APPALACHIAN SEARCH AND RESCUE CONFERENCE
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Reply To:
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January 11, 1989

TO: Cady Soukup, ASRC Chairman

FROM: Keith Conover, M.D., Board member

SUBJECT: Training Standards

Why am I writing this letter? Because I feel that getting our training standards into shape is the most important task facing the ASRC right now.

We revised our Bylaws to reflect the changes in ASRC membership structure that we agreed on a year ago. Now, we must revise our training standards to correspond to the new Bylaws. We must do so promptly, because, at least in AMRG, our recruiting and training are hamstrung by the lack of standards. The standards have been "in transition" since we formed our Group.

On the other hand, we must not be precipitate about setting standards; after this long, a few more weeks won't make a lot of difference. We must have standards that are good, standards that are workable, and above all, standards the members believe in and are willing to meet.

Why am I writing this letter? Because I wasn't able to come to the last Board meeting. And, I want to expose you and others to my most strongly-held ideas, so that you may consider them before we meet to discuss the training standards.

Why am I writing this letter? Because the ASRC training standards are important not only to the ASRC. The Virginia GSAR standards were patterned after the ASRC's. MRA teams tell me they have a high opinion of the ASRC standards, and hope to emulate them. Norm Sloane, a lawyer with Kentucky Emergency Services, gives a talk on search and rescue liability at each NASAR conference. He makes a point of citing the ASRC Training Standards as an excellent way to minimize SAR liability exposure.

Why am I writing this letter? Because I wrote most of the first three editions of ASRC training standards. Because I wrote the first GSAR standards. And, because I've thought about standards a lot

since then. (If for no other reason, because I'm chairman of the ASTM task group on SAR personnel assessment.) I want to share these thoughts with you. Please, read the rest of the letter, and let these ideas percolate in the back of your mind until the standards meeting. Thanks.

1. Our standards must serve multiple purposes:

1.1. Anyone we send into the field must be in no danger. I'm not really worried too much about observers/uncertified members/whatever, as long as someone competent is babysitting (oops, I mean leading the team). But, anyone we certify as a Field Team Member should be able to take care of his or her own safety.

1.2. Our standards provide uniformity. so that teams 400 miles apart can work together smoothly. (More smoothly than MRA teams.) We must have a common base of knowledge and skills. Members must also respect the standards enough that we are willing to trust <u>any</u> certified member's belay.

1.3. Our standards help represent us to the search and rescue community. And, our standards must meet or exceed those of the states in which we work. In particular, our Field Team Members <u>must</u> meet the Virginia GSAR Level I standards, and our Field Team Leaders <u>must</u> meet the Virginia GSAR Level II standards. (For your information, I've enclosed a copy).

1.4. Our standards provide a goal for new members. This may seem trivial to us old-timers, but I assure you that new members find the standards important.

2. We have pioneered the use of explicit, testable standards of performance in search and rescue. Let's not back off now. The nebulous MRA standards are OK for a loose association of disparate teams. But, to have the tight-knit ASRC that is our ideal, <u>we</u> need standards that have some meat on them.

3. The minimum standard for participation in the field should <u>not</u> be in the training standards. The Operations Manual specifies that members who participate in field activities must have certain minimum equipment. If we simply require that uncertified members participate only under close supervision of a certified member, we (a) allow anyone who seems competent to go in the field, (b) avoid liability, and (c) keep from diluting good standards. What will make people want to get certified if we do this? Peer pressure, and a desire to measure oneself against a respected standard.

4. Our standards must be testable, but don't need to be a test. The idea of testing someone on every single skill needed for search and rescue ASRC is comical-- we'd spend all our time testing and none of our time searching. Any testing we do should be based on our standards, though, including all those items that are essential and a smattering of the others.

5. We say that we specialize in wilderness search and rescue and mountain rescue. Our standard should reflect this chosen speciality. And, we must align our standards not only with what we do routinely, but with what mountain/wilderness search and rescue teams might reasonably be asked to do.

6. Our standards will be read far and wide. Let's use good grammar and syntax, spell everything right, and use consistent form and style without awkwardness or ambiguity. Have one person, with a good spell-checker, a good syntax/style-checker, and some editorial experience, clean up the standards before they are presented to the Board.

By the way, in your letter, you quoted my comments, and you had me saying Pennsylvania GSAR standards rather than the Virginia GSAR standards that I meant to say. As far as other people's comments: Search Communications-- no opinion. Age-- no opinion. Have branching into separate field and base "tracks"-- basically agree, but don't hold strong opinion. Set aside medical standards for now-- agree, but think we should specify which medical "levels" we plan to establish and charge the Medical Committee with working on them.

encl: Virginia GSAR standards excerpt

cc: Group main addresses

Gene Harrison		Peter McCabe
Dorothoy Antis	Deming Herbert	Gary Mechtel
Sheila Armstrong	Patsy Humphris	Kevin Parkes
Ricardo Bennett	Chris Ingle	Mark Pennington
Dave Carter	Bob Koester	Carl Solomon
Art Dodds	Mike Kuga	Ralph Wilfong
Bob Elron	Le Ligon	
Lorick Fox	Todd L'Herrou	

ASRC TRAINING STANDARDS
DRAFT

original version 1/88, by Chris Ingle.
Modified based on new proposals at 11/88 ASRC General Membership meeting by Chris Ingle.
Major revisions by Keith Conover, M.D., December 1988

- Footnotes with an asterisk are temporary, relating only to this draft, and would be deleted in any official version. Footnotes with numbers would remain in the official printed version.
- Since Red Cross first aid courses are essentially being phased out, and First Responder training is not very useful for the wilderness, we should establish our own standards for first aid/medical training below the EMT level. These standards could be included here, or we could establish a new ASRC Wilderness First Aid and Wilderness Medicine Standards Manual, including both first aid and WEMT standards. This represents a lot of work. Perhaps the ASRC-CEM *Wilderness Emergency Medicine Curriculum Development Project* would agree to develop wilderness first aid standards for search and rescue team members, in concert with Bob Koester working on pilot courses. This is, I think, the best way to assure that our standards have credible medical backing (i.e. the approval of the Center for Emergency Medicine of Western Pennsylvania).
- The Rescue Specialist certification standards here are just reworked from the old "Rescue Member" standards and need to be updated.
- Our FTM standards must meet or exceed GSAR Level I, and our FTL standards must meet or exceed GSAR Level II. Chris's initial proposal did not do so in either letter or intent. I have an ASCII copy of the Level I standards, so I merged them into our FTM standards, changing the syntax and numbering to fit with our other standards.
- While we do not want to get bogged down in too many picky details, our standards must be worded so as to permit a Training Officer to judge a member with
  - a written test,
  - a practical test, or
  - careful observation in the field.

  For some skills where there are a number of correct ways to perform the skill (e.g. belaying a litter), we must specify one or more correct "school answer" ways that every member can perform the skill. We are members of a team, and must be able to understand the skills our teammates are using. Having people using three different belay methods on a semi-tech evac makes it hard for the Rescue Specialist to judge what's going on, especially if he or she only uses a fourth method.

- Our standards should be written in the Queen's (President's?) English.
- This is an incomplete draft, and is in no way a formal proposal; I and the other AMRG'ers who looked it over are just submitting it as something to promote discussion.

I. INTRODUCTION[1]

A. Overview of ASRC Certification Levels

In order to efficiently assign members to appropriate tasks on wilderness search and rescue (and other) incidents, members are classified according to their search and rescue expertise. This is done through training, testing, and certification of members, based on standards of competence provided in this manual.

Members may participate in field operations as observers, even if they hold no certification, provided they meet the requirements specified in the ASRC Operations Manual.

The most basic certification is that of Field Team Member (FTM). An ASRC Field Team Member is capable of participating in nontechnical and semitechnical searches and evacuations in almost any weather.* FTM's are competent in short-term survival, land navigation, lost person ground search tasks, and non-technical rescues; they also know how to serve as members of a semi-technical evacuation team.[2] ASRC FTM certification includes all items of the Level I standard of Search and Rescue Training Associates (SARTA).[3] SARTA Level I

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*"Nontechnical" evacuations are those that require a litter and litter team, but no rope. "Semi-technical" evacuations require a rope and belay for the security of the patient and litter, but not of the litter bearers.

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[1]This introduction is not for experienced ASRC members. It is for new ASRC members, and for non-members who are reviewing our standards for the first time.

[2]The description of the purpose of each certification level has been moved from each level's own section into a single introductory section. Why? Because many current ASRC members have expressed difficulty understanding the new training levels, and we may well expect any new member reading the training guide to need some sort of general overview at the outset.

[3]We must ensure that all of our certification levels meet or exceed relevant state standards. Since our specialty is wilderness search and rescue, we should exceed the state standards in these areas.

is also the minimum certification for ground search and rescue team members anywhere in Virginia, as established by the Virginia Department of Emergency Services. Since the ASRC specializes in mountain and wilderness search and rescue, our standards go beyond the SARTA standards in wilderness travel and mountain rescue.

The next level higher level is that of Field Team Leader (FTL). An ASRC Field Team Leader has met all the requirements of a Field Team Member, and has more expertise in wilderness travel, land navigation, search task management, team management and leadership, and mountain rescue. FTL's know how to run a semitechnical evacuation, and can serve as members of a technical evacuation team. Our FTL standards include all of the SARTA/Virginia Level II standards, but as with the FTM standards, go a bit beyond them in the areas of mountain rescue and wilderness search and rescue.

At the level of Field Team Leader, the certification path diverges. Members may go on to become a Rescue Specialist (RS), or may become Incident Staff (IS) qualified, or both. Rescue Specialists are those with particular expertise in rescue operations, and are full Rescue Members of the Mountain Rescue Association. (Other members qualify as MRA Support Members.) Incident Staff members have the expertise to manage large search or rescue operations. Incident Staff-qualified members may go on to become qualified as Incident Commanders (IC's). An ASRC IC is qualified to command all ASRC resources in a large search or other incident.

Members may also obtain medical qualifications such as Emergency Medical Technician (EMT), EMT-Paramedic, or Wilderness Emergency Medical Technician (WEMT). Or, they may become qualified as Amateur Radio operators (hams), or learn tracking skills, or develop other skills of value to the ASRC. These other qualifications are not part of the ASRC Training Standards, although we may eventually include some or all.

B. Group Training Officers, Testing, and Certification Periods

Although the ultimate authority for testing and certifying members is vested in the ASRC Board of Directors, the ASRC Bylaws delegate most of this authority to a trusted member in each Group. This Group Training Officer is responsible for testing applicants for the various certification levels (with a few exceptions noted in the appropriate sections), performing an annual review of all members' continued compliance with certification requirements, and proposing members for a vote as needed.

Applicants for FTM, FTL, or RS status must pass a comprehensive written and practical test administered by the Training Officer. Once certified to a particular level, the member must meet all continuing education requirements, and must pass an annual review by the Training Officer. Thus, the certification period for all certification levels is one year. The Training Officer may use an informal review of a member's capabilities, but a we recommend that every certified member pass formal retesting every three years.

II. FIELD TEAM MEMBER CERTIFICATION:

A. General:

To receive Field Team Member certification, the member must:

1. be an Active Member of the ASRC, as specified by the ASRC Bylaws;
2. participate satisfactorily in four ASRC or Group training sessions, including at least 32 hours of field training;
3. possess all required personal equipment, as specified in the ASRC Operations Manual;
4. meet the technical standards listed below, as judged by the Training Officer;
5. receive a favorable subjective evaluation by the Training Officer regarding the applicant's overall competence to perform the duties expected of a Field Team Member, and
6. be proposed for Field Team Member certification by the Training Officer at a Group business meeting, and receive a favorable vote in accordance with procedures specified in the ASRC Bylaws.

B. FTM Technical Standards: Survival and Wilderness Travel[4]

[4]I have made significant changes in the wording of many of the technical standards. The standards must reflect the real training needs of our members, as seen in our current mission load, and in any reasonably possible missions (i.e. rescues). We must set forth standards that are objective. For some standards, for example some of these wilderness travel items, we cannot be as specific as one might wish, but we must at least provide the Training Officer with a good indication of how to assess whether the member meets the standard.

1. The Field Team Member must demonstrate the ability to travel confidently and competently with a full mission pack, on trails or cross-country, in terrain typical of a mid-Atlantic wilderness, in summer, spring, and fall conditions. This includes safely and efficiently:
   a. hiking across rugged terrain;
   b. crossing small streams;
   c. finding routes through brush or cliff bands;
   d. selecting appropriate clothing, pace, and rest stops for the situation;
   e. dealing with common wilderness hiking situations such as potential heel or toe blisters, and finding and purifying water, and
   f. selecting a good site and establishing an adequate bivouac.[5][6]

2. The Field Team Member must understand and demonstrate the ability to explain the essential principles of short-term survival.[7] Specific items include:
   a. short-term vs. long-term survival;
   b. describing several problems commonly encountered on SAR missions that may lead to a survival situation;
   c. psychological factors that may affect survival ability;
   d. short-term survival priorities;
   e. average and maximal daily food and water requirements;
   f. the heat balance of the body;
   g. heat loss and ways to prevent it;
   h. the physiology of heat loss, including the body's response to both heat and cold stress;
   i. the concepts of energy reserve/energy level, exhaustion, and fatigue;
   j. hypothermia, immersion foot, and frostbite;
   k. dehydration, heat exhaustion, heat cramps, and heatstroke;

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[5]Many of these items previously said "as determined by the Group Training Officer." With the new introduction, this is now superfluous and has been removed.

[6]All standards of competence have been reworded so that they follow a standard format of grammar and syntax.

[7]This is a good example of how a standard of competence should be worded. The first sentence succinctly outlines the intent of the item, and the second sentence lists the specific content of the standard.

l. general survival techniques, and
m. using the STOP mnemonic to develop an action plan, given several survival scenarios.

3. The Field Team Member must demonstrate the ability to explain the major points of wilderness clothing selection, including:
   a. listing the "3 W's" of clothing priority for wet cold climates, and explaining their importance; they are:
      (1) wind protection;
      (2) waterproof clothing, and
      (3) wool (or other warm-when-wet) clothing;
   b. the advantages, disadvantages, and appropriate uses of waterproof shell garments, and the water penetration resistance of: urethane-coated nylon, "60/40 cloth", "65/35 cloth", and Gore-tex;
   c. cold-weather dressing concepts, including: loft, the layer principle, ventilation, "dressing cold", and the dangers associated with overheating in the winter, and
   d. description of clothing materials, including cotton, down, wool, and synthetic fibers, in terms of dry warmth, wet warmth, wind protection, absorption and retention of water, and wicking of water.

4. The Field Team Member must demonstrate the ability to explain the major points of personal equipment selection, including:
   a. boots;
   b. sleeping bags;
   c. ground protection and insulation;
   d. rucksacks and daypacks;
   e. tents;
   f. personal safety items;
   g. fire starting aids;
   h. stoves;
   i. items for signalling and navigation;
   j. light sources and batteries; and
   k. emergency shelters.

5. The Field Team Member must demonstrate the ability to bivouac overnight with normal field pack gear in summer, spring or fall, and carry out incident tasks for a full day following.

6. The Field Team Member must demonstrate the ability to build a functional emergency overnight shelter from local materials, and build a fire using field pack gear.

C. FTM Technical Standards: Land Navigation

1. The Field Team Member must demonstrate the ability to identify and define the following terms or concepts:
   a. latitude and longitude;
   b. degrees, minutes and seconds;
   c. true north and magnetic north; and
   d. declination.

2. The Field Team Member must demonstrate the ability to describe the various parts of the compass and demonstrate the ability to use it to plot a course on a map, including northing and declination correction.

3. The Field Team Member must demonstrate the ability to demonstrate northing techniques by:
   a. pointing out the North Star;
   b. using the sun's position, shadow or "sun and stick" method; and
   c. orienting to surrounding terrain using a map ("northing by inspection").

4. The Field Team Member must demonstrate the ability to, given a standard 7.5 minute U.S. Geological Survey (USGS) topographic quadrangle map, correctly identify the following:
   a. grades of highways, roads, trails, and bridges;
   b. power and other landmark lines;
   c. buildings, schools, churches, and cemeteries;
   d. storage tanks, wells, mines, caves, picnic areas, and campsites;
   e. benchmarks (control stations) and spot elevations;
   f. boundaries and fence lines;
   g. contour lines, depressions, cuts, and fills;
   h. perennial and intermittent streams, falls, springs, and marshes;
   i. valleys, ridges, peaks, sags (saddles, cols);
   j. elevations and general land contours.

5. The Field Team Member must demonstrate the ability to, given a photocopy 7.5 minute series topographic map section with an ASRC grid overprint, the original 7.5 minute quadrangle map, and a Uniform Map System (UMS) gridded aeronautical chart of the area, identify points via:
   a. latitude and longitude;

b. LORAN-C coordinates;
c. the ASRC grid system;
d. the Uniform Map System;
e. an azimuth and distance off a VOR; and
f. Universal Transverse Mercator (UTM)/Military Grid Reference (MGRS) system.

6. The Field Team Member must demonstrate the ability to, given only a 7.5 minute topographic quadrangle or an orienteering map with an attack point and a target plotted on it, and a standard orienteering compass, reliably and accurately:
   a. calculate the true bearing from the attack point to the target;
   b. calculate and set on the compass the magnetic bearing to the target; and
   c. follow the bearing accurately, including triangulating and boxing around obstacles, and estimating distance by pacing.

7. The Field Team Member must demonstrate the ability to correctly locate a position on a topographic map given:
   a. the bearings to two landmarks indicated on the map (resection);
   b. the bearing to one landmark indicated on the map, and the information that the position is on a specified linear feature (modified resection).

8. The Field Team Member must demonstrate the ability to, given bearings from two locations to a target, correctly locate it on a topographic map (triangulation).

9. The Field Team Member must demonstrate the ability to consistently complete basic-level point-to-point orienteering courses.

10. The Field Team Member must demonstrate the ability to briefly explain and give examples of the use of the following land navigation concepts:
    a. catching features;
    b. "collecting" features;
    c. attack points;
    d. aiming off; and
    e. coarse and fine orienteering.

D. FTM Technical Standards: Search

1. The Field Team Member must demonstrate the ability to outline important points about SAR organization. In particular, the FTM must demonstrate the ability to:
   a. describe areas of responsibility for search and rescue as defined by the National SAR Plan,
   b. describe areas of SAR responsibility and authority at the state level for Virginia, West Virginia, Maryland, and Pennsylvania;
   c. list several resources that might be used during a SAR incident,
   d. list several factors that may result in an aircraft being listed as missing; and
   e. describe the basic principles of the ICS system and define the major staff positions.

2. The Field Team Member must demonstrate the ability to outline basic legal principles associated with SAR. In particular, the FTM must demonstrate the ability to:
   a. outline the provisions of the Good Samaritan law,
   b. define the terms "implied consent," "expressed consent," "informed consent," and "abandonment,"
   c. describe the four facts necessary to prove negligence,
   d. describe several methods of reducing liability exposure; and
   e. describe the circumstances when entry upon private property may be justified, define the problems involved with this action, and suggest possible solutions.

3. The Field Team Member must demonstrate the ability to identify and define four key points of search theory, the four core elements of tactical operations, the five phases of a SAR event, and the four phases of a rescue operation.

4. The Field Team Member must demonstrate the ability to describe the standard organization of Field Teams for wilderness search and rescue. In particular, the FTM must be able to:
   a. define "Field Team,"
   b. describe at least five types of search teams;
   c. describe at least four types of rescue teams; and
   d. define the functions of the field team positions:

(1) Field Team Leader;
(2) MEDIC;
(3) Rescue Specialist; and
(4) Radio Operator.

5. The Field Team Member must demonstrate the ability to describe the standard techniques for these search tactics:
   a. attraction;
   b. containment;
   c. survey search;
   d. hasty search (scratch search);
   e. sweep search (open grid search);
   f. line search (closed grid search);
   g. route search;
   h. air-scenting search dogs;
   i. tracking or trailing dogs; and
   j. man-tracking.

6. The Field Team Member must demonstrate the ability serve as a competent member of a Field Team engaged in any common lost person search task. In particular, the FTM must demonstrate the ability to:
   a. define clue-consciousness, and demonstrate the ability to pick out basic "man-tracking" sign in the field;
   b. describe the duties of a member of a grid team, sweep team, and hasty team, and demonstrate the capacity to participate in each type of task competently;
   c. describe the duties when accompanying a dog handler on a simple search task;
   d. demonstrate the ability to work well with people, in the field and at base;
   e. set up and operate any Group-owned hand-held radio, including the use of the ICAO-ITU phonetic alphabet, standard Status Codes, standard ASRC prowords, and standard ASRC net discipline;
   f. reliably use the ASRC grid system to report positions; and
   g. responsibly and effectively handle the media in the capacity of a field team member.[8]

E. FTM Technical Standards: Mountain Rescue

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[8]Note that some of these items are worded such as to make it easy to make a written test, and others aimed more at a field performance evaluation.

1. The Field Team Member must demonstrate the ability to outline proper management of an aircraft crash site, possible crime scene, or other incident scene. Specific items include:
   a. describe several hazards commonly associated with an aircraft crash site, including additional hazards that may be present if the crash involves a military aircraft;
   b. describe the proper approach to an aircraft crash site,
   c. explain the importance of the accurate documentation of events at an incident site;
   d. describe the proper methods to use to adequately secure an incident site; and
   e. explain the importance of clue preservation at both an aircraft crash site and a possible crime scene.

2. The Field Team Member must demonstrate the ability to care properly for ropes and technical rescue equipment.

3. The Field Team Member must demonstrate the ability to describe the several types of rope commonly used in wilderness rescue work, and their construction, use, and care.

4. The Field Team Member must demonstrate the ability to describe the use and care of the carabiner, the Figure 8 descender, and the brake bar rack.

5. The Field Team Member must demonstrate the ability to properly use the following improvised evacuation methods:
   a. 2-person linked-arms "chair" carry;
   b. 2-person packstrap-and-pole carry;
   c. both split coil and sling "piggyback" carries;
   d. improvised stretchers, rope stretcher, rope and pole stretcher, parka and pole stretcher, and blanket and pole stretcher.

6. The Field Team Member must demonstrate the ability to belay competently, including:
   a. proper anchorage, tie-in, stance, and aim for hip belays; and
   b. call usage, "up rope" technique, "slack" technique, smooth tree-belay lowering, and fall-catching.

7. The Field Team Member must demonstrate the ability to correctly tie, contour, and back up the following:
   a. the ASRC seat harness;
   b. overhand bend (water knot, ring bend)
   c. figure-of-eight on a bight and figure-of-eight bend;
   d. bowline knot;
   e. square knot;
   f. barrel knot and bend (grapevine knot, double fisherman's knot);
   g. girth hitch; and
   h. taut-line hitch.

8. The Field Team Member must demonstrate the ability to correctly coach and supervise an untrained litter team in a non-technical evacuation including loading and packaging the patient, toe-nailing and laddering, rotation of litter bearers, and proper use of standard calls.

9. The Field Team Leader must demonstrate the ability to competently brake litters with tree wrap belays and with figure-eight descenders.

10. The Field Team Leader must demonstrate the ability to serve competently in all positions on a semi-technical evacuation team, including:
    a. serving as rope team member with tree wrap brakes and with figure eight descender brakes;
    b. rigging and directing a brute-force hauling system and z-haul system, with and without directional pulleys;
    c. serving as rope team member with either hauling system;
    d. serving as litter captain; and
    e. selecting suitable anchor points.

11. The Field Team Leader must demonstrate the ability to properly load and tie a patient into a Stokes litter, and to rig it for semi-technical evacuations.

12. The Field Team Member must demonstrate the ability to serve efficiently and competently as a litter team member on a semi-technical evacuation.

F. FTM Technical Standards: Wilderness Medicine[9]

1. The Field Team Member must carry a current 2-rescuer American Heart Association CPR card.[10]

2. The Field Team Member must carry a current ASRC Fundamentals of Wilderness First Aid card.

III. FIELD TEAM LEADER CERTIFICATION:[11]

A. General:

To become a Field Team Leader a person must:

1. hold current Field Team Member certification;
2. complete 10 ASRC or Group training sessions as an FTM, including 2 on search and 2 on rescue;
3. as a FTM, have responded to 2 incidents within the previous year;
4. possess all gear required, as specified in the ASRC Operations Manual;
5. meet the technical standards listed below, as judged by the Training Officer;
6. receive a favorable subjective evaluation by the Training Officer regarding the applicant's overall competence to perform the duties expected of a Field Team Leader; and
7. be proposed for Field Team Leader certification by the Training Officer at a Group business meeting, and receive a favorable vote in accordance with procedures specified in the ASRC Bylaws.

B. FTL Technical Standards: Survival and Wilderness Travel

1. The Field Team Leader must demonstrate the ability to convincingly explain the important psychological aspects of survival, including:

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[9]At some point, we must set standards for wilderness first aid/medicine training for our members. Saying that members must have ASRC wilderness first aid certification only postpones things, but perhaps that is best. We can "grandfather" our members into the new categories pending establishment of the new ASRC Wilderness First Aid standard.

[10]Personally, I think that CPR is virtually useless in the wilderness. However, it might be handy if someone codes at Base. Is that sufficient to include it as a requirement? I think not.

[11]GSAR requires that FTL's have Advanced First Aid or equivalent. One option is for us to set up both basic and advanced wilderness first aid classes. Comments?

a. reactions to fear, pain, discomfort, and danger, and their effects on the mind and body;
b. the dangers of panic, and techniques for preventing panic;
c. evaluating and acknowledging the limits of oneself and others;
d. the way artificial goals may interfere with rational judgment;
e. the concept of one's pack and equipment as a life support system.

2. The Field Team Leader must demonstrate the ability to briefly describe the following physiological concepts pertinent to survival:
   a. homeostasis;
   b. energy level and exhaustion;
   c. fatigue;
   d. daily caloric (food) and water needs of the human body;
   e. the relative energy content and availability of fat, protein, starch, and sugar, including the effects of different levels of exertion and seasonal differences;
   f. conditioning for search and rescue, including conditioning for strength, flexibility, and endurance.

3. The Field Team Leader must demonstrate the ability to explain the "energy budget" concept of body temperature homeostasis, including the following key points:
   a. the routes of heat loss, and their relative importance:
      (1) temperature (conduction and radiation);
      (2) windchill (convection);
      (3) wetchill (conduction and evaporation);
   b. the use of energy stores to produce heat, and the metabolic costs of shivering;
   c. vasodilation, sweating, and behavior as means of increasing heat loss, and the long-term consequences of them;
   d. vasoconstriction and behavior as means of conserving heat;
   e. the effects of tobacco and alcohol on normal heat homeostasis;
   f. the particular danger of "hypothermia weather" that is, temperatures near freezing with wind and rain.

4. The Field Team Leader must demonstrate the ability to list the basic characteristics (voltage, life, weight, cost, temperature characteristics, and dangers) of carbon-zinc, alkaline, lithium, and nickel-cadmium cells.

5. The Field Team Leader must demonstrate the ability to briefly describe pertinent local weather patterns, including the signs of arriving cyclonic winter storms, cold fronts, warm fronts, and local storms.

6. The Field Team Leader must demonstrate the ability to travel cross-country competently in a middle Appalachian wilderness area in the winter, including:
   a. winter stream and ice crossing;
   b. traveling deep powder snow;
   c. using instep crampons or creepers on steep snow and icy areas; and
   d. fourth class rock climbing, including route selection, competent use climbing techniques including balance and counterforce, choice of belay stances and anchors, and proper use of standing and sitting hip belays.*

7. The Field Team Leader must demonstrate the ability to bivouac overnight in winter with normal field pack gear, and carry out incident tasks for the following full day.

C. **FTL Technical Standards: Land Navigation**

1. The Field Team Leader must demonstrate the ability to consistently complete point-to-point intermediate-level orienteering courses of approximately a 6-hour duration or 5 mile length in rugged terrain, at night.

D. **FTL Technical Standards: Search**

1. The Field Team Leader must demonstrate the ability to lead a Field Team competently on:
   a. scratch, survey, perimeter cut, sweep, and saturation search tasks for a lost person; and
   b. interrogation, visual, and electronic direction-finding search tasks for a downed aircraft.

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*Additional related items appear in the Mountain Rescue section.

2. The Field Team Leader must demonstrate the ability to explain the major factors involved in scene management when a victim is found.

3. The Field Team Leader must demonstrate the ability to properly brief and debrief a field team, and to manage a team on return to Base.

4. The Field Team Leader must demonstrate the ability to explain the general strategy and the role of the Field Team in lost person search (wilderness, downed aircraft search, and urban) ural disasters, and briefly explain the following search concepts:
   a. passive and active search methods;
   b. clue finders and subject finders;
   c. containment;
   d. binary search and cutting for sign;
   e. the hasty search;
   f. the "bastard search";
   g. sweep search;
   h. survey search;
   i. grid search;
   j. attraction.

5. The Field Team Leader must demonstrate the ability to explain the use and operation of direction-finding instruments for locating downed aircraft, and the ability to competently lead a team on an ELT search task.

6. The Field Team Leader must demonstrate the ability to outline the delegation of authority and responsibility for search and rescue in states where ASRC Groups are located.

7. The Field Team Leader must demonstrate the ability to briefly explain how the following legal concepts apply to search and rescue operations:
   a. Good Samaritan laws;
   b. civil suits and criminal actions;
   c. standards of care;
   d. the right to emergency assistance and duties to provide emergency assistance;
   e. abandonment;
   f. implied consent;
   g. entry, during incidents, upon private property posted "No Trespassing";
   h. crime scene protection;

i. declaration of death and confirmation of death;
j. confidentiality.

8. The Field Team Leader must demonstrate the ability to reliably use VHF-FM mobile and handheld radios to communicate incident information including:
   a. adjustment of channel, volume, squelch, and PL (CTCSS) controls;
   b. using the ASRC radio SOP, including proper station identification and observance of FCC regulations, proper use of prowords, and use of the ICAO (ITU) phonetic alphabet;
   c. describing various techniques for improving marginal communications encountered while using VHF-FM handheld radios.

9. The Field Team Leader must demonstrate the ability to track a person for twenty feet over various terrain types, with knowledge of:
   a. tracking sticks;
   b. the effects of the sun and how to use them;
   c. how to identify shoe type and provide measurements; and
   d. how to find stride length and width.

E. FTL Technical Standards: Rescue

1. The Field Team Leader must demonstrate the ability to:
   a. describe basic wilderness SAR team equipment;
   b. describe various team plans for insuring immediate availability of such equipment; and
   c. define equipment inspection and maintenance programs for team equipment, for vehicles used by the team, and for personal equipment.

2. The Field Team Leader must demonstrate the ability to describe the following:
   a. ground-to-air panel, paulin, and hand signals, and aerial flares, smoke, and signal mirrors;
   b. air-to-ground aircraft signals;
   c. ground procedures for working with a helicopter hoist;
   d. helicopter landing zone preparation and marking; and
   e. hazards to ground personnel working around a helicopter, and the rules for approaching helicopters.

3. The Field Team Leader must demonstrate the ability to correctly tie, contour, and back up the following:
   a. water knot (overhand bend, ring bend);
   b. Prüsik knot;
   c. Headden knot;
   d. clove hitch;
   e. butterfly knot;
   f. one-way knot;
   g. sheet bend;
   h. Frost (etriér) knot;
   i. load-releasing hitch; and
   j. cross-chest harness;

4. The Field Team Leader must demonstrate the ability to use the following rope handling techniques:
   a. coiling and uncoiling a mountaineer's coil;
   b. coiling and uncoiling a inverted-loop coil.;
   c. stacking and inspecting the rope;
   d. rigging to an anchor using:
      (1) a bowline;
      (2) a tree wrap and tie-off;
      (3) loop webbing slings;
   e. casting, padding, and rigging static lines.

5. The Field Team Leader must demonstrate the ability to competently select routes for a semi-technical evacuation, and must be able to describe the manpower and equipment requirements and organizational structure needed to manage a lengthy and difficult semitechnical evacuation.

6. The Field Team Leader must demonstrate the ability to rappel properly with:
   a. the arm rappel (French arm rappel, back rappel);
   b. a figure eight descender (single and double wrap);
   c. a Münter (Italian) Hitch, and *
   d. a carabiner wrap and
   e. a long rappel rack.

7. The Field Team Leader must demonstrate the ability to switch from rappel to ascend, and back to rappel.

8. The Field Team Leader must demonstrate the ability to ascend sixty feet using only Prüsik knots.

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*. Mike favors biner wrap over Italian hitch.

9. The Field Team Leader must demonstrate the ability to direct a semitechnical evacuation team up and down a 45-degree slope; uphill motions of at least 100 feet must include:
   a. a brute-force hauling system;
   b. a Z-haul;
   c. a simple 4:1 hauling system; and
   d. simple belays with toenailing by the litter team.

IV. RESCUE SPECIALIST CERTIFICATION:

A. General:

To become a Rescue Specialist a person must:

1. hold current Field Team Leader certification;
2. complete 10 ASRC or Group training sessions as an FTL, including 2 on search and 2 on rescue;
3. as a FTL, have responded to 2 incidents within the previous year;
4. possess all required gear, as specified in the ASRC Operations Manual;
5. meet the technical standards listed below, as judged by the Training Officer;
6. receive a favorable subjective evaluation by the Training Officer regarding the applicant's overall competence to perform the duties expected of a Rescue Specialist; and
7. be proposed for Rescue Specialist certification by the Training Officer at a Group business meeting, and receive a favorable vote.

B. RS Technical Standards: Ropework

1. The Rescue Specialist must demonstrate the ability to correctly tie, contour, and back up the following knots, describe each in terms of strength, security, and proneness to jamming, and discuss appropriate and inappropriate uses of each:
   a. bowline;
   b. "double strength" bowline;
   c. bowline-on-a-coil;
   d. bowline-on-a-coil around anchors;
   e. bowline-on-a-bight;
   f. three-loop bowlines;
   g. overhand knot and overhand bend (water knot, ring bend);
   h. figure eight knot, bend and loop;
   i. barrel knot and barrel bend (double fisherman's knot, grapevine knot);

j. sheet bend and double sheet bend;
k. square knot;
l. butterfly knot;
m. anchor hitch;
n. clove hitch;
o. taut-line hitch;
p. the ASRC seat harness;
q. the Parisian baudriér chest harness; and
r. the crossed-loop chest harness.

2. The Rescue Specialist must demonstrate the ability to rappel properly with the following methods, and discuss the advantages, disadvantages, and appropriate uses of each:
   a. the arm rappel (French arm rappel, back rappel);
   b. the Dulfersitz (hotseat) body rappel;
   c. single and double wrap on a figure eight descender;
   d. double carabiner-brake bar rappel;
   e. carabiner wrap rappel;
   f. six carabiner rappel;
   g. Münter (UIAA, Italian friction) hitch rappel; and
   h. long rappel rack rappel.

3. The Rescue Specialist must demonstrate the ability to rig and use multiple-step pull-down rappels.

4. The Rescue Specialist must demonstrate the ability to assemble and ascend properly with the following devices, and describe each in terms of strength, security, holding strength, jamming, special hazards, and appropriate uses:
   a. Prüsik knots and three-wrap Prüsik knots;
   b. Bachmann knots;
   c. RBS and Headden knots, formed both with rope and with webbing;
   d. Gibbs ascenders; and
   e. Jumar and similar ascenders.

5. The Rescue Specialist must demonstrate the ability to tie and discuss the appropriate uses of the following "escape ascenders:"
   a. the French Prüsik knot ("Barnett system"); and
   b. the end-of-rope self-Prüsik.

6. The Rescue Specialist must demonstrate the ability to construct and ascend with the following ascending rigs:

a. Texas and Texas "Y" rigs;
b. classic three-knot rig;
c. three-cam "ropewalker" rig;
d. modified climber's Jumar-etriér rig; and
e. Mitchell system.

7. The Rescue Specialist must demonstrate the ability to belay confidently and competently with:
   a. the sitting hip belay;
   b. the standing hip belay in the context of tree-belaying a litter;
   c. the Münter (UIAA, Italian friction) hitch belay; and
   d. the belay plate.

8. The Rescue Specialist must demonstrate the ability to coil and tie off ropes in:
   a. a mountaineer's (knee-foot) coil;
   b. a lap coil;
   c. a multiple-strand chain coil;
   d. a quick-release "rescue" coil; and
   e. a skein "backpack" coil.

9. The Rescue Specialist must demonstrate the ability to rig static lines in diverse situations, including:
   a. casting lines through brush or past obstructions;
   b. defouling lines;
   c. assessing abrasion hazards, padding, and rigging offset lines with directional anchors;
   d. rigging horizontal (Tyrolean) traverse lines; and
   e. rigging diagonal lines.

10. The Rescue Specialist must demonstrate the ability to select, place, and rig anchors both for individual use and for evacuations, including:
   a. the evaluation of and use of trees and rock formations;
   b. the placement of and evaluation of chocks, pitons, and expansion bolts;
   c. tree wrap rigging;
   d. the proper rigging of two self-equalizing anchors with a single loop sling; and
   e. the proper rigging of a self-equalizing system for several anchors.

11. The Rescue Specialist must demonstrate the ability to using the candidate's choice of the rappel methods described in item 2 (except the Dulfersitz or

arm rappel), the candidate's choice of the ascenders described in item 4, and the candidate's choice of the ascending rigs described in item 6, do the following:

a. rappel and ascend past overhangs and breakovers;
b. rappel and ascend through narrow chimneys;
c. rappel and ascend on diagonal slopes;
d. tie off, rest, and invert (both rappel and ascend);
e. rappel without the use of hand control;
f. rappel and ascend past knots;
g. change from rappel to ascend and ascend to rappel while on the rope; and
h. use rappel and ascending techniques to traverse slack horizontal and diagonal lines.

C. Rescue Level Technical Standards: Mountain Rescue

1. Properly and safely use the techniques of free lead climbing, and lead fifth class rock (i.e., 5.0 or harder by the Yosemite decimal system) in summer, spring, or fall.

2. The Rescue Specialist must demonstrate the ability to using the local Group's regular Stokes litter and rigging, assemble the litter, load and secure a patient properly into the litter, and rig the litter properly for:
   a. semi-technical evacuations;
   b. vertical evacuation with one rope, with top brakes;
   c. vertical evacuation with one rope, with top brakes, and with litter vertical;
   d. vertical evacuation with one rope, with traveling brakes;
   e. vertical evacuation with two ropes and top brakes; and
   f. hoisting to a helicopter in hover.

3. The Rescue Specialist must demonstrate the ability to properly load a patient onto a D-ring ("Army") stretcher, to secure the patient, and rig the litter for a semitechnical evacuation.

4. The Rescue Specialist must demonstrate the ability to using a standard bare Stokes litter and an assortment of slings and carabiners, improvise all the types of rigging listed in (3).

5. The Rescue Specialist must demonstrate the ability to rig and demonstrate the use of the following haul systems:
   a. Yosemite haul (offset vertical counterweight haul) and 2:1 and 4:1 (theoretical) variants;
   b. simple and piggyback Z hauls; and
   c. simple and piggyback 4:1 (theoretical) Z hauls.

6. The Rescue Specialist must demonstrate the ability to rig, tighten, and use horizontal and diagonal high tension (Tyrolean) traverse lines for personnel, equipment, and patients in litters.

7. The Rescue Specialist must demonstrate the ability to use the following braking systems for evacuations:
   a. tree wrap;
   b. figure eight descender;
   c. multiple carabiner brake; and
   d. rappel rack brake.

8. The Rescue Specialist must demonstrate the ability to competently perform the following solo rescue techniques:
   a. rescue of a person who is incapacitated while ascending on a static line, by the use of the same static line, ascenders, and a rappel device;
   b. rescue of a person who is dangling on the end of a top-belay line, using a separate static line for access and lowering; and
   c. rescue of a person who is in the middle of a rappel on a static line with a jammed rappel device, using a separate static line for access.

9. The Rescue Specialist must demonstrate the ability to, given a length of 2" webbing and assorted slings and carabiners, rig and use a Tragsitz-type harness for a mixed vertical and diagonal lowering.

10. The Rescue Specialist must demonstrate the ability to use standard third-man techniques to load a patient into a litter on a vertical wall.

11. The Rescue Specialist must demonstrate the ability to given a (simulated) conscious victim without severe injuries or illness and only the end of a haul line, tie the victim into the end of the line securely for a vertical lifting.

12. The Rescue Specialist must demonstrate the ability to list and explain the actions to be taken upon entering the scene of an aircraft crash.

13. The Rescue Specialist must demonstrate the ability to list and describe the phases of extrication, list and describe the standard field-portable forcible-entry and extrication tools, and describe the use of these tools in extrication of persons from light civil aircraft.

14. The Rescue Specialist must demonstrate the ability to safely and effectively employ the tools and techniques described in (13).

15. The Rescue Specialist must demonstrate the ability to set up and mark a rural landing zone and a wilderness helispot, guide a helicopter with standard body signals, to load a patient into a grounded helicopter, and serve as a ground crew leader for a helicopter hoist evacuation.

V. INCIDENT STAFF CERTIFICATION:

A. General:

to receive Incident Staff certification, a member must:

1. be certified as a Field Team Leader;[12]
2. successfully complete a "Managing the Search Function" course, or its equivalent;
3. lead a Field Team on at least 3 incidents;
4. meet the technical standards listed below, as determined by a Group Training Officer selected by the ASRC Board of Directors;
5. serve as a member of the General Staff on one incident; and
6. be proposed for Incident Staff certification by the Training Officer to the ASRC Board of Directors, and receive a favorable vote by the Board of Directors.

B. IS Technical Standard: Search Management

[12]Some have suggested that the prerequisite be changed to FTM or even dropped altogether.

1. The Incident Staff-certified member must demonstrate the ability to have a working knowledge of the ICS concepts presented in an I-220 course:
   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.

2. The Field Team Leader must demonstrate the ability to set up commonly-used ASRC radio equipment, including:
   a. mobile and base radios;
   b. antennas and masts;
   c. power supplies; and
   d. linear amplifiers.*

3. The Incident Staff-certified member must demonstrate the ability to assemble and operate communications equipment owned by any Group.

4. The Incident Staff-certified member must demonstrate the ability to competently produce photocopy maps with an ASRC grid overlay.

5. The Incident Staff-certified member must demonstrate the ability to produce legible color-enhanced copies of gridded maps.

6. The Incident Staff-certified member must demonstrate the ability briefly, but intelligibly, describe the implications of the following search concepts to lost person search operations. The IS-certified member must also be able to use these concepts to discuss the uses and limitations of search resources, such as trained and untrained foot searchers, mantrackers, air-scenting dogs, and tracking dogs. The specific concepts are:
   a. passive and active search methods;
   b. clue finders and subject finders;
   c. containment;
   d. binary search and cutting for sign;
   e. the hasty search;
   f. the "bastard search,"

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*. must provide training opportunities for this.

g. the relative efficiency of close-spaced line searches versus repeated wide-spaced line searches;
h. compatible and incompatible search resources;
i. probability of detection (POD);
j. probability of area (POA); and
k. shifting probabilities.

7. The Incident Staff-certified member must demonstrate the ability to, given a lost person search scenario, a topographic map of the area, and an ASRC OPSKIT, set up initial search priorities, using the standard ASRC Strategy Map symbols. The IS-certified member must also be able to describe the application of each of the following approaches to the development of strategy:
a. the statistical method;
b. the historical method;
c. the simple containment method; and
d. the Mattson Consensus Method.

8. The Incident Staff-certified member must demonstrate the ability, given a search scenario, an ASRC OPSKIT, and a completed Strategy Map, to:
a. use the Task Assignment Procedure to generate a set of appropriate tasks to complete the initial strategy with the given resources;
b. fill out a Task Assignment Form properly for each task; and
c. start a Status Map using the standard ASRC symbols.

9. The Incident Staff-certified member must demonstrate the ability to, given a matrix of search areas with Probability of Area (POA) for each, and a set of search resources with POD and search rate for each, assign resources to tasks and calculate overall Probability of Success (POS).

10. The Incident Staff-certified member must demonstrate the ability to, given a search scenario and an ASRC OPSKIT, calculate the Time Frame for Survival (TFFS) and explain its significance and uses.

11. The Incident Staff-certified member must demonstrate the ability to describe in outline the standard procedure for a search for a missing light civil aircraft, including the role and structure of the Civil Air Patrol (CAP) and the appropriate role to the ASRC in aiding the CAP.

12. Use the standard ASRC logging procedure and message forms, and use and update a Communications Systems Chart.

13. Describe those characteristics of HF (high frequency), ASRC VHF-FM (very high frequency -- frequency modulation), Public Service VHF-high band, and amateur 2 meter radio communications that are relevant to search communications planning.

VI. INCIDENT COMMANDER CERTIFICATION:

A. General:

To become an Incident Commander a person must:

1. be an Incident Staff member for a minimum of 6 months;
2. have worked as an Incident Staff member on three incidents, including:
   a. once as Planning Section Chief; and
   b. once as Operations Section Chief or Division Supervisor;
3. be proposed for Incident Command certification, by an ASRC Incident Commander, to the ASRC Board of Directors;
4. receive a favorable written performance evaluation from the Incident Commander on each of the three incidents in item 2., above;
5. receive a favorable majority vote of the member's Group; and
6. receive a favorable vote by two-thirds of the entire ASRC Board of Directors.