

MERIDIAN

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The Quarterly Publication of the Mountain Rescue Association



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The Loneliest Place on the Planet

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Team Visits Colorado
-Interstate MRA Agree-
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Dates



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Cover photo by Nathan Greenland.

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THE LONELIEST PLACE ON THE PLANET

MRA member spends winter at South Pole, works on SAR team

By Nathan Greenland

For those who don't know me, I'm Nathan Greenland. After graduating from Minnesota State University in 2001 as a Mechanical Engineer, I moved to Seattle Washington.



My motivation for moving to Washington was largely based on a love for the outdoors and wilderness adventure. Washington has not disappointed in that regard. My wife Britt and I have enjoyed backpacking, hiking, sailing, and skiing around the Pacific Northwest for a number of years now.

In 2006 Britt and I started to become active in mountaineering and climbing. Since then we have climbed a number of the peaks in the area and help out teaching with the [Everett Mountaineers](#). I eventually joined the [Everett Mountain Rescue Unit](#), and about a year later Britt joined too. In 2008 I also joined [Seattle Mountain Rescue](#), since their response area is closer to where I live.

In late 2008 through a series of college acquaintances I learned of a job opportunity to work on the new Amundsen-Scott Research Station at the South Pole Antarctica. Having long been fascinated with most aspects of the Antarctic I found the opportunity tantalizing. I worked as a Project Engineer for the 2009 South Pole winter, and while there I kept a blog called Freezedried Engineer: <http://freezedriedengineer.wordpress.com/>. Here are some excerpts, including a description of my participation on the station's SAR team:

Overview

January 23, 2009 by [freezedriedengineer](#)

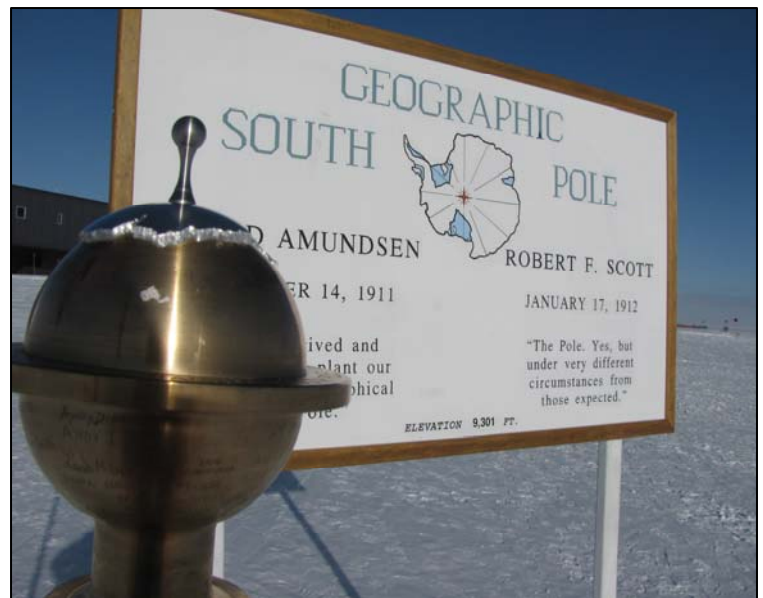
After I leave Denver, I will fly to L.A. where I will catch an international flight to Christchurch, New Zealand. After a day or so in New Zealand, I'll catch an Air Force cargo plane to [McMurdo](#) station which is located on the coast of Antarctica. After a day or two at McMurdo, I'll catch a smaller C130 cargo plane and fly about 700 miles inland to the South Pole. I will be at the Pole for a few weeks working with the summer crew.

In mid-February, the station "closes" and the summer crew leaves on the last flight out until mid-October. Don't forget your geography... summer in the southern hemisphere is winter in the northern hemisphere. About 43 people will remain at the station. Some of us are there to do science and some are there to keep the place running. My job is more related to finishing the construction activities of the elevated station, the associated buildings under the ice and the systems that operate them. While winter it not the best time to do any of this, the summer is just too short to get much done.

The South Pole sits on top of a huge ice field. The ice is about 9000 feet thick and extends for nearly a thousand miles in each direction. The ice and the station that sits atop it will move 33 feet in a year's time due to glacial movement. The rotation of the earth reduces the air pressure at the Pole giving it a physiological altitude of about 11,000 feet. Thus it is common for new arrivals to have altitude sickness for a few days.

The altitude combined with the polar latitudes and the darkness make the South Pole one of the coldest places on earth. Seven months of the year have an average daily low of -70 °F. Three months of the year have an average daily low of -80°F.

Did I mention the darkness? For the same reason that Alaska is the Land of the Midnight Sun, the South Pole experiences continuous daylight in the summer. Then, once a year, the sun sets and does not rise again until the end of winter. Only then does the sun make its one and only sunrise. The darkness and the cold make travel in Antarctica impossible for the entire winter.



The South Pole. Photo by Nathan Greenland.

2/4/2009 – Settling In at Pole

Temp -40, Wind Chill -67

I've been at the Pole for four days now. I am starting to feel a bit more acclimatized, both to the altitude and the buildings. Since this is the end of summer there is a lot going on. There is a big push to finish projects, science experiments and to prepare for winter. The population is also starting to turn over. The summer people are leaving and the winter-overs are starting to arrive. I've been very busy trying to keep up with my summer counterpart in an attempt to absorb as much info about the station and the systems I will be working with for the winter. I've seen the power plant and some of the HVAC systems here. I made another trip to the South Pole marker today, but after a few pictures the batteries died in my camera. It is starting to get colder. We occasionally hit -40 degrees F. Add a little wind and the wind chill nearly goes to -70. I have to give respect to some of the tradesmen. They are still out there hanging siding on the station.

[2/6/2009 – Exercise at 12,000 feet.](#)**Temp -39, Wind Chill -65**

Today is my seventh day at 10-12 thousand feet. I was finally feeling well enough acclimatized to the altitude to get in a workout. I've heard that it takes about one day to acclimatize to every 1000 feet of elevation gain, so I'm a little early, but this really isn't a big deal when compared to the altitude and exertion of a volcano climb in the western US. We have a small but fairly well appointed gym on station. Plus if you get a little overheated, it's just about 20 steps to the outdoor observation deck, where it is 40 below. In shorts and a T-shirt, that cools you right off.



The "climbing cave" is located in an outbuilding about a five-minute walk from the station. Photo by Nathan Greenland.

[2/12/2009 – Busy Day at the Pole](#)**Temp -50, Wind Chill -78**

Everyone on the station in the winter is part of an emergency response team. Since there will be only about 43 of us here, we have to solve every problem ourselves and it may take all of us. I am on the Hasty Team which is supposed to get on scene first and take the initial steps and/or make plans for the other teams.

This afternoon we had an emergency drill. The scenario was that someone had fallen off of a platform known as "Destination Zulu." I'm not sure what the origin of the name is. Anyway, it was a standard "immobilize the spine and transport case." In contrast to Mountain Rescue (MOFA) tactics, we did not spend a lot of time with secondary surveys and vitals at -50F when the medical clinic is just five minutes away. We all expect the drills will get more complicated and involve more dimensions such as fire, smoke, chemicals, multiple victims, darkness, colder weather and other nasties.

[2/16/2009 – Station closed](#)**Temp -49, Wind Chill -73**

Last plane until October...
Photo by Nathan Greenland.

[2/25/2009 – Another Mass Move](#)**Temp -50, Wind Chill -80**

It is interesting how one's perception of temperature tends to shift in response to the climate. Before I headed out to help with the food move, I noticed that the temperature was -40. I thought, "Oh well that's not THAT cold". So when headed out I had the usual gear on, but skipped the big heavy boots and instead just opted for hiking boots and some thin leather gloves. Well that was fine for a while, but within few hours the temp dropped to around -50 and despite whatever your reference considers "cold" to be, -50 officially qualifies for me. After an hour or so I tromped in to get my warm boots and better gloves.

[4/21/2009 – A strange...but normal day at Pole](#)**Temp -65, Wind Chill -100****Days since sundown: 30**

The day started out like any other. Breakfast at 6:30, started work at 7 a.m. About an hour later the fire alarm went off. Since I am on Team #1, it is my role to be first on scene and to help evaluate the scene, establish a perimeter and direct the other teams to a safe but accessible location where they can prepare to do whatever comes next. But the fire alarm turned out to be a false alarm.

Somewhere between 1:30 a.m. and 2:00, alarms rang out again through the station. I jumped out of bed and stood motionless until the buzzing stopped, waiting for the automated voice to describe the type of alarm and the location. It was not a long wait, but it seemed to take forever. Until the location is known, I have no idea whether it is in the station and I just need jeans, a shirt and a pair of shoes or if I will need to put on full ECW (Extreme Cold Weather) gear. It turns out there was a low oxygen alarm in one of the outbuildings where a huge amount of helium is stored. It was then that I knew that I would be spending a good part of the night outdoors. Unlike the previous alarm, I took a little extra time to dress warm. Since it had been quite warm the day before at around -65F and the wind chill was barely over -100F, I wasn't expecting it to be too bad. Since it was so dark, I opted to start out with my headlamp on. The headlamp is really inconvenient with the goggles and because it was so warm, I just stuffed my goggles in my pocket and headed out.

I stepped out of the door into the full Antarctic storm that had blown in over the last few hours. The wind was blowing hard and driving snow into the air. The blowing snow obscured the tiny trace of twilight on the horizon, making the scene very dark.

Based on my experience, frostbite happens in one of two ways. One is the result of being exposed to mild wind chills for a long time (e.g. -60F for 20 minutes). This first numbs the area and then the frostbite sets in without the person realizing it. The other type is when it is really cold the frostbite forms before the skin is numb... before it even really feels cold. You just go straight from warm to pain. We were only 40 seconds into the event...

I made my way to the outbuilding, stationed myself outside of one of the entrances and counted firefighters as they entered and exited the building to keep an account of who and how many were in the building. We didn't suspect a fire, but the low oxygen alarm was enough of a concern that the fire teams were wearing their air tanks. The rest of the night was a surreal experience of radios, flashlights and headlamps that froze and quit working, darkness, wind and the

ominous glow of red-eyed LMCs shuttling firefighters here and there. Darkness, wind and the ominous glow of red-eyed LMCs shuttling firefighters here and there. The firefighters have very little insulation in their turnout gear, so they can't be outside for much more than 60 seconds. Therefore they typically ride to and from the scene and wait inside an LMC or stage in another building when not in the action. We had everything figured out and under control by about 4:00 a.m. Usually when I am outside I'm walking from one place to another or doing something physically active so keeping the core temperature and feet warm usually isn't difficult. But this standing around soon allowed the cold to slip into my parka, pants and boots. Once I was back in the station, my suspicions were correct and it really was cold out, it wasn't just my imagination. Ambient temperature was -83 and the wind chill was ranging from -120 to -140F.

5/9/2009 – The Loneliest Place on Earth

Temp -64.5, Wind Chill -100.6

Days since sundown: 48

We 43 Polies are arguably the most isolated people on the planet. This is the smallest winter-over crew at the South Pole since 1999 and the days of the Dome. One would have to travel nearly 800 miles to see the next person...or anything living; bug, blade of grass, worm, green slime in a puddle. There are but 1000 people on the entire continent in the winter. From here it is a couple thousand miles to any real city. Not since the days of Scott, Amundsen, Shackleton and Bryd or the Apollo missions to the moon have humans been further from civilization. You might find people that are more geographically isolated in the world, but the fact that we are also isolated by time must also be factored in. Short of a major medical evacuation, that would be at the cost of very much preparation, planning, expense and hazard, no one is coming or leaving this place until October.

Who are these people who come to live at the South Pole for a 10 month long winter? I would need to describe each person individually since there is such an incredible diversity. This might be my biggest surprise of being here. Most are here to find something different or to add a noteworthy feather to their hat of life. Some are seeking to escape the trappings and expectations of society. There is a saying that the first time you come here is for adventure, the second time is to make money, and the third time is because you just don't fit in anywhere else. That seems to hit the mark in a lot of cases.

Much like mountain climbers, the simplest looking people can do the most surprising things. Some of the toughest people on the station are among the toughest in the world. Regardless they could easily play the part of the meek. I guess that is the true measure of strength.

6/20/2009 – Search and Rescue

Temp -44.3, Wind Chill -88.1

Days since sundown: 91

Days until sunrise: 93

Last week we had a search and rescue drill here at the South Pole. Getting lost is one of the biggest and most worrying hazards that we face down here. To help support science, we try to keep the outdoor lights to a minimum around the station and when the moon is down and the wind is up it is easy for the visibility to drop to five to ten feet. I actually walked into the side of a building once. The few lights that are around can be used for rough navigation and it is essential that those who go outdoors are familiar with what lights are where. Since they all look very similar (red dots), their relative location is the best clue as to the location they represent. If you are going a long ways away from the elevated station, to one of the more remote buildings such as the telescope or the Ice Cube building, it is routine to lose visual contact with all the buildings and lights on station. Fortunately, there are flag lines that can be followed.

If you loose the flag line or get disoriented while navigating between dark buildings you have to either retrace your tracks, or stop and radio for help. It is a huge risk to just pick a direction and start walking. You might find your way back or you may end up trekking off into a hundred thousand square miles of ice and wind.

In addition to the four emergency response teams on station (first response/perimeter; firefighters; logistics; and trauma) we have formed a small SAR group to prepare for, train and execute searches in these conditions. In part due to my experience with SAR and mountain rescue back home, I was invited to be in this group. With the exception of the mindset of a SAR person, there are few skills that carry over from mountain SAR to Antarctica SAR. Navigation for the SAR team is just as problematic as for the person(s) we may some day try to locate. We are still working out the best way to do this, but at the moment, about the best we can do is use ropes and have one person follow a flag line while the other



The Polies. Photo by Nathan Greenland.

sweeps 50 – 150 feet out looking for our lost person. Hand held GPS units are almost useless since they freeze and stop working in a couple minutes. If someone were to wander outside of a perimeter that is beyond 150' from a flag line, things get much more complicated. We have ideas on the drawing board about how to conduct a search without a physical tie to the flag line in near zero visibility, but at this point it has not been tested. If you were to wander way off station, the probability of detection is absolutely zero unless we had a decent clue in which direction to start.

There is much more to the SAR procedures than the actual outdoor search. There is the process of determining the point last seen, the time last seen and the primary and secondary search areas. There are medical teams to ramp up, vehicles to prepare and there is a complete room by room search of the building. We also remove the window coverings and turn on all the lights to help draw in someone who is merely lost.

All those pieces came together on the morning 6/10/2009. The scenario was that someone had missed their check-in time and was not responding to radio calls. The ERT teams spun up, the station was searched, vehicles were deployed and the SAR team went outdoors to search the location near where the missing person was headed. About 150' off the flag line, the "missing person" (clothing stuffed with snow) was located. The LMC was called in, picked up our unresponsive snowman, and raced back to the station. Frosty was hauled into medical where "she" started melting on the floor and was unceremoniously tossed back outside.



Frosty, the unresponsive snow-woman. Photo by Nathan Greenland.

7/18/2009—Dog Days of Winter

Temp -94.5, Wind Chill -130.1

Days since sundown: 118

The sun will rise tomorrow for 6.7 billion people, minus 43 Polies. The most dependable force on earth has abandoned us for more northerly latitude.

9/5/2009 – Big Red

Temperature: -95.6F, Wind Chill: -140.3F

One very tangible indication that we draw nearer to our departure is the rising of the sun. Every day it seems to get a bit brighter. It has driven most of the stars from the sky and replaced them with a bit of blue sky...actual blue sky. A week ago, you could easily navigate by the light, but you could not read a book by it. Today I believe you could, but it is still relatively dark. Last week the winds



SAR drill. Photo by Nathan Greenland.

were quite strong. As usual, this corresponds to low clouds, blowing snow. This has curtailed some of the sun's enthusiasm and has also generated a good deal of drifting around the station. The arrival of the sun has also meant the departure of the Aurora. I really don't recall where I was or what day it was that I saw it for the last time. Despite my obliviousness to the event, in all likelihood, that was that last time I will ever see the Southern Lights or the Aurora Australis. I already regret that I did not spend more time looking at them, but to an extent, they almost became commonplace despite their incredible majesty. It is kind of like the sun. The sun is a truly amazing force as well, but 7 billion non-Polies will take it for granted tomorrow, so I guess it's human nature to fail to notice the commonplace. The average temperature in August was -78F so that might have curtailed some of the sky gazing too.

It has not hit -100F yet. We are still hanging on to hope. In fact, the meteorologist office is predicting a 68% chance that it will still happen. Right now it is hovering in the -95F range and I think we have hit the bottom of this cold snap. The temperature will probably start to rise any hour now.

9/22/2009 – Sunrise

Temp -82.7, Wind Chill -127.4

11/13/2009 – Traveling North

Temperature +14F (in McMurdo)

Station Population: 1000+ (in McMurdo)

Current Location: Somewhere above the Southern Ocean

Time to New Zealand: 4 hours

Some people came out to see me off. Not many though. Most of the other winter-overs had already left and the station was now crawling with summer people. The plane was only bringing cargo and fuel so no one got off. After cargo and fuel were off-loaded, we were signaled to the aircraft. As I neared the aircraft I looked back one last time at the station and the handful of people seeing me off, while at the same time being careful not to veer off into one of the four propellers of the four running engines. I climbed into the fuselage of the empty airplane and took a seat on a fabric bench seat along the starboard wall. My one green duffel bag was comically strapped down in the center of the large cargo bay. I sat down and was confronted with my first seatbelt in 10 months. This was something I forgot about, but it only took a minute to locate a pair of dissimilar ends to couple together. One of the flight crew gave me a 10 second safety briefing that that was mostly, "If we crash, follow me! Don't walk into a propeller! It's all the same as when you came in!" I shouted over the engines that that was 10 months ago, so he spent another five seconds pointing to a couple doors and gave me a thumbs up.



Transantarctic Mountains. Photo by Nathan Greenland.

INTERVIEW WITH NATHAN GREENLAND

10/12/2010

Meridian: Was 2009 the first year for the SAR team at the Amundsen-Scott station?

Greenland: There was a SAR coordinator in 2008, but his job was to coordinate response if one was needed and there was no formal training at that point. To the best of my knowledge there has never been a SAR incident at the South Pole to date. However, in 2009 an equipment operator in Greenland named Joseph Gibbons (aka Jake Speed) lost both feet and one hand to frostbite after spending 58 hours in a white-out. His snowmobile ran out of gas while he was working near Summit Camp, the highest point of Greenland's ice cap, and conditions made the search for him nearly impossible. I suspect that incident may have been part of the reason for stepping up our efforts to formalize a SAR team at the South Pole in 2009.

Meridian: So what did you learn in the process?

Greenland: We started with a number of questions we wanted to answer. The first was, what's the best way to search, by vehicle or using ground searchers? We found the latter to be most effective; vehicles are too noisy, whereas with a ground search you can listen for the victim as well as track him/her. We found tracking to be fairly effective, although it's complicated by the fact that many Polies wear the same type of boots, and strong winds can quickly obscure tracks.

Another thing we learned is that if we have an idea of where to search, the probability of detection is fairly high and the risk to searchers is probably worth it. But if we have no idea whatsoever, it's like looking for a needle in a haystack. That's tough, because unlike in a traditional SAR incident, we are not looking for a stranger, we're looking for a friend. It would be hard to make a "no go" decision. Nonetheless, if we had no idea where to start searching and it was really cold (e.g. -80 with windchills in the -130's), that's probably what we'd need to do. For that reason we spent time educating our fellow Polies about the importance of telling someone where you're going.

Regarding search techniques, we learned that it's fairly useless to search into the wind when it's really cold. When the temperature is -90 you can't even open your eyes if you're moving into the wind. It's better to travel to the edge of your search area and then search with the wind at your back.

Lastly, we experimented with different techniques for keeping searchers from getting lost in continuous darkness during what we call an "over the horizon" search (a search outside of the camp area). We tried having an anchor person at a central point and searchers roped up in a line from there, but we found that to be overkill because we could see each other's headlamps. It was more effective to simply line search with searchers gauging off each other's headlamps, which gave us spacing of about ten to twelve feet.



Another SAR drill. Photo by Nathan Greenland.

Meridian: How much area could you reasonably cover like that?

Greenland: The official SAR team was only four people, but if we had a real search we'd draft everyone available and have the SAR team members act as team leaders. So we could cover a good amount of ground, depending on weather. But if it was a "way over the horizon" search, a significant distance from camp, we'd have to be pretty desperate to try it. We talked about using a wand trail, but the risk would be very high.

Meridian: Would you go back and spend another winter there again?

Greenland: Probably not. It was a great experience and I'm glad I did it, but I don't know what I would get out of doing it again.

2011 MRA MEETINGS

Save the dates and check back on the MRA website for details!

- ♦ **The MRA Winter Business Meeting is scheduled for January 7 – 9 in Salt Lake City, Utah.**
- ♦
- ♦ **The Spring Conference will be held in Eagle County, Colorado, on June 16 – 19.**

CHINESE MOUNTAIN RESCUE TEAM VISITS COLORADO TEAMS

Account by Dan Lack of Rocky Mountain Rescue Group:

On June 7th, 2009, the Colorado climbing community was stunned by the loss of two world-class alpinists, Jonny Copp and Micah Dash, and a member of the climbing film production company Sender Films, Wade Johnson. The three were killed in an avalanche as they were retreating from the notorious Mt. Edgar in China's Sichuan Province.

A week earlier the climbing team was reported overdue after missing their flights back to the US. While the climbing community in the US raised money to send a private rescue team to Mt. Edgar, the local Sichuan Mountaineering Association (SMA) rescue team was notified of the overdue parties and responded to the area. It was this team that discovered the debris from a massive avalanche, and the bodies of Johnny and Wade. Micah is still on the mountain.

There have been many positive outcomes in the wake of the tragic mountaineering accident, the rescue attempt and the stirring memorials. One such outcome was the recent search and rescue exchange between the SMA rescuers and rescue teams in Colorado and Washington State. Some of the funds left over from the US-based rescue effort were used to sponsor the exchange, and the US Department of State helped coordinate this effort to promote the exchange of experience in emergency response.

On Sunday, September 12th, the SMA rescuers arrived at the headquarters of Rocky Mountain Rescue (RMR), Boulder, Colorado, of which I am a member. RMR is one of the busiest rescue teams in Colorado, specializing in both rock climbing and high alpine rescue.

Even before first greetings were exchanged we could sense the vast differences in resources between the teams. RMR's rescue vehicles, parked at the front door of the headquarters, immediately drew all seven SMA rescuers into a frenzied discussion on the quality of the vehicles and rescue equipment. We learned later that the SMA team is made up of SMA mountain guides that use almost entirely personal equipment and, like RMR, operate on a volunteer basis.

Through the help of interpreters, we showed our Chinese colleagues around the headquarters. During displays of big wall evacuation techniques, trail carry techniques, over snow travel and evacuations, drop-tower testing, and search capabilities the SMA rescuers took detailed photos, asked numerous questions and talked about how well-resourced we were.

As a group of 60 all-volunteer rescuers, RMR responds to 140 missions annually on just \$30,000 from local government and \$30,000 in donations. To many in RMR this is a bare minimum to provide mountain rescue services, but once we realized that our Chinese colleagues still deploy a litter (using the true meaning of the word) for carry-outs, we were humbled. SMA rescuers make a litter from tree limbs and other available material when a carry-out is needed.



SMA members practice a technical scree evac with SCRG on Quandary Peak during their visit. Photo by Daniel Dunn of SCRG.

Once we had shown and discussed our gear we presented an introduction to RMR, including the methods used to alert the team; the terrain we cover; and our full range of evacuation techniques, including downed aircraft location and steel cable evacuation capability (used for long up-hauls, tyrols and in fire zones). During lunch the RMR test tower crew displayed a test in progress for determining the failure mode of a rope from a recent climbing fatality in Eldorado Canyon State Park.

Then the leader of the SMA team shared some insights into the operations of their team. In the Sichuan province, which has many peaks higher than 7000 meters, emergency response is coordinated through poorly trained and funded government agencies. For mountain rescue emergencies, the SMA team is called once the less-specialized agencies have been shown to be ineffective. This leads to multiple day delays in activating the team. The SMA is arranging a process whereby every mountaineering team that visits the province will be requested to have an SMA guide, who will be in radio contact with SMA to initiate rescue if needed. The SMA rescuers are also volunteers who may end up being paid by the victims or the victim's family. Almost all equipment is personal.

The presentation by SMA was followed by a tour of the Boulder County Communications Center containing County 911 dispatch and the County Emergency Operation Center (which was still active during the worst wildfire in Colorado's history).

Sunday evening proved to be an emotional one, as the SMA rescuers were welcomed to Colorado by the parents of Jonny, Micah and Wade. The SMA team was reunited with the four US climbers who flew to China to help rescue the lost climbers. It was obvious that a bond between climbers and rescuers had formed through the search and subsequent recovery, and had been maintained despite a year since the rescue effort. Mrs. Copp brought everyone to tears as she thanked the SMA team for attempting to rescue "their three boys."

During these emotional speeches, Rich Farnham, a mission leader with RMR and a friend of Micah's, reflected on the SMA team's visit: "When our pager goes off and we head into the mountains to rescue someone, that 'someone' is a stranger. We know there are friends and family of this person who care, who are scared and nervous. However as rescuers, we have an emotional detachment. Knowing that my friend Micah was missing in China while I was here made me feel useless. I wanted to use my skills to help. I realize now by meeting my Chinese colleagues that there was a team of rescuers over there helping my friend, as I help strangers here in Colorado, and I'm grateful that I got the opportunity to thank them in person."

After the formalities ended I was able to provide a bright light to Mrs. Copp by sharing the story of how Jonny had helped RMR on a critical rescue in Eldorado Canyon two years earlier. Jonny had used his strong climbing skills to set mid-wall anchors for a vertical evacuation of a critically injured patient. It was over two years ago that I was on the wall with Jonny as he helped in our rescue, and now, after the tragedy that prompted this exchange, I had the opportunity to share that story with his mother. How worlds circle and then collide is a marvel.

On Monday morning we took our SMA colleagues climbing in Eldorado Canyon, which provided many hours of hooting and smiles for everyone; even the interpreters completed their first ever rock climbs. Later that day RMR set up a climbing rescue scenario on the Elephant Buttresses in Boulder Canyon. A simulated injured free-soloist was rescued using a vertical evacuation system while the SMA rescuers observed from fixed lines at the top of the cliffs.

By the end of our time with our SMA colleagues we had been humbled by their amazement in our resources, learned of their difficulties in performing rescues in China, and been privy to the emotional gathering of family and rescuers. We had rescued our free soloist and cemented friendships through an interpreter and across a cultural divide. I realized that this divide shrank away through a common desire to help others who love the spirit of the high peaks and crags.

Dan Lack
Rocky Mountain Rescue 1935
Secretary/Treasurer Mountain Rescue Association – Rocky Mountain Region

- ◆ For more detailed information on the Mt Edgar tragedy see "First Ascent" by Sender Films.
- ◆ For more detail on the Sichuan Mountaineering Association go to www.sma.gov.cn
- ◆ For more details on Rocky Mountain Rescue go to www.RockyMountainRescue.org

Account by Summit County Rescue Group:

After an emotional two days with the Rocky Mountain Rescue Group, SMA members traveled up to Summit County to spend another two days with members of the Summit County Rescue Group (SCRG). On the first morning, State Department representatives assisted with a translation wire while SCRG mission coordinators and Sheriff's Office personnel traded ideas with the SMA members at the team's headquarters. Topics included general history and structure of SCRG, how the group is funded, and the use of dogs for wilderness rescue and recovery. The SMA members were particularly interested in the use of dogs, and SCRG dog handlers Patti and Dan Burnett arranged for one of them, Mr. Zongli Li, to meet with Pat Kaynaroglu that afternoon, a FEMA dog handler and Lake County SAR team member living in nearby Leadville. Kaynaroglu has previous experience helping to develop a dog program for post-earthquake search and rescue in Turkey, through the non-profit organization Emergency Response Canine. SMA members were interested in learning more because of the recent earthquake in Sichuan. During that earthquake, rescuers had worked with their bare hands for three days to locate victims; then the Chinese government brought in disaster dogs who found victims almost immediately, inspiring SMA to begin a civilian dog unit.

Kaynaroglu spent two hours with Mr. Li, who explained that the team had several dogs-in-training back in China but had spent two years training them so far without reaching certification standards yet. Using the help of one of the State Department translators, Kaynaroglu took him to the Lake County Canine Training Site, which features simulated rubble and an agility course, and demonstrated the training progression used for disaster dog certification. She also talked to Mr. Li about how to choose an appropriate disaster search dog, and how to use obedience work and positive



SMA and SCRG members on Quandary Peak. Photo by Daniel Dunn of SCRG.



SMA and SCRG members pose at the base of Quandary Peak. Photo by Colin Dinsmore of SCRG.

reinforcement in the training sequence. Mr. Li said at the end of the session that he'd learned more in two hours than in the previous two years. Kaynaroglu gave him and his teammates an open invitation to return for a week to ten days of training in Leadville, with or without the dogs. Funding for the flight over, however, would be a challenge for any of the team members.

Meanwhile the rest of the SMA team spent the afternoon with a group of SCRG members on Quandary Peak, one of Summit County's 14,000 foot mountains, where they performed a scree evacuation training scenario. SCRG members demonstrated techniques for organizing teams, setting up anchors and a lowering system, attending the litter during the evacuation, and radio communications between top and bottom lowering stations. A State Department translator agreed to play patient and was loaded into a litter. SCRG team leader and training director Matt Hage comments, "Those of us fortunate enough to spend time with our visitors on Quandary had an amazing experience learning how to do

things with very few resources. SMA covers an area the size of Texas with no trucks or team equipment to speak of; only what the military or their own guide services can provide. It was a lesson in resourcefulness for us."

On the second day, the group enjoyed a relaxed hike up Lenawee Peak, with no structured rescue exercises and a picnic lunch at the trailhead. Following the Summit County visit, SMA also traveled to Washington state to meet with four of Washington State's MRA teams.

SCRG President Tim Schlough summed up the experience, "Exchanging rescue ideas and techniques with SMA was informative and challenging, and really opened our eyes to what other countries have to work with in terms of equipment. We're grateful for the opportunity."



SMA and SCRG members on Lenawee Ridge. Photo by Christopher Mrozowski, US State Department.

Has Your Team Been in the News Lately?

The MRA web site has a section for links to news stories about MRA teams.

To have a look at this feature, see <http://www.mra.org/drupal2/content/news>

If you have anything to post, send it to Anna DeBattiste at adebattiste@aol.com

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Picture by Brandon Blackwell USCG - Runner Up - Technical Rescue magazine / CanPro Photo Competition 2010

INTERSTATE MRA RESPONSE AGREEMENT PUT TO THE TEST

By Neil Van Dyke, Stowe Mountain Rescue



Stowe Mountain Rescue in Vermont and the New York State Forest Rangers have a long history of training together as the only two Appalachian Region MRA teams in the northern part of the region. The Forest Rangers have attended a number of classes and trainings in Stowe, provided a large amount of support for the 2008 MRA annual meeting, and have frequently hosted winter regional training in the Adirondack High Peaks wilderness area. The teams had never, however, responded jointly on a mission. All that changed on Thursday, September 2nd.

To fully appreciate the complexities and pre-planning that went into that response, you have to go back to the fall of 2007. After working during the summer of 2007 as a seasonal employee for the Forest Rangers, Stowe Mountain Rescue team leader Neil Van Dyke became more familiar with the unique resource that New York had available to them through a partnership with the New York State Police (NYSP) aviation unit. Housed in Lake Clear, NY, the State Police operates a multi-purpose helicopter (Bell Jet Ranger) for medevacs, law enforcement, fire suppression and backcountry SAR operations using a cable hoist. For the latter use, the State Police provide the ship and the pilot, and the Forest Rangers provide the rest of the crew to operate the hoist and perform the rescue operation. In a typical year, dozens of backcountry hoist rescues are performed in the large and busy Adirondack Park. (At over 6 million acres, the Adirondacks are the largest public park in the continental US -- roughly the size of Yellowstone, Yosemite, Grand Canyon, Glacier and the Smokey Mountains combined.) Vermont does not have a readily available backcountry hoist resource in-state, so Van Dyke initiated work on establishing a formal mutual aid agreement between the states. The process started with contacting Vermont State Police Field Force Commander Major Walt Goddell to articulate the need and discuss the concept



Given the patient's condition, the length of time that would be required to conduct a ground rescue, the potential for long term complications for the patient following a lengthy evacuation, and the risk to the rescuers in performing an after-dark evacuation in technical terrain, the decision was made to request a helicopter for a hoist. Photo by Neil Van Dyke.

with him. Major Goddell then contacted his counterpart at NYSP to work out the framework of an agreement. It took about a year, but the process was eventually formalized. It wasn't until about two years later, however, that the opportunity arose to put it to the test.

At 3:35 pm on September 2nd, Stowe Mountain Rescue was dispatched to a report of a subject with a dislocated shoulder on the Hellbrook Trail on Mt. Mansfield. The trail is an extremely steep and rugged approach to the summit, with many sections of open rock faces and ledges. On arrival at the scene the patient presented with a severe shoulder dislocation, was in extreme pain, had some additional medical issues, and was not ambulatory. Given the patient's condition, the length of time that would be required to conduct a ground rescue, the potential for long term complications for the patient following a lengthy evacuation, and the risk to the rescuers in performing an after-dark evacuation in technical terrain, the decision was made to request a helicopter for a hoist.

After a preliminary call to the hangar to be sure that the New York helicopter was in service, Van Dyke placed a call to VSP Assistant Field Force Commander Capt. Rob Evans to request the resource. After agreeing that the request was justified, Capt. Evans made the requisite in-state notifications (which included the Governor's office, Major Goddell and the Director of VSP) and then made the call to NYSP Major Robert Kreppin who is in charge of the aviation division. Major Kreppin approved the interstate mutual aid request, the Forest Rangers were notified to provide a crew, and the ship was on its way to Vermont within an hour of the initial request. With Forest Ranger Kevin Burns operating the hoist, Ranger Jim Giglinto was lowered to the scene along with a litter. Working with the Stowe team, Giglinto helped package the patient and with just minutes of flight time remaining (due to impending darkness) the subject was hoisted from the mountain and transported to an LZ that had been established at the nearby ski area for transport by ambulance to the local hospital. Thanks to a well thought out pre-plan involving the four different agencies, the mission was efficiently and safely completed!



The NY State Police aviation unit uses a Bell Jet Ranger.

WHY THE MRA?

By Dan Land, Marketing Committee
Chairman



Does your MRA team know how to sell the benefits of MRA membership? This can be important not only as we seek to expand our membership within the SAR community, but also as we seek to increase the engagement of the members of our current teams. MRA membership benefits are many; some of the benefits include:

- ◆ Access to the MRA website www.mra.org
 - ◇ About the MRA
 - ◇ Member Services
 - ◇ Member Teams & International Teams
 - ◇ Sponsors
 - ◇ Links
- ◆ Access to the MRA administrative lister for critical communications
- ◆ Access to the MRA general lister for information exchange
- ◆ Access to the MRA's publication the "Meridian" (published quarterly)
- ◆ Access to training programs
- ◆ Access to the web-based Sarteams system for team attendance and statistics tracking, at no cost
- ◆ Access to the MRA Honor Guard
- ◆ Access to grant monies which are available for research
- ◆ Access to MRA committee information and findings
- ◆ Pro deals
- ◆ MRA Small Stores
- ◆ Regional, national, and world updates regarding mountain SAR
- ◆ MRA annual conferences:
 - ◇ New equipment
 - ◇ New methods/different methods
 - ◇ Training
 - ◇ Network and Socialize
 - ◇ Partnership with other mountain rescue groups:
 - 1) National Association for Search & Rescue "NASAR"
 - 2) International Commission for Alpine Rescue "IKAR"
 - 3) International Technical Rescue Symposium "ITRS"
 - 4) National Park Service "NPS"
- ◆ Accreditation & periodic re-accreditation of member teams
- ◆ Over 2000 members strong representing eight regions and over 100 teams.
- ◆ Influential in pending and/or approved legislation regarding mountain SAR.

We encourage teams to distribute this list of benefits to your current team members, all of whom have the potential to be spokespersons for the benefits of MRA membership.

GREAT GEAR FOR WORK AND PLAY

By Christopher Van Tilburg, MD
MRA Medical Committee and member of the Crag Rats

I get new gear across my desk every once in a while that I stash away in my Advance Life Support pack, the compact kit I take to mountain rescue call-outs and overland vehicle-supported trips to Baja and Canada. I carry only the basics in a lumbar pack. I have personal protective gear. For airway, I have three endotracheal tubes, two disposable laryngoscope blades, an AA-battery laryngoscope handle, and an angiocath for needle thorostomy. For bleeding, I carry medical tape, bulky dressings and hemostats. I carry only medicines for anaphylaxis and pain. Here are some new additions which are worth considering.

Performance Systems has a combat-proven hemostatic trauma dressing. The compression wrap is a gauze pad impregnated with QuikClot, which uses zeolite, an aluminosilicate mineral, to promote coagulation. (www.ps-med.com). Similarly, Hem Con Medical Technologies has a battle-tested compression dressing with hemostatic chitosan. It's a coagulant derived from chitin, which is found in exoskeletons of arthropods and insects (www.hemcon.com).

Intravenous access is always difficult in the field and ever since the American Heart Association recommended using intraosseous catheters in adults, we've seen a number of new devices. The EZ-IO is a compact intraosseous catheter for use in adults for rapid vascular access in long bones (www.vidacare.com). The military is using 10 fluid bolus with hypertonic saline, combined for oral hydration. Bottom line for me, IV fluids apparatus are too heavy and problematic to be an integral component of my lightweight ALS kit. We've always had difficulty getting oxygen into the backcountry and on expeditions. Pressurized canisters are heavy, cumbersome, and cold sensitive. Green Dot Systems showed me the new unpressurized emOx system, a cost-effective, light, portable, and reusable system. Two non-flammable, nontoxic powders--sodium percarbonate and manganese catalyst--react to disassociate oxygen from water in a polycarbonate canister. The two kilogram weight provides three 15 minute treatments. The system can go on the airplane, according to the manufacturer, and is FDA approved in the US and EUC approved in Europe (www.greendotsystemsinc.com).

Comment from MRA medical Committee Chair Skeet Glatterer: Hemostatic contact dressings had a bit of a bad reputation originally, especially if you had experience with the military "powder packs." This was the QuickClot preparation that had a high heat exothermic reaction.

It was originally a granular powder that was poured into a wound, and if spilled, could give a significant burn to normal tissue. It also formed a plug that was difficult, and traumatic, to remove. In its new form it is a dressing that is impregnated with the clotting agent. So, no problems with removal now, and now its exothermic reaction does not reach a temperature greater than 105 degrees. If you are only familiar with the "old" product, it's worth looking at again, as its past problems have been solved.

If you are not familiar with the EZ-IO system, it's a rapid way to infuse IV fluids into the bone marrow. It utilizes a small battery powered "hand drill" with a hollow drill-tipped needle that is often placed into the proximal tibia to facilitate rapid infusion of fluids.

Please visit the medical blog site on the MRA site to give us your feedback, make comments or ask questions on any of the articles.

THE CRASH OF TWA FLIGHT 260

By Jules Harrell

As a professional rescuer, it's always hard to read tragic body recovery stories. One always hopes that someone will survive to return home and see their families. This book is about a crash that killed all the passengers. The story details just how much each individual passenger was loved, what their lives were like in 1955, and what their future would have been like had they lived on after that fatal day. The book is filled with great photos, including those taken at the time of the recovery in 1955.

The Crash of TWA Flight 260 reads like a mystery novel, primarily due to the premise put forth in the beginning by the author Charles M. Williams that "all was not as it seemed." What makes this story great is that the author was a climber who participated in the body recoveries (very gory if you ask me) and made assertions about the pilots' intent which ultimately overturned the original premise that the pilots committed a grave error. The author never gives up his quest for the truth until he has figured out the mystery surrounding the crash of TWA Flight 260.

The book begins with a chapter entitled Flight Prelude, which includes serendipitous stories about the passengers, what they were doing right before the crash, what their families were thinking that day, and how events conspired to spare certain individuals from the deadly flight. Chapter Four provides details of the body recovery including descriptions of gear, one in particular which caught my eye: "Our rope supply for the entire operation consisted of five hundred feet of half-inch manila, five hundred feet of three-eighths-inch manilla, two three-eighths-inch hundred-twenty-foot nylons, and one eighty-foot nylon." (pg. 61)

Those of us who climb can appreciate that back in those days, rescuers used body belays, pitons and lots of heavy manilla rope, all of which had to be hauled on their backs up the mountain top in zero degree weather.

The author obsesses about why the pilots would be flying west when the plane was supposed to be flying northeast. He finally figures out that the pilots spun the plane on its axis to avoid hitting the mountain pinnacle, thus proving to all concerned that the plane crash was not due to pilot error.

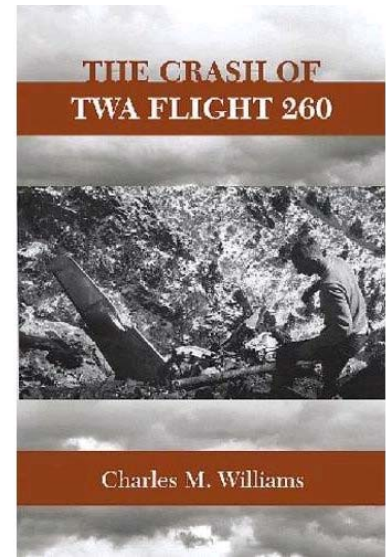
The Crash of TWA Flight 260 presents a larger message, and that is about compassion. Chapter 13 details the events leading up to The Aviation Disaster Family Assistance Act of 1996, designed to assist families and victims of airline disasters. Even though this fateful crash occurred many years ago, people who have undergone any type of airline disaster that has caused them emotional distress would do well to read this story. The book is filled with personal descriptions, photos of people and victims, and many details which make it a fascinating if sad read. It is dedicated to "the victims of TWA Flight 260; to TWA Captain Larry DeCelles who devoted himself to setting things right; and to the Family Assistance Foundation, whose worldwide mission is empowering disaster victims."

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.



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NATIONAL SAR DATA

By Howard M. Paul, Alpine Rescue Team, Evergreen, Colorado

This article is based upon a presentation made to the State Search and Rescue Coordinators Council (www.ssarcc.org) at its annual meeting held in conjunction with the National Association for Search and Rescue conference, in May, 2010. The Council was recently formed and incorporated under the auspices of NASAR; it comprises the designated SAR coordinators of the states that have such a function.

As much as SAR is driven by the very simple action of responding to calls for help from people that are, as one of my teammates likes to say, “having a really bad day in the mountains,” we know the organization, administration and existence of our teams is complex. Since many teams are volunteer it is even more complicated for them.

Occasionally headlines tell a story: “Hundreds search for lost 4-year-old,” but usually the news reports say little about a SAR incident, and the headline serves as nothing more than a simple alert that may or may not entice further interest. The headline “Climber injured on [insert name] peak” might catch some readers’ attention, but the story often reports only that “rescuers were able to evacuate the climber to a medical helicopter,” or something to that effect. The reader never learns that perhaps dozens of rescuers were on the mountain with another dozen working “behind the scenes” in support. Because SAR teams are driven by helping people rather than collecting data, the SAR community does not fully realize the tremendous benefits rendered to governments and people who live, work and recreate in their states.

One of the weaknesses of the SAR discipline in the United States is that teams are in many ways isolated whether at the local, regional, and national levels. They may respond to assist a neighboring team, but do they know how they fit in the bigger picture—in the “world of SAR” picture?

So what do we know about SAR— and before that— our brother and sister emergency disciplines?

EMERGENCY RESPONSE DISCIPLINES – WHO DOES WHAT?

In the world of law enforcement we know: ⁱ

- There are 17,876 state & local law enforcement agencies (2004).
- 43.5 million persons had contact with police in 2005.
- There were 80,642,904 crimes in 2008.
- There are 747,462 sworn officers (various - federal, local, tribal).

In the fire service: ⁱⁱ

- There are 1,148,850 firefighters, of which 28% are paid professionals.
- There are 30,170 fire departments, of which 70% are

volunteer departments.

- \$37.2 billion per year is spent by the fire service.
- Fire departments responded to nearly 1,600,000 calls in 2007.

We know even less about EMS. For example:

- The 50 states spend on average \$5,638,469 for state oversight and administration.ⁱⁱⁱ
- There are 196,880 employed EMTs (of all levels).^{iv}
- And that there were 18.4 million transports to hospitals in 2006.^v

But we don’t know how many EMS agencies there are in the U.S., nor how many of those EMTs are volunteer (unpaid) professionals. We don’t even know how many calls for service there are, especially 9-1-1 calls.

Which brings us, lastly, to search and rescue. Here’s what we know at the national level— nothing.

- Number of SAR responders? You guess.
- Number of SAR agencies? Nothing.
- Number of SAR calls? Nope.
- The aggregate time of SAR calls? Can’t guess.
- The value of SAR? A critical number—take a stab at it.

WHY ARE SAR STATS IMPORTANT?

I have often said, “If EMS is the stepchild of the emergency services family, SAR is its forgotten orphan.” What can the national SAR organizations tell the public, legislators and regulators? Not much. Of greater import is what we need to be able to tell them. Until we, as a discipline, can explain the value of SAR nationwide, we will continue to be misunderstood. The public will not recognize, and place into context, the depth and breadth of SAR until we can illustrate the dimensions of SAR and educate them as to our value and how we fit into the big picture.

Without baseline common data, we cannot do this. In 2009, I worked with an Outside Magazine editor who was writing an article about SAR. During one of our several phone calls he asked, “So how many SAR missions are there across the US each year? 1,000?” (Colorado alone has an average of more than 1350 reported.)

An L.A. Times national correspondent was flabbergasted when I told him, during a similar recent phone call, that just NASAR alone has more than 9,000 members. He was astounded there are “that many” in the SAR world.

Local teams, our state and national organizations need to be able to place their organizations in the context of the greater picture. A couple of years ago I attempted to make plain and comprehensible the value of SAR to a State Senate committee. Some years back I had done some “back-of-the-napkin” calculations based solely on my familiarity with my state’s SAR community. Mind you, this was a crude estimate based upon rough assumptions. I told the committee that more than 250,000 person/hours were donated each year; and that 93% of all missions reported^{vi} were performed by

volunteer professionals. And —this is the important point—that the value to the state of the SAR community's services was \$3,912,500! I'll shortly explain why I now know I was way off.

WHAT ARE THE OBSTACLES?

There are several. First, we have no single, coordinated, common national dataset as the law enforcement and fire services do.

Second, states collect differing information. Some have volumes of information, such as Oregon, while others have none. Colorado, somewhere in the middle, can tell you the number of subjects involved and what type of activity when SAR was called (e.g. climbing, hunting, fishing, biking, skiing, etc.) but can't tell you how many SAR teams there are or how many person-hours were involved.

Next, not every state has a SAR coordinator to collect data, nor a method to do it.

Lastly, the need is greatly underappreciated. The SAR discipline does not yet realize the benefits that become available with such information.

WHAT IS THE SOLUTION?

One solution is out there. MRA teams are already aware of it, as it is available to them now and some use it. It is a nationwide, web-based, incident reporting/personnel-data tracking system that can be used by any SAR agency; volunteer, private, paid, public, local, county, regional, it doesn't matter.

A national system would contain core information fields and would offer customizable fields for state and local needs.

The existing system I demonstrated to the Council is "SARTeams," developed—as it happens—by a teammate's web development company. My team was the test bed for it. It is used by many MRA teams and available as an MRA benefit to all of them. It is usable anywhere/ anytime via the internet. Anyone can enter data (as set by local team or AHJ policy).

Let me explain why my calculations of statewide value a few years ago were far off. Using this web-based system in 2009, Alpine Rescue Team recorded:

- 89 search, rescue or recovery missions
- 30 field practices and 50 classroom trainings
- 301 "other" events of all kinds

Team members contributed 26,323 person-hours of time for missions, trainings, PSAR, teaching, maintenance, fundraising—every team and team member activity. That time, contributed to the sheriffs and taxpayers of three counties, is valued at an astonishing \$635,323!^{vii} Knowing that seven teams are busier than Alpine—and there are around another 40 teams in the state—I believe it safe to assume that the statewide value of volunteer SAR teams of \$3,912,500 is quite underestimated.

Such a data collection system offers other benefits. A national system may prompt local collection of information where it now does not exist. Odds are most teams would be quite surprised the first

time they look at a year's statistics. Such complete, and importantly, validated information is superb for budget justifications and grant applications.

Necessary assumptions

Certain things are imperative with such a system. Because more than 90% of SAR in the U.S. is conducted by volunteer organizations^{viii} it must be free or extremely low cost. For universal use it must use nothing unique (software or hardware). It must be easy and user friendly. Lastly it is critical that it allow customizable fields for state and/or local needs.

I am glad to report that the State SAR Coordinators Council agrees with the premise I presented to them. The Council chose not to immediately go forward with the example I used, SARTeams.com, but will first look at the issue from the 40,000 foot level and then work toward a system to use. Council members understand the issue and have created an ad hoc committee to follow up and work on creating and implementing a national statistical reporting system. That committee includes Craig MacDonald, Alaska State Troopers; Paul Burke, Nevada Dept. of Emergency Management; Georges Kleinbaum, Oregon Emergency Management; Pat Culhane, Codington County, (S. Dakota) SAR and me.

It is my hope that in the near future we as a discipline will have the data that we can use, for example, to make our points to the news editors that help set the agenda of national and local discussions, the talking heads that define the tone of debate and the members of the public that demand that we charge for rescue (just one example). That information could show what portion of SAR personnel time — and its value — is a cost never billed to local or state government (or the subject or their family); it could explain what percentage of all SAR missions are performed by unpaid professionals (such as those of the MRA) that regularly hike and climb in the same areas as SAR missions.

Notes:

- i Dept. of Justice: FBI, Bureau of Justice Statistics
- ii National Volunteer Fire Council; US Fire Administration
- iii National Association of State EMS Officials
- iv U.S. Bureau of Labor Statistics, 2005
- v CDC, National Center for Health Statistics
- vi Colorado Dept. of Local Affairs SAR Fund mission response reports
- vii Estimated using National Park Service pay grades and federal "GS" pay scale.
- viii MRA, Tim Kovacs

Howard Paul is a 25-year member of Alpine Rescue Team in Evergreen, Colorado. He is a member of the Board of Directors of NASAR and is its PIO. He is the founding editor of the MRA's original journal, Rescue Forum, and is PIO for the Colorado SAR Board and Alpine Rescue Team.



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."

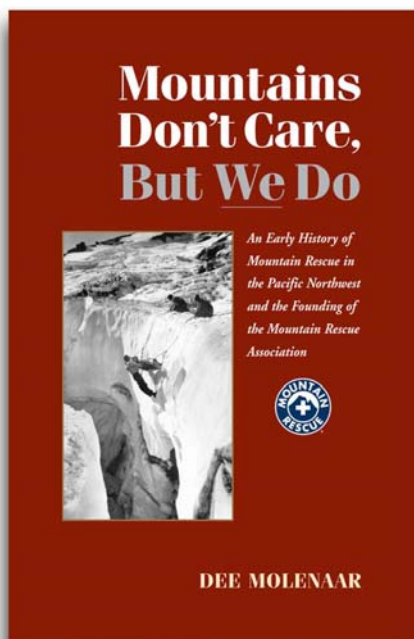
Tom Hornbein

"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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