



December 2005

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From the Chair....

Greetings SAR Folks!,

I hope everyone has been enjoying a good fall season, and that you are spending more time training, than searching! The members of the NMESC Board have been pretty busy putting together some neat benefits for NMESC teams. One of these items is a map printing program which will allow NMESC Member Teams to purchase USGS Quad maps at about one third of typical retail prices! We are very excited about being able to offer this service to member teams. NMESC Board Members are also investigating the possibility of acquiring some new radio frequencies for tactical teams to use during searches and trainings...details and guidelines to follow.

ESCAPE '06 is going to be held at Glorieta again this year. **PLEASE CONTINUE READING IF THIS GIVES YOU HEARTBURN!** As you are reading this we are actively visiting and researching locations farther south for ESCAPE '07. The Board opted to stay at Glorieta for another year because we had a pretty darn good conference, and the same people who made it a success in '05, **WILLINGLY** stepped up to the plate and **volunteered** to do it again in '06.

I know that when we find a location with the right facilities, and accommodations, the Board will be able call on some new and returning personalities to make things happen! Meanwhile our Training Chairs are organizing a special training session to be held in the Southern part of the state. The "SAR Boot-camp" is being organized by Training Co-chairs Matthew Corp and Jason Flesher. They have assured me details will be posted on the web page soon!

To all of you, from myself, and rest of the NMESC Board,
Sincere Wishes for a Safe and Happy Holiday Season.

Dave Kenneke
Board Chair

MEMBER BENEFITS

So, why is NMESC membership a GREAT investment for your team? Take a look at this!

NMESC ACTIVE MEMBER BENEFITS

- Reduced registration fees for your team members at ESCAPE
- Reduced or no fee registration for your team members for NMESC sanctioned regional trainings.
- Access to special training by qualified instructors for your team through NMESC.
- Voting privileges at the Annual ESCAPE to select NMESC Directors and have a voice in the direction for matters related to SAR issues in New Mexico.
- Use of LED projectors and screens for training purposes at no charge.
- Team Emergency Equipment Grant Program. While this is a very limited and restricted program it can be of a great benefit to a team for the replacement of team equipment that is lost, stolen or damaged during a State SAR Mission
- USGS Topographical Maps for teams and team members at prices about one third the USGS price.
- Seed money to sponsor trainings.
- Assistance organizing large scale training exercises
- Part of a statewide communication network for NM SAR teams.
- A contact liaison to help answer SAR related questions, or give direction with research. Check the NMESC website for the list of which Board Member is your liaison.

TRAINING CORNER

BE SURE TO CHECK THE NMESC WEBSITE OFTEN FOR TRAINING UPDATES!!

Southern SAR Boot camp

You asked for it, you got it! Truth or Consequences will be the location for the SAR Boot camp, which will take place in early February. We don't have exact dates yet, but be sure to check the NMESC website for times and dates!! Do you want to teach? We'll be looking for instructors, so get in touch with your team liaison or any NMESC Board member.

Winter Training

Winter training is scheduled for January 21, 2006 in Santa Fe. AGAIN, be sure to check the NMESC website for additional details!

FIELD COORDINATORS & SECTION CHIEFS

On December 3, there will be training at the EOC in Santa Fe for Field Coordinators and Sections Chiefs. Rob Deyerberg, USFS, Carson Nat'l Forest Snow Ranger and Miles Standish, Santa Fe Nat'l Forest Snow Ranger will be the instructors. This is an important training for anyone managing winter missions. Learn to recognize hazards, keep teams safe and accomplish your goals.

The course is focused on winter mission management for FCs and Section Chiefs. This is not an avalanche course. The morning will be a presentation by Rob and Miles. They have been conducting Avalanche Awareness classes for many years together. As Snow Rangers for the Northern Part of New Mexico, they have a great deal of knowledge about local terrain and conditions, with national level training. The afternoon will be a discussion of local hazards, situations and preplans common to winter missions.

The training will start at 0900 and run through late afternoon. Bring your lunch as we will only break for about 30 minutes. If you know FCs or Section Chiefs that do not subscribe to the NMSAR Forum, be sure to tell them about this training.

Contact James Newberry to reserve a space. Office 827-9228 or james.newberry@state.nm.us

Interesting website with statistics of Suicide victims, who and where.

http://www.dbs-sar.com/SAR_Research/despondent.htm

NMESC SEARCH MAP PROGRAM

MAP INFORMATION

Currently the maps being offered are the USGS 7.5', 1:24,000 scale quads and the BLM 1:100,000 scale maps.

The USGS 7.5' quads are available on the standard 24# color bond, coated paper which is a little better than the standard USGS paper and are priced at \$2.00. We also have a heavier water proof paper version of the USGS quads available at \$4.00.

The BLM 1:100,000 maps are on plain paper at \$3.00 per copy or \$6.00 for water proof versions.

These maps are identical to the USGS and BLM issued maps, as we are using their GIS Data Base. This is the only program that has the new U. S. Forest Service, 2002 versions with the trails and road numbers on the maps.

ORDERING INFORMATION

Maps are being sold only to NMESC Active member teams and individual members of those teams. We are not in competition with other map vendors and are offering this service to Active NMESC members only. Maps are shipped rolled not folded.

1. You can find an ORDER BLANK on the NMESC Web site. www.nmesc.org.
Click on Map Information on side bar.
2. Use the correct map name from the USGS State Index or the BLM Index.
3. Be sure to specify the number and paper types for each map ordered.
4. Include your check for the proper amount for the order, made out to LACDSAR.
5. Postage for most orders will be the minimum of \$4.00. (USGS is \$5.00) For large orders, over 25 maps, we will contact you.
6. Very important: include your e-mail address and a phone number.
7. Send orders to:

Los Alamos CD Search and Rescue
NMESC Map Program
1240 Sioux
Los Alamos, NM 87544

For additional information:

Bob Cowan
sarbob@att.net
505-662-7926

Paul McClendon
p.mcclendon@comcast.net
505-983-8748

For questions on a specific order please contact Bob Cowan.

ARE POD (Probability of Detection) ESTIMATES FATALLY FLAWED?

The ground SAR detection experiments conducted in 2004 in five different venues around the country with significantly different terrain and vegetation demonstrated, as I and the other investigators fully expected, that terrain and vegetation density have significant impacts on effective sweep width ("detectability index") values. Please link to http://www.uscg.mil/hq/g-o/g-opr/nsarc/interest_items.htm and download "Sweep Width Estimation for Ground Search and Rescue" for details.

Other significant factors included search object size, color, and contrast with surroundings. No surprises there, either. Also not surprisingly, the experiments demonstrated, beyond any doubt, the inability of searchers to accurately estimate their own POD. In the experiments, their estimates matched their actual performance no better than drawing numbers randomly out of a hat. The correlation coefficient was zero. In fact, it is logically impossible for anyone to accurately estimate POD performance (their own or anyone else's) by direct, purely subjective means. The reason is simple: Whether during an experiment, exercise, or an actual search, no one can tell you what they did NOT see out of the things that were actually present and therefore cannot tell you what proportion of the things actually present they missed. For the same reason, they cannot tell you what proportion of the things actually present that they did see. If a searcher makes no detections, all they do know or can know about their search results is just

that--they made no detections. Period. It is by carefully designing and performing experiments where all detections and all misses are recorded and analyzed that we can obtain the information and data needed to make objective estimates of POD for similar search conditions. The key data element that comes out of such experiments is a "detectability index" called effective sweep width which can be used with a few other data elements (time in segment spent searching, number of searchers, average speed while searching), simple formulas and a graph to obtain an objective POD estimate.

The U.S. National SAR Manual and now the International Aeronautical and Maritime SAR Manual contain effective sweep width values for aerial search over land, including correction factors for the effects of terrain and vegetation density.

I have read about a number of incidents where the subject (or their remains) were in a segment when it was searched, but were not detected until much later, long after any of the responding personnel would have considered searching that location again, usually by accident, and usually by someone not involved with the search. It seems very likely that a substantial contributor to such failures is, in fact, several significant flaws in past land SAR methods, to wit:

1. Unrealistically high POD estimates based on subjective techniques that, logically speaking, simply cannot work (as discussed several paragraphs above).
2. The incorrect notion that if several clues are present in a segment, it is virtually impossible to miss all of them, even with a low coverage ("non-thorough") search, and it is therefore safe to conclude the subject is not and was never there if no clues are detected. (This assertion is based on a taking an information theory result from a non-search context, where it is valid, and mis-applying it to searching a segment, where it is not valid. This was done by someone from the land SAR community with little or no background in either information theory or search theory--although they have made many valuable contributions to land SAR in other contexts. This same person, by the way, later demonstrated how difficult clue detection really is, and stated that, based on their own experience, clues were rarely found before the subject was--at which time the clues often seemed to jump out of the background, showing that the clues were present all along in searched segments but were not detected earlier when they would have been most useful. When asked how they could square their two almost diametrically opposed "findings" with one another, they simply said they couldn't.)
3. The incorrect notion that two successive low coverage searches of the same segment can produce a higher cumulative POD than a single more thorough search of the same segment when both methods expend exactly the same total amount of effort searching the segment. It is easy to prove that the cumulative POD from two low coverage searches can do no better than equal the POD of a single more thorough search that uses the same level of effort as the two low coverage searches combined. In fact, the cumulative POD from the two-search method can be, and often is, significantly less than the one-search alternative. The two-search method also takes longer, especially if the two searches are widely separated in time.
4. The incorrect notion that as segments are searched, they should go to the "end of the line," not to be searched again (if ever) until other unsearched segments have been covered, even when formal search theory would, if applied, show that a second search of a particular segment would be more likely to produce a find than expanding to any of the unsearched segments.
5. The unreliable notion that if the perimeter of a segment is searched and no evidence of the subject's passage across the segment boundary is detected, it is safe to conclude that the subject is not in the segment (so-called "binary search"). Failure to detect evidence does not confirm that no such evidence is present nor does it address the possibility that the subject was able to cross the segment boundary without

leaving detectable evidence behind.

These notions, all taken directly from the unrefereed, unvalidated land SAR texts, papers and manuals that made up the land SAR literature familiar to most land SAR practitioners just a few years ago and still present in many places (and minds), promote a philosophy of doing quick searches with thinly spread resources and then moving on if unsuccessful. They encourage extended searches that are just repetitions of initial response techniques over larger and larger areas that consume additional resources as fast as they become available. They discourage expending even some of these resources on more thorough methods or re-searching segments, even when such use is more likely to produce success than expansion. All of this is exacerbated by subjective POD estimates for rapid search techniques that are often unrealistically high. As recent detection experiments have demonstrated, even the best searcher is capable of walking past a very obvious clue or even a clearly visible but unresponsive subject at close range without making a detection. No sensor is infallible, including human searchers.

Another thing that search theory and many studies of human psychology tell us is that just getting resources into the field, even with poor choices on how those resources are distributed and even with no clear plan, will produce success often enough to convince us, in the absence of critical analysis, that we are doing all the right things. It is only through careful analysis of our experiences, especially our failures, and careful, disciplined, scientific study of our methods that we can find flaws and make improvements. This can be painful. However, sitting back and patting ourselves on the back over our successes will make us feel good, but it won't help us get any better.

Jack Frost

TEAM CORNER

Let's get the information about your team out to the rest of the SAR community! Every month we will feature at least two teams in this section, so let me know about YOU!!

Angel Fire Search and Rescue

Angel Fire Search and Rescue was founded in early October and incorporated in early November 1994 as a 501(c)(3) Corporation with seven "Charter Members", three of whom are still active. The team became operative on January 1, 1995, when the IRS provided the team with a "Letter of Determination" for its "Tax Exempt" Status to aid in fundraising. During that same year, the team was recognized by the SAR Review Board and joined the New Mexico Emergency Services Council.

Angel Fire Search and Rescue's main focus at the beginning was to assist people in need of help in the Urban Interface role of SAR. The Village of Angel Fire has 100-plus miles of road maintained by the Village, the Angel Fire Resort, and Colfax County. As the area grew in population and more out-of-area visitors were availing themselves of the amenities of the Moreno Valley and Angel Fire, it was determined there was a need for a fast-responding local SAR Team to handle SAR situations. The Village of Angel Fire, which covers 29 square miles, rests at the northeast end of the Moreno Valley, and the width incorporates two 10,000-foot mountains on each side of the valley divided by the Cieneguilla stream which flows year round. The airport is the highest in New Mexico at just above 8400 feet above sea level and the fifth highest in the nation, behind four in Colorado.

The AFSAR Team currently has 21 members who have a variety of SAR Skills and are either Active,

Trainee, Applicants, Honorary or Associate members. The team specialties include Communication Support, ATV (Search and Tactical Logistics), ELT Location, Ground Search (Foot, ATV, Snowmobile, 4X4, Snowshoe, Telemark Ski). The team currently has two New Mexico SAR Field Coordinators, seven Section Chiefs with various disciplines, ten Amateur Radio Operators, and two medical personnel.

The AFSAR Team and its members have responded to a variety of SAR Missions in their primary area in the past ten years ... from missions on the Philmont Scout Ranch property to missions in the areas of Red River, Taos, Questa, Raton, Valle Vidal, Carson National Forest, Cimarron Canyon State Park, and in most areas of Northeastern New Mexico including the many private ranches and state property in the Northern New Mexico area. In addition, the team has worked SAR Missions in Districts 7, 1, and 5. The team has assisted in searching for and rescuing lost and/or injured hunters, fishermen, hikers, climbers, horseback riders, skiers, snowmobilers, pinõn pickers, mushroom gatherers, dirt and mountain bikers, ATVers, motorists, and aircraft of all descriptions. Team members have participated during the Cimarron tornado, the Hondo Fire in the Questa/Red River area, the Zia and Osha Fires in the Angel Fire area, the Sierra Grande Fire in the Los Alamos Area, and the Viveash Fire in the Pecos area in various capacities, most notably citizen evacuations.

The team trains together once a month on its various specialties and tries to involve other SAR Teams in the area in our training opportunities. Team members are encouraged to attend all state-sponsored training opportunities and take advantage of the fine training at the Emergency Services Council Annual Emergency Preparedness Exercise (E.S.C.A.P.E.) held in various locations throughout the state. Team business meetings are held once a quarter, along with periodic Board meetings as the need arises.

The Angel Fire Search and Rescue Team is currently deploying a late-model Ford F-350, four-wheel-drive vehicle in the Command and Communications role to support SAR efforts in the Angel Fire area and throughout the state. It is currently equipped with two dual-band VHF/UHF Amateur Radios, VHF and UHF Commercial Radios with Public Safety Frequencies, Air-to-Ground VHF/AM Radio, 3-watt digital/analog cell phone, along with other communications gear to provide interoperability communication needs for SAR Missions or public safety "Mutual Aid" incidents to which it is requested to deploy.

The team participates in many non-SAR community activities such as communications support for the Taos Marathon, the Century 100 Bicycle Race around the Enchanted Circle, the World Cup International Mountain Bike races, and the Memorial Day Event in Red River. Team members also help with the Music from Angel Fire Benefit Auction which provides funds for classroom education, and the team also has an 'Adopt-a-Mile' for litter clean-up along the Palo Flechado Pass.

For any information or questions on Angel Fire Search and Rescue, please contact the President of the team at afmtns@newmex.com for a prompt reply.

Organ Mountain Technical Rescue Squad

Organ Mountain Technical Rescue Squad (OMTRS) is a 501 C 3 corporation founded in 1999 in response to a demonstrated need for trained technical rescue technicians in Southern New Mexico. We have 25+ members who train twice a month "on rock" to keep our skills honed. Our members are quite a diverse group; Professors, business owners, students, contractors and engineers. We have two CMC Rescue Technicians I and II, one Rescue for Rigging trained tech, as well as numerous climbers and cavers. Medically, we have one RN, 4 Wilderness First Responders, 2 EMT basics and a Pharmacist who is advanced cardiac life support certified.

Technical rescue is very gear intensive and, boy, do we have gear. Last year we got a team trailer to haul all the goodies and this certainly allows us to respond more expeditiously! We have 6 hand held radios, 2 portables and one simplex repeater.

We specialize in low, medium and high technical rescue, but do respond and support ground SAR. Most of the missions that we've responded to in the last several years have been "ground pounds", but this year we've had 3 technical missions that we've responded to. Many of our members cross train with Dona Ana County Search and Rescue (DAC SAR), and several of their members cross train with OMTRS. We've sponsored the helicopter training done in the southern part of the state for the last 3 years.

When we're not training, we get together for hikes and climbs in the area. Many of our members are avid mountaineers, cavers and climbers.

If you'd like to know more about us, check out our website: www.omtrs.org
(And you'll get to see some really cool pictures!)

FUNDRAISING

Looking for good fundraising ideas? Be sure to check the next issue of the Newsletter for a great article written by Jason Flesher, NMESC Board Member and Captain of Sacred Mountain SAR. Jason has quite a reputation for both fundraising and grant writing, having recently secured grants for Sacred Mountain SAR totaling **over \$170,000 a year for the next 3 years!!** I don't know about you, but our team could find a really good use for that!!!

2005-06 NMESC Board

Dave Kenneke, Chair
Steve Crawford, Vice-Chair
Paul McClendon, Membership Chair and ESCAPE Chair
Sue Williams, Secretary, PIO Officer
Elane Flower, Treasurer
Eddie Baldwin
Matthew Corp, Training Co-Chair
Jason Flesher, Training Co-Chair
Jerry Englehart
David Simmonson
Gail Zimmerman

Any member can be contacted by email through the NMESC website.