

Managing Risk in Avalanche SAR

- 
- 58 Years of Mountain Rescue History
 - Meridian Backcountry Zero
 - Body Recoveries in Wilderness Medicine



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Winter 2019

President's Message	4
The "AHA Moment": Managing Risk in Avalanche SAR	5
Book Review: 58 Years: My Life in Mountain Rescue, by Lynn Buchanan	10
Body Recoveries in Wilderness Medicine	12
Backcountry Zero, P-SAR	13
SAR Puppies	14
The Cabin	15
Editor's Note	16
Photo Contest	17
MRA Small Store	18

Cover Photo: Poor visibility, deteriorating weather, and overhead objective hazard . . . just another typical day for a winter SAR mission. In this photo, members of Everett Mountain Rescue package a subject for litter transport. In the Pacific Northwest, winter SAR missions tend to happen during conditions when a helicopter cannot fly, requiring a lot of people and a lot of risk exposure to get the job done. Having an "AHA moment" before the mission can help minimize risk to rescuers. Photo Credit: Everett Mountain Rescue

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President's Message

Winter 2019

By Art Fortini, MRA President

How many of you have ever heard someone ask, "What does the MRA do for me?" If you're like me, it's happened more than once, and at least in my experience, it usually comes from people who are new to mountain rescue. Having been asked this question many times over the years, I realized I was never giving the same answer twice. There are just so many benefits, so whenever someone would ask, I would rattle off the dozen or so that came to mind first. After thinking about it for a while, I came to realize that MRA membership doesn't just afford benefits to the individual team members; there are at least three other groups of stakeholders. These include the team as a whole, the authority having jurisdiction (AHJ) over that team, and the wilderness users who need our help.

One of the biggest advantages of MRA membership that benefits all four groups of stakeholders is the exchange of ideas and information among the various teams and team members. Information can include the development of new techniques, accounts of accidents and near misses, equipment reviews—information that will enable all of us to do our jobs better and safer. Information that benefits all four groups of stakeholders.

Nothing is static in mountain rescue, and techniques are constantly evolving. Because there are plenty of individuals within the MRA who are taking a closer look at how their teams do things, and who are actively researching better ways to do things, being part of the MRA gives you and your teammates easy access, not only to the techniques, but also to the people who are developing them.

Dissemination of that information to the teams—your team—can come from several different directions. Perhaps the most obvious is the [June MRA meeting](#), where the host team creates training opportunities in many different mountain rescue-related disciplines. In addition to the Friday and Saturday training opportunities, there are invariably two or three days of pre-conference activities offering even more opportunities. The MRA even offers scholarships to help encourage new people to attend the meeting.

[The International Technical Rescue Symposium](#) (ITRS) is another venue where MRA members exchange information and ideas. At ITRS, though, it's not just the mountain rescue community; people from many different rescue organizations (fire rescue, cave rescue) are also present and share ideas and techniques. The MRA is a longtime supporter of ITRS, and individuals from MRA teams are frequent presenters at ITRS.

The MRA is also an active member of the International Commission for Alpine Rescue (ICAR), and every year MRA representatives attend the annual meeting to exchange information on techniques and equipment with representatives from other nations. The MRA's ICAR delegates then summarize the information and make it available to MRA members via the [ICAR Reports](#), which are available on the MRA website and in *The Meridian*.

The *Meridian* is another means by which the MRA shares information on techniques with its members. In addition to ICAR reports, the *Meridian* also contains articles from the MRA medical committee, as well as articles from member teams on techniques of general interest, such as how to work safely in the heat, or risk management in avalanche terrain. Like the ICAR reports, [past issues of the Meridian](#) are archived on the MRA web page.

The MRA MedCom, which is a group of medical experts who are active field responders and medical advisors for various MRA teams, are a resource to all MRA teams. If you have a question about the most appropriate field intervention for a given situation, they would be more than happy to discuss the pros and cons of various possible medical interventions. If the incident is of general interest, they just might ask you to help them write an article for the *Meridian* and share the information with the larger MRA audience.

MRA webinars are yet another means by which MRA members share information with each other. And if you're not able to watch the webinar live, no problem. The webinars are archived and available through the [MRA Webinar Training page](#) of the MRA website so you can watch them at your leisure.

Last, but certainly not least, there's the [Training and Education](#) link on the MRA website where you can find training material on myriad topics. Some are in the form of PDF files, and others are in the form of interactive programs, which can be found in the [Online Education Basecamp](#).

All of these benefits are available to you as members of the MRA. Most are available only to MRA members, and virtually all of them benefit you directly. And because these various avenues for the sharing of information can make you a better, more skilled rescuer, they also benefit your team as a whole, your AHJ, and most of all, the people we serve.

When I sat down to prepare this article, I came up with 11 different benefit areas. Fostering the exchange of ideas and information with other MRA members was just one of them. They say you can lead a horse to water... There's an awful lot of water available to you because you're a member of the MRA. Drink up!

Yours in service,

Art Fortini

Art Fortini

President, Mountain Rescue Association

president@mra.org



MRA President Art Fortini

The “AHA Moment”: Managing Risk in Avalanche SAR

By Alexis Alloway, Winter Training Coordinator,
Everett Mountain Rescue

This article first appeared in its original form in The Avalanche Review, 37.2, December 2018

It's 9:40 p.m. on a stormy winter evening. Twenty-eight inches of new snow, with around 1.5 inches of Snow Water Equivalent (SWE), has fallen in the last 24 hours, winds have been steadily blowing, and weather conditions are showing no sign of improvement. The avalanche danger is “High,” and a thin layer of facets lurks atop a crust several feet below the snow surface. You're about to turn in for the night when you receive a text message announcing that two teenage boys are overdue after departing earlier that day for an afternoon ski tour. The general area where they were last seen consists of challenging to complex avalanche terrain. As an Operations Leader in your local Mountain Rescue Unit, how do you respond?

This scenario was a real avalanche accident that happened near Snoqualmie Pass in Washington's Cascade Mountains in February of 2018, and these dangerous conditions are somewhat typical of the handful of winter missions that nearby Mountain Rescue teams field each year. Common themes include terrible weather; considerable or high avalanche danger; darkness or impending darkness; challenging to complex terrain; poor visibility; and lots of uncertainty. Most of our winter missions are searches, which further increases risk to rescuers by requiring them to travel through more terrain than if they were responding to a known location, thus increasing their exposure.

Besides the objective hazards, another risk management challenge is that most Search and Rescue teams consist of volunteer rescuers, many of whom have little or no professional risk management or professional avalanche work experience. These members don't get paid to attend trainings, they don't have a supervisor, and they don't receive coaching, feedback, or other professional development related to terrain selection, stability assessment, and group management. Most rescuers have learned about avalanches in the wicked learning environment of the backcountry, meaning they do not have adequate experience in an instant-feedback environment to develop true avalanche expertise. Even those rescuers who frequent the backcountry may be unconsciously incompetent when it comes to managing risk, perhaps having gotten lucky over the years instead of making good decisions.

As if the objective hazards and lack of expertise aren't enough, human factors run rampant during a SAR. When someone is missing or injured in a winter environment, real people's lives are on the line, and the pressure to act and get results can feel enormous. Common human factors include expert halos, rushing, people being afraid to speak up, and what can only be described as good, old-fashioned “testosterone poisoning” (overconfidence in one's abilities and underestimating hazards).

If we look at accident potential as the realm where objective and subjective hazards collide, it's pretty clear that avalanche rescue is a risky business, especially when undertaken by volunteers. In Everett Mountain Rescue, we recognize that avalanche response is the skillset where our volunteers are least equipped to identify and manage risks. Of our membership of 70 people, only about a third recreate in avalanche terrain in the winter, and most of them only a handful of times per year. The average team member has a recreational Level One training, and while a few of our members volunteer to assist with teaching Level One avalanche classes, almost none are paid avalanche professionals. Our team does not get many winter SAR missions due to the fact that most alpine terrain in our jurisdiction is inaccessible all winter. Our nearby Mountain Rescue teams seem to have a similar demographic. For us, avalanche responses are a “low probability, high consequence” event, meaning we have few similar historic events to learn from, yet there is a lot at stake.

After fielding several winter missions where members raised concerns about risk management, we started to really see our team's vulnerabilities. The resounding advice from the professional avalanche world seemed to be “get a system,” so we decided to give that advice a try. After reviewing a couple of existing checklists, we felt they were not detailed enough to work well for our users, so we decided to create our own. During the winter of 2017-18, a small group of our volunteers developed and piloted an Avalanche Hazard Assessment (AHA) sys-



If the helicopter can't fly, it takes tremendous manpower to pack an injured or deceased subject out of the backcountry. More humans equals more human factors that can influence our risk management decisions, and taking an AHA moment during mission planning can help mitigate these risks.

Photo by Brad Jaffke.

tem designed specifically for our Mountain Rescue unit. For the rest of this article, we will explore the components of this system, its benefits and limitations, and tips for implementing an “AHA moment” into your own organization’s culture.

HOW IT WORKS

Upon receiving a request for SAR resources, our In-Town Commander (ITC) pages out the known information to a group of Operations Leaders (OLs) using the GroupMe app (an instant messaging system). Upon receipt, two OL-level individuals respond to the group that they will perform the AHA. Using a standardized AHA worksheet (*see below*), each of those individuals independently spend 15 minutes gathering information about snowpack, weather and terrain. Once the raw data is gathered, each OL analyzes the information and decides whether to deploy field teams or wait for better conditions. If they do opt to deploy, they create a run list for field teams, with an emphasis on identifying terrain that needs to be closed. A run list is a common risk management tool used in ski guiding, where guides meet in the morning and pre-determine which specific ski runs are open, closed, or on standby (needs further assessment) for the day.

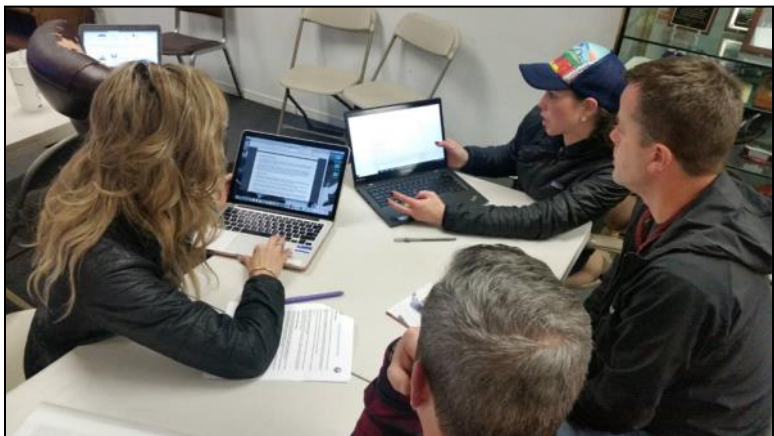
Once each of the two OLs has completed the AHA, they call each other on the phone and collaborate to create a finalized AHA that includes a run list and notes to field teams. OLs have the authority to order terrain for closure, and OL-level terrain closures cannot be reversed by rescuers in the field. Field teams can choose to close additional terrain based on what they find, but OL-level terrain closures are a final say. If the OLs can’t agree on a run list, they are encouraged to yield to the more conservative judgment call. Our local avalanche center, the Northwest Avalanche Center (NWAC), has agreed to have their staff review our completed AHA forms during missions and give their input about our terrain choices. They also are able to provide us with point-specific weather and avalanche forecasts for locations further away from the ski areas, where data is more scarce.

The completed AHA worksheet, along with supporting documents like slope-angle shading maps, Google Earth images, and terrain photos, is then paged out to all rescuers with the mission announcement. If we are not able to get OLs working on the AHA immediately, we have agreed it’s okay to start mobilizing resources toward the trailhead, but the AHA must be completed and communicated to Command before teams are actually deployed in the field. Our AHA also includes a standardized briefing sheet for all teams to complete before heading into the field, allowing them to make additional assessments at the trailhead. Just because OLs have not closed terrain doesn’t mean that terrain is necessarily safe, and we want to allow individual rescuers to maintain their veto power and create their own terrain closures if they don’t feel comfortable going into certain terrain.

ADVANTAGES OF THIS SYSTEM

Human factors are why smart people can do stupid things. The AHA is an attempt to minimize human factors in our decision-making by using a checklist and assessing obvious hazards from a level-headed perspective. By having our more experienced team members assess risk, and by using a collaborative approach rather than relying upon the judgment of one individual, we are harnessing the collective brainpower of our team and providing some checks and balances against strong opinions from one person. If you are familiar with the swiss cheese model of accident causation, we are adding another layer of risk management to protect individuals from harm.

Another benefit of the AHA is that it slows us down and allows us to engage our logical, proactive brains instead of just our intuitive, reactive brains. This slowing down is minimal in the grand scheme of things, but it’s enough time that it does allow for critical and thoughtful analysis.



Risk management starts long before your team sets foot in the backcountry. In this photo, members of Everett Mountain Rescue practice using the Avalanche Hazard Assessment (AHA) during an evening training at our base. Photo by Chris Moriarty.



Fresh avalanche debris is the perfect setting for rescuers to experience the difficult realities of performing avalanche recoveries in Cascade concrete. During this training, Operations Leaders assessed that weather had improved enough to minimize the wet loose avalanche hazard on this particular day and location. Field team members kept an eye on changing conditions, and the team was able to enjoy a challenging, incident-free training day. Photo by Alexis Alloway.

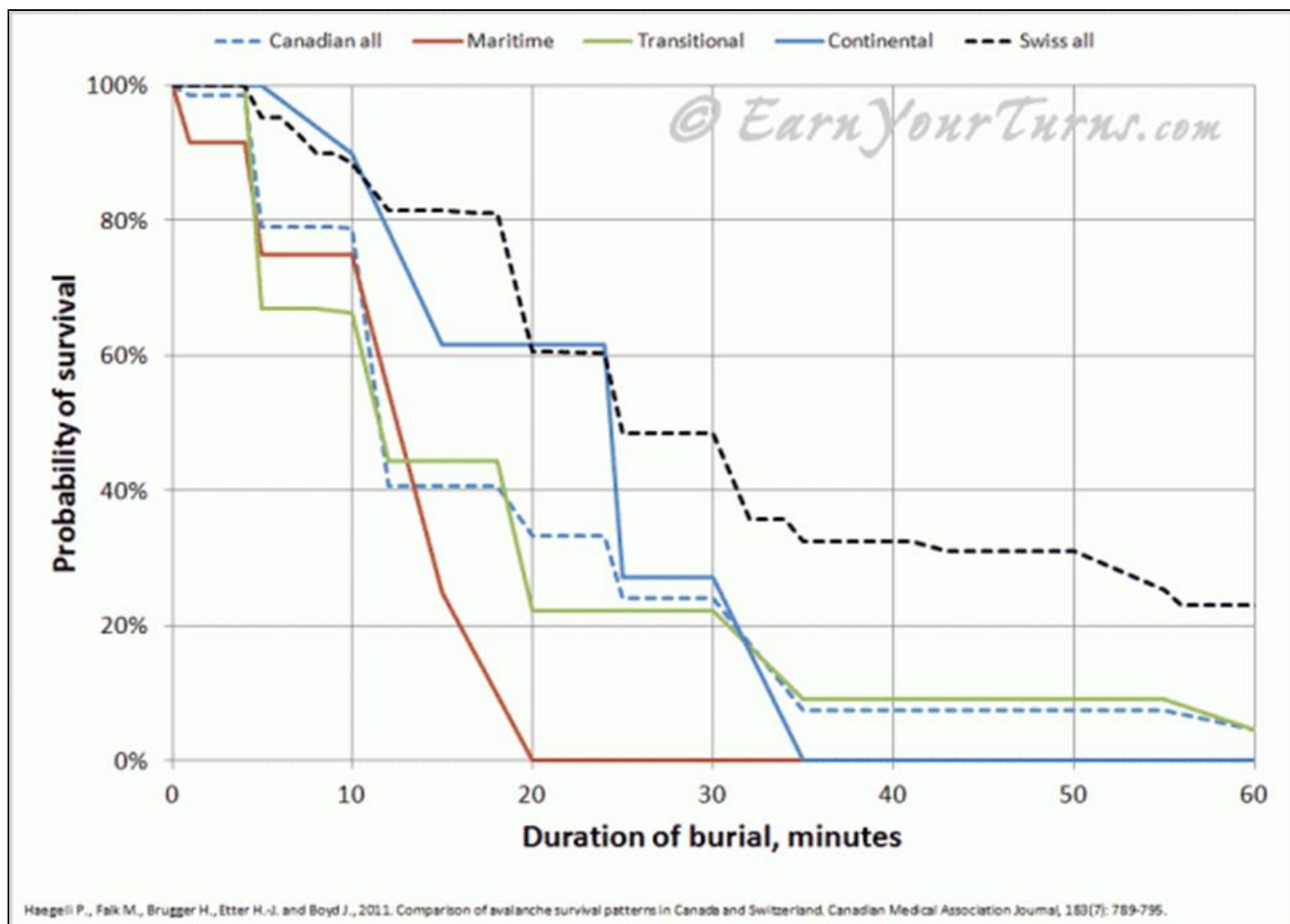
sis of complex variables. The systematic approach of working through a pre-set worksheet ensures we don't skip steps that can easily be forgotten in the adrenaline-fused excitement of mission planning. Having the OLs complete the AHA ultimately saves the team time, as individual rescuers don't have to spend mission prep time checking the avalanche forecast and pulling data themselves.

To maximize effectiveness, our AHA was intentionally designed to be flexible and to avoid rule-based decision-making, which can prevent the use of situationally appropriate judgment. There is no mandate within our AHA that states that if data points meet a certain threshold, we can't send teams in the field or we need to close terrain. It's up to the OLs making the assessment to determine whether conditions warrant terrain closure or delaying or declining the mission from the start, or whether field teams can make that assessment on their own. We recognize that sometimes you can't truly assess conditions until you are in the field, and we encourage OLs to only close terrain preemptively if they feel certain that there is an imminent threat to rescuers.

Finally, maybe the best part of the AHA system is that it has proven to be an excellent training and communication tool that is improving the overall avy-savvy of our team. By using the AHA even for routine trainings, we are role-modeling what a thoughtful hazard assessment looks like. The more people practice using it, the better they get at analyzing and communicating about avalanche risk. We even had one of our rescuers use the AHA worksheet to help her teenage son analyze his intended snowshoe trip during high-avalanche danger, and make the decision to postpone the trip for another day. Our mission of saving lives through rescue and mountain safety education? Accomplished.

DISADVANTAGES OF THIS SYSTEM

The AHA process does take time, and we all know that time matters in avalanche rescue . . . but does it? In companion rescue, yes. Organized rescue is another story, though. The greatest myth perpetuated among SAR volunteers is a misguided belief that time is of the essence and that they must hurry to deploy teams in the field. The reality is that, at least in our region, by the time rescuers from Seattle or Everett make it to the mountains (a minimum one-hour drive), anyone who has been fully buried by an avalanche will be dead (see graph of survival times in maritime climate). Our SAR teams either perform body recoveries of people fully buried, or we assist people who can



wait the extra 15 minutes it takes to perform an AHA (read: they are not having an airway emergency). With rescuer safety as a priority over subject safety, there is ALWAYS time to assess conditions before heading into the field, even for SAR teams within closer proximity to the mountains. To borrow from the Special Forces, remember that slow is smooth, and smooth is fast.

Even though time doesn't matter as much as in a companion rescue, we still want to perform our AHA efficiently and get teams in the field. The first time we piloted the AHA, it took nearly 30 minutes for the testers to complete the worksheet. The biggest challenge was not gathering the information, but getting that information into the electronic worksheet format. Through piloting and revamping the worksheet, we designed a more efficient and user-friendly system. Like any system, the AHA works best with training, and we have seen that trained users can complete it in about 15 minutes.

That brings us to another disadvantage of the AHA system: user skill-set and backcountry experience. Our AHA is designed for expert backcountry users who are proficient with gathering online data and analyzing terrain using topo maps, satellite images, and their own personal terrain knowledge and experience. Inexperienced users will struggle to find this information in a timely manner, and they may struggle to visualize what terrain on a topo map actually looks like in real life. Additionally, inexperienced users tend to overestimate risk and they struggle to use judgment and make decisions in the face of complexity and uncertainty.

Because our AHA is being performed indoors, before our teams are in the field making their own snow and avalanche observations, the AHA output is only as good as the data input into it. While we are lucky to have pretty good information available online for western Washington, we still have all seen times when conditions in the field don't align with conditions reported online, or where we can't find information that we need or want. AHA users need to be able to make judgment calls, such as recognizing when weather data seem a little off, or recognizing when they need to skip a data field if the information isn't available. They also need to have the common sense to communicate areas of uncertainty in their assessment so those areas can be addressed.

NOW WHAT?

For Everett Mountain Rescue, the AHA system is still new, and we have only gotten to deploy it on a small amount of missions and trainings. Despite its newness, the preliminary results of using this system have been incredibly positive. By using the AHA during routine winter trainings, we have provoked excellent discussions about avalanche risk, with high engagement from participants. People are showing up to trainings and missions better prepared than ever with knowledge about weather, terrain and snowpack. Using the AHA has sparked a renewed interest in avalanche safety and education within our members, and our unit leadership paid for 30 of our members to take avalanche trainings in January of 2019. Finally, other regional Mountain Rescue units have been asking to see our AHA system, which shows that there is a regional interest in improving risk management during winter SAR missions.



Members of Everett Mountain Rescue enjoy a brief respite from wet winter weather underneath the protection of a bothy bag. The maritime climate of the Pacific Northwest can often prevent air rescues during winter, requiring ground teams to complete the dangerous task of evacuating subjects from the backcountry.

Photo by Alexis Alloway.

BORA AR PACK

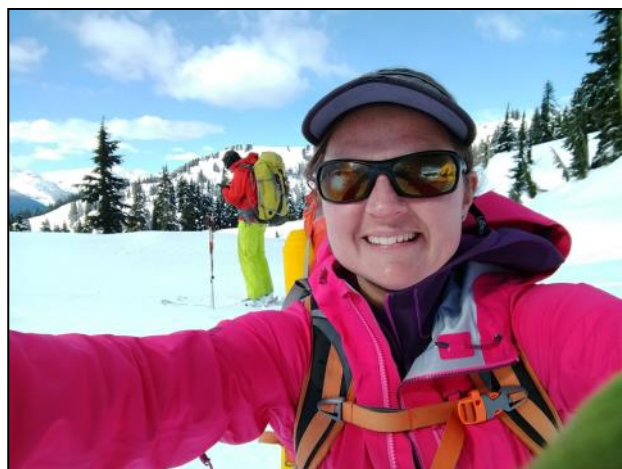
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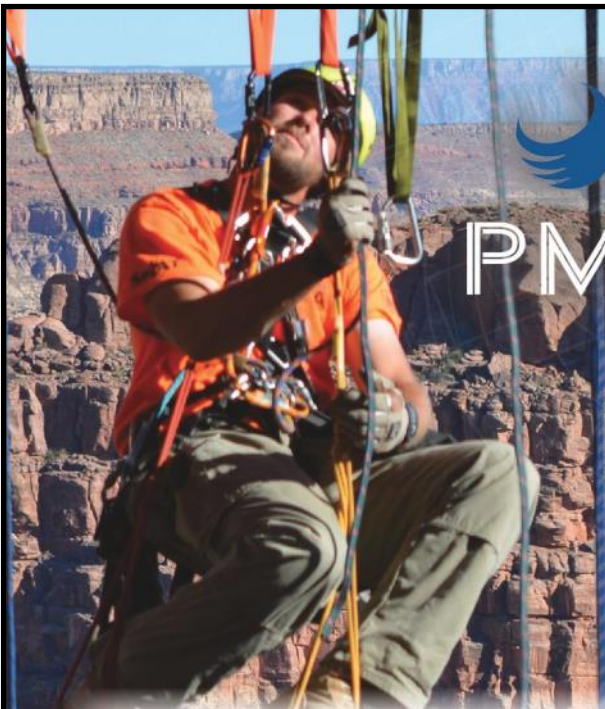
For our team, the biggest challenge of using an AHA system was navigating our team through the process of change. While the majority of our team members openly welcomed the new system, there was a small but vocal minority that opposed it. We encouraged these people to give their input on how to improve the system, and soliciting this input helped gain buy-in.


If you are involved with a Mountain Rescue group, I encourage you to up your team's risk management game this winter by adopting a systems approach to avalanche safety. Feel free to use our system as a template, or create your own. Regardless of what you do, something is better than nothing, and even a small, simple checklist can go a long way in improving your team's performance.

And finally, if you are going to adopt a systems approach, a few words of advice: Have a plan. Many people struggle to embrace change, and you will need to create a change-management plan in order to set yourself up for success. Identify progressive, like-minded people within your team, and recruit those early adopters to the cause. Get the support of people in key leadership positions. Once your leadership agrees on the need for change, start planting the seed in unit members that change will be coming, and explain why. Get group input in developing and piloting your system, and have respected team members voice their support and role-model using it. Be realistic and frame your AHA as a work in progress that will require troubleshooting and modifications. Start using your AHA during trainings and missions, and be sure to consistently use it for every winter field event. Before you know it, people will come to expect it and appreciate it, and you will have made a substantial improvement in your team's professionalism and culture of risk management.




Alexis Alloway has volunteered with Everett Mountain Rescue since 2012, and she has run its winter training program since 2014. As a current senior field instructor for NOLS, she has spent years of her life living and traveling on snow, teaching backcountry skiing, avalanche, and mountaineering courses. She also works in environmental consulting to help finance her big adventures. You can reach her at alexis.alloway@gmail.com

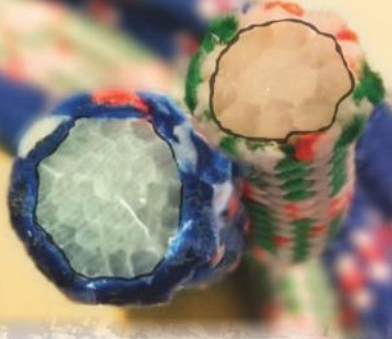




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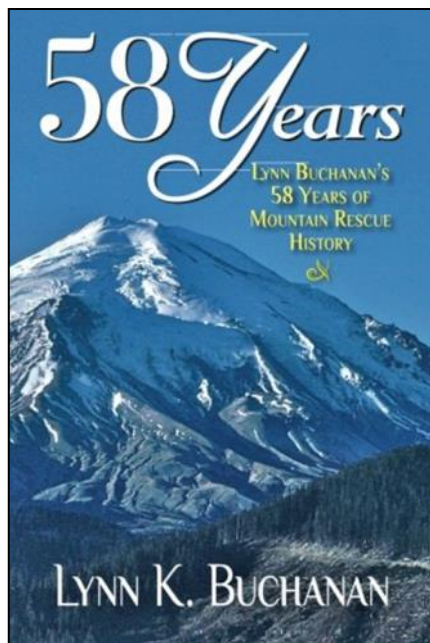
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Book Review: 58 Years: My Life in Mountain Rescue, by Lynn Buchanan

Book Review by Doug McCall, Seattle Mountain Rescue

"58 Years: My Life in Mountain Rescue" is a fun read about the early days of mountain rescue.

Lynn Buchanan joined the Mountain Rescue Council (MRC and the original name of Seattle Mountain Rescue) after being approached by Ome Daiber in 1952 (Daiber, 1907–1989, is known frequently as the "Father of Mountain Rescue"). Daiber took Buchanan on a climb up Lundin Peak following a dülfersitz (also known as body rappel, the dülfersitz is a non-mechanical abseiling technique used in rock climbing and mountaineering) rappel accident where one of Buchanan's Washington Alpine Club climbing instructors died next to Buchanan the week before. Buchanan joined Seattle MRC and quickly became rescue qualified. He later moved to Yakima and was one of the founding members of Central Washington Mountain Rescue (CWMR).

Some of the tales recounted in Buchanan's book show just how far mountain rescue has come since the early days, while other stories carry an echo of more recent missions. In one story, Buchanan tells of a Seattle MRC board meeting where several of the founding members were almost voted out of the unit because their first-aid cards had expired. In another unit-related story in CWMR, Buchanan describes the skepticism around the Bergtraga (an early litter from Austria) and wheel. One humorous story explains how Buchanan became deputized after a joint mission with the Hood River Crag Rats (Oregon) on Mt. Adams.

Buchanan had called the Crag Rats because they were 100 miles closer to the south side of Mt. Adams. Following the mission, the Hood River county sheriff said that a civilian volunteer did not have the authority to call out an out-of-state unit. So the Yakima County sheriff deputized Buchanan, and later informed the Hood River sheriff that his deputies had made the call.

Buchanan explains the development of the Military Assistance to Safety and Traffic (MAST) committee that was formed in Washington state. Buchanan had been a fixed-wing pilot and got the opportunity to get some stick time on a UH-1 Huey. Buchanan later became the president of the MAST committee and worked to train the mountain rescue teams in helicopter operations. Buchanan details some of the 82 helicopter missions he has been on. Buchanan says he has experienced severe turbulence ("when the control of the aircraft is in doubt," as defined by the Federal Aviation Administration). On one mission Buchanan experienced extreme turbulence when the helicopter's tail became damaged.

In a somewhat humorous recounting of a mission for a lost helicopter, Buchanan writes that a C-130 airplane searching for the ELT signal saw the helicopter sitting on the summit of Mt. Baker, with two guys waiving for help. The pilot of the helicopter had been coming back from a job and decided to land on the summit, where he shut down the aircraft. After walking around the summit for a bit, the pilot returned to the helicopter but was unable to get it started. The pilot and passenger had to spend the night on the summit until they were located.

Buchanan tells of several missions on Mt. Adams, one in which a climber who survived a 1,000-foot slide was very unwilling to let go of a rock he had been clinging to until he was fully assured that the rope, harness and belay would hold him. On another mission, Buchanan recounts searching for a fall subject who had an apparent dislike of brightly colored clothing, claiming that it created visual pollution. One of the mountain rescue members asked if the two hours of noise and exhaust pollution from the helicopter that was searching for him was countered by his lack of visible clothing.

Buchanan also shares his experiences at the national level, including stories from MRA meetings, one of which devolved into a num-

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ber of people being thrown into a pool, only to be broken up by a sheriff's deputy who was attending the meeting. At breakfast the next morning, the deputy was informed that he was pretty close to being pushed into the pool himself. At the 2010 Juneau MRA meeting, Buchanan received the Lifetime Service Award and his wife Connie received the Distinguished Service Award.

"58 Years: My Life in Mountain Rescue" is filled with intriguing stories of searches, rescues and recoveries, and much more. As a rescuer, I can relate to each of these stories. As an MRA member, it is a great opportunity to read about the developing days of mountain rescue. This is the perfect book to read while waiting for your next mission.

Doug McCall has been a field member of Seattle Mountain Rescue since 2008, and has served as the chair of the Washington region and former Secretary/Treasurer and Member-at-Large of the MRA. McCall began climbing in the Washington Cascades in 1992 and enjoys alpine ascents, mixed climbing, and backcountry skiing.



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KATHY RYHNSBURGER

photo courtesy Kathy Ryhnsburger

Body Recoveries in Wilderness Medicine

By Chris Van Tilburg, M.D.; Chair, MRA MedCom; Crag Rats, Hood River, Oregon

Body recovery in mountain rescue is an important task for wilderness first responders. We handle recoveries differently than rescues of live persons because they are usually less urgent and sometimes have a forensic component. My mountain rescue team, Crag Rats, of Hood River, Oregon, has had many recoveries over the last two decades on Mount Hood and in the Columbia River Gorge. One of the worst was a triple fatality airplane crash.

Some seem preventable: Once a man flying a drone walked off a cliff, presumably while staring at his phone. Another time a man was crushed by a serac on Mount Hood's White River Glacier on a mid-August afternoon during a heat wave. Once we recovered an octogenarian on Mount Adams who had a heart attack at high camp. We've been involved in the body recoveries of two suicides and one homicide, as well as one search of a landfill for body parts.

Here are some considerations for body recoveries:

1. Before the mission commences, take a safety pause. Team members should feel comfortable responding to the mission and have the ability to opt out without pressure. Even rescuers who have careers that encounter fatalities, like fire, police, and medical professionals, can encounter emotional stress. New team members should have guidance from senior leaders.
2. Secure the scene, prevent further injuries, and employ strict bloodborne pathogen precautions. Responders should wear heavy-duty nitrile medical gloves (7-8mm thick) either under or over their work gloves, and be prepared to dispose of both pairs of gloves. Gloves should be turned inside out when removed from hands and put in biohazard or freezer bags for disposal.
3. Confirm the victim is dead and notify incident command.
4. Manage bystanders by appointing a team member to attend to them; evacuate bystanders as soon as reasonable.
5. Collect forensic evidence, GPS waypoints, and images. Secure the scene with crime-scene or surveyor tape.
6. Crag Rats often packages corpses using a body bag and SKED, which works well for snow and rough forest terrain. Other litters work well, depending on the situation, such as a wheeled litter on a smooth trail. Heavy duty body bags are not readily available at our local funeral home, so we order them at an online EMS or funeral home supply company. Consider using two body bags to contain body fluids. Once, on Mount Hood, we used a mesh bag designed for water rescue.
7. Don't hesitate to leave the body for a delayed extrication if the scene is unsafe or if more planning needs to occur.
8. Debrief. A debrief can take several forms. We usually have a quick debrief at the end of the mission at search base and then an informal discussion at our next business meeting. Infrequently, we have a more expanded, formal debrief with a counselor or psychologist. Post-traumatic stress and acute stress disorders are issues that affect rescuers and should be attended to. As medical advisor and senior member with expertise and experience at dealing with fatalities, I sometimes check in with junior team members via phone after recoveries.
9. Incident command may need to manage the scene prior to the arrival of SAR personnel. Issues that can be considered in communications with bystanders include a) securing the scene, b) confirming the fatality, c) keeping lay rescuers from extricating and evacuating the body, and d) watching for emotional responses of lay bystanders.
10. Finally, clean your gear if it has been exposed to bloodborne pathogens. We've found that water recoveries contaminate equipment more than those on snow or dirt because the waterlogged clothing and body extrudes blood-contaminated water.



Recovery of a buried snowboarder from a serac collapse, White River Glacier, Mount Hood. Photo courtesy of Chris Van Tilburg/Crag Rats.



Body recovery in Mount Hood National Forest. Photo courtesy of Chris Van Tilburg.

Backcountry Zero, P-SAR

By A.J. Wheeler, MRA MedCom, and Stephanie Thomas, Executive Director, Teton County Search and Rescue Foundation

"An ounce of prevention is worth a pound of cure." Benjamin Franklin

As search and rescue members and medical providers, we are often faced with the reality that it will take us hours and sometimes days to reach those who need our help. Some will be beyond our ability to help. Those who are still treatable, will have the added insult of prolonged suffering and exposure to the elements.

What if there was a way that these patients could be reached earlier and provided shelter and perhaps even basic medical care?

This what-if scenario is not, as it would seem, a fairy tale, but is the reason for developing a robust preventive SAR program. Last winter, one of our members was out for a quick lunchtime ski when he came across a patient who was having chest pain and in serious need of medical care. Luckily, our member carried baby aspirin in his first-aid kit, having learned that it might help save a life one day. The patient was flown out of the backcountry by search and rescue and then airlifted to Eastern Idaho Medical Center, where he was treated for a heart attack. That fraction of an ounce of prevention may have helped saved his life.

Backcountry Zero, a preventive SAR (P-SAR) program in Jackson, Wyo., was started in the Fall of 2015 with the vision of reducing backcountry injuries and fatalities through a number of different programs. This community-wide vision is implemented through educational classes, partnerships with other organizations and businesses, and outreach to outdoor recreational groups. The program stresses the importance of preparation, and being practiced and present for every adventure. Knowing that SAR help may not arrive for hours, if not days, we stress throughout our messaging the ability of the public to be first responders. With just a few key items in a pack and a few hours of practice on life-saving techniques, such as beacon searching or CPR, we're teaching the community that they can make a difference in someone's life.

These patient stories are available on the Backcountry Zero podcast, The Fine Line, <http://www.backcountryzero.com/podcast/>. This podcast was produced to allow the community to hear stories of real rescue and survival, hoping to spread the message about lessons learned to backcountry recreationalists and to broaden the community's discussion on backcountry preparedness.

Search and rescue teams could benefit from taking these steps to help their community members be first responders in the backcountry: Sponsoring educational programs; showing people how to make their own first-aid kits; teaching them how to use a smartphone GPS so that they can help SAR locate them in an emergency; encouraging people to carry headlamps and warm clothing; stressing the importance of bringing extra food and water. By taking the time to educate our community, we are doing ourselves a favor in making our rescues more efficient, making our patients more comfortable, and sometimes even saving a life that we would not have been able to save on our own.

Backcountry Zero began in the Fall of 2015 with the vision of reducing backcountry injuries and fatalities in the Tetons. Since its inception, partnerships with Grand Teton National Park, the U.S. Forest Service, neighboring SAR teams and local businesses have created education and outreach opportunities that have reached thousands of backcountry travelers. To learn more about Backcountry Zero and see how your team can develop an effective P-SAR program, please visit our website at www.backcountryzero.org.

A.J. Wheeler, M.D., is a Fellow of the Academy of Wilderness Medicine (FAWM) and holds a Diploma in Mountain Medicine (DiMM). He is a member of Teton County Search and Rescue, and is an emergency physician in Jackson Hole and a member of MRA MedCom.

Stephanie Thomas has been a volunteer for TCSAR since 2007 and has been the executive director of the TCSAR Foundation since 2010. For more information about Backcountry Zero or the TCSAR Foundation, please contact stephanie@tetoncountysar.org.



SAR Puppies

By Shaun Roundy, Utah County Search and Rescue, MRA Intermountain Region Chair

Remember your early years in search and rescue? Remember the energy, the enthusiasm, the eagerness to learn, the hunger to do and see and experience absolutely everything? My teammate J.T. Ferrin—an energetic, second-year recruit—recently coined a perfect term for such volunteers: SAR puppies.

The name came up in a conversation about hosting a car-show fundraiser for the team. "We have gear we want to buy, don't we?" he asked. "People love us and would gladly support us, won't they? Why not let some of us SAR puppies make this happen?"

You SAR veterans—the old dogs, and I confess to being one of these myself—may shake your heads slowly and point out that fundraisers take a lot of work. There's the planning, marketing, staffing, up-front costs, permits, insurance. We already ask a lot from our volunteers and we'd rather use their discretionary time for rescue missions. Wouldn't it be easier to just write a few letters to large corporations and let them cut us a check?

This article's purpose is not to debate the merits of fundraisers versus writing letters. It's to point out that you may not be making the most of the endless enthusiasm of your SAR puppies, and that maybe you should reconsider.

I'm pleased to report that the car show, now branded as a community awareness event, took place October 12, before one of the county's biggest high school-rival football games. An Apache helicopter flew in; some of our vehicles and gear were on display. We also had a silent auction that featured a generous amount of gear donated by local and national outdoor brands. Thanks to outstanding preparation by Ferrin, our fundraising chair Andrew Titensor, and others, this event was a success.

I created our team's website 16 years ago as an eager second-year SAR puppy, and now Tim Berrett, a third-year SAR puppy, has set up team Facebook and Instagram accounts. I pitched the same idea about 10 years ago, but our leadership at the time—or at least the county attorney's—was hesitant and cautious about liabilities. Now the pages' popularity is growing rapidly. Berrett does a great job of posting mission reports and photos. It's an ideal way to connect with the public; social media will surely prove to be one of our best instruments for non-mission priorities, including preventive search and rescue (P-SAR), fundraising, and recruiting.

If you feel nervous about your newer recruits representing your team differently than perhaps you would, then step up and provide some leadership. But don't smother their contribution completely. Yes, you've proven your dedication and made this team yours. But it's not yours alone. It's their team, too, and they'll carry it forward long after you're gone.

So use your SAR puppies for what they're good for: Enthusiasm. Vision. Getting things done. Let them build their team pride and sense of ownership. Give them some guidance and let them run. Let them make your team even better before it's too late, before they grow up and become like us.



Photo credit: <https://www.pexels.com/photo/portrait-of-a-dog-257540/>

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The Cabin

By Debbie Kelly, Alpine Mountain Rescue

Shortly after Mountain Rescue Aspen (MRA) was incorporated in 1965 there was a mission for a lost 10-year-old boy that sadly ended in a recovery. The family was so grateful for the rescuers' efforts that they donated the funds for a small pan abode-type cabin (600 square feet) to be built on a lot owned by the city of Aspen on West Main Street.

This was to be the home for MRA until 2015. There was the addition of a two-vehicle garage, and then a subsequent rebuild of the back half to include a locker room (that also served as a meeting room) upstairs of the now attached two-vehicle garage.

As the team expanded with more members and gear, it was obvious that we were outgrowing our cabin. After getting some preliminary plans to rebuild on the lot, it was determined that the lot would never be big enough to meet our needs. We had equipment (ATVs and snowmobiles) stored at different member's houses across the county, as well as parked on neighborhood streets near the cabin. A T-card system was necessary to keep track of where all of the equipment was located. We looked to the city and the county for a suitable place to build but all parcels were set aside for other uses and real estate prices in Aspen were exorbitant.

At about the same time that we were weighing our options for a larger headquarters, a former member was hired to do a sculpture for a woman who had been rescued from a plane crash back in the 1970s. She had expressed how grateful she was to Mountain Rescue Aspen for saving her and other survivors from the crash that had claimed the life of her father and the pilot. She had done very well financially in her life and was willing to donate the funds necessary to build a new facility for the team. The building would be named after her father.

After much searching for a spot to build, her family foundation also helped secure a site that was central to Pitkin County and big enough to house all of our equipment under one roof. The building would also have plenty of room for meetings, training, and running missions. It was everything a rescue team could ask for.

Additional donations were secured from other community members for specific room requirements, and a tiled donor wall was installed for larger donors. But many of our team members were attached to our old cabin. So in the design of this new and much larger building, we incorporated the roof angle and size of the old cabin as the entrance. This room serves as a museum for our old gear and memorabilia, including a logbook of a founding member with recorded details of rescue missions dating back to the 50s. In the front window we have a lantern that is lit 24/7/365 denoting our willingness to respond at any time.

So now we have this large building, with a four-vehicle-plus-trailers garage, encompassing 14,000 square feet. But given that we have close to 20 members with more than 20 years on the team, the old timers just couldn't let the old moniker go. So it stuck, and that's why we still call our new facility The Cabin.



The "new" Cabin. Image courtesy of Mountain Rescue Aspen.



The team outside the old Cabin headquarters. Image courtesy of Mountain Rescue Aspen.

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Editor's Note

As a writer and editor with many years of experience, I can tell you that it doesn't take a specialist to cover the stories I have in my career. I've been a newspaper police reporter, magazine editor, columnist, correspondent and consultant for such diverse entities as John Jay College of Criminal Justice, the International Association of Chiefs of Police, the U.S. Department of Justice, the U.S. Department of Homeland Security, the Naval Postgraduate School, Claremont Graduate University, and the University of Southern California, to name a few. If you're very good at what you do, and I am, and if you're smart and interested in the world around you, you can cover anything: the science of DNA analysis; the development of specialized weapons from declassified DOD technologies; asymmetrical warfare in the fifth-dimensional battlespace; how the deaf can lose their language in long-term incarceration; interviews with serial killers, government officials, movie stars, and a Minnesota jailer who moonlights as a cartoonist. You can even write about why peaches have fuzz. Seriously. My editor once sent me to the farmer's market to interview a local grower about his peach crop. It may have been my best work.

Those stories took brains, curiosity, and the ability to translate scientific language and government-speak into English. What they didn't require, and what probably caused a fatal case of burnout, was heart. This is where you come in.

Search and rescue requires heart. We can learn all the technical skills, go through the academics, buy all the cool gear. But if we don't have heart (and no small amount of grit) our search-and-rescue careers will be short. We won't feel that rush of adrenaline when the cell phone rings. When we hit the trail, we won't turn our faces to the sky, close our eyes, and sigh with relief at being outdoors, where we belong. We won't have that compulsion to find out what's behind that bush or over the next hill. (I call it Around-The-Next-Corner OCD.)

This is what strikes me about the Meridian, its contributors, and about you – the members of the MRA. You have heart. You can hear it in every story. The dedication to learning more, to finding new ways, honing skills, saving more lives. And all from *volunteers*. It's extraordinary.

I join Shelley Littin, my co-editor, in thanking everyone for their contributions to this issue. We are excited about working with you, and look forward to reading your stories of rescues that ended well and learning from those that didn't.


Keep in touch,

Lois Pilant Grossman


San Dimas Mountain Rescue Team
(support team member and peach fuzz expert)

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Photo Contest!

Due to insufficient submissions with the last Photo Contest attempt, we haven't voted on a winner this time around – but Meridian editors and MRA officers would like to keep this friendly competition going! We will vote on a winner and honorable mentions, which will be featured in the Summer edition of the Meridian and on MRA social media. The only requirement is that the photo must follow HIPAA restrictions where patients are concerned: subjects must not be personally identifiable by their faces or any other feature in the photo. Please submit your photos for consideration, including a caption and photographer name and

team to MeridianEditor@mra.org by June 1.



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