APPALACHIAN SEARCH !

newsletter of

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RESCUE CONFERENCE, INC.

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* Group, *Appalachian Search & Rescue Conference* * Section, *Potomac Appalachian Trail Club* * Member, *Mountain Rescue Association*

MEETINGS: Most SMRG activities are held at Potomac Appalachian Trail Club Headquarters (PATC HQ), 1718 N Street NW, Washington, DC (near the Dupont Circle Metro Station). Business meetings are the first Tuesday of the month, and training meetings, the third Tuesday.

ASRC NEWSLETTER: Is published on a bimonthly basis. Yearly subscriptions are $5, payable by check made out to The Treasurer, SMRG, c/o the above PATC address. Articles or schedule items should be turned into the Editor, Paul Torrence (301)977-2102 (h).

FOR FURTHER INFORMATION in general about SMRG, or for information about membership, write to SMRG, c/o the above address, come to one of the business meetings or contact the Group Training Coordinator, Al Rosen, at 301-268-5871 (h).

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24-hr emergency number: (804) 323-2300 (Va. Dept. of Emergency Services)

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NEW [ ] RENEWAL [ ]

answers to may june SAR quiz

May/June SAR Quiz

g Cutting for sign

x Close-spaced line searching

j Includes a quick check to see if subject is really lost

v The person or persons on a line search who can give the command "forward"

t The person or persons on a line search who can give the command "stop"

w A formal mathematical process of giving equal weight to the opinions of all mission staff personnel regarding the most probable whereabouts of the subject

u Search of a point or linear feature, especially, high probability areas

r Patrol of an area's perimeter

i Search of a large area from a single vantage point

d Wide-spaced line search of a small area by a small team

e Grid, Contour, or line search

l Local responsible agent for a search in a National Park

b Local responsible agent for a search in a National Forest

k Number of pieces of flagging tape used to mark clue location

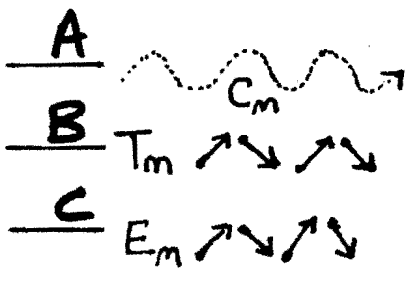
a Number of pieces of flagging tape used to mark temporary boundaries and trails

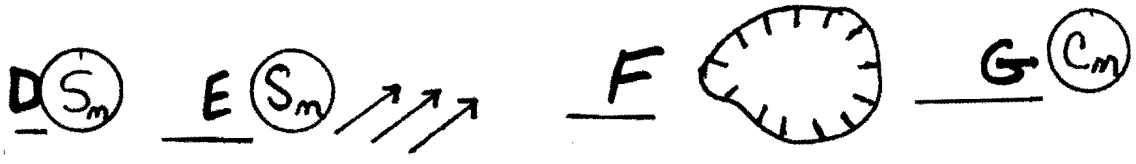
f Number of pieces of flagging tape used to denote completed search task area boundaries

a. one
b. county sheriff
c. 2^n
d. sweep task
e. saturation task
f. two
g. an important part of binary search technique
i. survey task
j. hasty search
k. three
l. district ranger
m. the Governor
n. The President
o. Avogardo's Number
p. incident commander
q. four
r. containment task
s. $E = mc^2$
t. any one on the team
u. scratch task
v. the field team leader
w. Mattson consensus method
x. last resort in search strategy

II. Task Symbols Used on a Search Status Map

A. Foot Patrol (containment)
B. Tracking
C. Evacuation
D. Survey
E. Sweep
F. Saturation
G. Road Block or trail block(containment)





BASIC SWIFTWATER RESCUE COURSE

On May 17-19, Kevin Parkes and Al Rosen participated in a basic swiftwater rescue course given by Virginia DES (Dept. of Emergency Services) and VAVRS (VA Association of Volunteer Rescue Squads), at Big Island, VA. The 3 day course began with a day in the classroom, covering such topics as hypothermia, cold water near drowning, river reading, equipment, preplanning, and boating safety. The next two days were mostly spent on and in the James River: one day dealing with personal survival and the second with rescue techniques. The course was very well taught and extremely interesting. While much of the material is not directly applicable to our activities, some could prove useful in the future. Someday we might find ourselves having to deal with rapidly moving water, perhaps having to get ourselves and a victim across safely.

contributed by Al Rosen

HEAT STRESS

The program at the June 4 Business Meeting dealt with heat stress; it was presented by Moulton Avery, of the Center for Environmental Physiology. The Center is a non-profit organization which conducts research, develops educational material, and provides technical assistance on cold and heat stress.

Dr. Avery presented an informal, informative discussion on heat stress, drawing from his own experiences as head of a wilderness school in North Carolina for 6 years. He stressed recognizing the signs of heat-related problems as a whole, rather than attempting to classify them according to the medical texts as heat cramps, heat exhaustion, and heat stroke. Dr. Avery also advocated prevention in searchers. As a field team leader, know your team. Be aware of any predisposing factors, such as medications, medical problems, lack of acclimatization(where do we spend our time? air conditioned offices and homes), and dehydration. Encourage group alertness, regular water breaks, carrying plenty of water(2 liters), and wetting hair and clothing to keep cool(you may not want to drink that stream water, but you can certainly use it to keep cool). Slow down or stop if you even suspect a problem. (Note that victims of heat stroke may not have dry skin...they might be sweating.) Know the possible early warning signs of heat stress, including weakness, sluggishness, unusual fatigue, headache, nausea, dizziness, weak/rapid pulse, and rapid breathing.

As for victims, be aware that what applies to the searchers also applies to them, especially predisposing factors such as medications, old age, poor physical condition, and cardiovascular disease.

Dr. Avery also supplied the group with a pamphlet describing heat stress, and a single sheet summary listing predisposing factors, leadership considerations, and early warning signs (nice and compact, to fit in your SAR pack). Copies can be obtained from Mike Maslona, the Stores Officer.

Remember, it's supposed to be a hot, humid summer. Let's be careful out there.

Contributed by Al Rosen

ERMRG SUMMER TRAINING SCHEDULE

July 13,14	Wilderness Skills (e.g. campout)	TBA (someplace - Mt. Rogers??)
July 17	Business MTG	1900, TBA
July 23	Map Problems	1900, Locker
July 27	Semi-tech	TBA (SNP??)
Aug 3,4	Simulation, ICS	TBA
Aug 11	Orienteering	0900 at Locker, TBA
Aug 21	Business MTG	1900, Locker
Aug 24,25	Campout	Someplace else
Aug 31-Sept 1	Refreser WKEND	0900 Locker

For questions and more information, call Karen Anderson (979-9467) Chris Ingle (293-4956)

JULY AUGUST 1985 WILDERNESS MEDICINE QUIZ (Matching answers may be used more than once)

____1. *Entamoeba histolytica**

____2. Sudden fever, spotty red rash

____3. Chronic hypothermia

____4. Vasoconstricted

____5. *Giardia lamblia**

____6. Campfire

____7. Dark/deep yellow urine

____8. Exactly flat or head slightly down

____9. *Clostridium tetani*

____10. Acute hypothermia

____11. Vasodilated

____12. Nausea, blurred vision lightheadedness

____13. Tetanus booster

____14. "Afterdrop"

____15. Antihistamine

____16. Subacute hypothermia

____17. Red-hot straightenedpaper clip

____18. Frozen feet

____19. Edema, pain

____20. Long axis of linb

____21. 105-110°F

____22. Hands, feet, ankles, wrists face neck, genitalia

____23. Nail polish

____24. Warm soaks, erythromycin, splinting elevation

____25. Scraping

____26. Gradual onset of eyepain, red eyes, white/yellow discharge

____27. Tendinitis (squeak heel)

____28. Dislocations that may be reduced in the field if circulation is impaired and patient is hours from nearest medical help

a. every 10 yrs or sooner for grossly contaminated wound

b. worst way te rewarm a seriously hypothermic patient

c. soil bacteria that causes "lockjaw"

d. result of hours of cold exposure in exhausted fatigued individual

e. result of return of cold-stagnant blood to body core, may cause ventricular fibrillation

f. symptoms of dehydration

g. Rx for systemic allergic reaction

h. state of peripheral blood vessels in hypothermic victim

i. usually not killed by iodine, but only by boiling

j. necessary position of transport for hypothermia victim

k. Rocky Mountain Spotted Fever

l. excellent sign of dehydration

m. can be killed by iodine treatment of H_2O, but not by chlorine tablet treatment

n. what happens to peripheral blood vessels when hypothermia patient is rewarmed

o. result of mild/moderate cold exposure over period of days

p. result of sudden, overhelming cold stress (immersion hypothermia)

q. unicellular parasite causing diarrhea

r. jaw, shoulder, patella, finger

s. caused by ill-fitting boots

t. conjunctivitis

u. preferred method of removal of stinger-venom sac

v. treatment of cellulitis

w. direction of incision if necessary after pit viper envenomation

x . should not be thawed if the victim may have to walk.

y. alleviation of pain of subungual hematoma

z. water temperature for rapid rewarming of thawed extremities

aa. where no incisions should be made in case of snakebite

bb. ideal treatment for chiggers

cc. signs/symptoms of pit viper envenomation

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*Two answers

EDITOR'S NOTE. The following narrative details a SAR mission that was not run under ASRC auspices;however, it is of interest, I believe, because it illustrates what happens when things are well-executed on a mission. It is also of didactic value with respect to the concepts of quick response, search mechanics, and hypothermia.

REPORT ON THE RUSSELL COUNTY MISSION OF 9 MARCH 1985

Around 1730 hrs on 8 March 1985, a resident of Lebanon, Virginia saw a flash of light followed by black smoke and later a steady burning white light near the top of Clinch Mountain in Russell County. At the time of the sighting, he was standing at a Ford dealership along US 19 about 5 miles south of Lebanon. Clinch Mountain has been the site of several aircraft crashes in the past and the opinion of the local authorities was that this sighting was probably also a crash. State Trooper B. G. Ratliff and members of the Lebanon Rescue Squad responded to that location and proceeded up the mountain on foot. By the time the group got near the top, it was dark and the mountain was enshrouded in heavy fog, so they decided not to continue the search that night. They did, however, report finding an area where there appeared to be several freshly broken branches and where they detected an unusual odor in the air. The team returned to base at about 2300 hrs with plans to return to the mountain at 0800 hrs.

Following the sighting, Washington Center reported a Cessna 182, tail number N5430B, to be overdue on a flight from Springfield, MO to Woodbridge, VA. The intended flight path would have taken this aircraft directly over the Lebanon area so every one felt reasonably certain at this point that they were dealing with and actual crash.

The CAP command staff decided to request a quick response ground team from the GSAR College to proceed to Russell County to initiate an immediate search of the area abandoned by the local search team. Teams were assembled and departed for Russell County at 0035 hrs via convoy. During the time this team was on the road, CAP had other teams out doing ramp checks at airports along the intended flight path of the missing aircraft. The convoy also stopped and checked one airport along I-81 with negative results.

Radio contact was established with the Russell County Sheriff's Department on 155.295 Mhz and they provided a police escort into the town. The CAP arrived at the Russell County jail at 0420 hrs. The Sheriff's Dept provided a briefing, area topo maps, and a guide. The guide was a member of the local rescue squad and had been on the mountain with the earlier search group. The Ford dealership was chosen as the staging area. A logging road ran up the mountain from the Ford dealership in the general direction of the sighting. A local resident provided a 4 wheel drive pickup truck to transport the team so vehicles were left at the base camp along with a CAP radio operator. Team members were assigned to the three team leaders and the team equipment was distributed for transport. The quick response team departed base camp at 0515 hrs.

The logging road was extremely muddy and proved to be impassable after approximately one half mile so the team off loaded and proceeded on foot. The mountain has a vertical rise of about 1600 feet in less than two miles. This factor combined with the heavy mud, the dense fog, and an air temperature in the low 30's made the climb extremely strenuous. One team member became exhausted and had to be sent back to base camp with an escort. The team arrived near the crest of the mountain at approximately 0630 hrs. The team leaders decided to continue enmasse to the general area of the previous night's report and begin specific search tasks at that point.

The team was arranged in an open grid search configuration, and the ridge was contour searched. Soon an aircraft wing was located in a tree, and then the fuselage was spotted .

The tail number of the aircraft was readily visible and it matched the N number of the missing aircarft so no further confirmation was necessary.

The main impact area was uphill and immediately forward of the empennage. Two badly charred bodies were visible in the primary burn area along with the remains of the cockpit and instrument panel. Since the team had been briefed that there were three passengers on board, it was assumed that there would be a third body in the immediate area. Due to the severity of the impact and based on numberous previous crashes it was thought by all concerned that this crash was not survivable. Nevertheless, an intensive search of the area was begun. After about 15 minutes, a blue sock was found stuck in the mud as if someone had stepped into the mud and then withdrawn their foot leaving the sock behind. With this new evidence it became clear that we had a mobile third victim even though it was difficlut to believe anyone could have survived the crash, let alone walk away. By this time it was around 0730 hrs and we had been joined by a group from the rescue squad. They told us other squad members were on the way up the mountain along another route. In the meantime we be an gearing up for a full scale lost person search. At about 0740 hrs we received a report via the rescue squad radio that the group coming up the mountain to join us had located a woman who appeared to be from the crash. Our squadsman radioed that group and told them to hold their position, that we would be down to join them with a Paramedic and a full trauma pack. We could hear them discussing an evacuation and calling for their IV Tech to come up with his equipment.

The scene that greeted us was a bit frightening because my first look at the patient told me that the key ingredient in the drama about to unfold was time, and she had precious little of that commodity left. The squadsmen that had found her told us she was immobile but conscious. They had a vinyl body bag with them that had strap handles on the sides and their intention was to use the bag as a litter to carry the patient off the mountain. They had placed her in the bag, covered her with several coats on the top only, zipped the bag up to her neck and were beginning to carry her down the ridge when we arrived.

The patient was a white female in her twenties who was conscious but confused and with slurred speech. She told us her name was Tammy.

She was dressed in jeans, a light shirt and was wearing one blue sock with no shoes. Her clothing was soaking wet. There were burns on the clothing but no obvious traumatic injuries and she was able to move all of her extremities. Her skin was ashen and cold to the touch with no palpable peripheral pulses. This finding alone with the clouded sensorium led to a diagnosis of acute stage III hypothermia. It was apparent that, other factors not withstanding, the hypothermia was going to prove rapidly fatal without immediate, appropriate intervention so that is where initial treatment was directed.

All of her clothing was removed and an insulating layer was placed in the bottom of the body bag, the insulation was covered with a disposable space blanket and she was laid on the blanket. We then covered her with a second space blanket with additional insulation on top of that blanket. Kwik-Heat packs were placed in the groin, the acillae and each side of the neck over the carotids.

The secondary examination found second and third degree burns to the feet, the anterior surfaces of both legs, both hands and a small area of the neck. The burns were more severe on the right than on the left with a total burn area estimated at 30%. There was no acute serum loss due to burn age and peripheral shutdown. No burns around or within the mouth were noted. No traumatic injuries were evident. Head and neck movement was intact. Pupils were equal and slowly reactive. Breath sounds were well heard bilaterally with course rales throughout. The abdomen was soft. No deformity of the torso was seen. An EMT from the local rescue squad obtained a rectal temperature which he reported at 91 degrees F. The physical findings ruled the reading invalid and I suspect he brought the thermometer in contact with one

of the hot packs. I felt it unnecessary to repeat the temperature at the time since it was urgent that we prepare for evacuation. A blood pressure reading was attempted without result. Peripheral pulses were absent so heart rate was determined apically at a rate of 60. Heart sounds were muffled. Two attempts were made to establish and IV but lack of perfusion made this impossible. The puncture sites did not bleed.

No further medical treatment could be accomplished at this point so we prepared to evacuate. The evacuation began using CAP and rescue squad personnel as litter bearers and a CAP belay team. The litter team was instructed to move at a steady pace with the patient in a slightly head down (Trendelenburg) position. They were warned against jarring the patient excessively since this could trigger potentially fatal cardiac disturbances. A volunteer fireman was on the litter near Tammy's head and he kept up steady conversation with her during the entire operation. He was encouraged to stimulate her in order to keep her awake and to keep her heart rate up as much as possible.

Radio contact was established via squad radio with the Russell County Medical Center and I was able to speak directly with the ER physicaian. I gave my report along with an urgent request for Lifeguard 10 to be available to transfer Tammy as soon as she could be stabilized. When told we could not establish an IV, he asked if I could place a central line (subclavian). While I have been trained in this procedure local protocols prohibit field use so I didn't carry the equipment in my trauma pack. I gave the rescue squad specific instructions on setting up the ambulance to receive the patient (i.e., warm blankets, O_2, etc.) along with a request for every available hot pack to be sent up to us if possible. Only a few could be located but they did arrive before the evacuation was completed.

We arrived at the road head after about 45 minutes and loaded the Stokes into a waiting 4 wheel drive pickup. A 10 minute ride brought us to a better road where an ambulance was waiting. After transfering the patient I obtained another rectal temperature of 80 degrees F which was much more in keeping with the physical findings. Updated information was relayed to the hospital enroute and when we arrived a complete team was standing by.

The surgeon attempted a cutdown in her lower leg without success but succeeded in placing a subclavian line after 3 attempts. Warmed blood and IV fluids were infused while the physicians examined the patient. Their exam revealed no additional findings. Tammy's level of conciousness had not changed enroute and did not appear to increase in the ER. By the time Lifeguard 10 arrived her systolic blood pressure had begun to fluctuate wildly. MAST trousers were put in place for transport and a Dopamine drip was started. A Foley catheter was placed but urinary output was near zero. Lab reports showed a blood pH of 7.03 so sodium bicarbonate eas administered to combat the acidosis. A rectal temperature of 83 degrees F was obtained just prior to transport. Additional IV fluids were warmed for use on the helicopter and Tammy was ready for transfer to Roanoke. Further warming was done at Roanoke and then Tammy was flown to UVA Burn Center for further treatment. Her prognosis was reported to be good. (Editor's Note: Tammy was relased from the Burn Center the following Friday).

What could have happened if the response to this mission had not been as it was? The GSAR College Staff lives by the creed "SEARCH IS AN EMERGENCY!" and that an urgent response is mandatory. Having a group of skilled people and their gear assembled and immediately available was an enoumous benefit and this factor contributed directly to the success of the mission. Had we responded from home in a routine

manner it is highly doubtful Tammy would be alive today. The same can be said of the "let's wait until morning" attitude so common among emergency services personnel. Morning would have been too late. A third body would have eventually been located and some people would have considered the mission to be a success.

It is imperative that trained, equipped ground search personnel be available on short notice to respond to missions such as Russell County. Quick Response Teams MUST have dependable, around the clock airlift available to them since ground transportation to the more remote regions of the commonwealth takes too much precious time. For Tammy, time had nearly run out. Within another two hours,without definitve care, she may not have been salvageable.

Lack of adequate equipment is another problem. SAR personnel are generally volunteers and cannot afford to purchase equipment beyond their own personal field gear. Team rescue and medical equipment is often what can be begged or borrowed and is usually marginal at best. SAR teams cannot depend on local agencies to supply the needed items because ES agencies are geared to provide ambulance based medical care and do not own the specialized equipment needed to perform treatment and rescue in the wilderness environment. Neither can local agency personnel be depended upon for skilled manpower because urban/rural and wilderness rescue are seperate disciplines requiring much different skills.

A common concern is that this sort of event stirs a lot of initial excitement and offers of "what can we do to help" that soon die down, leaving the few to wonder about next time. Will the next mission end in tragedy because trained people couldn't get there in time? Wilderness SAR does not attract as much attention as the fire and rescue services because there is not the daily activity that some people need to hold their interest, but when our services are needed, they are desperately needed and there is no one else available to do the job.

To Tammy, we wish her well. She is alive because of a group of dedicated individuals who share the motto of the ARRS, "That Others May Live".

Narrative by:
Ralph E. Wilfong, NREMT-P
Field Team Leader, Team Medic

Edited by Ralph Wilfong, Mark Pennington and ASRC newsletter editor.