



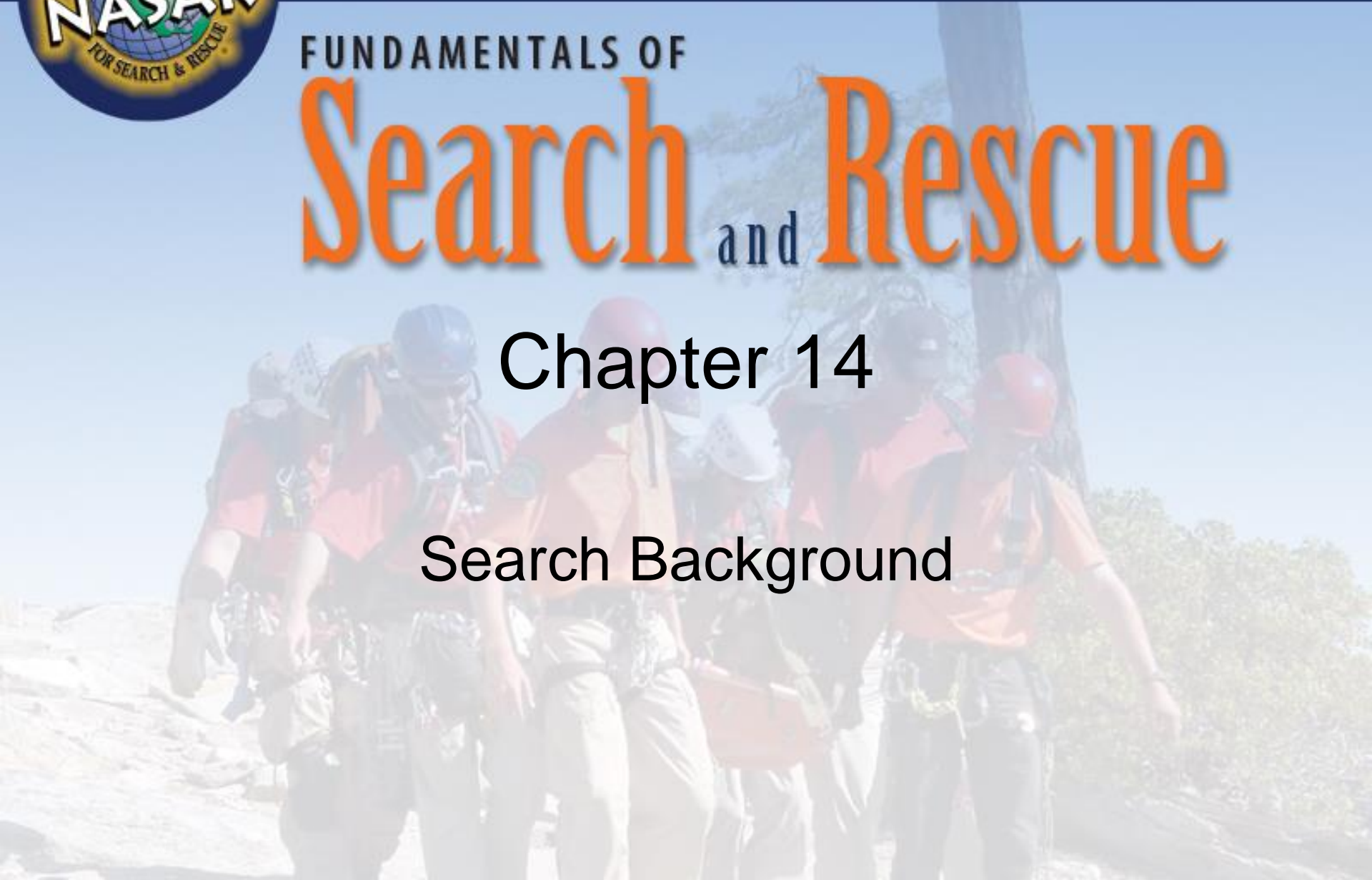
National Association for Search and Rescue

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# Search and Rescue

## Chapter 14

### Search Background





# Objectives (1 of 2)

- Describe the four possible methods for documenting evidence.
- Describe the considerations for handling evidence associated with the following situations:
  - Crash scenes
  - One or more fatalities
  - Injuries



# Objectives (2 of 2)

- Describe in hours the average usefulness of a field researcher per operational period.
- Describe how a complete subject profile can help predict the behavior of a lost person.
- Describe the driving concept behind the application of search theory.
- Describe the unique combination of characteristics on which clue detection is based.



# Attitude and Philosophy

- People involved in SAR must be:
  - Focused
  - Dedicated
  - Skilled
  - Confident
  - Thick-skinned

# The “Crucials” of Search Management (1 of 2)

- Search is an emergency.
- Maximize the probability of success in the minimum time with the available resources.
- Search is a classic mystery.





# The “Crucials” of Search Management (2 of 2)

- Search for clues as well as the subject.
- Concentrate on aspects that are important to search success and under your control.
- Know if the subject leaves the search area.
- Use high coverage grid search as a last resort.



# Clue Consciousness (1 of 2)

- A major job of field personnel
- Today's approach to search is dependent on the detection of clues.
- There are more clues than subjects.
- Detection of clues reduces the search area.





# Clue Consciousness (2 of 2)

- Good clue seeking is learned.
- This skill must be practiced frequently.
- Avoid forming an opinion and then gathering information to support that opinion.
- Know what to do when/if a clue is found before entering the field.





# Clue Orientation (1 of 2)

- Clue detection is based on a unique combination of the characteristics of:
  - The sensor (searcher)
  - The search object (subject or clue generator)
  - The environment



# Clue Orientation (2 of 2)

- Changing any variable could affect how easy or difficult an object is to detect.
- Effective sweep width is the term used to describe this measure of detectability.
- Sweep width
  - A function of the combination of the three described characteristics
  - A measurement of effectiveness



# Search Theory Terms

- Area effectively swept
- Coverage
- Sweep width
- Track line length (effort)
- Probability of area (POA)
- Probability of detection (POD)
- Probability of success (POS)
- Region
- Search area
- Search object
- Search speed
- Segment
- Sensor



# Search Theory

- Operations Research (OR)
  - A professional scientific discipline
  - Provides for a systematic approach to informed decision-making
- Search theory
  - An applied mathematical subdiscipline of OR
  - Uses OR principles and methods to resolve search problems



# Lost Person Behavior (1 of 3)

- Understanding and predicting behavior of a lost or missing person can enhance chances for a successful search.
- Search managers need to know what to expect from the subject.
- Information regarding how this person might act can also help field personnel.



# Lost Person Behavior (2 of 3)

- A skilled search manager might ask:
  - What is the subject's state of health?
  - What is this person's experience base?
  - Can the subject respond to searchers' yells or lights?
  - Will the subject hide or come running?
- Put yourself in the subject's shoes.



# Lost Person Behavior (3 of 3)

- A complete subject profile can help predict the behavior of a lost person.
  - Physical description of clothing and equipment
  - Last known position
  - Activities subject is most likely to engage in
  - Standard practices of subject
  - Personality traits
  - Physical and mental condition





# Handling Evidence (1 of 4)

- How field personnel handle evidence can have a significant impact on the outcome of the search and any potential investigation.
- Proper processing of discovered evidence is essential.
- As clues are discovered, they must be interpreted and acted upon.



# Handling Evidence (2 of 4)

- Clues must be handled in such a way so as to facilitate all search efforts and to preserve evidence for subsequent investigation.
- Plan for the discovery and processing of clues and evidence.
- The place to do this is at the assignment briefing.



# Handling Evidence (3 of 4)

- What to establish about the discovery of evidence at the briefing:
  - How should it be recorded?
  - How should it be protected?
  - Act on it or simply report in about it?
  - What to do if confronted with two trails?
  - How to manage discarded evidence?



# Handling Evidence (4 of 4)

- Situations where evidence may be encountered:
  - Crash scenes
  - Human remains
  - Injury/illness



# Specific Situations

- SAR personnel may encounter:
  - Evidence
  - Crash scenes
  - Human remains
  - Injury



# Crash Scenes (1 of 2)

- Proceed with caution: Safety of personnel is paramount!
  - If the smell of spilled fuel is strong, approach from uphill and upwind.
  - Stabilize the scene and mitigate hazards.
- Establish which subjects are alive and/or dead.



# Crash Scenes (2 of 2)

- Establish a security perimeter.
- Handle any evidence as determined in the briefing.
- Document, photograph, sketch, and protect all pertinent evidence.





# Human Remains (1 of 2)

- Even when circumstances seem obvious, often an investigation must ensue.
- Establish if subjects are deceased.
  - Emergency care supercedes evidence protection.
- Observe the scene and look for clues, evidence, or indications of what might have happened.



# Human Remains (2 of 2)

- SAR personnel may be required to make a written statement.
- Do not search deceased for identification unless directed to do so by authority having jurisdiction.
- When possible, have a witness to activities conducted at scene.



# Illness/Injury

- Handling injuries is similar to handling deaths.
- Try to protect evidence while doing your best for the patient.
  - Proper emergency care is more important than protecting evidence.
- Investigation may hinge on clues, observations, and recollections of those involved.