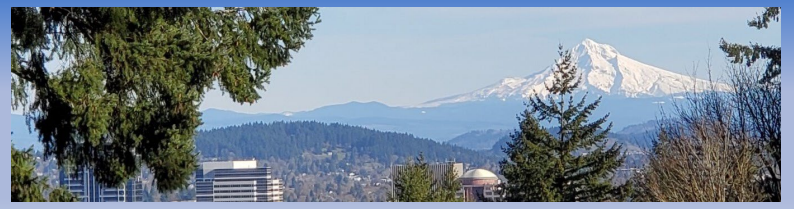
Goals of Search and Rescue



- Rescue greatest number in shortest amount of time
- Get walking wounded out first
- Rescue lightly trapped survivors next
- Keep the rescuers and survivors safe

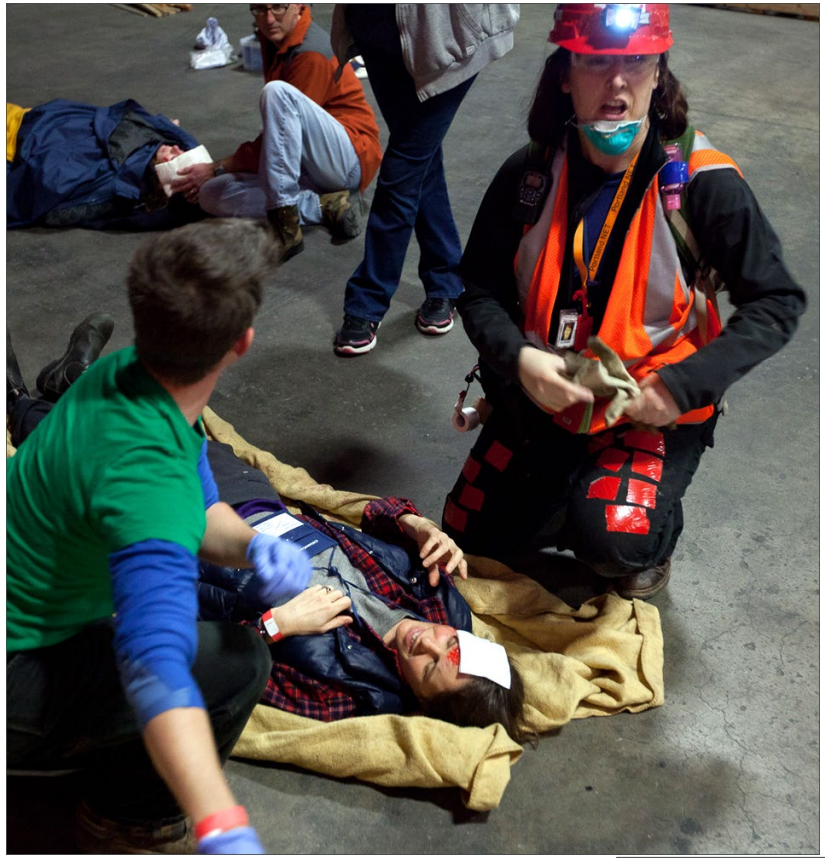
PM 7-1

Effective Search and Rescue



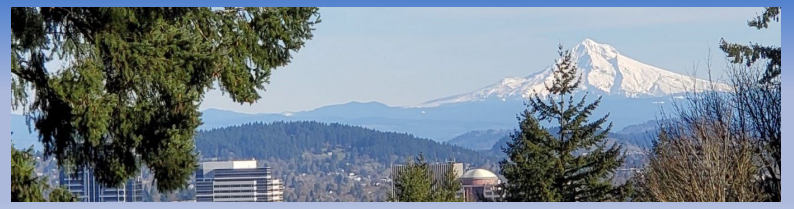
Depends on:

- Effective size-up
- Rescuer safety
- Survivor safety

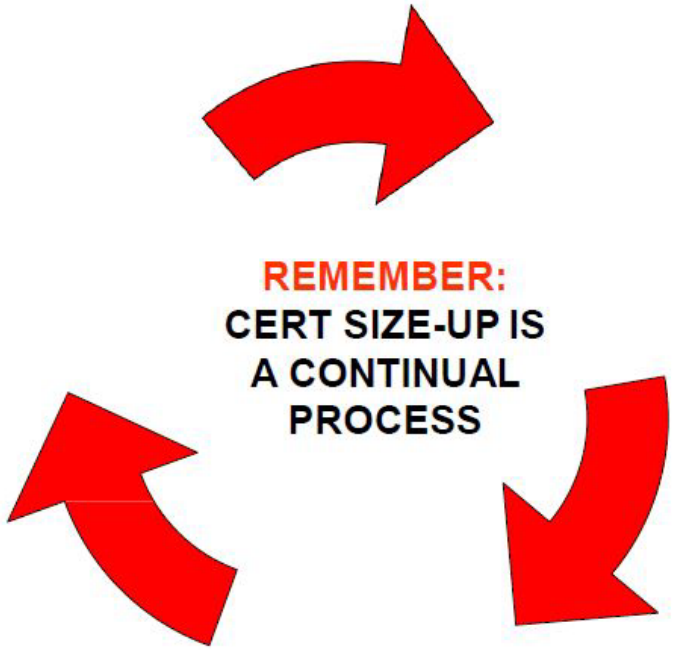


PM 7-1

Size-up

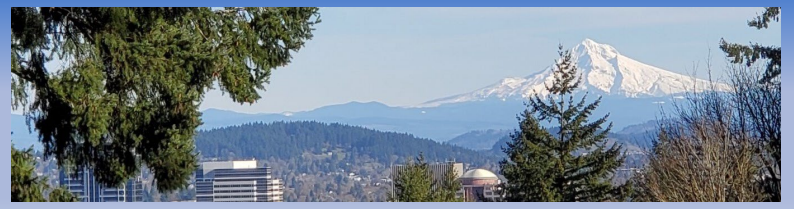


1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
5. Establish Priorities
6. Make Decisions
7. Develop Plan of Action
8. Take Action
9. Evaluate Progress



PM 7-3

Size-up (condensed edition)



1. Gather Facts
2. Assess Damage
3. Consider Probabilities
4. Assess Your Situation
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6. Make Decisions
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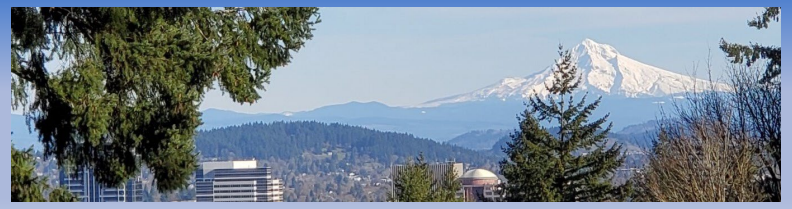
OBSERVE

PLAN

ACT

Size-up Step 1

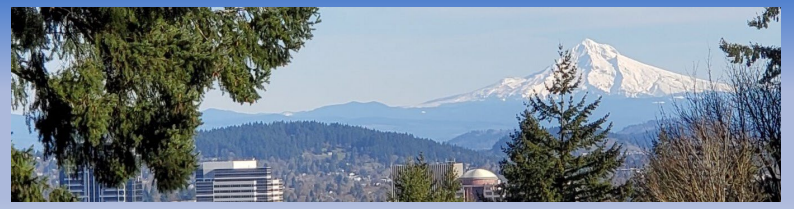


Gather Facts:

- Time of event and day of the week
- Construction type/terrain
- Occupancy
- Weather
- Hazards
- Search subject profile

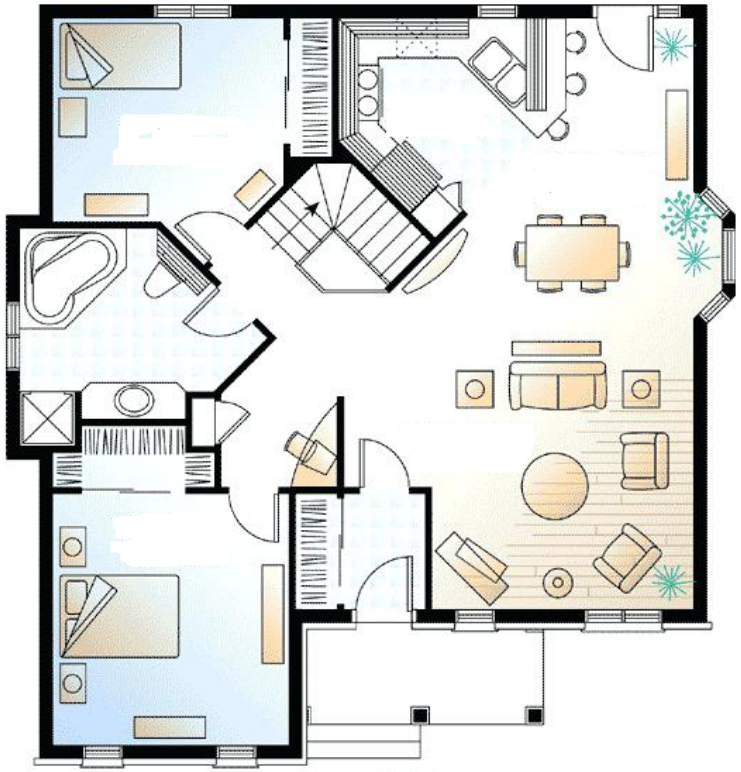
PM 7-5

Size-up: Conducting a “360”

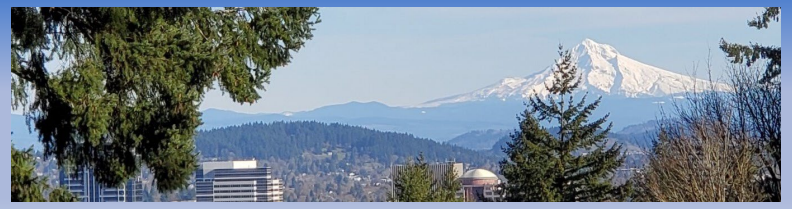


Essentials of a 360:

- Minimum of 2 members
- Identify & communicate side labels
- Maintain contact with your Team Leader
- Avoid or deal with immediate dangers
- Report pertinent information



Street



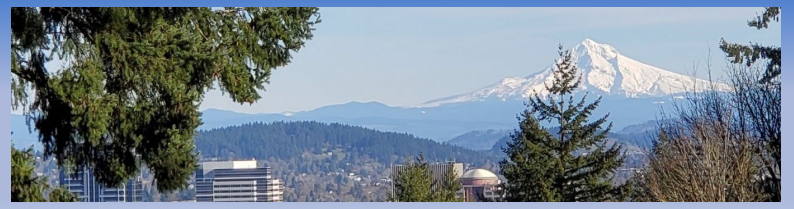
Assess and Communicate Damage

The CERT mission execution changes if:

- Damage is light
- Damage is moderate
- Damage is heavy

PM 7-6

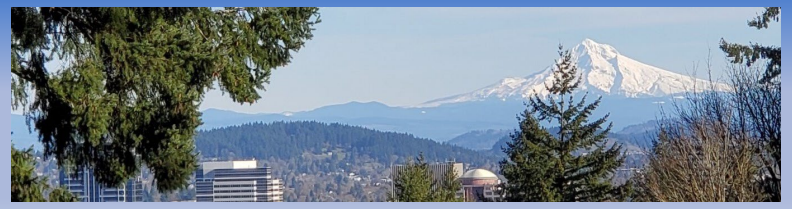
Light Damage



- Superficial
- Broken windows
- Superficial cracks or breaks in wall surface
- Minor damage to the interior contents
- **Safe to enter and remain**

PM 7-6

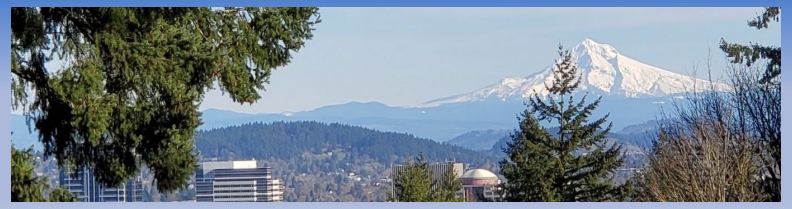
Moderate Damage



- Visible signs of damage
- Decorative work damaged or fallen
- Many visible cracks or breaks in wall
- Major damage to interior contents
- Building still on foundation
- **Enter only to save lives**

PM 7-6

Heavy Damage

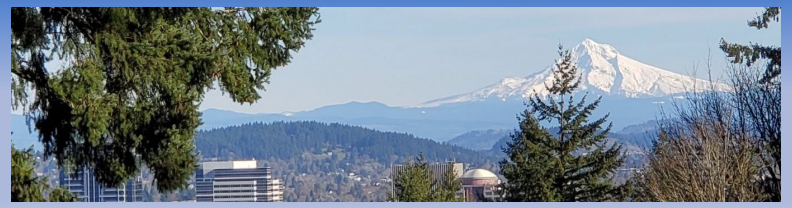


- Partial or total collapse
- Tilting structure
- Obvious structural instability
- Building off foundation
- Smoke, fire, or other hazards
- Further movement is likely
- Rising water

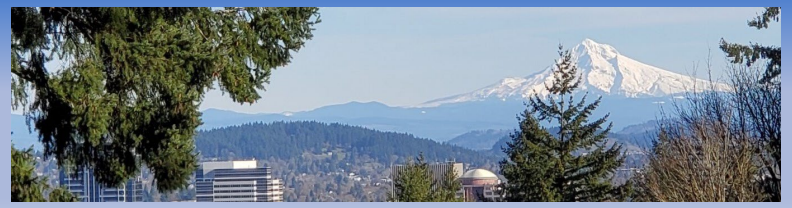
Do not enter a building with heavy damage under any circumstances!

PM 7-7

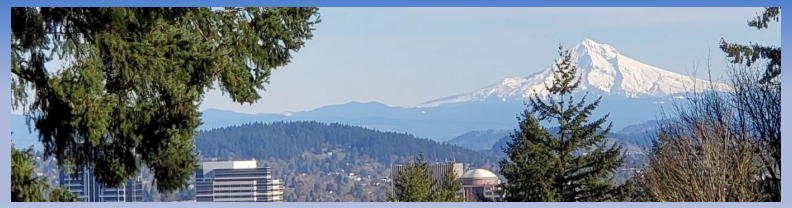
Light, Moderate or Heavy?



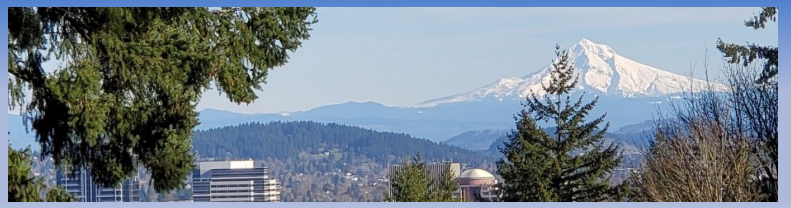
Light, Moderate or Heavy?



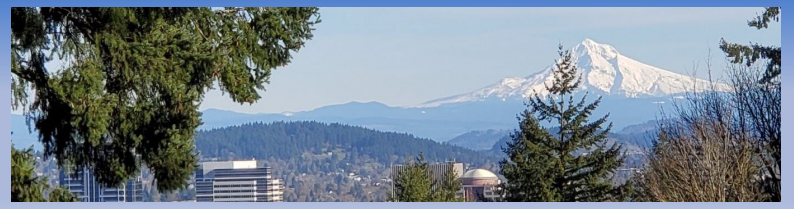
Light, Moderate or Heavy?



Light, Moderate or Heavy?

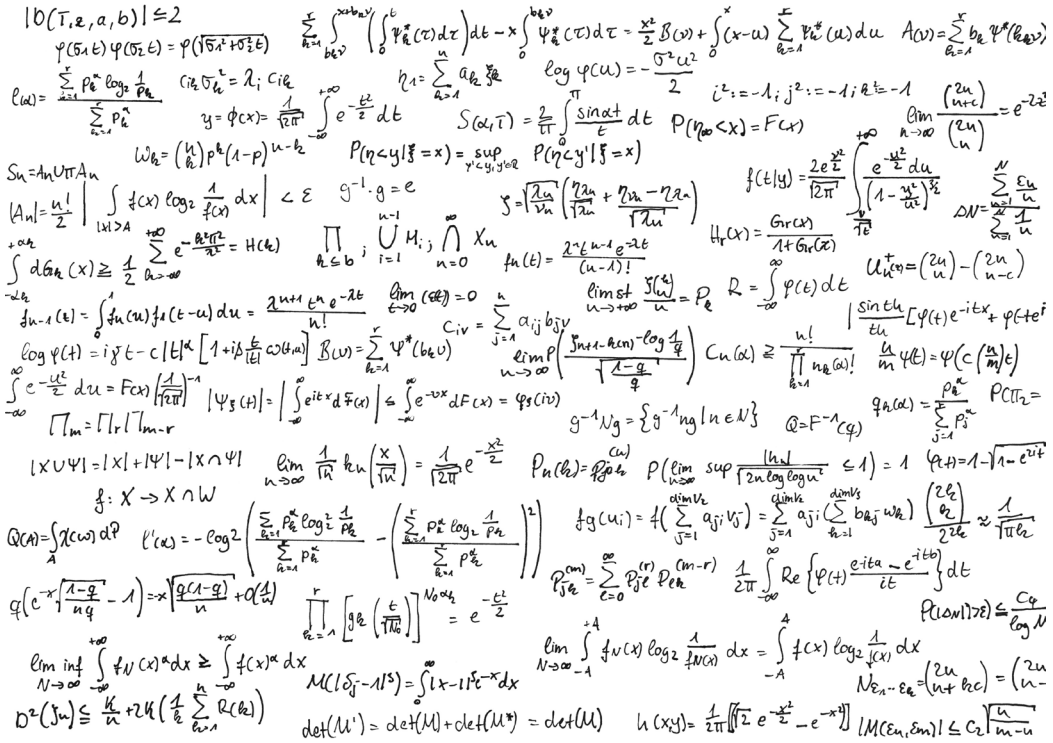


Size-up Step 3



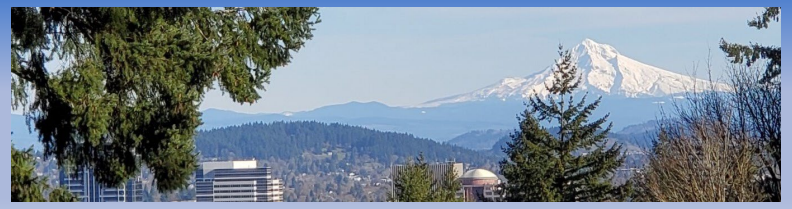
Consider Probabilities:

- How stable is the situation?
- What secondary factors should be considered?
- What else could go wrong?
- What does it mean for the search and rescue?



PM 7-14

Size-up Step 4

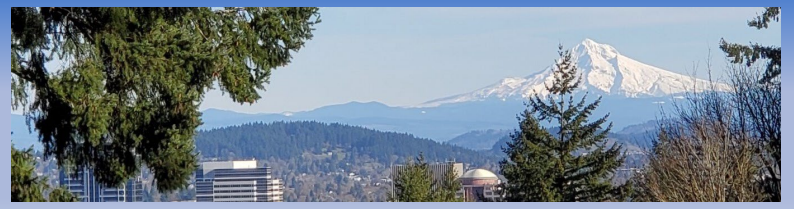


Assess Your Situation:

- Is the situation safe enough to continue?
- What risks will rescuers face?
- What resources are needed?
- What resources are available?

PM 7-10

Rescue Resources



Personnel:

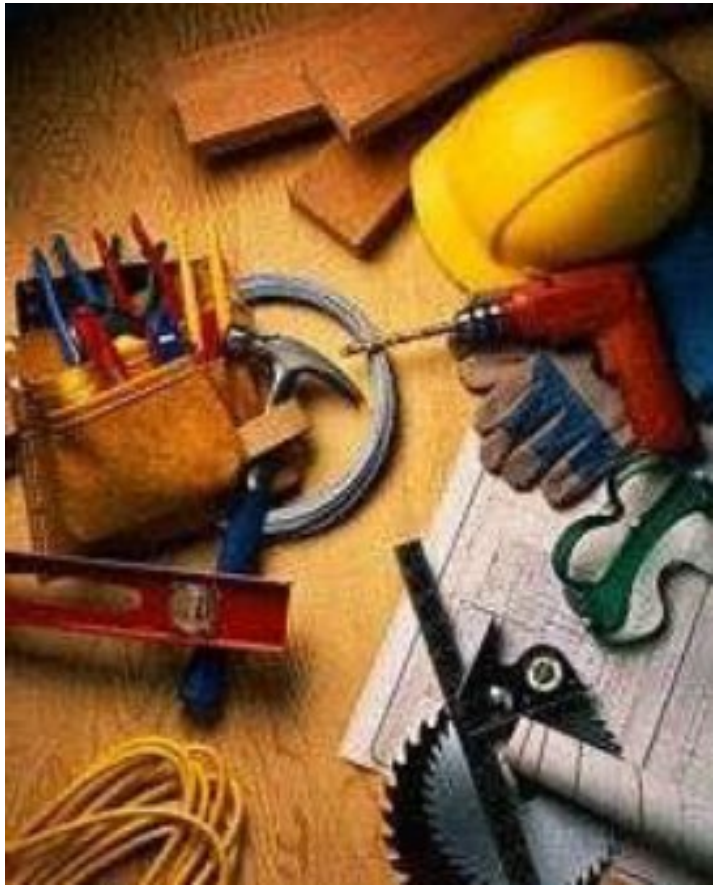
- Firefighters
- Police officers
- Doctors, Nurses
- Contractors

Tools:

- Crowbars
- Auto jacks
- Chainsaws

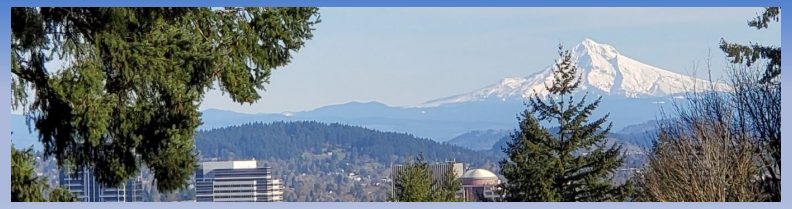
Equipment:

- Additional PPE
- Mechanization



PM 7-11

Size-up Step 5

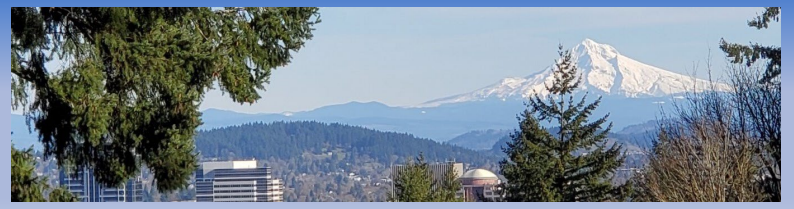


Establish Priorities:

- What should be done?
- In what order?
- How do you rescue the greatest number in the shortest amount of time?

PM 7-11

Size-up Step 6



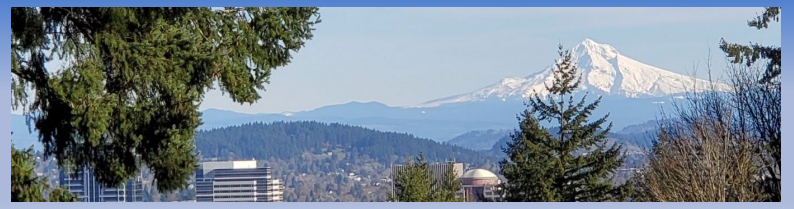
Make Decisions:

Keep in mind:

- Safety of team members
- Life safety for survivors and others
- Protection of the environment
- Protection of property

PM 7-11

Size-up Step 7

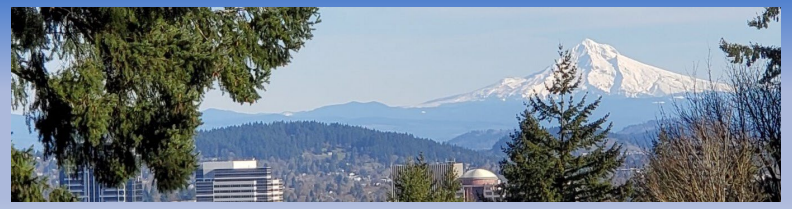


Develop Plan of Action:

- Focus operation on established priorities and decisions
- Provide documentation to give to responding agencies
- Provide documentation to become part of team records

PM 7-12

Size-up Step 8

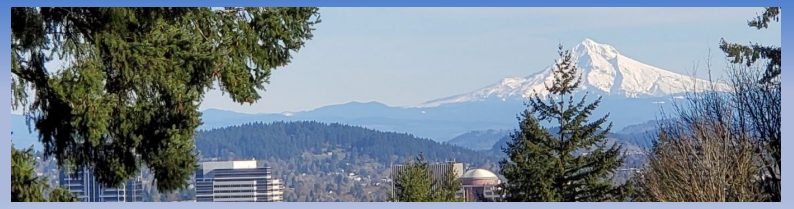


Take Action:

- Base action on plan developed during Step 7

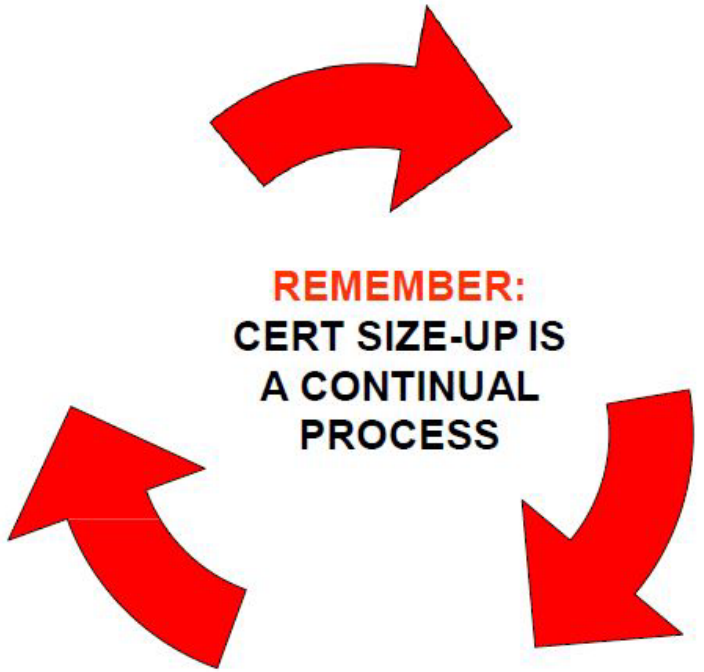
PM 7-12

Size-up Step 9



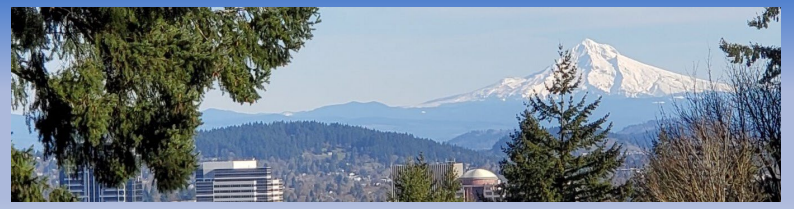
Evaluate Progress:

- Most critical step
- Monitor plan's effectiveness and safety
- Make necessary changes to plan or operations



PM 7-12

Size-up Exercise



- We will breakout into groups of 6-8.
- Each group will be given a disaster scenario to size up and will choose a scribe to take notes and report out.
- Size up your disaster using the 9-step size up process. You will have 10 minutes plus 2-minutes to wrap up.

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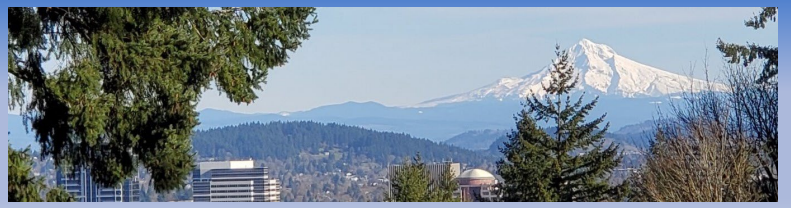
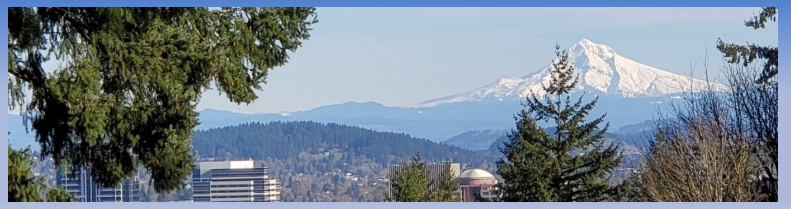
Size-up Exercise



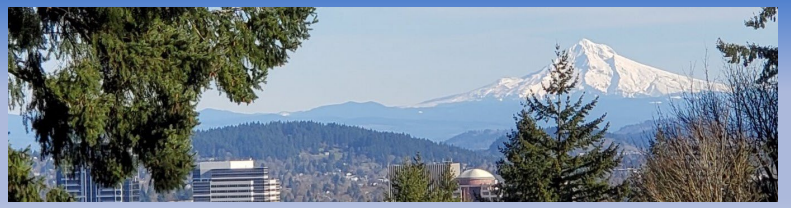
Event: Magnitude 5.6 Earthquake
Day/Date/Time: Saturday, May 13th, 11:30 hours
Weather: Cloudy with occasional rain, 44 degrees F.
Construction: 1995, 1 story, wood frame with brick façade
Additional Info:
360 reveals hissing sound coming from corner (DE), and wheel chair ramp at front entrance covered with bricks.

Size-up Exercise



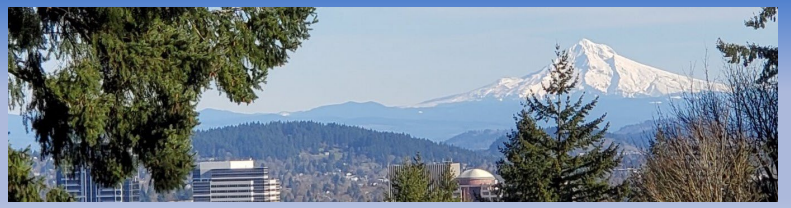
Event: Magnitude 5.6 Earthquake
Day/Date/Time: a Sunday in August, 15:30 hours (3:30 PM)
Weather: hot and dry
Construction: 1980's shopping mall, renovated early 2000's
Additional Info:
It's a busy shopping day and the local mega-mall is crowded. There is an outdoor carnival – complete with Ferris wheel, other rides, and petting zoo in the east parking lot.

Size-up Exercise



Event: weeks of rainy weather and a major wind storm today
Day/Date/Time: a Tuesday in March, 18:00 hours (6:00 PM)
Weather: gusty winds, upper 40's temperature, more rain expected overnight
Construction: unknown
Additional Info:
The neighborhood is built on a steep incline, and you have encountered a few downed trees as you made your way to this location.

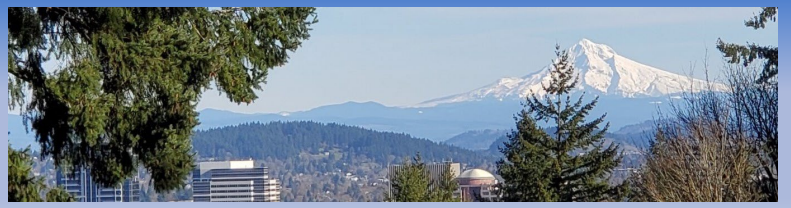
Size-up Exercise



Event: an ice storm
Day/Date/Time: a Friday in January, 0330 hours (3:30 AM)
Weather: below freezing temperatures, light winds and light snow falling
Construction: 1990's wood frame
Additional Info:

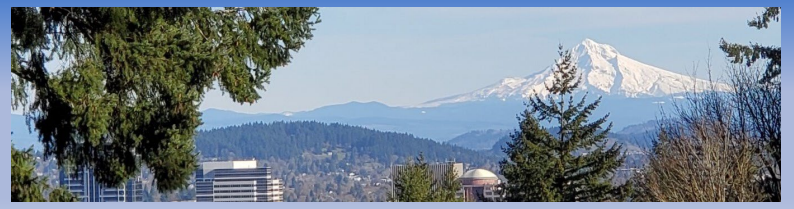
You have cell phone service and have learned that the care center for senior citizens has lost power (and heat) and that a tree has fallen onto one corner of the facility.

Size-up Exercise



Event: Magnitude 5.6 Earthquake
Day/Date/Time: Tuesday, March 5th, 09:30 hours PDT
Weather: Overcast, 45 degrees
Construction: 1926, 3 story, wood frame with brick façade
Additional Info: High school and grade school with 600 students aged 5 through 18

Search Markings

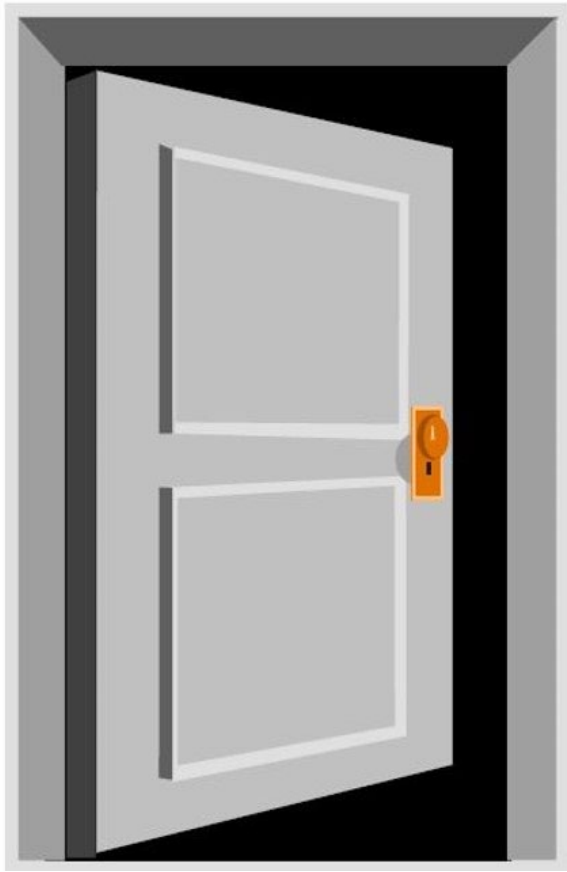


Upon entering search area:

- Make a slash from top left to lower right
- Enter team ID, number of team members to the left of the line, then date & time above line

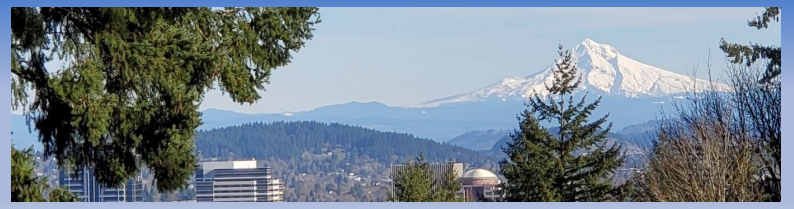
Upon leaving search area:

- Complete ‘X’ only after all of the team have exited
- Enter areas searched & survivor info

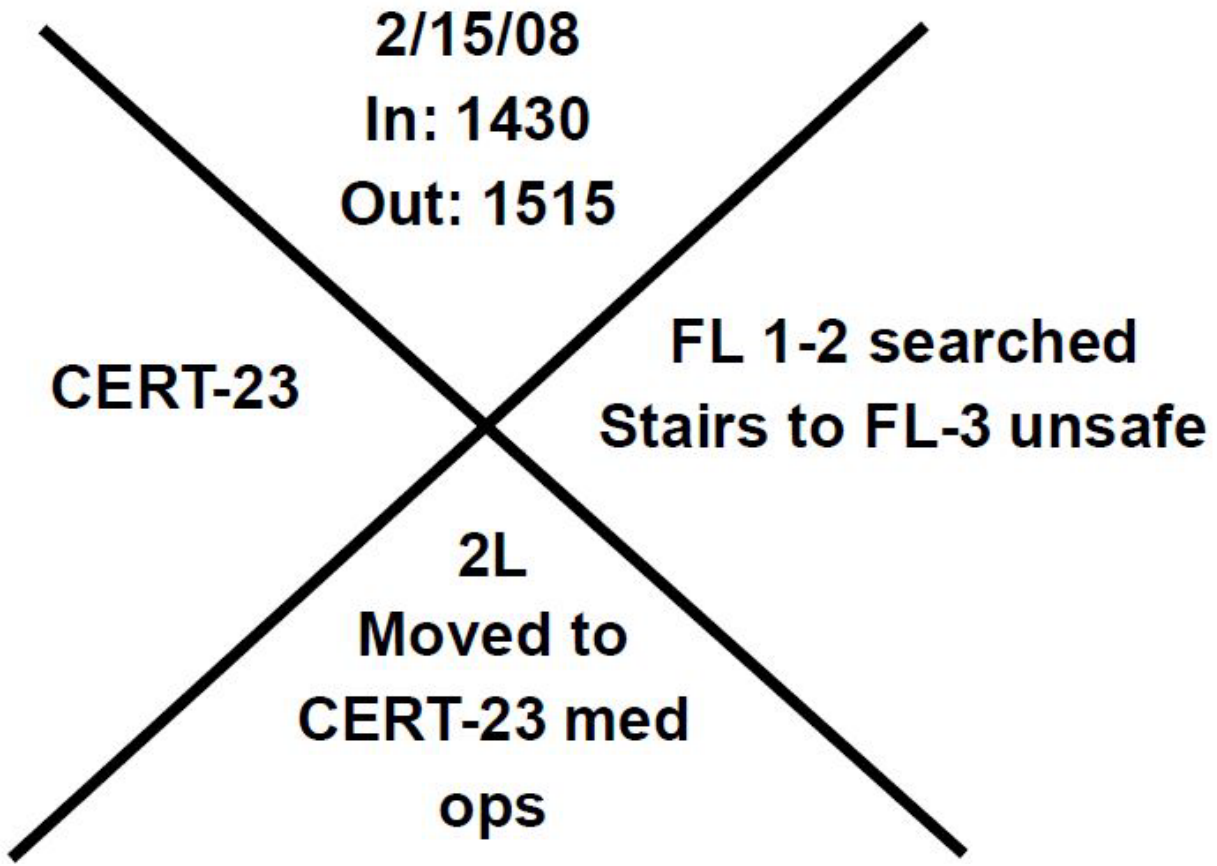


PM 7-15

Search Markings

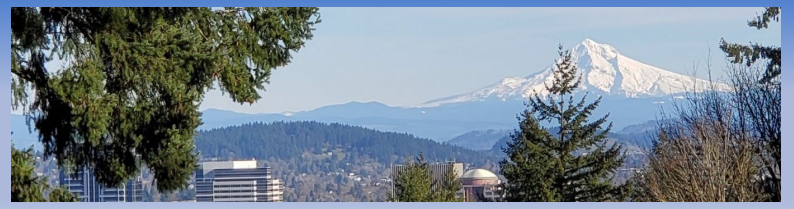


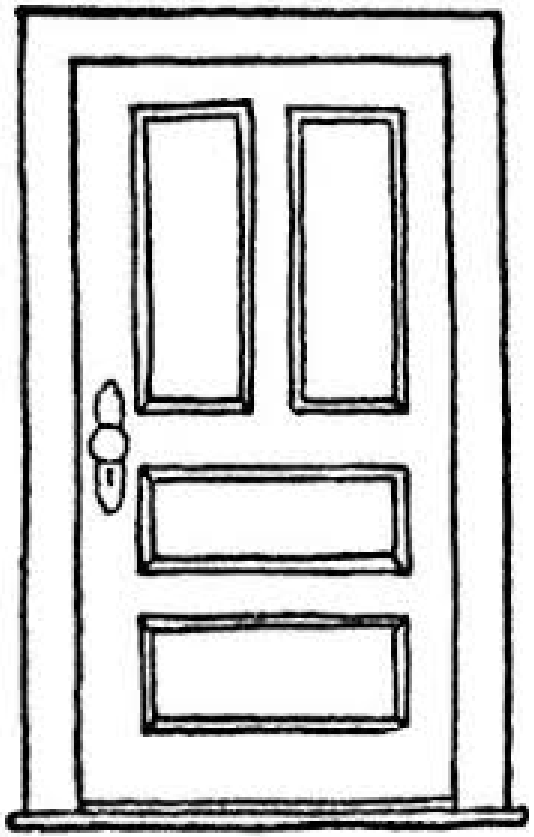
Sample



PM 7-15

Search Markings Exercise



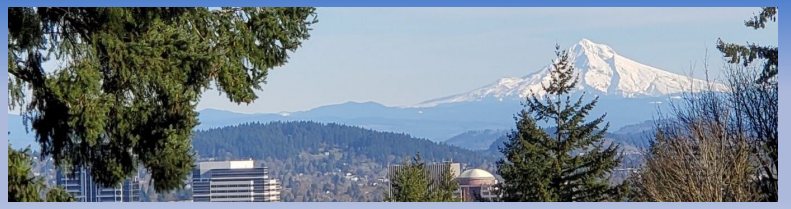


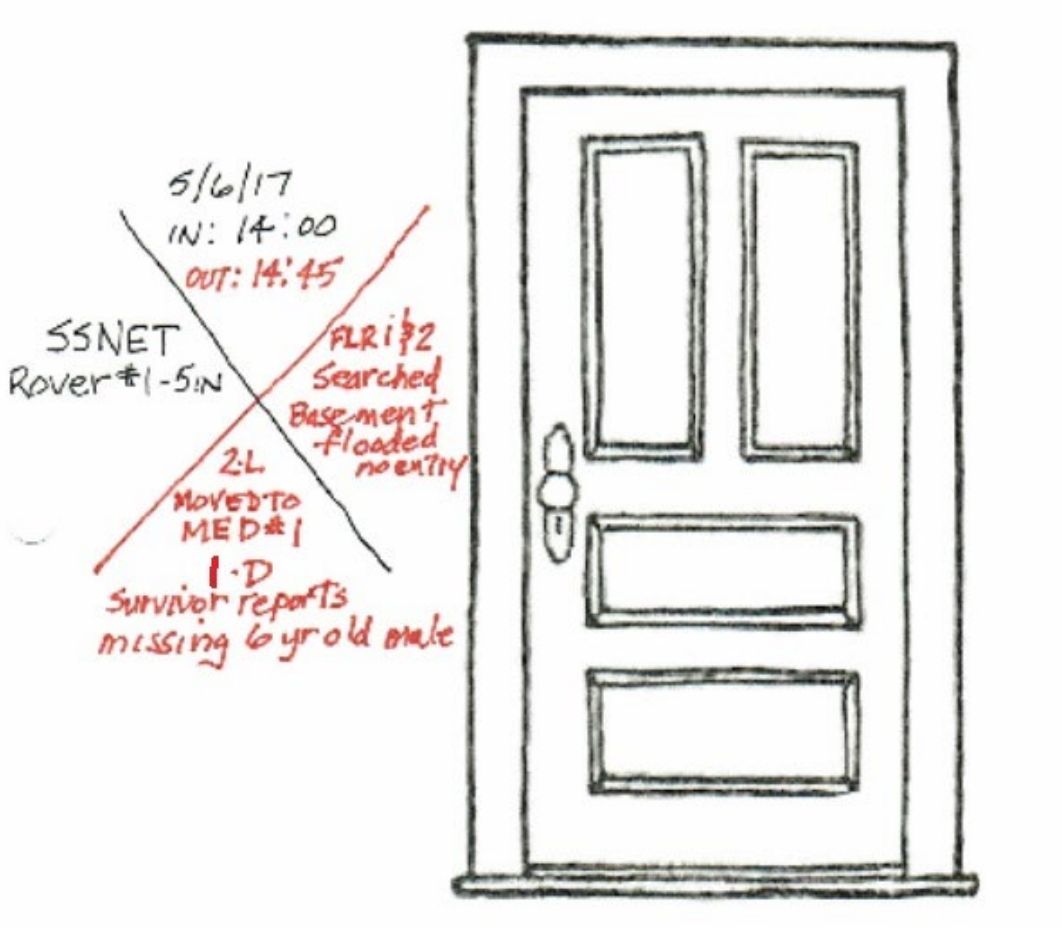
Step 1: Mark the following Search Entrance Info in an appropriate location:
Five members of the Sunnyside NET Team Rover 1 entered on May 6th, at 14:00 (2:00 PM)

Step 2: Mark the following Search Exit Info in a different color*:Five members of the Sunnyside NET Team Rover 1 exited on May 6th, 2017, at 14:45 with the following results: 2 survivors moved to Med Area 1, survivor reported missing 6-year-old male, 1 deceased, floors 1 & 2 searched, basement inaccessible due to water.

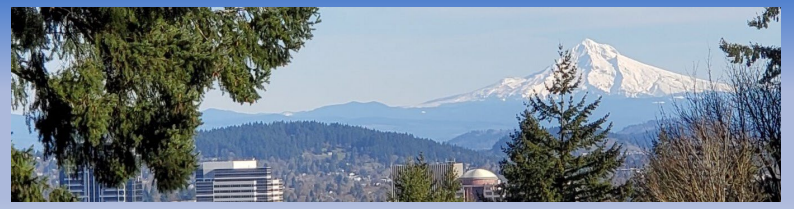
*The different color is used for instructional purposes only to differentiate between entry & exit notes.

Markings Exercise Solution





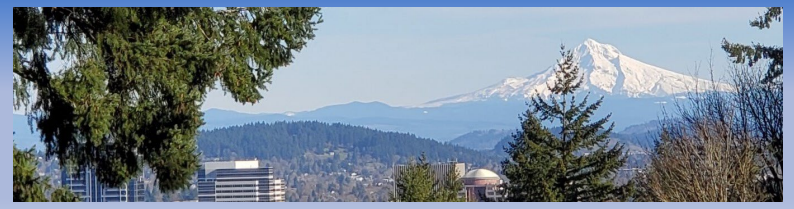
Search Methodology



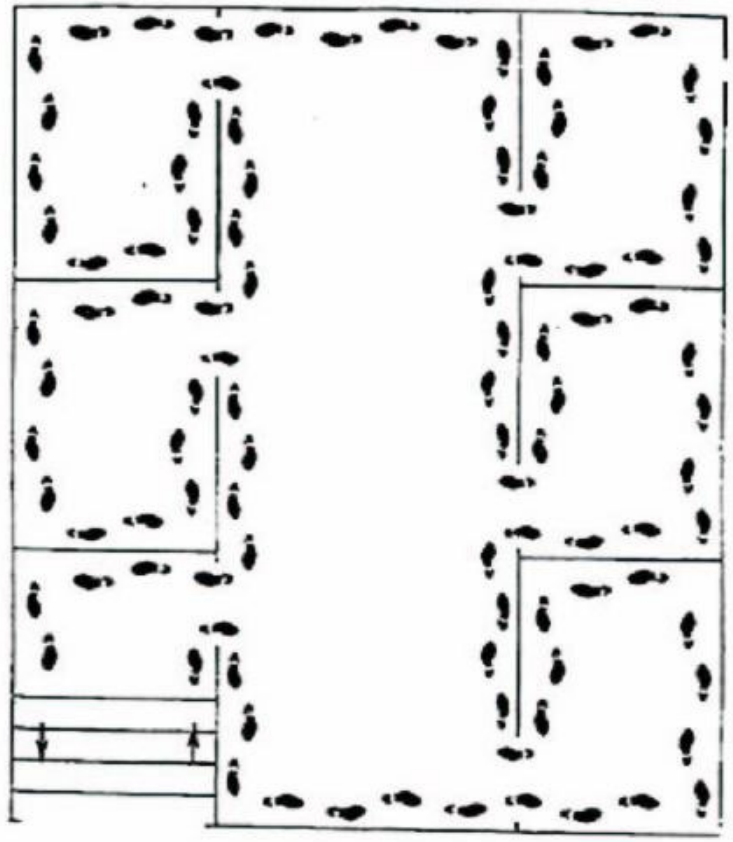
- Call out to survivors, “If can hear my voice, come here”
- Ask any survivors who do respond for more information about the building or others who may be trapped
- Search in pairs, maintaining communication with your lead.
- Remain within arm’s reach of the other team member
- Scan all 6 directions and don’t forget closets or nooks.
- Some survivors might be disoriented or confused
- Keep records and report findings to command

PM 7-15

Search Methodology

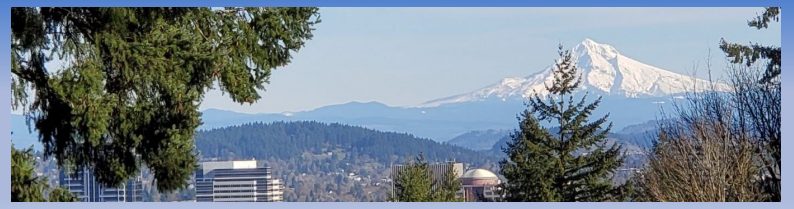


- Bottom-up vs top-down for a multi-story building
- Right hand vs left hand for a single floor
- Stop frequently to listen
- Stay with your search mate

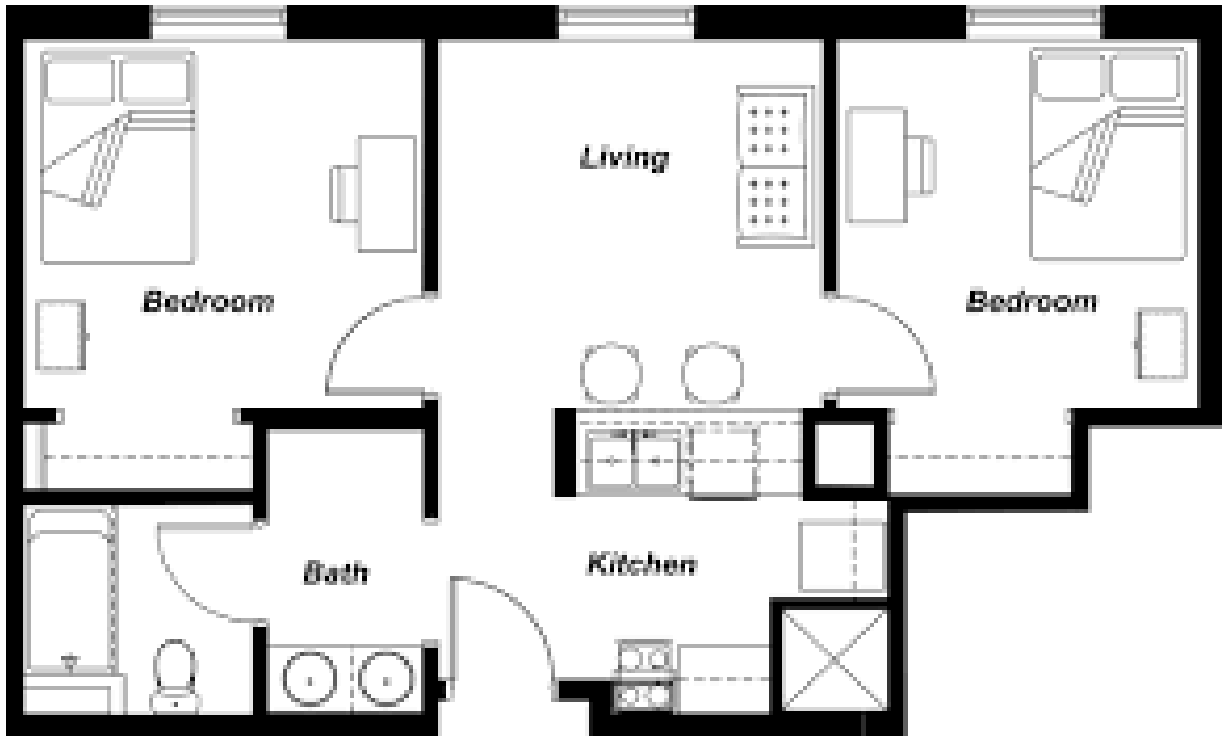


PM 7-15

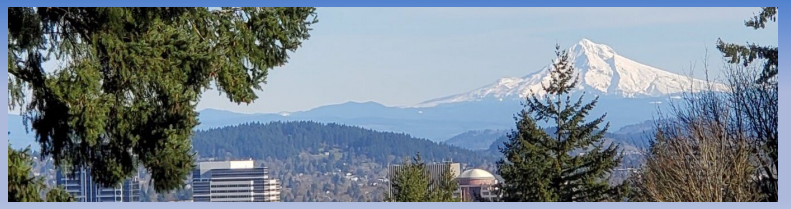
Search Methodology



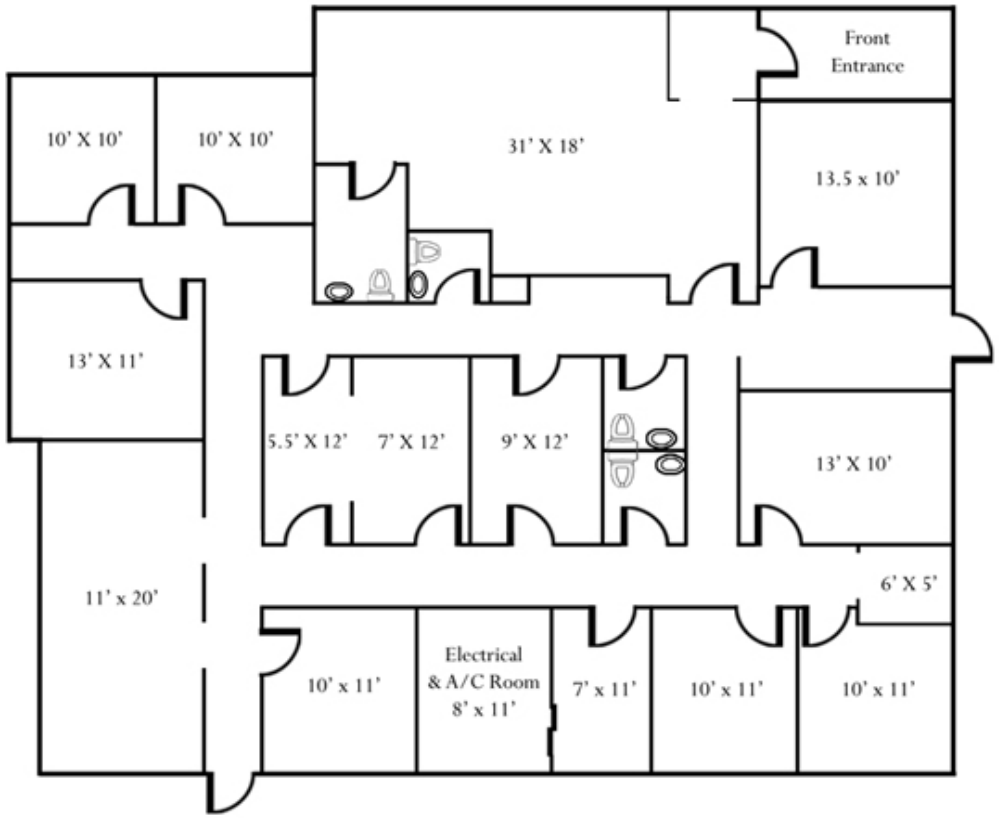
Real World Conditions



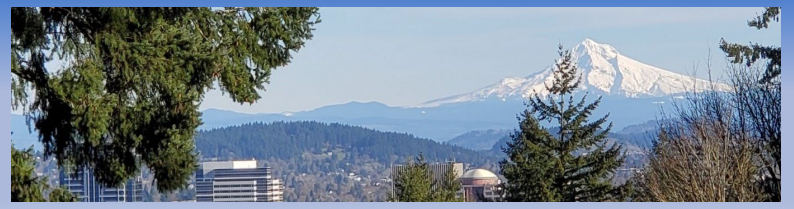
Search Methodology



Real World Conditions

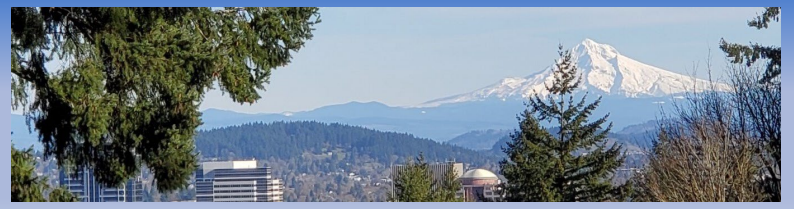


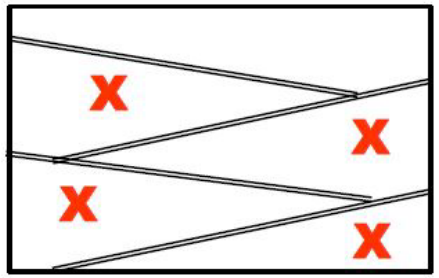
Search Methodology



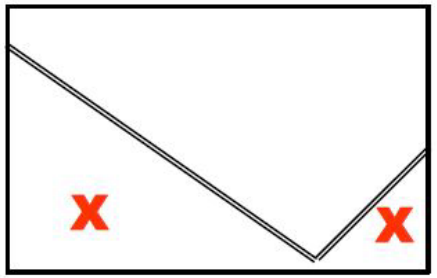
Real World Conditions

Structural Voids

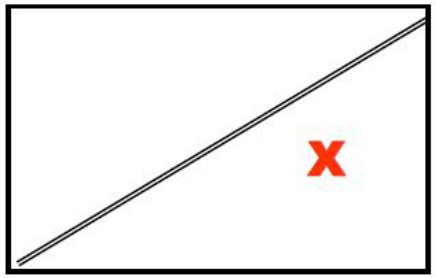




Pancake Void



'V' Void



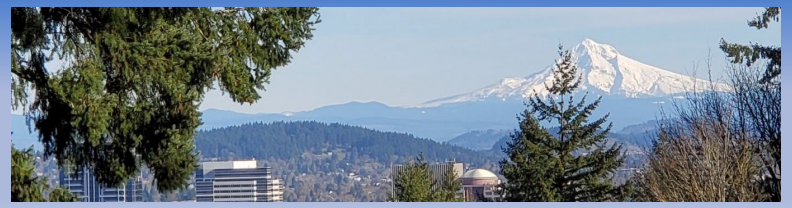
Lean-to Void

X = Voids

If you see collapsed floors or walls, **GET OUT!**

PM 7-14

Individual Voids

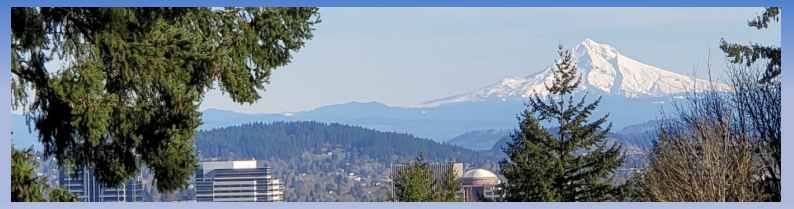


Survivors may seek protection in various places

- Inside bathtubs
- Underneath desks
- Inside cabinets
- Under/next to beds
- Inside closets

PM 7-14

Search Methodology

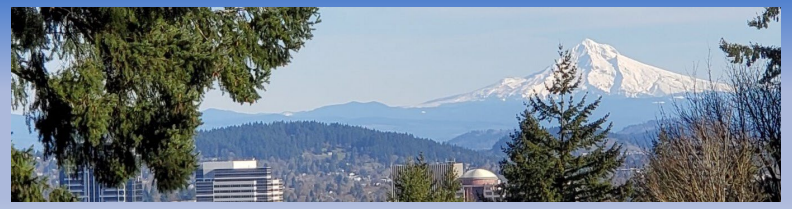


Stop frequently to listen for:

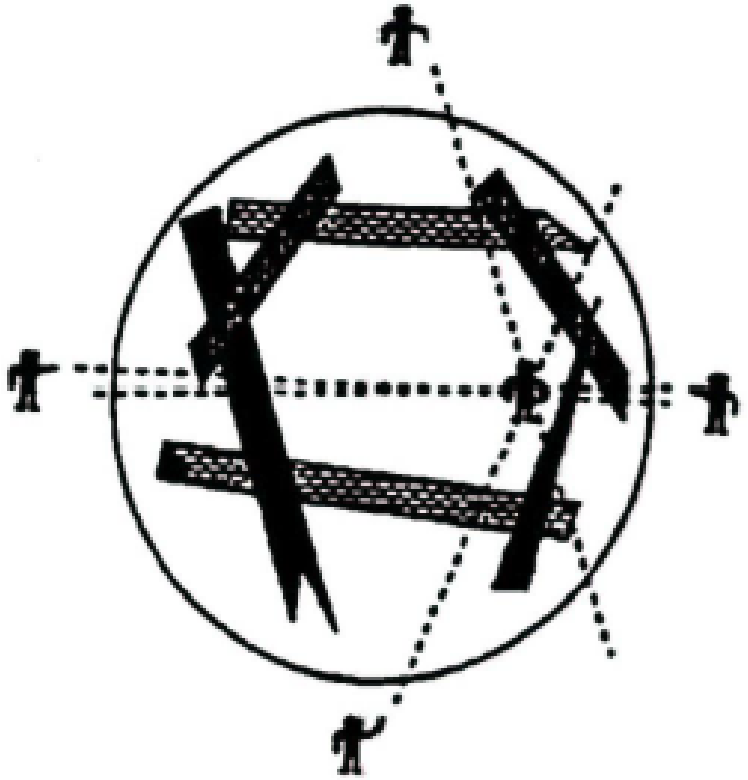
- Tapping
- Movement
- Voices
- Building structure noises
- Gas hissing or electrical arcing

PM 7-15

Search Methodology

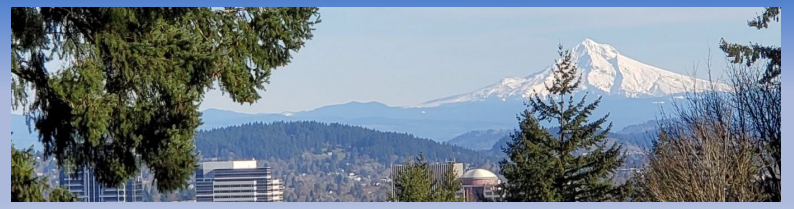


Triangulation allows rescuers to view a location from several perspectives



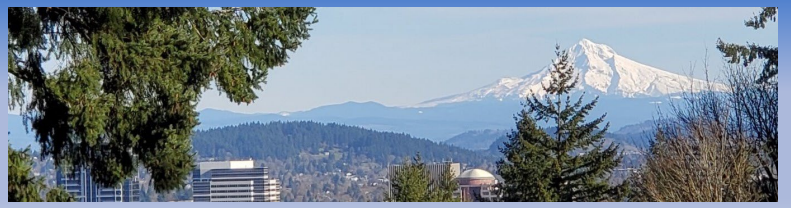
PM 7-15

Specific Safety Considerations



- Emphasize rescuer safety
- Use the buddy system
- Check your equipment
- Be alert for hazards
- Have an exit strategy
- Know & use code words and whistle codes
- Remember survivor etiquette
- Rotate teams

Search Methodology

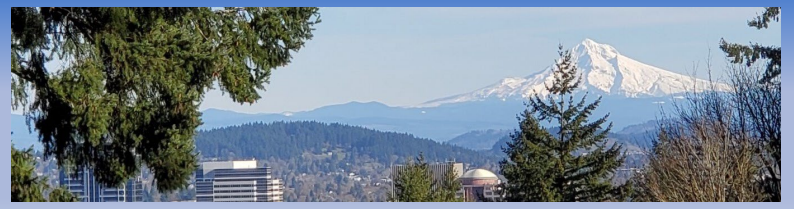


The 2 greatest causes of rescuer deaths are:

- Secondary collapse
- Rescuer disorientation

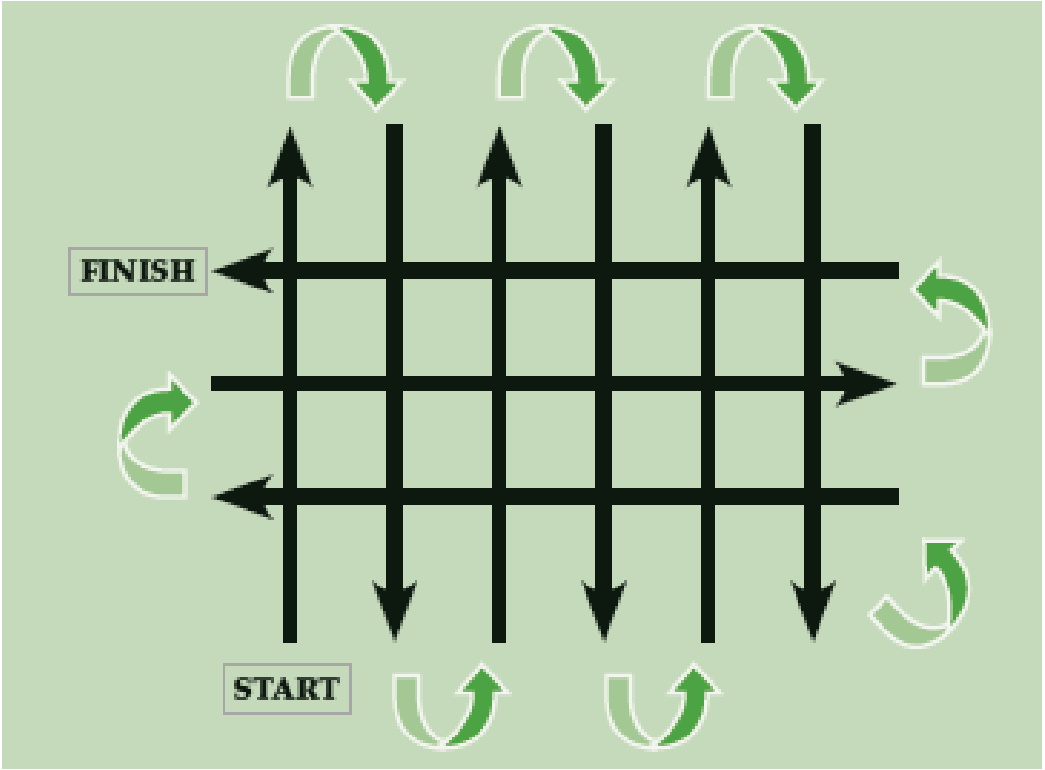
PM 7-15

Exterior Search



Set up a grid search:

- Set distance between searchers according to visibility and debris
- Overlap patterns for full coverage
- Search in as straight a line as possible
- Mark areas that have been searched



PM 7-15

Wrap-up and Q&A