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Standard Practice for Training a Land Search Tracker¹

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1. Scope

1.1 This guide establishes a standard of training to address specific skills required for a searcher who participates as a Tracker the minimum training, including knowledge, skills, and abilities, required for personnel operating as Trackers in support of a land search effort.

1.1.1 This guide establishes a standard of knowledge for a Tracker as related to general, field, and tracking-specific knowledge and skills.

1.1.2 This guide identifies the performance requirements of a Tracker who performs tracking of humans as it relates primarily to land search events, but might include law enforcement investigation or military situations.

1.2 A Tracker Endorsement alone is not sufficient to indicate that an individual has the knowledge, skills, or abilities to perform any specific duties, including search and rescue operations, beyond those defined within this guide.

1.3 A Tracker is required to have the knowledge and skill sets pertaining to basic tracking techniques and be familiar with unique tracking terminology and the equipment commonly used: tracks on the surface of the land only, including urban or disaster areas that may be isolated or have lost supporting infrastructure.

1.4 This guide does not provide the minimum training requirements for tracking in partially or fully collapsed structures, in water, in confined spaces, or underground (such as in caves, mines, and tunnels).

1.5 A Tracker may be utilized in any of three common tracking environment kinds described Human land SAR resources that may utilize personnel trained to this guide are classified in Classification F1993: Kind A (wilderness), Kind B (urban), Kind C (mountainous) or other kinds.

1.5.1 Individuals trained to this guide are qualified to operate on teams or crews classified as Category – Land Search of Kind – Tracking.

1.5.2 Further training may be required before Tracking Land Search personnel may participate on particular Category or Kind of SAR resource, depending on local needs, regulations, or policies of the Authority Having Jurisdiction (AHJ).

1.6 *This guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this guide to establish appropriate safety and health practices and determine the applicability of regulatory requirements prior to use.*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[F1633 Guide for Techniques in Land Search](#) (Withdrawn 2017)³

[F1767 Guide for Forms Used for Search and Rescue](#)

[F1773 Terminology Relating to Climbing, Mountaineering, Search and Rescue Equipment and Practices](#)

[F1993 Classification System of Human Land Search and Rescue Resources](#)

¹ This practice is under the jurisdiction of ASTM Committee F32 on Search and Rescue and is the direct responsibility of Subcommittee F32.03 on Personnel, Training and Education.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ The last approved version of this historical standard is referenced on www.astm.org.

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 ~~Tracker, bruising, n—a person with specialized knowledge and training who can locate, identify, interpret, and systematically follow evidence of passage of a specific person. footfall damage to vegetation, usually indicated by color variation contrasting with surrounding area of same vegetation.~~

3.1.2 ~~flattening, n—a part of the surface of the ground compressed in a manner consistent with that of a human footfall. A compressed area may include loose debris, vegetation living and dead, and surface moisture.~~

3.1.3 ~~disturbance, n—any disturbance of the natural state of ground surface, including leaf litter, loose debris, duff, dislodged or embedded objects probably caused by footfall movement.~~

3.1.4 ~~flagging, n—vegetation turned in a direction of travel.~~

3.1.5 ~~scuff, n—a mark caused by footfalls contacting firm ground indicating movement in a determinable direction of travel.~~

3.1.6 ~~shine, n—light reflected from within the human footfall damage.~~

3.1.7 ~~sign, sign cutting, n=v—the systematic and regimented procedure used to locate and identify the physical evidence of the presence or passage of a specific person or persons.~~

3.1.8 ~~step by step method, n—a process of identifying contiguous tracks, sign, or both in succession, and acknowledging each one as first described by Albert Taylor, United States Border Patrol.~~

3.1.9 ~~step interval, n—normal walking distance between footfalls measuring between a toe dig and a heel strike.~~

3.1.10 ~~tracking, tracking or track, v—the systematic and methodical identification of physical evidence which thereby allows someone to follow a specific person, person or persons.~~

3.1.11 ~~sign cutting, transfer, v=n—the systematic and regimented procedure utilized by Trackers to locate and identify the physical evidence of the passage of a specific person, any substance inadvertently collected by footgear in a footfall and deposited by succeeding footfalls.~~

3.1.12 ~~response organization, unnatural marks, n—a group, be it governmental or nongovernmental, of which the Tracker is a member and under whose auspices the Tracker operates in the field, straight lines, curves, parallel lines, or marks not related to the natural world.~~

3.1.13 ~~weeping, n—the natural exudation of vegetation fluids resulting from footfall damage.~~

3.2 ~~For definitions of other terms used in this guide see Guide F1633, Terminology F1773, Classification F1993, and other references within.~~

4. Significance and Use

4.1 ~~This guide establishes the minimum knowledge, skills, and abilities that a person must have to perform as a Tracker. No other skills are included or implied.~~

4.2 ~~This guide establishes the minimum standard for training a Tracker as it relates to general, field, and tracking-specific knowledge and skills. A person trained to this guide, who demonstrates the knowledge and skills required, may be recognized as a Tracker. Every person who is identified as a Tracker shall have met the requirements of this guide.~~

4.1.1 ~~A Tracker shall be adequately trained in the environment in which he or she is expected to work.~~

4.2.1 ~~Nothing in this guide precludes a response organization or the Authority Having Jurisdiction the AHJ from adding additional requirements for its own members, personnel.~~

4.3 ~~Being trained as a Tracker Training to this guide is not an indication that a person possesses adequate field skills or knowledge to make mission critical decisions.~~

4.3 ~~This guide is not a complete training or performance document. It is only an outline of the topics required for training or evaluating a Tracker. It may, however, be used in the development of, or as part of, a complete training document or program.~~

4.3.1 ~~This guide does not stand alone and must be used with the referenced documents (1-19),⁴ qualifying tracking training materials, and appropriate field training, under the supervision of a qualified trainer, to provide the specific skills and knowledge needed by a Tracker.~~

4.4 ~~Though this guide establishes a basic training standard, it does not imply that a Tracker is a “trainee,” “probationary,” or other similar team member designation of an organization. It is up to the Authority Having Jurisdiction or response organization to determine the requirements and qualifications for member designations.~~

4.4.1 ~~Determining the requirements and qualifications for a Tracker is the responsibility of the AHJ.~~

4.5 ~~Because tracking could be performed in a dangerous area and Trackers may be required to perform rigorous activities in adverse conditions, safety and fitness standards shall be included in a response organization’s policies and procedures. Trackers~~

shall determine if the task can be completed safely with the personnel, equipment, and training at hand. This guide does not stand alone and must be used with the referenced documents to provide the specific information needed by a Tracker or AHJ.

4.6 This guide by itself is not a training document. It is an outline of the topics required for training or evaluating Tracker endorsed personnel.

4.7 This guide may can be used in conjunction with other appropriate materials to evaluate training documents to evaluate a book or other document to determine if their its content meets includes the necessary topics information required for training or performance of a Tracker. Likewise, this guide may be used to evaluate an existing training program to see if it meets the requirements of this guide.

4.8 The requirements presented in the following sections knowledge, skills, and abilities defined in this guide are not presented in any particular order and do not represent a training sequence.

4.9 A comprehensive Tracker training program shall include an evaluation process to determine the students' ability to meet these training standards. Written and oral examinations designed to evaluate knowledge of theory, policy, and the practices required by the response organization, which include the requirements of this guide, may be utilized. However, field shall document his or her training, as directed by the AHJ, which might include the completion of a position task book, compliant with Guide F3068 or training ground exercises and demonstrations are necessary to determine practical tracking knowledge or a developed skill, or by field demonstration under qualified supervision.

4.9.1 Unless stated otherwise, an ability or proficiency in a skill shall be demonstrated for initial qualification and then as often as required by the AHJ.

4.9.2 Except where a physical skill or ability must be demonstrated, the AHJ shall determine the best way to evaluate a person's knowledge. This may be by written exam, oral exam, field demonstration, or by some combination of the three.

5. General Knowledge and Skills

5.1 To be endorsed as a Tracker, a Land Search Team Member must complete the National Incident Management System (NIMS) course IS-200, "ICS-200: ICS for Single Resources and Initial Action Incidents."

6. General Knowledge and Skills Equipment

6.1 *General Requirements:* A Tracker shall carry, as a minimum, the PPE for personal safety suitable for the normal area of operations.

5.1.1 As a prerequisite a Tracker is expected to be a member of a response organization and possess some training, certification, or endorsement in the environment in which he or she is expected to work.

5.1.2 For land search personnel, meeting the requirements of Guide F2209 shall be considered sufficient for meeting the requirements of 5.1.1.

5.1.3 The response organization shall determine the mental and physical preparedness of the Tracker to serve in the field using such methods as are objective and consistent with direction, if any, from the Authority Having Jurisdiction.

6.2 A Tracker shall carry the equipment required for tracking in the field. A list of recommended equipment can be found in [Appendix X1](#).

6.3 *Personal Equipment:* A Tracker shall be able to explain the reasons to carry, and demonstrate the use of all tracking equipment required by the AHJ.

5.2.1 A Tracker shall possess and carry, as a minimum, sufficient personal protective equipment and equipment to maintain personal safety while working at or around the land search assignment. Suitability of equipment shall be verified by the response organization or Authority Having Jurisdiction. A suggested equipment list can be found in [Appendix X1](#).

5.2.2 Additional specific equipment may be necessary for a Tracker to safely participate in assignments with special circumstances or a variety of conditions, seasons, environments, and terrains.

5.2.3 A Tracker shall be able to explain the reasons to carry, or demonstrate the use of, or both, all personal equipment required by the response organization or Authority Having Jurisdiction.

5.3 Team Equipment:

5.3.1 A Tracker shall be familiar with tracking equipment identified and commonly used by the response organization or Authority Having Jurisdiction.

7. Specific Knowledge and Skills for Tracking

7.1 *Tracking Theory:* A Tracker shall explain the significance, as it relates to the mission, of the following:

7.1.1 A Tracker shall explain the significance, as it relates to any search and rescue mission, of the following examples: How track evidence supports initial information regarding the search subject;

6.1.1.1 Verify that evidence supports initial information

6.1.1.2 Establish a direction of travel

6.1.1.3 Limit search area

7.1.2 How establishing the direction of travel affects search efforts;

7.1.3 How trackers can limit a search area.

7.2 Tracking Procedure:

(See Guide A Tracker shall ~~F1633~~) demonstrate the ability to identify and describe a track as follows:

~~6.2.1 A Tracker shall know the basic techniques for the “Step-by-Step” method. It is a process of identifying contiguous tracks or sign or both in succession and acknowledging each one, either as part of the learning process, or as an effective tactic when required or as needed.~~

~~7.2.1 A Tracker shall demonstrate the ability to identify and describe a track by: Measuring the overall length, width of sole, width of heel, length of heel, or if no heel is present, some other visible feature;~~

~~6.2.2.1 Measuring overall length, width of sole, width of heel, length of heel, or if no heel is present, denote a measurement to a visible feature.~~

~~6.2.2.2 Determining the type, shape, and condition of the footgear being worn.~~

~~6.2.2.3 Drawing a picture of a track including all unique marks and designs.~~

~~7.2.2 A Tracker shall demonstrate the ability to set up a tracking stick: Determining the type, shape, and condition of the footgear being worn;~~

~~6.2.3.1 Point of stick on forward heel strike, place marking over rear toe dig, second marking over rear heel strike.~~

~~6.2.3.2 Length of foot between marks.~~

~~6.2.3.3 Stride interval is the normal walking distance between footfalls shown from the point of stick to the first mark.~~

~~7.2.3 A Tracker shall demonstrate the ability to clearly mark tracks and the direction of travel by: Drawing a picture of a track including all unique marks and designs.~~

~~6.2.4.1 Placing indicators, a pin, powder, or other marking material just behind heel mark to mark each track.~~

~~6.2.4.2 Placing indicators above ground level occasionally to clearly show the trend of the direction of travel.~~

~~6.2.5 A Tracker shall demonstrate the ability to recognize, identify, and describe the following types of sign under actual conditions:~~

~~6.2.5.1 Compressed Areas—Areas of ground surface that include loose debris and vegetation both living and dead, surface moisture and all types of soil surfaces, compressed in a manner consistent with that of “human footfalls.”~~

~~6.2.5.2 Shine—The light reflected from within the human footfall damage.~~

~~6.2.5.3 Flagging—Vegetation turned in a direction of travel.~~

~~6.2.5.4 Bruising—Footfall damage to vegetation, usually indicated by color variation contrasting with surrounding area of same vegetation.~~

~~6.2.5.5 Weeping—The natural exudation of vegetation fluids resulting from footfall damage.~~

~~6.2.5.6 Dislodged or embedded objects moved or compressed by a footfall.~~

~~6.2.5.7 Disturbance—Any disturbance of the natural state of ground surface, including: leaf litter, loose debris, and duff, probably caused by footfall movement.~~

~~6.2.5.8 Scuff—Mark caused by footfalls contacting firm ground indicating movement in a determinable direction of travel.~~

~~6.2.5.9 Transfer—Any substance inadvertently collected by footgear in a footfall and deposited by succeeding footfalls.~~

~~6.2.6 The Tracker shall demonstrate the ability to observe and explain “simple” sign aging characteristics and estimate the time elapsed since the sign was left. The Tracker shall include all factors of vegetation damage, rain, sun, and other natural effects.~~

~~6.2.7 The Tracker shall demonstrate the ability to recognize and explain footprint characteristics related to the manner and movements of the sign maker.~~

7.3 A Tracker shall demonstrate the ability to set up a tracking stick as follows:

7.3.1 Placing point of stick on the heel strike of the next print, mark stick over the existing toe dig, and place a second mark over the existing heel strike.

7.3.2 The distance between the point of the stick at the next heel strike and the existing toe dig is referred to as the *step interval*.

7.4 A Tracker shall demonstrate the ability to use a tracking stick to find the next track when using the Step-by-Step method as follows:

7.4.1 Place observed track between the markings;

7.4.2 Pivot the point of the stick left and right in a sixty-degree arc;

7.4.3 Focus your eyes in the prime sign area, at the end of the stick, for the next track;

7.4.4 Locate track evidence;

7.4.5 Mark track by placing an indicator behind the heel strike;

7.4.6 Move on to next track;

7.4.7 Show the trend of the direction of travel by occasionally placing visible indicators above ground level.

7.5 A Tracker shall demonstrate the ability to utilize the sun or another light source to reveal sign using the following:

7.5.1 A mirror;

7.5.2 A handheld light that provides illumination, but does not contribute to eye fatigue.

7.6 A Tracker shall demonstrate the ability to recognize, identify, and describe the following types of sign under actual conditions, and be able to articulate how the sign is related to the track:

- 7.6.1 Bruising;
- 7.6.2 Flattening;
- 7.6.3 Disturbance;
- 7.6.4 Flagging;
- 7.6.5 Scuff or scrape;
- 7.6.6 Shine;
- 7.6.7 Transfer;
- 7.6.8 Unnatural marks;
- 7.6.9 Weeping.

7.7 A Tracker shall demonstrate the ability to observe and explain simple sign aging characteristics and estimate the time elapsed since the sign was left.

- 7.7.1 A Tracker shall include factors of vegetation damage, rain, sun, and other natural effects.

7.8 A Tracker shall demonstrate the ability to recognize and explain footprint characteristics related to the manner and movements of the sign maker.

7.9 A Tracker shall demonstrate the ability to function in any position in a recommended three-person tracking team as follows:

- 7.9.1 Point Person, using a tracking stick to follow track evidence.
- 7.9.2 Right or Left Flanker, one step behind the point person, each of whom assists the point person from a different perspective and also watches for approaching sign on either side.
- 7.9.3 A tracker shall identify the rationale for frequent rotation among the positions, including issues of back strain, eye strain, and focused attention cognitive fatigue.

7.10 Tracking Technique: A Tracker shall explain the concept and significance of “sign cutting,” including the following:

7.10.1 The Tracker shall demonstrate the ability to use a tracking stick to find the next track when using the “Step-by-Step” method. How natural and man-made barriers help locate human sign;

- 6.3.1.1 Place observed track between markings and let the point of the stick focus your eyes on the prime sign area of next track
- 6.3.1.2 Locate track evidence
- 6.3.1.3 Mark track
- 6.3.1.4 Move on

7.10.2 The Tracker shall demonstrate the ability to utilize the sun angle or a light source to reveal sign. How multiple search or tracking teams can be used to advance a specific sign line in an organized and regimented manner;

6.3.3 The Tracker shall demonstrate the ability to function in any position in a recommended three-person tracking team.

- 6.3.3.1 Point person using a tracking stick to follow track evidence.
- 6.3.3.2 Right and left flankers, one step behind the point person, who assist the point person and watch for approaching sign from the sides.
- 6.3.3.3 Rotate positions often.

7.10.3 The Tracker shall explain the concept and significance of “sign cutting” as follows: How a Tracker can advance to another location to detect sign or tracks based on the probable movements of the search subject.

- 6.3.4.1 Utilizing natural and man-made barriers to locate human sign.
- 6.3.4.2 Used in conjunction with multiple search or tracking teams to advance prime sign in an organized and regimented manner.
- 6.3.4.3 Going to another location to detect sign or tracks based on the probable movements of the search subject.

7.11 The A Tracker shall be able to complete written documents required by the response organization, chain of command, or Authority Having Jurisdiction. If no such documentation is prescribed, the Tracker may prepare AHJ to document a tracker’s efforts and provide other trackers with a summary of the relevant information. Appendix X2 an alternative report format as described in provides an example of the documentation that Appendix X2: a Tracker is expected to complete.

8. Keywords

- 8.1 search; track

APPENDIXES

(Nonmandatory Information)

X1. EQUIPMENT RECOMMENDED FOR TRACKING (See Guide F1767)

- Adequate clothing appropriate for weather and terrain
- A broad-brimmed hat for protection and to reduce glare
- Tracking stick with two rubber bands or “O” rings
- Measuring device (small tape measure)
- Notebook
- Tracking cards
- Writing instrument
- Flagging material (bio-degradable), pins, powder, or other track identification material
- Handheld flashlight which provides a soft diffuse yellowtinted light without spots or circles
- Mirror (3” by 5”)
- Compass

X1.1 Clothing appropriate to conditions;

X1.2 A broad-brimmed hat for protection, shade, and reducing glare;

X1.3 Tracking stick, about 42 in., with two rubber bands or O rings;

X1.4 Measuring device (small tape measure that locks open);

X1.5 Small notebook (rain-proof recommended);

X1.6 Tracking cards (rain-proof recommended);

X1.7 Writing instrument (rain-proof recommended);

X1.8 Flagging material (biodegradable recommended) or scraps of toilet paper;

X1.9 Pins, powder, or other track identification material;