

# MERIDIAN

April 2011



The Quarterly Publication of the Mountain Rescue Association

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## K9 Teams in Mountain Rescue



**-Regional News**

**-2011 Spring Conference**

**-Cost Recovery for Mtn Rescue in Europe**



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April 2011

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Cover Photo: Suzanne Elschult and Bosse practice rappelling.

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## K9 Teams on Mountain Rescue Missions: Should I Stay or Should I Go?

By Suzanne Elshult and Andrew Toyota, Everett Mountain Rescue

The following article focuses on deployment of airscent K9 teams in the backcountry. Aiscent K9s work off leash and are typically not scent-discriminating. The airscent dog searches for any human scent and will alert the handler to any person it finds in the wilderness. Because human encounters are generally rare in the wilderness, this strategy is effective. Trained search dogs can range long distances away from the handler when in scent. Once the dog locates a person, it returns to perform a trained indication such as jumping on the handler or tugging on a toy attached to the handler's pack. This behavior lets the handler know that the dog has found someone. After the dog indicates to the handler, the dog then leads the search team back to the found person. When an airscent team works well together, it is as if the handler and K9 partner are engaging in an intricate dance. It is, however, the handler's job to orchestrate the dance. This means developing an effective search strategy by considering the capabilities of the K9 team against the volatile weather and challenging terrain often involved in mountain rescue missions. Some considerations:

### ***What type of terrain and weather conditions do K9's work well in on search and rescue missions in the mountains?***

Back to the dance! In the mountains and the backcountry in general, the dance means a handler has to understand how scent moves in various terrain and changing weather. Wind and scent behave differently in gullies, streams, cliff bands, boulder fields, high grass, alpine terrain, lakes, dense forests, snow and avalanche debris to name a few terrain types. In addition, good handlers are knowledgeable about their K9s' effectiveness and limitations working various terrain types under different conditions. This means knowing how to work a K9 in extreme heat versus cold, powder versus hard snow, humid versus dry, downpour versus drizzle or 2 versus 20 mph winds.

Generally speaking, a K9 team will be most effective in open terrain under both moderate temperature and wind conditions. A complete lack of wind can be just as bad as gusty weather. An experienced handler will look at all the dimensions and develop a search strategy adapted for conditions unique to that particular day. For example, a hot day with little air movement would dictate a much more detailed search with narrow gridding. Sunny, hot weather makes it more difficult for the dog to smell (Note: a dog's sense of smell is estimated to be more than 250,000 times as sensitive to humans). The heat decreases a dog's working duration as the dog spends more energy regulating its body temperature than working scent with its nose. If searching during the day, an experienced handler typically searches along ridges as air (and thus scent) tends to rise. Likewise, handlers may search in the valleys in the evening/night when scent tends to flow downhill.

If handlers have the opportunity to influence how they get deployed with their K9s on a backcountry mission, they would probably



*Andy and Tundra, an Akita, both prepared for the snowy day.*

### ***October 2010***

*It's a blistery fall day when the pager starts beeping. Winter has unexpectedly arrived with over two feet of snow in the mountains. The subject has been missing for several days in freezing temperatures and whiteout conditions. As we drive up to the trailhead, Tundra, my K9, whines in anticipation. Tundra is an Akita built for the mountains with thick fur that automatically sheds snow. Other rescue teams are already in the field, Tundra isn't the only one anxious to get going. My teammates are on snowshoes so I decide to do the same, leaving my skis behind. At first, with just a foot of snow, Tundra searches freely through the wooded forest. As we gain elevation, our group starts to break trail in the new, heavy snow. It's then that I notice that Tundra is no longer ranging ahead but wisely, walking behind us in the snowshoe track. He's no dummy but this is a critical mistake on my part as it severely limits our search range. If I had brought my skis and climbing skins, Tundra could search the snow covered valley more effectively. Is our subject lying right next to the trail, covered in snow? I worry and urge Tundra ahead. He tries to but after half an hour, falls behind us again. A rescue helicopter suddenly flies in from above and soon after, we hear that they have spotted the subject. She is alive and being airlifted to safety. A cheer rises among the team and I feel a wave of relief. It's an invaluable lesson learned - the gear I bring into the mountains can impact my dog's ability to work.*

***Andy***

prefer working in an alpine meadow with trails rather than in a talus field or rocky cliffs where scent problems will be much more complex. Ideally, the temperature would not be extreme, mid-50s with a gentle breeze. In reality handlers never quite know what they will encounter when they get out there, so it is important that handlers are honest with themselves about what kind of terrain they and their K9s are equipped and trained for. If a handler does not know how to rappel with his or her dog or cannot identify potential avalanche terrain, *a K9 team may become more of a liability than an asset*. Because a K9 does not have an innate understanding of these hazards, it is up to the handler to mitigate these risks through either training or avoidance.

Even in the best of circumstances, K9 teams operate under stress. Because that stress is heightened in the mountains, an even greater degree of communication and trust between the dog and handler may be required. If the handler says “stop” because the dog is approaching an overhanging cornice, the search dog must comply immediately. And if using a harness and rope is the safest way to circumvent the steep overhang then the dog must trust its handler to get them both down to lower ground.

There are many environments in the backcountry and in mountains where K9 teams can be extremely useful, provided both the handler and dog have the proper training and experience. On the other hand, even with the proper training, there are certain types of environments that are not appropriate for search dogs. If the team encounters steep rock faces where technical climbing gear is required, a dog team will most likely not be able to ascend. Another potentially unworkable environment is on a glacier when the risk of partially covered crevasses is high. Although dogs are lighter than their human counterparts, our ability to disperse our weight using skis or snowshoes coupled with ropes and climbing harnesses provides a safety measure that dogs do not have.

***What are some of the considerations when making “Go/No Go?” decisions for K9 teams in potentially hazardous mountain terrain?***

It is important that K9 handlers evaluate weather, terrain and potential hazards, and objectively consider their experience before deploying into the backcountry. An operations leader charged with deploying K9 teams needs to know what questions to ask. Failure to do so might result in K9 teams who become a liability rather than an asset. From a planning perspective, several questions can help determine a dog team’s effectiveness for mountain rescue:

- *What type of potential hazards exist and does the team have the appropriate training?* For example, will the team encounter avalanche terrain and if so, does the handler have the appropriate training such as AIARE Level 2 and substantial backcountry skiing or snow shoeing experience? Additionally, is the dog experienced with traveling in hazards such as steep snow slopes, rock moats or icy ridges?
- *What is the weather forecast?* If the forecast worsens, mountainous terrain that is normally relatively benign can afford substantial risk to humans and K9s. An easily crossed rock slab with soft snow can become, in late evening, a slick sheet of hard ice.
- *Do both the dog and its handler have the conditioning and experience to safely reach their assigned area?* Typically, mountain missions do not occur right next to the trailhead so a



*Suzanne and Bosse enjoying a search.*

***May 2005***

*Slipping on the moss I fall backwards, landing hard with my rear firmly wedged between two logs. Getting up with my mission pack is an ordeal. I am glad no one is watching - except my K9 partner who seems somewhat amused by the sight. We are searching for two lost hikers in pouring rain. It is cold. Very cold and WET! This is the third logjam 100 feet wide that we have to cross. It's treacherous! Progress is slow. I can hear my follower and manage to get myself into a standing position – my self-respect somewhat intact. Our assignment is to hike up the backside of Mt Pilchuck - gaining 4000 feet of elevation on abandoned logging roads and then crossing several drainages and descending down Kelly Creek. The terrain is extremely rugged and steep. I worry about my dog. We have to help him up and down several cliff bands. He is still working relentlessly. I am thankful that we regularly spend time in the backcountry. My dog is used to drop-offs and maneuvering his way around steep obstacles. He has been hauled up climbing towers in a harness as a puppy and has rappelled with me. For him this is “normal.” I’m glad we are in good condition and that he is responding to my commands. Since I consider myself his “spiritual caretaker”, I silently wonder if I am in terrain that is too hazardous for a dog.*

***Suzanne***

team must hike many miles to reach its destination and then work for several hours. If air support is available, does the dog team have the training necessary for a helicopter hoist or low hover operation?

***What type of training and experiences are useful for K9 teams deployed on mountain rescue missions?***

Through comprehensive training, search dog teams can become quite effective in a variety of mountain environments.

- Advanced dog obedience requires your dog to follow your instructions quickly and explicitly, often from a great distance away. An “emergency stop” command may mean the difference between life and death in the mountains. What if another avalanche is coming down? What if your K9 might cause rocks to fall on you or your teammates? For snow travel, directional commands are critical. Dogs need to understand “left or right” to avoid cutting themselves on sharp ski edges, or “behind” for following exactly in your path in case of a rock moat, tree well or hidden crevasse.
- Agility training prepares your search dog for climbing over boulders, negotiating steep “no fall” zones and balancing along ridgelines.

***July 2006***

*I'm on a helicopter with Bosse, my K9 partner, to search for a lost hiker in the backcountry. In typical style, Bosse is as cool as a cucumber. The crew chief is amazed that Bosse is actually napping in the midst of the noise. We approach the lake for our exit. There is nowhere to land. We have to do a low hover exit. I count my blessings that Bosse is such a trusting dog. The crew chief gives me the sign for exiting. I'm on the ground and can see my dog above me. He has to jump. Will he trust me? I call his name – more like screaming through all the noise, and out he comes, landing in my arms, both of us sinking to the ground. I have him firmly on the leash. We crouch and run through the prop wash and noise. We're ready to search!*

***Suzanne***



*Bosse is ready for takeoff.*

- Conditioning training needs to be rigorous and consistent so that you and your K9 partner have the cardio capacity to hike five or more miles into an assigned area and still have enough energy to search effectively. Whether you run several miles or hike daily, it's important to have a consistent training schedule so that your K9 has the necessary energy to process complex scents while negotiating difficult terrain.
- Specialty training includes learning how to ascend or descend with your K9 partner under different scenarios. To lower from a steep cliff, you need to know how to set up a rappel for you and your K9. If a helicopter is available for transportation, you need to know how to safely approach the aircraft, how to secure yourself and K9 in the helicopter and the various methods of exiting (e.g. hoist cable, low hover exit).

K9 teams must know how to “dance together” on mountain rescue missions. They need a unique partnership built on mutual trust developed through spending time together in the backcountry as a team. They need to be in excellent condition and understand the potential consequences of not having the utmost respect for the many potential hazards, unpredictable weather and unforgiving terrain encountered in the wilderness. Finally, they must have the extensive set of complex skills required in such demanding environments.



*Suzanne Elshult with Bosse.*



*Andrew Toyota with Tundra.*

*Suzanne Elshult and Andrew Toyota are members of Everett Mountain Rescue. Both Suzanne and Andy also are Snohomish County Volunteer Search and Rescue (SCVSAR) K9 members. Suzanne started K9 search and rescue training in 2001 and has been certified in K9 Airscent with her labrador retriever Bosse since 2004. Since April of last year, she has begun training her second airscent dog. Suzanne is the SCVSAR airscent K9 coordinator and serves as an Everett Mountain Rescue board member. Andy is working Tundra, his first search and rescue dog. Since 2001, he has been a climbing and backcountry ski instructor for the Washington Alpine Club. He also serves as a rescue technician for the SCVSAR Helicopter Team. Andy and Suzanne, along with their K9 partners, spend much of their free time exploring the spectacular Pacific Northwest wilderness, all year around. If you would like to contact Suzanne or Andy e-mail them at [selshult@hrnow.net](mailto:selshult@hrnow.net) or [aftoyota@comcast.net](mailto:aftoyota@comcast.net).*

## Regional News



*Photo by Chris Ruch.*

## Appalachian Regional Training

*By Chris Ruch, Appalachian Region chair*

The accredited and ex-officio teams of the Appalachian Region continued the tradition of gathering for winter training by holding a joint drill on March 5th in the Adirondack Park, NY. The New York State Forest Rangers hosted members from Stowe Mountain Rescue, New Jersey Search and Rescue, and Allegheny Mountain Rescue Group in a full day training session at Chapel Pond.

The participants were split into two groups, with a mix of members from each of the four teams, and worked through a number of training scenarios including avalanche awareness, steep angle litter evacuation, and ice climbing. The group then came together for a mid-face litter scoop rescue scenario. Most of the teams brought several newer members to this training, allowing them to both see techniques from other teams and be introduced to new skills and team roles.

A highlight of this training was being able to work with a RECCO system. The NY State Forest Rangers and Stowe Mountain Rescue each recently received a RECCO system, becoming the first rescue organizations in the East to have this tool. This training provided many of the members the opportunity to use the system out in the snow for the first time.

While it was a little rainier than expected for a winter training, it was a fun and informative day for all!

## WMRA Regional Update

*By Kevin Riddell (Everett Mountain Rescue) and Marty Lentsch (Central Washington Mountain Rescue Council)*

The region has had a busy winter with rescues, body recoveries, snowmobiler difficulties, evidence searches, and mental health patients. Weekends typically kept units busy with the winter recreationalists getting into trouble. There has been an abundance of snow in March that increased missions for some teams.

The WMRA February meeting began with a technical rock scenario demonstration led by Tacoma Mountain Rescue and Olympic Mountain Rescue for the purpose of visualizing a testing situation. The teams sent representatives who watched and then summarized the demonstration for their teams. Also at the February meeting Stefan Lofgren from Mount Rainier National Park presented a collaborative project with the climbing rangers. Washington Mountain Rescue teams will be allowed on routes on the mountain for training purposes and will have the opportunity to assist in missions should they occur while they are on the mountain.

In 2010, WMRA voted as a whole to bring our re-accreditation methods across the state in line with those adopted at the June MRA Business Meeting in Alaska. Jon Schwegler flew to Colorado in order to witness and learn from the experiences of other state reaccreditation practices as well as our experiences assessing the newest unit in our region, INSAR (Inland Northwest SAR, based in Spokane).

After much discussion, WMRA is moving forward with a model in which units from across Washington will converge on Snoqualmie Pass in September 2011, to be assessed in SAR with an emphasis on rock rigging. In 2012, the emphasis will be on snow situations, followed by wilderness search in 2013.

As hoped, this has caused a surge in training efforts aided by an exciting, multi-county rescue of a base jumper from Mount Baring last summer. In Everett, Nathand Greenland has masterminded several memorable rigging mock rescue sessions including the rescue of a stuffed animal locked in handcuffs to a midface bolt. A re-direction of the rope system was needed in order to secure the key, under time constraints of course. We hope he'll keep up the fantastic training opportunities.

Unlike some other regions in the nation, Everett Mountain Rescue Unit operates as an independent unit within a broader county SAR structure. They provide mountain rescue expertise to supplement other SAR units within Snohomish County. Other specialty units include Operations Support (radios, documentation, IC), Helicopter, Ground Searchers, 4x4 and Swiftwater. EMRU is therefore ramping up its own operational organization to act as a stand-alone unit for purposes of reaccreditation.



*Former chairman Scott Welton rescues a stuffed animal during rigging training. Photo by Nathan Greenland.*

## MRA California Region Teams Re-Accredit Technical Rope Rescue

By John Chang

On March 5, 2011, the California Region of the Mountain Rescue Association held a technical rock rescue re-accreditation event at the Alabama Hills Recreation Area at the foothills of Mount Whitney. Nineteen MRA teams from throughout California were concurrently tested throughout the day with additional associate member teams and visitors observing the event. The event was hosted by Ventura County Sheriff's Office Search and Rescue with support from Inyo County Sheriff Posse, China Lake Mountain Rescue Group, and the U.S. Department of the Interior Bureau of Land Management.

The theme of the event was "Honoring Those That Came Before Us," with a specific tribute to the recent passing of Phil Ulmholtz (past MRA president, Bay Area Mountain Rescue Unit with 59 years of service), Dick Sale (Sierra Madre Search and Rescue with 35 years of service), John Baker (former Ventura County Search and Rescue with nine years of service), and Alyssa Skye (former Contra Costa County Search and Rescue with three years of service).

The event took more than a year of planning and countless volunteer hours by the host team Ventura County Sheriff Office's SAR. Ventura's Andy Puhek took on an instrumental role as the liaison between the host team planning and the point of contact for the region. A highlight event held annually for the region's teams, the re-accreditation directs each team's attention to one of three MRA disciplines on a three year cycle.

Alabama Hills is a favorite backdrop location for 150 film and TV productions including old classics such as the Lone Ranger, Gunga Din and How the West Was Won as well as recent favorites like Star Trek Generations, Iron Man, and Transformers: Revenge of the Fallen. It's a favorite destination for the region because of rugged technical terrain full of access challenges and a full spectrum of non-obvious rescue problems to push any team's limits.

Alabama Hills is a large boulder (high rise building sized boulders) field that presents a fair extrication challenge representative of a Sierra Nevada Backcountry area. The various teams are assigned to divisions at registration based on their starting points within the area. The ingress was planned to include an approximate quarter mile hike, and the technical approach was Class III with some possible Class IV climbing. The actual rescue of the subjects required high angle techniques. Some of the rock is really solid, while some has decomposed significantly. The test team leaving the starting point was expected to move the gear they would need into the field. The mock patient was a live person with a debilitating injury that was not life-threatening to begin with so the attention of the evaluators could focus primarily on the effectiveness and efficiency of the team's technical system capabilities. The goal was to extricate, treat and move the subject to a predefined termination point.

Early bird members came to enjoy the location, from exploration of the local landscape to bouldering, rock climbing, and a winter summit bid of Mount Whitney. The BLM offered the Tuttle Creek campground as base camp and staging area for members opting to enjoy the open sky in contrast to the accommodations available in the town of Lone Pine. The majority of the teams arrived throughout Friday for check-in.

Friday was also the time for final preparation in setting up the technical problems. Teams of Ventura members and other helpers went into the field to precisely identify locations to stage the mock patients.



The re-accreditation had a tremendous turnout with nearly 300 participants from various organizations. Photo by Paul Raab.

The main event on Saturday began at 6:30 am with breakfast, but for a number of Ventura members who left earlier for one of the four division locations, their day began way before dawn. Briefings were given to the mock patients by region chair John Chang from the San Mateo County Sheriff Office's Bay Area Mountain Rescue Unit and to the evaluators by the region vice chair Dan Land of the Los Angeles County Sheriff Office's Montrose Search and Rescue. As standard practice for re-accreditation, each team from the region provided a minimum of six members to be evaluated, two evaluators each assigned to a different team to proctor the test, and one mock patient.

The formal kick-off was presented by region chair John Chang with special thanks to Ventura County Sheriff Office's Frank Dikken, Frank Underlin, Kevin Donoghue, and Andy Puhke; BLM's Jim Jennings, Becky Hutton, and Dave Kirk; and Inyo County Sheriff Office's Sheriff Bill Lutze, and Tim Winkler.

Test teams and their evaluators self-transported to the assigned locations for their respective test problems, using a wide range of methods. Upon completion of the test, the teams were debriefed and results presented immediately by the evaluators according to a standardized score sheet.

All teams from the region safely and successfully passed the re-accreditation tests. This was one of the largest re-accreditation events ever held, with nearly 300 participants, and was filled with technically challenging problems and rewarding exchanges. The region greatly appreciates the combined efforts of the many individuals and agencies that help plan and execute the event as well as all the dedicated participants, subjects, and evaluators. The results of the event will be reviewed and discussed at the next region meeting in May 2011.

The official photographer for the re-accreditation event was Antonio Arizo from Ventura. Among other duties, Antonio also collected photos from others throughout the event and has highlighted samples on the Flickr page at <http://www.flickr.com/photos/cmra/>.

*John Chang*

*-California Region Mountain Rescue Association, Chairman  
-Bay Area Mountain Rescue Unit, San Mateo County Sheriff's Office, Unit Leader*

*-Mountain Rescue Association, Secretary/Treasurer*

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**The total emergency response community in the United States is immense: federal, state, and local fire and EMS, law enforcement and emergency management agencies number in the thousands and trained individual responders number in the hundreds of thousands.**

NASAR believes that a comprehensive emergency response conference is needed to serve this community. In accomplishing this goal, NASAR has developed a training forum which, we believe, cuts across the entire spectrum of contemporary emergency response activity, is innovative in its approach and will be attractive to a broad audience for its educational value.

Join your Search and Rescue comrades at the 2011 National Search and Rescue Conference in Sparks, NV! The conference site, John Ascuaga's Nugget Hotel and Casino, is located in the majestic Sierra Nevada Mountains and the breathtaking Reno-Sparks-Lake Tahoe area is an incredible vacation or business destination. From the arts and the cultural splendor, to gaming and fine dining, Reno and Sparks are rich in tradition and fresh entertainment.

Make sure to join your SAR comrades at the 2011 National Search and Rescue Conference for a Search and Rescue educational experience like no other!

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## 2011 Spring Conference: Eagle County, Colorado

### Logistics

Pre-conference activities are on Wednesday and Thursday, June 15<sup>th</sup> and 16<sup>th</sup>. The regular conference runs Friday through Sunday, June 17<sup>th</sup> – 19<sup>th</sup>, with field scenarios on Friday and Saturday, a banquet on Saturday night and the Spring Business Meeting on Sunday.

The location is Eagle, Colorado, and the host hotel is the Eagle Lodge and Suites at 200 Loren Lane: [www.eaglelodgcolorado.com](http://www.eaglelodgcolorado.com). A conference room rate of \$79.00 is arranged, and there are suites available that sleep eight to ten people for \$149.00. There is also tent and RV camping available at Central Command Eagle County Fairgrounds.

The closest airport is Eagle (EGE), and Denver International Airport (DIA) is about 120 miles away. There are mountain shuttles and limo services available to get from DIA up to Eagle if you don't wish to rent a car.

### Conference rates

- Active MRA member, \$149 before May 15th and \$199 after May 15th
- Non-active MRA member \$199 before May 15th and \$229 after May 15th
- Unified Command Conference (pre-conference), \$50

Teams who are close enough to drive to the conference are asked to bring extra team gear to share for the field exercises.

### Pre-conference activities

The area has many activities if you decide to bring your spouse or family along: hiking, rock climbing, mountain biking, ATV and 4x4 rentals, shopping, recreation centers, and the best rafting of the

year is available at this time.

The **Unified Command Workshop** will be held on June 15<sup>th</sup> and 16<sup>th</sup> at the Eagle Lodge and Suites, with Dan Hourihan from Alaska Mountain Rescue instructing. This class will focus on the use of the Incident Command System (ICS) during rapidly expanding incidents in the initial operation period. It will provide a thorough review of the Unified Command concept as well as Area Command during a multi-agency/multi-incident event. Emphasis will be placed on resource management and allocation and the staffing of Incident Management Team (IMT) positions based upon span of control and incident considerations. Registration is limited to 40 people, so register soon if you're interested.

There will also be pre-conference **Mount of the Holy Cross** climbs for both intermediate and expert climbers. Contact Steve Zuckerman at [zman@vail.net](mailto:zman@vail.net) for more information and to sign up.

### Regular conference activities

**Friday:** Eagle County Fair Grounds, 100 Fairgrounds Road, Eagle, CO

Report for field briefing at 0630. Six scenarios are planned from 0700 to 1900, and you can expect to participate in two of them over the course of the day. A steering task force of experienced MRA personnel will be creating the scenarios, which include rock rescue, swiftwater, cave, hang glider, slot wall canyon and more.

Dinner is on your own on Friday night, but hospitality will be available during the evening with refreshments and vendor displays.

**Saturday:** Field ops briefing at 0600, same location. Six more scenarios are planned to run from 0700 to 1400.

At 1800, the annual awards dinner begins. Your conference registration fee includes a buffet dinner and two drink tickets for the cash bar, plus a bull ride! There will be a silent auction.

**Sunday:** The Spring Business Meeting will be held at the hotel.

- 0630 Breakfast at hotel
- 0800 Meeting room opens
- 0830 Call for proxies
- 0900 Call to order
- 1400 Estimated adjournment

We are doing this on a very limited budget and we request that local teams help us with trucks, tech gear, medical gear, etc.

For more information and to register: [www.mra.org/training/spring-conference](http://www.mra.org/training/spring-conference)

## Federal Coordination Report

By Mike Vorachek

Although there is not a lot of visible activity on the surface of our SAR and other NIMS Working Groups (WGs), there is quite a bit going on in the background. There have been some changes within the FEMA NIMS National Integration Center, including a new individual managing the WGs. The WG leaders, including Tim Kovacs, the SAR WG Chairman, have had conversations with FEMA's Deputy Administrator, Mr. Tim Manning. Mr. Manning is a long time SAR guy with experience on MRA teams. The primary effort is being directed at obtaining a standard look and feel in all the WG Resource Type and Credentialing documents. We still do not have a date as to when we can expect them to come out for public comment, which we anticipate as the next step.

FEMA had released the Emergency Responder Field Operations Guide (ER FOG) for public comment. The comment period ended on March 18<sup>th</sup>, but the hope is that FEMA can address the comments and get the final version released yet this year.

Finally, I have become involved in a Full-Scale Exercise (FSE) that is being developed by Idaho's Bureau of Homeland Security. From our first large Exercise Design Team meeting to the conducting of the three-day FSE will span 18 months. Having a representative of your team involved in the planning of these types of exercises can go a long way to ensuring that your team can design in some objectives to test your capability and allow you to play (training) with others in a large-scale disaster scenario. Contact your local or state emergency management folks to see if there is something on the horizon that you can become involved in.

Sun Tzu is quoted as saying, "the more you train in peace, the less you bleed in war." When you think about the massive SAR effort following the earthquake and tsunami in Japan, and the ongoing potential for a major event somewhere in the US, it is only appropriate that we all prepare for the possibility. Stay safe!

## Search and Rescue National Memorial & Museum Update

By Marty Lentsch



At this time the House of Representatives in Congress has a ban on commemorative resolutions that create obstacles in the plan to pass a Joint Resolution this year. Last year in May the US Senate passed Resolution 526 to begin a National Search and Rescue Week for the first time in the nation. The leadership for the Resolution came from Senator Maria Cantwell of Washington. Resolution 526 is the foundation the Joint Resolution is built on. The Joint Resolution with Presidential signature places National Search and Rescue Week into law. The design is that National Search and Rescue Week follow National Law Enforcement Week annually. An inquiry is out to Speaker John Boehner's office as to when the ban could be lifted. The goal was to have the Joint Resolution passed in May, 2011.

Although there is a hold up in legislation, there is going to be a national release about the proposal to build a Search and Rescue Memorial and Museum. There is a logo design that can be used along with an executive summary of the proposal. Work is going on for the startup including the IRS 1023 to establish a 501c3. What is needed is some startup financing to pay for the 501c3, business fees, and \$11,000 to set up a highly functional website with donation capability. If you are interested in donating funds for the startup phase, please contact Marty Lentsch at [mountainmarty@live.com](mailto:mountainmarty@live.com) or 509-949-0846.

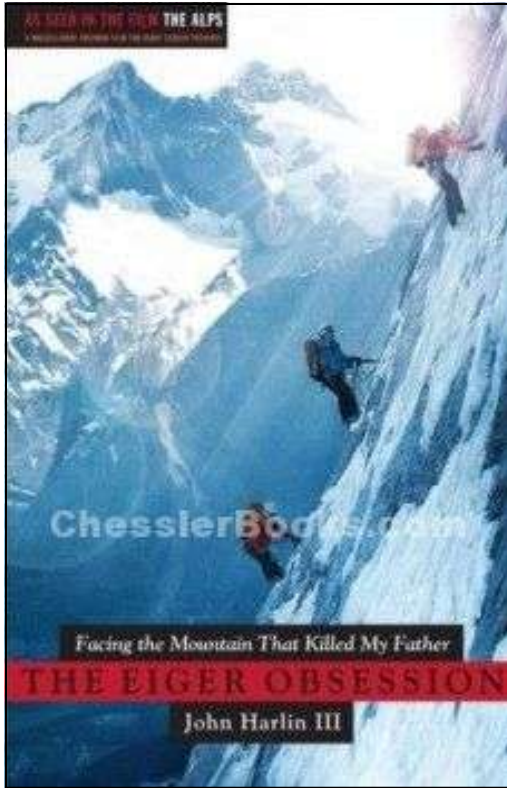
## The New MRA Website is up!



### Did you know....

that Meridian now sells advertising space? Meridian is distributed via email to about 2,000 MRA members on a quarterly basis, as well as accessible to the general public on our website. If you know any SAR-related businesses who might be interested in advertising, please refer them to our editor at [adebattiste@aol.com](mailto:adebattiste@aol.com) for rates and more information.

Power Shift Online Services ([www.pshift.com](http://www.pshift.com)) did the new design, with MRA president Neil Van Dyke managing the process, and Bryan Enberg assisted with some of the social media interfaces. Check it out at [www.mra.org](http://www.mra.org).



## Book Review:

# The Eiger Obsession: Facing the Mountain That Killed My Father

By Jules Harrell

Author John Harlin III, editor of the *Alpine Journal*, writes poignantly about what his life was like without “Dad,” who perished on the Eiger when John was only nine years old. Included in this fascinating book are many photos of both John Harlin Sr. and John the younger, along with their children, wives and families, mountains and ski runs. As the book progresses it becomes obvious that the story goes deeper than mountain climbing, although page-turning cliff hangers abound. This book is about the consequences and familial fallout of feeding the internal climbing rat that we all know and love.

John Harlin II promoted an image of himself that reviewers in his time disagreed with. A big, strong man who looked like a movie star, he created fantasies to seem even larger than life. These fantasies included being famous for climbing the highest mountains in the world, including the Eiger. Yet he was constantly repelled. After attempting the Eiger 12 times, he was determined to put this mountain on his resume. Meanwhile, his son John III enjoyed an adventure life with Mom. This life was spent almost entirely without the company of his father, who was always busy chasing his dream. When he was home, John II was less of a father and more of a spoiled child waiting petulantly for his next ride at the amusement park.

It is amazing to read a book by a man so enamored of a parent, yet at the same time so brutally honest about that parent’s shortcomings. Sadly, the son loved his father very much. John II’s untimely death on the Eiger fueled John III’s desire to follow in his father’s footsteps. While great men climb mountains, what happens to the wife who stays home fending for the family? His mother, Marilyn Miler, a biologist, was the driving force in John III’s life. She spent many days exposing her two children to the outdoors, including teaching John how to ski at an early age.

“I never realized that Dad wasn’t interested in my learning curve; I simply assumed he wasn’t around, as usual,” John says. The family lived in such places as Chamonix, Genoble, and Leysin, Switzerland, where dangers were everywhere for children and so were great adventures. John II often put his wife in situations we as rescuers would consider completely out of line, including skiing on trails that were closed due to avalanche dangers. During a ski descent from La Berneuse, Marilyn may have regretted her absolute trust in her husband’s “mountain judgment,” because they nearly perished in an avalanche. While he yodeled, she could only think of the children. “All John wanted of a wife,” she says, “... was that she be a Balmain model, an Eiger climber and a perfect housekeeper, have shining hair, get a Ph.D., be a devoted mother (with invisible children), plus a reader, mixer, camp director, secretary-treasurer...”

On the 12th attempt of the Eiger, John III fell 4,000 feet to his demise, looking much like an empty red sack as he freefell down to the rocks below. The family was heartbroken, yet they trudged forward with their lives. John’s son eventually married and had a child, vowing to treat his family differently than he had been treated. In August of 1999, 43 years after the death of his father, John faced the Eiger. With palpable, gut wrenching fear, John forged ahead with his plan. He kissed his child goodbye, feeling like he would not see her again.

Days later, at the place of his father’s death, John reflects, “What did you think about, Dad? What was it like to feel the rope go slack and see this icefield coming up on you fast? Were you the hero you—and we—thought you’d be?”

This brilliant book is about a father’s ambition and a family who loved him. It is about a son who spent his whole life trying to reconcile who he was, where he came from, and what he would become. The true hero of this story is really John’s mother Marilyn. She raised her children to become great adults, and taught them the ways of the mountains.



### About the reviewer:

Jules Harrell is a 50 year old ski patroller for both Jiminy Peak and Magic Mountain, a search and rescue volunteer, an animal tracker, and a former EMT/firefighter with the Bolinas Fire Department in Marin County, California. She has written three books: *A Woman's Guide to Bikes and Biking* (Bicycle Books, 1999), *A Woman's Bike Book* (Owl Publications, 2010), and *Tripping with Gabrielle* (to be released by Owl Publications, 2010). Please see her blog at [www.photonicgirl.blogspot.com](http://www.photonicgirl.blogspot.com) and contact her at [photonicgirl@gmail.com](mailto:photonicgirl@gmail.com) for more about life on the Iced Coast.

## Cost Recovery for Mountain Rescue in Europe

By Rick Lorenz

I was asked to provide some information on mountain rescue in Europe, and the liability of the subject for costs associated with the rescue. Here is some preliminary information.

In France nearly all mountain rescue is conducted by full time professionals, the PGHM (High Mountain Police), special units of the CRS, Civil Security and the Fire Brigade. On the national level France has a policy to avoid billing tourists for rescue, although the local mayor has ultimate responsibility, just as the sheriff does in many US counties. In climbing areas that attract a large number of visitors, such as Mount Blanc, mountain rescue is expressly excluded from the competence of the local mayor and the costs are borne by the French state. But in more remote areas the local mayor will bill for rescue, and it could be \$20,000 or more if a helicopter is involved.

In Austria mountain rescue is conducted by volunteers, the Austria Mountain Rescue Service (AMRS), but by Austrian law they must charge for rescues to help offset the cost. The AMRS encourages people to take out their world-wide insurance for an annual subscription of €22 (about \$30). Without insurance, a rescue could cost a casualty or their family ~€300 per hour (without heli-evac) or ~€600 per hour with heli-evac. Here is a good article in English that describes the insurance policy available through AMRS. <http://www.bergrettung.at/ENGLISH.484.0.html>

In Switzerland, the costs of rescues are the responsibility of the person(s) being rescued. "The costs of the rescue are determined by law: The person who is rescued has to pay all the costs of his rescue determined as necessary for the situation. When a person fails to report returning from a trip and can't be located by telephone or other means, that person is responsible for the costs of the search even when it was not necessary or unsuccessful. A third party who reports a person as being missing or in trouble is not responsible for any rescue costs." You can get rescue insurance though REGA for \$30 per year. That's about the cheapest option if you plan on climbing there. [www.rega.ch](http://www.rega.ch) (Thanks to Art Farash of Seattle Mountain Rescue who translated this from the website Alpine Rettung Schweiz.)

In Germany the system is very similar to Switzerland; without insurance a climber or hiker can incur substantial cost for rescue. Mountain rescue in Germany is provided by volunteers through the mountain rescue service Bergwacht. They recommend that everyone acquire insurance through the German Alpine Club (DAV). Here is a link in English that provides more information on cost and policy limits: <http://www.toytowngermany.com/lofi/index.php/t575.html>.

Members of the American Alpine Club get a worldwide insurance policy, but the limit is only \$5,000 according to the AAC website. A serious American climber who travels to Europe might purchase

in advance a plan that includes rescue, medical treatment and evacuation to the US. This is the company used by American Alpine Club: <https://www.globalrescue.com/>. Most insurance policies put various exclusions on what they consider to be high risk activities. In 2006 the families of two British snowboarders killed in France were billed more than \$15,000 by the local government and the insurance company reportedly denied payment. See <http://pistehors.com/backcountry/wiki/Articles/Search-And-Rescue-Costs>.

There are significant cultural differences between the US and Europe, and this plays out in terms of the need for insurance and requirement for cost recovery. Nearly all Europeans have government health insurance and see no problem in voluntarily paying a small additional fee that covers mountain rescue in their own country. They have little sympathy for the increasing number of foreigners that need to be rescued from peaks like the Matterhorn or Zugspitz, and cost recovery is often mandated in national legal systems.

If you are travelling to the mountains overseas it makes sense to acquire insurance, but be aware of possible exclusions and limitations in the fine print. If you are overseas and want coverage just for rescue (not medical or medevac to the US), the Austrian Mountain Rescue policy seems to make sense. It can be purchased online; see the link above.

If anyone has more information on cost recovery in other countries please send it to me. I am compiling a list and hope to write a more detailed article on the subject.

Rick Lorenz, [fmlorenz1@aol.com](mailto:fmlorenz1@aol.com)

Vice Chair, Olympic Mountain Rescue, Washington

(Previously printed in Call Out Magazine, Mountain Rescue Ireland)



They (Europeans) have little sympathy for the increasing number of foreigners that need to be rescued from peaks like the Matterhorn (seen above) or Zugspitz, and cost recovery is often mandated in national legal systems. Photo credit unknown.

# Electromagnetic Energy (EME) Emission Standards and SAR Two-Way Radio Operations

By William Laxson, MRA Communications Committee Chair

The two-way radio and cell phone transmitters used by SAR responders emit non-ionizing electromagnetic energy in a variety of frequency bands.

Non-ionizing radiation generates thermal heating effects in body tissues if the field strengths are strong enough (somewhat greater than 10 mw/sq-cm, averaged over a six minute period). Your kitchen micro-wave oven is just a small 2.54 GHz 1,000 watt transmitter with a shielded door to keep your eyeballs from cooking.

To keep the public safe from EME exposure, the Federal Communications Commission (FCC) has enacted exposure limits that must be followed in 47 CFR 1.1310. The methods for ensuring these limits are met are defined further in OST/OET Bulletin 65. OSHA-specific rules minimally extend the FCC rules into the workplace in 29 CFR 1910.97.

This article will summarize the important regulatory requirements and discuss the practical implications for SAR volunteers operating two-way radios.

Exposure limits set by the FCC vary by frequency (wavelength) and class of persons being exposed. Public exposure limits are generally five times stricter than occupational exposure limits. This distinction is based on the assumption that the public is never aware of when or whether they are receiving any exposure, and therefore are unable to predict or control total exposure. But exposure in an occupational setting will be known and can be controlled and limited.

The RF Exposure Safety Handbook that came with the two-way mobile or portable radio you purchased most likely states that the radio equipment is only authorized for occupational use, because the EME exposure limits for public use cannot be met at the power levels demanded by end users (typically four to five watts for portables, and 25 to 100 watts for mobiles).

Separate rules apply to base stations, mobile radios and portables radios.

## PORTABLE RADIOS

All personally carried and operated devices (cell phones, portable two-way radios) are required by the FCC to be characterized by the manufacturer and be safe when used according to the manufacturer's instructions. The manufacturer measures and publishes the SAR (specific absorption rate, or heating effect) of

each model and certifies that it meets all regulatory requirements.

No further action is required by the end user, other than to follow the manufacturer's use recommendation. This means that the antenna should be held vertically and never allowed closer than one inch from the nose or lips, and never in contact with skin. The radio should also not be used with more than a 50% transmit duty cycle.

The manufacturer's SAR measurements also only apply when using their accessories. If you install an aftermarket high efficiency (extra long) VHF antenna on your radio, you will possibly exceed the SAR limits specified by the FCC.

## MOBILE RADIOS

Because mobile installations vary with antenna type and placement, SAR measurements are more difficult and usually are not made by the manufacturer.

Instead, the manufacturer is charged with providing the end user with documentation and safety information in the installation requirements that keep the user safe, using language summarized in TIA-EIA Bulletin 133.

For example, Motorola requires that mobile radios in the 40-100 watt power range have antennas installed so that end users cannot be closer than three feet to the antenna. This could be hard to comply with on some cars, especially when multiple antennas are mounted and evenly spaced across the vehicle roof. It is impossible to comply with if the roof of the vehicle is not metal (a few vehicles have non-conductive fiberglass roofs that require a special end-fed half-wave dipole).

Icom uses a one-meter distance for VHF radios and goes even further to state that the mobile antenna used must only be a unity gain style. Many users install a three dB gain 5/8 wave mobile whip antenna. The equivalent safe

distance might be as high as six feet.

## BASE STATIONS

Base station installations require a user environmental evaluation for EME *if* they meet certain criteria. This means that calculations must be completed and placed on file (or actual measurements taken) proving the transmitting system is safe. The threshold criteria (along with calculation methods of compliance) are listed in OST/OET Bulletin 65 Table 2. The evaluation requirement is triggered if the total effective isotropic radiated power (EIRP) of all transmitters on a structure is greater than 1,000 watts, and the antennas are building-mounted. Tower mounted two-way antennas at any power level get a pass if antenna bases are at least 30 feet above the ground or highest floor of a building attached tower.

A single 100-watt base radio driving any type of gain antenna with 10 dB of antenna gain or more could trigger the evaluation requirement. Multiple smaller base stations on the same structure could also trigger the evaluation requirement if they could transmit simultaneously.

There is a tremendous amount of ongoing research into the subject of EME exposure, driven largely by concerns over the ubiquitous



use of cell phones among a young population that will gather that exposure throughout a lifetime. No credible US or international studies have determined that the US EME safety limits need to be strengthened.

On the other hand, Russia uses EME limits that are generally ten times more stringent than ours (direct comparisons are difficult due to measurement differences) and that attempt to account for exposures over much longer time frames than used in the US (on the order of careers, not minutes or hours).

Because SAR two-way radio use is usually infrequent and occurs at low duty cycles, cumulative SAR exposure is most likely less than that received from our cellular equipment. But at the same time, I personally am a proponent of the precautionary principal that strives to minimize exposure when easily accomplished.

Where possible, I adapt practices that limit my exposure by keeping radio antennas farther from my face and head, not standing near mobile transmitting antennas on vehicles, and keeping temporary base-camp transmitter antennas well above the crowd. And I use standard industry lockout-tagout safety measures when handling antennas that are wired to transmitting equipment. When climbing on a tower containing any number of active transmitting antennas, one should wear a personal RF exposure dosimeter.

If you have any questions about this simplified explanation of a very complex subject, please feel free to contact me at the email address or phone number listed on the MRA web site.

*Additional information on this subject can be found at:*

*FCC Rules and Regulations 47 CFR Part 1.1310 Radiofrequency Exposure Limits*

*FCC OET Bulletin 65 Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*

*TIA/EIA TSB 133 Private Land Mobile Portable and Mobile Equipment RF Exposure*

*IEEE C-95.1 Standard for Safety Levels With Respect To Human Exposure to Radio Frequency Electromagnetic Fields*

*IEEE C-95.3 Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure*

*OSHA 29 CFR 1910.97 Non-Ionizing Radiation*

## Harness Suspension Trauma

*By Skeet Glatterer, MD*

The MRA Medcom commented in Meridian [July 2010] last year on Harness Suspension Trauma (HST) from a paper published by Raynovich et al in the Journal of Emergency Medical Services [JEMS , Aug 2009 , Vol. 34 , Issue 8 , page 44 ]. We disagreed with the author's position and recommended that based on the best available medical data, it is advisable to treat HST patients like any other patient: remove patients from the suspended position quickly, without regard to length of suspension or positioning, and treat them appropriately medically.

We had anticipated the position paper from ICAR would be soon available, but it is still in progress. A recent article in Wilderness and Environmental Medicine [Wilderness and Environmental Medicine, 22, 77-86 (2011)] took a position similar to ours.

“Search and rescue teams and party members assisting a colleague suspended unconscious on rope should follow standard resuscitation measures to restore circulation to vital organs immediately.”

Other salient comments from the Wilderness and Environmental Medicine article include: “The most critical part of suspension trauma management is to get the unconscious person down from the suspended position.” And that research “strongly suggests that passive suspension (an unconscious person) is the risk, not the harness.” Lack of venous return leads to decreased body perfusion overall. This supports the premise that, “The evidence of prompt resuscitation in controlled environments and a better understanding of the physiology involved argue against any recommendation to keep a victim of suspension trauma upright.”

The British Health and Safety Executive [Adiseh, et al, “Evidence Based Review of the Current Guidance on First Aid Measures for Suspension Trauma.” Norwich,UK: Health and Safety Executive; 2009] performed an extensive review and concluded that, “ there was evidence for syncope (fainting ) after head-up passive suspension but no evidence against standard resuscitation measures.” This position was supported by Thomassen in the Emergency Medical Journal [Thomassen et al, “Does the horizontal position increase risk of rescue death following suspension trauma”/ Emerg Med J. 2009;26:896-898.].

Therefore, rapid rescue of the unconscious suspended patient with prompt attention to BLS or ALS medical care is advised, without regard to any type of upright positioning after rescue. Be advised that all patients who have been suspended in an unconscious state should be evaluated at a medical facility. Prompt intravenous fluid resuscitation may be needed to enhance circulating volume and to guard against complications of rhabdomyolysis (muscle damage from hypoperfusion and hypoxia that releases muscle cell proteins that can lead to renal failure by compromising kidney function).

Details can be found in the article. As always, please contact me directly with any comments or questions, which will be shared with the Medcom.

From the Wilderness and Environmental Medicine article (page 83):

### **Basics of Management**

1. Remove the person from the rope
  - a. Be sure the scene is safe or mitigate the situation
  - b. If patients can cooperate, have them move their legs and raise them up until they can be lowered
2. Lay the patient flat and start standard advanced life support protocols
  - a. This should not be delayed waiting for any other supplies
  - b. Airway, breathing, circulation, etc.
  - c. Hypothermia prevention
3. Oxygen, monitoring, intravenous fluid as available (alternate saline and half-normal saline with added bicarbonate)
4. Remove the harness if preferable for evacuation
5. Transport. If suspended passively more than 2 hours, [consider] transport to a facility capable of dialysis

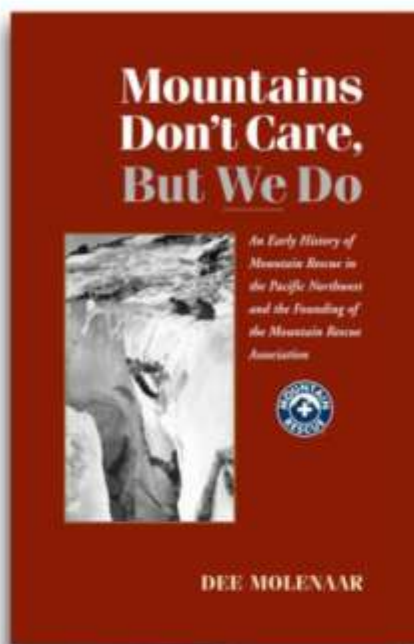
*Skeet Glatterer , MD, [glatterer@comcast.net](mailto:glatterer@comcast.net)*

*Chairman MRA Medcom*

# Mountains Don't Care, But We Do

An Early History of Mountain Rescue in the Pacific Northwest and the Founding of the Mountain Rescue Association

By Dee Molenaar



Dee Molenaar, author of *The Challenge of Rainier*, has written fascinating accounts of the legendary mountain rescues and recoveries in the Pacific Northwest. In telling these tales of triumph and tragedy, he has also traced the formation and evolution of the mountain rescue groups that carried out these missions.

*"The old master has done it again, pulling from personal experience and scholarly research, a vital and vibrant history of mountain rescue in the Pacific Northwest to celebrate the Mountain Rescue Association's 50th anniversary."*

Tom Hornbein

*"Mountains Don't Care, But We Do, by Dee Molenaar, is a must read for those who enjoy high adventure and want to know the history of the Mountain Rescue Association."*

Jim Whittaker

*"Mountains Don't Care, But We Do, is a modest way of saying 'thank you' to the hundreds of mountain rescue volunteers who have come before us. We hope that they would be as proud of today's groups as we are of them."*

Charley Shimanski, President  
Mountain Rescue Association

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