The following power point training presentations must be viewed at unit training and/or under the supervision of an OSRT Officer.

Members viewing the presentations must sign a OSRT sign in sheet. The completed sign in sheet must be submitted to the OSRT Planning (Training) Section to receive credit for the training.

Standard Guide for Techniques in Land Search

ASTM F1633-97(2008)

OHIO SPECIAL RESPONSE TEAM

Reference:

ASTM F 1633, 12.14;
ASTM 2209, Para 7.12.7; 11.1-11.3.4; 12.1-12.1.4; 12.3-12.3.5.3; 12.4-12.4.8; 12.14; 12.16
MRA 105, Para I.3.g.iv; I.3.g.v

Training PowerPoint slide program prepared by Headquarters OSRT- 8 Dec 2014; Rev 23 Oct 2015

OHIO SPECIAL RESPONSE TEAM

Reference: ASTM F 1633, 12.14

1. Scope

1.1 This guide identifies and describes techniques that may be used by individuals or agencies when searching for persons, property, or evidence on land. The application of one or more of these techniques to any particular land search will depend upon the individual circumstances of the search and the judgment of the person responsible for conducting the search.

1.2 This guide assists individuals and agencies by providing a list of techniques for their consideration during a land search and by providing a brief description of the application of the technique to land search. Some advantages and disadvantages, as well as the most common uses of the techniques, are discussed in the guide. The guide does not, however, purport to discuss all aspects of conducting a land search.

Training PowerPoint slide program prepared by Headquarters OSRT- 8 Dec 2014

4. Summary of Guide

4.1 This guide presents the land search manager with a brief synopsis of various land search techniques that have been shown to be effective in locating missing subjects or evidence. Some known strengths and weaknesses are discussed to assist the land search manager in selecting the most appropriate set of techniques for the incident at hand.

4.2 Much of the information in the guide comes from classroom materials available through the National Association for Search and Rescue *Managing the Search Function*[4] Course and from the Emergency Response Institute's classroom text *Search is an Emergency*.[5]

4 *Managing the Search Function*, Third Edition, 1987. Available from the National Association for Search and Rescue, P.O. Box 3709, Fairfax, VA 22038.

5 LaValla, Rick and Stoffel, Skip. 1987. *Search is an Emergency*, Emergency Response Institute, 4537 Foxhall Drive, Olympia, Washington 98506

TABLE 1 General Considerations for Land Search

Subject Considerations:

number of subjects
age
physical condition and abilities
mental condition and attitude
knowledge and training
clothing
equipment
self-rescue likelihood

Terrain Considerations:

difficulty of travel
difficulty of access
remoteness
exposure to object hazards

Weather Considerations:

recent past
present
future

Time Considerations:

last seen
remaining light, if any
sign age/longevity

Resource Considerations:

available personnel
available equipment
knowledge, training and experience
available air-evac assets

7. Land Search Techniques

7.1 *Attraction*—Method of searching, in which the searcher attempts to establish contact with the subject by audio or visual means, or both. When the technique is used it is important that the searcher remains stationary for a long enough period of time to be sure the subject will respond if able. This method is used when the subject is believed to be responsive. The subject(s) may or may not be mobile, although mobility improves the usefulness of the technique in many instances.

TABLE 2 Examples of Attraction

Visual	Audio
lights	horns
flares	sirens
fires	voice
beacons	bells
strobes	firearms
smoke	PA systems
balloons	whistles

7. Land Search Techniques

7.2 *Confinement*—A search technique that presumes the subject's ability to leave a search area can be prevented or at least detected. It is most useful when several items of pertinent information are known, thereby enabling the subject's rate of travel to be estimated. This information includes the point last seen (PLS), the time the person became lost, and the mobility of the subject keeping in mind that weather or darkness may further limit the subject's mobility.

7. Land Search Techniques

7.3 *Electronic Search*—The use of electronic systems or devices to locate a subject(s) or evidence, or both. Which electronic search techniques can be used depends upon what equipment is available, whether or not the subject or evidence is specially equipped (for example, RECCOy,6 ELT), and whether or not the subject(s) are responsive.

Table 3 summarizes the suitability of the various techniques to specific circumstances of a search.

TABLE 3 Electronic Search Techniques

Not Specially Equipped, Not Responsive/

infrared thermal imaging helicopter Forward Looking Infrared (FLIR)

infrared illumination

light amplification starlight or sniper scope

acoustic amplification magnetometer

Not Specially Equipped, Responsive/

all of the above

seismic sensing

acoustic interrogation loudspeaker, acoustic amplifier for listening

Specially Equipped, Not Responsive/

radio direction finding automatically activated Emergency Locator Transmitter (ELT)

avalanche beacon

transponder interrogation RECCOY personnel locator5

Specially Equipped, Responsive/

all of the above

radio direction finding manually activated transmitter

direct radio/telephone communication

7. Land Search Techniques

7.4 *Hasty Search*—A planned, rapid, non-thorough search, of high probability areas, by small, fast moving, clue conscious crews. This active method of searching is usually used in the early phases of a land search to search the areas where the subject is most likely to be located, or to find a clue to give direction of travel, or both. Some areas in which a hasty crew may be used include known or suspected routes (for example, trails), the area around the point last seen, areas which might be attractive to the subject (for example, ponds, rivers, meadows, vistas), drainages, and ridge tops.

7. Land Search Techniques

7.5 *Investigation*—The act of gathering information, often referred to as intelligence, about the lost person(s). In the course of investigation, information is gathered regarding two elements of lost persons.

The first involves subject behavior and survivability profiles within the boundaries of the search area.

The second pertains to the potential whereabouts and plight of missing persons who are potentially outside the search area (staged incident5 or “bastard” search7). This could be information needed by criminal investigators should the search become criminal in nature

7. Land Search Techniques

7.6 *Line Search*—Includes many methods of searching, all of which use a number of searchers forming a line of some sort to sweep a selected segment of the search area. These methods vary in their manpower and time requirements according to the desired percent of detection. Some line search methods use very tight spacing to find small clues or deceased subjects (for example, an avalanche probe line). Other methods use wide spacing while attempting to make sound contact with a responsive subject. In all cases the probability of detecting the missing subject is inversely related to the spacing between adjacent searchers.[4,5] The objective of line searching is to achieve the desired percent of detection for the complete segment, thoroughly, without duplication. Often this is done by marking the edge of the searched area with flagging or string, and using this as a guide for the next sweep. In some methods, searchers start and end on a common line, but work independently or in small groups using a compass bearing as a guide.

4 *Managing the Search Function*, Third Edition, 1987. Available from the National Association for Search and Rescue, P.O. Box 3709, Fairfax, VA 22038.
5 LaValla, Rick and Stoffel, Skip. 1987. *Search is an Emergency*, Emergency Response Institute, 4537 Foxhall Drive, Olympia, Washington 98506

7. Land Search Techniques

7.7 *Search Dog Crews*—The use of search dog crews in land search involves the fielding of a trained canine, trained handler, and often at least one other trained searcher who handles navigation and radio communications for the crew.

Search dog crews are typically used to identify and develop clues that will lead searchers to the location of a missing subject. Search dog crews, however, are also frequently used to establish the subject's direction of travel and to quickly decrease the probability of area (POA) of one or more search segments.

7. Land Search Techniques

7.8 *Segmentation*—A search strategy that involves dividing the area to be searched into smaller more manageable units called segments. Segments are constructed to assist search crews in achieving strategic objectives in a defined amount of time (usually a single operational period4). They may or may not be equal in size. Properly constructed segments will improve the coverage of the area being searched and will enhance a search manager's ability to set tactical priorities.

Segmentation is also used as a basis for applying statistical probability theory to the prioritization of search resources and the estimation of and tracking of search success.

7. Land Search Techniques

7.9 *Tracking*—The process of following a subject(s) over varying types of terrain based upon physical evidence of the subject's passage. This evidence may include footprints, bruised or broken vegetation, or far more subtle signs such as scuffs, flattening, color changes, or shine. Highly skilled trackers can even suggest information about the subject's physical condition by studying their tracks and gait. For instance, long, even strides are often considered evidence of a subject in good physical condition while a deteriorating or otherwise uneven gait, foot dragging, aimless drifting from the trail, or frequent falls are often considered as an indication of a subject in poorer physical condition.

7. Land Search Techniques

7.9.1 In concert with other search techniques, tracking can aid in verifying information and evidence provided by other land search techniques (for example, search dogs, eyewitness interviews, victim profiling).

It can reduce the search area by establishing a known direction of travel of the missing subject(s).

Finally, because it is basically a step-by-step technique, it can be especially helpful in locating hidden or otherwise unresponsive subjects.

QUESTIONS ?