

Support During the Pilgrimage to Croagh Patrick, Ireland



**-MRA Education
Goes Online**

**-Improving Response
Team Management**

**-Piercing the
Darkness**



MOUNTAIN
RESCUE
ASSOCIATION

Fall 2012

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Cover photo by John Myers.



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First Aid Support During the Pilgrimage to Croagh Patrick, Ireland

By John Myers

- ◆ **Date:** July 29 (Sunday)
- ◆ **Location:** Croagh Patrick (mountain in County Mayo, west Ireland)
- ◆ **Type:** First aid support during Pilgrimage
- ◆ **Field Team:** John Myers, Lana McNamara (ONP)



During a vacation to Ireland, Olympic Mountain Rescue (WA) member John Myers and MRA member Lana McNamara, ranger at Olympic National Park made contact with the Galway Mountain Rescue Team (GMRT) based in Galway, Ireland, to participate in joint training and a major annual rescue event.

On the 28th of July Myers conducted a field training and demonstration of CMC's MPD rigging device on a crag in the Burren which is a barren seaside limestone rock outcropping on the west coast of Ireland frequented by sport climbers.

By way of thanks for allowing Myers and McNamara to become members of the GMRT team, they presented a sign made from stainless steel to the GMRT team as a token of appreciation.

The big event came the next day, so on Sunday the 29th Myers and McNamara were met by Jarlath Folan of GMRT at 0630 for the drive to Croagh Patrick ("Saint Patrick's stack"), a 2,507ft tall mountain located 5 miles from Westport Ireland on the coast in county Mayo.

This happened to be "Reek Sunday", the last Sunday in July when over 20,000 people climb the mountain. The mountain is reported to be where Saint Patrick climbed to and spent 40 days/night in year 441 AD. Since then it has become a holy pilgrimage site for Catholic worshippers, and for others who annually enjoy making the trek to the top. People from all walks of life and all ages, including many doing it barefoot are to be found.



All 12 of the mountain rescue teams from Ireland, in addition to a Civil Defense Air Corps helicopter unit and the Order of Malta Ambulance Corps, volunteer to be on hand to provide support for those people who run into trouble while hiking to the top.

Myers and McNamara arrived at the search base HQ on the south side of the mountain at 0800, and were greeted by Seamus Bradley, the head of Irish Mountain Rescue, and member of the Donegal Mountain Rescue Team. Seamus arranged for a ride to the north side of the mountain where most hikers begin their trek to view operations there with the Order of Malta Corps HQ, medic tents, and also to meet with the Air Defense pilot onboard their helicopter for a tour.

At 1000, returning to the south side, Myers and McNamara joined up with the Mayo Rescue team to hike up onto the shoulder of the mountain.

Soon after arriving on the main trail they encountered a woman holding a young Jack Russell terrier that had become separated from its owner. Casualty #1 was then carried down to the medic tent on the mountain's shoulder and contact was made via cell phone with the owner.

The team of two then headed uphill and was soon re-united with GMRT. The operations consisted of staging teams every few hundred feet along the trail for periods of up to an hour and a half, and then moving upwards and relieving the next uphill team. This continued into and through the afternoon until they reached the summit, which is a broad flat area with a small chapel, hosting Mass all day. Myers took the opportunity to propose to McNamara, which she happily accepted, witnessed by 4 donkeys and a priest.

The trail on the upper 400 feet of the mountain was the most "technical" of the route, steepening considerably from the more gentle slope downhill, and consisting of large, loose talus. Making matters worse was that the trail essentially goes straight up, with no real switchbacks to speak of. Consequently many people struggled for balance amidst the crowds, rolling rocks and uneven terrain.

The team assisted multiple elderly people, escorting some upwards and most primarily down slope. One German woman ripped the sole from her boot, so Myers made a field repair from duct tape. Another young man descending in bare feet stopped to report he was in severe pain because of his feet, which were bleeding and raw. When asked what we had that could help him, we replied "shoes!"

On the way down to the mountain's shoulder the team aided an elderly woman to the medic tent whereby she was deemed unfit to continue on her own. The helicopter was called in and the team evacuated her.



Immediately following this, another elderly gentleman was in need of escorting down the hill and it became apparent that he would be unable to walk. The GMRT team placed him in their litter and the team ran a running belay down the steep boggy slopes of the south side of the mountain to the search base where the gentleman was transferred to waiting ambulance.

In the search base tent afterwards the team was rewarded with warm Irish stew and soda bread. Gifts were exchanged between the Olympic team and GMRT.

It was a successful day assisting the teams on the mountain; assisting the public (there were a total of 10 casualties assisted by GMRT); and good bonds made with OMR's new sister team in Ireland, Galway Mountain Rescue.

John Myers is a member of Olympic Mountain Rescue and was recently elected as Chair of the Washington Region of MRA. All photos courtesy of John Myers.

Mountain Rescue Association Education Goes Online

By Bryan Enberg

The MRA Education committee is thrilled to announce the re-launch of our **Helicopters in Search and Rescue, Basic Level** as our first online education program. When this program was initially launched, it was offered as a hard copy in a three-ring binder. Over time, this program transitioned to a PDF that was available for download from the MRA website. Now, we have taken the program into the digital age as the first in a planned series of self-paced, interactive online educational programs.

Built on the popular Moodle platform, and developed in part by Remote Learner, a leading distance learning development company, as well as by internal MRA developers and producers, our online educational offerings will be designed to provide the interactive learning experience our audience is coming to expect. Each program will include:

- ◆ Illustrations for clear understanding
- ◆ Video to clearly demonstrate proper procedures
- ◆ Interactive elements
- ◆ Progressive tests allowing small segments for effective retention
- ◆ Course completion certificate for documentation by your organization

Helicopters in Search and Rescue, Basic Level, is designed to provide introductory information required by mountain rescue personnel, and search and rescue personnel, for safe operation in and around rotary wing aircraft. While this program is not designed to replace in-house, hands-on training in helicopter safety procedures, it can be used to bring students to a standard base level of safety, on their own time, enabling member teams to maximize the time spent with engines turning and burning. The program also provides an excellent tool for annual review for the experienced responder, again lessening the training load of our member teams.

Go to training.mra.org to sign up for your free account.

As we have the ability to easily update and revise this program, we look forward to comments from the membership. Comments can be posted on the training site.

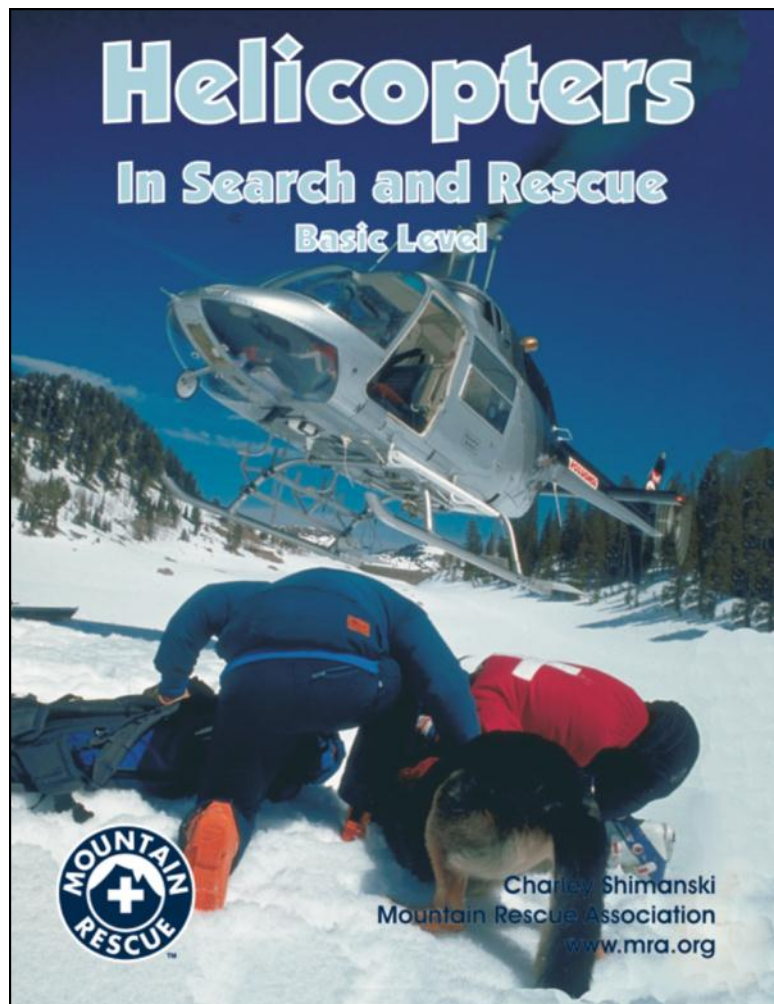
We hope you enjoy **Helicopters in Search and Rescue, Basic Level** and find it useful in reducing risk and increasing the effectiveness of your response.

Up next in the development pipeline is the online version of our popular General Backcountry Safety program that is targeted to the inexperienced backcountry user.

Bryan Enberg is currently a MRA Officer, Member at Large; is the Chair of the Appalachian Region; as well as the MRA's Marketing Committee; and manages the MRA's social media efforts. He also serves as a member of the Education Committee.

Reminder from your MRA Vice President, Dave Clarke:

The MRA is pushing to improve the statistical reporting of teams from 40% to 100%. Please make sure your team is reporting your annual statistics. The reporting forms and procedures can be found in the [Members Only](#) page on the MRA website.



Wasatch Backcountry Rescue, a volunteer avalanche rescue group composed of professional ski area personnel in northern Utah, trains for loading their avalanche rescue dogs into Wasatch Powderbird Guides' helicopter. Wasatch Powderbird Guides is a helicopter skiing operation and they are usually available to fly rescuers to the scene of an accident. Photo courtesy of Bruce Tremper.

HELP WANTED!

The MRA Education Committee is looking for a few good Moodelers!

We are looking for members interested in helping develop and administer the MRA's newly launched online educational programs using the Moodle learning management system. While experience in Moodle development is preferred, we have training slots available for the right candidate.

Email MRAEducation@mra.org for more details.

2012 International Commission for Alpine Rescue (IKAR)

By Dan Hourihan

Krynica, Poland, October 3-7, 2012

The 2012 IKAR Congress was held in Krynica, Poland during the first week of October. Krynica is a small town on the Polish/Slovakian border three hours, by car, south of Krakow. Renowned historically for its hot springs, often referred to as the *Pearl of Polish Spas*, Krynica lies in the Beskids Mountains approximately 40 kilometers east of Zakopane in the High Tatras, site of the 2004 IKAR Congress. The Mountain Volunteer Search and Rescue (GOPR) is headquartered in Krynica and served as the host organization for this year's Congress. GOPR is celebrating its 60th anniversary in 2012.

The Congress included a "Practical Day" organized by the Terrestrial Rescue Commission, which involved numerous demonstrations and discussions of new and refined rope rescue techniques and procedures, as well as technological advances. Three days of presentations at the various commission levels followed, concluding with the annual formal business meeting of all delegates. Of significance, during the Delegate's Meeting the IKAR membership voted overwhelmingly in favor (77 organizations in favor, 3 abstentions) of conducting the October, 2014 Congress in the United States at Lake Tahoe!

The United States delegation, representing and appointed by the Mountain Rescue Association (MRA), was comprised of Dale Atkins, Avalanche Rescue; Ken Zafren, Alpine Medicine; Casey Ping, Air Rescue; and Dan Hourihan, Terrestrial Rescue. Their individual commission reports will be posted to the MRA website by mid-November. You are encouraged to review these reports, as well as previous years also posted there, for a wealth of information regarding lessons learned and developments in the world of mountain rescue.

Dan Hourihan is the current president of NASAR; and serves as the U.S. delegate to the Terrestrial Rescue Commission of International Commission for Alpine Rescue.



Federal Coordination Committee

By Mike Vorachek, Bonneville County SAR

FEMA has ended what was known as the SAR Working Group and rolled our members into a general group known as the Strategic Resources Group (SRG). In doing so, they have recognized that the work that was undertaken by the SAR WG is essentially complete. The new SRG allows FEMA to bring specialized resources to the table to work on a variety of items that are not Resource Typing or Credentialing focused. In a series of webinars, the FEMA NIMS National Integration Center (NIC) outlined their view of the SRG as being a broad general, cross-discipline, organization that could be built into task focused teams for NIMS-NIC document development and review. No word as to when the SAR Resource Typing or Credentialing documents will be released for public comment.

On a more interesting note, the Army National Guard is increasing its inventory of the UH-72, Lakota helicopter. In the September issue of National Guard magazine, the ARNG is projecting to receive 210 Lakota's by the end of 2016. By the end of this past fiscal year (Sept 2012) the guard had planned on having 100 fielded. There are two basic configurations, designated security and support. The security version has some advanced thermal imagery and other cameras that will make it ideal to support SAR activities. In addition, some of the Lakota's have a winch capability that will also be useful for rescue operations. These helos are designed to replace some aging observation helicopters and assist the various states in supporting domestic missions. It might be worth a call to your Army National Guard Aviation Support Facility or whomever you use as a contact at state level to find out the status of their fielding and their utilization plans.

Safety Corner

By Mike Vorachek, Bonneville County SAR

Eastern Idaho recently experienced a tragedy involving a female who entered an irrigation canal to rescue her dog. Two neighbors heard the commotion and also entered the canal to rescue the woman and her dog. All three adults and the dog were electrocuted and died at the scene. Local SAR and electrical company personnel were also "lit up" by the 480 volt circuit that had energized the canal water and surrounding ditch. Fortunately, none of the rescuers were severely injured or killed. The investigation identified a short at a 480 volt power pole that energized the ditch bank and water in the canal.

The take away from this is that when you see an animal and three humans in the water, all appearing lifeless – this is not a drowning. STOP, re-assess the call, and look for something else. Fortunately, our brothers and sisters survived. Remember – there are lots of calls we respond to where things are not what they seem.

Stay safe.



5 Quick Tips for Improving Response Team Management

From Marc Healy, with Decision [D4H], Ireland

There is a huge amount of opinion out there on how a response team should be managed. Experts and consultants are constantly writing in relation to this topic. Thus we felt it important to put our own spin on the topic of “Team Management” by looking at it from a slightly different point of view. How can you create a high performing sustainable response team through better management of your data?

ANALYZE YOUR INCIDENTS, a lot has been made of this topic across the Emergency Response industry and criticism has been bandied about that responders are terrible at learning from past incidents. However when learning from a past incident the devil is in the detail, you can only study what is put in front of you. The major failing is that incident analytics tends to be scarce and Responders are not supplied with detailed archived incident information.

Solution: Start by increasing the level of detail in your reports. Analyze archived incident reports and share the finding with your crew. Every team has to create incident reports, not every team gets value from them. The information available in your reports will blow your mind.

TRACK YOUR SKILLS AND QUALIFICATIONS, Search and Rescue teams by their nature have some of the most diverse skill sets imaginable with many career responders choosing to dedicate their time to a voluntary cause. It is our belief that knowing and utilizing the varying skill sets amongst your members can make for a better more rounded SAR team.

Solution: Keep an accurate and up to date account of your team’s skills and qualifications. Equally important is to ensure qualifications expiry and refresher courses are kept in order.

KNOW WHO’S AVAILABLE, Unfortunately this is a problem we have heard from many of our customers. An incident happens and only a fraction of the responders originally thought to be available turn up. Why? Responders’ true availability is not known or tracked over time leading to artificially high on-call levels.

Solution: Understandably most SAR professionals are volunteers thus can’t be expected to always be available. Your team must track responder availability and be aware of time when numbers are low.

MANAGE YOUR EQUIPMENT, I’m hearing sniggers from the back of the class but listen up. In SAR response situation it is not beyond the realms of possibility that you would have to rely on your equipment to save yours or someone else’s life. All equipment from the smallest of tools to an expensive 4x4 or truck can be mission critical thus calibration, inspection and maintenance must be logged and managed. There is no way of telling when you might be relying on some Emergency Response equipment and you can’t leave it to chance that it is in full working order.

Solution: Track equipment life cycles, log inspection and maintenance records and finally assign tasks to crew members and track their completion.

RECOGNITION OF A CRISIS, don’t laugh this may seem like an obvious statement. However it is crucial that all your responders know what they are looking at when they come across an incident. The importance is twofold, firstly it avoids ‘The boy who cried wolf’ scenario where responders are sounding the invasion alarm for the most mundane of incidents, creating an environment in which people no longer take the alarm seriously. Secondly it ensures responders know when there is a serious incident underway and know how to react.

Solution: Research archived incidents; studying what happened, what it looked like and how could the incident have been avoided or a response improved. Know the difference between an Incident, Emergency and Crisis. Prepare for the worst and hope for the best, this may seem like a very pessimistic approach but you must create a response management plan.

Marc Healy is employed in Ireland, by Decisions[D4H], which produces Emergency Response Management Software.



Piercing The Darkness

Improving SAR mission effectiveness in light deficient environments

By Peter Reese, Open Air Brands LLC

Fumbling around in a shadow-infested attic to drag down Christmas tree ornaments is one thing. Conducting a mission safely in darkness has entirely different consequences for SAR personnel and search subjects alike.

The potential for darkness is anywhere there's inadequate natural light to find your way, complete a task or help others to do the same. While moonless nights are dramatic, the challenges of unlit, unevenly lit or partially lit outdoor or indoor environments are no less daunting. In addition, the unreliability of electric power can transform bright spaces into lightless caverns.

Three barriers to effectiveness in light-deficient environments can confront the most committed incident commanders and teams:

- #1: Inadequate provision for varied – and evolving – operations, tactics and lighting conditions
- #2: Inconsistent deployment of lighting resources across the team
- #3: Deficits in individual rescuer safety that lighting should, in fact, support

Take a look at the following construct developed to address these barriers. The implications for equipping teams are included, followed by guidelines to assist any group in improving their mission effectiveness.

Missions conducted within extreme environments are not specifically addressed, as the lighting scenarios common to fires, cave rescue, underwater operations and catastrophic events warrant separate discussion. Not only will lighting deficits be different, but also the illumination technology required to fill them is unique.

“At 3 PM, two adult search subjects, approximately forty years of age, are reported missing while canyoneering in the Doom Rapids area of Bottomless Canyon. The Butte County sheriff's department has mobilized two teams under the direction of their incident commander.”

When rescuers arrived with a superior level of training, the probability of night operations was clearly high – as was the likelihood that lighting deficits would be encountered in the canyon environment even during daylight hours. Using the S.E.E.N. construct, the team's management of light deficit environments during the mission can prove instructive to teams across MRA's extensive network.

S = SCAN > Initial and recurring situation assessment in deficit conditions up to 1,000ft out (estimated 15%-30% utilization level during the mission)

The responsibility of a unit leader for gathering on-site data rapidly (and accurately) is beyond dispute. Assessing 1) OVERALL GEOGRAPHY AND TERRAIN, 2) MAJOR OBSTACLES AND ACCESS POINTS, and 3) ENVIRONMENTAL AND WEATHER CONDITIONS is part of the SCAN step.

Furthermore, in cases where motor vehicles, aircraft or watercraft, are involved, the SCAN function can provide visual data even at extended distances. In the Doom Rapids situation, SCAN may simply reduce the POA to focus resources. As with mountainous operations, vision at extended distances often translates into vertical reconnaissance more than horizontal scanning.

Open, arid environments may permit a worthwhile level of SCAN effectiveness at distances up to 2,500ft or more with upgraded lighting tools. Clues as well as search subjects may be visible, although even slight terrain anomalies preclude using SCAN exclusively.

Generating SCAN lighting power takes a minimum of 750 lumens (ANSI-rated) with a carry distance of well over 500 feet (once again, as rated by ANSI). Tactical LED flashlights are capable of generating SCAN-worthy levels and have portability well beyond that of vehicle-mounted systems.

Both mounted and handheld capabilities are ideal, with portable tools being the requisite for the team's kit. One per team is the minimum, as are power sources (batteries and rechargeable cells) capable of at least 12 hours of extended operations. Here, SCAN is done intermittently, not continually, unless the mission shifts to rescue activities requiring high-powered scene lighting.

Enough illumination to SCAN with confidence is the metric for evaluating the tools required. In cases where operations are conducted in more confined areas, lighting to a maximum distance of 250ft (or less) may be adequate. However, USAR teams are well advised to carry lights with greater firepower as the grid may well grow during the course of the mission.



Author, Peter Reese. Photo by Eric Larsen.



Photo by Kemter.

Barrier #1, the inadequate provision for mission conditions, frequently shows up in SCAN. Lighting power may be immobile (only vehicle-mounted), too cumbersome for in-field use or simply unavailable on a strike team or task force level.

“The leader was able to SCAN much of the canyon bottom and walls 250 yards upstream and downstream from Doom Rapids to identify dark objects that resembled packs or jackets within 50 yards of the rapids.”

E = EVALUATE > Safe search navigation, clue identification and safe transport in deficit conditions up to 250ft (estimated 50%-75% utilization)

Rescuer safety mandates cautious travel across varied terrain, through manmade structures and in suboptimal conditions. At the same time, the objective is to locate, access, stabilize and transport at an elevated level of urgency.

EVALUATE combines team and individual way finding with efficient progress, balancing thoroughness with the pace required by the mission. Searchers each need to take responsibility for their contribution to EVALUATE, and trackers clearly have well-defined illumination requirements that are, by definition, idiosyncratic.

Barrier #2, inconsistent deployment across teams, shows up prominently in the EVALUATE modality. Some searchers come with the equivalent of airplane landing lights while others stand ready with headlamps that reach up to only 75ft with any level of object definition. This puts the team at an immediate disadvantage. Here, individual searchers end up calling on each other for “more light over here.”

In addition, should extended travel on foot, bike or in watercraft be required, the ability to shift responsibility for way finding is essential. Even if the same navigator is alert and in charge, they’ll need to refresh their extended-range lighting tools (as in, switch out the EVALUATE light with another team member – and have SCAN at the ready).

USARS are another concern, where EVALUATE may normally occur within 50 yards (even 25) but extended illumination range is prudent. As with SCAN, the portability of powerful flashlights and headlamps to EVALUATE makes it easier to justify carrying more lumens, more often, and by every searcher.

EVALUATE is a one-per-searcher requirement of up to 350 lumens per light. A minimum of 250 lumens is essential, with enough working time to EVALUATE at close to 200 lumens for 10 hours: Each light has rated runtimes at different levels, and additional power supplies will be required and must be carried by each individual.

Note that leaders can employ their SCAN light for EVALUATE by switching to lower lumen output levels. In this situation, the SCAN light becomes one of the hardest working illumination tools being employed. Cleaning and regular maintenance is even more imperative as a result.

Considering both OUTPUT and DISTANCE is mandatory for EVALUATE, as is testing the light’s beam pattern. The reason? Light that is extremely diffused (covering 35 degrees or more) is inadequate for overcoming deficits while focused spotlights reduce peripheral visibility to varying degrees. This narrower field, like that of some binoculars, requires rigorous, nearly constant head or hand movement to ensure meaningful coverage.

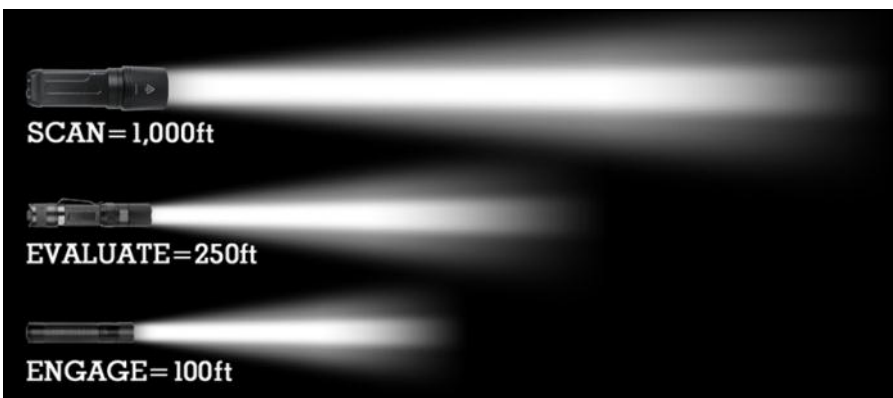
“Team members cautiously descended into the canyon on narrow footpaths, stopping every 50 yards to EVALUATE the surrounding area for hazards as well as clues that included a climbing rope anchored 120ft above the canyon floor.”

E = ENGAGE > Management of access obstacles along with search subject encounters including stabilize activities in deficit conditions between 3ft and 100ft (estimated 25%-40% utilization)

Face-to-face with anything – or anyone. ENGAGE gets close and could be considered the most surgical of lights, figuratively and literally. The ability to assess and act is resident in the illumination this light must deliver.

Access obstacles first come to mind, situations in which team members must gather data, make decisions and deploy solutions that span the spectrum from locked or jammed doors to running belays and bivvy shelter construction in whiteouts. Here, long-range beams are no substitute for close-in illumination to execute technical tasks (with EVALUATE lighting ready when necessary).

So to is effectively encountering search subjects, making scene assessments and taking intelligent action. The ENGAGE light notches down in intensity and may have an integrated diffuser to operate up close or even within the subject’s field of vision (as in, directed right at their face). Medical interventions are in the same category of proximity lighting.



Most team members are, at least at the start of a mission, prepared around this requirement. If their lights offer broad enough dispersion to provide an adequate light “bubble” to operate without constant beam redirection, they are solid. The challenge occurs if these tools (often extremely compact and lightweight) have short runtimes or can’t stand up to environmental stresses (e.g., impact and extreme temperatures).

Some lights have the provision for diffusers or conversion to standing or hanging lanterns. These models have significant utility during prolonged periods of rest,

shelter, subject care or waiting for evacuation. The same applies to clip or head-mounted tools where hands are freed up for greater mobility and dexterity.

ENGAGE lights generally offer variable brightness levels, from as low as 5 lumens to as high as 100 lumens or more. At least 75 lumens max output is recommended. Runtimes at an under-25 level should clock in at well over 50 hours. This is the tool, which in extended mission or survival situations will become the key lighting source potentially across multiple days.

Practically-speaking, an EVALUATE light might be capable of providing ENGAGE illumination, the caveat being enough battery power to allow both roles. However, the opposite does not automatically apply: Short-throw, limited-power flashlights and headlamps that appear irreplaceable for illumination on the scene are suspect for navigation and likely inadequate for clue identification.

“When both of the search subjects were found huddled inside a partially lit canyon-level cave, team members evaluated the cave’s safety using ENGAGE lights and began assessing the condition of each canyoneer.”

N = NOTIFY > Team communication, location identification and emergency signaling (flashing) in deficit conditions at ½ mile or more (estimated 5%-10% utilization)

The topic of mission communication applies in light deficient situations. As with other tools and wavelengths that permit one, or two-way communication, lights can be employed to great effect.

Barrier #3 comes into sharp focus when NOTIFY is the topic. Informal surveys of rescue personnel from around the United States indicate a significant gap in the capability – or training – to signal visually at night.

Many of the flashlights and headlamps found in 24-hour packs have no strobe or SOS function. Those with these two modes are frequently of such low lumen output that their effective carry distance limits them to 750ft or less.

While quality ANSI-rated lights don’t quantify strobe or SOS distance, the lumen output of these functions is one meaningful indicator. Flashing at over 200 lumens is the bare minimum. In cases where a light has no programmed provision for signaling, the ability to quickly turn it on and off – for an extended period -- is critical as well.

Doubling up on lights is recommended in this instance, using an EVALUATE light equipped for signaling. While the team’s SCAN light should possess this functionality, individual searchers must take responsibility for their own safety in this regard. Once again, runtime comes into play particularly in a light that’s actively used in the mission so that adequate reserve power is warranted.

“Using agreed-upon communication protocols, a team member stepped to a secure area outside of the cave to attempt radio and cell transmissions – and use the NOTIFY function of their EVALUATE flashlight to signal searchers along the canyon’s rim.”

The S.E.E.N. construct can help overcome the three barriers to effectiveness in light-deficient mission environments. Importantly, the lighting tools, reserve power and training capacity each team carries into the field radically affect the outcomes.

A few guidelines are worthwhile based upon experience equipping law enforcement, military, emergency and volunteer personnel across the United States. While each team can well argue their requirements are unique, these recommendations transcend location, agency structures, personnel or even budgets.

Guideline #1: Team standard includes one group ANSI-rated SCAN light, individual ANSI-rated EVALUATE lights that can NOTIFY plus separate ANSI-rated ENCOUNTER lights for each member.

Guideline #2: ENCOUNTER light (flashlight or headlamp) should have enough a) output, b) carry distance and c) runtime to serve as an emergency back up to the EVALUATE light (meaning, ideally perform at 50%-60% of ENCOUNTER’s levels to deliver 150 lumens or more, 150ft plus of carry distance and many hours of runtime).

Guideline #3: Team standards should limit power supplies (most commonly, batteries) to no more than two sizes and types to increase redundancy, with ENCOUNTER lights utilizing either alkaline AA or CR123A platforms because of their small size and widespread availability.

Guideline #4: Additional batteries or rechargeable cells for EVALUATE and ENCOUNTER lights are carried by each searcher, with the leader carrying the SCAN back-up power (with enough buffer to allow their SCAN light to double up for EVALUATE). Light-specific diffusers, filters and lantern accessories are the responsibility of each searcher.

Guideline #5: As with other SAR support technology, all S.E.E.N. lights are checked at training sessions, by searchers before responding and leaders prior to searcher deployment.

Missions keep no schedule, nor does the absence of broad daylight mean rescues are automatically suspended or terminated. With some basic planning and a S.E.E.N.-worthy complement of lights, every team can be more effective in light deficient outdoor and indoor environments.

So that others may live, the darkness will continue to be pierced.



Graphics by Toby Demoss.

Going Underground?

By Art Fortini, Sierra Madre Mountain Rescue

Under the best of circumstances, discussing bylaws and policies can be almost as exciting as watching paint dry. Nonetheless, when changes are proposed to the documents governing our organization, we need to consider them carefully. One such change has been brewing for almost a year now, and it's going to come to a head in February at the MRA winter business meeting. The crux of the issue is whether or not the MRA should get involved with cave rescue, and if so, to what extent?

While mountain rescue and cave rescue have many similarities, they also have many differences. For example, the ease with which a mountain rescue can be performed is often a strong function of the weather. While caves can be affected by weather, (e.g. flooding), the air temperature in a cave is generally constant, and precipitation is essentially nil. Despite the reliable underground weather, however, helicopter-based rescue is simply not an option for someone injured in a cave. Tight passages and the cold/wet conditions often found underground make cave rescue a form of specialty rescue that has its own set of unique challenges.

Two years ago, a representative from the Chattanooga Hamilton County Cave and Cliff Rescue Team approached the MRA and expressed interest in joining. They, like most of the other organized cave rescue teams in the U.S., are located in the southeast, which is where the greatest density of caves is. For cave rescue teams wanting to become full members of the MRA, this poses a problem: lack of snow and ice. Their accreditation and reaccreditation exercises in snow and ice, as well as any trainings they would need to do, would require them to travel many hundreds of miles. Furthermore, they have no reasonable expectation of ever being called upon to do a snow and ice rescue, even under mutual aid.

After much discussion, the people involved converged on a proposal to bring to the MRA: Introduce cave rescue as a fourth discipline for accreditation, and to be a full-member team, you would need to be accredited in rock, search and either snow/ice or cave. This issue was discussed at the MRA winter business meeting in 2012, and arguments were made both for and against. On the one side, people viewed cave rescuers as a community of rescue professionals that we could learn new/different techniques from. It would also enable the MRA to create a

presence in the southeastern US, where we currently have absolutely no teams. Since every region of the MRA contains caves, and since several existing MRA teams already do cave rescue, this was viewed as a growth opportunity for the organization. Those opposed to the proposition argued that we're a *mountain* rescue association, and that it's not our objective to adopt every form of specialty rescue that comes along. It was also argued that, since some teams will undoubtedly want to be accredited in all four disciplines, they would either have to put in more training hours or devote fewer training hours to each discipline.

After much discussion, the consensus was to move forward: a committee was formed, and was tasked with proposing modifications to the MRA bylaws and policies that would add cave rescue as a fourth accredited discipline. The proposed changes were *almost* ready in time for the June meeting in Lake Tahoe, but not quite, so no vote was taken. The matter, however, was discussed, and the mood had changed somewhat. A poll was taken at the end of the discussion, and 40-45% of the representatives indicated that they would favor A) adding cave rescue as a 4th discipline that a team could become accredited in, but to be a full-member team, you would have to be accredited in rock, search, & snow/ice. A roughly similar number 40-45% favored B) making no changes to the bylaws to accommodate cave rescue, and the remaining 10% favored C) adopting cave rescue as a 4th discipline that could be counted toward the three needed for full membership.

To accommodate the new preference of the membership, a new set of proposed bylaw & policy changes were drafted to accommodate Option-A. These, along with the previous set of proposed changes (Option-C), will be discussed at the Winter business meeting in February, and a vote will be taken. The specific wording of the two proposals will be circulated to the membership in late September or early October. Whether we remain the *Mountain* Rescue Association or whether we expand our repertoire will be up to you.



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Fentanyl in the Field

By Jeffrey Isaac, PA-C, wildmed@medofficer.net

The goal of pain management in the wilderness and rescue setting is an alert patient with tolerable pain. Sometimes this can be achieved with acetaminophen or ibuprofen, but many of our patients would benefit from the addition of an opiate analgesic. Transmucosal fentanyl offers an effective way to achieve this additional pain relief while managing the risk of respiratory depression and over sedation.

For the past six years in Crested Butte (CB) , we have been using the fentanyl “lollipop” for pain control by the Ski Patrol on the mountain, in the clinic, and on SAR evacuations. It is easy to administer and the pop will not freeze, melt, or break in your pack. No IV or injection is required.

The fentanyl lollipop is now widely used by military medics. The current Tactical Combat Casualty Care Guidelines recommend use of a single 800mcg dose for most situations, with the addition of a second pop for severe pain. In our SAR experience in CB, we have found that the 600mcg dose is usually sufficient, one pop at a time.

The pop is placed between the cheek and gum and the medication is absorbed through the mucous membranes of the mouth. Although the pops contain 600 micrograms of fentanyl, far less is actually absorbed into the circulation. After about 15 minutes of use, patients behave like someone who has received about 75 mcg IV. They still hurt, but are significantly more calm and responsive.

The level of pain control from transmucosal fentanyl may seem inadequate in the emergency department, but it is ideal for rescue

work. The pop can be offered intermittently to titrate the effect, or you can tape the stick to the patient’s finger for self-administration. That way, if the patient does get drowsy, the pop falls out of the mouth.

Since nausea is a common side effect of opiates, the medical officer may want to add a 4 milligram dose of ondansetron which can be given by oral dissolving tablet. It is also important to note that fentanyl in this form carries a Black Box warning for respiratory depression. Although this problem has not been seen in our experience, we carry the opiate antagonist naloxone, which can be given by nasal atomizer to reverse CNS and respiratory depression if it does occur.

Fentanyl is a closely controlled substance that will require the authorization of your medical director, the appropriate records, and lock box. However, the ease of carrying and use in the wilderness and rescue setting makes it well worth consideration. MEDCOM would appreciate reports from other teams that may be using fentanyl in this form, or other agents that have been particularly effective for pain relief in the field.

All Meridian articles are reviewed and endorsed by the MRA Medical Committee, however, this article is for general information only. The MedCom makes no representations regarding the legal or medical information provided, and the views expressed do not necessarily reflect the views of the Mountain Rescue Association.

As always, your suggestions and comments are encouraged--either directly to the author, to me, or via the Listserv to the MedCom.

Skeet Glatterer, MD, FAWM, Glatterer@comcast.net, Alpine Mountain Rescue, Chair of the MRA’s Medical Committee



The Colorado Search and Rescue Fund and the “Colorado Outdoor Recreation SAR (CORSAR) Card”

By Howard M. Paul

Like most western states, Colorado is vast in size and has immense areas of sparse population whose tax base is minimal. Most counties have no, or very little, money to support a large SAR mission, let alone ongoing funding of their SAR team year-to-year. Such a mission, a multiple-day search for a missing hunter in Mineral County (current population of 966 people) led to the “Colorado Search and Rescue Fund” (SARF).

The Mineral County Sheriff’s Office, which had a staff of three when this author last visited there, had many volunteer searchers for that large search, but paying for food for them, fuel and some private helicopter time wiped out his tiny SAR budget.

History

So in 1988 the state legislature created the SARF to help financially strapped counties deal with SAR missions on which they spent a significant amount of money.

Since then, each **fishing** and **hunting** license sold in Colorado has had a twenty-five cent surcharge added to it, which goes into the fund. In 1993, the same surcharge was added to **boat**, **snowmobile** and **off-road-vehicle** registrations. These five state-mandated licenses and registrations were the only methods by which the state could require outdoors folks (us) to pay into the fund.

In 1994, the legislature saw the need for others to pay into the SARF, such as hikers, skiers runners and bicyclists. It created a card that eventually became the “Colorado Outdoor Recreation Search and Rescue (CORSAR) Card.” Entirely voluntary, anyone can buy the \$3.00, one-year, or the \$12.00, five-year, (<https://dola.colorado.gov/sar/orderInstructions.jsf>). In state fiscal year 2011, revenue to the fund totaled nearly \$439,000.

What does the fund do?

The fund reimburses a county sheriff (and its search and rescue agencies) for some **direct expenses** involved in search and rescue missions: fuel, lost or damaged equipment, food for searchers, helicopter time for searching or transporting rescuers (but not medical helicopter transportation), etc. Search and rescue teams are the usual beneficiaries of such money. Requests for reimbursement must be made by a county sheriff, which assures accountability and allows the sheriff to maintain oversight of which agencies conduct SAR missions.

There are several tiers to the SAR fund. The first tier is reimbursement of expenses for any eligible search or rescue incident – one involving someone who has purchased a CORSAR card, license or registration. This is paid within 30 days of receipt. Tier two reimburses expenses of missions involving an immediate relative of a cardholder: parent, grandparent, child, grandchild or sibling. The last tier covers exceptionally costly (relative to the jurisdiction) mission of “unlicensed” people; it also has the greatest benefit of the fund: an annual grant program to pay for search and rescue training and equipment. It typically makes grants of more than \$200,000 a year.

In FY 2011, the fund received \$438, 962. The state expended all but \$2.

Expenditures (rounded)

Tier I—\$67,801


Tier II—\$796

Tier III missions—\$ 15,988

Tier III grants—\$212,173

Administrative—\$142,200

In 2011, the greatest tier I reimbursement for mission costs was \$11,554; the greatest tier III reimbursement for a mission for an “unlicensed” person was \$4, 050 to a tiny county in SW Colorado. The largest tier III grant was \$11,500 and the smallest was \$888 (although several were not funded at all).

	Colorado Outdoor Recreation Search & Rescue 5 Year Card	Card #: 123456789 Purchased: 2/27/2011 Expires: 2/27/2016
	Name: JOHN M. SMITH Address: 123 MAIN STREET City/State/Zip: BRECKENRIDGE, CO 80424 Phone #: 970-555-1212 Date of Birth: 11/22/1983 Signature: _____	
Thank you for supporting search and rescue operations in Colorado!		

Over the years, those grants have paid for:

- ◆ Radios
- ◆ ATVs
- ◆ Snowmobiles
- ◆ Trailers
- ◆ Miles of rope
- ◆ Training classes (i.e. MLPI, MLSO)
- ◆ Avy beacons
- ◆ Climbing gear
- ◆ Medical equipment

In addition to those extremely valuable year-end grants (which began in 1993), teams can recover team or personal costs of missions throughout the year. Hard mission costs that may be reimbursed include:

- ◆ Fuel, or mileage, for team and personal vehicles
- ◆ Lost or damaged team or personal equipment such as maps, litters, packs, clothing, radios or ropes
- ◆ Food
- ◆ Lodging
- ◆ Helicopter time
- ◆ Medical supplies, etc.
- ◆ Specialized equipment rental, such as ATVs, horses or snowmobiles

A critical consideration

The SARF is not insurance. The term insurance implies a bill for services will be received. Colorado's search and rescue teams, via the Colorado Search and Rescue Board (the state's SAR association), in 1987 published their position that they will not charge for their services, to avoid delays in calls for help.

Additionally, Colorado statutes do not authorize a sheriff (who is statutorily responsible for SAR) to charge for SAR services, *except* they may, collect "expenses incurred by a governmental entity for search and rescue efforts" limited to "...river running activity conducted for consideration by a river outfitter..."

Unfortunately, when the fund was first created, SAR teams were not involved in marketing or promoting the fund. Through years of inaccurate news stories the public was led to believe that they would receive an enormous bill (from "someone") for search and rescue. The source of this misunderstanding was the Colorado Division of Wildlife, which in 1992 widely promoted the Search and Rescue Fund as "insurance," apparently the only way they know how.

•Shortly after the fund was created, the Tenth Mountain Trail Association printed on its literature, "...purchase a one-day Colorado fishing license and the State of Colorado will pay for your rescue."

•The *Summit Daily* newspaper printed, "Rescue extractions can be costly; buying a state fishing license gives hikers one free rescue from the backcountry."

•During the winter of 2001, the *Bicycle Colorado* web site contained a similar advisory.

SAR teams, concerned with the growing number of incidents in which the subject was afraid to call for help because they presumed they would receive a large bill, frequently have to explain that it is state-administered pool of money, from which a **sheriff and it's authorized search and rescue unit** can recoup some costs; and which also helps fund SAR training and equipment through grants. Moreover, that there has never been a "public" benefit to the program.

It will also not pay indirect costs for which a responding agency may choose to bill, e.g. \$xx/hour for a rescue truck or command staff.

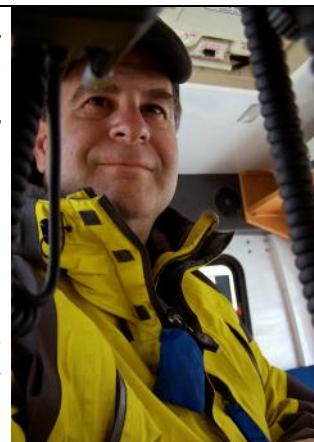
The SAR community in Colorado is fortunate that today the fund is administered by a state agency, the Colorado Department of Local Affairs, that has recognized the problem of labeling it as insurance, and goes out of its way to explain it is not.

An advisory board advises the state on Search and Rescue Fund issues, and reviews claims and all grant requests, for appropriateness. It is composed of representatives from the Colorado Search and Rescue board, the Division of Parks and Wildlife, outdoor organizations (fishing, hunting, biking, hiking, etc.), the snowmobile community and three county sheriffs.

The fund has been copied entirely, or in part by the legislatures of Idaho, Utah and Wyoming. If your state contemplates, or does, create such a fund it is imperative that SAR teams be involved from the beginning. It is also critical that they be involved in all marketing and promotion of the fund to the outdoor community and the news media, at the outset. If done correctly, the public should never infer it is insurance and, hence, assume SAR teams will bill for service and they should fear a bill if they are not covered by the fund.

The Colorado Search and Rescue board will gladly offer advice to any state that is considering creating a fund like Colorado's.

Howard Paul is a 25-year member of Alpine Rescue Team of Evergreen, Colorado. He is a past president, and current public affairs manager, of the Colorado SAR Board. He is a member of the board of directors of NASAR, as well as its PIO. Paul was the founding editor of Rescue Forum, the MRA's first journal. Contact him at hmpaul@ecentral.com.



MRA Alaska Region Teams with National Guard

By Doug Wessen

Sitka Mountain Rescue hosted a training with the Alaska National Guard the weekend of October 13th and 14th. The National Guard provided transportation for the event flying six members from the Alaska Mountain Rescue Group (AMRG) out of Anchorage, and six members from Juneau Mountain Rescue (JMR) to Sitka for the training with the C Company, Long Range Surveillance 1-297th. National guard medics met with EMS personnel from Sitka Fire Department to review medical capabilities. The rest of the Guard members had a tour with Air Station Sitka. US Coast Guard rescue swimmers gave briefings on MH-60 Jayhawk rescue capabilities.

On Saturday the National Guard members had classroom instruction on the civilian ICS system, search tactics and avalanche response. The rest of the day involved field training led by Sitka Mountain Rescue on a trail system near Bear Mountain, south of Sitka, on Type I, Type II and Type III search tactics. The final part of the day involved avalanche response methods led by AMRG members. Participants were provided with demonstrations and practiced with avalanche beacons, and probe line techniques.

The training was organized for the National Guard to provide support for the state of Alaska as an additional resource to assist local search and rescue teams for large scale and multi-operational events. In July a member of the National Guard went missing while on a solo river trip near Wrangell, Alaska. Unfortunately after searching for several days, they were not found. This event prompted the National Guard to develop improved search and rescue skills and to work with local teams.

As the training progressed Guard members commented they now understood the complexities of conducting a search and what was involved in search management. Several were also excited about learning beacon techniques and avalanche response, and were hoping for more training in the future. Since snow had not fallen yet instructors had to improvise and hide beacons in a grass field.

Three JMR Candidates took part in the training along with the Guard, practicing with beacons, probing with Guidon Cords, and in search tactic exercises. Several guardsmen remarked that this was one of the best drills they have had for weekend exercises. Despite a steady rain that was unrelenting the soldiers never complained.

Although the event was designed to develop a multi-agency response to a major incident, it was beneficial to Guard members who discussed the need to get avalanche beacons for their personal use when snow machining during winter back-country recreation.



Juneau Mountain Rescue members prepare to board a C-130 to attend the multiagency training. Photo by Doug Wessen.

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The training ended Saturday evening with leadership from the three MRA teams, National Guard and Sitka Fire Department deciding to develop plans for future exercises within the state.

Doug Wessen is the current MRA President; the Vice President of Juneau Mt. Rescue; and is on the Board of Directors of the Southeast Alaska Critical Incident Stress Management Team.



National Guard members practice probing using a Guidon Cord. Photo by Doug Wessen.

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."

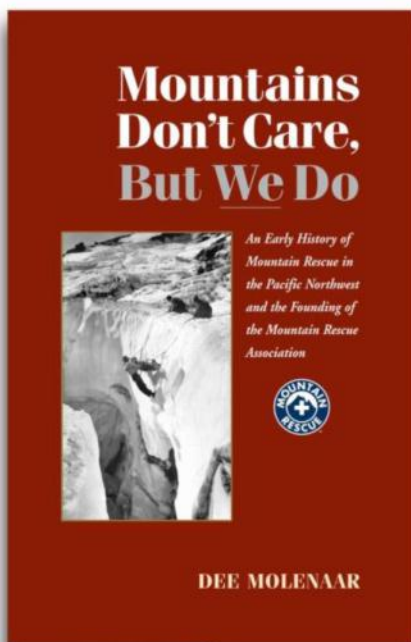
Tom Hornbein

"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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