VIRGINIA WING, CIVIL AIR PATROL
Ad Hoc Committee on Ground Search and Rescue
P.O. Box 237
Sandston, VA 23150

GROUND SEARCH AND RESCUE PROGRAM

1 Jan 1978

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I. Introduction

The Ad Hoc Committee on Ground Search and Rescue was formed in 1976 from a group of concerned members within Virginia Wing, with the expressed purpose of studying and enhancing Ground Search and Rescue (GSAR) within the Wing. In 1977, the Virginia Wing Committee became the nucleus for a National level committee with the same name. Both Committees are very active at the present time and welcome enquiries from all interested persons.

The initial year of activity of the Virginia Wing committe was directed towards a detailed assessment of the current status of GSAR within the state and the Wing, and the apparent needs in the area of GSAR. Information-gathering activities included conferences with knowledgeable CAP members and non-CAP experts, and seminars at the Virginia Wing and Middle East Region, CAP annual Conferences. The year 1977 saw the Committee's efforts turned towards the establishment of uniform standards of training and competence, based on the detailed assessment made the previous year. Also, 1977 was the year of the first Ground Search and Rescue College, an intensive trainig session designed to provide instruction leading to certification by the GSAR Committee's standards. The year 1978 will see the completion of the comprehensive program being developed by the Committee, and hopefully the implementation of this program, including additional GSAR Colleges and the certification of many members to the standards of the Committee.

VIRGINIA WING, CIVIL AIR PATROL

AD HOC COMMITTEE ON GROUND SEARCH AND RESCUE

G R O U N D

S E A R C H A N D R E S C U E

P R O G R A M

1 January 1978

viewed exclusively as a cadet activity, with little senior involvement. The Committee's stand is that ground search and rescue should be an integral part of the senior program, in order to promote adequate senior involvement.

In many Wings, "Ranger" training is used for the purpose training GSAR teams; the Committee is of the opinion that such adventure training, while of definite value, does not relate closely to actual GSAR training needs. GSAR training should focus on task-related subjects, and not include items of peripheral importance such as firearm familiarization, military-style rappelling, and long-term survival. This orientation is reflected in the content of the standards. Units may, and are in fact are encouraged to, include such types of additional training in their regular senior and cadet programs, but GSAR certification will not depend on any such training.

The details of the standards have been meticulously chosen to reflect the current state of the art as far as ground search and rescue in this region. Information and criticism from many sources, including the Appalachian Search and Rescue Conference, Inc. (ASRC), the Mountain Rescue Association, the National Association for Search and Rescue, Explorer Search and Rescue, and the CAP Hawk Mountain Ranger School, have been taken into account in the writing of the standards. A reference is provided for each item of the standards, to provide detail of the proper technique. Primary references include Outdoor Living, a short-term survival compendium by the Tacoma Mtn. Rescue Unit; the Mountain Rescue Manual of the Appalachian Search and Rescue Conference, the second edition of Emergency Care and Transportation of the Sick and Injured, by the American Academy of Orthopædic Surgeons; the second edition of Mountaineering First Aid by Dick Mitchell; and Ground Search and Rescue, a compendium of supplementary information compiled by the Virginia Wing Ad Hoc Committee on Ground Search and Rescue. A special section of Ground Search and Rescue provides information for Mission Staff members' use when involved in ground search and rescue operations and their coordination, including standard ground search and rescue strategy and a protocol for the use of Class A, B, and C teams in downed aircraft and lost person searches.

Comments are welcome and should be directed to:

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The complete program will include four qualification levels for members and three levels for teams. The member levels are labeled I, II, III, and IV in order of increasing qualification. Teams are designated Class A, B, and C in order of decreasing qualification levels. Standards are competence-based, rather than experience-based, and are quite detailed.

The most basic level of member certification, Level I, is roughly equivalent to the previous Interrogation Team Member, and two to four Level I members with their vehicle comprise a Class 'C' (Interrogation) Team. A Class 'C' Team may provide interrogation and visual search during a downed aircraft search, but is also trained to provide road containment during a lost person search. A Class'B' (Search) Team requires Level II certified members, and a Level III certified leader. This type of team is qualified and equipped to carry out any type of lost person or downed aircraft search task (except for man-tracking) in all but the most severe weather or terrain. A Class 'B' (Search) Team is also qualified and equipped to provide a limited rescue and evacuation capability, or to support a rescue team in such an operation. Thus far, the program appears superficially to differ little from the previous scheme of Interrogation Team Members, Ground Team Members, and Ground Team Leaders; however, the standards of procedure and competence are much more detailed and rigorous than heretofore, and are carefully selected to correspond with actual situations faced by a team in the field, and to accord with accepted search and rescue and mountain rescue practice across the country.

The evacuation of survivors is not a responsibility of the CAP; however, the CAP may occasionally do so when requested. The standard Class 'B' (Search) team, or any CAP Ground Team in Virginia Wing, is neither equipped nor trained to do so, except in the most trivial cases (e.g. a crash site a few hundred yards from a road, across level ground), and most such cases can be easily handled by a local rescue squad. The case of a crash site or injured lost person high in the mountains, or in any other wild area, presents a completely different situation, especially in severe weather.

Currently, the only agency in the area capable of safely and correctly handling such a rescue situation (known to the Committee) is the Appalachian Search and Rescue Conference, Inc. (ASRC), which provides standby mountain rescue teams for CAP missions, and coordinates lost person search activities when requested to do so. There is considerable interest within the Wing in creating teams with advanced training similar to that of the ASRC. Therefore, the program will provide for a Class 'A' (Rescue) Team. Such a team would consist of Level III members (Class 'B' team leaders) and would have a Level IV team leader. Since Level III and Level IV certification is limited to senior members 21 years of age or older, a Class 'A' Team would consist of senior members.

Due to the special aspects of GSAR, each team member going into the field (Class 'A' and 'B' team members) must be self-sufficient in the outdoors, due to the ever-present possibility of becoming stranded or lost. Search tasks and rescue and evacuation work in wild areas and in severe weather are quite strenuous, and may offer many opportunities for injury to team members. Minor mistakes by team members may have serious effects on the victim's condition. All of this requires the greatest care and diligence in the training of ground search and rescue personnel, which is reflected in the depth and breadth of the standards of competence.

In the past, CAP ground search and rescue has been very closely related to the cadet program, due to the strong interest of many cadets in the more glamorous aspects of ground search and rescue (e.g. "mountain rescue", "rappelling"). Unfortunately, this has sometimes resulted in GSAR being

SUMMARY--INDIVIDUAL CERTIFICATION LEVELS

LEVEL	I	II
AGE	--	--
REQUIREMENTS	CAP Radio Operator's Permit (ROP) Complete E.S. Questionnaire (CAPF 116) Part I	CAP Radio Operator's Permit (ROP) Complete E.S.Questionnaire (CAPF 116) Part I Have completed 3 contracts within the past 12 months if a cadet. Possess or have available all required equipment. Current certification in Standard First Aid.
CAPABILITIES	Class 'C' (Interrogation) Team member or leader.	Class 'B' (Search) Team member.
KNOWLEDGE AND SKILLS	CAP Mission Staff organization, especially Ground Operations; restrictions on use of Level I members; legal aspects of ground search and rescue in brief. Interrogation and visual search protocol; containment in lost person search; proper recording and reporting of information.	All knowledge required of Level I, plus: Coordination with other GSAR agencies. Principles of radiological monitoring and decontamination. Principles of fire and firefighting. Principles of extrication and use of hand tools. Field communications procedures. Helicopter operation procedures. Survival physiology. Environmental diseases and injuries. Environmental stresses, and coping with them. Principles of environmental protection in clothing. Selection, use, and care of personal equipment. Foot travel technique, including bushwhacking and stream crossing. Improvisation in shelter and fire building. Use of the compass. Use of topographic maps. Significance and use of orienteering concepts. Plotting and following cross-country routes. Distance estimation by pacing and collecting features. Completion of a basic point-to-point orienteering course. Lost person search strategy in outline. Ability to participate in all types of search tasks except for man-tracking. Ability to work with tracking dogs, search dogs, and man-trackers. Ability to tie 7 specified knots. Rope handling, coiling, etc. and care of technical equipment. Belaying. All non-technical and semi-technical evacuation procedures as given in the ASRC Mountain Rescue Manual, and improvised rescue methods.

SUMMARY--TEAM CERTIFICATION LEVELS					
TEAM CLASS	MINIMUM MEMBER QUALIFICATIONS	MINIMUM LEADER QUALIFICATIONS	NUMBER OF PERSONNEL	EQUIPMENT[1]	TASKS*
Class 'C' (Interrogation)	Level I	Level I + Senior member w/ Driver's Lic.	2-4	Vehicle, (Radio)[2]	Interrogation, (visual, ELT)[3] and road containment search tasks
Class 'B' (Search)	Level II	Level III[4]	4-6	Vehicle; Radio to Base; Radio to field; Hand-held radio; ELT locator; Instant radio; 6 extrication tools; Large backpack trauma kit; Stokes litter w/ rope, rigging, backboard, sleeping bag, ensolite pad, blanket, lightweight tarp, and helmet for victim.	All lost person and downed aircraft search tasks except for tracking, or in cases where overnight bivouacs are known to be required; on-site first aid and victim stabilization; decision to evacuate immediately or wait for rescue team; non-technical and semi-technical evacuations.
Class 'A' (Rescue)	Level III[4]	Level IV[4]	10+	Class 'B' team equipment, plus: HF radio required; 2 Hand-held radios required; Binoculars; 3 additional extrication tools; Trauma kit must have suction, oxygen, bag-mask, and IV supplies and esophageal airway if team has advanced EMT training; Thomas ½ ring splint; Small amount of additional rescue equipment.	All types of search and rescue tasks, except for cave rescue, rock rescue, sea rescue, alpine mountain rescue, and man-tracking.

[1] Only major items are listed; see text for details.

[2] Radio is optional for Class 'C' teams.

[3] Class 'C' teams will do visual and ELT search tasks if and when equipment permits; this equipment is not required.

[4] Level III and Level IV members must be senior members.

* Each class of team is trained to handle certain types of tasks safely; for the safety of team members, the team should not be requested to attempt tasks beyond members' abilities; for example, Level I members should not go on foot into the mountains in winter.

CERTIFICATION STANDARDS
Ground Search and Rescue Team Member:

LEVEL I

I. REQUIREMENTS

A. Have completed Part I of the Emergency Services Questionnaire (CAPF 116).

B. Possess a valid Civil Air Patrol Radio Operator's Permit (ROP).

II. KNOWLEDGE

A. Operations
1. Outline the standard CAP Mission Staff organization.[ES]
2. Describe the duties and responsibilities of the Ground Operations Staff.[ES]
3. Explain the restrictions placed on the use of Level I Ground Search and Rescue Team members, as regards going into the field.[GS,ES]

B. Legal Aspects
1. Describe the authority and responsibility of the CAP for Search and Rescue (SAR) missions.[ES]
2. List the actions expected of Class A, B, and C Ground Search and Rescue Teams during a downed aircraft SAR mission, and identify actions that are forbidden to GSAR Teams.[ES,GS]
3. Recall the provisions of the Virginia Good Samaritan Law.[GS]

C. Search Tactics[GS]
1. Describe, and explain the purpose of, interrogation search.
2. Explain the use of search patterns in interrogation search.
3. Demonstrate proper questioning technique.
4. List 6 possible visual clues to an aircraft crash site.
5. Explain the purpose of containment during a lost person search.
6. Demonstrate proper information recording and reporting procedures, including the use of gridded highway maps and the uniform map system to report position.

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CERTIFICATION STANDARDS
Ground Search and Rescue Team Member:

LEVEL II

I. REQUIREMENTS

A. Have completed Part I of the Emergency Services Questionnaire (CAPF 116).

B. Possess a valid Civil Air Patrol Radio Operator's Permit (ROP).

C. Possess a valid American National Red Cross <u>Standard First Aid and Personal Safety</u> card, or demonstrate equivalent knowledge and ability.

D. Possess, or have readily available, all required personal equipment (see section IV).

E. If a cadet, have completed 3 contracts in the past 12 months.

F. Meet all Level I standards.

SUMMARY--INDIVIDUAL CERTIFICATION LEVELS (Continued)

LEVEL	III	IV
AGE	21+	21+
REQUIREMENTS	CAP Radio Operator's Permit (ROP) Complete E.S. Questionnaire (CAPF 116) Part I Possess or have available all required equipment. Current certification in Advanced First Aid (EMT-I preferred).	CAP Radio Operator's Permit (ROP) Complete E.S. Questionnaire (CAPF 116) Part I Possess or have available all required equipment. Current EMT-I certification (EMT-II preferred).
CAPABILITIES	Class 'B' (Search) Team leader; Class 'A' (Rescue) member.	Class 'A' (Rescue) Team leader; Ground Operations Officer for downed aircraft or lost person searches.
KNOWLEDGE AND SKILLS	All knowledge and skills from Level II, plus: Personal and team equipment selection, maintenance, and use. Recruiting and team training. Team organization and alerting plans. Standard search strategy and protocols. Application of ground search tactics. Use of air cover. Incident site management. Evacuation modes and selection. Use of helicopters. Personnel management and leadership. Interorganizational cooperation principles. Working with other GSAR agencies. Demonstrate the ability to travel cross-country on foot through a Va. or W. Va. wilderness area in deep winter conditions, navigating by map and compass; and to bivouac overnight with standard gear, all without impairing the ability to carry out SAR tasks the next day. Ability to lead teams in all types of search tasks, with the exception of man-tracking. Ability to use standard tools for extrication. Tie and give information about 16 knots. Belay properly, including tieing off a fallen climber and leaving the stance. Climb 4th class (Sierra Club system). Use properly 4 ascendeurs, 2 Prusik rigs, 6 rappels, 4 tie-ins, and 5 braking methods. Use hauling systems and a Tyrolean traverse. Direct and supervise a semi-technical evacuation as per the ASRC Mountain Rescue Manual. Serve as a litter bearer on a vertical evac.	(Standards for Level IV are still in draft form; they will be available in March of 1978. The standards will stress management of the search function and advanced rescue techniques.)

d. nutritional needs and digestion
e. the "energy budget" concept of the human body as related to temperature (including windchill and wetchill)
f. the effects and dangers of alcohol, tobacco, aspirin, and carbon monoxide, and
g. proper goals and methods for conditioning.

3. Describe the causes, signs and symptoms, and treatment for the following temperature-related diseases:OL,OE,GS
   a. hypothermia
   b. frostbite (including contact frostbite, and the dangers of volatile fluids)
   c. trench foot (immersion foot)
   d. heatstroke
   e. heat exhaustion
   f. heat cramps, and
   g. dehydration.

4. List the four major environmental stresses (heat, cold, wind, and wetness), describe the dangers associated with them, and describe the uses of clothing in coping with them. Important concepts include:OL,OE,GS
   a. materials (wool, cotton, down, synthetics; waterproof vs. non-waterproof shells, etc.)
   b. loft
   c. wind and water protection
   d. ventilation
   e. layering
   f. fit
   g. fastenings and connections, and
   h. cleanliness.

5. Demonstrate knowledge of the selection, use, and care of the following personal equipment:OL,OE,GS
   a. boots
   b. packs
   c. sleeping bags
   d. flashlights, headlamps, batteries, and bulbs, and
   e. hardhats and helmets.

H. Land Navigation

1. Demonstrate the ability to interpret topographic maps, to read information from them, and to identify and explain the following:TM,OE,GS;ES
   a. colors
   b. symbols
   c. contours
   d. all border information
   e. grids and coordinate systems, including:
      i. latitude and longitude
      ii. the US Geological Survey quadrangle system, and
      iii. the uniform map system.

2. Describe the significance and use of the following orienteering concepts:GS
   a. northing lines
   b. declination and declination correction
   c. catching features
   d. collecting features
   e. attack points, and
   f. aiming off.

II. KNOWLEDGE

A. Operations
1. Outline the standard CAP Mission Staff organization.[ES]
2. Describe the duties and responsibilities of the Ground Operations Staff.[ES]
3. Describe the relationship of the CAP, the US Air Force, the Appalachian Search and Rescue Conference, the County Sheriff, and rescue squads during a Search and Rescue (SAR) mission.[GS]
4. Describe the major types of CAP missions, the authorizing agency for each, and the role of Class A, B, and C Ground Search and Rescue Teams in each.[GS]

B. Legal Aspects
1. Describe the authority and responsibility of the CAP for SAR missions.[ES]
2. List the actions expected of Class A, B, and C GSAR Teams during a downed aircraft SAR mission, and identify actions which are forbidden to GSAR Teams.[ES,GS]
3. Recall the provisions of the Virginia Good Samaritan Law.[GS]

C. Radiological Monitoring and Decontamination[GS]
1. Briefly describe the effects of nuclear weapons.
2. Briefly describe proper methods of protection from nuclear weapon effects.
3. Describe the principles of decontamination of personnel, vehicles, and aircraft.

D. Extrication and Firefighting[GS]
1. Describe the different classes of fire and their characteristics.
2. Describe the different classes of fire extinguishers, and their use, care, and maintanence.
3. Describe the common fire dangers in aircraft and vehicles.
4. List and describe the phases of extrication.
5. List and describe the basic Class B Team extrication tools, and describe the forcible entry procedures applicable to aircraft in the field.

E. Field Communications[GS]
1. Describe the characteristics, uses, and dangers of the following signaling devices:
   a. flares
   b. smoke
   c. mirrors
   d. panels and paulins, and
   e. ground-to-air body signals.
2. Describe standard field radio use procedures.

F. Helicopter Operations[GS]
1. Describe the dangers to ground personnel associated with helicopters, and standard procedures for working with helicopters.
2. Explain the dangers associated with hoist operations.
3. Describe standard procedures for selecting and preparing a helispot.

G. Survival and Wilderness Travel
1. Describe the psychological and emotional factors that affect survival ability.[OL,OE]
2. Describe the basic regulatory mechanisms, processes, and ranges of tolerance of the body pertinent to short term survival and wilderness travel. Important concepts include:[OL, OE, GS]
   a. homeostatic (self-equalizing) mechanisms
   b. energy level and fatigue
   c. water supply and dehydration

5. containment
6. interrogation
7. visual
8. electronic, and 9. locale.

H. Demonstrate the ability to reliably produce, correctly tied, contoured, and backed up, the following knots:[MR]
1. bowline
2. bowline-on-a-coil
3. figure 8 loop
4. water knot (overhand bend, ring bend)
5. Prusik knot
6. square knot (reef knot), and
7. the ASRC seat harness.

I. Demonstrate the following rope-handling techniques:[MR]
1. coiling and uncoiling, with
   a. mountaineer's coil
   b. lap coil
   c. speed coil, and
   d. rescue coil
2. stacking
3. inspecting and testing
4. padding
5. throwing, and
6. rigging to an anchor with bowline, and with runners.

J. Demonstrate proper belaying technique. Important points are:[MR]
1. anchorage
2. tie-in
3. stance (both sitting and standing hip belay stance)
4. aim
5. procedures for up-rope, slack, and catching a fall, and
6. standard calls.

K. Demonstrate the ability to use tree-wrap and figure eight braking[MR] methods properly.

L. Demonstrate, as litter captain and as rope team member, proper procedures for a multiple-pitch semi-technical evacuation, including the following points:[MR]
1. rigging the Stokes litter and the D-ring stretcher
2. loading the litter
3. lifting, lowering, and carrying the litter
4. rotation of litter bearers
5. laddering, including toenailing
6. serving as rope team member using tree-wrap belays, mechanical belays, and the brute force hauling system, and
7. serving as litter captain.

M. Demonstrate the ability to use the following improvised evacuation methods:[MR]
1. 2-man linked-arms chair carry
2. 2-man packstrap-and-pole chair carry
3. split coil and sling piggyback carries, and
4. improvised stretchers using rope, poles and rope, poles and blanket, and poles and parkas.

I. Search[GS]
   1. Describe, in outline, search strategy for downed aircraft and for lost persons.
   2. Describe, and provide standard techniques for, the following search tactics:
      a. scratch (including proper clue marking and reporting)
      b. survey
      c. sweep
      d. line (including calls and boundary marking)
      e. containment
      f. interrogation
      g. visual
      h. electronic, and i. locale.
   3. Describe briefly standard procedures for working in coordination with search dogs, tracking dogs, and man-trackers.

J. Wilderness Rescue[MR]
   1. Describe the proper care of ropes and hardware, and criteria for retirement of equipment, and proper marking of retired equipment.
   2. Provide information as to the proper use and characteristics of the following knots:
      a. bowline
      b. bowline-on-a-coil
      c. figure 8 loop
      d. water knot (overhand bend, ring bend)
      e. Prusik knot
      f. square knot (reef knot), and
      g. the ASRC seat harness.

III. SKILLS

A. Demonstrate the ability to travel on foot in the Middle Atlantic region. In particular, demonstrate the ability to use proper stream-crossing and bushwhacking techniques, and demonstrate an understanding of pace, efficiency, and the proper use of rest stops, and the recognition and treatment of muscle cramps.[OE,GS]

B. Demonstrate the ability to improvise, especially in respect to constructing emergency overnight shelters, and in respect to building and starting fires, using either materials in the surrounding environment or materials normally carried in the pack.[OL]

C. Demonstrate the ability to determine direction quickly, accurately, and reliably using a compass.[OL,OE,GS]

D. Demonstrate the ability to plot and follow the fastest, the most direct, and the least energy-consuming routes between two points plotted on a topographic map.[OL,OE,GS]

E. Demonstrate the ability to estimate distance by pacing, and by the use of collecting features.[GS]

F. Demonstrate the ability to successfully complete a basic level point-to-point orienteering course.[GS]

G. Demonstrate the ability to participate as a team member in the following types of search tasks:[GS]
   1. scratch (including proper clue marking and reporting)
   2. survey
   3. sweep
   4. line (including calls and boundary marking)

CERTIFICATION STANDARDS
Ground Search and Rescue Team Member:

LEVEL III

I. REQUIREMENTS

A. Have completed Part I of the Emergency Services Questionnaire (CAPF 116).

B. Possess a valid Civil Air Patrol Radio Operator's Permit (ROP).

C. Currently certified as an Emergency Medical Technician-Ambulance (EMT-I) with the National Registry of Emergency Medical Technicians or Virginia Department of Health; or possess a valid American National Red Cross Advanced First Aid and Emergency Care card; or demonstrate equivalent knowledge and ability.

D. Possess or have readily available all required personal equipment (see section IV).

E. Be a Senior member 21 years of age or older.

F. Have current certification as a Radiological Monitor.

G. Meet all Level II standards.

II. KNOWLEDGE

A. Training GS
1. Outline a workable continuing education program for a squadron ground team.
2. List and briefly describe the basic principles of learning.
3. List at least three non-CAP resources for ground team training at the squadron level.

B. Equipment GS
1. Given a list of summer and winter personal gear for Level II ground team members, provide a rationale for each item.
2. Outline a program for personal and team equipment evaluation and maintanence for a class B team.
3. Outline team equipment needs, including packaging and disposition requirements, for class A, B, and C teams.

C. Recruiting GS
1. List the personal attributes and experience necessary for a good ground team member.
2. Explain the problems of personnel turnover, and suggest several ways to cope with these problems.

D. Organization GS
1. List the positions to be filled in any class A or B team, and provide a brief resume of the duties and responsibilities of each position.
2. Outline two types of acceptable alerting plans.

E. Search Management GS
1. Outline standard search strategy for:
   a. Downed aircraft searches
   b. Lost person (wilderness) searches
   c. Lost person (urban) searches.
2. List and define the types of ground search tactics, and provide information as to their proper use, including personnel requirements for each.
3. List and describe the ways of using air cover (both fixed and rotor wing) in coordination with ground search, and provide information as to the dangers, restrictions, and special techniques applicable for each.

IV. MINIMUM PERSONAL EQUIPMENT--LEVEL II

Summer	Add for winter
regulation cotton fatigues, 2 pr.	
wind shell jacket with hood.	
raingear (leg protection recommended).	leg protection required.
heavy wool shirt or sweater.	an additional heavy wool shirt or sweater which may be worn simultaneously with the first.
wool underwear bottoms. (cotton thermal underwear is not acceptable.)	an additional pair of wool bottoms or better, a pair of wool pants. wind shell pants to be worn over wool pants if used instead of wool underwear.
wool stocking cap, toque, or balaclava.	wool scarf for neck protection if a stocking cap is used.
boots: lug soles (e.g. Vibram) are highly recommended; the boots should fit well with the socks listed below. (hiking and mountaineering boots may be worn with the fatigue uniform in a field setting; they are classed as "special purpose footgear".)	highly recommended: a pair of winter boots or ensolite "overboots".
socks: boots should be worn with one pair of very heavy wool Ragg socks, and one pair of lighter weight liner socks of wool or synthetic (no cotton, please).	
spare socks: at least one change (2 pr.) 2 pr. underwear.	at least two spare sets (4 pr.)
1 locking "D" carabiner.	
seat harness (tied from 6 meters of 1 inch tubular climbing webbing).	
tie-in (made from 1.5 meters of 6 millimeter perlon rope)	
hardhat* with non-stretch chin strap. (military helmets or helmet liners are not acceptable).	
leather gloves.	wool mittens.
rucksack.	
canteen or water bottle.	
pocketknife.	
compass (orienteering type).	
whistle.	
flashlight or headlamp with alkaline batteries, and spare batteries and bulbs.	
metal cup and spoon.	
storm shelter.	
waterproof matchcase with matches.	
personal first aid kit.	
at least 500 kcal. of rations.	
sleeping bag.	warm winter bag.

*Level III requires a climbing helmet; do not spend your money on a hardhat if you will be needing a helmet.

III. SKILLS

A. Demonstrate the ability to travel cross-country on foot through a VA or W.VA. wilderness area in deep winter conditions, navigating by map and compass; and to bivouac overnight with standard gear, all without impairing the ability to carry out SAR tasks the following day. OL,OE,GS

B. Demonstrate the ability to lead a team in any of the following types of search tactics: Hasty, Scratch, Survey, Sweep, Line, ELT-df, Visual, Interrogation, and Locale. GS

C. Demonstrate the ability to use standard class B team tools and standard protocol in the extrication of severely injured patients from light planes. GS, EC

D. Demonstrate the ability to properly perform and supervise triage and treatment of the victims of a multiple-victim accident. GS, EC

E. Demonstrate the ability to: MR

1. Handle ropes and technical gear properly.
2. Properly tie the following knots, and give information as to strength, security, jamming, uses, dangers, and special considerations: square knot, overhand knot and bend, figure 8 knot, bend, and loop, barrel knot and bend (double fishermans'), sheet bend and double sheet bend, anchor hitch, bowline, bowline-on-a-coil, three-loop (French) bowline, butterfly knot, and ASRC seat harness.
3. Set up a proper belay stance, and belay a climber from above, using proper calls; and be able to tie off a hanging climber and leave the belay stance. The belayer should be able to use a hip belay.
4. Climb 4th class (Sierra Club system).
5. Assemble and properly use ascending systems including Texas and three-knot rigs, using prusik knots, Heddon knots, Jumars, or Gibbs ascenders.
6. Assemble and rappel properly with: figure 8, double brake bar, six-carabiner brake, carabiner wrap, and arm and body rappels, and belay properly each type of rappel.
7. Properly load and tie into a litter patients with injuries, including: spine injuries, pelvis fractures, leg fractures including ones needing traction, and head injuries.
8. Select anchors appropriate for rescue work, and utilize properly the following tie-in methods: tree wrap, girth hitch with sling, doubled sling, bowline with double wrap.
9. Set up and use properly the following braking methods: double wrap on a figure 8, rappel rack, six-biner brake, carabiner wrap brake, and tree wrap brake.
10. Rig and tighten a suspension line for a Tyrolean Traverse, and use such a line for the transfer of personnel and the litter.
11. Set up and use the following hauling systems: brute force, "Z", and "Z" with a separate hauling line.
12. Direct and supervise a litter team in all aspects of a semi-technical evacuation as described in the ASRC Mountain Rescue Manual.
13. Serve as a litter bearer on a vertical evacuation.
14. Improvise litters and spinal immobilization as per the ASRC Mountain Rescue Manual.

F. Demonstrate proper procedures for radiological decontamination of personnel, vehicles, and aircraft. GS

IV. REQUIRED MINIMUM PERSONAL EQUIPMENT: LEVEL III

A. All Level II personal equipment.

F. Rescue Management GS

1. List and explain the sequence of actions to be taken upon entering the scene of an aircraft crash.
2. Explain the applicability of these actions and priorities to the case of a body found during a lost person search.
3. List the various evacuation modes available to a ground team, and explain the advantages, disadvantages, and special requirements of each.
4. Outline the standard procedures for backcountry helicopter evacuations, including safety precautions.

G. Personnel Management GS

1. List the steps in problem solving, and demonstrate their application, given a specific problem.
2. Give a possible good management approach to the following problems:
   a. You are the leader of a class B team. Your team consists of four Level II certified members, only two of whom are from the same team. You are faced with a difficult semi-technical evacuation.
   b. One member of your team, who happens not to be in a leadership position at the present time, has a history of being 'bossy'. This is often a cause for resentment among the other members. You must split the team in two for a search task.
   c. Your team has been out on a difficult lost person search task, and the team is quite tired. Two members have a history of personality clashes, and are now vigorously fighting about the burden of carrying the trauma kit.
   d. Two of your team members have a history of not attending training sessions, although they are both experienced. During a simulated rescue, one of them starts directing the litter team to use a different type of braking technique from that taught in the training sessions. The rope team is having difficulty with the new system, as none of them are familiar with it.
   e. You are in the mountains in winter with a team consisting of 5 cadets, none of whom are certified. You have taken your team into the woods to investigate a possible sighting. One cadet has fallen into a stream, suffering a closed tibia/fibula fracture in the process of falling in. It is 4km to the vehicle via trail. The cadets have as personal gear cotton fatigues with cotton thermal underwear, field jackets, and canteens; you have your standard rucksack gear and a VHF-FM handheld radio and can talk to Mission Base on it. The air temperature is $7^{\circ}C$, and it is beginning to rain.
   f. A member of a local rescue squad is going along with your team to the crash site to assist in first aid. The terrain is quite rough, and the crash site is 2 km from the road. Your team has no Stokes litter, but you do have a D-ring stretcher. An ASRC rescue team will be at the roadhead in $\frac{1}{2}$ hour. You find one victim alive; his vital signs are stable, but he has a pelvis fracture and a femur shaft fracture. The rescue squadsman tells you to begin evacuation immediately using the D-ring stretcher. Both the rescue squad member and yourself have EMT certification.
   g. Your team has been out on lost person search tasks in bad weather for two days. No clues have been found, and your team members want to go home. The MC says that he still needs your team.
3. List the major factors contributing to interorganizational cooperation.
4. Give standard procedures for working with other ground SAR organizations.

MEMBER CERTIFICATION PROCEDURES

I. CERTIFICATION: LEVEL I

A. Initial Certification

Certification for Level I members will be carried out at the unit level. The unit testing officer will administer a standardized written test to members desiring certification; only those with a valid Radio Operator's Permit and who have completed the Emergency Services Questionnaire Part I are eligible to take this exam. The unit Testing Officer will fill out a form GSAR-5 (Level I registry) with the name(s) of the member(s) to be certified; this form will be forwarded to the GSAR Committee.

B. Failure; Retesting

Should a member fail the exam, the unit Testing Officer may administer a retest 30 days or later after the date of the initial test. The test may be attempted a maximum of 3 times in a given 12 month period.

C. Recertification

Recertification will be accomplished by a retest of the Level I member by the unit Training Officer; Level I certification is good for a period of 3 years from the date of successful test completion.

II. CERTIFICATION: LEVELS II, III, IV

A. Initial Certification: GSAR College

Certification may be gained by completion of the appropriate course of instruction at one of the periodic Ground Search and Rescue Colleges, providing the prospective member meets all requirements for the specified level.

B. Initial Certification: Challenge

A member may challenge the standards of competence for Levels II, III, or IV. The member must 1) submit a letter to the Ad Hoc Committee on GSAR indicating the desire to challenge, and 2) complete a GSAR Form 9 providing details of GSAR training and experience. A special date and time for the exam will be set.

C. Failure; Retesting

1. A member failing a written test at a GSAR College may attempt the test again after a lapse of at least 30 days, but within 90 days. A member failing a practical exam at a GSAR College may attempt the failed section again within 30 days.
2. A member failing either the written test or a section of a practical exam for the second time, or a member failing a challenge exam must attend the proper course of instruction at a GSAR College in order to qualify for retesting.

D. Recertification

Certification for Levels II, III, and IV, is valid for 18 months. The recertification test includes both written and practical tests, and may be given at a scheduled SARCAP, or other time and place at the request of the member applying for recertification. A member failing a recertification exam is subject to the terms of C.1. above.

E. Certificate of Training

A member meeting the standards of competence for Level II, III, or IV, but who cannot or is not willing to meet the other requirements, may obtain a dated "Certificate of Training"; no expiration date is given on such certificates. Such certificates are valid for the purposes of qualification for Ground Operations Officer and Mission Coordinator, but do not qualify a member to perform SAR tasks in the field.

B. an acceptable rappel device.
an acceptable ascending system.
an electric headlamp.
mitten shells with leather palms (for wool mittens).
climbing helmet (e.g. Ultimate, Joe Brown, Mountain Safety Research).
instep crampons (e.g. SMC or Salewa).
1000 kcal. of rations.
boots suitable for winter use (e.g. mountaineering boots with Ensolite "overboots" okay, preferably overboots or supergators; or Sorel-pac type arctic boots; or Korean "Mouse" boots).
sleeping bag must be backpacking type down or fiberfill bag.
ensolite pad.

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CERTIFICATION STANDARDS
Ground Search and Rescue Team Member:

LEVEL IV

Level IV standards are presently in draft form and will be issued as a supplement.

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REFERENCES

(GS) Ad Hoc Committee on Ground Search and Rescue, Virginia Wing, Civil Air Patrol. Ground Search and Rescue. 1st edition. Charlottesville, VA: Monticello Composite Squadron, CAP, 1978.

(EC) American Academy of Orthopaedic Surgeons. Emergency Care and Transportation of the Sick and Injured. 2nd edition. Chicago, IL: American Academy of Orthopaedic Surgeons, 1977.

(MR) Appalachian Search and Rescue Conference, Inc. ASRC Mountain Rescue Manual. 1st edition. Alexandria, VA: ASRC, 1978.

(OE) Fear, Mitchell. Fundamentals of Outdoor Enjoyment. 1st edition. Tacoma, WA. Survival Education Association, 1977.

(ES) Civil Air Patrol. CAP Manual 50-15: Emergency Services. Maxwell AFB, AL: National Headquarters, CAP, 1972.

(MF) Mitchell, Dick. Mountaineering First Aid. 2nd edition. Seattle, WA: The Mountaineers, 1975.

(OL) Tacoma Mountain Rescue Unit. Outdoor Living: Problems--Solutions--Guidelines. Tacoma, WA: TMRU, no date.

(TM) U.S. Geological Survey. Topographic Maps. Washington, D.C.: USGS, 1969.

B. The following officers should be appointed for the day-to-day running of the team:
1. Training Coordinator.
2. Administrative Coordinator.
3. Equipment Coordinator.
These names should be noted on the team roster.

C. The team should keep its alerting system updated, and should run occasional mock callouts, noting the time required, and the response in terms of personnel and equipment.

IV. EQUIPMENT

The following equipment is required; equipment may be CAP or members', so long as it is readily available for missions.

A. Vehicle
-vehicle(s) sufficient to carry team
-mobile radio for contact with base: HF preferred, VHF repeater/simplex acceptable, 26.620 marginal at best
-proper equipment for vehicle proper, including: first aid kit, fire extinguisher, flares, jack, spare tire, tool kit, snow chains.

B. Search
-plastic surveyor's tape for marking trails and boundaries
-string for roping off crash sites
-instant-type camera for documentation
-warning signs for crash sites
-paulins for signals
-1 hand-held radio of 1 W output or more, compatible with one of the radios in the vehicle
-1 set of county road maps for VA
-1 state highway map, gridded
-1 index to topographic maps for VA
-1 notebook
-1 folder with necessary forms
-1 ELT locator (Bee-Line recommended)
-100 triage tags
(1 pair binoculars optional but highly recommended).

C. Extrication
-1 24" pry bar
-1 leaf spring cutting tool
-1 fiberglass mallet or sledge
-1 reversible screwdriver or screwdriver set
-1 pair 12" shears for soft metal
-1 pair of 6-8" vice-grip pliers
-4 15 minute flares
-1 smoke bomb
(hacksaw, come-along with chain, and extra pry bars optional).

D. Trauma
-1 54" board splint set
-20 cravats
-2 4½" Kerlix roll gauze
-2 1" Kling roll gauze
-4 3" Kling roll gauze
-3 oropharyngeal airways (assorted sizes)
-1 ear syringe or other suction device
-2 8x10" composite dressings
-1 10x30" multi-trauma dressing
-2 eye pads
-2 rolls adhesive tape
-12 4x4" gauze pads

-1 sterile burn sheet
-1 blood pressure cuff
-1 combination stethoscope
-10 triage tags
(additional supplies in vehicle recommended).

E. Evacuation
-100' Goldline, Blue Water II or III, or similar rope
-1 Stokes litter with rigging as per ASRC Mountain Rescue Manual
-4 locking D carabiners
-1 Ensolite pad
-1 sleeping bag, warm, full zip
-1 helmet with face protection (e.g. face shield or goggles)
-backboard for Stokes litter
-1 wool blanket
-1 lightweight tarp sufficient to wrap around victim (e.g. space blanket)
(3 figure 8s and 3 3M 11mm perlon slings optional but highly desired).

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CERTIFICATION STANDARDS
Ground Search and Rescue Teams:

CLASS 'A' (RESCUE)

I. GENERAL

Procedures are the same as for Class 'B' Teams except unit notations are Class 'A' and Class 'A'--Quick Response. Again, mixed unit designations may be used, for example:

Boonesville Composite Squadron
Class 'A'--Quick Response - 1
Class 'B' - 1

II. PERSONNEL

A Class 'A' Ground Search and Rescue Team consists of a minimum of 9 Level III members, and one Level IV leader. For serious consideration for Quick Response status, a unit should have at least 12 Level III members and 2 Level IV members.

III. ORGANIZATION

Organization is the same as for Class 'B' Teams.

IV. EQUIPMENT

A Class 'A' Team must have Class 'B' equipment, but with the following additions and changes:

A. A HF-SSB radio is required.

B. 2 hand-held radios
Binoculars required.

C. Add: Hacksaw and spare blades
come-along with chain
one additional pry bar (long).

D. Add: Portable suction device
oxygen and masks
bag mask
(IV therapy supplies and esophageal airway are recommended if team is trained in their use).

E. Add: 3 figure 8 descenders
3 3M slings of 11mm perlon
6 Prusik loops
2 rescue pulleys

TEAM CERTIFICATION PROCEDURES

I. A unit desiring Class 'B' or Class 'A' certification should contact the Ad Hoc Committee on Ground Search and Rescue and arrange a mutually compatable place and time for testing. Testing will involve 1) team equipment inspection, 2) individual equipment inspection, and 3) a field test of team abilities, including one search problem and one rescue and evacuation problem. Teams failing the test may be retested at any mutually agreeable time and place.

II. A unit desiring Class 'B'--Quick Response or Class 'A'--Quick Response should first obtain Class 'B' or Class 'A' certification as per Section I. The GSAR Committee will make special arrangements for Quick Response testing in the form of no-notice simulated callouts and problems.

III. Recertification for Class 'B' and Class 'A' teams will be yearly testing at a SARCAP. Arrangements may be made for a special session for testing.

IV. Recertification for Class 'B'--Quick Response and Class 'A'--Quick Response teams will be on a no-notice basis.

V. Certification may be revoked when a team does not meet the minimum requirements, or cannot demonstrate adequate organization or team ability, or conducts itself in such a manner as to bring discredit on other GSAR teams or the CAP.