

**COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF EMERGENCY MANAGEMENT  
SEARCH AND RESCUE PROGRAM'S**

**STANDARDS FOR**

**FIELD TEAM SIGNCUTTER**

**April, 1997**

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## STANDARDS FOR “FIELD TEAM SIGNCUTTER”

### I. SCOPE

- A. These standards were developed to define the minimum qualification requirements necessary for certification as a Field Team Signcutter by the Commonwealth of Virginia’s Department of Emergency Management.
- B. The certification issued under these standards is a requirement only for those personnel who wish to voluntarily participate in the search and rescue program of the Department of Emergency Management at the level indicated in this standard.
- C. The Field Team Signcutter will be able to perform the following functions in the general environment of the Commonwealth of Virginia anytime of the year, day or night, and in most weather conditions experienced in the Commonwealth. In order to accomplish this, the Field Team Signcutter will be able to:
  - 1. Search for missing persons in wilderness, rural, suburban and urban areas, using the rudimentary art and skills associated with signcutting and tracking addressed in these standards, as a member of a ground search and rescue team .
  - 2. Assist in missing person investigations on searches to help obtain necessary signcutting and tracking information.
  - 3. Interface with and instruct other searchers, search staff and local agencies on the abilities of, and team tactics that might be used by, Field Team Signcutters.
  - 4. Demonstrate the ability to instruct other searchers on being clue, sign and track aware.
  - 5. Assist ground rescue teams in the evacuation of missing subjects.
  - 6. Navigate accurately on land.
  - 7. Survive an unexpected wilderness emergency.

### II. TERMINOLOGY

The definitions listed here are for the purpose of these standards only. They may or may not reflect the definitions used by other individuals, groups, agencies or publications. These definitions are in very RUDIMENTARY terms.

**Clue** - Item of personal usage, i.e. clothing, equipment, medicine, etc.

**Field Team Leader (FTL)** - The Leader of a Ground Search and Rescue Team who has been certified in that discipline by the Commonwealth of Virginia’s Department of Emergency Management (VDEM).

**Field Team Member (FTM)** - A Member of a Ground Search and Rescue Team who has been certified in that discipline by VDEM.

**Field Team Signcutter (FTS)** - A member of a Ground Search and Rescue Team who has been certified in that discipline by VDEM. The FTS should be able to: detect human passage by using track traps, distinguish the missing subjects sign and tracks, give a relative age of that sign or track, and detect a direction of travel.

**Field Team Signcutter Course Coordinator/Course Manager/Head Instructor** - An individual who oversees the operation of the Field Team Signcutter Course for the VDEM as addressed in these Standards and Appendixes. The FTS Course Coordinator is appointed by the Commonwealth of Virginia's DES SAR Coordinator and the VDEM SAR Program's Chief Instructor. For the purpose of these FTS Standards, FTS Course Coordinator, Course Manager, and Head Instructor are one in the same.

**Field Team Signcutter Lead Instructor** - An instructor who may oversee the training, instruction and testing of the FTS Course in the absence of the VDEM FTS Course Coordinator.

**Incident Commander** - The person designated by the Legal Responsible Agent to coordinate and manage on scene operations during a specific SAR incident, Depending upon what management system is used and what organizations are involved, this person may be called the Mission Coordinator (MC), On-Scene Commander (OSC) or Incident Commander (IC).

**Incident Staff (IS)** - Individuals who work in, or are in charge of, certain areas of a search base, under the supervision of a Incident Commander. These positions may include, among others, Plans, Operations, and Logistics.

**Independent Signcutting /Tracking Resource** - An individual who, because of his or her training, experience and knowledge, is requested to respond independently to a missing person search as an signcutting or tracking resource. These persons are certified by the Commonwealth of Virginia's Department of Emergency Management as either a Search and Rescue Signcutter or a Search and Rescue Tracker.

**Last Know Position (LKP)** - The last know position of the missing subject(s). i.e. known by the way of clues, sign, tracks, etc.

**Place Last Seen (PLS)** - The last place (area) where the missing subject(s) was seen.

**Probability of Clues (POC)** - The percentage of probability that if clues from a missing subject were actually in the search area, the searcher should have located (detected) those clues by the search effort.

**Probability of Detection (POD)** - The percentage of probability that if a subject were actually in the search area, the searcher should have located (detected) the subject by the search effort.

**Search and Rescue Signcutter (SARS)** - An individual who has completed the course Search and Rescue Signcutting, met the additional requirements, and is Certified in that discipline by the Virginia Department of Emergency Management as a Search and Rescue Signcutter.

**Search and Rescue Tracker (SART)** - An Individual who has completed the course Search and Rescue Tracking, met the additional requirements, and is Certified in that discipline by the Virginia Department of Emergency Management as a Search and Rescue Tracker.

**Sign** - Any disturbance, or items, that is unnatural to the environment.

**Signcutting** - The act of locating clues, sign and tracks.

**State Search and Rescue (SAR) Coordinator** - The person designated by the Coordinator of Emergency Management to coordinate the Search and Rescue program administered by the Virginia Department of Emergency Management and to coordinate overall State SAR operations.

**Track** - Identifiable sign.

**Tracking** - The finding, identifying, interpreting and following of sign and tracks.

**Virginia Department Of Emergency Management (VDEM)** - Agency whose primary responsibility is providing support and guidance to local governments dealing with and recovering from emergencies or disasters including the SAR incident.

### **III. COURSE ADMISSION CRITERIA**

#### **A. Age:**

The minimum age for FTS certification is eighteen (18).

#### **B. Affiliation and Experience**

1. Applicants for FTS training should hold active membership in a professional, paid or volunteer, Search and Rescue (SAR) group, or an established Emergency Management organization such as a law enforcement agency, rescue squad, or a fire department. First consideration for training will be given to these applicants. Additional factors such as prior experience, potential for use of training, number of SAR missions per year and other criteria may be considered.

2. Applicants must have completed Field Team Member (FTM) certification as recognized by the Virginia Search and Rescue Council (VaSARCo) and the Commonwealth of Virginia's Department of Emergency Management Search and Rescue Program or its equivalent.

#### **IV. KNOWLEDGE AND PERFORMANCE EXPECTATIONS**

FTS's are expected to fully meet the expectations of the Field Team Member Standards Part III as certified by the Virginia Department of Emergency Management. The FTS student must demonstrate an understanding of the items listed under each subject and must be able to demonstrate the ability to perform the skills herein. Specific written and field tests have been designed to help evaluate the student(s) knowledge and performance skills.

##### **A. Signcutting Tools And Their Usage**

1. Describe the following signcutting tools, demonstrate their usage, and explain or show how they may be improvised:
  - a. Tracking stick
  - b. Measuring tape
  - c. Popsicle sticks
  - d. String
  - e. Mirrors
  - f. Magnifying glass
  - g. Tweezer
  - h. Light sources
  - i. Colored lenses
  - j. Flagging tape
  - k. Sunlight
  - l. Track traps
  - m. Binoculars
  - n. Notebook
  - o. Camera
  - p. Casting materials

##### **B. Tracking Stick**

1. Describe and demonstrate the usage of the tracking stick.
2. Describe and demonstrate what may be used as a tracking stick.
3. Describe what and demonstrate how measurements are placed on a tracking stick.
4. Explain what may be wrong with using O-Rings, rubber bands, etc. on one's tracking stick.
5. Explain the difference in measuring animal gaits vs. human stride.
6. Explain what one must not use one's tracking stick for and why.

##### **C. Using The Sun**

1. Describe the best times of day to signcut using the sun.
2. Explain and demonstrate ways to overcome overhead sun, washout and night signcutting/tracking.

3. Explain and demonstrate how to approach a sign/track using the sun and other light sources.
4. Define and demonstrate the “Angle of Vision.”
5. Define and demonstrate “Side Heading.”
6. Explain and demonstrate how to make your own “Sun” and under what conditions it may or may not work.

#### D. Log Book

1. Explain the importance, and legal issues, of maintaining a log book.
2. Describe and display what information should be recorded in one’s log book.

#### E. Awareness

1. Explain the importance of awareness.
2. Describe five (5) negative effects on awareness.
3. Explain five (5) ways to become more clue/sign/track aware.
4. Explain how each of the senses is important and how each is used in awareness.
5. Describe and demonstrate how one would use “Splatter Vision.”
6. Describe seven (7) basic elements of visual perception and demonstrate the ability to locate each.
7. Explain the problems of locking onto a track.
8. Explain and demonstrate the ability of how to overcome locking onto a track.
9. Explain and demonstrate the ability to scan your search area.

#### F. Field Team Signcutter Search Tactics And Related Knowledge

1. Describe and show what a FTS is looking for.
2. Describe and show where a FTS may look for sign and tracks.
3. Explain what track traps are, the different types, and demonstrate the ability of how to utilize each.
4. Explain and demonstrate the usage of the “36-Inch Detection Method.”
5. Explain and demonstrate how one approaches track traps, sign and tracks.
6. Explain and demonstrate how one may physically mark and protect a clue, sign or track.
7. Describe, and demonstrate the ability to obtain the information a FTS needs from base.
8. Explain and demonstrate where the FTS’s tasks begins.
9. Explain who may get briefed and debriefed and why.
10. Describe, and demonstrate the ability to report to base and others, the information an FTS should report back to his/her debriefer.
11. Describe how and demonstrate the ability to work as a:
  - a. Member of a Ground Search Team
  - b. Member of a Hasty Ground Search Team
  - c. Member of a Dog Team
12. Describe how and demonstrate the ability to perform the following:
  - a. Circle Signcutting
  - b. Feature Signcutting
  - c. Perimeter Signcutting

#### d. Cross Signcutting

13. Explain and demonstrate the ability to instruct other search team members on the tactics a FTS may use.
14. Explain and demonstrate how one would physically follow a clue/sign/track trail.
15. Define and demonstrate the ability to perform leapfrogging.
16. Define and demonstrate the ability to perform accordion tracking.
17. Explain the "Angle of Drift."
18. Describe and demonstrate the position of a FTS on a Ground Search Team and explain when and why that may change.
19. Describe and demonstrate ways to protect the Point Last Seen (PLS) or the Last Known Position (LKP).
20. Describe the difference between tracking and signcutting.
21. Describe how a FTS may be used on a team with Search and Rescue Signcutters and Search and Rescue Trackers.
22. Describe and demonstrate the ability to use other search resources in FTS tactics.
23. Demonstrate the ability to locate relatively easy tracks among other tracks and sign.
24. Explain and demonstrate ways one may overcome a trashed PLS or LKP.
25. Explain why signcutting/tracking may, or may not, work for one on any given day.

#### G. Soil

1. Describe soil solids.
2. Describe pore space.
3. Describe the content of most soils.
4. Explain how moisture and air may affect sign or tracks.

#### H. Night Signcutting

1. Explain why searchers may search inadequately at night.
2. Explain and demonstrate why signcutting may be easier at night than during the day.
3. Explain and demonstrate ways to signcut at night more effectively.
4. Explain and demonstrate how to use one's lights effectively.
5. Explain the dangers of night signcutting.

#### I. Shoe Information

1. Describe four (4) basic types of footwear.
2. Describe what a track showing a heel may tell one.
3. Describe the dangers of determining unknown measurements of a track (footwear) based upon a known, or reported, shoe size.
4. Describe "Track Classifications". Locate and describe each.
5. Describe and demonstrate the dangers of describing a track over the radio.
6. Describe some common sole and heel patterns.
7. Explain the importance of a track identification form.

#### J. Aging

1. Define aging.
2. Explain the main reason that sign/tracks age.

3. Describe four (4) influences that help create aging.
4. Describe other ways (subcategories of influences) that tracks may age.
5. Explain foot indexing, describe when it is used, and demonstrate the ability to use it correctly.
6. Explain thumb indexing, describe when it is used, and demonstrate the ability to use it correctly.
7. Explain how old tracks can look new and how new tracks can look old.
8. Describe the aging time flow.
9. Describe and demonstrate ways to determine the relative age of clues, sign or tracks.
10. Demonstrate the ability to give a relative age of a know sign or track.
11. Explain the FTS's worst problem in aging.
12. Explain why trying to age sign or tracks is one of the most dangerous aspects of signcutting/tracking in search and rescue.

#### K. Signcutting/Tracking In Soils

1. Describe which of, and how, the basic elements of visual perception are involved with finding sign/tracks in/on soils.
2. Explain what they are and demonstrate the ability to discover eight (8) different ways of detecting sign/tracks in/on soils.
3. Demonstrate the ability to give a relative age and to determine a direction of travel in/on soils.
4. Explain weather influences on soils.
5. Explain "Time of Year" influences on soils.

#### L. Signcutting/Tracking In Leaves and Pine Needles

1. Describe which of, and how, the basic elements of visual perception are involved with the finding of sign/tracks in/on leaves and pine needles.
2. Explain what they are and demonstrate the ability to discover eight (8) different ways of detecting sign/tracks in/on leaves and pine needles.
3. Demonstrate the ability to give a relative age and to determine a direction of travel in/on leaves and pine needles.
4. Explain weather influences on leaves and pine needles.
5. Explain "Time of Year" influences on leaves and pine needles.

#### M. Signcutting/Tracking In Grass

1. Describe which of, and how, the basic elements of visual perception are involved with the finding of sign/tracks on/in grass.
2. Explain what they are and demonstrate the ability to discover eight (8) different ways of detecting sign/tracks on/in grass.
3. Demonstrate the ability to give a relative age and to determine a direction of travel on/in grass.
4. Explain weather influences on grass.
5. Explain "Time of Year" influences on grass.
6. Explain how the sun may be used signcutting on grass.

#### N. Signcutting/Tracking In Low Vegetation

1. Describe which of, and how, the basic elements of visual perception are involved with the finding of sign/tracks in/on low vegetation.

2. Explain what they are and demonstrate the ability to discover eight (8) different ways of detecting sign/tracks in/on low vegetation.
  3. Demonstrate the ability to give a relative age and to determine a direction of travel in/on low vegetation.
  4. Explain weather influences on low vegetation.
  5. Explain "Time of Year" influences on low vegetation.
- O. Signcutting/Tracking On Gravel/Rocks/Stones
1. Describe which of, and how, the basic elements of visual perception are involved with the finding of sign/tracks on/in gravel/rocks/stones.
  2. Explain what they are and demonstrate the ability to discover eight (8) different ways of detecting sign/tracks on/in gravel/rocks/stones.
  3. Demonstrate the ability to give a relative age and to determine a direction of travel on gravel/rocks/stones.
  4. Explain weather influences on gravel/rock/stone.
  5. Explain "Time of Year" influences on gravel/rock/stone.
- P. Signcutting/Tracking On Frost/Dew/Sleet/Snow
1. Describe which of, and how, the basic elements of visual perception are involved with the finding of sign/tracks on/in frost/dew/sleet/snow.
  2. Explain what they are and demonstrate the ability to discover five (5) different ways of detecting sign/tracks on/in frost/dew/sleet/snow.
  3. Demonstrate the ability to give a relative age and to determine a direction of travel on frost/dew/sleet/snow.
  4. Describe needle ice, rime frost, hoar frost and water ice.
  5. Describe five (5) properties of snow.
  6. Explain weather influences on frost/dew/sleet/snow.
  7. Explain "Time of Year" influences on frost/dew/sleet/snow.
- Q. Animal (Mammal) Tracking
1. Name and describe the basic animal gaits.
  2. Describe and demonstrate the ability to identify the following families' tracks and basic gaits:
    - a. Dog
    - b. Cat
    - c. Raccoon
    - d. Hoofed
  3. Describe the difference between a gait and a stride.
  4. Describe how an animals' track or gait may appear to be human.
  5. Describe which animals' track and gait may cause problems for the FTS and other searchers.
- R. Pressure Releases
1. Define pressure releases.
  2. Define indicator pressure releases.
  3. Define fluctuating pressure releases.
  4. Define micro pressure releases.
  5. Explain how, and why, many pressure releases could be associated with one sign or track.

6. Describe what could cause, and demonstrate the ability to find each of, the following pressure releases:
  - a. Cliff
  - b. Overhang
  - c. Cave
  - d. Cave-in
  - e. Slope
  - f. Rounded slope
  - g. Gouge
  - h. Ridge
  - i. Peak
  - j. Crest
  - k. Mound
  - l. Crevasse
  - m. Fissuring
  - n. Plume
  - o. Drag out
  - p. Ripping
  - q. Explosion
  - r. Dome
  - s. Crease
  - t. Reverse crease
7. Explain why the reading of pressure releases is one of the most dangerous aspects of signcutting/tracking in search and rescue.

S. Human Strides

1. Describe four (4) common human strides and demonstrate the ability to detect each on easy soil conditions.
2. Describe the problems with determining what stride is being used.
3. Describe what can be confused for human strides.

T. Uphill - Downhill - Sidehill Signcutting/Tracking

1. Describe and demonstrate four (4) ways to detect each of the above and determine a direction of travel.
2. Describe and demonstrate how a person going up or down hill may use longer or shorter strides.

U. Evasive Signcutting/Tracking

1. Discuss what type of missing subject might use evasive tactics against a search team.
2. Describe some ways to detect evasive tactics.
3. Describe some ways to counter evasive tactics used by a missing subject.
4. Explain at what point you would abort your task for a missing subject being evasive.
5. Explain at what point you would abort your task for a missing subject known to be armed.
6. Describe and demonstrate the ability to detect five (5) different signs that a person may be walking backwards.

V. Other Required Knowledge And Skills

1. Explain the problems with “Shooting from the Hip.”
2. Explain the difference between a FTS and an Independent Signcutting/Tracking Resource.
3. Explain and demonstrate the ability to instruct other search team members on being be more aware and how to search for sign.
4. Describe the following terms a FTS may encounter:
  - a. Conclusive evidence
  - b. Substantiating evidence
  - c. Flattening
  - d. Regularity
  - e. Jump-tracking
  - f. Conclusively human
  - g. Corroborant sign
  - h. Spore
  - i. Simple tracking
  - j. Systematic tracking
  - k. Speculative tracking
  - l. Ghost tracks
5. Explain some of the misconceptions that people have of signcutting and tracking as it relates to search and rescue.
6. Explain what information is need from people who state that they are trackers.
7. Explain the number one “Rule” in signcutting and tracking.
8. Explain why FTS are forced to break that rule and what the consequences of such actions may be.
9. Explain some of the legal ramifications in signcutting/tracking mistakes as it pertains to search and rescue.
10. Discuss how many clues, signs and tracks may be in a one mile radius from the PLS or LKP.
11. Explain where a task begins and why.
12. Explain why a FTS must prove everything.
13. Describe how to search for downed aircraft.

## **V. TEST METHODS**

### **A. Written Testing**

1. The written test consists of one hundred questions and several essays representative of the material presented in these standards. The written test must be approved by the VDEM FTS Course Coordinator, the VDEM SAR Coordinator, and VDEM SAR Program Chief Instructor.
2. The FTS written test may only be administered by the VDEM FTS Course Coordinator, an FTS Lead Instructor, the VDEM SAR Coordinator or the VDEM SAR Program Chief Instructor.
3. Passing score is eighty (80) percent of the questions answered correctly.
4. Failure of the written test constitutes failure of the course.

5. A copy of the answers of the written test will be kept on file with the VDEM SAR Coordinator.

#### B. Practical Testing

1. The practical testing consists of the student(s) demonstrating their knowledge of, and the ability to use, these Standards. The practical test is addressed in Appendix B.
2. "Shooting from the hip," the failure to age sign or tracks, not obtaining the needed information for the practical test, not signcutting the PLS or LKP given to the student, and trashing the tracks, among others, will result in automatic failure of the field test. (Appendix B)
3. Practical testing can be evaluated only by the FTS Course Coordinator and/or FTS Lead Instructors. All other evaluators must be approved as addressed in Appendix D.
4. A check sheet will be used for the practical field test evaluations.
5. A grade below 80% correct will constitute failure of the field test.

#### C. Other Pass/Fail Criteria

Based upon the recommendation of the VDEM FTS Course Coordinator or by at least two VDEM FTS Instructors or one VDEM FTS Instructor and one Commonwealth of Virginia Search and Rescue Technical Instructor, a FTS student may fail the course due to poor performance in any of the following: the search simulation, class room participation, homework assignments, and/or field work.

#### D. Retesting The Written and Practical Tests

1. Students who complete the required training and classroom work but fail due to failure of the written or practical test are eligible for retesting.
2. Neither the written test nor the practical test may be retaken the same day as the original testing.
3. The student must wait one (1) month after failure of the written test before retesting.
4. The student must wait three (3) months after failure of the practical field test before retesting.
5. The practical retest may only be evaluated by the VDEM FTS Course Coordinator, or by an evaluator that the FTS Coordinator appoints. That evaluator must meet the criteria addressed in Appendix D.
6. Each student is responsible for making arrangements for retesting with the VDEM SAR Coordinator or the VDEM FTS Course Coordinator on an individual basis. The retests will be held at a location suitable to both the examiner/evaluator and the student.
7. If a student fails the retest in either the written or practical test, the student must retake the entire course and retest in both the written and practical tests.
8. If a student fails any portion of a retest, the student must wait six (6) months from the date of the retest before retaking the course.

#### E. Poor Performance Evaluation

1. Students who fail due to poor performance in the classroom, homework assignments, or field work, must retake the entire course. If this student passed either his/her written or practical tests, the student will not have to retake those tests passed except under Section VII. Recertification Procedures.
2. Students who do not pass the FTS course because of poor performance in the classroom, homework assignments, or field exercises, and that student feels that he/she has been unfairly evaluated on the performance evaluation, may request a hearing with the instructor(s) who failed him/her, the VDEM FTS Course Coordinator, the VDEM SAR Coordinator, the VDEM SAR Chief Instructor and one VDEM SAR Program Technical Instructor. The decision of either passing or failing the student based upon the statements and documentation presented by the parties involved must be by a majority of those present, excluding the FTS Instructor(s) who failed the student and the student. The final decision will be arrived at without the FTS instructor(s) who failed the student and the student attending. The decision will be made before the end of the current training (class) session and will be binding on all parties.

## **VI. CERTIFICATION PROCEDURES**

- A. The following criteria must be met in order to qualify for certification for Field Team Signcutter:
  1. Attend and pass the Field Team Member training course as recognized and certified by the Commonwealth of Virginia's Department of Emergency Management Search and Rescue Program, or its equivalent, or with the approval of the VDEM FTS Course Coordinator and the VDEM SAR Coordinator.
  2. Attend and pass the VDEM FTS Course. This includes passing the written exam, the practical testing, and the performance evaluation. Students must also be recommended for certification by the VDEM FTS Course Coordinator and/or the FTS Lead Instructor overseeing the student's class.
  3. Be at least eighteen (18) years of age.
  4. Candidates must be a member of a Search and Rescue Group, law enforcement agency, rescue squad, fire department, Civil Air Patrol, or any other agency or group that has need for Search and Rescue Field Team Signcutter Training or with the permission of the FTS Course Coordinator.
- B. Equivalent Training and/or Experience
  1. Those individuals who, by virtue of past training and experience, possess the necessary knowledge and skills, may be permitted to challenge the written and practical testing, and upon passing will be certified as a FTS, provided all prerequisite requirements are met. The written and practical testing may only be done by the VDEM FTS Course Coordinator.
  2. Members of recognized search and rescue organizations who receive their training from that organization and who are a member of the Virginia

Search and Rescue Council (VaSARCo) or have a Memorandum of Understanding (MOU) with the Commonwealth of Virginia's Department of Emergency Management, may apply for the VDEM certification as a FTS. The Lead Instructor for the Groups FTS course must be approved by the VDEM Field Team Signcutter Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program Chief Instructor. The organization's FTS training, FTS Course and FTS standards must meet or exceed the VDEM SAR FTS Standards. These applications will be processed on a case by case basis.

C. C. Certification

1. Upon successful completion of training, a certificate will be issued to the trainee by VDEM. This certificate does not constitute a license to practice the skills taught in the training program, but signifies only that the person holding the certificate has met an established minimum standard of knowledge and performance and should be able to function in a competent manner at the level on the certificate.
2. Certification will be valid for three (3) years from the date of issue of the certificate.

## **VII. RECERTIFICATION PROCEDURES**

A. Notification Of Expiration of Certification

1. Six (6) months prior to the expiration date, a letter will be sent from VDEM noting the expiration date and defining the recertification procedure.
2. A second letter will be sent by VDEM during the expiration month stating that if recertification is not accomplished within three (3) months of expiration, certification will be dropped, the record reverts to inactive and the candidate must retake the FTS course or challenge the course as addressed in Section VI, Part B:1.
3. The practical test may be evaluated only by the VDEM SAR FTS Course Coordinator or by a VDEM SAR FTS Lead Instructor.
4. The written test may be administered by the VDEM SAR FTS Course Coordinator, a VDEM SAR FTS Lead Instructor, the VDEM SAR Coordinator, or the VDEM SAR Chief Instructor.

B. Procedure

1. Certification may be renewed by successfully completing the written and practical tests, and meeting any other requirements for certification for Field Team Signcutter that exist at the time of recertification.
  2. Each person is responsible for making individual arrangements for recertification testing with the FTS Course Coordinator or the VDEM SAR Coordinator.
  3. Certification will be valid for three (3) years from date of issue.
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## APPENDIX A

### GUIDELINES FOR SUGGESTED MINIMUM PERSONAL EQUIPMENT FOR THE FTS

These items are not required but are suggested equipment. Equivalent gear (and improvised signcutting tools) would be acceptable. This list may be modified to adapt to seasonal and special conditions and the Field Team Signcutter's needs. Not all of this equipment would be carried into the field but should be available to the individual searcher on the mission in some form. This may include a vehicle cache or pack to be left at base. Personal equipment and signcutting tools may include:

1. Tracking stick
2. Measuring tape
3. Popsicle sticks
4. String
5. Hand held mirror
6. Magnifying glass
7. Waterproof notebook/pad with pens or pencils
8. Tweezers
9. Light source - large and small with removable color lenses. Extra batteries. A head lamp should be carried for usage in difficult terrain and in evacuations when the searchers hands must be kept free or for other situations that may arise.
10. Flagging tape
11. Camera and extra film
12. Casting Materials
13. Map of task and Orienteering Type Compass - A GPS (Global Positioning System) may be carried with extra batteries, but map and compass (and the knowledge of their usage) are required.
14. Flash cards
15. Wind shell jacket with hood
16. Water resistant jacket or parka with hood. A Gore-Tex or similar jacket can serve for both items 15 and 16.
17. Rain pants or rain chaps - add gaiters for winter
18. Heavy \*wool shirts, pants and sweaters as required
19. Long underwear made of wool, silk, polypro or other suitable synthetic material. Cotton thermal underwear is not acceptable
20. Wool stocking cap or balaclava. A scarf is recommended if a stocking cap is used.
21. Heavy wool socks with lightweight liner socks
22. Leather gloves with wool liners. Mittens suggested for extremely cold weather.
23. Backpacking or mountaineering boots appropriate to the terrain and conditions of the search.
24. Backpack suitable for day use.
25. Canteens or water bottles containing a minimum of 2 quarts of water.
26. Multi blade pocketknife.
27. Whistle

28. Waterproof matches or disposable lighter and a fire starter
29. Personal first-aid kit
30. Storm shelter: Tent, tube tent, space blanket, lightweight tarp
31. Two 30-gallon leaf bags
32. One-day minimum supply of quick energy food
33. A sleeping bag and an ensolite or similar sleeping pad

\*Wool is the fabric of choice for cold weather clothing, but an insulating material such as polyester pile may be substituted if necessary. Down is not acceptable.

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## **APPENDIX B**

### **“Field Team Signcutter” Practical Field Test.**

The Field Team Signcutter student(s) will be evaluated on his/her knowledge and performance during the practical field test. Criteria for Field Evaluators is addressed in Appendix D. The student will be responsible for answering any questions and demonstrating the ability to perform any and/or all of the skills listed in these standards. The student(s) must answer questions and perform each of the following elements correctly. The testing elements are, but are not limited to, the following:

1. Student must describe and demonstrate the ability to use the signcutting tools, including the sun and other light sources, and how to improvise if needed.
2. Student must gather the information required for the practical task.
3. Student must signcut the PLS or LKP.
4. Student must find the “known” track in a group of tracks.
5. Student must index the sign/tracks.
6. Student must give a relative age of the sign and tracks.
7. Student must demonstrate the ability to take correct measurements of a track, record that information and then demonstrate the correct usage of a tracking stick as stated in # 1 above.
8. Student must determine the direction of travel of missing subject.
9. Student must demonstrate the ability to signcut the “known” sign or track for the minimum of one hundred (100) yards, with several cut-offs and several trail direction changes, over relative easy ground conditions using scanning and other awareness/signcutting/tracking skills.
10. Student must find at least one cut off from the known trail by the “missing subject” and determine the direction of travel.
11. Student must find the change of the direction of travel of the “missing sub at two trail or road forks.
12. Students must use the pressure releases, if applicable, in these standards to determine stride changes, turns, and evasive tactics.
13. Student must describe the search resources that might be needed during and when their practical test has concluded.

14. Student must explain how to instruct the searchers on their team on how to be more clue/sign/track aware and how to work with a FTS.
15. Student must demonstrate the ability to interface with other searchers, search base and other need-to-know personnel.
16. Student must explain all their decisions to the evaluator.
17. Student must answer the questions and perform the skills/tasks that the evaluator requests, as addresses in these standards.

Automatic failure of the field test will occur if the student:

1. Shoots from the hip - answers questions or makes decisions based upon lack of knowledge/proof or gives false or misleading answers. Some answers and decisions can be based upon a students subjective judgment based upon a percentage of the “known” facts, but the student must correctly explain how their decision was reached.
2. Fails to correctly index and give a relative age sign and tracks in the test area.
3. Fails to correctly gather the needed information before starting, and during, the practical test.
4. Fails to correctly signcut the PLS or the LKP.
5. Fails to obtain a direction of travel.
6. Fails to determine the correct sign/track to signcut/track.
7. Trashes the search area.
8. Receives a grade on their field practical evaluation under 80%.

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## APPENDIX C

### **GUIDELINES FOR THE APPOINTMENT OF THE COURSE COORDINATOR AND INSTRUCTORS FOR THE VIRGINIA DEPARTMENT OF EMERGENCY MANAGEMENT SEARCH AND RESCUE PROGRAM'S COURSE - "FIELD TEAM SIGNCUTTER"**

- A. Field Team Signcutter Course Coordinator/Course Manager/Head Instructor To be appointed as the Virginia Department of Emergency Management Field Team Signcutter Course Coordinator, the candidate must meet the following criteria:
  1. The candidate must demonstrate the ability to: perform and have superior understanding, knowledge, training, and experience in the art and skills associated with signcutting, tracking (human and animal), and ground search and rescue (SAR) operations. The candidate must also demonstrate the desire, willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside the SAR community.
  2. The candidate must also demonstrate the ability to:
    - a. Coordinate the Field Team Signcutter Classes (either on or off site)

- b. Oversee and instruct the FTS Instructors
  - c. Instruct all lectures and field exercises
  - d. Lay out all field exercises and evaluate the students
  - e. Appoint and recommend Instructors as addressed in Appendixes C and D
  - f. Formulate class schedules
  - g. Manage the day to day functions of the FTS Course Coordinator
  - h. Submit to the VDEM SAR Coordinator the names of the students recommended for FTS Certification.
  - i. Interface with VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  - j. Ensure that all training and instruction materials are up to date.
  - k. Uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
3. The candidate must be a member of a search and rescue group with a Memorandum of Understanding (MOU) with the Virginia Department of Emergency Management or have an individual
  4. The candidate must have passed the VDEM Field Team Member (FTM) course, the VDEM Field Team Leader (FTL) course, the VDEM Field Team Signcutter Course (FTS), the VDEM Search and Rescue Signcutting (SARS) course, the VDEM Search and Rescue Tracking Course (SART), and the Managing Search Operations (MSO) course which is recognized by VDEM.
  5. The candidate must have completed and passed the Instructors' Workshop sponsored by the VDEM.
  6. The candidate must be approved by the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  7. If the candidate has the training, knowledge, skills and experience, items 3, 4, and 5 above may be waived with written approval from the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
- B. Field Team Signcutter Lead Instructor

To be appointed as a VDEM Field Team Signcutter Course Lead Instructor, the candidate must meet the following criteria:

1. The candidate must demonstrate the ability to perform, and have in - depth knowledge of, the art and skills associated with signcutting, tracking, and search and rescue operations. The candidate must also demonstrate the desire, willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community.
2. The candidate must also demonstrate the ability to:
  - a. Conduct the FTS course in the absence of the FTS Course Coordinator
  - b. Supervise FTS Instructors (and Assistants) in his/her FTS class

- c. Instruct all classroom and field lectures
  - d. Lay out all field exercises and evaluate the students
  - e. Submit to the VDEM SAR Coordinator and the FTS Course Coordinator, the names of the students recommended for FTS certification.
  - f. Interface with the FTS Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  - g. Uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
  - h. Perform any tasks requested by the FTS Course Coordinator.
3. The candidate must be a member of a search and rescue group with a Memorandum of Understanding (MOU) with the Virginia Department of Emergency Management or a member of a SAR group that is a member of the Virginia Search and Rescue Council (VaSARCo).
  4. The candidate must have passed the VDEM Field Team Member (FTM) course, the VDEM Field Team Leader (FTL) course, the VDEM Field Team Signcutter (FTS) course, the VDEM Search and Rescue Signcutting (SARS) course, and the Managing Search Operations (MSO) course which is recognized by VDEM.
  5. The candidate must have completed and pass the Instructors' Workshop sponsored by the VDEM.
  6. The candidate must be recommended by the VDEM FTS Coordinator and approved by the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  7. If the candidate has the training, knowledge, skills and experience, items 3, 4, and 5 above may be waived with written approval from the VDEM FTS Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
- C. Field Team Signcutter Instructor

To be appointed as a VDEM Field Team Signcutter Course Instructor, the candidate must meet the following criteria:

1. The candidate must demonstrate the ability to perform, and have a general knowledge of the art and skills associated with signcutting, tracking, and search and rescue operations that are related to the lectures or to the field exercises which the candidate will be instructing and must have the ability to work under the direct supervision of the VDEM FTS Course Coordinator or a FTS Lead Instructor. The candidate must also demonstrate the desire, the willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.

2. The candidate must be a member of a search and rescue group with a Memorandum of Understanding (MOU) with the Virginia Department of Emergency Management or a member of a SAR group that is a member of VaSARCo.
3. The candidate must have passed the VDEM Field Team Member (FTM) course, the VDEM Field Team Leader (FTL) course, the VDEM Field Team Signcutter (FTS) course, and the Managing Search Operations (MSO) course which is recognized by VDEM.
4. The candidate must have passes the Instructors Workshop sponsored by the VDEM.
5. The candidate must be recommended by the VDEM FTS Coordinator and approved by the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
6. If the candidate has the training, knowledge, skills and experience, items 2, 3, and 4 above may be waived with written approval from the VDEM FTS Course Coordinator, the VDEM SAR Coordinator and/or the VDEM SAR Program's Chief Instructor.

#### D. Field Team Signcutter Assistant Instructor

To be utilized as an Assistant Instructor for the VDEM Field Team Signcutter Course, the candidate must meet the following criteria:

1. The candidate must demonstrate the ability to perform, and have a general knowledge of, the art and skills associated with signcutting, tracking, and search and rescue operations that are related to the lectures or the field exercises which the candidate will be assisting. The candidate must demonstrate the ability to work under the direct supervision of the VDEM FTS Course Coordinator or a FTS Lead Instructor. The candidate must also demonstrate the desire, willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
2. The candidate must be a member of a search and rescue group with a Memorandum of Understanding (MOU) with the Virginia Department of Emergency Management or be a member of a group that is a member of the VaSARCo.
3. The candidate must have passed the VDEM Field Team Member (FTM) course, the VDEM Field Team Leader (FTL) course, the VDEM Field Team Signcutter (FTS) course, and the Managing Search Operations (MSO) course which is recognized by VDEM.
4. The candidate must have passed the Instructors Workshop offered by the VDEM or by Search and Rescue Training Associates (SARTA) .
5. Assistant Instructors must be approved by the VDEM FTS Course Coordinator.

6. If the candidate has the training, knowledge, skills and experience, items 2, 3, and 4 above may be waived with written approval from the VDEM FTS Course Coordinator.
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## APPENDIX D

### **CRITERIA FOR BECOMING, AND RULES FOR REMAINING, A FIELD EVALUATOR FOR THE “FIELD TEAM SIGNCUTTER” COURSE**

- A. Field Team Signcutter (FTS) Field Evaluators must demonstrate the ability to “lay out” field exercises and practical field tests so that the student(s) will attain useful information, training and experience.
- B. Field Evaluators must be able to articulate to the FTS student(s) the learning points on the field tasks and to assist the student(s) in their understanding of “what” happened and “why” it happened on the field exercises.
- C. Field Evaluators must have the knowledge, training, experience and skills above those in these FTS Standards.
- D. Field Evaluators must demonstrate their knowledge of, and their ability to guide and instruct the FTS student(s) on the field exercises and practical field test in the following, but not limited to, areas: signcutting, tracking, aging, pressure releases, search operations and tactics.
- E. Field Evaluators must work patiently with students and other instructors.
- F. Field Evaluators must demonstrate the ability to work one on one or with groups of students.
- G. Field Evaluators can give only limited guidance to the student on the practical test.
- H. Field Evaluators must not under any circumstance try to mislead the student(s) unless it is for a valuable learning point. After the learning point has been made, the evaluator must tell the student(s) of the misleading information immediately and explain why it was done.
- I. The following Instructors are approved Field Evaluators:
  1. FTS Course Coordinator \*
  2. FTS Lead Instructors
- J. The following must be approved individually by the FTS Course Coordinator as Field Evaluators:
  1. FTS Instructors \*\*
  2. FTS Assistant Instructors \*\*
  3. All others, whether associated or not associated with the FTS Course
- K. Should any Field Evaluator vary from any of the above resulting in negative results, their Field Evaluation status will be revoked in writing by the FTS Course Coordinator with copies given to the VDEM SAR Coordinator and VDEM SAR Program’s Chief Instructor.
- L. Field Evaluators will communicate their evaluations on each student which they have worked with to either the FTS Course Coordinator or the FTS Lead

Instructor, who in turn, will inform the FTS Course Coordinator of the outcome of the evaluations and of any suggestions, concerns, problems or poor student performances.

NOTE: \* Field Team Signcutter Course Coordinator/Course Manager/Head Instructor are one in the same for the purpose of these standards.

\*\* Holding the position of a FTS Instructor of a FTS Assistant Instructor does qualify that person as a Field Evaluator. These Guidelines MUST be met.

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## APPENDIX E

### **FTS INSTRUCTOR RULES AND LIMITATIONS**

The following is an overview of some of the rules and limitations that the Virginia Department of Emergency Management (VDEM) Search and Rescue (SAR) Field Team Signcutter (FTS) Instructors must follow.

- A. Field Team Signcutter Course Coordinator/Course Manager/Head Instructor
  1. The FTS Course Coordinator must meet and follow the guidelines addressed in Appendixes B, C, D, and E.
  2. The FTS Course Coordinator is responsible for reporting any instructor recommendations, schedule changes, course offerings, problems, and certification recommendations to both the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  3. The FTS Course Coordinator reports to the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
  4. The FTS Coordinator must have the desire, the willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
  5. The FTS Course Coordinator may not change, reprint, or publish, nor give permission to change, reprint or publish any of the written material, either in part or in whole, of any Guidebook, Workbook, Manual or Book approved by VDEM for the Field Team Signcutter Course without the written permission of the copyright holder, the FTS Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.
- B. Field Team Signcutter Course Lead Instructor

1. FTS Course Lead Instructors must meet and follow the guidelines addressed in Appendixes B, C, D, and E.
2. FTS Course Lead Instructors must receive permission to make schedule changes and to offer and conduct the FTS course to SAR groups from the VDEM FTS Course Coordinator.
3. If the VDEM Course Coordinator is coordinating or instructing classes in which Lead Instructors are present, the Lead Instructors will be referred to as an FTS Instructor for that class.
4. FTS Lead Instructors may not appoint Instructors. All recommendations must be submitted to the FTS Course Coordinator and appointments will follow the Instructor Guidelines addressed in Appendix C.
5. FTS Lead Instructors are allowed to lay out, conduct and evaluate field exercises and the practical field test under the guidelines of Appendixes B and D.
6. FTS Lead Instructors operate under the supervision, direct or indirect, and report to the FTS Course Coordinator.
7. The FTS Lead Instructors must have the desire, the willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
8. FTS Lead Instructors may not change, reprint, or publish, nor give permission to change, reprint or publish any of the written material, either in part or in whole, of any Guidebook, Workbook, Manual or Book for the VDEM Field Team Signcutter Course without the written permission of the copyright holder, the FTS Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.

#### C. Field Team Signcutter Course Instructor

1. VDEM FTS Course Instructors must meet and follow the guidelines addressed in Appendix C, and Appendix E.
2. FTS Course Instructors are not allowed to make schedule changes or to offer the FTS course to SAR Groups without permission from the VDEM FTS Course Coordinator.
3. FTS Instructors may not appoint any Instructors. All recommendations must be submitted to the FTS Course Coordinator and appointments will follow the Guidelines addressed in Appendix C.
4. FTS Instructors are not allowed to lay out, conduct or evaluate the field exercises and the practical field test unless they have met the guidelines under Appendix D.
5. FTS Instructors must be approved for each lecture or field exercises in which the FTS Instructor assists or instructs from the FTS Course Coordinator and/or the Lead Instructor of that FTS Course.
6. FTS Instructors operate under the supervision and report to the FTS Course Coordinator.

7. If the FTS class is being conducted by the FTS Course Coordinator, the FTS Instructor will be under his/her direct supervision.
8. If the FTS class is being conducted by a FTS Lead Instructor, the FTS Instructor will be under his/her direct supervision.
9. The FTS Instructors must have the desire, the willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
10. FTS Instructors may not change, reprint, or publish, nor give permission to change, reprint or publish any of the written material, either in part or in whole, of any Guidebook, Workbook, Manual or Book for the VDEM Field Team Signcutter Course without the written permission of the copyright holder, the FTS Course Coordinator, the VDEM SAR Coordinator and the VDEM SAR Program's Chief Instructor.

D. Field Team Signcutter Course Assistant Instructor

1. VDEM FTS Course Assistant Instructors must meet and follow the guidelines addressed in Appendixes C and E.
2. FTS Course Assistant Instructors may not make schedule changes.
3. FTS Assistant Instructors must be approved for each lecture or field exercises in which the Assistant Instructor assists from the FTS Course Coordinator and/or the Lead Instructor of that FTS Course.
4. FTS Assistant Instructors may not appoint any Instructors. All recommendations must be submitted to the VDEM FTS Course Coordinator and appointments will follow the Guidelines addressed in Appendix C.
5. FTS Assistant Instructors are not allowed to lay out, conduct or evaluate the field exercises and the practical field test unless they have met the guidelines under Appendix D.
6. FTS Assistant Instructors operate under the supervision and report to the FTS Course Coordinator.
7. If the FTS class is being conducted by the FTS Course Coordinator, the FTS Assistant Instructor will be under his/her direct supervision.
8. If the FTS class is being conducted by a FTS Lead Instructor, the FTS Assistant Instructor will be under his/her direct supervision.
9. FTS Assistant Instructors must have the desire, the willingness and capability to take the training and knowledge of search and rescue signcutting and tracking to its highest levels within and outside of the SAR community and to uphold the integrity of the Field Team Signcutter Course, comply to the Field Team Signcutter Standards and ensure that these standards are being complied with.
10. FTS Assistant Instructors may not change, reprint, or publish, nor give permission to change, reprint or publish any of the written material, either in part or in whole, of any Guidebook, Workbook, Manual or Book for the VDEM Field Team Signcutter Course without the written permission of

the copyright holder, the FTS Course Coordinator, the VDEM SAR  
Coordinator and the VDEM SAR Program's Chief Instructor.

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