

MERIDIAN

Fall 2023



The Quarterly Publication of the Mountain Rescue Association

mra.org

A low-angle photograph of a yellow helicopter with "SHERIFF" written on its side, hoisting a person in a red rescue basket. The helicopter is positioned in the upper left, and the basket is suspended in the lower center. The background shows a clear blue sky and the tops of green trees.

SURVIVING THE WORST & SUPPORTING SAR:

**A WOMAN'S MISSION TO
GIVE BACK TO RESCUERS**

**MEDCOM:
In-Field Hydration**

**Takeaways from the
OceanGate Disaster**



MOUNTAIN
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ASSOCIATION

Fall 2023

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ON THE COVER: A helicopter rescue team evacuates Nichole Doane after breaking her back and pelvis in a fall at Wallace Falls, Wash. Doane is now working to support SAR teams through a documentary project.



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To learn more about our levels of sponsorship, click through to the [MRA Sponsor page](#).

President's Message

I recently attended the Spring Conference and want to again thank Coconino County Sherriff's Office Search and Rescue for the excellent event in Flagstaff. They were professional, organized, helpful and appeared to enjoy working together! There were lots of new faces at the conference and the pre-conference events were very well attended. For those of you who made it all the way to the business meeting, you are aware of some big changes in proxy voting that will be in effect starting with the February winter business meeting in 2024. In short, there is no proxy voting anymore.

The Officers of the Mountain Rescue Association have been aware that proxy voting was not standard practice on a Board of Directors, so we hired lawyers in Washington State, versed in non-profit law, to investigate the issue. They confirmed that as a non-profit, proxy voting is not permitted on the governing board. Our structure in the MRA is such that each team makes up the BOD and the BOD is responsible for essentially all decision making in the organization. Despite the inclusion of proxy voting in our bylaws and policies, we cannot continue with this practice. The MRA is going to correct in the simplest way possible, which is to eliminate proxy voting. This maintains most of the existing policies and procedures the MRA has been using for decades. Each member team can still

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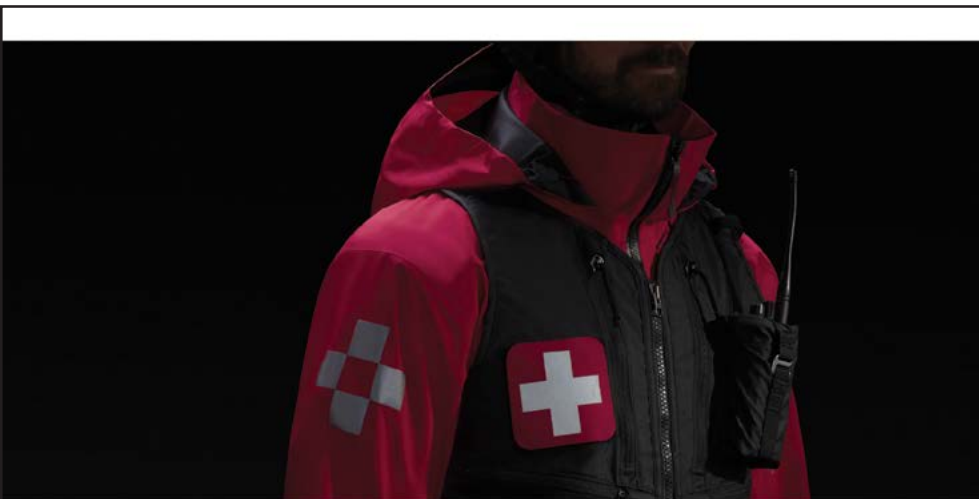
send a representative to the BOD meetings. The roles and responsibilities of the Board will not change.

There will be a necessary re-write of our bylaws and policies to reflect this change. There will also be some minor updates to the bylaws that will be proposed at the same time. Look for these in your inbox for review at least 6 weeks prior to the business meeting in February.

The result of this change is that teams will need to send a representative in person to have their voice heard and their vote counted. In the past, more than 30% of votes were cast by proxy at the MRA business meetings. Going forward the teams that participate in person will be the ones making the decisions and deciding in what direction the MRA will grow. As professionals we need to be accountable and available to work through our problems and plan the future of the organization. Show up, get involved, we will be stronger working together.

Alison Sheets

President, Mountain Rescue Association



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Where the Rope Ends:

TURNING A NEAR-DEATH EXPERIENCE INTO SUPPORT FOR SAR

Rick Lindfors - Meridian Editor in Chief

SEATTLE - Surviving an incident that could have killed her was just the beginning for Nichole Doane. The Seattle-area trauma nurse nearly died in a rappelling accident and found the road to recovery to be long and brutal. But in her path forward she also discovered a way to help guide other trauma survivors through healing and support search and rescue teams like the one that evacuated her.

Doane was canyoneering at Wallace Falls in 2017 near Snohomish, Washington. Doane had done several canyoneering trips before and the Wallace Falls was her first trip of that season. After several rappels, her team came up on a more hazardous descent that involved walking down a rock face then going down a free-hang area. Her team felt comfortable with the maneuvers, but when Doane began moving down, things went south. "I thought I was prepared for the gravity but it just pulled me faster down the rope... burning my brake hand," she said, noting that she was using an ATC device, making it difficult to add friction to the rappel. Doane struggled to correct herself, scrambling for ways to get control and ended up falling the rest of the way. She ended up with an L2 vertebrae burst fracture, T8 fracture and broke her pelvis. She lost most of the sensation in her legs immediately after the impact as well as about half of her blood volume in her pelvis.

Doane was with two other trauma nurses on her trip who provided care for the four hours that it took for a rescue team to reach the area, aided by a rescue beacon from the team. A helicopter team evacuated her to Seattle. Doane required extensive surgery for her spine and pelvis, staying in the hospital for two weeks and was wheelchair-bound for another two months. She had internal and external bars to bind her pelvis together. While she received the required physical care, mental health care was lacking. "As a nurse, you see all of the holes in the system that should be there for people and mental health was a huge piece that got missed completely. Nobody ever asked me how I was doing mentally except my friends," Doane said.

Doane tried to push ahead with her physical recovery, even though she knew she was struggling mentally. She moved into her aunt's house after surgery

A helicopter rescue team evacuates Nichole Doane after her fall at Wallace Falls, Wash.

because it had elevator access. The external bar on her pelvis kept her from comfortably sitting. She was getting two hours of sleep at a time due to the pain. “Constant pain and this lack of sleep put me very much in a downward spiral,” she said, adding it took about a week out of the hospital to realize how tough recovery would be. The bar would be removed after two months, and Doane wanted to get back to work. Despite the pain in her back, she tried to plow ahead and went back to 12 hour shifts at her hospital but struggled to make it through the day. She thought the pain was just part of having a back injury. But a year later, someone at a yoga class pointed out lumps in her back, indicating that the hardware had broken off.

Doane went back to the doctor and x-rays confirmed the hardware failure, meaning another round of surgeries and six months of recovery. That was the point where she stopped pushing and started listening to her body and mind. She figured that by pushing through her pain, she was setting herself up for more hardship. She also started to get to the bottom of why she was pushing so hard physically. Doane had a yoga practice of her own prior to her injury and used it to center herself and get more recognition of her psychological symptoms. “What was causing me to push was this future thinking of [...] not being able to support myself financially, not being able to physically do the things that I wanted to do,” Doane said. She learned to stay in the present moment and try to avoid imagining worst-case outcomes of her injury.

Doane has started to tell her story of recovery and appreciation for search and rescue in articles, podcasts and now an upcoming documentary. The film, “Where the Rope Ends,” profiles her recovery and also educates viewers on search and rescue teams. The project was originally titled “Be Like Water” but was changed to avoid confusion with the famous saying from actor and martial artist Bruce Lee. Doane met the director of the project, Baylee Sinner, while she was still in her wheelchair and attending a yoga teacher training. Doane says Sinner observed her in the class and approached her afterwards about sharing her story of injury and recovery. “I said ‘hell no,’” Doane said, laughing, “but I had this other goal [...] to give back to search and rescue in a big way.” She warmed up to the idea of sharing her story of recovery, initially wanting to do a five-minute commercial for SAR. Outside interest in the project grew and the concept grew to a feature-length documentary. She started working on ways to make the project support Snohomish County SAR and now wants the film to serve teams across the U.S. The documentary



An x-ray image of hardware in Nichole Doane's hip and spine after surgery.



Nichole Doane in a wheelchair and body cast during her hospital stay. Her pelvic bar is visible across her lap.

team hosted a virtual screening for SAR teams in the summer of 2023 and wants the film to be part of a package that teams could use for fundraising. The package would include marketing materials for teams to create campaigns for screenings. The movie and materials would be available for free for those teams. Snohomish County SAR has served as a pilot for the project. Doane hopes to also hold a national virtual screening during search and rescue week in April 2024.

Interested teams can learn more about the documentary on the [project website](#). There is a portal for interested SAR groups to enter their information and receive updates on the film release and marketing campaign materials.



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Taking care of yourself in Field: Hydration

Bill M Campbell MD FAWM DiMM

As mountain rescuers, we get very focused on finding and rescuing individuals in austere conditions. Some teams even have the motto “So others may live.” But we must constantly remind ourselves of our priorities: self > team > subject. If we don’t take care of ourselves, then we let our team and possibly the subject down. There are many factors included in taking care of yourself that we will address over time, but in this article we will address water and hydration in the field and afterwards. Hydration is 1 of the 10 essentials of outdoor travel.

We have all been on searches where volunteers with the right heart come out to help. However, they are usually ill prepared and, at most, carrying 12 ounces of extra water and little else. How much water you need to carry with you depends on your mission and location. On a mission

in the East where water is prevalent, a couple of liters of water might suffice for a day. But if the mission turns into a prolonged field deployment, being able to obtain extra water is crucial. In places where water is particularly plentiful, some team members may only carry 1 liter but have methods of quick water filtration or purification.

WATER

55 to 60 percent of adult human bodies are composed of water. Loss of water (dehydration) affects our performance, starting with as little as two percent dehydration. For a 75 kilogram man, that would be one and a half kilogram or about one and a half liters of water loss. This may seem like a lot, but losses from urine output, sweating and



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our respiratory system add up quickly. Maintaining normal hydration requires between 1.5 liters and 2.5 liters per day without the added losses from exertion (sweating, breathing harder, heavier muscle activity). The more we lose, the worse our performance.

For optimal performance, drinking before starting your activity (prehydration) is recommended. About a half a liter will do and it can be plain water or a sports drink. During activity, frequent sips rather than large quantities taken more infrequently is recommended. Usually 200-300 milliliters every 20 - 30 minutes will do. This is about half to one liter of water per hour of exercise. If you are having to take a bioBreak (needing to urinate) every one to two hours, you are probably keeping up with your water losses. For very short duration activities (90 minutes or less), plain water will suffice. Anything longer than that, drinking a combination of plain water with some sports drink mixture will work better (carrying powders that you can mix yourself on the trail works well). Post exercise rehydration is most optimal within one to two hours after

stopping exercise. This includes electrolyte replacement along with carbohydrates and lean protein.

How much water you need to carry depends on many factors. Personal factors (some people's bodies are more efficient and lose less water), activity levels, and environmental conditions (in heat you will need more water as the body sweats even more trying to cool yourself off) are important variables. Whether you can replenish water while out in the field and whether you need to carry additional water for your subjects are other important factors. I would say that most team members should carry 1-2 liters into the field.

Options for carrying water are generally either a separate container (Nalgene bottle, metal bottle) or a hydration pack. How you carry is somewhat a personal preference. Hydration packs allow you to sip as you go with less effort to access water. Bottles are more durable and some even come with filtration/ purification built in. I find that for activities where I wear my pack most of the time (searching) the hydration pack serves well. But if I am working with



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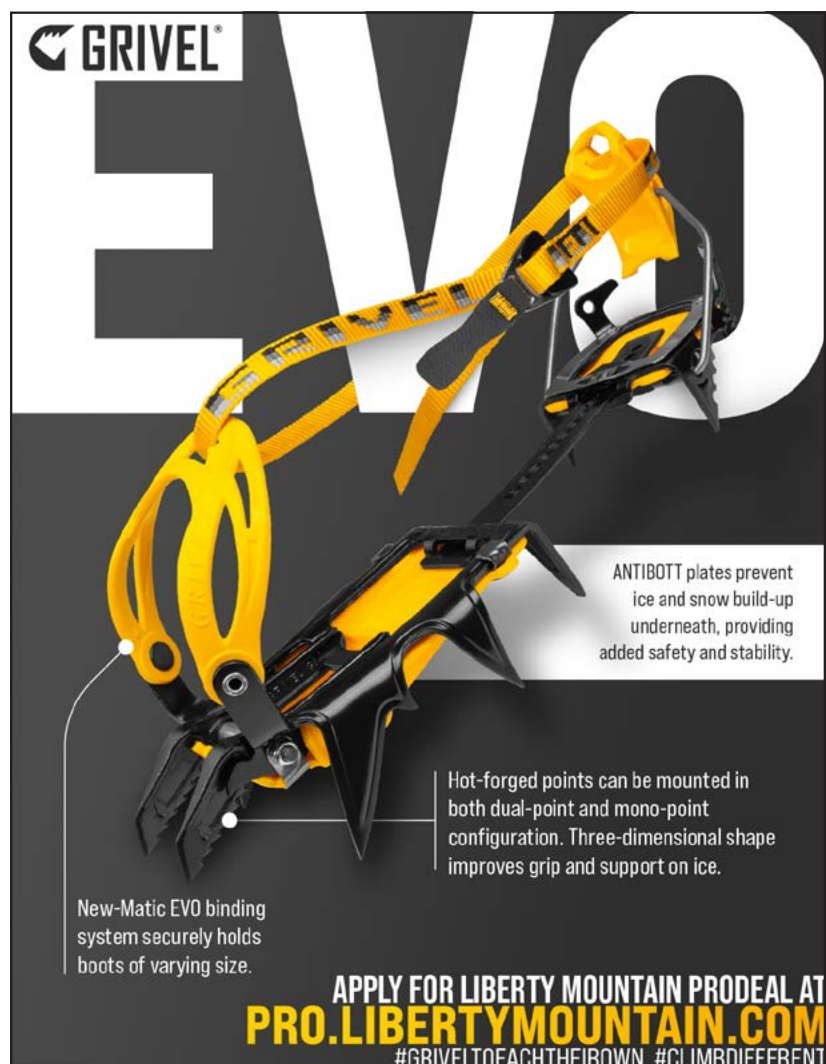


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my pack set off to the side, then a bottle seems easier to use. Hydration bladders should be cleaned out routinely. Bottles are easier to use if you want to mix up a rehydration drink in the field. It is important that you do not use and reuse a purchased bottle of water. These add to the growing problem of plastic waste and they are not BPA-free. Most bottles you can buy now to carry water are BPA, BPS and phthalate-free.

REPLENISHING WATER IN FIELD

How much water you need to carry is very dependent on access to water in the field. Even if you have access to fresh water, you must consider how to create safe drinking water. It is not a question of whether water is contaminated but how much it is contaminated. All water in the field will contain some combination of bacteria, viruses, protozoa, chemicals, heavy metals, and micro plastics. All of these can have a profound effect on your health. Some effects are fairly quick (microorganisms) and some effects are more long-term and insidious (chemicals, heavy metals, micro plastics). The old-fashioned method of boiling water still works (at least for most microorganisms) but requires time, a vessel to heat water in and a heat source. Easier methods are filtration and purification. Filtration usually clears bacteria and protozoans and micro plastics. Purification also clears viruses and chemicals and heavy metals. With most water sources in North America, filtration will suffice. But if you go into a disaster area (e.g., hurricane, flooding) this might not hold true. There are numerous evaluations of purification and filtration devices online. Look them over and decide what system works best for you. Other methods such as chlorine dioxide tablets or drops can also work but you need to wait 30 minutes to 4 hours for them to reach effectiveness. The best idea is to carry 2 types of treatment in case one breaks. Two is one, one is none.



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STRAIGHT WATER OR ELECTROLYTE REPLACEMENT?

If your activity is less than 90 minutes, straight water will suffice, especially if you also rehydrate and eat right after the exercise. Longer activities will require more attention to electrolyte replacements (and also carbohydrates). Electrolyte replacement can be achieved with salty snacks



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in addition to water. A more complete replacement would be one of the rehydration solutions. Premixed is not as efficient as a powder mix you can carry. Some powders even come with a sugar free option. Be careful about hydrating with lots of straight water (and not eating, especially something with salt in it) because you can cause hyponatremia (low sodium). This can be serious, especially in the field as performance and decision making can suffer drastically.

TAKE HOME POINTS:

1. Prehydrate
2. Hydrate often while exercising
3. Hydrate more at altitude (lower humidity so more insensible losses)
4. Don't forget to hydrate when it is cold
5. Treat any water replenishment in field with suspicion
6. Don't over-hydrate with straight water
7. Don't forget to rehydrate immediately after you finish your activity



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Letter from the Editor

Courage, Compassion, Commitment. Those are the words that surround the Mountain Rescue Association logo on the organization's challenge coins. They represent the core of our volunteers; courageous people who have committed to saving lives in search and rescue through a sense of compassion for our subjects. The first two can be easier to gather

Sponsor Spotlight:

MRA team members are familiar with two types of black diamonds. The first is the ski slope we take on when we're feeling brave and the second is a gear company that covers the outdoor equipment spectrum. BD equipment can be seen in SAR teams whether it's packs, gaiters, headlamps, apparel or their venerable line of climbing hardware. BD carabiners and harnesses are a common sight and many climbers have started up a glacier using a raven ice axe. The company quite literally has your equipment needs covered from head to toe, backpack to avalanche beacon.



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within ourselves. We drum up the courage to run missions in hazardous environments. We block out time and budgets for our operations, training and equipment. Compassion, on the other hand, can be a little slippery. It can sometimes be easy for our compassion to give way to cynicism towards their subjects over their preparedness, decision making or other factors involved in their predicament.

Such was apparent in June this year when an OceanGate submersible imploded while on a trip to the titanic. For the first day after the announcement, the world was gripped in tension and hoped for the best as North American navies and other maritime assistance searched for the vessel. But soon after the mission began, the nature



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of OceanGate's design, testing and executive mentality came to light, changing the public perception of the issue from an expedition gone wrong to a disaster that was waiting to happen. Within weeks it was apparent that OceanGate cut innumerable corners in its operation and went against many established norms in undersea exploration and safety.

There was, to say the least, enthusiastic discussion about the matter in search and rescue forums on social media. While some focused on the technicalities of deep-sea recovery, others carried vitriol towards the victims and the level of commitment being made to salvage what was left of the doomed craft. Many members of the public wondered out loud whether there would be any payment for the SAR effort. The U.S. Coast Guard simply replied no. SAR is one of the primary mission sets for the USCG, which more commonly assists hikers, climbers, swimmers, surfers and fishermen who end up in harm's way. A search for a submersible is, for them, another mission.

Of course, many SAR volunteers in the U.S. knew that would be the answer from the get go of the search. This is something we've heard time and again even after we witness missions that result in careless actions by subjects. Such missions, especially in repetition, can lead to frustration among teams. Sometimes it seems like no matter how many press releases we send about such missions or preventative actions we take, someone is bound to do something reckless in the wilderness with us volunteering to get them out. A little cynicism is normal and perhaps healthy for us in our line of work. However, there is a point where such an attitude can become destructive both to team morale and our relationship with the public. We must remember that we as SAR volunteers aren't too different from the public ourselves. We also take risks in our own adventures whether they're on land or at sea, and it can only be a matter of time before we are on the receiving end of the rescue effort. It's important to remember that not as a way to forgo scrutiny of our subjects, but pause and remember that we must be compassionate towards them as we are often responding to what may well be the most traumatic day of their life. We must also remember to do our best to educate people on how to avoid such situations in the future.

Cheers,

Rick Lindfors

Meridian Editor in Chief
Northstar Search and Rescue



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