



The MRA Honor Guard



Rescuer's Prayer

When I am called to duty, God,
wherever people fall,
give me strength to save a life,
whatever be the call.

Help me embrace a little child
before it is too late,
or save an older person
from the horror of that fate.

Enable me to be alert,
and hear the weakest shout,
and quickly and effectively
bring my neighbor out.

I want to fill my calling, Lord,
and to give the best in me,
to bring my every neighbor
back to their family.

And if according to your will,
I have to lose my life,
please bless with your protecting hand,
my children and my wife.

**2011 Spring
Conference
Highlights**

**Portable Two-Way
Radio Battery
Primer**

**On the CPR
Debate**



MOUNTAIN
RESCUE
ASSOCIATION

July 2011

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As always, seeking the high spot on a host hotel with Pikes Peak in the background in early 2001, shortly after the founding of the MRA Honor Guard.

Left to right: Neal Jeffers, Carl Schwendler, Pete Espinosa, Dave Moore, Tim Kovacs.

Photo by Rocky Henderson.

The MRA Honor Guard

By Tim Kovacs, Founding Commander, Honor Guard; MRA President 1998-2000

Influences and Inspirations

The MRA Honor Guard was established as an unofficial service in 2000. The idea was not new. I have been able to trace the concept of it as far back as at least the late 1960s, when people including former MRA president 1970-1972 Dave Moore, then a junior MRA officer, suggested the concept at a meeting. In more recent years up through 2000, a few MRA members had quietly discussed the idea of an MRA honor guard.

Losing Russ

In March of 1998, MRA's Las Vegas Metro Police search and rescue officer Russ Peterson was killed by a falling ice block while belaying another member on a team training ice climb. He died still holding the belay to his unpaid SAR member. I knew Russ and attended his funeral in Las Vegas, at their SAR office-hangar. To honor Russ I chose to wear my sheriff's office class "A" uniform, since I happened also to be a sworn (no longer career but still reserve) deputy. I did this because Russ was a full time police officer-SAR coordinator, and because neither my team nor the MRA had a dress uniform or anything that even came close. I was taken with the desire to give a formal appearance and respectful goodbye to Russ. For me this included a salute, which one does not normally do without proper uniform and "cover."

"Don't lose your history".

In June 1998 at the 40th Anniversary Conference of the MRA at Timberline Lodge, Mt. Hood Oregon, I was inducted as the incoming MRA president. I shared a drink or two at the lodge with Butch Farabee, a close-to-retirement National Park Service EMS/SAR chief in Washington DC, assistant park superintendent and former member of Southern Arizona Rescue Association. Butch had just finished his book on SAR in the national parks that his publishers titled "*Death, Daring and Disaster*." He shared with me what a treat it was to research and write of the history of the national park rangers and SAR. We talked about how the MRA and NPS dovetailed in many areas and in fact shared founders. I talked of my quest to get a complete list of who had served as a previous MRA officer, and to capture the elusive and somewhat enigmatic history of our founders and our organization. I shared a recent attempt to do so by Tim Cochrane and the MRA that had fallen down.

He asked how we were doing on gathering and maintaining the MRA history. "Poorly," was my answer, "but trying to get better." He gave me a stern but impassioned look and said, "Don't lose your history or your culture." So began a long journey that continues today to recapture, save and honor the rich history of the MRA and its people.

Tom's death

In early 1999 while I was president of the MRA, Tom Frazer of El Paso County SAR, Colorado was our MRA secretary-treasurer. He was also our ASTM representative and managed our small stores. A quiet, timid but determined, dedicated and kind man, Tom passed away in office from pulmonary fibrosis - a terminal illness that we knew about but one that took him too suddenly. My wife at the time, Tami, and I flew to Colorado Springs to visit him in the

hospital at what would be one of his final days. We returned several days later for the service. As president, I came to represent the MRA more so than my team, so my team field uniform was not appropriate. My sheriff's uniform was certainly not appropriate either, as Tom was not a law enforcement officer and we did not routinely wear them for SAR in our county. I came dressed in my best black suit, tie and overcoat, with my president's pocket badge showing.

These two deaths left a mark on me, a sense that it was time to offer something in the way in which we paid respects to our members and our brothers and sisters in SAR when they pass.

I knew that the MRA has never gone for much pomp and circumstance. We have always been a simple group of mountaineers and rescuers who go out to do the job without fanfare. Yet as a full time police officer, as a career or volunteer firefighter, or certainly as a member of the military such a person would receive some sort of honors. If an MRA member died on duty or off duty, the sponsoring sheriff's office or other agency might have a formal service, but history showed that did not usually occur for volunteers. A pity.

Providing an honor guard seemed a good thing to do. I am very proud of the work that the MRA does and its units do, and we have reason to be proud. At our best we're a cut above in the field. And our families give a lot. What do they get when an MRA member retires and dies after giving so much? What if they never served in the military, fire or law enforcement as a paid career? There are a LOT of people who have given years and years of their lives to unpaid SAR work and who otherwise received no honors. They don't seek it, but is it wrong to have it? To offer it?

I thought it a good thing to honor our own people, sometimes to honor them even if they didn't die on a mission, such as passing away while still active on a team or after they "retired" from service. Perhaps their dedication and sacrifice of self and family was enough reason to honor them when they passed. Perhaps an honor guard might help the family understand what we speak so little or nothing of to them, what they don't understand when we do try to explain it; what we try so hard all our lives to impart to those who do not fully grasp why we do what we do, for pay and for no pay. Perhaps the family might find solace and some joy in such a ceremonial explanation of our love and respect for our fellow rescuer, and by extension, the families' sacrifice.

I filed the information away, along with a hundred other ideas I had for the MRA. I figured I needed help, and I would know when it was time.

Foreshadowing

In 1999, I was invited as MRA president to the Alpine Rescue Team of Colorado's 40th anniversary. I was excited and looked forward to having a one-stop-shop to meet a few MRA past presidents in the same place and get more history lessons. Dave Moore, 1970-1972, was one of them. Introduced to him, I found a large and tall but distinguished gentleman with a pronounced handlebar moustache, a strong handshake, a ready smile – although somewhat impish – and a booming but controlled and carefully

paced voice. His red suit coat told me a little of what personality might be coming too. We seemed to tap into one another with some quick quips and puns. I picked his brain, as I did others, about the past, his part in it, tidbits about the MRA of years gone by. He was one of several past presidents and founders of the MRA that I would cajole into getting active again with the MRA. Dave, I would later learn, took the bait more than the rest in several ways. Or was it that I took *his* bait?

The Establishment of the MRA Honor Guard

At our June 2000 Spring Conference in Nordegg, Alberta, Canada, MRA host team Rocky Mountain House SAR treated us very well. They provided the RCMP local Color Guard with a piper to lead us in to the Saturday festivities and banquet. A prayer was proffered and a moment of silence observed for absent friends. I hadn't recalled any such ceremony in my 12 years of national MRA conferences. Pomp and circumstance in the MRA is not the norm and was even discouraged. And its true, it can take the wrong path if not done for appropriate and noble reasons.

As the outgoing MRA president, as well as having been born in Canada, it was special indeed to be led in to the banquet in such a manner. We had already had a terrific time on the glaciers and in hosting a film crew from the History Channel, who would internationally chronicle the MRA once and for all, permanently on TV and on video. We were enjoying the MRA's "fifteen minutes of fame."

As the conference was winding down, who should approach me but MRA past president Dave Moore, at his first MRA conference in several years. Despite the strong appearance, he was misty-eyed as he said to me how many years it was since he had attended an MRA conference, what a neat thing it was that the host team and the RCMP Color Guard did. He then moved in for the kill. He asked (in Dave's commanding Cochrane-esque voice and rhetorical style) if there was any reason that we could not do something similar each year. Butch Farabee's words came back to me as Dave spoke.

We shared the concept with a few others, and with a few beers under our belts and a full head of steam, the MRA Honor Guard was born. Rocky Henderson, my MRA vice president who succeeded me as president, provided some excellent support to the concept ("give it a chance").

It would be a volunteer unit and we would find our own funding. Members would pay for their uniforms and their expenses, including last minute flights. We spread the word quietly through the MRA. Some stepped immediately forward and several of my own local rescue team members honored me by asking to be part of it.

First MRA president and Crag Rat Dick Pooley lent critical advice to traditions, culture and uniform ideas and he promptly asked to march in with us at our first MRA appearance. We made him an honorary commander years later in 2009, where he again asked to march with us in his Crag Rats outfit. The families of Otto Trott and Ome Daiber helped with historical perspective, uniforms, and culture and traditions. Former MRA PIO Brad Parker and Howard Paul were supporters who helped get things going from the start.



Dave and I became the co-commanders, although I was given the title in official capacity. Pete Espinosa of CAMRA/MCSOMR, a previous member of the Army Honor Guard and well versed, became our drill commander and “go to” guy for any questionable issues of protocol.

Our other founding members were;

Dennis Chapman, Utah County SAR

Neal Jeffers, CAMRA/MCSOMR

Carl Schwendler, CAMRA/MCSOMR

Brett Bigelow, CAMRA/MCSOMR who became our first Bagpiper.

Later, Jennifer Mackler of Larimer County, CO SAR became our first female member and her K9, Chara, became our first canine member, with her own honor guard vest!

The rest... is history.

With the distinction – that we did not seek - of being the only SAR-specific honor guard in the US and Canada, civilian or military, we have been asked to provide services for SAR people outside the MRA, including being flown to New York within several weeks of 9-11 to help with memorials, and to Arlington when the 10th Mountain Division was so overloaded by Iraq and Afghanistan that they did not have enough personnel for memorials. And yet, our most beloved and favorite “details” are always the ones for regular members who simply pass on, as well as for MRA founders and past presidents.

We just recently buried our dear friend Dave Moore, who continued to serve in the Honor Guard into his 80s, and was buried in his uniform according to his wishes. At the 2009 50th celebration at Timberline, Dave told Jim Whitaker that he was his hero and Jim replied, “You’re my hero. I’ve been living off my reputation and actions and books from a half century ago. You’re still out there suiting up and honoring people.”

And we recently buried past president Tim Cochrane to honors that Tim approved when he asked the Honor Guard to be there before he died. I was Tim’s vice president and succeeded him. Tim had become a quick and avid supporter of the Guard and later moved to make it an official part of the MRA and give it some initial modest funding.

Many other MRA members and officers have contacted us to tell us what they would like from the Guard when they pass. We adapted a guide for all MRA members that will help them and their families now with their estate planning, and to plan for what they would like at their memorial services, whether or not they choose for the Honor Guard to be there. We take the stand that we are there to support the families’ and teams’ wishes. We are there for them, not for us.

We are a small group of members of local MRA teams who give what they can, when they can. We’re looking for members who espouse the culture and personality of an honor guardian, and we seek people from every region. If you have ever seen the recent HBO movie now on DVD, “Taking Chance,” you will see many of the traits we seek.

Candidates and members must learn and know their movements. They must know about the history and structure of the MRA. They must know about each and every one of our “fallen in the line of duty” MRA members. They must be diplomats. They must be able to honor their commitments and to not over-commit. And yes, they have to keep an acceptable look in the uniform.

We hope that the MRA Honor Guard is worthy to be carried on as a tradition of the MRA, and we charge all in the MRA, our successors, with preserving the tradition of honoring our members and their families for their service.



2002 World Trade Center. Honor Guardian Soren Orley of Alaska MRG at the memorial at ground zero. Photo credit unknown.

2011 MRA Spring Conference Report

By Dave Clarke

This year's conference was held in Eagle County, Colorado from June 17th to 19th. MRA members from all of our regions came together for a weekend of fun, education, sharing and problem solving. From the beginning, this year's event was billed as a return to our roots. The theme was incident management and the activities were designed as simulated incidents managed by an "area command" structure.

The pre-conference this year was a class on managing multi agency/jurisdictional incidents taught by Dan Hourihan. After two days we were ready to practice our newly learned management skills. Meanwhile other early arriving participants were treated to a variety of hikes organized by members of Vail Mountain Rescue.

Although the theme was incident management, if anyone thought that this would be a bunch of rescuers sitting around drawing org charts on a white board they quickly found out that there was a more hands-on agenda in store for them. Friday began with a mock mission to rescue a paraglider who had crashed on a cliff. While that seems straightforward enough, the rescue was complicated by the fact that the cliff was above a long scree slope and across the swollen Eagle River from the access road and we had to conduct boat operations and build a highline to get rescuers in and out. An incident management team was formed the night before from the pre-conference participants and they assigned 50 rescuers to various tasks.

The weather forecast called for 85 degrees and sunny so we prepared with sunscreen and extra water. Not to worry though, turns out we got temps in the 50s and intermittent rain. Other glitches in our plans popped up here and there, and in true MRA fashion, everyone adapted, improvised and overcame to complete the rescue and get everyone safely back to our area command base right on time.

The next activity was a visit to the National Guard's High Altitude Aviation Training Site or HAATS, where pilots from all over the world come to learn "power management" techniques for flying



Visiting the National Guard's High Altitude Aviation Training Site (HAATS). Photo by John Chang.

helicopters into thin air. We were fortunate to receive a great tour from the unit commander, Major Josh Day and the executive officer, Major Tony Samoji. In addition to training pilots, this base also flies missions for local MRA teams.

Friday concluded with one of my favorite conference activities, the chance to visit with other MRA members and partake in some well earned food and beverage. Meeting other rescuers, exchanging ideas and information and catching up with old friends is something I look forward to at every MRA conference.

Saturday morning was another early start; we met at the area command base where new incident management teams gave assignments for two new incidents. Today's missions: rescue a stuck climber with a guiding line and locate a simulated crashed aircraft ELT with L-Per locators. The group split into two teams, tackling one mission in the morning then switching places to handle the second mission in the afternoon. Everyone got hands-on experience and for many it was with skills they had never used before. By late afternoon we all arrived back at incident base, tired but looking forward to the Saturday evening banquet.

This year's banquet included a moving presentation by our Honor Guard recognizing our members who have passed in the last two years and installing "Line of Duty Death Banners" on our MRA flag. Rocky Henderson officiated the MRA awards presentation. Several members received well deserved recognition for their work but one in particular deserves mention here. That is a lifetime achievement award to Arnold "Al" Green of China Lake MRG (California) for 50 years of service in mountain rescue. Another highlight was an appearance by Marilyn Monroe to sing "Happy Birthday Mr. Past President" to Monty Bell. No kidding, you can check it out for yourself here: <http://www.youtube.com/watch?v=CJoBPKnLZdM>

Yup, it was another fun and worthwhile conference. I hope to see you all next year at Lake Tahoe, NV.



Rigging up for the mock rescue of a crashed paraglider. Photo by John Chang.

2011 MRA Awards



20 Year Service Award

**Mike Everist,
Alpine Rescue Team, Colorado**

Nominated by Alpine Rescue Team
Presented by Rocky Henderson



25 Years Service to the Community

Grand County Search and Rescue, Colorado

Nominated by Mountain Rescue Assoc.
Presented by Rocky Henderson



Distinguished Service to Region

**Roger Yensen,
CAMRA/MCSOMR**

Nominated by John Gorski, SARA
Presented by Rocky Henderson



Distinguished Service to Olympic Mtn Rescue

**Roger Beckett,
Olympic Mountain Rescue, WA**

Nominated by Olympic Mountain Rescue
Presented by Rocky Henderson



Distinguished Service to Olympic Mtn Rescue

**Keith Spencer,
Olympic Mountain Rescue, WA**

Nominated by Olympic Mountain Rescue
Presented by Rocky Henderson



Lifetime Achievement

**Arnold "Al" Green,
China Lake MRG, CA**

Nominated by China Lake MRG
Presented by Rocky Henderson



Distinguished Service to Colorado Mountain Rescue/SAR

Flight For Life Colorado

Nominated by Charley Shimanski/Alpine Rescue Team
Presented by Rocky Henderson

2011 MRA Awards



These rescuers made up Teams 1 and 2, who went into the field at dusk to attempt to locate an overdue back-country skier who had reportedly fallen through a cornice. Significant efforts were made to locate the skier including dropping down steep and unstable snow and ice terrain, braving hanging cornices and sketchy steep snow. These two teams worked tirelessly in freezing, dark and exhausting conditions to locate the victim. When at 0500 hours it was deemed no longer mitigably safe to be in the basin where the cornices would fall, Oyvind, Bree and Nathan remained in as safe a position as possible until daylight to get one final view of the 1,000 foot rock face to ensure the victim was not stuck on a small ledge. Then they made their way out via an alternate route from their entry route due to the unsafe avalanche conditions, through ten miles of snow, steep cliffs and bushwhacking to get to Middle Fork.

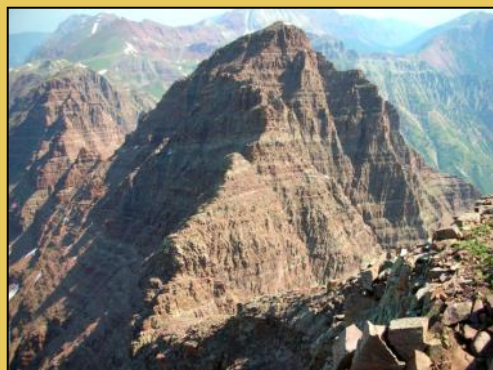
Conspicuous Bravery Award

**Oyvind Henningsen, Nathan Greenland, Ian Williams, Russell Anschell,
Bree Loewen, Aaron Zabriskie, Matt Wetzel, Garth Bruce,**

Seattle Mountain Rescue, Washington

Nominated by Tacoma MRU

Presented by Fran Sharp



North Maroon Peak

back over South Maroon. Within minutes, Mike was rappelling and climbing down the couloir to Spencer, some 600 vertical feet below the ridge. A member of Mountain Rescue Aspen who happened to be on the route also went to the site.

They began CPR and other necessary emergency medical procedures, but soon realized that Spencer had received fatal injuries from the accident.

Spencer's body was secured and the two rescuers waited in communication limbo for the organized recovery operation by Mountain Rescue Aspen. It would be seven hours before rescuers could climb the route to the site. Because of the difficulty of the location, Spencer's body was not recovered until the following day.

Despite huge personal grief during the accident, Mike instinctively used his years of SAR and mountain rescue experience to move beyond the personal pain of what he had witnessed, rappelled down to Spencer and attempted CPR and other lifesaving actions. For this, we recognize him for something that we all hope and pray we never have to experience.

Mike would say that he was just doing what he was trained to do.

On August 14, 2010, Mike was climbing the Bells Traverse on Colorado's 14,000-foot Maroon Bells with his longtime friend Peter Nelson, along with Nelson's 20 year old son, Spencer, and four of Spencer's college-age friends. While Spencer, Peter and Mike had considerable experience climbing Colorado's highest peaks, the other young men and women were relatively inexperienced.

The Bells Traverse is rated Class 5, but is complicated by loose rock and severe exposure. By 1000 hours the group had already summited South Maroon Peak and was approaching the crux of the traverse to North Maroon Peak, when one of the climbers dislodged a football-sized rock.

The rock hurtled down the rocky slope and struck Spencer in the head, sending him tumbling down the Bell Couloir. You may recall this as the location where we lost Mountain Rescue Aspen leader Greg Mace in 1986 in a line of duty death accident.

Mike immediately took charge of the situation. He formulated an action plan to rescue Spencer, and a retreat plan for the now emotionally handicapped climbing party. Mike provided GPS coordinates for the accident and charged Peter with leading a safe retreat



Spencer Nelson



Conspicuous Bravery Award

Mike Cronin,

Grand County Search and Rescue, Colorado

Monty Bell Awarded California State Award

At the 2011 NASAR Conference in June in Reno, NV, Monty Bell was awarded the California State Award for SAR.

Monty Bell has done an outstanding job in taking active SAR leadership roles as a professional volunteer for the citizens of San Diego County as well as the entire State of California.

Monty has taken SAR volunteerism beyond simply training and responding to local SAR missions. He has committed to the state's SAR management instructional program, as well as to both the National Association for Search and Rescue (NASAR) as a current board member, and to the Mountain Rescue Association (MRA) as the Past President. Monty represents both national associations to the California's State Sheriff's SAR Coordinators sessions each quarter in Sacramento. He also dedicates his time, experience, expertise, and expert instructional skills to California's only Peace Officers Standards and Training Search and Rescue Management Course program, the California Emergency Management Agency (CalEMA) Law Enforcement Division's Direction and Control of the Search Function SAR Management Course, a recognized NASAR MLPI course (Monty brings extra experience and value to this course as he is the only search management instructor that we could find that has actually been lost).

Monty exhibits a clear commitment to make SAR better for his county, for the State of California, and for our nation.



Honor Guard Presentation

The last of our 32 Line of Duty Death Streamers were dedicated and mounted at the Spring Conference. For complete list of our fallen, go to www.mountainrescuehonorguard.org.



- ♦ Vern Kaiser, Yellowstone NP, WY. 21 June 1947. (By Mike Vorachek, IM Region)
- ♦ Richard Slates, China Lake MRG, CA. 21 Dec 1966. (By Bob Hiuey, CLMRG)
- ♦ Chuck Rea, Montrose SAR, CA. 26 Jan 1969. (By CA Region: John Chang, Antonio Arizo, et al)
- ♦ Jack Dorn, 23 May 1977, Yosemite SAR, CA (By CA Region)
- ♦ Rick Mosher, Mono County SAR, CA (By CA Region)
- ♦ James Randolph, Inyo County SAR, CA (By CA Region)
- ♦ Terry Leadens, CAP, CO (By Charley Shimanski, ART)
- ♦ Dan Madrid, Yosemite NP, CA (By CA Region)

2012 Spring Conference

We are very pleased and excited to announce that the 2012 MRA Annual Meeting and Conference will be held in conjunction with the National Search and Rescue Conference. This is the first time that MRA and NASAR have partnered to jointly host our annual conferences.

When: The pre-conference dates are June 4-6, with the main conference on **June 7-9, 2012**.

Where: The conference will be held in the Reno/Lake Tahoe area with the support of local host Douglas County (Nevada) SAR.

As additional details become available we will communicate them with our membership - but be sure to mark your calendars now for next June!



Backcountry Rescuer (www.backcountryrescuer.com) is an online SAR magazine reporting on various topics relating specifically to SAR. Backcountry Rescuer was created with the intent to provide the SAR community with an informational resource. Most of the articles are written by people in SAR, or rescue related agencies. If you register on the site, you receive an email only when the next issue is released (about every 2 months). You can also follow Backcountry Rescuer on [Facebook](https://www.facebook.com/backcountryrescuer) where article announcements are updated as they are published. Simply "like" Backcountry Rescuer to see these announcements.

If you have an article idea or would like to write an article for Backcountry Rescuer, please send your ideas to BCReditor@gmail.com.

New MRA Teams

Coconino County Sheriff's Technical Rescue, Arizona—Full Accreditation

The Coconino County Sheriff's Search and Rescue Unit has been in existence since 1976, serving the second largest county in the continental United States. Coconino County encompasses 18,661 square miles of Northern Arizona and includes within its boundaries the Grand Canyon National Park, Mt. Humphreys (tallest peak in Arizona at 12,633ft), Sedona, portions of Lake Powell, Oak Creek Canyon, and several Native American reservations.

On average, Coconino County Sheriff's Search and Rescue responds to between 80 and 120 missions per year that range from overdue hikers and hunters to aircraft accidents to technical rescue incidents to winter recreation-related incidents. In addition to traditional search and rescue incidents our personnel have been called upon to assist with other natural disasters and incident management activities including wildfire evacuations, Emergency Operations Center functions, heavy snowfall emergencies, and support to law enforcement on criminal investigations.

In 2010 the Coconino County Sheriff's Search and Rescue Unit had 4303 person hours on search and rescue missions and 6842 person hours in search and rescue training. Our wilderness navigation programs have been sought after by several neighboring agencies including the National Park Service, the local ski patrol, and the local SWAT team. We work very closely with our neighboring counties as well as the Arizona Department of Public Safety Aviation Bureau and the National Park Service to accomplish search and rescue missions in the region.

Beginning in the fall of 2010 and ending in March 2011 the team completed the accreditation evaluations for regular membership in the Mountain Rescue Association. We are very proud of this accomplishment and look forward to a long relationship with the MRA.

Sgt. Aaron Dick #32, Search and Rescue Coordinator
Coconino County Sheriff's Office

Coconino County Sheriff's Technical Rescue Team. Photo by Tom Boughner.



Santa Clara County Search and Rescue, California—Membership

Santa Clara County Sheriff's Search and Rescue was formed in 1989 to assist city, county, state and federal agencies in times of emergency. The team is part of the Special Operations Division of the Santa Clara County Sheriff's Department. Our members are all dedicated volunteers, who are highly trained to effect successful SAR operations.

The team is based in San Jose and directly serves the cities and unincorporated areas of Santa Clara County. The County encompasses 1,304 square miles and has a population of 1.8 million people. Its terrain ranges from San Francisco Bay wetlands to rugged mountains with two ranges running through it, the Santa Cruz Mountains to the west and the Diablo Range to the east.

During a typical year, the team responds to about 25 requests for assistance and expends more than 8000 person-hours of training.

The team's activities cover:

- Wilderness and urban search and rescue responses
- Rope rescue on steep slopes
- Downed aircraft search, rescue and recovery
- Support for major community events
- Community preparedness and preventative SAR education

The team also responds to major and extended out-of-county incidents statewide, through the California Office of Emergency Services; Mutual Aid Plan. Also, as a Sheriff's Office resource, the team has supported the California Department of Forestry and Fire Protection during major wildland fire incidents.

Rusty Wackermann
Santa Clara County SAR



Portable Two-Way Radio Battery Primer

By William Laxson, MRA Communications Committee Chair

Over the past 40 years, the chemistry used inside our rechargeable two-way radio batteries has undergone several major evolutions. In the 1970's, nickel-cadmium batteries (NiCd) were widely used. Then about 20 years ago, the industry began a shift to nickel-metal-hydride (NiMH) batteries to reduce environmental pollution by the cadmium (a heavy toxic metal) waste stream.

More recently manufacturers have been transitioning to lithium-ion (LION) batteries because of their higher energy density and the desire to reduce the size and weight of the battery in concert with the size and weight reduction of the associated radio that can be achieved with modern microelectronic circuitry.

Each battery chemistry has its own unique set of operational characteristics that the end user should keep in mind.

We desire many characteristics in our batteries, including low cost, high energy density, and light weight.

Battery characteristics should not change at low and high temperatures. They should have no memory effect, offer a large numbers of recharge cycles, and leave no hazardous heavy metal waste disposal issues when the battery reaches the end of its life.

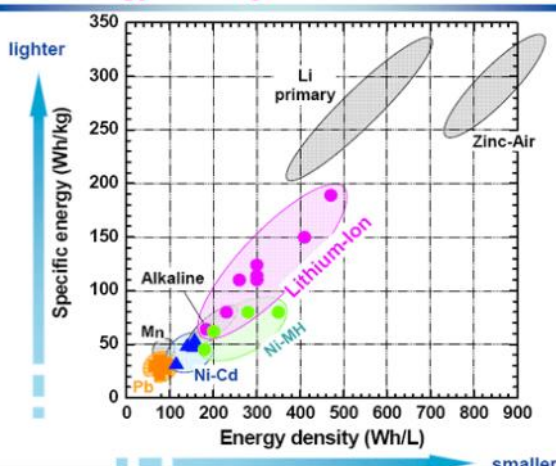
No battery chemistry yet developed can be optimized to maximize all of the favorable characteristics at the same time. Battery manufacturers tweak whatever chemistry they are using to emphasize some characteristic over others based on how the battery is expected to be used.

The characteristics most important to the SAR community (because they have a direct impact on the actual use of the radio in the field) are battery life and reliable operation over a wide temperature range (that extends down well below zero for many teams operating in northern climes or at high altitudes).

All other undesirable characteristics can be managed with varying degrees of inconvenience and cost because the radios are not in field service.

There are three major battery chemistries in use today in our rechargeable two-way radio batteries, NiCd, NiMH, and LION.

Energy Density of Various Batteries



NiCd: Nickel cadmium batteries have generally been phased out by radio manufacturers for new model radios. In some cases, NiCd may be available from aftermarket manufacturers like Alexander or TEI4. NiCd is the most robust battery technology of the three in use today.

NiCd Advantages:

- ◆ They are very tolerant to widely varying charge and discharge conditions (and temperature), even after long storage periods in a discharged state.
- ◆ They provide the highest number of charge/discharge cycles when properly maintained (1000 or more), hence lowest cost/cycle.
- ◆ They have the longest shelf life in any state-of-charge (important because of higher self-discharge rates).
- ◆ They have the best low temperature performance, maintaining 60% of capacity at minus 20°C (4° F).

NiCd Disadvantages:

- ◆ They have a lower energy density when compared against newer battery chemistries.
- ◆ They exhibit the strongest memory effect. They must periodically (monthly) be exercised to a full state of discharge.
- ◆ NiCd is environmentally unfriendly, containing the toxic metal cadmium.
- ◆ They have a modest self-discharge characteristic, losing 10% of their charge in the first 24 hours, then continuing at a 10% per month rate thereafter.

NiMH: Nickel metal hydride batteries can be found for most models of modern two-way radios.

NiMH Advantages:

- ◆ They have a 50% percent higher capacity over a standard NiCd, with potential for greater improvements.
- ◆ They are less prone to memory effects than the NiCd batteries. Periodic exercise cycles are required less often, but are still critical to maintaining a long battery life.
- ◆ They are environmentally friendly and profitable to recycle.

NiMH Disadvantages:

- ◆ NiMH battery service life is more limited compared to NiCd, particularly when deep cycled at high load currents (i.e. two-way radio transmit mode to battery end-of-charge). Shallow rather than deep discharge cycles are preferred. Expect 300 discharge cycles and 300% the cycle cost of NiCd.
- ◆ They are less tolerant to charge conditions. The battery generates more heat and takes longer to recharge.
- ◆ They have a 50% higher self discharge rate than NiCd batteries.
- ◆ They have a poor shelf life when stored at elevated temperatures. They should be stored in a cool place and at a state-of-charge of about 40 percent.
- ◆ NiMH batteries have poor low temperature capacity retention. At minus 20°C (4° F), expect to get only 20% of the room temperature capacity. If the battery is warmed up, some capacity will be returned.

LION: Lithium ion batteries represent the most recent development in rechargeable battery technology. They have significant low temperature operation and cycle cost disadvantages in the SAR environment.

LION Advantages:

- ◆ They have the highest energy density, primarily because of their high 3.7 volt per cell open circuit voltage.
- ◆ They have no memory effect, and only half the self-discharge rate of NiCd batteries.

LION Disadvantages:

- ◆ They are extremely sensitive to charging conditions. To extend cycle life and avoid damaging the battery, most LION cells are operated by cycling them between the 80% and 20% capacity points.
- ◆ Battery overcharge, over-discharge, or physical damage can induce thermal runaway, leading to flames and explosions.
- ◆ Most high capacity LION batteries suffer from age related degradation of the cathodes, leading to a 20% reduction in capacity per year, whether the battery is in use or not.
- ◆ LION batteries have extremely poor low temperature capacity retention. At minus 20°C (4°F) they stop working. If the battery is warmed up, some capacity will be returned.

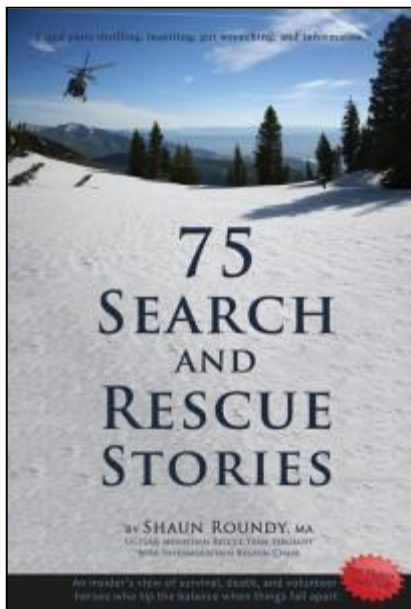


A 1950s era two-way radio that used peanut vacuum tubes to generate ½ watt of transmit power. It could be powered from two 67.5 volt zinc-carbon batteries (plate voltage) and a string of D cells (filament voltage). Photo credit unknown.

Table 1: Comparison of Two-Way Radio Rechargeable Battery Characteristics ¹

Performance Parameter	NiCd	NiMH	LION
Rechargeable?	Yes	Yes	Yes
Energy density in watt-hrs per lb of battery	20 - 36	30 - 54	50 - 72
Low temp operation (% capacity retained when operated at -20° C (-4 ° F))	60%	20%	5% to totally inoperative
Shelf life (self discharge characteristics) when stored at room temperature	10% first day after charge, then 10% per month thereafter	15% first day after charge, then 15%-20% per month thereafter	<5% per month
Memory effects	Yes, must be fully cycled monthly	Yes, must be fully cycled bi-monthly	None
Tolerance to varied charging conditions	Widely tolerant to high charge rates and trickle charge rates	Sensitive to temperature, cannot be charged rapidly, long term trickle charge damaging, needs microprocessor controlled charger and factory programmed charge profiles	Extremely sensitive – Must be charged with microprocessor controlled precision using factory specified charge profiles for each type of battery
Cycle life	>1000	300	300
Relative per-cycle costs	100%	300%	500%
Other considerations	Toxic heavy metal pollution upon disposal		Battery ages and loses 20% of its capacity per year whether in use or not

¹: Data taken from "Batteries in A Portable World, Third Edition, Isidor Buchmann, and from various battery manufacturer engineering manuals.



Book Review:

75 Search and Rescue Stories

By Jules Harrell

Shaun Roundy, a Utah County search and rescue professional, writes poignantly about the many events he's participated in, by foot, sled, motorcycle, ski, rope, ATV, boat, belly (in the caves) and underwater diving for body parts. Shaun is the kind of guy you just want to hang out with and swap stories, knowing that by the end of the evening he'll be still telling more while you are quietly listening, in awe of his experiences.

And it can get gross at times. When he describes the rotting faces of bloated waterlogged corpses whose arms may fall off you have to cringe a little. When he talks about the little girl's body that is caught in river debris, at least you already know she's dead because otherwise you'd be heartbroken like the rest of the rescuers. Lots of kids die in Shaun's book; in fact, lots of people die. Several also survive, although as he says most of the time the SAR groups don't even know if their patient lived or died unless they come

back and tell them.

Shaun is no stranger to death and destruction. He sees it all the time, and writes about it in a way that puts you there with him. Throughout the book you will see many photos of different rescue scenes, as well as some photos of SAR folks just having a good time. It's important to remember that SAR is almost always volunteer, and as volunteers we have to have a good time once in a while. Speaking of which, there was the time Shaun had a cute chick out for a date on the lake when his boat capsized. He was forced to call for rescue, which we all know means he'll never hear the end of it from his SAR friends. The cute chick pretty much ditched him for his rescuers, but at least he can laugh about it now. As I'm sure the rest of his SAR team does too.

Vignettes of what it was like to develop the motorcycle contingent of Utah County's search and rescue really made me want to go out and buy a motorcycle. You can personally experience how hard they had to push those bikes straight up gnarly rooted paths late at night. I still can feel what it must have been like for the guys to feel their bikes rear up in front of them, and have to somehow get them back on the path again without

falling to their deaths down below. The motorcycles speed up rescue and recovery, and are fun too. Still, a high level of skill is required to ride where you once hiked, and Shaun certainly takes you there in his book.

When Shaun says 75 stories, he's not kidding. This 214 page book is jam packed with stories, photos and discussions of what SAR life is like for the average person who also has a job and a life to juggle. At one point, Shaun is about to sit down with slathering hungry jowls to Thanksgiving dinner prepared by a friend when of course, right while he's piling his plate with food, the pager goes off. The two rolls and slice of pie provided by the host at the last minute give Shaun and another rescuer some food while they're stuck high on a mountain cliff, freezing cold and bivvying for the night. Those two rolls and pie sure tasted good, I can feel them in my stomach all the way here in upstate New York.

I admit it, rescue stories are a favorite. Right now, *Accidents in North American Mountaineering 2010* is sitting on my desk. I had to put it down to devour Shaun's book for this review. If you don't have a copy of *75 Search and Rescue Stories* in the mail to your address right now, I highly recommend you get one. This is the best rescue book by far that I've ever read. Get your fix and get it now at: <http://ucssar.org/search-and-rescue/rescue-stories/>



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 and contact her at photonicgirl@gmail.com for more about life on the Iced Coast.



Did you know...

that Meridian now sells advertising space? Meridian is distributed via email to approximately 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 for rates and more information.

On the CPR Debate

By Skeet Glatterer, MD

There have been recent postings on the MRA listserv regarding an increase in costs for CPR training, as well as comments on the use and efficacy of CPR in the field.

As a group, our medical expertise is an integral part of the rescue portion of SAR. Some basic level of medical training is needed to achieve this goal. This is also becoming increasingly important as the government becomes more involved in resource typing and credentialing measures that will eventually define our group's role in the community. It draws us back to a key concept in medical training and culture for our teams, and the valued use of that training: 1) care of myself; 2) care of my teammates; 3) care of our patients, in that order.

It is unfortunate that costs are increasing for medical training, but it is clearly a necessity for us to fulfill our mission. There are options to defray the costs of medical training. Groups can work with local medical instruction agencies to pool groups together to help reduce costs "in bulk." Also you can explore the option of having a team member become an instructor for your team, and others, to adjust charges or even waive instruction fees.

Whether team certifications are CPR, WFA, WFR, OEC or an equivalent, most members will have only basic training and hence will apply BLS-CPR type measures. And most team's field actions will be under the supervision of local medical services. Understandably, BLS-CPR in a wilderness setting has a dismal outcome after about 30 minutes. But this does not negate the value of being prepared to render this aid to our teammates and/or patients. Results may improve as the level of medical care increases (as with adding ALS level care). Perhaps it could be a consideration to have some team members with more advanced medical expertise. The "care of my teammates" concept has shown to be valuable among pre-hospital providers with instances such as CPR being needed at a training where a member has become unresponsive due to a cardiac issue.

Remaining current on techniques such as CPR (at a minimum) helps us remain professionals and lends us credibility in the pre-hospital care arena, on par with our first aid and EMS counterparts. And it gives us depth where current knowledge and background in CPR helps us understand and be more competent practitioners for other medical issues and emergencies that we may see more often.

The Wilderness Medical Society (WMS) has consensus guidelines for many areas of wilderness medical care that are published in the WMS Practice Guidelines Handbook [William W. Forgey, MD, Editor; Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care (Falcon Press, 5th Edition, 2006)]. The following is an outline of the general guidelines from this publication (pages 7-9). It does not address specific cases of hypothermia, avalanche, cold-water immersion or lightning strikes. These may be addressed in a future Meridian.

WMS Guidelines: General Information

Guidelines for the general use of cardiopulmonary resuscitation (CPR) are well defined, regularly updated and widely distributed. Because the wilderness may impose circumstances that require special considerations in CPR, the following guidelines have been developed.

A) Contraindications to CPR in the Wilderness

There is no reason to initiate CPR if there is : 1) detection of vital signs; 2) danger to rescuers; 3) dependent lividity; 4) rigor mortis; 5) obvious lethal injury; 6) a well-defined Do Not Resuscitate (DNR) status; or 7) a patient with a rigid frozen chest. Criteria 3 and 4 may be difficult to evaluate in the non-frozen yet profoundly hypothermic person and without documentation criteria 6 is impossible to determine.

B) Discontinuation of CPR in the Wilderness

Once initiated, continue CPR until: 1) resuscitation is successful; 2) rescuers are exhausted; 3) rescuers are placed in danger; 4) patient is turned over to more definitive care; or 5) patient does not respond to prolonged (approximately thirty minutes) of resuscitative efforts.

The MRA MedCom welcomes comments and suggestions. Please feel free to comment in the listserv, or to contact me directly. All issues will be reviewed and commented on by the MedCom as a group.

Skeet Glatterer, MD

Alpine Rescue Team , Evergreen , Colorado

Chairman , MRA Medical Committee

glatterer@comcast.net

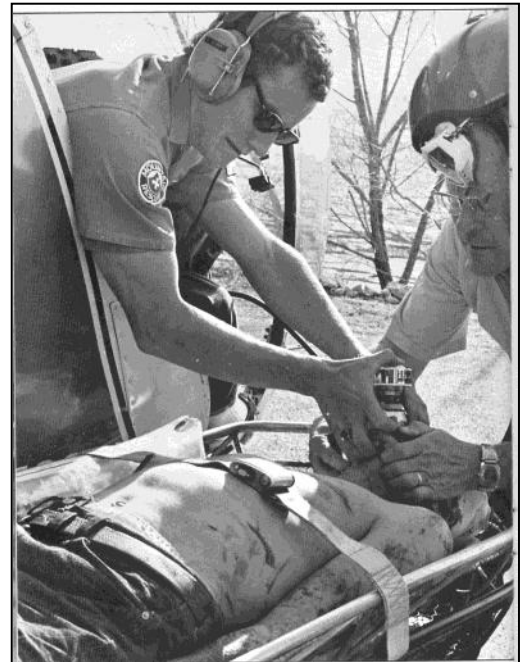


Photo by Rocky Mountain Rescue member Walt Walker.

Team Delegate Responsibilities

by Dan Land, Internal Marketing Committee Chair

Attention: Delegates and Member Teams!

Delegates: Did you know you are the lifeline between your team and the MRA?

Member Teams: Do you know and support your MRA delegate?

The MRA board of directors is made up of the MRA officers and one delegate from each team. Any team member is encouraged to attend the business meetings; however, each full member team gets one vote: the team's delegate vote.

The delegate's primary responsibility is back and forth communication; the secondary responsibility is facilitating and assuring that responsibilities are being completed. Delegates for full member teams have a voice and voting responsibility. Associate and ex-officio delegates do not have a vote, but do have a voice in all MRA matters.

Some of the delegate's responsibilities include:

1. Representing his/her team as a delegate voice and voting on all MRA business matters at the MRA business meetings
2. Being on the MRA general lister
3. Attendance (in person or by proxy) at the spring and winter business meetings
4. Communicating MRA information to the delegate's team:
 - A. The MRA schedule
 - B. Conference information
 - C. MRA issues
 - D. General MRA lister information as it applies to the delegate's team
5. Ensuring that all team members are on the MRA admin lister and receiving MRA critical information (Meridian, conference updates, critical communications, etc.)
6. Ensuring the MRA dues packet, contact information, and team profile are being processed correctly and on time by the responsible team member(s)
7. Ensuring the MRA statistics are being filed for each year in February by the responsible team member
8. Ensuring all team members have access to the MRA website and have the current password
9. Reviewing the MRA minutes and the report package and disseminating critical information to the delegate's team
10. Promoting the MRA to the delegate's team
11. Promoting the Meridian newsletter and periodically providing articles as suitable
12. Participation in committees as applicable

Delegates: Thank you for your valued service!

Member Teams: Thank you for supporting your delegate!



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."

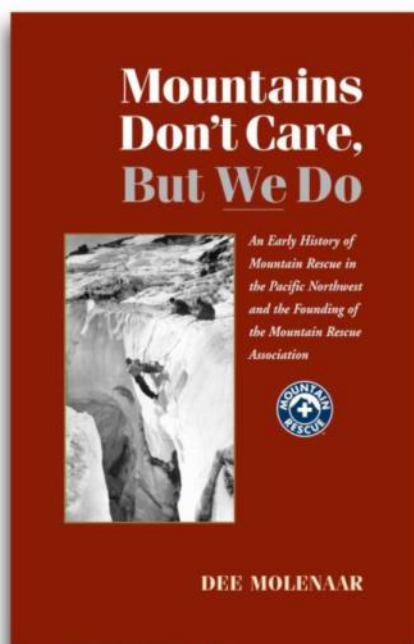
Tom Hornbein

"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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