APPALACHIAN SEARCH & RESCUE CONFERENCE, INC.

P.O. BOX 440
NEWCOMB STATION
CHARLOTTESVILLE, VIRGINIA 22904

Board of Directors Meeting
7 February 1988

This meeting of the Board of Directors of the Appalachian Search & Rescue Conference, Inc. was called to order at 10:18 am at the Headquarters of Shenandoah National Park in Luray, Virginia by Chairman Greg Shea.

Present at this meeting were:

Directors:
> Brian Wheeler - Blue Ridge Mtn. Rescue Group
> Kevin Coyne
>
> Greg Shea - Shenandoah Mtn. Rescue Group
> Gary Mechtel
>
> Marcia Le Grand - South West Virginia Mtn. Rescue Group
> Kristi Fitzwater (Acting delegate)
>
> Keith Conover - Allegheny Mountain Rescue Group
> John Greenaway (Acting delegate)
>
> Todd L'Herrou - Richmond Search and Rescue
> Lorick Fox
>> (Non-voting as probationary certified group)
>
> Peter McCabe - Explorer Post 616
>> (Non-voting as probationary affiliate group)

Other Members:
> Gene Harrison, SMRG, ASRC Communications Officer
> Chris Metzler, BRMRG, ASRC Operations Officer
> Chris Ingle, BRMRG, ASRC Training Officer
> Robert Koester, BRMRG, ASRC Medical Committee Chairman
> William Dixon, Chairman BRMRG
> Erin Carroll, BRMRG
> Deming Herbert, BRMRG
> Jim Rooney, ASRC At-large member
> Stuart Carpenter, SMRG
> Dianne Burroughs, BRMRG-Tidewater
> Bill Johnson, BRMRG-Tidewater
> Kevin Parkes, SMRG
> Kent Carlson, SWVMRG
> Jonathon Houck, ESAR

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READING AND APPROVAL OF MINUTES
The minutes from the 5 October 1987 Board meeting were approved unanimously with final additions of the Communications Committee and ESAR reports.

GROUP REPORTS

Blue Ridge Mountain Rescue Group - Charlottesville:
The group expects to submit a budget request to the University of Virginia Student Council totaling around $12,000. Spending of this past year's allocation included purchase of a full body vacuum splint, a dynamic rope, a "personal heating device," a linear amplifier, and the cost of printing the BLS field guidelines. Grant funds recently received have purchased a mobile repeater, digital pagers, ICOM radios, slide projector, and a screen. An additional grant to the Rescue Squad Assistance fund was denied. The proposal shall be resubmitted in April requesting another mobile repeater. BRMRG calculates that its members spent 4,000 manhours on incidents during the past school year. Members drove their vehicles 15,000 miles for training and incidents. In one week, the group will offer a basic practical test at Stony Man in SNP. Another test will be offered in April. Finally, BRMRG plans to request an additional telephone, for installation in the office, to assist with heavy alert/dispatch traffic.

Shenandoah Mountain Rescue Group - Washington, D.C.:
SMRG recently received 545 topographic maps covering MD, VA, and WVa. The group hopes to receive a donation from Appalachian Mountain Outfitters in the near future. An equipment inventory is in progress and any surplus gear could be offered for trade or sale to other groups. SMRG is investigating digital pager service for alerting. Gary Mechtel, Greg Shea, and Kevin Parkes have approached the Potomac Appalachian Trail Club (PATC) with a budget report for 1988 explaining SMRG's needs and in particular requesting office space. Their request was well received and PATC's support for SMRG seems to be increasing. In the late Spring, SMRG and ESAR Post 616 plan to co-sponsor a fundraiser with REI, Inc. After a major REI sale, the, the two groups plan to have an auction offering service of interest to the public. Finally, group members plan to give talks this spring at the Criminal Justice Academy in Salisbury, MD to law enforcement personnel.

South West Virginia Mountain Rescue Group - Blacksburg:
Kristi Fitzwater reports that the group's top priority this Spring is recruitment. While the SWVMRG has several new trainees and Associate members, membership is declining and it has been difficult to find enough officer candidates for Spring elections. Financially, the group continues to have funds from its $10,400 budget for 1987-88. Next year's budget is in the works.

Allegheny Mountain Rescue Group - Pittsburgh:

John Greenaway reports that Dave Lindell is now acting as Vice Chairman. AMRG's tax-exempt application with the IRS was turned down, and the group is in the process of resubmitting it. In order to more effectively seek grant funds and for legal protection, the group is considering incorporating in Pennsylvania. AMRG has approved a new Communications Officer qualification test developed by Keith Conover and John Kihl. Future Commo Officers demonstrate their knowledge before taking office. On March 4-7, AMRG is sponsoring a NASAR MSF class at Butler Community College. A basic practical test will be held one Sunday TBA in March. Members plan to attend a EMS conference hosted by the EMS Institute of Pennsylvania March 25-27. The group hopes to acquire digital pagers through the local Hospital Association in Pittsburgh which should contribute to an expanded group callout system. Slowly new members are joining and additional equipment is being collected. Upon receiving tax-exempt status, AMRG plans to pursue additional fundraising options.

Richmond Search and Rescue - Richmond:

Todd L'Herrou reports that the group is preparing for elections this MArch. They have achieved tax-exempt status and are attempting to put several grant proposals together. Two stokes litters have been donated. The group currently has 25 members of which 6 are certified and 15 are associates. RSAR's 18-month probationary period ends on April 3rd and the group is gathering the required equipment and paperwork for consideration as a Certified ASRC group. RSAR has requested a digital pager on the BRMRG alert network since the group lost its paging service through Va. DES. Finally, RSAR applied for membership in the Richmond Metro EMS Council.

Explorer Post 616 - Columbia, MD:

The post currently has 29 Explorers on its roster of which eighteen are active members. Peter McCabe also reports that the post has eleven associate advisors. While eight newcomers have joined the post, 3-4 older members are heading to college next year and are of course are in search of schools with SAR teams!

COMMITTEE REPORTS:

<u>Operations Committee:</u> (Chris Metzler, Chairman)
Chris reports that the previously discussed Aircraft Observation form is basically the same document that has just been adopted by the Va. SAR Council. Chris suggested that the Conference consider whether it should adopt the same form chosen by the Council. A new edition of the Lost Person Report / Checklist (LPR/C) is expected soon. The VaSAR Council incorporated changes discussed at its last meeting. Chris recommends that each group seek the form from its council representatives. Jim Rooney is expected to send out a compiled and updated equipment color code listing very soon. The committee re-emphasized the policy that all members check with the Incident Commander prior to departure from an incident to ensure that members are in proper for a safe return home. Chris has completed dispatch and alert materials for each group and expects to mail them soon. Each group should have received additional copies of the Task Assignment Forms at the last VaSAR Council meeting. Todd L'Herrou, VaSAR Council Operations Officer, added that a search task debrief form has been accepted as an interim document. The purpose of the form is to increase information gathering on the subject after a search is completed.

<u>Finance Committee:</u> (Gary Mechtel, ASRC Treasurer)
Currently the Conference has $571.17 in the checking account. Dues from 1987 are still due to the ASRC from the ESARs in the amount of $70.00 and from AMRG in the amount of $115.00. In addition all group's owe their 1988 dues totalling $45.00 each. Upcoming expenses include the state incorporation fees and funds owed to Gary totalling $50.00. The Conference is no longer paying MRA dues due to individual membership by the groups. Our IRS application has been approved and is heading for final evaluation...

<u>Training Committee:</u> (Chris Ingle, Chairman)
The committee announced that the next ASRC training session will be hosted by AMRG in march at a time and place TBA. In April, the scheduled Conference event will be the Dogwood Half Hundred hosted by SMRG. In April or May, BRMRG-Tidewater hopes to schedule another swamp simulation in their area. Reports on the Training Standards and the Membership manual were postponed as agenda items later in the meeting. Gary Mechtel suggested that the committee compile a training schedule for 1989 in the near future.

<u>Medical Committee:</u> (Robert Koester, Chairman)
The Virginia Wilderness EMT Pilot program will be held at UVa. on the weekends of April 8-10 and 22-24. Students may apply through Va. DES. Applicants must be 18 years of age, hold at least a valid EMT-A and GSAR Level I or submit an adequate resume. Most likely, students selected will be limited to members of Va. SAR Council agencies. The target size is 30 people. Bob reports that DES has stated that minors cannot be field team leaders on SAR tasks. The ASRC Operations Manual declares the same policy. Bob mentioned that it was likely Va. EMS would establish a similar policy stating that minors cannot be attendant in charge i.e. a "solo medic." How this will relate to SAR has yet to be determined. Finally, all administrative materials pertaining to our EMS license and required by state law have been

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submitted by the committee on a monthly basis.

Communications Committee: (Gene Harrison, Chairman)
Gene requested that all documentation handed out for the committee's report be written in to the minutes. The current report (that follows) was distributed. Gene discussed each item with the board. Briefly, under Item D **Technology**, Gene mentioned that he plans to update unit number assignments on all radios. In other discussion, Gene mentioned that he has loaned the ESARs radios and that the committee has made commitment to support them. He requested that the group designate an ESAR and an Advisor as communications officers. Gene described a new patch cord available for King radios to connect them to computers for programming.

In a clarification of FCC regulations several items were discussed. First Gene mentioned that it was his understanding that the license holder is responsible for making sure that the radios are on frequency and properly maintained. As long as Gene's name remains on the license as control point he is responsible for the ASRC in the FCC's eyes. The committee's policy has been that members may not reprogram synthesized radios without Gene's authorization and training. Gene stated that the FCC's concern is more with transmitting illegally than reprogramming. This is a gray area in FCC policy. They are more concerned with violations in repair, servicing, and alteration all of which must be performed by a licensed repair person and kept within FCC type acceptance.

On Saturday March 12, the committee plans to hold a meeting for all group communications officers. Additional members are encouraged to attend. The meeting is expected to start at 9:00 am and last all day.

As the report began to take up a lot of time, Greg suggested we defer further discussion on communications until later in the meeting. Gene requested to be allowed to finish his report and explained that it was taking a lot of time because the Board was asking numerous questions. Greg replied that the Board was asking so much because it had not heard from the committee in a while. Gene pointed out the Board "had not been publishing his minutes." Greg requested that the above discussion be summarized in the minutes.

Gene continued with his report and discussed the BRMRG repeater project. He submitted the committee's suggested repeater specifications and requested that they be written in to the minutes.

Appalachian Search! - the ASRC newsletter: (Chris Ingle, Co-editor)
Financially, the newsletter account currently has $60.00. The next publishing date is March 15th with the deadline for submissions on February 25th. Chris announced that Anne Eckman decided to leave the staff to give more attention to academic commitments. Deming Herbert has filled her position. The theme of the next issue shall be ELT SAR. If any members are interested in contributing an article, they should contact the appropriate section editor. Brian Wheeler mentioned that many subscriptions are expiring especially in SMRG and AMRG. Brian will send out notices to remind each group.

Virginia Search and Rescue Council: (Gary Mechtel, Chairman VaSarCo.)
Gene Harrison reported that individuals have expressed an increased interest in SAR computer bulletin boards. An open invitation has been extended to take advantage of the current bulletin board at Va. EMS in Richmond: (804) 786-6927 from 1630 to 0800 weekdays and all day on weekends. Keith Conover also mentioned he can provide information on an existing bulletin board in Pittsburgh.

Mechtel reported that the Pennsylvania DER gave a presentation at the Council's last meeting on their activities. The Va. SAR Council is currently considering incorporation to allow for fundraising and in order to act as an advisory board to the state. Chris Metzler added that one new organization and an individual have joined the Council: Tidewater Trails SAR Team (dog team) and Charles Worsham a mantracker.

Pennsylvania Search and Rescue Council: (Kevin Parkes)
The minutes to the Council's September meeting were passed around. Kevin reported that the council has finally published its Constitution and Bylaws. The issue of umbrella groups vs. individual group representation on council has been resolved to everyone's satisfaction. Representatives from individual groups, which are part of an umbrella organization, will be accepted if they choose to send them. Currently both AMRG and SMRG send representatives.

At the last meeting, John Kihl presented a legislative voter view on Special Response Units (SRUs) which includes the ASRC through AMRG. John and others have presented themselves as a united front to legislators to increase their awareness of SAR activities. The Penn. Governor is very aware of the Council. Council members have met with the Lt. Governor. These contacts have already had some influence on current legislation.

Finally, there appears to be some chance for improvement in relations with the Penn. Civil Air Patrol due to a change in command in their organization.

Mountain Rescue Association (MRA):
Greg Shea announced that there would be a short meeting for MRA teams following the Board meeting.

National Association for Search and Rescue:
Todd L'Herrou and Lorrick Fox recently attended a NASAR board meeting. Lorrick mentioned that he was concerned that NASAR is not continuing to pursue the database for SAR incident information.

Advertising Committee:
No Report

Managing Information Systems Committee: (Jim Rooney)
Jim reported that a new computer account has been established for SWVMRG. Greg, Jim and SWVMRG representatives will discuss the situation.

Recent Incidents and other news:
Chris Metzler began discussion relating to some points brought up in the most recent missions. There appears to be a policy change within Shenandoah National Park which will allow park service personnel to respond to incidents outside the park. These individuals might be able to provide Incident Staff and other assistance on searches in which the ASRC is short of personnel. The Division of Forestry was mentioned as another resource.

Greg Shea related comments from Al Rosen, SMRG in which he wished to remind ASRC Incident Staff that, while advantageous, it is not always necessary to have ASRC members as FTLs on SAR tasks. Al also suggested that the ASRC appoint a liaison to the local volunteers.

Lorrick Fox mentioned that he is now CAP Group Four Commander in Va. and he sees some encouraging signs relating to improved qualifications for CAP team members. He suggested that the Conference try to make greater use of the CAP resources in Charlottesville for responses by fixed wing aircraft. He believes the CAP is trying harder than ever to make favorable changes in its program.

Gary Mechtel discussed the proposed International Response Team which would respond to disasters around the world. The Office of Foreign Disaster Assistance, in a meeting in the end of February, contracted with Va. DES to form the team. The Board discussed possible ASRC involvement and concluded that, if approached, the ASRC as an organization at this time could not support the team with manpower but encouraged individuals to participate.

COMMUNICATIONS COMMITTEE BUSINESS

New frequency acquisition and license status:
The Board and the communications committee discussed the need for additional VHF frequencies for use by AMRG in Pennsylvania. Mechtel suggested a temporary solution might be a mutual agreement or coalition with Penn SAR teams on a frequency which could be used by all. Gene and Keith replied that most SAR teams in the state just do not have VHF licenses for SAR communications. The Board discussed the financial cost of "coordination" to add additional frequencies to the ASRC license. Finally, Keith motioned that the discussion be tabled since the Conference does not presently have the funds to submit an application. Keith suggested that Gene send in bids

to determine the cost.

Gene reported that he is currently coordinating with Greg Styles, SNP to update our license on SNP's frequencies. Our current license needs to be updated to include a couple of new frequencies in the park. Gene also mentioned that only units designated by the committee can operate on SNP frequencies. Dogs East also has units authorized under this ASRC license.

Eastern Region NCRC's use of the ASRC VHF license:
Prior to the meeting it was brought to the attention of the current Board that it was not aware that the NCRC was authorized to operate on the ASRC VHF license. Al Baker, past ASRC Chairman confirmed that an agreement had been made by the Board through Gene Harrison with NCRC. Gene estimated the date to be around 1976-77. Gene reported that this agreement still existed as did agreements with Dogs East and the Roberstson Association. The Robertson Assoc. agreement was made many years ago to help them facilitate their annual Old Timers Reunion for area cavers. Additional understandings with the CAP and SNP allow use under our license "for coordination purposes."

As ASRC control point for the ASRC VHF license, Gene expressed that he had complete confidence in Eastern Region NCRC personnel operating under our license. Gene described one of the ASRC's original goals as that of a regional leader in SAR and he believes our efforts to help NCRC with communications are true to that end. Gene added that since the relationship is going well, there is no need for them to pursue their own license. When the issue of the total number of units operating under a license was brought up, Keith voiced this interpretation: While the Conference "controls" more radios than could be operated legally on an incident at any one time, as long as we operate less than the number of units specified (30) we are in full compliance with the regulations.

Discussion of recent communications related correspondence and the status of the ASRC Communications Committee:
The Conference and members of the Board received four letters relating to the communications committee and ASRC members just prior to the meeting. These letters were distributed among the board members for review. Discussion began with Greg Shea asking Gene Harrision if he had any knowledge of the letters being solicited by any individual(s). Gene replied that he had no idea. Kevin Parkes suggested that because an ASRC member had been named in the correspondence and content might reflect alleged behavior, it was up to the Board to discuss the matter without other non-Board members present. The Board met in a **closed session at this time.** The microphone recording the meeting was disabled at Gene's request.

Keith Conover began by summarizing the past two years of history relating to the ASRC members and Eastern Region NCRC's involvement in this situation. The board discussed available options for a response to the letter received from NCRC. It was later decided that Greg would draft a response with Board input and final approval.

Discussion then moved to the status of the communications committee and its

leadership. The Board reviewed discussions between Gene, Gary and Greg that took place in December and related to their concerns about the committee. Keith suggested that the Board consider whether the committee should continue in its present state? Later Keith moved that the Board adopt Gene's chart of organization for the committee with Gene continuing as ✳ Chairman. After Board discussion, the motion was killed by a point of order and the Board focused its attention on its concerns and priorities for the committee. Constructive comments were made by all members and the Board decided that Gene would continue as Chairman of the committee. Greg volunteered to draft a position statement on the status of the committee for the next meeting.

Finally,   Greg and John Greenaway were assigned to investigate the circumstances surrounding the letters previously mentioned.

OLD BUSINESS

ASRC Brochure: (Chris Metzler)
The group working on the brochure has selected new photographs and rewritten the text. The Board suggested that Jim Rooney and Kevin Parkes put the final document together. Kevin Parkes and Erin Carroll made plans to talk to various printers prior to the next meeting to determine price options.

December Round Table Retreat: (Greg Shea)
Greg summarized the events at the ASRC retreat last December.

ASRC Training Standards: (Chris Ingle)
Chris submitted his latest version of the training standards to the Board. Keith suggested that they needed considerable review and needed to be available for editing during the next month. After several other suggestions, the standards were referred back to the Training Committee. Comments should be sent to Chris by March 1. Chris will present the next draft in April.

ASRC Application: (Jim Rooney)
The application is still being put together. Comments should be sent to Brian Wheeler. A new draft will be brought to the next meeting.

ASRC Operations Manual: (Chris Metzler)
Chris reported that he has only received one set of comments on the manual. Metzler announced that the final version would be mailed out to the membership for a vote on March 1.

36 Month Review Standards: (Todd L'Herrou)
The document was edited Part One sections 2,4 and deleted Part Two section 2. The final document was approved unanimously. Both the original and the approved versions are attached to minutes.

NEW BUSINESS

Fundamentals of Wilderness First Aid course: (Robert Koester)
Bob distributed and information sheet on the course and mentioned that a teachers manual and text will soon follow.

New ASRC Incident Commanders:
In another closed session, the Board discussed Chris Ingle, William Dixon, Todd L'Herrou, Cady Soukup, and George Swett as IC candidates.

Bob Koester nominated William Dixon as ASRC IC. Bob and Chris Metzler read letters of recommendation certifying that William had met all the qualifications necessary. William was approved by the Board as an ASRC IC by a vote of seven votes for and one abstention.

The Board then discussed proposed amendments to the IC selection process. The Board decided that letters of evaluation (vs. letters of recommendation) should be placed in a confidential envelope in the members personal file.
At a previous meeting, Kevin Parkes had nominated Todd L'Herrou as an ASRC IC. Todd requested that Chris Metzler write a letter of evaluation to be reviewed by the ASRC Board. After Board discussion, Todd was not approved by the Board in a vote of seven votes opposed and one abstention. The Board will send copies of the documentation presented to Todd for review.

Cady Soukup was unanimously reinstated as an ASRC IC after a leave of absence.

Greg Shea and Gary Mechtel felt that after letters of favorable recommendation, the Board should consider George Swett an ASRC IC.

The Board then approved new IC standards presented in Chris Ingle's Training Standards by a vote of seven for with one abstention.

The Board then reviewed Chris Ingle's eligibility as an ASRC IC. The Board approved Chris as an ASRC IC by a vote of seven for with one abstention.

ASRC Membership Manual: (Keith Conover)
Keith presented the attached plan for the membership manual.

In Other Business...

Gary Mechtel reminded the Board that we need to try and utilize as many different ICs as possible without compromising our standard of performance. We were assured by Bob and Chris Metzler that their support of William and Chris Ingle as ICs was not an attempt to ensure that BRMRG could field more ICs per incident than other groups. Everyone agreed that some ICs skills are deteriorating through disuse, but that the ASRC must continue to dispatch the most readily available, shortest-ETA IC whenever possible, as per current alert policies.

Most Board members agreed that they should try to attend the next BOD meeting so as to smooth the transition for the new Board. Greg will make the reservations for the next meeting tentatively for 9:30 am on 2 April 1988 at SNP HQ.

BRMRG-Tidewater:

William Johnson and Dianne Burroughs asked the board what their group's obligations to the ASRC were. Evidently, they were under the impression that they were a bona-fide ASRC Probationary Certified group. Greg explained that they were all considered BRMRG members. They expressed the their perception that BRMRG had pocket-vetoed their desire to become a full Probationary Group. As no BRMRG members were present at the meeting at this time, Greg instructed them to check their sources. Obviously, there had been some miscommunication between the two groups. Greg also suggested that if they desired to apply prior to the next meeting, the Board might consider a phone vote.

ADJOURNMENT
6:20 pm

Respectfully submitted,

Brian A. Wheeler
Secretary, ASRC

APPALACHIAN SEARCH AND RESCUE CONFERENCE
Communications Committee

Report To The Board Of Directors
7 ~~January~~ 1988
February

A.   EXECUTIVE SUMMARY

During 1987 the SAR communications community was faced with an unusual
number of significant challenges. These included the actions of the
National Public Safety Planning Advisory Committee, the attempt to
obtain nationwide dedicated SAR frequencies, and the controversy over
restricting new and vital technology. Several of these challenges are
continuing into 1988, and new issues include the ASTM standards
activity. Overall, 1987 showed progress for SAR communications, and the
NPSPAC was a temporary setback with the potential for long range gains.

B.   NATIONAL PUBLIC SAFETY PLANNING ADVISORY COMMITTEE

The National Public Safety Planning Advisory Committee (NPSPAC) was
created by the Federal Communications Committee (FCC) at the mandate of
the US Congress. Its major purpose was to create a national band plan
for the new 6 MHz portion of the 800 MHz radio band which was recently
allocated to Public Safety users. This was the spectrum which was also
sought by the mobile satellite service community for the provision of
nationwide and rural "cellular telephone" type services which would have
been of great benefit to the SAR community, especially in remote areas.
However, in the political fight for this spectrum, the public safety
organizations won, despite the observation that they already have more
spectrum than they can utilize effectively.

Although the 800 MHz frequencies were possibly not of critical utility
to rural SAR and disaster operations, they were of significance for
emergency interoperability with other agencies who were using them,
especially during urban disasters and other mutual aid activities.   It
should be remembered that the NPSPAC had another mandate which was of
even more significance, and that was to examine the other radio
frequency bands and to propose approaches to improve interoperability
and effective usage. It is in these other bands, especially the very
high frequency, high portion (VHF-HI), band near 155 MHz that most SAR
and disaster teams are presently operating. Unfortunately, these teams
are often crowded out of the limited frequencies in their areas, and
their low-power tactical operations are overwhelmed by high-power users
"sharing" the channels that they can get. Since these teams are also
highly mobile and are often rapidly deployed to emergencies all over the
US (and internationally, too), they must have a means of
interoperability with the units in the emergency operational area,
regardless of where it is. Unfortunately, a nationwide SAR and disaster
channel has never been approved by the FCC, despite many previous
attempts. Therefore it was of critical importance that ASRC and all
other SAR and disaster organizations participate in the NPSPAC
activities and raise their voices together in an effort to influence the
beneficial results of the process.

When the FCC convened the NPSPAC, it made some critical errors, the most significant of which was the entrusting of the control and operation of the committee to personnel from an organization which had a great vested interest in the outcome of the results. Never send mice to guard cheese! This organization was the Associated Public Safety Communications Officers (APCO), who promptly placed their own members in every key position, volunteered to write (their version of) the minutes, and evidently were able to pursue their own agenda with impunity. As an example, at least half of the members wanted to discuss the definition of "public safety" organizations, which would have opened the door to presently excluded emergency providers such as SAR, disaster, Red Cross, emergency medical services, and others. According to the FCC, public safety includes only police, fire, local government, forestry, and highway, and these users have jealously guarded their "spectral turf". It's comforting to know that the FCC holds garbage trucks and road scrapers in higher esteem than front-line life savers such as paramedics and SAR teams! Despite this, the Chair refused to allow discussion. Likewise, several proposals were submitted to discuss emergency interoperability and nationwide compatible radio channels, but these papers "disappeared" from the minutes even though they were presented in full view of the whole committee. Finally, certain members resorted to obtaining written receipts from the Chair for paper proposals which they submitted, some of which apparently also "disappeared".

The basic result of the NPSPAC process is a notice of proposed rule making (NPRM) of the FCC which gives use of the 800 MHz channels to only those organizations which are approved by regional public safety committees, with the blessing of APCO. These public safety committees do not have to consider non-public safety entities (such as SAR, disaster, Red Cross, EMS, or any others) unless they choose to do so. The NPRM also totally ignores any nationwide user requirements (such as highly mobile SAR and disaster teams) and disregards all the other frequency bands, despite their mandate to consider them. Therefore, if a SAR, disaster, or other team cannot cajole their local police, fire, etc. and APCO regional committee into allowing them a tiny piece of the "turf" to operate on 800 MHz, they can't do it anywhere in the US, period.

Now for the good news! The attitude and performance of the APCO and the NPSPAC have been a good lesson for all concerned. In the SAR and disaster community, as well as the other "non-public safety" emergency services, it is clear what type of operations and tactics will be used to protect the "turf". Therefore, we should choose the next move and pick the next battleground. One potential opportunity is to try to join the APCO and establish a SAR and disaster committee. Another is to use the ASTM process. In 1988, the ASRC Communications Committee Team will be exploring both options.

C.   NATIONAL SAR FREQUENCY

At the present time, there is no nationwide clear radio frequency which can be used by SAR and disaster units for emergency interoperability and mutual aid communications. As mentioned above, the National SAR frequency of 155.160 MHz has never been acknowledged by the FCC in Part 90 or its predecessors. Most of the SAR and disaster teams in the US operate in the VHF-HI band, which is very crowded. However, the characteristics of these frequencies and the equipment which uses them are an excellent combination for SAR and disaster team usage from rural to urban environments. Yet, a clear channel is still desperately needed. At the start of 1987, the ASRC Communications Committee Team had

identified a potential set of frequencies of which one or several might be obtained for these uses, if the appropriate procedures and contacts could be identified and pursued. The Team has been assembling the information and applications necessary to request authorization from the FCC, but unfortunately the process has not been able to move as rapidly as hoped due to significant activities such as NPSPAC and other time consuming events. It is planned to resolve the application process and submit the necessary documents by summer 1988.

D.   TECHNOLOGY

Recently there have been several reports that the FCC has attempted to ban the use of synthesized radios by SAR and disaster units. This is not exactly the case (yet), as understood by the examination of one of the FCC's recent notices obtained through Hunter Holloway (thanks!). The notice affects those organizations which have been using radios, designed and marketed for the amateur radio service, on non-amateur frequencies such as special emergency channels. They have done so primarily because of the low cost of the "ham" equipment and the wide frequency range which some of the new technology equipment will span, often all of VHF-HI band (140 to 175 MHz). Therefore, in a single economical package, they can interoperate with users in SAR, ham, CAP, MARS, police, fire, rescue, parks, forestry, and other services. This is certainly a persuasive argument! However, there exist certain administrative and technical controls on such operations.   .

The technical requirement is that all radios used in most of the services other than ham, CAP, and MARS must be type accepted. That is, they must be technically qualified to perform in an electronically acceptable manner, and they must be appropriately examined and approved by the FCC. The ham radios in question do not have to meet the same technical tests, even though they may actually be capable of passing them. The FCC concern evidently involves the unknown potential for improper functioning, rather than the fact. Fortunately, there are now available several radios which offer virtually the same performance (and are almost as inexpensive) and are type-accepted. They are usually commercial version "cousins" of almost identical ham radios, but have improved designs and have met the testing criteria. Excellent examples are the King LPH series and the ICOM H-16. They span almost any desired part of the VHF-HI band, including ham. It is suggested that SAR units no longer purchase ham radios for non-ham uses, and that any existing ones be quietly sold or retired.

Administratively, the FCC requires that the user of any transmitter on any frequency must have the proper authorization. This is usually satisfied by the possession of an FCC license, an agreement with such a licenseholder, or satisfaction of other appropriate requirements (if any). One exception (not to be abused or used routinely) is the emergency provision. In the event of a clear and present danger or threat to life or property, and radio communications are the only feasible means of summoning assistance, radio users may disregard the administrative (and some of the technical) restrictions and attempt to pass the critical messages. Such a use of the emergency provision must be done with due regard and minimum practical interference to the other authorized users, and it is limited to the minimum time necessary to accomplish the communications. SAR units should not rely on the use of this emergency provision on a routine basis. If they need to frequently interoperate with other users, they should obtain a license or agreement.

E.   ASTM STANDARDS

There has been a significant amount of interest in SAR standards, and one area which has not been considered by the ASTM SAR standards effort is SAR communications. The members of the ASRC Communications Committee Team plan to attend the ASTM meeting and organize a SAR Communications activity. This may be of great value in bringing together all SAR and disaster organizations in an effort to develop standardized communications procedures, frequencies, equipment, and mutual strength. This is an opportunity which should be actively pursued.

F.   RADIO LICENSE UPGRADE

There has been an urgent request by AMRG for assistance in obtaining additional radio channels for use on ASRC operations. In the Pennsylvania area (and many others, too), the SAR frequencies we presently use are already crowded, and the competition with which we "share" the channels is using high power base stations which swamp our low-power tactical operations. The appropriate course is to apply for more frequencies on our license. Due to the advent of the expensive coordination process with its large fees, I and the other members of the Communications Committee are no longer able to finance the ASRC license costs out of our own personal pocket as we have done in the past. Therefore, we hereby request that the ASRC BOD budget a sum of $2000.00 to be used for the coordination fees. Although it probably will cost more, we will try to negotiate the lowest cost, and if any is left, we will return it to the BOD. As an alternative, if we can enter into a coalition with several other SAR community radio users who also have the same challenge, we may find a way to share some of the costs.

G.   REVIEW OF GOALS

A.   Develop communications training materials. IN PROCESS

B.   Renew radio license for 155 MHz channels. ACCOMPLISHED

C.   Participate in FCC National Public Safety Planning Advisory Committee (NPSPAC) and fight for SAR needs and resources. ACCOMPLISHED

D.   Develop coalition of SAR emergency communications leaders for regional and national activities. ACCOMPLISHED

E.   Obtain new license for UHF Emergency Medical Services   ← need
frequencies. ACCOMPLISHED

F.   Exploit new technology agile radios within ASRC. ACCOMPLISHED

G.   Assist ASRC Groups and other SAR teams in obtaining equipment and supplies at minimum (usually dealer or factory) cost. ACCOMPLISHED

H.   Develop Committee member job descriptions. IN DRAFT

I.   Improve intracommittee communications to support dramatically increased ASRC size, regional expanse, and communications activities. IN PROCESS

J.   Obtain bylaws change to stabilize and formalize the Committee. IN PROCESS

H.   NEW GOALS FOR 1988

A.   Continue 1987 goals A, H, and I; maintain gains and thrusts
     of the others. IN PROCESS
B.   Expand 155 MHz license for more capabilities. IN PROCESS
C.   With SAR emergency communications coalition, continue battle
     for special nationwide SAR channels. IN PROCESS
D.   Develop regional SAR data communications systems to support
     all phases of SAR activities, including wireless and wired.
     PENDING
E.   Assist each ASRC Group to become self-sufficient in initial
     response   and   small   tactical   operations   communications
     equipment and capabilities. IN PROCESS
F.   Update callsign and equipment inventory list. IN PROCESS
G.   Develop technical design guide for portable tactical repeaters.
     IN PROCESS

I.   ASRC SUPPORT

The ASRC Communications Committee Team, and the truly critical work that
they are doing for both ASRC and all of the SAR community, could easily
be wiped out in an instant! How can this be? A surprise attack by those
special interests? A politically motivated slamming of the doors at the
FCC? Perhaps a renagade school bus crashing through their front doors?
No! All it takes is the whim of a capricious ASRC board! It seems that
the ASRC Communication Committee has no permanet status and can be wiped
out at any meeting of the Board, despite all the good work and great
strides for SAR. Many members do not remember it's history. According to
the   first President of the ASRC, the Communications Committee was
originally intended to be a permanent organization, and it has in fact
been the only ASRC internal organization which has been in continuous
operation since the very beginning. Longer than Operations, Training,
Medical, or any other. And longer than SMRG or BRMRG, too. Yet it never
got written into the Bylaws as a formal body. Perhaps it's time to
correct this error. As a formalized body, as defined in the bylaws, it's
responsibilities and authorities would be clearly defined and no longer
subject to misunderstanding. Even more importantly, an essential
continuity of operation could be assured, from year to year, without
significantly being affected by the periodic turnover of the elected
positions in the ASRC. Many other organizations, including local, state
and Federal, expect to see consistent and coherent organizational
structure and operation in a professional SAR resource such as ASRC.
This has not always been the case, unfortunately. Therefore, the
Communications Committee strongly supports the establishment of a new
ASRC Communication Division, as described in the attached summary. This
was to have been a key action item at the July 1987 ASRC Board meeting
in Pittsburgh, but it was tabled with no action. Unfortunately, I could
not attend due to unforseen work commitments, and John Kihl was involved
in an accident when his ambulance was rammed while on an ALS call.
Despite several requests since that time, nothing has been done. I
hereby officially request that the Board act rapidly to positively
support this Bylaws change and the ASRC Communications Division, and
therefore expedite action for adoption. If you have any questions, both
I and the Communications staff will be happy to help. But please realize
that our time is precious and must be devoted to the critical operations
which have been described above. Thank You!

J. SUMMARY

Although this short report cannot adequately reflect the very large amount of activity in SAR communications, the ASRC Communications Committee Team hopes to keep the ASRC Board of Directors informed of the fast-moving technical, operational, and political environments. If there are any questions, please feel free to contact us directly.

Thank You!

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A. INTRODUCTION

A1. APPLICATION

Portable tactical repeaters are intended for temporary use, primarily in search and rescue (SAR), disaster, and special tactical operations, to provide essential communications support to low-powered handheld and mobile radio units in limited operational areas. They provide both range extension for these low-powered units and also communications access to, and egress from, isolated areas. They typically consist of a small, specially constructed, ruggedized, and self-contained package which is transportable by an individual through difficult terrain. They may also be a temporary field-expedient design, consisting of interconnected, "back-to-back", handheld radios. Except as noted herein, these repeaters are normally operated in the VHF and UHF bands (typically 30 to 900 MHz).

A2. OPERATIONAL MODES

Unilateral devices ("repeaters") enable all users who are listening to the output frequency to hear any user transmitting on the input frequency (usually one at a time), provided their radios are configured for the frequencies in use. Bilateral devices ("retransmitters" or "remote bases") enable users on one channel (single or paired frequency(ies)) to intercommunicate with users on another channel without special modification of their radios, as the retransmitter performs the two-way interfacing between the two user networks. Retransmitters are often used to connect several (otherwise isolated) nets of users during multiagency emergency operations. They are also used to enable placement of a communications base station at an advantageous radio site while remotely controlling it from a separate control or command post location. As a useful operational procedure, users may conduct direct point-to-point communications, while monitoring but not occupying the repeater, by transmitting on the repeaters output frequency. In this document, "repeater" may refer to either or both modes, as implemented in the specific device.

A3. PHYSICAL CONFIGURATIONS

There are generally three physical configurations for portable tactical repeaters. The simplest is the "field-expedient", which is usually a pair of handheld radios connected back-to-back with an interface cable, and it is often assembled ad-hoc and on-site from general purpose equipment. The "dedicated" configuration is similar, but typically consists of a protective enclosure containing a set of dedicated (but probably general purpose) radios and a battery supply. The "custom" configuration is typically a device which is specially engineered for the purpose with specialized radio and control circuits and power supply. This specification applies to all three configurations, according to their capabilities.

A3. DEFINITIONS

"Shall" indicates a mandatory requirement for compliance with this specification. "Should" indicates an item which is highly recommended for incorporation. "Option" indicates an item which may be incorporated at the users discretion depending on operational environments and requirements. "Channel" indicates a single radio frequency, or an associated pair of radio frequencies, for communication.

B. GENERAL REQUIREMENTS

B1. POWER OUTPUT

Portable tactical repeaters should typically produce 5 to 25 Watts of RF output power and 1 to 5 Watts for field-expedients (which are usually built from handheld radios). To minimize power consumption and interference, a switchable high/low power capability is strongly recommended. The RF circuits shall be resistant to all load conditions, including the range from shorted to open circuit. The nominal output impedance shall be 50 Ohms.

B2. FULL DUPLEX

The repeater shall provide simultaneous reception of, and automatic retransmission of, received and desired radio signals. Use of a single antenna, with a resonant cavity filter duplexer, is recommended (especially for custom units) unless prohibited by logistical constraints such as weight or size. Pairs of spatially-separated antennas (or radios) may be used with lightweight and low-powered devices, such as dedicated and field-expedient repeaters. If separated radios are used, the wireline interface between them should conform to standardized telephone interface specifications of 600 Ohms, balanced, at 0 dBm (1 mW) maximum levels. Field-expedients employing pairs of handheld radios controlled by accessory voice controlled switch (VOX) devices have been very successful as emergency configurations, and they can be interfaced to standard issue military field telephones. All implementations should maintain maximum receiving sensitivity while minimizing self-interferences, such as desensing or feedback oscillation.

B3. MODULATION

Standard narrowband frequency modulation of 5 kHz deviation, CTCSS tone deviation of 750 Hz, and auxiliary "beep" and "identifier" tone deviations of (approximately) 1000 Hz, shall be used (unless the design must be modified to different required modes and technical standards of the band in use).

B4. FREQUENCY

The selection and use of input and output frequencies shall be in accordance with Federal Communications Commission (or other appropriate) rules and regulations, agreements with other authorized users, and/or emergency interoperability requirements. Frequency tolerance shall be within 0.0005 percent over all conditions of operation (with special attention to power supply voltage and environmental temperature variations).

B5. POWER SOURCE

A totally self-contained battery supply should be capable supporting at least 24 hours of heavy usage (continuous duty operation with 25% or more transmit time), or longer if required by history of user's operational experience or contingency planning. Continuous operations and simultaneous recharging, as a minimum, should be achievable from common 12 VDC vehicular and 110 VAC powerline supplies (plus from 28 VDC or 220 VAC if military-supported or foreign operations are anticipated). "Rapid charge" devices are recommended, as the battery charging time requirement should be significantly less than the operational life time to ensure full capacity, plus a generous margin of time for (possibly slow and difficult) transport and installation of replacements. "Sealed lead-acid" and "gel-cell" batteries are strongly recommended (Gates and Globe are excellent examples), except for extremely cold environments where "nicad" cells would be appropriate. As a general rule, batteries should never share same the same compartment (or at least airspace) with electronic equipments due to fumes, explosion, and corrosion hazards. Wet cells of any kind, and cells that vent fumes during normal operations or rapid charging, can be disastrous. The optional ability to use alternate power sources, such as solar, wind, or water, is recommended. Battery and power lines shall be protected by a combination of quick-acting fuses and surge-suppressers (gas tubes strongly recommended) in accordance with electrical codes and good engineering. The electronic equipment should be specially protected from accidental polarity reversal by blocking diodes (low drop shottkey). To minimize adverse interactions with own and other devices, radio frequency interference filters should be included on all input/output circuits, including power, audio, and signaling. Field-expedient designs usually operate from their normal batteries, although supplementary power may be supplied through included connectors or by a recharger. In all designs, a spare battery supply should be available to enable charging while operating, and the ability to replace batteries during operations (especially without interruption) and without exposing sensitive electronics to adverse environmental conditions is strongly recommended. High-quality electrical connections in the power circuits are essential for reliable operation. Two-pin "Jones Plugs" are a standard connector for up to 7-10 Amps DC, but "cigar lighter" types should be avoided except for emergency adapters and low powers.

B6. ANTENNA

Variety to fit the situation is strongly recommended, such as a selection of omnidirectional and directional "gain" radiators (including "magnet-mount" and "in-the-tree" flexible types, such as the Larsen "PO-MM-150" and "PHW-150"), plus interchangeable RF coaxial cables (typically good-quality RG-58). The use of "UHF" (PL-259) connectors on all enclosure connections, including the antennas, is strongly recommended to ensure tactical flexibility (the entire Larsen "PO" antenna series is an excellent example and can be had in almost any of their designs). Capability to attach the antenna directly to an RF connector on the enclosure, to form a very compact package, is strongly recommended. Field-expedient designs, and the interior circuits of the others, may use other connectors as appropriate, such as "BNC" or "TNC", provided that emergency interchangability is retained. Nonmetallic enclosure designs may require either the incorporation of a conductive plate "groundplane" or the use of "half-wave" antennas (which also work very well on handheld radios). The RF output connection shall be protected against static discharge (lightning arrestor), and the use of gas-tube devices is strongly recommended (Transtector is an excellent example).

B7. ENCLOSURE

Lightweight, weatherproof, waterproof, and shockproof enclosures are operationally required (Zero and Pelican are excellent examples). All penetrations and protrusions, such as connectors, should be sealed, and they should also be protected from impact damage. The connectors themselves should be watertight and pressure proof, and they should have protective caps (captive on a leash) for physical coverage. An automatic pressure relief valve is required for airlift safety. Depending on the operational (threat) environment, bright SAR orange (or perhaps camouflage) colored exteriors should be selected, and a tarp may provide another color if needed. The enclosure should have a strong lock to deter tampering or theft. Reinforced tiedown rings should enable attachment to vehicles, aerial suspension (hanging in trees), or anti-theft locking. Excessive heat should be dissipated through ventilation, radiation, or conduction (such as a transmitter heatsink attached to a metallic enclosure sidewall), and may include immersion. If ventilation is used, the aperture should be tightly sealable when not needed, and any ventilation fan should be thermostatically controlled to conserve power. Field-expedient designs are normally protected, as a minimum, by their carrying cases, and the additional use of waterproofing, such as plastic "rain jackets" (or "Zip-Lock" bags) is strongly recommended. As these repeaters may be hidden (or lost) during emergency operations, and recovering them is usually desirable, a remotely activated "flash and beep" location accessory may be a valuable option. In most cases, simple marking of the area (but perhaps not the repeater itself) will assist recovery without compromising security.

B8. SIZE AND WEIGHT

The size and weight should be minimized (such as a cubic foot and 20 pounds, or less) to enable safe transport by a single individual under adverse conditions (while not getting separated from his pack).. If not, it is recommended that the system be subdivided into several smaller and more easily managed components (such as repeater, batteries, recharger/power supply, accessories, etc.) as waterproof, "snap-together" modules. A modular approach also enables interchangability of components for repair or recharging. As an optional procedure to assist transport, the battery may be removed from the enclosure, but sturdy connectors should be used and short-circuits must be prevented.

B9. SUPPORT

The repeater should have a selection of supporting assets accompanying it to the area or to the operational site. These include a variety of RF, signal, and power adapters, schematics of the equipment for repairs, extra fuses and expendables, and spare batteries, cables, and antennas.

B10. OPERATIONS

A clear and concise set of (weatherproof) operating instructions should accompany the repeater, and they should enable a person totally unfamiliar with the equipment to successfully setup and operate the system. Likewise, the operational controls should be strictly minimized to avoid confusion and simplify operation (such as simply "on" and "off").

C. SPECIAL REQUIREMENTS

C1. CHANNELS

Portable tactical repeaters should be multichannel to ensure flexible operation on available channels which may be selected from 1) those most lightly used in an operational area, to avoid interference, or 2) those specially requested by cooperating agencies or 3) as necessary to ensure emergency interoperability. The use of synthesized equipment which may be rapidly rechanneled by authorized technicians during emergency or disaster situations is strongly recommended. The channel selection switch shall have a list of the included channels and their associated standardized SAR codenames, and it shall not have the actual frequencies listed or accessible to unauthorized persons.

C2. CTCSS TONE CONTROL

The repeater shall incorporate a CTCSS (continuous tone coded squelch system) which shall provide controlled access to users which transmit the correct CTCSS tone. This shall also prevent unintentional interference or unauthorized access. The CTCSS tone shall always be transmitted by the repeater. The CTCSS tone detection circuits shall parallel (bypass) the normal noise-squelch in the repeater receiver and shall ensure that a user with the proper (and detectable) tone will be permitted access, regardless of the strength of his signal or the

"tightness" of the squelch setting. The tone circuits shall be set by simple switches ("dip", rotary, etc.) to any one of the 37 (common 32 as a minimum) EIA RS-220 standardized CTCSS tones (the Communications Specialist model TS-32 is an excellent example). A high pass filter shall be inserted into the audio path to suppress received CTCSS tones, and new CTCSS tones shall be generated in the repeater. The repeater CTCSS shall be set to the SAR interim national standard tone code "3A" (127.3 Hz) to ensure interoperability by all authorized SAR users, especially during emergency redeployments for major disasters and multiagency response operations. If there is a critical requirement for a secondary access tone, a duplicate CTCSS circuit shall be added in parallel with the mandatory primary tone circuit and shall function independently and identically. However, when either tone is received, both tones shall be transmitted simultaneously, the level of secondary tone shall be within 0.0 to 0.5 dB below the primary tone, and their frequency separation shall be sufficient (and well tested) to ensure proper operation of the decoders in radios with either CTCSS tone. As an option for VHF low-band equipment which may have a requirement for interoperation with military units with standard tactical FM radios, a special secondary CTCSS tone of 150 Hz should be installed. To ensure positive control of the repeater, the CTCSS access control shall always be required for automatic access to the (unmanned) repeater. There shall be a backup capability for an authorized control operator to provide emergency or auxiliary access to other desired users, as follows: the control operator shall continuously monitor all signals present on the input channel and shall permit special access 1) by supervision of traditional noise-squelch automatic activation, with no CTCSS tone required, or 2) by manual "push-to-repeat" activation, temporarily and manually over-riding the CTCSS tone requirement.

C3. AUTOMATIC IDENTIFIER

The repeater shall incorporate an automatic identifier which shall transmit the repeaters callsign at intervals which are no less than a half hour (adjustable at least from each transmission up to an hour). The identification signal shall be appended to the end of the next repeated transmission which occurs after the elapse of the interval period since the last identification. The signal shall be an on-off keyed tone of 2000 Hz (adjustable at least from 500 Hz to 2000 Hz) and shall be by International Morse Code at 20 WPM (adjustable at least from 5 to 20 WPM). The deviation shall be 1000 Hz (adjustable at least from 500 Hz to 5 kHz). The identification shall consist of the characters of the FCC assigned callsign, plus a "/R#" directly appended, where the "#" is a number indicating uniquely which one of several repeaters may be using the same basic callsign within the radio system (example: "KAB1234/R2" for the second of several). If several different callsigns are used, as with different channels or user groups, the callsign identifier must be switchable at least as easily as the channels. As an option to minimize interference to personnel listening to the repeater, the CTCSS tone should not be transmitted during the identification

transmission. As a special case exception, field-expedient repeaters
(such as back-to-back handheld radios) may simply be identified verbally
by the control operator.

C4. TIME-OUT TIMER

The repeater shall incorporate an automatic "time-out" timer which shall
prevent continuous and uncontrollable operation of the transmitter
output caused by interfering signals or excessively long input
transmissions. It will also encourage users to provide a momentary pause
between transmissions which will be available for interruptions for
emergency traffic. It shall terminate the repeater output when any
activating input exceeds a continuous period of one minute (adjustable
at least from fifteen seconds to ten minutes). The repeater shall reject
all current and new activating inputs until after at least one of the
following conditions are met: 1) an input signal with a correct detected
CTCSS tone ends, 2) when under supervised noise-squelch access
operation, the squelch closes, or 3) a control operator resets the
device. In cases 1) and 2), the signals must be absent for at least a
half second (adjustable at least from zero to five seconds). As very
desirable options, a soft and brief "courtesy beep" may be transmitted
when the timer resets, and a momentary "time-out beep" may be
transmitted to signify termination due to a time-out violation. As a
special case, field-expedient repeaters shall be locally supervised by a
control operator and shall utilize a time-out timer if available in the
radios.

C5. HANG TIMER

The repeater shall incorporate an automatic "hang" timer which shall
extend the duration of the transmitter output beyond the end of the
activating input signal by two seconds (adjustable at least from zero to
ten seconds). This will minimize excessive on-off operations of the
transmitter and distracting additional "squelchtail" noises. The
received audio retransmitted through the repeater during the "hang"
period shall be controlled by the traditional noise-squelch, even though
these signals (during CTCSS tone-only operation) do not activate the
repeater or reset the timers. During CTCSS tone-required operations,
this feature allows simple monitoring of non-tone activity on the input
channel and also provides a special method for non-tone units to insert
a brief emergency call, through this narrow time window, to alert the
authorized users and the control operator.

C6. INTERFACE

The availability of an interface for optional interconnection with other
auxiliary devices is very desirable. This may be used for such purposes
as telephone line access or back-to-back repeaters. The interface should
provide availability of the principal circuits, including received and
transmit audio, transmit keying, noise-squelch and CTCSS tone signal
detection, and repeating enabling, plus useful circuits including CTCSS
enabling, channel selection, squelch and volume settings, etc. All

interface circuits should be protected against short circuits and electrical surges.

C7. CONTROLS

There should be no controls on the exterior of the enclosure, except possibly a power safety shutoff switch (depending on risk of tampering). All setup and operational controls should be inside the enclosure and be accessible only by authorized field communications personnel. For control by a local operator, the following functions should be provided: squelch and/or CTCSS controlled receive audio (for both handset/headset and speaker), speaker on/volume, local microphone/handset transmit audio, local push-to-talk, transmit indicator, repeat enable, push-to-repeat, CTCSS disable, power on indicator, high/low power, battery/charge status indicator, and time-out timer reset. If external control is desired, to avoid opening the enclosure during adverse conditions, an optional waterproof connector may provide the attachment of a removable cable and control box.

D. SUGGESTIONS

Your helpful and constructive input and advice is greatly appreciated in this effort to improve emergency communications. Please send your suggestions, and refer all inquiries, to the following coordinator:

GENE HARRISON
BOX 1584, LEESBURG, VA 22075
(703) 777-6111

Preliminary: On October 4th, 1986, the membership of the ASRC voted in several Bylaws changes. One of those changes (Article III, Section 3.1.1d) is the inclusion of a clause stating [all Certified Groups] "Shall undergo a comprehensive review, to be defined and conducted by the Board of Directors, at regular intervals, not to exceed thirty-six months." This document defines the standards of that review.

Part One

Certified Groups Shall:

1.

Maintain minimum equipment requirements as set forth in the ASRC Operations manual, and be prepared to show physical evidence of the existance of such equipment.

2.

Be comprised of at least six (6) Certified, four (4) Base or Field Qualified Associate, and six (6) Trainee members at each thirty-six month review. Membership shall not drop below this figure for more than 4 months of any year. Members may be tested to determine if they meet standards for stated level of training.

3.

Provide their books and financial papers for a complete audit by the Conference CFO (as per Article III, Section 3.1.1h of the ASRC Bylaws). Groups must also be prepared to show continuing evidence of meeting all financial obligations, both to the Conference and to other organizations.

4.

Attend 12 Conference events with at least 5 members present at each event over each 36 month period. The group must be able to indicate the events at which it met this requirement.

5.

Show evidence of meeting and maintaining the standards of the ASRC, as set forth in the documents of the ASRC, including, but not limited to: the Articles of Incorporation, Bylaws, Operations manual, and Training Standards.

5.1 Specific areas of compliance must be demonstratable. Those areas include, but are not limited to: training; criteria for conferring the various levels of membership; compliance with political policies of the ASRC, including policies set by the Board of Directors; and a continuing state of operational readiness as set forth by the documents of the ASRC.

Part Two

Failure to conform with these standards:

The ASRC Board of Directors shall determine if these standards have been met. If the standards have not been met, the BOD may apply the following measures. In the case of application of these measures, the BOD shall notify the appropriate group by certified mail within the 10 day period following the decision.

1.

For any offense(s) found during the review: The group shall be placed under observation for an 18 month period, during which time they must correct the problem. If by the end of the 18 month period the group fails to conform to these standards, the group shall be reduced to probationary Certified group status, and must meet all requirements (as set forth in Article III, Sections 3.1.2 and 3.2 of the ASRC Bylaws) to return to Certified status.

2.

If any offenses are noted during the time a group is reduced to probationary status, Article III, Section 3.5 of the ASRC Bylaws shall be invoked, with the possible consequence of removal of the group's charter.

3.

The ASRC Board of Directors reserves the right to intervene in all groups. Intervention is appropriate in the case of major transgressions of ASRC policies, procedures, or Board directives.

4.

In the event of a group being convicted of any applicable state or federal laws, or an individual member of a group convicted (of other than traffic-related laws) due to participation in search and rescue activities, the ASRC BOD shall immediately place the group on probationary status until such time as the matter has been investigated by the BOD. At such time, the Board of Directors shall make a recommendation on any further action which may be taken.

Part Three:

Appeals: All groups hold the right to appeal any decision made by the Board of Directors. In the case that an appeal is made, the Group in question shall notify the BOD within thirty (30) days of receiving notice of a BOD decision. At that time two (2) people will be chosen at random from the voting members of each ASRC group, excluding the group in question. This panel shall hear all evidence regarding the decision and return an opinion to the BOD within 60 days of being convened.

From: Gary Mechtel
Date: October 25, 1987
Subj: Goals Committee (Plans Committee)

To: ASRC BOD

Greg recently mailed me a notice requesting a written definition of the goals committee. This memo documents is my answer to Greg's request. I hasten to add that in my normal "Big Picture View of the World", I have expanded the committee to a Planning Committee. My reasoning is contained herein, including reports explaining why we need a planning committee, the committee's functions, its operational methodology, and its composition.

Why:

The ASRC does not adaquately address its present and future problems because it does not have a Planning Committee. Moreover, the BOD wastes inordinate amounts of time discussing issues that have not been adequately researched. Creating and using a goals committee to prepare a once-a-year set of draft goals is short sided. The BOD needs a committee to prepare plans, goals, forums, policies, and think beyond the day to day events that presently drive conference business. The ASRC is too large to maintain itself in a purely passive administrative mode. The conference needs the active approach of predicting problems and either eliminating or reducing them while the problems are still in their infancy. The planning committee obviously works for the BOD and does not set policy. Rather the committee will present an issue, evaluate its impact, and if warrented, give detail arguments pro & con and prepare a strawman position for discussion. The BOD will then address the issue.

What:

The committee will address the following items:
- --Yearly goals
- --Long term goals
- --Internal Conference communications
- --Addressing specifically (BOD) assigned top-level tasks
- --Documenting leadership personnel charts
- --Collecting regional data and preparing predictions
- --Yearly planning forums
- --Preparing draft top-level policies

Who:

The committee will consist of:
- --A BOD liason
- --A member from each group
- --Any interested ASRC members
- --The committee will also recruit non-ASRC members as needed.

How:

The development of any issue needs three independent functions, all of which are performed within the Planning committee. These functions are:
- --The issue leader
- --The committee review
- --The reviewer

The committee will perform its duties by having the chairperson assign a task leader and a reviewer for each task. The lead person's role is to collect the data and prepare the document(s). This does not require the leader to actually write the documents, rather the leader must coordinate the document's development. Practically speaking however, the task leader will usually do most of the work.

The leader must first present a short document addressing the issue to the committee, requesting the committee either further develop the issue or reject it. The committee will then review the document and agree or disagree with the leader's conclusions. If an issue is to be dropped, the document and supporting arguments will be presented to the BOD. Three voting committee members provides the quorem needed to determine if an issue should be further developed (by mail or phone is sufficient, not necessarily at a meeting). If the committee disagrees with the leader, the leader may appeal directly to the BOD.

If the issue is to be developed further, a reviewer is required. This person will be assigned by the committee chair. (It may happen that one reviewer will oversee all the committee's issues for the year.) The reveiwer's role is to assure the BOD that an issue has been reasonably addressed from all points-of-view. However the reviewer will not judge the contents of each point-of-view. This process is tempered by the sensitivity of the issue and the amount of time spent on any one point-of-view. The reviewer will not necessarily require that an issue be withheld more than a few months if an unrepresented side is attempting a pocket veto.

This process will assure that the jobs are completed in a reasonable amount of time and with some fidelity to the various sides of an issue.

Some items (as determined by the chair) will not require all this effort. Such items as collecting data and documenting personnel will be done quickly and efficiently.

Whats next:
There are a number of issues that should be addressed imediately by the Planning Committee. These include:
- --Short Term Goals
- --Long Term Goals
- --The role of affiliate groups
- --Initial alerting & dispatching of resources
- --Funds distributions
- --Document Leadership personnel Charts
- --Predicting ASRC future commitments
- --Addressing the ASRCs administrative overload (including refining the BOD)
- --MRA role
- --ASRC vs Groups, both their roles and authority
- --ASRC service area and functions

From: Gary Mechtel
Date: December 2, 1987
Subj: Operational Usage of ASRC Groups
To: ASRC BOD

This memo address the use of all ASRC groups, certified and affiliate. It is written in resonse to a request for some definition on why and how to use affiliate groups. The position presented here provides a means of placing the use of affilitate groups within the context of how to use any ASRC resources.

There has been some growing pains in the use of affiliate groups (ie, the ESARs). This is due to the conferences's unfamiliarity with affiliate groups. The method of resolving these growing pains requires that we look at the use of all conference groups and the envisioned role of affilate groups. The solution is to confirm the generic roles of certified groups, the specific missions of each certified group, and the specific missions of each affiliate group. However, always remember that the role of any group or individual in the ASRC is to help the injuried or missing.

As defined or implied elseware (Bylaws and Articles of Incorporation), each certified group is intended to provide the local training and administrative functions needed to maintain the ASRC resources in a local region. However, the ASRC in total, was to remain in charge of actual operational incidents. The ASRC group membership requirements have been expanded to allow for affiliate groups, since it was foreseen that the number of incidents will continue to grow. The main reasons for allowing in affilate groups included: more man-power for the growing number of incidents, more trained manpower operating under the same training and operational standards, more manpower providing a greater varity of techincal and administrative resources and knowledge, more manpower providing more political authority, and more manpower trained in speciality areas (eg communications or 4WD operators) thereby releasing certified members to perform in their trained roles. All these items will ultimately mean saving more lives.

Different certified groups are capable of performing different functions at different skill levels. It is assumed that all certified groups are able to generically provide trained field team leaders, trained searchers, and the appropriate minimal gear (radios, non-techincal evacuation gear) for most incidents in the Mid-Atlantic region. However, outside the world of sub-atomic physics, no two items are alike. This is especially true of the presently certified ASRC groups. Some have ICs, some have antenna masts, some are more capable underground, some are understaffed and undertrained. The solution is to have each group submit to the BOD a reasonable statement of their present top-level capabilites. This could be updated whenever the group desires. However, to protect the conference, any such statements must be approved by the BOD. This will prevent a group from claiming outrageous capabilities. These statements will also provide important operational data for AOs ICs, and dispatchers. Moreover, these documents provide useful administrative, fundraising, political, and morale functions.

Affiliate groups will also have to submit mission statements. These will outline the funcions the affiliate group is able to perform. This would address how to use such groups, with the understanding that each group should be alerted in the normal fashion and the callouts are performed in a fair and equitable manner for both the subject(s) and all the group(s). (Obviously, however, the subject(s) take priority over the groups.)

This policy's results will provide an easy and convient method for determining who should be used on any one incident. In the future, (possibly via computer networks) it may be possible to maintain a weekly up-date of each group's detailed capabilities. This is left for the operations committee to think about.

FUNDAMENTALS OF WILDERNESS FIRST-AID

Developed For the
East Coast
International Search and Rescue
Team

STANDARDS

* Identify the responsibilities of the wilderness medic.
* Describe the proper management of a field team at the scene of the sick or injured.
* Define implied consent, informed consent, and laws relating to minors.
* Define standard of care and how it relates to the wilderness first-aider.
* Define the good samaritan act and provisions involved.
* Describe the role documentation plays in wilderness care.
* Describe the tenets of patient confidentiality.

* Identify the arterial pressure points and relate minimum blood pressures to each where applicable.
* Explain the relationship between the spinal cord and the cervical vertebrae.

* List the normal diagnostic signs.
* Identify abnormalities in diagnostic signs.
* Be able to determine and record vital diagnostic data.

* Demonstrate the primary survey conducted for a single patient.
* Demonstrate the primary triage survey using the START system.
* Demonstrate the head-to-toe survey including vital signs.
* Describe selected abnormalities and their clinical relevance.
* Demonstrate a neurological examination.
* Describe the importance of frequent neurological examinations.

* Identify characteristics of bleeding from arteries, veins, and capillaries.
* Describe the signs and symptoms of internal bleeding.
* Describe proper wound cleansing and dressing application.

* Recognize signs and symptoms of shock.
* Describe principles of general care for patients in shock.

* Describe the signs and symptoms of fractures.
* Describe the signs and symptoms of a dislocation.
* Describe the reasons for splinting fractures.
* Describe the general rules of splinting.
* Describe the materials that may be used to improvise splints.
* Demonstrate the examination and treatment for a fractured forearm, upper arm, wrist, collarbone, upper leg, lower leg, and spine.

* Explain the mechanism of force causing most ankle sprains.
* Describe when a patient with an ankle sprain may walk out.
* Demonstrate the examination and treatment for an ankle sprain.
* Describe the proper treatment of an ankle sprain.

* Describe the effects of a fracture or dislocation of the spine may have.
* Describe the types of wilderness trauma most likely to produce spinal injuries.
* Describe the signs and symptoms of a spinal injury.
* Demonstrate in-line cervical traction.
* Demonstrate the proper technique for removing a climbing helmet.
* Demonstrate methods to improvise cervical collars.

* Describe the proper treatment for removal of foreign bodies in the eye.
* Describe the signs and symptoms, and the proper treatment for a scratched cornea.

* Describe the signs and symptoms of insulin shock.
* Describe the proper treatment for insulin shock in the conscious and unconscious subject.

* Describe the actions to be taken by the wilderness medic if the patient is aggressive.
* State the role of the wilderness first-aider at the crime scene in relation to patient care and the chain of evidence.

* Explain the methods of heat loss from the body.
* Describe the methods of thermoregulation during cold stress.
* Describe locations for determining core temperatures and advantages and disadvantages of each.
* Describe the importance of clothing and shelter in avoiding hypothermia.
* Describe the importance of layering.
* Briefly describe the pathophysiological changes to the muscles, brain, circulatory system, and heart.
* Describe the difference between chronic, subacute, and acute hypothermia.
* Describe the signs and symptoms of hypothermia, differentiating between mild and severe hypothermia.
* Describe treatment for mild and severe hypothermia in a wilderness setting.
* State the complications of treatment of hypothermia.
* List factors that predispose to frostbite.
* List methods to prevent frostbite.
* Describe the signs and symptoms of frostnip and frostbite.
* Describe the treatment of frostbite including when rewarming is appropriate.
* Briefly describe the signs and symptoms, and prevention of trench foot.
* Describe the affects of alcohol, caffeine, and smoking.

* List factors that predispose to heat illness.
* Describe the signs and symptoms, and treatment of heat cramps, heat syncope, and heat exhaustion.
* Describe causes and groups most likely to suffer from heatstroke.
* Describe the signs and symptoms of heatstroke.
* Describe the treatment of heatstroke.

* Describe the causes of dehydration encountered in the wilderness.
* Describe the signs and symptoms of dehydration.
* Describe the use of fluids and electrolytes used in the treatment of dehydration. Describe the proper amount and time course in which to give the fluids.

* Describe the signs and symptoms, and treatment of pit viper envenomation.
* List the common types of animals that may cause painful or harmful bites or transmit disease.
* Describe the signs and symptoms of Lyme disease, Rocky Mountain Spotted Fever, Giardia, Traveler's diarrhea, and Rabies.
* Describe the importance of early medical attention.
* Describe the signs and symptoms of anaphylactic shock.
* Describe the treatment of a Bee, Wasp, or Ant sting.
* Describe the treatment of a bite from a mammal.

* Describe methods to minimize the danger of lightning strikes.
* Describe the common factors in treatment of all burns.
* Describe the differences in treatment of specific burns.

* Describe the conditions that may cause convulsions.
* Describe the general care of an unconscious patient.
* Describe the treatment of and special considerations for the person who has a convulsion.

* Describe the handling of patients with communicable diseases.
* Describe when treatment for rabies or tetanus is needed.

* List conditions that require the evacuation of a field team member or patient.
* List conditions that call for an immediate rescue/evacuation.
* List conditions when an aeromedical evacuation is indicated.
* Describe the requirements of a landing zone.
* Describe the proper control of team members during helicopter operations.
* Describe the following improvised carries; piggyback carry, cradle carry, packstrap carry, two rescuer assist, two-handed and four-handed seats, fore-aft carry.
* Demonstrate the ability to assist in transferring a patient to a stretcher using the following techniques; blanket lift, three rescuer lift.
* Describe methods to make an improvised stretcher.
* Demonstrate possession of a personal wilderness first-aid kit

Keith Conover proposed the following structure for the ASRC
Training Manual/Textbook Project for which he is Editor-in-Chief.
This is similar to the structure of the ASRC--Center for
Emergency Medicine Wilderness EMT Project for which he is coor-
dinator.

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* * * * * * * * * * * * * * * * * * * * * * * * * * *
                        A Plan
      for Managing the ASRC Training Manual/Textbook
                and Wilderness EMT Projects
* * * * * * * * * * * * * * * * * * * * * * * * * * *
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ASRT

Editor-in-Chief, Task Groups, Editorial Board
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    The Editor-in-Chief asks ASRC members to head Task Groups to
compile/write/review/evaluate material for each section of the
Training Manual/Textbook. The Editor-in-Chief then advises each
Task Group, reviews its work, and nags members until they produce
a coherent draft. The Editor-in-Chief then proofreads and
reworks the material for consistent style, grammar, syntax, and
clarity (an ongoing process during development of the Task
Group's material, actually). When the Editor-in-Chief and Task
Group think that their section is ready for review by others,
their draft is submitted to an Editorial Board. The Editorial
Board will simply vote YES or NO on whether the material will be
released for review outside the Task Group. (Any Editorial Board
members who wish to deal with the nitty-gritty details are
invited to join the appropriate Task Groups.)

Developing, Circulating, and Reviewing Draft Material
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    Once the Editorial Board finds a Task Group's draft suitable
for (limited) public scrutiny under the ASRC name, the draft will
be released for review outside the Task Group. Copies will be
distributed to Groups through BITNET (see below) and made avail-
able to a limited number of non-ASRC people through the ASRC com-
puter Bulletin Board Systems (BBS's), and possibly by other
means. The results of this review will be used by the Task
Groups in revising their respective sections.
    Once the Editor-in-Chief feels the material is ready to be
released as a single comprehensive draft Training
Manual/Textbook, he will submit it to the Editorial Board for

approval, and if approved, will release it as the individual section drafts were released (i.e. to ASRC Groups and selected others for review). Once the entire manual is in satisfactory condition, Keith will ask the Editorial Board to approve the manual for presentation to the Board of Directors for a vote. Target date for a first comprehensive draft is April 1 1988, and target date for an approved First Edition is January 1 1989.

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      ASRC Board of Directors
      ---------------------------
               |        --->-------->------.
      ---------------- /            |         /\
      Editorial Board |     (BITNET)/   \(BBS)
      ---------------- |           /       \
               |      ^          /           \
      ---------------- |        ASRC      OTHERS
      Editor-in-Chief |      GROUPS        /
      ---------------- |         |        /
          /    \     ^ |         v       /
         /      \    | |         |      /
        /        \   | |         v     /
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      Task    Task   Task        |   /
      Group   Group  Group <-----<---
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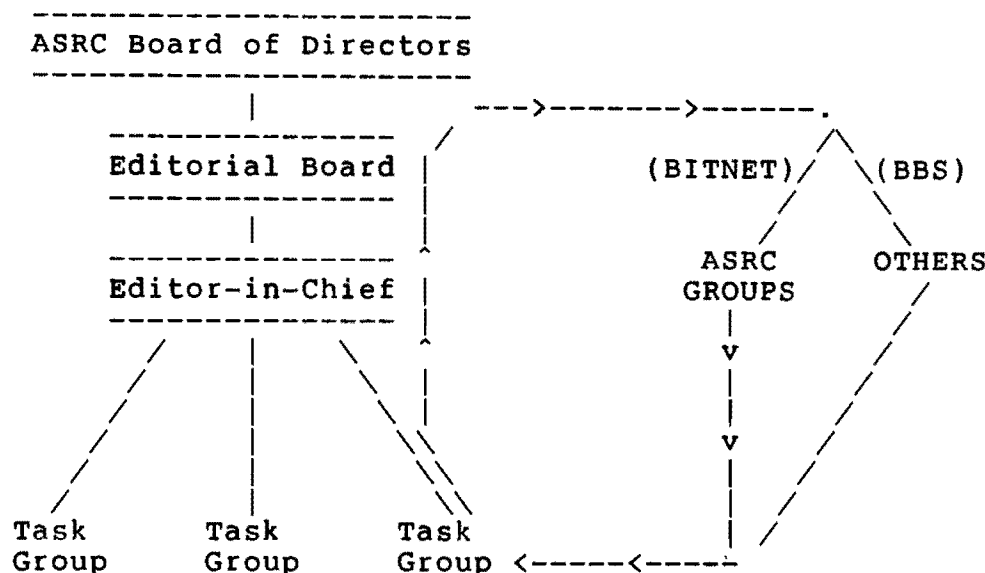
Agenda Items for Next Board Meeting
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Keith requests that we consider the following agenda items at the next Board meeting: (1) selecting members for the Editorial Board (Keith asked the Board of Directors to directly appoint 4-5 trusted members to serve in this capacity), (2) fixing an official name for this manual ("ASRC Training Manual"? "ASRC Wilderness Search and Rescue Textbook"? "The ASRC Textbook of Wilderness Search and Rescue"?), and (3) deciding which people (other than ASRC members) will be permitted to review and comment on the preliminary draft material. (Security features on the computer BBS may be used to restrict access to only those people with a certain password.) Keith suggests that we allow any interested people to access this material, provided it contains a statement such as:
"This material is a preliminary draft of material for the Appalachian Search and Rescue Conference (ASRC) Wilderness Search and Rescue Textbook and is copyright (C) 1988 by the ASRC. The ASRC hereby grants limited permission to copy this material, provided that (1) the contents are copied as a whole, including this copyright notice, and (2) it is copied only for general information and review. As this is a preliminary draft, it may contain errors or omissions with potentially hazardous consequences, and

TRNGxxxx.xxx -- Training Standards
OPS_xxxx.xxx -- Operations Manual

The 4th through 8th characters will provide two digits for the
  month and two for the year:
xxxx0188.xxx -- a file from January, 1988
xxxx1287.xxx -- a file from December, 1987

Files distributed through the BBS will be in ARChive format
  (several files compressed and packed together into a single
  large file). ARChiving the files makes it much faster and
  easier to download them. Let me give an example of the con-
  tents of a hypothetical ARChive file:
COMM0388.ARC -- An ARChive containing the March 1988 version of
  the Communications portion of the draft ASRC Textbook. Here
  are the component files of this ARChive:
 COMM0388.NB -- The original document in Nota Bene format
  (includes formatting information).
 COMM0388.TXT -- The original document in ASCII (formatting
  information stripped out).
 COMM0388.FC The original document in format suitable for
  review and commentary using the ForComment program. It may
  already contain comments. The original Nota Bene-format
  document (COMM0388.NB) was imported into ForComment format,
  rather than the ASCII version (COMM0388.TXT). Although the
  formatting information makes COMM0388.FC harder to read than
  if the ASCII version were imported, being able to export the
  file with changes AND with formatting intact makes subsequent
  editing much easier.
 COMM0388.CMT -- An ASCII file showing the current revision of
  the communications portion, with comments as footnotes.
 COMM0188.CMT -- An ASCII file showing the comments on the
  previous draft of the communications portion.

[I hope this makes editing the minutes a bit easier. If you'd
  rather have this in hard-copy form in the mail, let me know.
  Thanks.]

Distribution of Textbook and Wilderness EMT Project Files
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Now that ASRC Groups are becoming interconnected by BITNET and computer BBS's (Bulletin Board Systems), computers allow us a chance to become more efficient and better at reviewing and revising documents such as the Bylaws, Textbook, Operations Manual, Training Standards, and Wilderness EMT materials.
    However, the difficulty of using incompatible word processor files to compare notes and revise documents is real. Keith Conover suggested that we adopt the following terminology for files to be used in these projects:

  <filename>.ARC-- an ARChived file containing other files that
    can be extracted using the ARCE program available on the BBS.
    ARCE will work on any IBM-compatible computer.
  <filename>.TXT -- an ASCII file that can be directly printed on
    any printer.
  <filename>.FC -- a file that members may review and add com-
    ments to, using the ForComment Reviewer program (available
    for free distribution).
  <filename>.CMT -- ASCII file output from the ForComment
    program, with comments formatted as footnotes.

  Files used with various word processors will have special
    extensions:
  <filename>.WS -- WordStar
  <filename>.WS2 -- WordStar 2000
  <filename>.WP1 -- WordPerfect 4.1
  <filename>.WP2 -- WordPerfect 4.2
  <filename>.NB -- Nota Bene/XyWrite
  <filename>.MM -- Multimate
  <filename>.MSW -- Microsoft Word
  <filename>.PCW -- PC-Write

  Each filename will consist of 4 characters indicating the docu-
    ment or project, or section thereof, the file pertains to:
  BYLWxxxx.xxx -- ASRC Bylaws and Articles of Incorporation
  BOOKxxxx.xxx -- ASRC Textbook
   COMMxxxx.xxx -- Communications portion of the ASRC Textbook
   LNAVxxxx.xxx -- Land Navigation portion
   SURVxxxx.xxx -- Survival portion
   RESQxxxx.xxx -- Mountain Rescue portion
   SRCHxxxx.xxx -- Search portion
   MED_xxxx.xxx -- Medical portion

MEMORANDUM

From: VaSARCo Operations Committee [Todd L'Herrou, (804) 649-8207]

To: All VaSARCo Agencies

Subject: Call-Down Procedures

Date: 7 November, 1987

Call-Down should be initiated at the time that the IC calls DES to inform the SAR Duty Officer that the search is over. Call-Down efforts should include notifying the dispatchers of the agencies involved, release of un-needed resources, and, when neccesary, turn-around of manpower in route. If turn-around is needed, methods which may be used are:

1. Paging resource via resource's own page system or protocol.

2. Request that DES transmit turn-around message over 155.205

3. Request that the DES SAR Duty officer issue an APB for those known to be enroute. If a APB *is* issued, the text should be as follows: "Call the Department of Emergency Services @ 1 (800) 468-8892". To facilitate use of this method, vehicles enroute should monitor the State Police frequencies. Those frequencies are:

   158.985,   159.000

   159.135,   159.165

(Note:these frequencies are each in use in several areas in VA)

4. Any other reasonable method may be used.

MEMORANDUM

From: VaSARCo Operations Committee [Todd L'Herrou, (804) 649-8207]

To: All VaSARCo Agencies

Subject: Call-Down Procedures

Date: 7 November, 1987

Teams enroute should call their dispatcher *or* Va DES @ 1 (800) 468-8892 on an hourly basis. Also, the first-in team should call DES with an update on accuracy of the directions. DES should also be notified any time the directions change.

MEMORANDUM

From: VaSARCo Operations Committie [Todd L'Herrou, (804) 649-8207]

To: All VaSARCo Agencies

Subject: Armed or possibly armed subjects

Date: 7 November, 1987

Whenever possible VaSARCo Agencies should avoid any situation where the mental condition of the subject suggests the possibility of searchers being at risk. However, several agencies have already been involved in such situations, and it would be unrealistic to think that more will not arise. In such instances, several guidelines should be followed. These are as follows:

1. Appoint a safety officer to evaluate risk.

2. Obtain the advice of the subject's psychiatrist, or another professional psychiatrist or psychologist.

3. Consider the possibility of sending an police officer or deputy with each field team. If needed, the Va DES can facilitate the use of State Police for this duty.

4. Suspend the search if the risk is too high.

MEMORANDUM

From: VaSARCo Operations Committee [Todd L'Herrou (804) 649-8207]

To: All VaSARCo Agencies

Subject: Teams working near roads

Date: 7 November, 1987

A recent accident has pointed out the danger of working teams near roads. Due to that danger, the VaSARCo Operations Committee recommends that the following procedures be used any time a team must work on or near a road.

1. Team members should use high-visibility clothing or vests

2. Teams working at night should position a person on the edge of the road to flag down traffic.

3. Whenever possible, law enforcement officials should be used to control traffic, stopping all traffic if needed.

4. Roads carrying high-speed traffic (i.e. interstates, major highways) are especially dangerous. Therefore, extra precautions may be needed.

VIRGINIA SEARCH AND RESCUE COUNCIL
STANDARD DEBRIEF FORM

Notes: Part 1 of this form is intended for use in the debriefing of the subject, at the discretion of the I.C. Part 2 is a brief summary of the subject's actions, based on both part 1 and the information discovered over the course of the incident. Appended to this form should be a map indicating the subject's approximate path, reliable clues, PLS or LKP, and the point where found. A final comment: part 1 is intended to act as prompts, and the text of the questions can be altered as needed.

State Mission #:_____ AFRCC #:_____

VAEOC Control #:_____

I.C. or Interviewer's Name:_____

_____PART 1_____

SUBJECT INFORMATION:

Subject's Name:_____

Age:_____ Sex:_____ Education:_____

Do you have brothers? No Yes   Do you have sisters? No Yes

Are you from around here? No Yes If Yes, How long?_____
If No, Where? _____ How Long?_____

Are you currently married? No Yes   Were You previosly married? No Yes
If Yes to either, How Long?_____

Did anything happen when you were younger which influences your thinking about things now?_____

_____

_____

Has there been any really good things happening in your life recently?

_____

_____

_____

Any bad things?

_____

_____

_____

When you were found, how did you feel?

What did you think about the people that found you?

Have you ever been lost before? (if yes, describe)

(if yes)
What was different about this time?

When did you realize that you were lost?

What did you do when you realized that you were lost?

Were you aware of people looking for you? (Ask about specific efforts, helicopters, etc.)

How would you descibe yourself as a person to someone who didn't know you?

Would you describe how you came to be lost?

APPALACHIAN SEARCH & RESCUE CONFERENCE, INC.
P.O. BOX 440
NEWCOMB STATION
CHARLOTTESVILLE, VIRGINIA 22904

24 January 1988

TO: ASRC Board members, committee members, group representatives
FROM: Brian Wheeler, Secretary ASRC

RE: February ASRC Board meeting and Conference business

Dear Friends,

First of all, I would like to apologize for the delay in publishing the enclosed Board minutes and notice of the next meeting.

Enclosed are several very important documents that I would like you to study prior to the next meeting. Briefly, I feel that in our efforts to keep the Conference moving forward, the Board needs to encourage editing of documents such as these at the group and committee level. While the Conference only has a limited number of extremely enthusiastic and available members, willing to serve as leaders of their groups and on the ASRC Board, the nature of the ASRC gives us a superb pool of people with expertise and ideas in many areas. The ASRC can best take advantage of this characteristic when the leaders and the enthusiastic reach out to the rest of the Conference. It requires some extra effort, but only then can we best achieve the goals we have set.

Enclosed you will find draft versions of Chris Ingle's ASRC Training Standards and Keith Conover's Table of Contents to the future ASRC Training Manual. I believe these two projects are of the utmost importance to the ASRC and the lost person. With their completion and use, ASRC members can once again utilize the expanse of knowledge and experience that ASRC membership offers. Training to the same standard, using the same techniques and procedures, and understanding the same language is one easy way the Conference can move forward and improve the service we offer.

Recently, circulation of these documents and others has resulted in little feedback from the membership. I urge each of you to read Chris and Keith's ideas and to copy them for your training officer, operations officer, and other members of your group. If each team arrives at the meeting with suggestions or the approval of all their officers, the Board will not need to spend its time reviewing these works line by line. Instead it can take the quick action needed, knowing the people that will use these documents approve of them.

The meeting has been scheduled for 9:30 am, Sunday 7 February at SNP Headquarters in Luray, Virginia. If you have any questions please contact Greg or myself. See you soon.

Proposal: The ASRC Training Manual
Version 1.1 December 5, 1987
Keith Conover, M.D.
36 Robinhood Road
Pittsburgh, Pennsylvania 15220-3014
(412) 561-3413 (H; voice)
(412) 412-247-4488 (AMRG Computer BBS)

Notes

▪ Equipment checklists and information on the ASRC uniform, originally
included in the ASRC Basic Member Training Course, should more properly be
a part of the Operations Manual.

▪ For items with a dagger (†), we will review the topic briefly, then
refer the reader to a readily-available reference. (E.g. for Fourth Class
Climbing Techniques, we will mention some basic principles, then refer the
reader to a good basic text such as Loughman's *Learning to Rock Climb*.*)

▪ I'd like to try an experiment with the Training Manual: providing both
a printed manual and a computer version using a *HyperText* format.   The
idea behind *HyperText* is that the text is <u>indexed</u> like data in a database,
so that there is more than one path to a particular sentence or paragraph.
Thus, with a *hyperText* version of the Manual, you could all the sections
relating to <u>energy</u>, in a logical order, as if they were in a single sec-
tion, even though they are really spread throughout the manual.

▪ This version (1.1) supersedes version 1.0, which was incomplete.   It is
being distributed in three forms:

◆ A form suitable for use with Broderbund Software's <u>ForComment</u>
program, both of which are available** for downloading from the Alle-
gheny Mountain Rescue Group Computer Bulletin Board System at 412-247-
4488.

◆ A plain ASCII text file, also available from the above BBS.

◆ A printed version.

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*Loughman M. *Learning to Rock Climb.* San Francisco: Sierra Club,
1981.

**The reviewer program, which allows the user to enter comments, may
be distributed freely. The author program, which is needed to import
documents into the required format, cannot be distributed and must be
purchased from Broderbund.

If you have comments for the editors, we would prefer that you use ForComment to attach them to the outline; that way, we can integrate your suggestions directly into the word processor file that we are using. A second choice would be comments in ASCII form with carriage returns at the end of paragraphs but no line endings. We'll take handwritten notes, too, even if in Crayola crayon on brown paper.

Content Outline: ASRC Training Manual

    I.   Introduction
        A. Introduction: the role of the ASRC Member
        B. History of Wilderness Search and Rescue and the ASRC
   II. Personal Wilderness Skills
        A. Survival
            1. Short-Term Survival vs. Long-Term Survival
            2. Survival Priorities
            3. Weather
                a. Sources of Information
                b. "Hypothermia Weather"
                c. Cyclonic Storms
                d. Cold and Warm Fronts
                e. Summer Storms
                f. Lightning
                g. Prediction of Weather in the Filed
            4. Psychological Aspects of Survival
                a. The Role of Fear
                b. Panic Prevention
                c. The Will to Live
            5. Heat Balance and Survival
                a. Wind and Rain: Wetchill and Windchill
                b. Physics of Heat Loss
                c. Clothing Insulation Value
                    (1) The "Clo"
                    (2) Clothing Materials and Properties
                        (a) Warmth
                        (b) Wet Warmth
                        (c) Water Absorption
                        (d) Wicking, Good and Bad
                        (e) Compressibility
                        (f) Water Resistance
                        (g) Water Vapor Permeability
                        (h) Teaching About Outdoor Clothing: The 3 "W' s"
                d. Physiology of Heat and Cold
                    (1) Dealing with Heat: Vasodilitation, Sweating, and Their Consequences
                    (2) Dealing with Cold: Vasoconstriction, Shivering, and Their Consequences
                    (3) Effects of Tobacco and Alcohol
                e. Heat Illness: Recognition, Prevention, and Wilderness First Aid
                    (1) Dehydration†

                (2) Heat Syncope†
                (3) Heat Cramps†
                (4) Heat Exhaustion†
                (5) Heatstroke†

        f. Cold Illness: Recognition, Prevention, and Wilderness First Aid
                (1) Frostbite
                        (a) Frostnip†
                        (b) Deep Frostbite†
                        (c) Immersion Foot†
                (2) Hypothermia
                        (a) Immersion (Acute) Hypothermia†
                        (b) Mountain (Subacute, Exhaustion) Hypothermia
                        (c) Urban (Chronic) Hypothermia†

    6. Survival Equipment
        a. The SAR Pack as a Life Support System
        b. Food
        c. Shelter
        d. Warmth
    7. Bivouacs and Improvised Shelters
    8. Improvised Evacuations

B. Wilderness Travel
    1. Route Selection
    2. Pace, Rest Stops, and the Rest Stop
    3. Fourth Class Climbing Principles†
    4. Conditioning for Mountain Search and Rescue
        a. Strength
        b. Endurance
        c. Flexibility
    5. Food, Water, Digestion, and The Wilderness Traveler
        a. Food Types and Caloric Needs
                (1) Energy Values of Foods
                (2) Digestibility of Food
                (3) Need for Carbohydrates, Fats, and Protein
        b. Eating Habits and Exercise
                (1) "Quick Energy" Food
                (2) Easily Digestible Food
                (3) Carbohydrate Loading
                (4) Fat and the Winter Diet
        c. Foods for Field Use
        d. Water
                (1) Finding Water
                (2) Water Purification
                (3) Water and Electrolyte Needs

C. Personal Equipment
    1. Clothing for the Outdoors
        a. Materials: see under Heat Balance and Survival, above
        b. Raingear
        c. Wind Protection
        d. Ventilation, Layering, and Adjusting Insulation
    2. Hand Protection
        a. Gloves for Ropework
        b. Gloves and Mittens for Cold Weather

3. Foot Protection
    a. Standard Boots
    b. Winter Footgear: Winter Boots and Overboots
    c. Socks, Boot Liners, and Insoles
4. Sleeping Gear
    a. Sleeping Bags
    b. Sleeping Pads
5. Stoves and Fires: Uses and Dangers
    a. Fires
    b. Gasoline Stoves
    c. Other Stoves (Solid Fuel, Alcohol, Compressed Gas)
6. Winter Travel: Ice Axes, Snowshoes, Skis, and Crampons
    a. Ice Axes for Eastern Winter SAR
    b. Snowshoes for Eastern Winter SAR
    c. Skis for Eastern Winter SAR
    d. Crampons and Instep Crampons/"Creepers"
7. Light Sources
    a. Night Vision and Red Filters
    b. Headlamps and Flashlights
    c. Batteries
    d. Bulbs

D. Land Navigation
1. Maps
    a. Series and Types of Maps
        (1) Topographic
        (2) Aeronautical
        (3) Highway
        (4) Others: Oreinteering, Trail, Planimetric
    b. Features of Topographic Maps
        (1) Contour Lines†
        (2) Edge Information
            (a) Name
            (b) Date
            (c) Road Clasification
            (d) Scale
            (e) Contour Interval
            (f) Declination
            (g) Mapping Information
            (h) Other Edge Information
            (i) Keys to Adjacent Maps
    c. Features of Aeronautical Maps†
        (1) Contour Lines
        (2) VOR Markers
        (3) Aerodromes
        (4) Airways
        (5) Declination Marks
2. Grid and Location Systems
    a. The ASRC Grid System
    b. The "Uniform Map System" (CAP/MRA)
    c. The Universal Transverse Mercator--Military Grid Reference System (UTM/MGRS)
    d. Latitude and Longitude and LORAN-C
    e. The "Second G in George Washington" System
    f. Distance and Bearing/VOR+DME
3. Compasses

    a. Basic Principle
    b. Declination
    c. Types: Orienteering, Survey, Lensatic, Other
4. Orienteering
    a. Orienteering as a Sport
    b. Orienteering as SAR Training
    c. Point-to-Point Orienteering Courses
    d. Northing Lines
    e. Bearings (Azimuths)
    f. Catching Features
    g. Attack Points
    h. Aiming Off
    i. Collecting Features
    j. Backwards Route Planning
    k. Route Selection
5. Determining a Bearing
    a. Determining a Bearing With Map, Protractor, and Strightedge
    b. Determining a Bearing With Map and Compass
6. True Bearings, Magnetic Bearings, and Declination Adjustment
7. Following a Bearing
8. Determining Distance
9. Determining Position
    a. "Thumbing" a Map
    b. Position by Inspection
    c. Position by Resection
    d. Position by Triangulation
    e. Marking Positions for Easy Location
10. Emergency Determination of Direction

III. Wilderness Search
  A. Operations Management and Leadership
    1. Principles of Management
    2. Leadership
  B. The Incident Command System and the ASRC SAROP
    1. Principles of the ASRC SAROP
       a. Completeness
       b. Simplicity
       c. Adaptability
       d. Compatibility
       e. Clear Delineation of Authority
    2. Wilderness Search and Rescue Operation Management and the Incident Command System
       a. Command
       b. Plans
       c. Resources
       d. Logistics
    3. ASRC Alerting and Mobilization
       a. The Virginia Department of Emergency Services (DES) and University of Virginia Emergency Medical Communications Center (UVA MEDCOM)
       b. The Alert Officer (AO)
       c. The Appalachian Search and Rescue Conference Incident Commander (ASRC IC)
       d. The Dispatch Officer (DO)

4. The First Response Phase
   a. Quick Response Team (QR Team) Organization
      (1). The Quick Response Team Leader (QR Team Leader)
      (2). The Assistant Team Leader (ATL)
      (3). The Medical Specialist (MEDIC)
      (4). The Rescue Specialist (RS)
      (5). The Radio Operator (RO)
      (6). The Base Officer (BO)
   b. Overhead Team Organization
      (1). The Dispatch Officer (DO)
      (2). The ASRC Incident Commander (ASRC IC)
5. The Scratch Search Phase
   a. The ASRC Command and General Staff
      (1) The ASRC Incident Commander (ASRC IC)
      (2) The Dispatch Officer (DO)
      (3) The Plans Chief
      (4) The Resources Unit Leader
      (5) The Operations Chief
      (6) The Logistics Chief
      (7) The Communications Unit Leader
   b. The National Interagency Incident Management System
      (NIIMS) and Incident Command System (ICS)
   c. The Field Team
   d. Operational Problems
      (1) Task Assignment
      (2) Briefing and Debriefing
      (3) Relief
      (4) Safety
      (5) Coordination with Other Organizations
      (6) Communications
      (7) Position Information
      (8) Public Relations
      (9) Medical Care and Evacuations
      (10) Mission Suspension
6. The Saturation Search Phase
7. The Withdrawal Phase
   a. Withdrawal of Non-ASRC Searchers
   b. Withdrawal of ASRC Searchers
   c. Withdrawal of ASRC Command and General Staff
C. Communications
1. Principles of effective communications
2. Legal and administrative background
   a. Radio frequencies and bands
   b. Communications law and regulation
   c. Security and codes
3. Technical background
   a. Modes and frequencies
   b. Radio propagation and attenuation
   c. Repeaters
   d. Antennas
   e. Power and batteries
   f. Squelch, tone squelch and "private line"
4. Communications management
   a. Principles: planning the communications nets
   b. Base Camp Communication Center procedures

      c.   Field Radio Operator procedures
      d.   Net discipline
      e.   Radio operator discipline
   5. Non-radio communications
      a.   Field telephones
      b.   Signaling
D. Lost Person Search
   1. Search Theory
      a.   Search as an Emergency
      b.   Search as a Mystery
      c.   Searching for Clues vs. Subjects
      d.   Containment
      e.   Non-Thorough Search and Efficiency
      f.   Search Calculations: POA, POD, POS
   2. Strategy†
   3. Resources and Tactics
      a.   Trained searchers
          (1) Hasty search
          (2) Scratch search
          (3) Sweep search
          (4) Cutting for sign
      b.   Untrained searchers
          (1) Line search
          (2) Containment
          (3) Managing untrained searchers on skilled search
              tasks
      c.   Man-trackers
      d.   Dogs
          (1) Tracking and trailing dogs
          (2) Air scenting dogs
      e.   Aircraft
          (1) Fixed-Wing
          (2) Helicopters
      f.   Passive Search
E. Downed Aircraft Search†
   1. Interviewing
   2. Visual Search
   3. Electronic Search
F. Legal Aspects of Wilderness Search and Rescue
   1. General
   2. Authority and Responsibility for Search and Rescue
   3. Authorization for ASRC Participation in a Search
   4. Medico-Legal Considerations
      a.   Aid to Persons in Distress and "Good Samaritan Laws"
      b.   Levels of Training and Negligence
      c.   Abandonment
      d.   Consent: Express, Implied, and Informed
      e.   Patient Data and Public Information
   5. Crime Scenes and Crash Sites
   6. Entry on Private Property

IV. Wilderness Emergency Medicine*
    A. Wilderness Emergency Medical Services
    B. Wilderness First Aid
    C. Wilderness Medicine
V. Wilderness Rescue
    A. Principles of Wilderness Rescue
    B. Ropework
        1. Ropes, Knots, and Technical Equipment
            a. Rope and webbing
                (1) General Care
                    (a) Chemicals
                    (b) Radiation Damage
                    (c) Thermal Damage
                    (d) Mechanical Damage
                          i) Abrasion
                          ii) Direct Trauma
                (2) Materials
                (3) Management
                    (a) Stacking
                    (b) Coiling
                        i) Speed Coil
                        ii) Arm Coil
                       iii) Knee Coil
                       iv) Lap Coil
                        v) Chain-coiling
                       vi) Reverse-twist coil
                    vii) "Rescue" Coils
                   viii) Rope Bags
                       ix) Tie-offs
                  (c) Casting
            b. Knots and hitches
                (1) Principles
                    (a) Strength
                       i) Strength of Knot
                       ii) Contouring
                     iii) Standing Ends to the Outside
                    (b) Security
                       i) Knot Creep and Securing Ends
                       ii) Overhands
                     iii) Barrel Knots
                  (c) Jamming
                (2) Basic Knots and Hitches
                    (a) Overhand Knot
                    (b) Overhand Bend
                    (c) Figure Eight Knot
                    (d) Figure Eight Loop
                    (e) Figure Eight Bend
                    (f) Bowline

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*I am uncertain how much wilderness medicine should be in the ASRC Training Manual, since we will be putting all our best information into the Wilderness EMT Textbook. Perhaps the Training Manual should have information only at the standard/advanced first aid level.

              (g)   Butterfly Knot
              (h)   Square Knot
              (i)   Barrel knot
              (j)   Barrel bend
              (k)   Clove hitch
      (3)   Advanced Knots and Hitches
              (a)   "double strength" bowline
              (b)   bowline-on-a-coil
              (c)   bowline-on-a-coil around anchors
              (d)   bowline-on-a-bight
              (e)   three-loop bowline
              (f)   sheet bend and double sheet bend
              (g)   anchor hitch
      (4)   Esoteric Knots and Hitches
              (a)   Load-releasing Hitches
      (5)   Basic Tied Harnesses
              (a)   the ASRC Seat Harness
              (b)   the Diaper Seat
      (6)   Basic Tied Harnesses
              (a)   the ASRC seat harness: variants
              (b)   the Crossed-loop Chest Harness
              (c)   the Parisian Buadriẽr Chest Harness
  c. Equipment
      (1)   Basic Technical Equipment
              (a)   Carabiners
              (b)   Pulleys
              (c)   Natural Anchors and Slings
      (2)   Advanced Technical Equipment
              (a)   Chocks
              (b)   Pitons
              (c)   Bolts
              (d)   Edge Rollers
              (e)   A-Frames
2. Belaying
  a. Basic Belay Device: Hips and Gloved Hands
  b. Advanced Belay Devices
      (1)   Münter Hitch
      (2)   Belay Plate
      (3)   Figure 8 descender
  c. Stance
      (1)   Physical Stance
              (a)   Sitting Hip Belay
              (b)   Mechanical Belay on Harness
              (c)   Standing Hip Belay
              (d)   Mechanical Belay on Anchor
              (e)   Tree Belay
      (2)   Tie-in
      (3)   Aim
  d. Technique
      (1)   Basic Technique
              (a)   Up-rope
              (b)   Slack
              (c)   Catching Falls
      (2)   Sitting Hip Belay
      (3)   Mechanical Belay on Harness

       (4) Standing Hip Belay
       (5) Mechanical Belay on Anchor
       (6) Tree Belay
       (7) Tying Off Belay and Leaving Stance
   e. Calls
3. Rappelling
   a. Basic Rappel Devices
       (1) Dulfersitz Body Rappel
       (2) Arm Rappel
       (3) Figure 8 Descender (single and double wrap)
       (4) Rappel Rack
   b. Advanced/Escape Rappel Devices
       (1) Münter hitch
       (2) Carabiner Wrap
       (3) Carabiner-Brake Bar
       (4) Six-carabiner Rappel
   c. Basic Rappel Technique
       (1) Basic Technique
       (2) Tying Off
       (3) Edges
       (4) Recovering from a Jammed Rig
       (5) Switching to Ascend
   d. Advanced Rappel Technique
       (1) Multiple-step Pull-down Rappels
       (2) Self-Belays: Spelean Shunt, Spiral Knot, etc.
   e. Calls
   f. Belaying a Rappeller
       (1) Bottom-belays
       (2) Top Belays
4. Ascending
   a. Basic Ascending Devices
       (1) Prusik Knot
       (2) Headden Knot
       (3) Cam Ascenders (e.g. Gibbs Ascenders)
       (4) Spring Ascenders (e.g. Jumars, Clog Ascenders)
       (5) Taut-line Hitch
   b. Advanced Ascending Devices
       (1) Bachmann Knot
       (2) French Prusik
       (3) Friction Hitch
   c. Basic Ascending Systems
       (1) Two-knot "Texas" rig and Texas "Y" rig
   d. Advanced Ascending Systems
       (1) classic three-knot rig
       (2) three-cam "ropewalker" rig
       (3) modified climber's Jumar-etrier rig
       (4) Mitchell system
5. Hauling
   a. Principles of Mechanical Hauling System
   b. Z-hauls
   c. Piggyback Hauls
6. High-tension lines
   a. Principles of High-Tension Lines
   b. Anchors for High-Tension Lines
   c. Tensioning High-Tension Lines

        d. Passing Personnel and Equipment across High-tension
            Lines
    7. Anchorage
        a. Natural Anchors
            (1) Looped Runner
            (2) Girth Hitch
            (3) Doubled Runner
            (4) Tree-Wrap
C. Patient Packaging
D. Non-Technical Evacuations and Basic Litter Handling
E. Semi-Technical Evacuations
F. Technical (Vertical) Rescue
    1. Basic Technical Rescue
        a. Sending Litters Across High-Tension Lines
        b. Vertical Lowering
        c. Solo Rescue
    2. Advanced Technical Rescue
        a. Vertical Raises
        b. Third-Man Techniques
        c. Special Rigging
G. Cave Search and Rescue
    1. The National Cave Rescue Commission and the Role of the
        ASRC in Cave Rescue
    2. The Cave Environment[†]
    3. Management Issues[†]
    4. Patient Transportation[†]
    5. Vertical Cave Rescue[†]
    6. Hazardous Atmospheres[†]
    7. Water Problems[†]
H. Downed Aircraft Extrication and Rescue
    1. Military Aircraft[†]
    2. Common Carrier Aircraft[†]
    3. Light Civil Aircraft
        a. Hazards and Scene Management
        b. Fire
        c. Extrication with Lightweight and Improvised Tools
        d. Nullifying ELT Signals
I. Whitewater Rescue
    1. Hazards of the Whitewater Environment and the Rescuer[†]
    2. River Rescue by Rope[†]
    3. Rescue from Entrapment[†]
VI. Disasters
VII. ASRC Training Standards[*]
VIII. Pretests
IX. Pretest Answers
X. Annotated Bibliography
XI. Skills Checklists

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[*]I was going to suggest that this be available also as a separate pub-
lication, but after some contemplation, I found it difficult to jus-
tify as a separate publication.

I.C. or Ops Officer: Please reconstruct, to the best of your ability, the behavior and/or actions of the subject while lost or missing. Please utilize debriefing information, clues found, etc. when summarizing. Be brief, but include all pertinant information. Please use additional pages as needed, and attach a map of the search area. This map should list all confirmed or reliable clues, PLS or LKP, place where found, and subject's approximate path or route.