



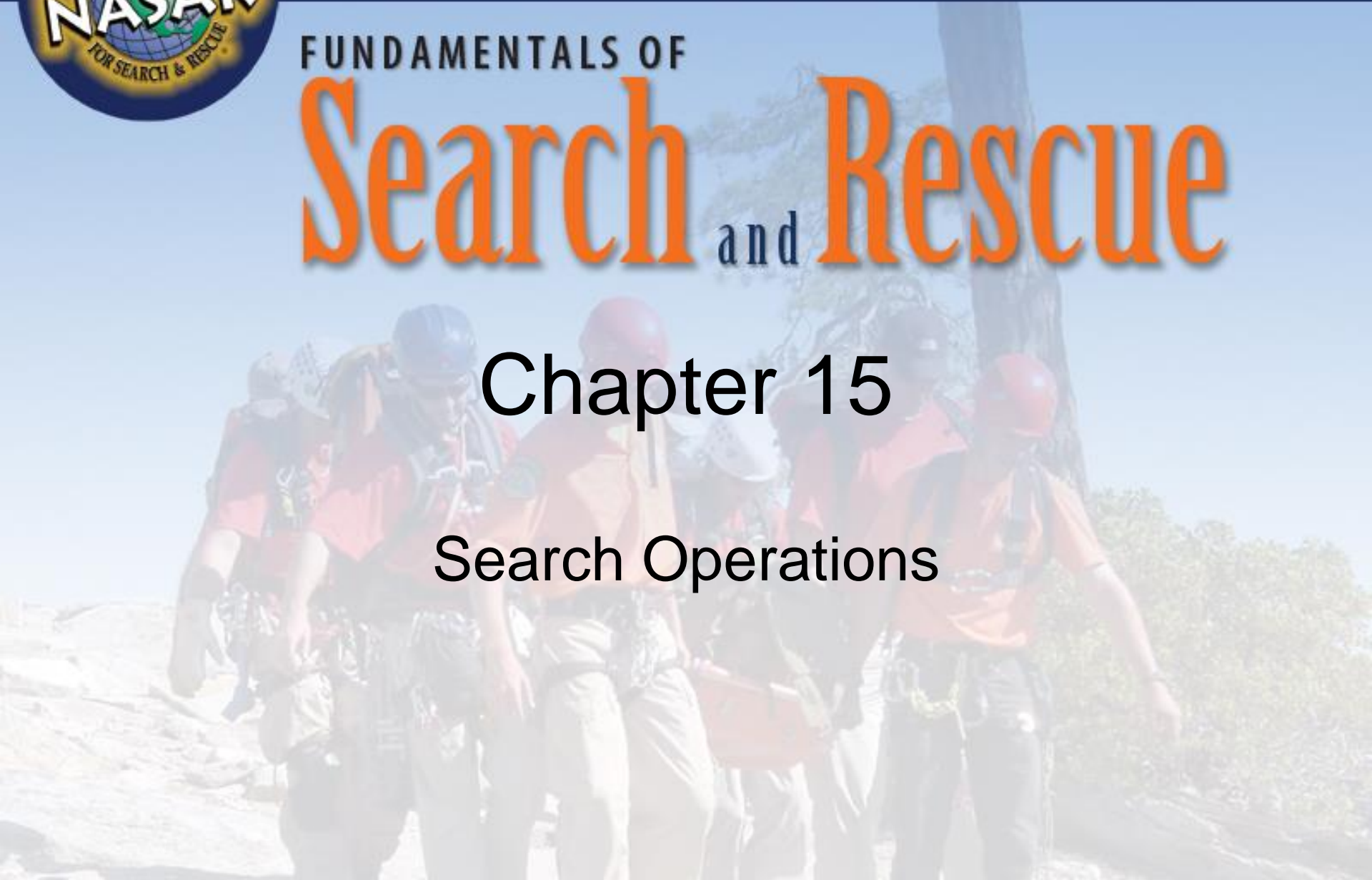
National Association for Search and Rescue

FUNDAMENTALS OF

Search and Rescue

Chapter 15

Search Operations





Objectives (1 of 3)

- Describe the following processes:
 - Checking in at the incident.
 - Crew mission briefing.
 - Crew mission debriefing.
 - Checking out of the incident.
- Describe the general functions of the various search crew positions.
- Differentiate between indirect and direct search tactics (formerly referred to as “passive” and “active.”)



Objectives (2 of 3)

- Describe the following search tactics:
 - Containment
 - Hasty search
 - Loose grid
 - Tight grid
 - Evidence search
- Define the following:
 - Base line
 - Guide line
 - Guide person
 - Search lane



Objectives (3 of 3)

- Describe and demonstrate the use of the grid search naming system used by the Boy Scouts of America.
- Describe how Average Maximum Detection Range (AMDR) can be estimated in the field.
- Describe at least five guidelines for skilled searching.
- Describe two categories of what a searcher must prepare prior to call-out.



Tactics

- Include all techniques employed to actually find a lost subject or clues
- The methods by which SAR personnel get physically involved with the search function
- A definite progression of techniques and fall into one of two categories:
 - Indirect
 - Direct



Indirect Tactics

- Do not involve physically entering the search area to look for the subject or clues
- Almost always first to be employed; often locate the subject
- Specific tactics include:
 - Intelligence gathering and fact finding
 - Attraction techniques
 - Containment techniques



Attraction Techniques

- Assume a responsive subject
- Use noise: Sirens, whistles, yelling, PA systems, horns
- Use lights: Beacons, flares, fires, strobes, car or patrol lights, search lights
- Do not forget to have silent periods if using noise.



Containment Techniques

- Efforts taken to confine the movement of a lost subject
 - Route blocks
 - Lookouts
 - Track traps
 - Patrols



Direct Tactics

- Include all organized methods used in the search area to detect a lost subject or clues
 - Hasty techniques
 - Loose grid techniques
 - Tight grid techniques
 - Evidence searches



Hasty Searches (1 of 2)

- Fast initial response
- Well-trained, self-sufficient, and very mobile searchers
- Likely spots that are quick and easy to search
- “Points and lines” (no area)



Hasty Searches (2 of 2)

- Specific locations might include:
 - Camp sites
 - Abandoned vehicles
 - Buildings (cabins, trailers, etc.)
 - Trails, tracks, paths, roads
- Thorough check of LKP or PLS
- Follow known or suspected routes



Hasty Search Teams

- Usually two to four immediately available and very mobile searchers
- Should be skilled enough to follow clues if discovered
- Usually used early in search but may be used anytime
- Often used to investigate the area around a discovered clue



Some Grid Search Terms

- Base line
- Guide line
- Guide person
- Search lane
- Trail tape/ribbon/string line



Area Searches

- Segment being searched must have established boundaries identifiable on a map and in the field.
- Search crews should spread their searching effort as evenly as possible over their assigned segments.
- Use searchers in organized search lanes as much as possible.
- Finish task assigned in allotted time.



Loose Grid Search (1 of 6)

- Goal: Quickly cover larger areas with fewer resources
- May use three to seven searchers, but usually just three
- Amount of overlapping area scanned by searchers in adjacent search lanes should be minimal.
- Amount of area between adjacent search lanes that is scanned by neither searcher should be minimal.



Loose Grid Search (2 of 6)

- Roughly, space searchers on base line at a distance greater than AMDR.
- Maintain voice contact, and occasional visual contact, with adjacent searchers if possible.
- May require quick forward speed of search crew
- Thoroughness is not a high priority.



Loose Grid Search (3 of 6)

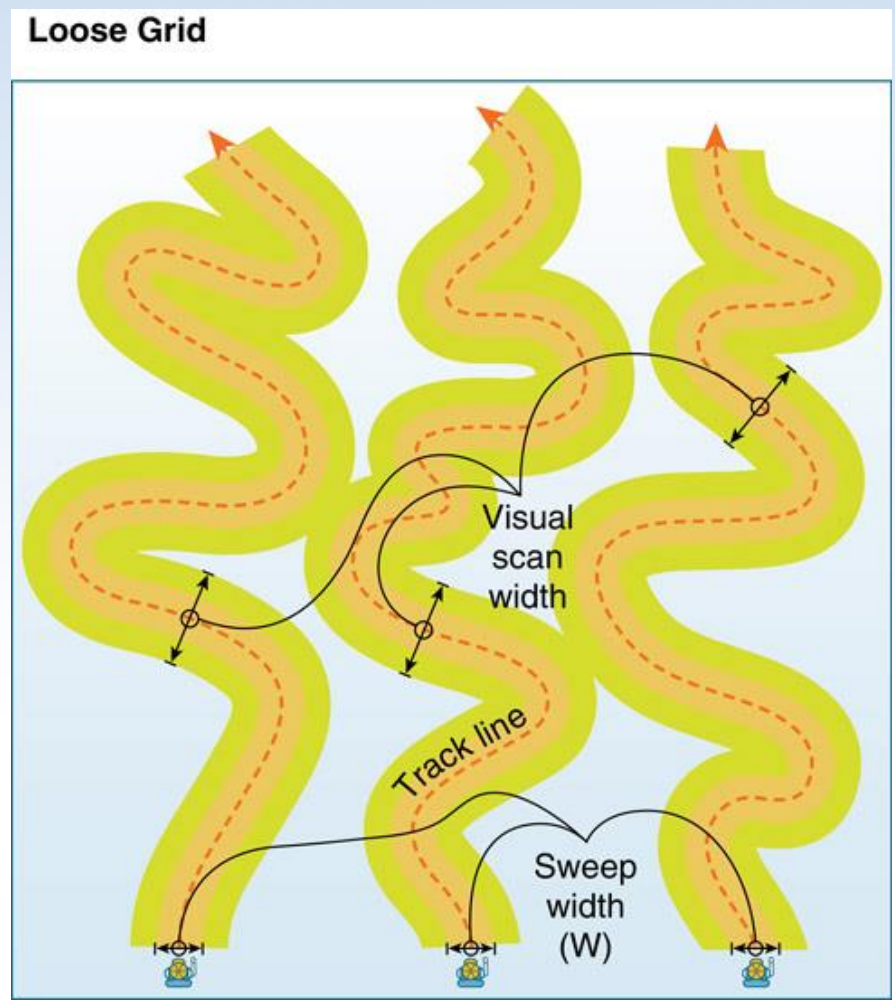
- Characteristics
 - More flexible, requires less coordination than tight grid techniques
 - Relatively wide search lanes
 - More efficient use of searchers' time and effort
 - Good for situations where more thorough techniques are impractical
 - Less damaging to environment and clues



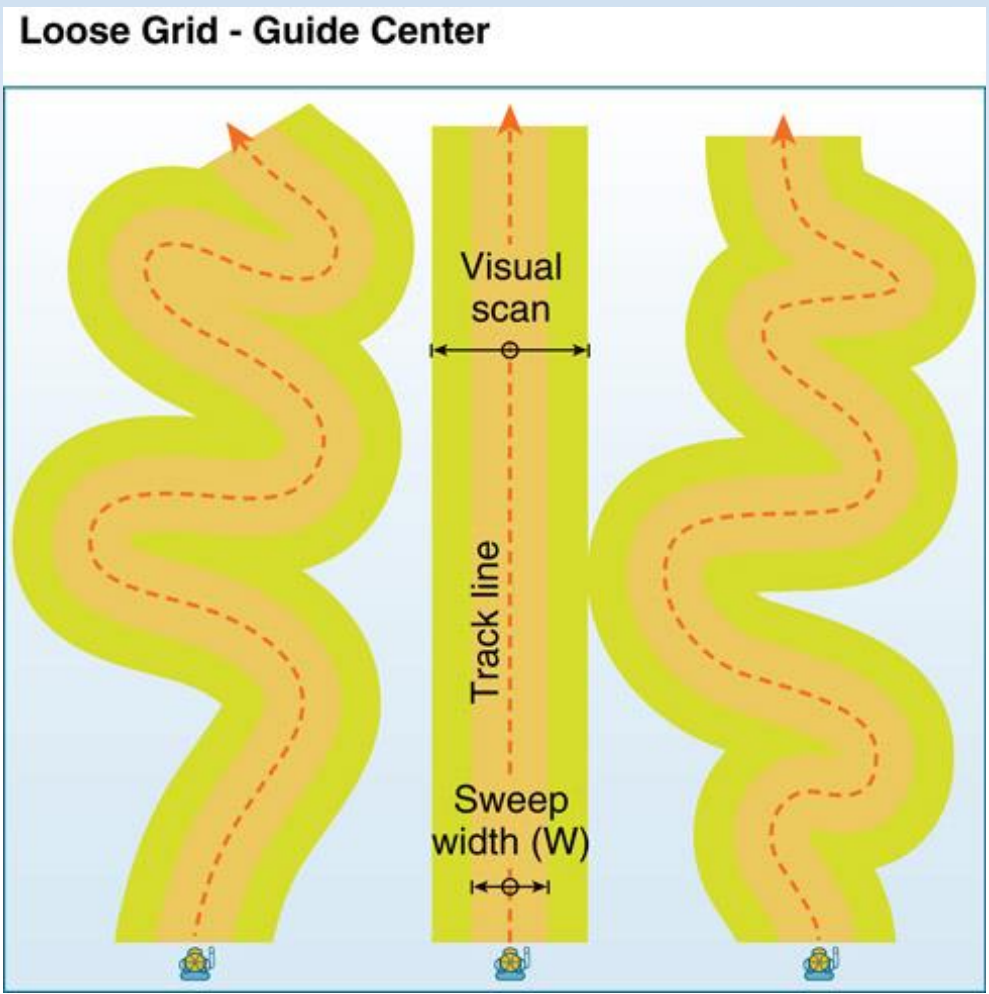
Loose Grid Search (4 of 6)

- Characteristics (cont.)
 - May take less time to achieve same level of coverage as tight grid techniques
 - Most useful when subject responsiveness is high
 - Useful for locating clues
 - Preferred method for achieving reasonable levels of coverage in reasonable amounts of time

Loose Grid Search (5 of 6)



Loose Grid Search (6 of 6)





Tight Grid Search (1 of 4)

- Goal: A very thorough, high coverage search of a segment
- Crew made up of 3-7 searchers, rarely more
- Slow, highly systematic area search
- Overlapping of search lanes is encouraged.
- Unskilled searchers may be mixed with skilled searchers.



Tight Grid Search (2 of 4)

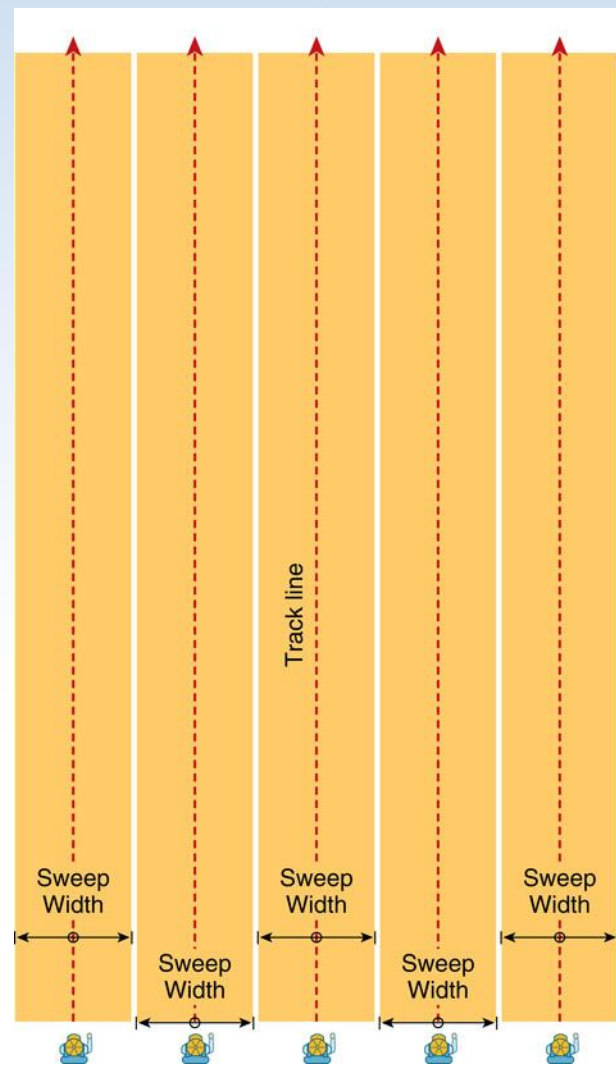
- Uses searchers on a line, usually at relatively close spacing
- Resource intensive
- Used when thoroughness is a priority
- Used to minimize the possibility that a clue will go undetected



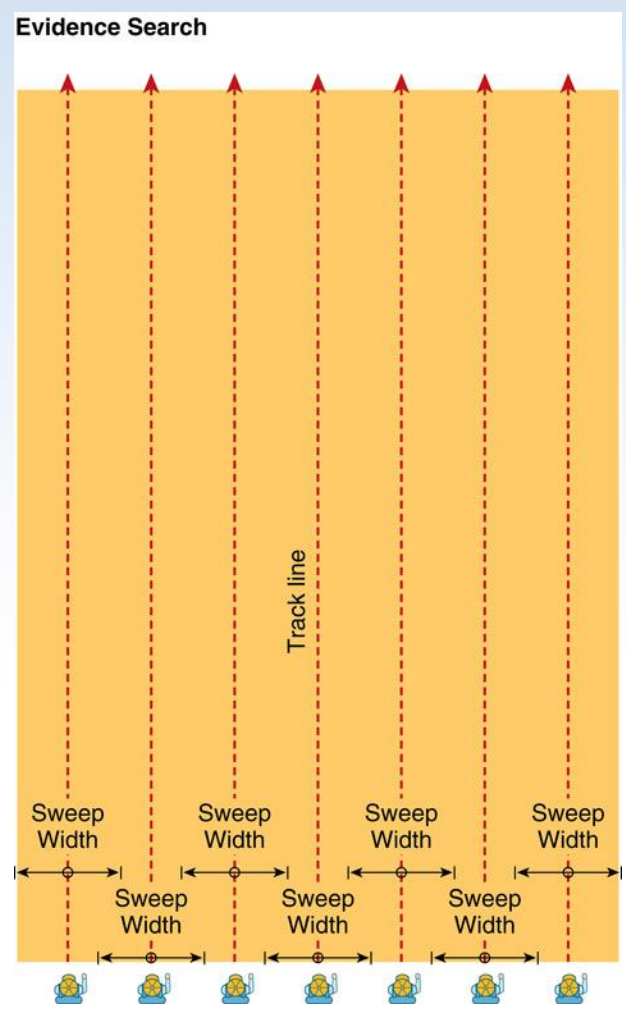
Tight Grid Search (3 of 4)

- Characteristics
 - Can be damaging to clues (if not detected)
 - Used only as a last resort
 - Requires great deal of effort, time, and resources

Tight Grid Search (4 of 4)



Evidence Search (1 of 2)





Evidence Search (2 of 2)

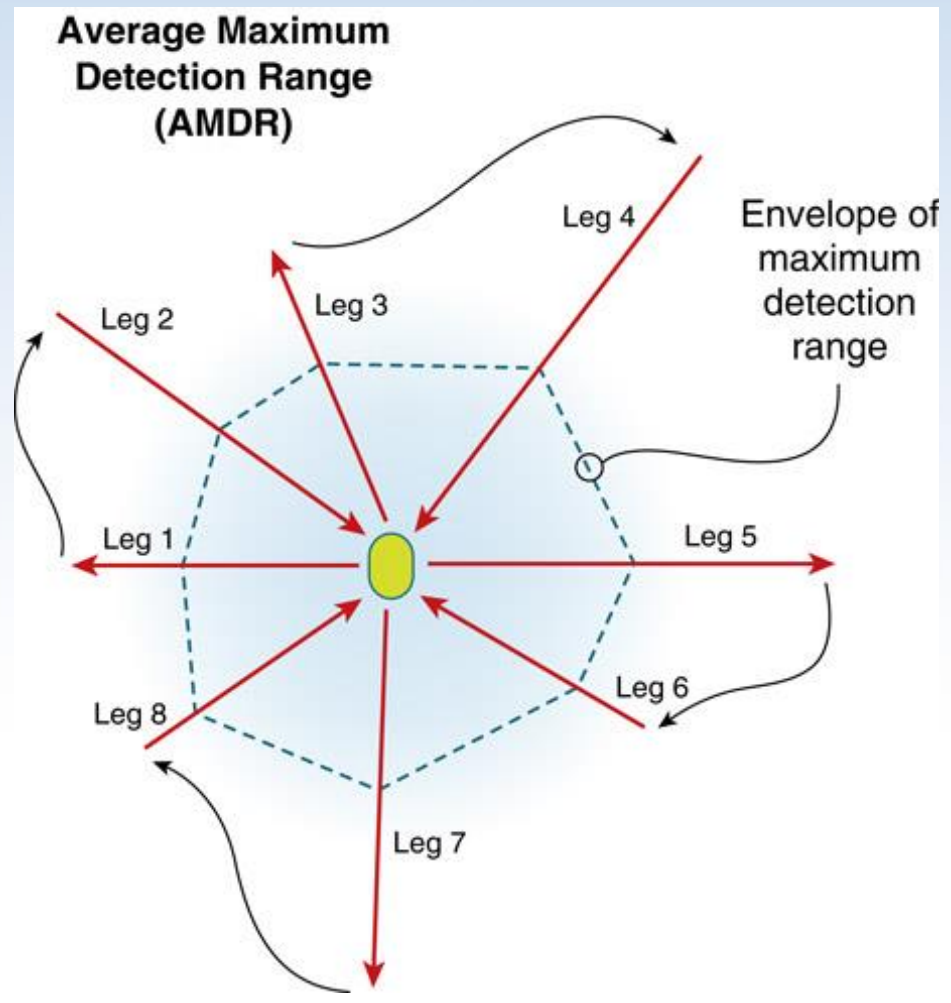
- High coverage search, usually for small items
- Time is not usually an important factor.
- Thoroughness is absolute priority.
 - There will be no second chance
- Any evidence discovered must be specially treated to maximize evidentiary value.



Information to Report to Search Planners

- Estimated forward search speed
- Exact length of time spent searching
- Field measurements of AMDR or some similar field-observable measure
- Other field-observable measures identified and requested prior to the assignment
- Qualitative description of search
- Qualitative description of the search conditions

Estimating AMDR





Grid Naming System (1 of 2)

- Developed by Explorer Search and Rescue (now called *Venturing*)
- Used to describe any specific grid (area) search pattern
- Consists of *number-word-number* pattern
 - Example: 6 - Guide [right] – 30



Grid Naming System (2 of 2)

- Advantages:
 - Offers easily recognized method of communicating details of search pattern
 - Ensures mutual understanding
 - Allows an opportunity to estimate a search team's base line width



Guidelines for Skilled Searching (1 of 2)

- Stay alert and maintain proper attitude.
- Use all senses for searching.
- Scan the searcher “cube” – up, down, right, left, forward, back.
- Yell and make noise, then be quiet and listen.
- Know searchers adjacent to you.



Guidelines for Skilled Searching (2 of 2)

- At night, keep light out of eyes of searchers.
- Always check the obvious.
- Refer family and media to appropriate command staff.
- Search for clues as well as the subject.
- Safety of searchers is paramount.



Anatomy of a Search

- Preplanning and preparation
- First notice
- Check-in
- Briefing
- Assignment
- Debriefing
- Check-out
- Return to service
- Person mission log
- Mission critique



Preplanning and Preparation

- Means having the skill, knowledge, and equipment ready to perform
- Personnel must understand the standards by which they will be measured.
- Involves preparing:
 - Equipment
 - Self



First Notice

- Initial notification of responders to a SAR incident
- Broken into two distinct parts:
 - First notice of incident
 - Personnel call-out



Check-In

- All SAR personnel must travel to incident site and check in.
- Complexity and size of incident determines if check-in is formal or informal.
- Insist that your presence be documented and tracked.



Briefing

- A summary of the situation, past and present
- Purpose: To convey necessary information to personnel who need it
- Specific task assignments are made at the briefing.
- Should be performed prior to a search shift rather than during it.



Assignment

- Includes individual and team responsibilities
- Individuals have certain responsibilities that bear on the effectiveness and safety of other individuals and the team.
- Team should assign one member to be:
 - Navigator
 - Tally
 - Time keeper
 - Team leader



Debriefing

- Necessary for the extraction of relevant and pertinent information
- The transfer of information from field personnel to the search management team
- Term used whenever information is conveyed from subordinates to supervisors in a hierarchy



Check-Out

- Part of the management function called “demobilization”
- May be simple verbal sign or formal procedure
- A final accounting is made of all field personnel.



Return to Service

- Begin mentally preparing for returning to response-ready status even before checking out of current incident.
- Make sure all paperwork and physical work is done for present mission.
- Replace, replenish, and clean all gear and equipment.
- Rest and return your body to mission-ready status.



Personal Mission Log

- Should contain:
 - Date and time of involvement
 - Description of the details
- Have your mission supervisor sign the log to validate your documented actions.
- Some SAR organizations require such logs.



Mission Critique

- Also called the Incident Debriefing
- A formal critique should be attempted as soon as possible after the situation.
- Used to identify why and how the search occurred, how it could have been prevented, and to assess effectiveness