

MERIDIAN

Winter 2020



The Quarterly Publication of the Mountain Rescue Association

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Overcoming COVID-19

How Teams Adapt to the Pandemic

Double Holiday Rescues on Mt. Hood

Saved: A Rescuer's Perspective

**ICAR Terrestrial: A Dream
Training Facility**



MOUNTAIN
RESCUE
ASSOCIATION

Winter 2020

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ON THE COVER: *Rescuers trudge through fresh snow during the rescue of a snowboarder on Mt. Hood over Memorial Day Weekend (Erik Broms/PMR)*

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Letter from the Editor

The year 2020 is one that many of us will remember well, though I bet most of us won't remember it fondly. Truth be told, I don't remember too much of the months leading up to March except that snow was decent at Oregon's Mt. Bachelor right before it closed and the Oregon Ducks women were surefire picks to win the NCAA tournament. Everything after that seemed to be a stream of unfortunate and, in many cases, momentous events. Little could be counted on for stability in the year 2020 as the public saw the sweeping impact of the coronavirus pandemic, incredible civil unrest, and an awfully bitter election cycle.

But in the list of the few things that could be counted on in the year 2020, MRA teams were there, and likely in bold font. As more people took to the outdoors, one of the few available recreation forms available this year, volunteer SAR teams saw a rise in callouts. Many hikers and climbers took on trips that they were not prepared for as they sought to get out of the house. As they ventured, our teams were there for them. Other members sat alongside public health staff to call people exposed to coronavirus and check in on their wellbeing. And through all the risks and restrictions suddenly in play, MRA teams found ways to adapt. Trainings went virtual, small groups met outside, and volunteers navigated new supply chains to ensure that PPE would be available for teams.

As the West erupted in flames, MRA members were there to assist with evacuations, help those who had fled, and assist in many other tasks to support wildland

firefighting and recovery efforts. Many MRA members themselves prepared for evacuations, evacuated, or lost property in the historic wildfires. Like the pandemic, some aspects of the wildfire were ever present as ash choked out the sun in some regions. Many times it was so thick you could taste it, posing yet another health risk to teams taking on calls.

It was a tumultuous year to be sure, but what a year to be in SAR. By whatever means they could, MRA teams answered the call of duty in rain, sleet, smoke and snow. Your communities are safer because of your participation. While this year was surely tiring for many of us under increased time commitments and stress from changes in our day jobs, know your efforts and dedication are appreciated by your neighbors. By engaging and overcoming the challenges of 2020, you have laid the groundwork for how you and your partner agencies will navigate similar challenges in the future, as there will surely be at least a few.

Enjoy this issue of Meridian which brings you stories of alpine rescue, perseverance through the pandemic, education on operations, and hopefully a smile or two. I wish you happy holidays and a safe start to the year ahead.

Stay frosty,

Rick Lindfors-Ackerman
Meridian Lead Editor
Eugene Mountain Rescue
Pacific Northwest Search Dogs

THE HOLIDAY ON HOOD

RESCUERS RUN TWO MISSIONS IN 24 HOURS

Rick Lindfors – Meridian Lead Editor

MT. HOOD, ORE. — “Crazy” is how Portland Mountain Rescue member Paige Braugher described the first of two missions undertaken within 24 hours on Memorial Day weekend. Around 8 pm Friday, May 22, 2020, rescuers received a callout for a snowboarder that had gotten lost and stranded in whiteout conditions while descending from the summit of Mt. Hood. Nikolas Larson, 31, had been using a smartphone app to guide him back to his vehicle, but ended up going farther northwest on the mountain than climbers usually go, according to Clackamas County Search and Rescue Coordinator Scott Meyers. Larson ended up at 6,200 feet on the west side of the popular cascade mountain.

Larson was told to stay in place as CCSO coordinators tracked his cell phone to narrow down his location. Low on battery, Larson put his phone into airplane mode. He had some food but no water, according to Meyers. A callout

was sent to several teams in the greater Portland area, including PMR and the Hood River Crag Rats.

“I was just getting into bed,” said Erik Broms, an early to bed, early to rise member of PMR. Braugher was ready to go, having been prepared to go skiing on Mt. Hood the next day with another PMR member. Rescuers assembled at Timberline Lodge and took a snow cat to the top of the Palmer chair lift, and then climbed towards Larson’s coordinate.

The night was a tough one for a mountain SAR mission, as rescuers were operating in whiteout conditions with significant avalanche danger. “We had to be careful of where we were going,” Broms said. The team did a safety analysis before embarking from the top of Palmer, and worked to stay away from avalanche-prone areas and terrain traps. The first team of rescuers also had to trudge through thigh-deep snow in some areas and push past piled drifts.



A daytime view of the shelter Portland Mountain Rescue members built for Nikolas Larson while treating him. Members cut snow blocks and assembled them around their teammates (Erik Broms/PMR)

Around 1:30 Saturday morning, the first rescue team made contact with Larson, first hearing him yell for help about 1,000 feet above his position. "I was pretty amazed we could hear him as far away as we did," said Broms, adding that the noise helped the team hone in on Larson's position. "He told me that he couldn't hear anything but he could see our headlamps and he started yelling," added Braugher.

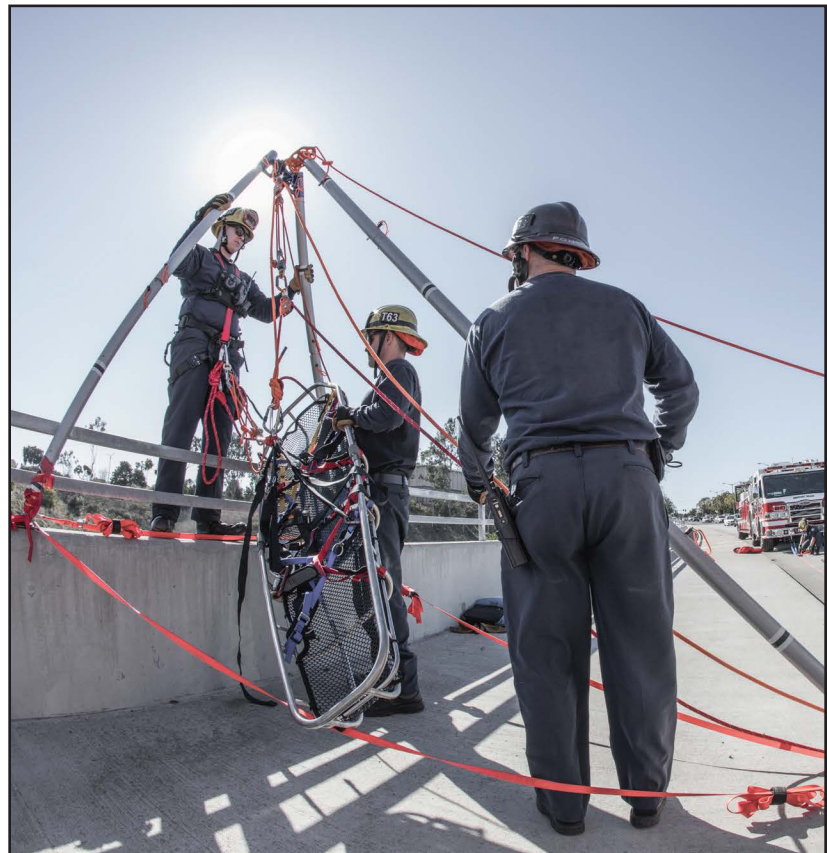
When the first team reached Larson, they saw that he was hypothermic. He was found standing outside of a snow cave he had built and removed his jacket and one of his gloves. "He didn't have much time to go," said Meyers. Another sign of a serious issue was Larson's alertness when the team found him. "He could barely answer my questions," said Braugher, who took on the role of psychological first aid for Larson as other PMR members with advanced medical training assessed his condition. "My job was basically to keep him calm and make sure he knew he was safe." Broms could tell that Larson would need to be assisted off the mountain, and called for additional backup. "We figured he wasn't going to walk out," said Broms.

Rescuers removed Larson's wet jacket and insulated him with additional layers and heating pads. One sticking point was his gloves; he wouldn't allow the team to place a glove on his exposed hand. "That was the weirdest thing," said Braugher. While part of the team worked on Larson's medical care, the rest took on the task of shelter. The team was still in a storm that was bringing in a mixture of rain and snow in high winds. They cut blocks of snow and built a wall, securing a tarp to the top to reduce the exposure for their patient.

As the morning wore on, the question of how to remove Larson from the mountain needed to be answered. Broms could see that the weather would not allow for a helicopter exit. "The cloud cover kept moving... the helicopter extraction was iffy," he said. Adding to the list of issues was the coronavirus pandemic, with additional decontamination procedures needed for helicopters after carrying a patient. As a precaution, all rescuers were wearing masks, along with their patient, according to Meyers. Meyers also noted that the rescuers had stabilized Larson to a point where the urgent helicopter extraction was not necessary, though he would not be able to exit the mountain on his own power.

A second team of mountain rescuers arrived around 7:00 am Saturday morning with a litter. The team brought Larson down the slope, meeting a Clackamas County ground search team at the treeline. The challenge of a

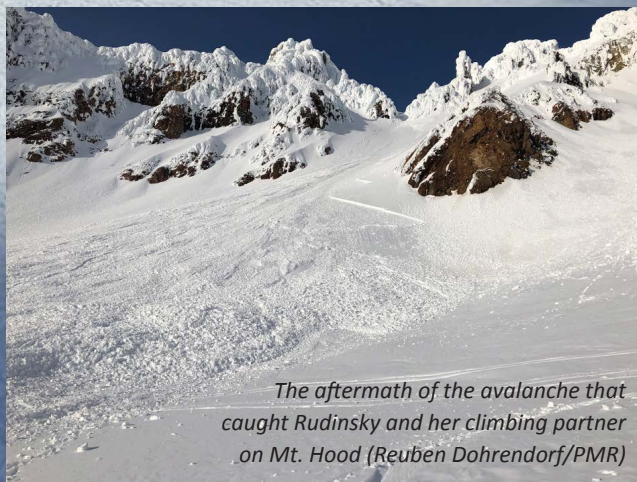
Members of Portland Mountain Rescue assess Nikolas Larson after locating him on the west side of Mt. Hood, just south of Paradise Park (Erik Broms/PMR)



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A photo from Rudinsky's climbing partner before the avalanche, showing their intended route and the likely trigger point of the slide (Dani Rudinsky, provided by PMR)



The aftermath of the avalanche that caught Rudinsky and her climbing partner on Mt. Hood (Reuben Dohrendorf/PMR)

mountain rescue didn't end there, as the teams had to move Larson across downed trees, through snow and across snowed-in creeks in the Mt. Hood National Forest on the way to Kiwanis Camp. When the terrain allowed, a wheel was placed on the litter, but first mountain rescue team had an especially tough time with the four-mile trek, as they were all wearing ski boots. "It was nasty," Braugher said. There were some blackened toe nails among members of the mountain team due to the long hike in less-than-ideal footwear. The ordeal had Braugher clocking about 20 hours of mission time, and she and the other members of their team returned home as another mission started.

Reuben Dohrendorf was one of the rescue leaders for the second mission within 24 hours on Mt. Hood. His subject was a skier who had been caught in an avalanche

and had fallen from the Leuthold Couloir to the Reid head-wall, sliding about 1,000 feet. The skier, 23-year-old Dani Rudinsky, was an experienced climber and had activated an SOS signal on her personal locator device. She was hit by the avalanche near the summit, which started above her location while climbing. One of her ankles was injured, but her climbing partner was not hurt. It is unclear exactly what had triggered that avalanche, but Dohrendorf notes that the danger for a slide was elevated given the recent snowfall.

Deputy Meyers called in PMR, the Crag Rats, and the Reach and Treat team from the American Medical Response ambulance company. The RAT team comprised of paramedics trained in backcountry travel and medicine. Meyers also called for coordinators from Hood River County for assistance. A 'ready team' of

PMR skiers, who are positioned on Mt. Hood in case of emergency, was on the way to find Rudinsky. A fresh contingent of volunteer rescuers assembled at Timberline while the team that operated the night before made their way home. Dohrendorf says that members of PMR were aware that Memorial Day would be busy, and he had opted out from the first mission of the weekend after seeing that there was an effective response. "We [had] a team out, we're going into a busy weekend, we know everyone is antsy, let's make sure I'm planning to be available to respond as needed," he said, noting that team members collectively kept themselves ready for a mission, aside from the ready teams that were scheduled in advance.

The combined team of PMR and Crag Rats took snow cats to the top of Palmer lift around 4:45 in the afternoon, then climbed to the Illumination Saddle. With the higher avalanche danger, Dohrendorf assigned a Crag Rat with extensive ski patrol experience to assess the terrain and snow. All team members carried avalanche probes, shovels and transceivers, and stuck to lower risk areas of travel. Once at the top of Illumination saddle, the team

Rescuers prepare to extract Rudinsky from Mt. Hood (Reuben Dohrendorf/PMR)



descended about 500 feet, reaching the subject and the AMR RAT team at 7:00 pm.

While patient treatment was underway, Dohrendorf assigned a team to build a system to raise Rudinsky up to the saddle. "That was going to be our slow point, so we worked to get that done promptly," he said. When Rudinsky was packaged and ready to move, the team hauled her across the Reid glacier, keeping themselves rigged for crevasse rescue. The team then hauled her up 500 feet, reaching the top of the saddle at 8:15 pm. A team of Crag Rats then skied her down to a waiting snow cat. "One of the most efficient rescues we've experienced," said Dohrendorf. Rudinsky arrived at Timberline around 9:30 pm.

About 10,000 people attempt to climb Mt. Hood each year, with many more exploring the wilderness across Clackamas County. With it being such a popular mountain, rescues are common for PMR and the Crag Rats. But with that popular terrain comes an experienced corps of volunteers that make up the rescue teams. "We have some of the best mountain climbers and ground searchers that you can imagine," said Meyers, adding that over the last two years, CCSO, PMR and the Crag Rats have worked to improve their response procedures over the past few years, as the three groups are constantly working together.



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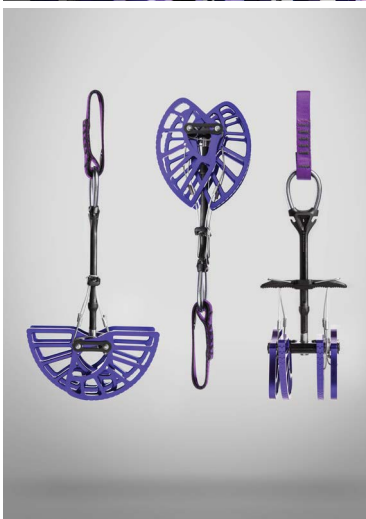
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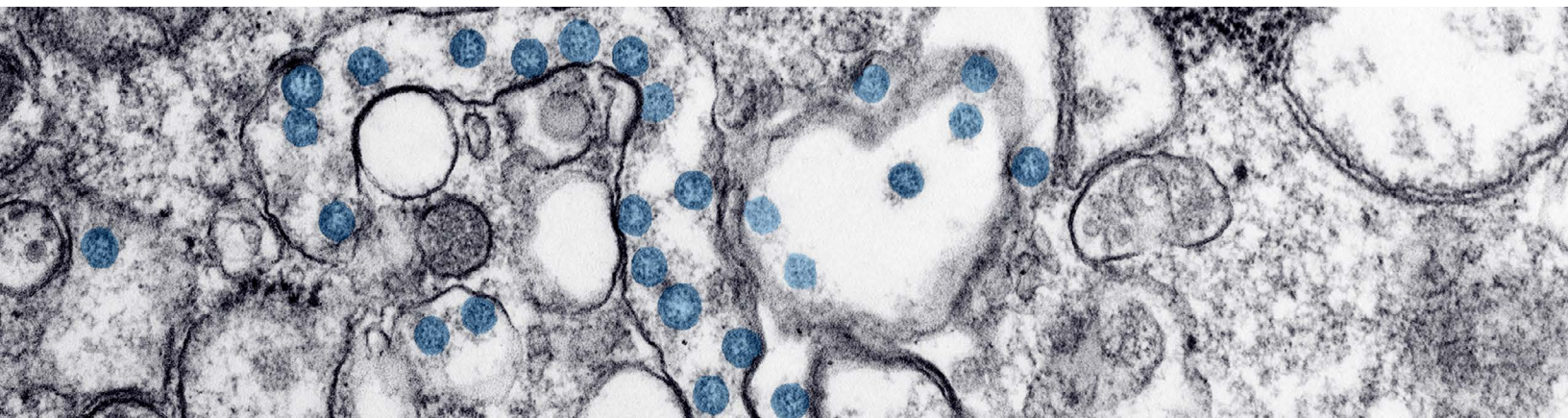
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THE COVID CONTINGENCIES

RESCUE TEAMS ADAPT TO PANDEMIC CHALLENGES

Meredith Martin – Meridian Editor

PORTLAND - Search and Rescue groups are accustomed to dealing with a variety of outdoor situations as cliffs, avalanches, life threatening injuries and extreme weather. So when Covid-19 showed up, they were able to change directions to face it as well.

Dr Christopher Van Tilburg, Chair of the Medical Committee of the MRA and member of the Crag Rat Search and Rescue team, submitted a medical protocol for teams to follow in May. However, noted that “Every team really has their own guidelines because every team is in a different situation.”

Across the country, SAR teams had to figure out the best way to deal with the coronavirus pandemic. Some areas of the U.S. dealt with an increased number of callouts as the wilderness was a respite for the public amid lockdowns for parts of the recreation sector. Many of the people heading outdoors weren’t ready for their trips.

A RISE IN MISSIONS

“We have had more rescues this year, which absolutely can be attributed to COVID-19. People that would not normally hike are trying to hike. Lots of rolled ankles/ knee injuries & heat issues,” said Kerrie Valdiviezo from Santa Barbara County SAR in California, noting the team saw a twenty five percent increase in callouts compared to the year before. “As other activity venues were being closed by government orders, we saw a dramatic increase in people turning to outdoor recreational activities with a corresponding increase in missions by more than 50 percent in March through May,” said Joe Barr from Southern Arizona Rescue Association in Tucson. SARA saw a drop

in missions in June, when the Bighorn Wildfire closed down the Coronado National Forest. That closure led to a reverse in the trend in the earlier months, with the team getting less than half of their normal missions for that time.

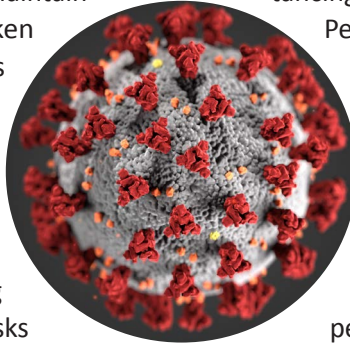
The same situation could be seen on the other side of the country. “State Park visitation has exploded. The number of rescues has increased but not the technical rescues,” said Seth Hawkins, the Medical Director of Appalachian Mountain Rescue in North Carolina. “Most rescues have involved inexperienced people who aren’t accustomed to hiking. Our area had nine calls on Labor Day weekend.” Up north, a similar observation in New Jersey. “We have seen more searches [...] which we attribute to a wider cross section of people,” said Bob Mykyta from New Jersey SAR, adding that many of their subjects in their missions were going on trips without being properly prepared or having adequate fitness.

Despite many teams in the U.S. seeing a jump in callouts, some jurisdictions saw the opposite trend unfold during the pandemic. Idaho Mountain Search and Rescue in Boise saw a noticeable decrease in their callouts. “No real explanation,” said Ken Swickard, “Perhaps folks are just being more cautious and focused on what they are doing.”

NEW PANDEMIC, NEW RULES

SAR teams also had to work with new rules on masks and social distancing. In California, SBCSAR has strict rules. “We asked all team members to remove their gear from their lockers and store their gear elsewhere,” said Valdiviezo. This was to prevent team members changing or standing close to each other when they were getting ready to

respond to a call. When members arrive at the station, they have to have a mask on before they exit their vehicle and it has to be on at all times when at the station. Members must also keep their mask on when in a team vehicle. In the field, team members must maintain social distancing but the mask can be taken off. The team's medical advisor recommends that members keep the coverings on when on busy trails. The team also carries mask for their subjects and they need to wear one if possible. New Jersey SAR followed a similar protocol, with an added rule for how teams handle litter extractions. "During a carryout, members on the litter have masks as well as the subject," said Mykyta. "After two minutes, one-by-one they are rotated off." Team members go to the back of the line and walk with their masks off until it is their turn to handle the litter again. Idaho Mountain Search and Rescue, operating in a state with much lower COVID-19 prevalence, did not have specific rules for missions.



Sometimes the mission conditions did not allow for social distancing. In the May rescue of a snowboarder on Mt. Hood, members of Portland Mountain Rescue needed to huddle with him to warm him up. "There was no distancing but they did try to wear masks or buffs," said Pearce Beissinger, the Assistant Medical Director of PMR.

CHANGES IN TRAINING

In a time when many teams across the country saw a spike in callouts, they also had to change up their training to meet guidelines around distancing and groups. "We suspended training meetings and training exercises during the period of June through August," said Elvin Burnell from Ohio Special Response team in Mansfield. The team was able to return to in-person training in September with team members wearing masks and maintaining their distance. Portland Mountain Rescue moved large group meetings to Zoom, with technical training being done in small groups.

MRA CONTEST

WINNER

Portland Mtn Rescue



DILLON M.



PRIZE: LIBERTY SKIS V92

"Thanks so much to Outdoorly for sponsoring this contest, and for their ongoing support to the MRA. I'm looking forward to using the Liberty V92s this winter, to help continue PMR's mission of saving lives through rescue and mountain safety education, and perhaps for a little fun too!" - Dillon

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Some certifications for teams even had to be extended. SARA issued four-month extensions for technical skills certifications, according to Barr. “We also arranged for members to respond in limited capacity with an expired external certification,” he said, adding that this allowed them to maintain a ninety percent response capacity while training and refresher courses were scarce or not available.

As the pandemic entered the fall months, the situation began to stabilize as teams found a groove with the restrictions in their areas. NJSAR started in-person meeting in October in outdoor spaces with masks. Santa Barbara County SAR started meeting indoors as the daylight hours shortened. SARA also began adjustments away from summer rules, aiming to operate in a ‘new normal’ by January.



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Crag Rats PPE Response COVID-19



DO NOT RESPOND IF YOU ARE ILL

ON MISSION

Stay 6 feet apart

Wear a face covering when <6 feet apart

Max four per truck: **do not use middle seats**

Wear long sleeve shirt & long pants

Bring work gloves, medical gloves, procedure mask, and eyewear

One person: Bring medical kit with at least two masks and eyewear for patient

One person: safety officer to monitor team for physical distancing/masking

Bring face shield for litter.

PATIENT ASSESSMENT: Medical

One rescuer approaches the patient, using gloves, eyewear, and mask

Ask patient if: Fever, Cough, Difficulty Breathing, or illness prior to injury

Give mask & glasses to patient

Consider using face shield for litter

Limit number of people exposed <6' and/or touching litter.

All rescuers need: face covering, eyewear, work gloves, long sleeve shirt, long pants

POST RESCUE

EQUIPMENT

Wipe down litter and hardware with sani-wipes in truck

Machine wash rope, webbing, cord.

Wipe down inside / outside of truck.

RESCUERS

Wash with hand sani at trailhead in truck

Wash or let leather work gloves rest for 3 days in paper bag

Clean mask or let rest for 3 days

Change, bag, and wash all rescue clothes.

TRAINING

On-site training events will be conducted outside.

All mission PPE protocols will be implemented during the training session.

The trainer is responsible for limiting the participant group size to maintain social distancing.

The trainer shall appoint a safety officer who is responsible to monitor compliance with PPE protocols.

Only active first-responders (3+ rescues/year) will participate.

People in high-risk groups should self-select and not participate.

No food or alcohol consumption

Participants will bring their own masks, gloves and hand sanitizer.

Personal Protective Equipment (PPE) Guidelines for Rocky Mountain Rescue

Updated 9/9/20

| | WHEN RESPONDING AND FIELDING |
|---|--|
| R E S C U E R S | <ul style="list-style-type: none"> ● Do Not Respond IF: <ul style="list-style-type: none"> ○ Cough, Fever, Sore Throat, Body Aches, SOB, diarrhea or just feeling ill. ○ Attendance of indoor event or mass gathering without PPE within 14 days. ● If no CV19 suspected, maintain social distancing. All rescuers use: <ul style="list-style-type: none"> ○ Surgical Mask ○ Medical gloves if within 6' of patient ○ Eye protection recommended ● If CV19 patient suspected, and you are within 6' of patient, must add: <ul style="list-style-type: none"> ○ N95 Mask for rescuers within 6' ○ Long sleeve top & pants ○ Eye Protection |
| A N Y P A T I E N T | <ul style="list-style-type: none"> ● 1 rescuer approaches the patient, stay >6' and determine if CV19 is suspected or not. <ul style="list-style-type: none"> ○ If no high risk CV19 exposure within 14 days, and no CV19 symptoms, then patient is not suspected of CV19. Place Surgical Mask on patient. ○ If you need to approach within 6' to evaluate, OR patient unconscious OR If they have had high risk CV19 exposure within 14 days, OR concerning CV19 symptoms; then patient IS suspected of CV19. Go below to CV19 Suspected instructions. |
| C V 1 9 S u s p e c t e d | <p>History:</p> <ul style="list-style-type: none"> ● Cough, Fever, Sore throat, SOB, feeling ill, diarrhea or other illness symptoms ● Attendance of indoor event or mass gathering without PPE within 14 days. <p>Then:</p> <ul style="list-style-type: none"> ● Have patient place N-95 mask on themselves if possible, or by rescuer if patient unable to place mask on self. ● Litter Bearers & rescuers within 6' of patient wear: <ul style="list-style-type: none"> ○ N95 masks ○ Eye protection ○ Medical gloves ○ Long sleeve top and pants |

| | POST-MISSION DECONTAMINATION |
|--|---|
| E Q U I P M E N T | <ul style="list-style-type: none"> ● Wipe down RMR equipment that was within 6' of patient with wipes or alcohol spray & paper towels. ● Alcohol or machine washing is preferred for rope, purple slings & litter straps. ● Wipes or Alcohol for metal hardware. ● Place blood liner in trash bag for washing. ● Wipe Vacuum Mattress with wipes or alcohol and repack. ● Truck driver wipes down exterior door handles & touch surfaces before entering truck. |
| R E S C U E R S | <ul style="list-style-type: none"> ● If patient was suspected or confirmed CV19, go home if you were not within 6' and do not help clean gear. ● Keep PPE on, clean gloves with alcohol, then help clean team and personal gear. ● When done with team chores: <ul style="list-style-type: none"> ○ Remove and clean glasses, keep. ○ Remove mask, spray outside with alcohol, keep. ○ Remove gloves, dispose appropriately, clean hands thoroughly. ○ Change outer pants and top, bag them, clean hands again before departing. Wash outer clothes before wearing again. |

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MRA Zooms Toward a New Monthly Online Training Program

Michael St. John - MRA At-Large Board Member

In this new world where online rescue team trainings are commonplace, your MRA Education Committee has developed a new program to supplement your team's training regimen with monthly interactive MRA online trainings that would be delivered using the Zoom platform.

The Mountain Rescue Association (MRA) Education Committee has launched "Third Thursdays," a new a new online MRA Rescuer Education Program.

These trainings will draw upon the expertise within and outside our MRA family, and bring our vast experience to a national platform for our MRA teams. We will hold them live on the evening of the third Thursday of each month, but also record them for later viewing on our MRA web site.

Recognizing that hypothermia is a predominant source of significant morbidity and mortality in the cold weather environment, they will discuss identify appropriate methods of prevention, evaluation, and treatment of the spectrum of cold-related illnesses for use in the field.

The registration link for this coming Third Thursday will be sent the week of the event.

Additional programs are already developed for coming months, including:

Thursday January 21, 2021

Best Practices for Search Mapping and Data Management in SARTopo (featuring Meghan Twohig and Julie Vargo from SARTopo)

Thursday February 18, 2021

Spring and Summer Avalanches: Concerns for Mountain Rescuers (featuring Dale Atkins, Alpine Rescue Team)

We encourage MRA "Subject Matter Experts" to contact MRA Education Director Charley Shimanski (charley.shimanski@gmail.com)

with any possible training offerings. Presentations will be limited to 45 minutes, with 10 minutes of question and answer to follow. Topics that would be of interest include:

- Search Theory (including analysis of a recent search)
- Case Studies
- Incidents, Accidents, and Near Misses
- Advances in Wilderness and SAR Medicine in Austere Environments
- Helicopter Crew Resource Management

As always, your MRA Education Committee is looking forward to any feedback you might have. Please forward your thoughts to MRA Education Director, Charley Shimanski, at charley.shimanski@gmail.com.

The MRA Education Committee is also looking for interested MRA members to join the Committee and lead the further development of this "Third Thursdays" program. Please contact Charley Shimanski if you wish to join the Education Committee and assist on this important new initiative.



Michael St. John is a recently-elected At-Large member of the MRA Board of Directors. He joined the Marin County Sheriff's Search and Rescue Unit as an Explorer Scout in 1979 and currently serves as the teams leader. He recently retired as a Battalion Chief with the Mill Valley Fire Department after a 33 year career in the fire service. During the last 40 years he has participated in numerous search and rescue missions across California. Michael currently serves on an all-risk Type 3 Incident Management Team.

Our next "Third Thursday" program will be Thursday December 17 at 6:00 p.m. PST (7:00 p.m. MST, 8:00 p.m. CST, 9:00 p.m. EST). Drs. Christianne Coffey, Lauren Altschuh, and Miguel Pineda from the University of California San Diego will present "Hypothermia and Associated Maladies"



A closer view of White Rocks. Mahir and Baba were just out of picture near the lower left corner of the photo when they were rescued. (Dawn Wilson/ART)

Rescued in the Rockies

Mahir Dalwani

Editor's note: Meridian will occasionally feature guest contributions from sources outside the Mountain Rescue Association and its partners. This post was submitted to Alpine Rescue Team in Denver after its writer and partner were rescued. Mahir Dalwani was rescued by ART on Kelso Ridge, Colorado on September 25-26, 2020 after becoming injured. Mahir's account of the rescue is being published to highlight what a subject experiences on their side of a mission as the colorful portrayal of the great people at ART.

"Baba? I'm calling from the Alpine Rescue Team. My name is Woody." Woody, we later found out, was a central coordinator for the Alpine Rescue Team. His tone was relaxed yet authoritative, as if this were a nightly exercise for him.

"Where are you, Baba?" Baba again recited the coordinates. Woody wasn't interested. "Coordinates are fine but describe what you see. I've done that route over 50 times, so tell me everything you see." We both started blurting things out. The sun set on our left, so we were on the north face. Trees at the base of the mountain. Snow covering the rocks.

Woody cut us off. "Ok, I know exactly where you are. If you climb about 20 to 30 feet, you're in safety and nearly at the peak. Try to climb up."

"There's no way," I interjected. "I can't move my right arm. My shoulder's dislocated." Baba suggested, "Why don't we go down? There's snow cover so we could just butt slide down." A good idea, I thought; after all, it wasn't a vertical drop, so sliding slowly could be fine.



PETZL RESCUE SOLUTIONS

The challenge of the rescue professional is the need to adapt, especially when facing unexpected situations. In order to be ready for the unexpected, members of the Utah County Search and Rescue train often in places like American Fork Canyon, Utah.



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There was a slight pause from Woody. "Listen to me carefully. If you go down that mountain, you are going to die. There are cliffs you cannot see from your position. Either you go up, or you stay exactly where you are." Woody sounded like a general giving orders to his subordinates. It was clear, we were staying there.

"Here's the reality," he continued. "I'm getting a team together, but no one is reaching you for the next 5 hours. It's too dark and windy for any helicopters, so you will have to wait for a ground team."

My heart sank. The temperature was dropping, wind was picking up, and I didn't think I had the energy to hold myself secure from slipping with only one functional arm for 5 hours. Woody had one last piece of advice for us. "Call me every hour and turn your phones off to save battery." With that, the line went dead, and it was just Baba and me at 14,000 feet.

Baba checked the time on our phones and turned them off. It was 7:36, and the sky was nearly all black, but the half-moon still provided us with light to see. Baba and I memorized Woody's phone number and decided that we would call him at 8:30, but since we didn't have watches, we would just guess the time every couple of minutes. We agreed to say something every 10 seconds even if it was just "ok," and promised to be brutally honest about our mental and physical conditions. To prevent our extremities from freezing, we constantly reminded ourselves to wiggle our toes and fingers. These short conversations would keep us talking and our minds alert – no room for emotion, only focus on survival. We also convinced ourselves that we would be stuck until the morning. That way, even if the ground team found us and couldn't rescue us, we would be prepared to hang on longer.

Around 8:00, the first cramps started kicking in due to heavy shivering from a sudden drop in temperature. First it was my left quad, and about 15 minutes later, both quads were cramping. My butt was numb from sitting on the snow for so long, so I gently tried lifting myself up with my arms to get some blood flow. I tried to control my breathing to keep my body temperature from falling too low and calm the shivering. When we thought it was 8:16, the Big Dipper appeared to our left. I trained my eyes on it and the neighboring stars, trying to determine other constellations.

At 8:25, we decided to call Woody. Baba turned on one phone to realize it was

actually 8:35. Mentally, it was a big win for us to know we had survived longer than we thought – even if it was only 10 minutes. Woody answered on the first try, and this time it felt like we were talking to a long-lost friend.

"How're y'all doin'?" he asked.

"We're all right."

"I got some good news. The rescue teams have reached the base and should be up in 2 to 3 hours. Now tell me, do you guys see a road from where you're sitting?"

Baba and I craned our necks. I saw a thin patch of road exposed from the jumble of trees and reported back to Woody.

"Perfect," he said, "That's I-70. I'm going to send a car to that patch right now and have the driver blink his lights. Let me know if you can see it."

Sure enough, within a minute or so, a car appeared with blinking lights. It was again a big mental win for us. Woody knew exactly where we were and he had not only a rescue team hiking up for us but also emergency services vehicles at the base. Rejuvenated from the conversation, we hung up and decided to call back at 9:30.

The next hour went by similarly to the first, but it was getting tougher. I was starting to fade, so constant communication with Baba was crucial, but the cramps were getting worse and spread to my pecs and triceps. On top of that, hunger and dehydration pains kicked in, but I dared not move because even the slightest motion could mean a slip and a fall. Finally, we phoned Woody and he informed us that the rescue teams were an hour away. No special instructions from him on this call, but he did tell us that he was in touch with our families and had instructed them to not contact us to keep the phones free.



*A view of Kelso Ridge in the Summer.
(Dawn Wilson/ART)*

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We sharpened our minds and dug deep. One more hour. Our conversations became more and more ludicrous: “Once upon a time, there was a tree ... how was your day today” We just had to keep ourselves talking. By this time, the Big Dipper had taken some pity and conveniently repositioned itself directly in front of us, but the wind didn’t show the same mercy. Just 20 more minutes.

At 10:30, we called Woody again. “15 to 20 minutes, guys. They have headlamps on, so look out for lights. When they get you to the top, they’ll have food, water, medical supplies, and warm clothes.”

We thanked Woody and hung up. This was the home stretch. We started yelling out so the rescue team could find us. 10 minutes went by but no one was responding to our cries for help. A couple more minutes, we figured, and they’ll be here.

“HELLOOO!” we cried in unison and strained our ears for a response.

The wind cooperated just for a couple minutes, and suddenly, a faint “Hellloo ...” greeted us.

My heart started racing. “HELLLOOO! Can you hear us? We’re down here!”

“WE HEAR YOU! We’ll be right there!”

Baba looked up to his 7 o’clock, saw their headlamp lights, and guided them to our position. Within a couple minutes, they were standing 25 feet above us at the spot where Woody had told us to climb to. We yelled through the wind and explained the situation: I would not be able to climb unsupported due to the injury. I heard one of them speak into his radio, perhaps to Woody, “We have visual of the hikers, one is injured, preparing to descend now,” and then to us, “I’m going to the injured guy first.”

I figured the rescuer would need time to get down to where I was stranded – after all, it was dark, windy, and the path down was steep and snowy. But to my amazement, no more than 60 seconds later, he was standing right in front of me. He had chosen a rock that was only 2 feet wide and

just a few inches away from me as his base. With his thick hiking boots, he cleared the snow off the rock, dug his soles in, and took his backpack off. He moved so fast; it was as if gravity didn't apply to him. Then he turned around to face me, his headlamp shining on my face.

"Hey! I'm Curt. Nice to meet you."

I was stunned. It was nearly the middle of a Friday night, and he was risking his life to save a complete stranger in a less than ideal environment. Despite that, he had the charm of a schoolboy during recess.

"Hey," I responded, "I'm so glad to see you." "So, the good news is the guy up there – his name is Dale, by the way. Well, he has over 40 years of experience doing this stuff, so you're in great hands. Bad news is, as for me, you're my first rescue ever." I'm pretty sure I just stared blankly back at him, because after a pause, he continued, "Ha! Just messin'. I've been doing this for years."

"Ok, so now to business. I'm going to put my harness on you and Dale is going to belay you up. The only sucky thing is you're going to have to do the climb yourself, but I'll be here to support you."

Then he looked up to Dale and yelled, "How're we doing up there?"

Dale said he had found a good spot to secure the rope but needed to clear the area of snow and loose rocks, which meant kicking the debris down our direction. Curt was like a chess grandmaster thinking steps ahead. Even before Dale finished his sentence, he'd already pulled out a spare helmet from his bag for me and leaned over me to act as a shield from the falling rocks and snow. This guy was a real-life superhero.

Dale worked to secure the rope while Curt helped put the harness on me. Once the two were ready, Dale threw the rope down and Curt tied it on my harness with a strong double figure eight knot. They took in the extra slack on the rope, and when they were confident everything was set, Curt yelled up to Dale, "On belay!"

"Belay on!" came the affirmative response, and we were off. First, Curt helped me up from my seated position. Blood went rushing to my butt, but my legs were cramped so they took a while to loosen up. I turned around to face the mountain – one last climb. I grabbed onto the rope and looked at Curt.

"You can hold onto that; it's not going anywhere." He already knew what I was going to ask and had the answer ready.

I grabbed the rope with my good arm and started climbing. Strength hadn't returned to my legs yet; I immediately slipped and slammed into the mountain, but the rope kept me from falling farther. I shook my legs off and continued. Curt pointed to a foothold, and then the next. Each step up sent jolts of pain radiating through my body, as my shoulder was still dangling loose from its socket. Curt right behind me was climbing freehand. He gave me a helpful nudge when needed and lifted my morale with constant words of encouragement: "You're doing great ... don't worry, Dale's got you ... almost there."

I looked up. Dale was getting closer and closer. I stopped myself from thinking ahead about safety – there was still more to go. The only way I had made it to this moment was ridding myself of emotion to preserve energy for as long as possible. One last ounce of mental strength, I thought, just find the next footing.

With Curt on my heels, after one final push, I made it. I found myself standing next to a beaming Dale.

"Hey! Well done! I'm Dale."

"Hi Dale, thank you so much. I'm Mahir."

No sooner had Curt finished his climb up with me than he went down again to rescue Baba. Meanwhile,

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Dale loosened the rope from my harness to get it ready for its second mission. I couldn't believe it. 2 hours ago, I was nearly certain that we'd have to wait until the morning or that I would lose consciousness. Now that I no longer needed to fight for survival, fatigue, hunger, and dehydration took over my body all at once. Dale noticed me slumping and reassured me that the rest of the team would be there in just a few minutes with the supplies.

30 minutes later, Baba was rescued and standing beside me, totally exhausted. We were given glucose gummies, granola bars, and water with electrolytes. Four teammates arrived at the scene and gave us winter coats and pants for us to wear over our clothes. One pulled out a large plastic tarp from his backpack to shield us from the wind while we ate and regained strength. Curt and Dale slipped into the background to pack up the belay equipment. Phase I of the operation was complete.

But we still had to get back down the mountain. Once Curt and Dale finished packing up, the team reconvened to discuss the best path forward. They decided that we would finish the climb to Torrey's Peak and then on the other side of the mountain rejoin the normal trail to walk down. Dale estimated we'd be down by 6 in the morning, but at this point, I had no idea what the time was.

The team gathered their belongings and we were off: a steep, quarter-mile hike to the summit. Curt and other rescuers helped hold my injured arm up as my shoulder was still out of its socket. Baba and I both had members of the team surrounding us at all times to keep us from falling and to give us the occasional nudge.

At the summit, there was another small group waiting for us. In addition to food and water, they were equipped with a couple 2-liter oxygen cylinders. The wind was howling so they quickly moved to get the tubing and tanks on us, and we continued. Finally, after about 13 hours from when Baba and I started at the trailhead, we were on our way down.

More and more members of the team kept on appearing. It was clear that they were stationed at key points on the trail. Two members had litters, small stretchers used in search and rescue missions. After about an hour of climbing down, the wind calmed and the food, water, and oxygen started helping. Since there were always 3 men with me and a 3-hour hike down, we all got to talking.

Wes was a 66-year-old retired investment banker. There was so much to unpack there. First, he had just summited a 14,000-foot mountain, in darkness, with equipment, to help someone less than half his age all the

way down. Second, he was an investment banker! Weren't bankers supposed to retire in their Manhattan penthouses and ride off in their German cars?

When I asked Wes, he simply responded, "I love it up here, so I volunteer with the Alpine Rescue Team." His answer floored me – I hadn't realized that the team that rescued us were volunteers. I was expecting to get slapped with a bill the size of the American healthcare system itself, but no – they operate on a completely volunteer, no-charge basis.

I asked other members of the team about their backgrounds, and their responses continued to surprise me. Many members were, like Baba and me, in their mid-twenties and working in sales, engineering, and consulting fields by day. The difference was that by night, they turned into superheroes from the comics: the real Guardians of the Rockies.

When we reached the base, my heart swelled with gratitude. But how do you thank someone who not only just saved your life but also risked their own in doing so? I started thanking members of the team individually, but it didn't feel enough. Words couldn't express what I was feeling; frankly, I don't think it had sunk in yet.

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In a year marred by a global pandemic and sociopolitical unrest, I had forgotten that humans are capable of such good – without expecting or even wanting anything in return. Baba told me the next day that in a way he was sort of glad this happened, just so we could meet these beautiful people. Our gratitude went beyond the relief of our rescue. It was about learning about the Alpine Rescue Team and understanding what they stand for. It was about feeling a bond with strangers again, something the isolation of quarantine had robbed most of us of. Perhaps next time, as Dale had suggested during our hike down, instead of hanging off a cliff, we'd all simply meet for a beer.

Dale counted his men off, and the team helped us get the oxygen and borrowed equipment off. One by one they started dispersing. There was no fanfare, no cheers, but there was a sense of duty and camaraderie in the air. Curt and Dale waited around a bit to help us and asked if we needed medical services. They had an ambulance on

call, ready and waiting. We assured them that we were going straight to the ER, so there was no need. Finally, I asked Dale how we could ever thank them.

He looked at us. "Pay it forward." With those parting words of wisdom, he got in his truck, and drove off.

The Alpine Rescue Team saved our lives that night. We were their 111th mission of the year, and in the following week, they completed four more. They've been in operation since 1959 and have conducted more than 130 local search and rescue missions per year since 2015. Basic math would suggest that just in the last half decade, they've saved well over 500 lives and probably around 10,000 in their 60+ years of existence. They pride themselves on their unique ability to respond at any time of day, completely free

of charge. From firsthand experience, I believe that the Alpine Rescue Team is one of the world's most – if not the most – tactical, trained, and knowledgeable nonprofits.

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ICAR AVALANCHE 2019 REPORT

Rick Lindfors, Meridian Lead Editor

Editor's note: The avalanche report from the 2019 ICAR conference has been abridged for publication in Meridian. Some portions are removed or summarized while others are presented in full. You can view the full 2019 ICAR reports on the MRA website.

ICAR delegates presented avalanche reports at the 2019 conference in Zakopane, Poland. Tatrzańskie Ochotnicze Pogotowie Ratunkowe (TOPR) – the Tatra Mountain Rescue Service hosted the event. 2019 marked TOPR's 110th anniversary as well as their busiest rescue period ever.

COUNTRY REPORTS

United States

The United States saw average precipitation in terms of SWE coupled with some extreme events. The Sierras had above normal snowfall, but no fatalities. The Rocky Mountains had above normal snowfall, with 22 fatalities. A total of 25 people died. Backcountry skiers accounted for 12 deaths, eight fatalities were snowmobiling, two were residential, two were skiing inbounds of resorts and one was involved in mechanized guiding. The number of fatalities meets the 30-year average, but is above the five-year average of 20. This comes as populations across the western states are growing rapidly, along with the number of people involved in winter recreation.

Of the fatalities, 19 of the 25 involved a persistent weak layer (F, SH, DH). Having a high number of fatalities in years with a high occurrence of PWL is a continuing trend. The United States delegates at the ICAR commission identified several reasons this may be appearing.

- Avalanche education may not focus on the difficulty of this problem.
- Backcountry users may be estimating their ability to manage this problem.
- Avalanche centers are not clearly communicating the dangers with PWL.
- The problem may also be psychological, as people may not be considering all factors in avalanche terrain.

Organized rescue took part in the search efforts of twelve of the twenty-three separate avalanche accidents

with fatalities and in all the recoveries. SAR is extremely important in avalanche search, rescue, and recovery. Some lessons learned for incorporating into training include.

- Practice for multi-agency deployment – practice all rescue and recovery techniques. Practice with all your equipment and make sure it is in a ready state.
- Use avalanche mitigation and control and delayed response as risk to rescuer mitigation tools.
- Involve your local avalanche center for assessment, investigation, and documentation.

A few takeaways for rescue teams to include in messages to their audiences in avalanche classes and outreach efforts:

- Avoid terrain with Persistent Weak Layers.
- Don't go alone.
- Use "safer" travel techniques – avoid terrain traps, travel one at a time, stop in safer areas, etc.
- Carry personal and team rescue gear. Carry communication tools. Practice with all the gear.

Canada

Canada saw an average number of avalanche-related fatalities, with nine separate events resulting in death. Four fatalities involved snowmobiling, three involved skiing, three involved mountaineering, one was related to ice climbing and one involved snowshoeing. It is believed the trend in fatalities has declined since 2004. The Canadian presentation discussed a rescue where they located a subject that had been pushed into a lake by an avalanche. Rescuers utilized a technique of sitting in the door of a helicopter and searching with a handheld transceiver as they did not have immediate access to an external, helicopter-mounted transceiver. They also had a high-profile rescue involving three North Face athletes. Due to high danger and unable to control the site by using explosives, rescuers searched with a K9 and handler attached to the longline of a helicopter. The K9 located a subject (without a transceiver) after 23 minutes of searching under the rotor wash.



Left: A picture of a cornice in Norway. Cornice failures were blamed for three 2019 avalanche fatalities. (ICAR)

Below: Rescue teams work to recover a snowboarder caught in an avalanche, blocked out in red. The snowboarder was an avalanche specialist. The avalanche happened at a ski resort that saw above-normal snowfall. (ICAR)



Norway

Norway saw an increase in avalanche fatalities with thirteen people killed. At the same time the total number of reported accidents dropped. It is believed that the increase in fatalities was related to the increased number of days with persistent weak layer and wind drifted fresh snow as avalanche problems as compared to the previous season. The recommendation for these situations was to recommend to the public that they read the entire avalanche report, not only with a focus on the degree of danger, but also to factor in the type of avalanche problem forecasted. In the last few years there has been an increasing trend of tourists being killed by avalanches and the forecasting services are increasing their communication efforts to this user group by posting information at airports and on the internet. Three people died (in separate incidents) when cornices (pictured) they were walking on collapsed and efforts are being intensified to communicate the danger of cornices. In one fatality, the victim was carried by the avalanche onto the snow-covered ice of a lake. The body was located and dug out, but the recovery effort was unable to be completed the same day. When rescuers arrived the following morning to recover the body, water had almost engulfed and frozen around the victim which complicated the rescue.

Slovakia

Slovakia had an above average snow year, lower number of total accidents, but four fatalities, which is slightly above

average. One fatality was a snowboarder, one was an ascending climber, and two were tourists whose activity is not known.

Slovakia has built a prototype weather station that is being used for avalanche forecasting. Mountain rescuers and avalanche forecasters are part of the same group and work and train often and well together. One accident killed a very experienced snowboarder, national team member and avalanche specialist. It was a huge loss to the local community. The accident happened near a ski resort that is open only two months each season. The resort experienced above normal snowfalls after many years of low snow. It was speculated that the heuristic trap of familiarity played a role in the accident. Another accident claimed the lives of two tourists that were following a summer trail and had zero knowledge of the avalanche danger. A video was shown of an avalanche that was triggered by explosives and ran into the area with damaging effect on structures and vegetation. Digital models used prior to the control did not support such a large avalanche that was triggered. The main takeaway: Sometimes digital models are wrong.

Switzerland

Switzerland keeps very good records of avalanche activity. Last year there were 160 avalanches with material damage or search operations. There were 132 avalanches with 217

people caught which is about average. These avalanches resulted in twenty-one fatalities which is lower than the 20- year moving average of 23.



snow cat sits damaged after an avalanche in Switzerland. (ICAR)

Poland

Poland saw several avalanche accidents, but no fatalities. Most people caught in avalanches still do not carry avalanche rescue gear (beacon, shovel, probe). In an incident on Mt. Rysy, five people in a party of six climbers were caught and carried several hundred meters, sustaining severe head injuries and broken limbs. Two of the people in the party were elite climbers and among some climbers there is an opinion that basic rescue gear is optional. One person in the party wrote a big social media post about how they did not do anything wrong and there was a big Facebook debate and media got involved. What TOPR mountain rescue learned: the media doesn't know about avalanche safety and they need to provide more avalanche education to climbers. TOPR was also dispatched to an accident involving a French woman wearing a transceiver. This was the first time an avalanche mission involved a victim actually wearing a transceiver.



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Italy

The season started early in Italy, at the end of October and there were big snowfalls in February and April. Snow cover below 2000 meters altitude was poor, with a big difference of coverage between north and south aspects. There were many strong wind events and unexpected spring-like wet avalanche cycles in the middle of winter. In the northeastern part of Italy, they had a storm from the October 27th to 29th that dropped record levels of SWE of 800 millimeters in 72 hours with wind gusts of up to 200 kilometers per hour. The storm destroyed acres of protective forests and created new possible avalanche paths exposing villages and roads.

The season was relatively stable with short-lived moments of higher danger. Almost half the time, the danger level was moderate with long periods of low danger in the middle of winter. There were 42 avalanche accidents reported, with a total of 73 people caught. There were 12 fatal incidents resulting in 15 total fatalities, six of the victims were tourists. An average avalanche year in Italy brings 20 fatalities. Most of the accidents occurred during considerable (20/42) and moderate (11/42) danger level ratings.

Many of the accidents involved wind slabs. On average, backcountry skiers were well equipped and there was good companion rescue, but many of the victims caught were killed by trauma. In one accident a ski tourer deployed his airbag but was completely buried under one meter of snow. He was located after 15 minutes by his companions



An exposed village after a major snowstorm took out several acres of trees. The red arrow indicates a likely slide path with the natural barrier no longer on the slope. (ICAR)

using spot probing. He did not have a transceiver. Several accidents showed how off-piste skiers are unaware of the dangers they are facing when skiing in uncontrolled areas just a short distance from the ski slope. There was also an

accident that claimed the life of a SAR member in Italy. The victim was ski touring alone and most likely booting up when he was caught. He was located the following day by a K9.

On April 21, a person hiking a steep south-facing couloir was caught and killed in a wet avalanche. His wife called the emergency number and reported her husband overdue. Local firefighters responded to the site and were caught by a second avalanche before mountain rescuers were deployed. This created controversy between firefighters and mountain rescuers with the latter claiming the former were ignorant of the conditions and not prepared to respond to such missions.

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France

France saw one of the least dramatic avalanche years since 1971. 92 people were caught in avalanches with 13 fatalities (compared to an average of 30) in 12 accidents. Seven victims were 7 off-piste skiers, five were ski tourers, and one was a ski patroller. Explanations for the few accidents were suggested as few periods of unstable conditions, few weak layers in the snowpack, and poor weather conditions during weekends and many holidays. There were no big accidents with multiple fatalities and there were no fatalities during the summer (alpine climbing season). There has been an increasing effort to communicate the importance of skiing one by one and spreading out which might have contributed to the reduction in multiple fatality accidents. The number of buried ski tourers wearing transceivers have slowly increased over time and the last 5-year period (2013-2018) 85.3 percent were found to be wearing transceivers. This is an indication that the continued educational efforts highlighting the importance of wearing transceivers is working. On December 26, 2018 a 10-year-old child was found alive by K9 after he was buried for 1 hour after being caught in a large avalanche while skiing off piste. He had an air pocket and was uninjured. In another incident, two French ski patrollers were killed by trauma from explosives while performing avalanche control at the Morillon Ski resort.

Greece

While not as well-known for snow as other European countries, Greece does see snowfall and associated winter recreation. The country is currently facing several major challenges in preparing for and executing avalanche rescue. There is not a standard training program for mountain rescuers, and staff have insufficient knowledge and experience. People recreating in avalanche terrain are untrained and taking high risks. First responder agencies are not on standby for avalanche incidents and are not trained for avalanche response. Public services not on standby and not trained for avalanche response. The country also does not have a formal avalanche bulletin or avalanche forecast. Greece has been developing an avalanche training program in close cooperating with ANENA (National Association for Snow and Avalanche Studies) of France. They are working on a four-factor avalanche danger system which they claim is simple but communicates danger well. They are looking for training and cooperating with other mountain rescue units. ICAR asks MRA units to reach out

if they are interested in assisting with this effort, as Greece is currently building a more formal system for mountain rescue training.

PRESENTATIONS

Teamwork in the Tetons

Presented by Cody Lockhart

Cody described the response to an avalanche accident in the sickle couloir on Mt Moran in Grand Teton National Park. Four backcountry ski mountaineers were caught by a small crown avalanche as they were ascending. They were knocked off their feet and dragged over cliff bands. A 911 call was placed at 0933 on May 17 and it was reported there was one fatality, one critically injured patient, a patient with a leg injury, and one uninjured. Challenges to the response included multiple victims making for a complex rescue, remote location, poor weather and the familiarity of victims to rescuers.

The mission successful largely due to the unified inter-agency response by Jenny Lake Rangers and Teton County Search and Rescue. Together they have built a strong integrated group of resources. The accident, mission, and subsequent reflection created the **Backcountry Zero** vision and community initiative to reduce fatalities in the Tetons. Avalanches are destructive to communities and this had an impact not only on the families where five children lost their fathers and two wives lost their husbands, but on the larger close-knit community of Jackson Hole.

The accident also spurred the creation of the Teton Interagency Peer Support group which provides peer mental health support to first responders. The accident left many of the responders with mental health challenges. The teams realized that there was something missing in their training and their support system as they were not spending a lot of time on the mental part of health. Now they have a psychological program that provides support and proactive outreach to make sure that everyone on the team is mentally healthy.

The Canadian delegate commented that Canada has a robust program of psychological support, and they are now they are working on preventative measures and training to build mental health resiliency among responders. They have a monthly training with a resiliency tip/focus of the month.

Editor's note: You can view the Backcountry Zero program at <http://www.backcountryzero.com/>

Drones

There has been an increasing use of drones for avalanche control and forecasting purposes throughout the world. It was suggested at the ICAR conference that drones could be utilized to assess danger to rescue teams, as avalanche “look-outs” or to mitigate danger to teams by explosive control of slopes. There are experiments underway with drones delivering AED’s in several cities. Drones could be used similarly in avalanche accidents for delivering ventilation equipment, first aid and rewarming gear, etc. Dr. Will Smith from Teton SAR commented that they are currently working on this in the Tetons. It is not a question of if, but of when regarding the use of drones in many fields of mountain rescue.

Forging a Better Chain of Survival in Avalanche Terrain

Presented by Heiko Stopsak

Following an avalanche accident, it is important to render appropriate first aid as quickly as possible to a subject. Stopsak asked the conference about what can be done about to improve the survival chances for the rescued subjects. Following questions centered on the preparation of the outdoorsperson for responding to an accident and forging stronger links in the chain of survival. Rescuers have the equipment and training for rescue, but Stopsak believes there is an opportunity to teach CPR to companion rescuers, and treat avalanche rescue like an urban cardiac arrest event. Working CPR into avalanche rescue courses could provide a higher survival rate for avalanche subjects. The ICAR medical commission supported the recommendation. Most avalanche victims die from asphyxia, so being able to clear an airway and perform high quality CPR is very important.

Should Airbags be Mandatory Avalanche Safety Equipment - Christopher Van Tilburg

Presented by Dr. Christopher Van Tilburg

Dr. Van Tilburg presented on avalanche airbag history and the current ICAR recommendation on airbags: “The

efficiency of the transceiver in combination with probe and shovel, and of airbag systems has been proven.” Other organizations such as the Wilderness Medical Society have endorsed airbag use in their guidelines. Dr. Van Tilburg presented that a study by Haegeli, et al showed that airbags worked in reducing morbidity and mortality by about 11 percent.

Dr. Van Tilburg stated that there are still questions and research to be done regarding airbags. Issues include the best inflation method, optimum size of the airbag, whether the shape of the balloon prevents trauma, if the balloon creates an air pocket or protect the airway once buried, if an industry standard for canisters should be developed and if airbags should be used with air diverters. Dr. Van Tilburg outlined several barriers for universal use of airbags such as size and weight, cost, training burden, possible exclusion of coverage if mandatory recommendations are not followed and lack of authority recommendation. He ended his presentation asking the audience if ICAR has a duty to make a stronger position on airbag use as an organization. The question enlisted quite a few comments from the audience both in support and against.

Editor’s note: The ICAR Congress for 2020 was held virtually due to the COVID-19 pandemic. While the physical training aspects were not able to happen, presentations were still present. Notes on those will be presented in future issues of Meridian. Video from the 2019 ICAR congress can be viewed at <https://vimeo.com/topographmedia>



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ICAR 2019 Terrestrial Report

Rick Lindfors - Meridian Lead Editor

Editor's Note: The following is an abridged summary of notes from the ICAR Terrestrial Rescue Commission Report from the 2019 conference in Zakopane, Poland that was assembled by Tom Wood and Dale Lang. Some sections have been summarized while others have been left out. Media from the event with rescue demonstrations can be viewed at <https://bit.ly/37qVEMN>

Twin Dyneema Rope System for Technical Rescue

TOPR, the Polish host team for this year's conference, uses a twin tension rope system in the high mountains both for the weight savings of the 8mm dyneema, but also for the high strength and abrasion resistance that dyneema offers. They have done 600 meter litter lowerings in the Tatras using this system. The team uses a dynamic rope with at least three separate anchors to construct the focal point anchor for the system.

The twin dyneema main lines are controlled by Munter/Italian hitches on matching steel HMS carabiners, with industrial shock absorbers protecting the litter and the two attendants from an inadvertent dynamic load. All end connections are spliced instead of knotted. After a patient is loaded in the litter, extra friction is added by converting to Super Munters on both lines. TOPR stressed that they used strict retirement criteria when inspecting the ropes, and retire them when more than 20 percent of the 8mm diameter rope is lost due to wear.

ICS and ICAR

Delegates discussed the pros and cons of the Incident Command System in different presentations and working groups. Alistair Read (Wales), presented a case study, "ICS Features, Functions and Failures." The report discussed an incident of a missing helicopter, tracking cell phones to discover a search area, and getting Land SAR involved, which resulted in a delay of eight hours. The mission involved several agencies from Wales and Ireland working on land and sea. The question was raised if ICS would have improved the mission.

Dan Hourihan (USA) outlined the progress of the ICAR ICS working group. Items included LAST (Locate, Assess, Stabilize, Transport) for SAR and listing the best practices for ICAR recommendations. Several common themes emerged from the incidents discussed including chaos, lack of information and bad information.

ICS work group member Asgeir Kristinson (Ireland) noted that there are several key considerations for ICS. Those are soft skills, scalable and modular system, ability for cross-border use, working for small and large incidents on land, sea and air, integrating into other national system, timely information sharing and having common language and terms.

Rescue After a Bear Attack and Lessons Learned from a Multi-Agency Response

Presented by Anthony Stevens of Teton County SAR

Anthony Stevens presented a report on how interagency teamwork was called for when a bear attacked and killed a hunting guide and wounded his client in remote Wyoming near Terrace Mountain. With no pre-plan for this kind of call, rescuers were not familiar with other involved agencies, which presented challenges for all when both responding for the rescue of the client and the subsequent recovery of the guide.

A simulator used by Bergwacht Bayern in Bad Tolz, Germany. The facility includes a climbing wall, indoor trees, gondola cars and other features for training for rescue. Mountain weather conditions such as rain and snow can also be replicated. (Bergwacht Bayer,/ICAR)



Delaying the recovery of the guide was key to rescuer safety, as teams feared another bear attack. They waited until dawn and were inserted by helicopter and went into the area with an armed state game warden. One field member inserted with three long guns and a medic, with searchers working under armed supervision. They located the diseased guide 50 yards from the attack site. He had used his bear spray and his body was intact after the initial fatal attack.

Takeaways for all organization involved in the rescue and recovery included the need for better training for non-routine rescues, SAR teams needing a big game rescue plan, and all responders needing to improve inter-agency communications for future multi-agency calls.

Civil Liability for Alpine Rescue Teams

Presented by Rick Lorenz of the Mountain Rescue Association

Lorenz, an attorney, discussed how and why rescuers need to better address and mitigate risks with SAR. Lorenz noted that the Green, Amber, Red (GAR) model is often used to assess risk, but it is subjective. Civil action is also different than criminal action in that it is between two people, with one usually seeking financial compensation. Non-paid rescuers are also viewed differently than paid rescuers. Lorenz added that the Good Samaritan Law covers someone who renders aid on a voluntary basis. Common Law jurisdictions usually afford volunteers more protection. Lorenz cited a May 2019 rescue on Mt. Hood that had a four-hour delay that may have contributed to a fatal outcome. The family of the victim won \$25,000 in a civil suit.

Simulation in Mountain Rescue (Bergwacht Bayern)

Bergwacht Bayern is the mountain rescue service for Bavaria, Germany. The unit is about a century old and responds to about 12,000 missions per year with 3,500 volunteers in 40 operational units. Their indoor training facility in Bad Tolz has the ability to simulate rescue missions from dispatch to delivery of the patient to the hospital. The 1,700 square meter building has indoor trees, a climbing wall, a waterfall and pool, buildings, gondola cars from a ski lift and helicopters hanging from the ceiling with fans to emulate rotor downwash. Mountain weather conditions can also be simulated including rain, snow and temperatures as low as four degrees fahrenheit below zero. Mannequins are used to train responders on

medical care and a separate part of the facility simulates a hospital environment. New rescuers are trained there and do not respond to missions until they have received adequate training.

Introducing...

Third Thursdays

A new monthly online video training program
Presented by the MRA Education Committee.

Next Event:

"HYPOTHERMIA AND ASSOCIATED MALADIES"

Hypothermia is a predominant source of significant morbidity and mortality in the cold weather environment. In this lecture, we identify appropriate methods of prevention, evaluation, and treatment of the spectrum of cold-related illnesses for use in the field.

Thursday December 17, 2020

6:00 p.m. PST, 7:00 p.m. MST, 8:00 p.m. CST, 9:00 p.m. EST

Registration details will be sent the week of the seminar.



By: Lauren Altschuh M.D.
and Miguel Pineda M.D.
University of California San Diego

Sponsored by:

Save the date for MORE!

"Best Practices for Search Mapping and Data Management in SARTopo"

Meghan Twohig and Julie Vargo

Thursday January 21, 2021

6:00 p.m. PST, 7:00 p.m. MST, 8:00 p.m. CST, 9:00 p.m. EST

"Spring and Summer Avalanches: Concerns for Mountain Rescuers"

Dale Atkins

Thursday February 18, 2021

6:00 p.m. PST, 7:00 p.m. MST, 8:00 p.m. CST, 9:00 p.m. EST



LET'S GET SOCIAL

If you're active on social media, you may have noticed that the Mountain Rescue Association is now on Instagram! You can find us at @mtnrescueassoc on the 'gram. Remember to use the hashtag #mtnrescueassoc when posting on this platform and on Twitter! We hope to continue highlighting the courageous work of our member teams and to provide useful information such as safety tips, contests, and sponsorship information.

Thanks to our newly-formed team of regional public information officers, we are "reactivating" our social media platforms and trying to enhance our presence in this world. MRA is also on Facebook and Twitter so please follow and like us there, as well. The social media team is led by Ana Beatriz Cholo (Malibu SAR), Michael St. John (Marin County SO SAR) and Linda Ziccardi (Alpine Rescue Team).

We have also created a new Flickr webpage for MRA. Flickr is a photo and video hosting service and basically, this platform will allow us to store all of our best team photos in one convenient place and will serve as a photo "clearinghouse" of sorts. All photos are being sorted into regional "albums."

Do you have photos, news or stories to share? Or questions? Please email them to socialmedia@mra.org.

- <https://twitter.com/MtnRescueAssoc>
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