



Presentations Terrestrial Rescue Commission

Place: Chamonix, France
Date: October 20, 2018
Time: 8:05 a.m.
Participants: Members Terrestrial Rescue Commission
Members Avalanche Rescue Commission
Members Air Rescue Commission
Members Medcom
Members Dog Rescue Commission
Chairmen: Dan Halvorsen and Dan Hourihan
Minutes: Fabienne Jelk

ÖBRD Report on Accident from 08.27.2017 in the Zillertal Alps; Martin Gurdet, ÖBRD

This accident caused 6 deaths. The group started at the Zittauer Hütte (2329 M.ü.M.) with the intent of ascending the Gabler (3263 M.ü.M.), which is a very common route. The climbers formed a rope team. Shortly before the accident the group discussed turning around because one of the climbers felt the route was too risky. One climber slipped and pulled the others with him down 200 meters. The call came in at 10:06 a.m. Five helicopters were involved in the rescue; the police and the Krimml mountain rescue. The accident happened in ice. Five of the victims were dead on scene. One victim died in the hospital.

What is the correlation between this accident and climate change? Global warming has changed the glacial area enormously; the glacier has shrunk. 2017 was a bad year for Austrian glaciers. The Goldbergkees station (2625 M.ü.M.) measured 2.8 meters of snowfall in winter, but it was gone by July 4. The following month the ice melted another 3.7 meters. The global temperature

keeps rising, and Austria is strongly affected by it as the temperature rises more in Austria than globally, comparatively.

In summary: There will be more slipping accidents because glaciers don't have snow layers anymore but only ice. Rescue teams will have higher risks due to rock falls and rescuers are also prone to more slipping accidents.

File: 20181020-01-Wildgerloskees.pdf

Risks and Avalanche Service Mattertal; Bruno Jelk, KWRO

There had been little snow in the last few years; however, last year there was an enormous amount. Zermatt is a tourist town with up to 30,000 guests. It can be reached by rail or road. On a Saturday up to 15,000 guests can arrive and depart the town. Last winter there was a huge snowfall event from December 31, 2017 through January 10, 2018 and a second large snowfall event from January 16-24, 2018 and more problems after the 23rd.

In Mattertal there are 34 avalanche trains. The avalanche service Mattertal is subordinate to the natural hazards section of the forestry and landscape agency within the Department of Transportation, Equipment, and Environment. Seven counties are joined. The avalanche service has an advisory function, responsible are the rail and road inspectors. There were many issues last winter, some of which happened simultaneously: avalanches, storms, rock falls, mudslides, roof slides, collapsing houses, power outages, evacuations, curfews, snow removal in the villages, closing of access roads and roads within villages, transportation of goods, air bridges. People weren't allowed to leave the village. At that time there were 20,000 people in Zermatt.

All decisions and work of the avalanche service are logged with date and time. The log contains assessments, radar warnings, recon flights, spontaneous avalanches, avalanches causing damage, closures, blasting with helicopter, blasting with Wyssen masts, and evacuations.

In Zermatt 70 people had to be evacuated out of the red zone. The village and its access roads had to be closed as well as the school. Families were told not to let their kids play in the snow by themselves. Snow had to be shoveled off house roofs; in some parts with the help of helicopters. The snow within the village was removed using backhoes and trucks. During this period continuous blasting with Wyssen masts and by helicopter were performed. Many large avalanches happened with up to 5 in the same avalanche chute. The avalanche alarms triggered 122 times in January in Luegelti and Schusslawine. For the 2017/2018 winter there were 244 alarms.

The road had been buried in avalanche snow up to 18 meters deep. The removal had to be done using backhoes and Snowcats. The railroad tracks were buried in 5 different places. A huge issue was the fact that avalanches were diverted by other avalanche cones. Additionally, rain up to an elevation of 2000 M.ü.M caused mudslides and rock falls. On January 23 a roughly 10-ton rock was hurled onto the railroad tracks in Mattsand and an approximately 100-ton rock made it all the way to the field next to the tracks. Full avalanche barriers and continued snow slides caused additional issues. After February 6, 2018 special measures were necessary: diversion dams at various avalanche cones, draining of mudslides. People also ignored the avalanche barriers and walked through anyway.

Q. When was the avalanche service established?

A. In 1999 it was decided that the whole valley would establish one avalanche service.

- Q. What was done with the people who ignored the barrier?
- A. There are no measures available. The road is closed and people still walk through. Once there are boot prints, others will follow. The question then becomes whether or not to go search for them.

File: 20181020-02-Lawinenwinter-Mattertal.pdf

The Role of Mountain Rescuers During Natural Events in Switzerland; Theo Maurer, ARS

On August 22, 2005 there was a mudslide in Guttannen (Rotloui) and on August 23, 2017 in Bondo (Pizzo Cengalo).

In Guttannen one of the roads was buried over several meters. Not far above the mudslide 20 construction workers were at work. They had to be evacuated by a mountain rescue team. The evacuation was only possible on foot. Familiarity with the area was necessary to guide the workers to safety. In addition, it continued to rain all day and new mudslides kept happening. No injuries occurred. The water flowed straight into the village which caused damage to buildings.

In Bondo the slide was caused by the break-off of a 3-million cubic meter rock. The mudslide was a surprise as there was no rain, but the rocks fell onto the glacier and that water caused the mudslide. Geologists had not anticipated that. The village was spared. The residents had been warned in time by the alarm system and were evacuated. However, many hikers were about. Therefore, helicopters were used to search the area for people. After two days 8 people were still missing. The search continued in the air as well as with dogs. The search was ended without success after 3 days. The alarm system had to be reconditioned during which time there was another mudslide. One year after the event the search was restarted. The 8 people are still missing today.

The role of mountain rescuers in such events: evacuation of people, search for missing people, closing of areas, hiking trails, and roads, and post-search.

Management of such major events goes through county, regional, and state leadership. Mountain rescuers are only involved when people are in danger or injured. In such instances one's own safety is paramount. A defensive strategy is to be used. Continuous communication with the leadership is necessary.

Q. In Switzerland, rescue operations are fee-based but not so in France. Who carries the cost in such major events? Who decides which means are deployed?

A. Principally, the victim, his accident/health insurance, respectively, carries the cost. If no insurance pays, the victim has to pay himself. In major events, the county or state pays.

Q. Will police and/or firefighters be involved in rescues in the future?

A. ARS is an independent, non-profit foundation and not an organization of the government. We don't know what the future will bring. For now, it'll stay the same.

Files: 20181020-03a-ARS-Naturereignisse.pdf
20181020-03b-Cengalo.mp4

HOPE Study; Pasquier

The study researches which hypothermia IV patients should be rewarmed. No one is dead until he is warmed up and dead. In the hospital the criterion is the potassium blood level. If there is a high amount of potassium in the blood, the prognosis is poor and ECLS (extracorporeal life support) is not recommended.

One single criterion decides life or death of a patient. Other factors such as age are not considered.

Therefore, the Hope Study researched which patients survived. 37% of patients survived. All variables were considered; age, gender, temperature, potassium, injuries, cardiac arrest, heart rhythm, type of rewarming. Altogether this gives you a Hope score. The Hope score did a better assessment than only using potassium as a criterion. Less patients without a chance were rewarmed.

EURAC X-Cube; Brugger

Introduces a room in which different studies can be done. Research has been done using the room since 2009; for example, field studies. These are done in a lab setting. Up to 12 people can stay several days inside. Various factors can be imitated; temperature, air pressure, wind, snowfall, rain. Extreme, controllable environments can be created within the room. The people are observed. Scenarios can be repeated. One of the studies being conducted in the room is the efficiency of pilots in high altitude; 10 EMS crews are expected to participate.

Psychosocial Support (PSS) for Mountain Rescuers and Ski Patrollers; ICAR Medcom Initiative, Nordgren

Rescuers encounter many difficult scenes such as bodies or severe injuries. They work in dangerous conditions and sometimes have to watch their colleagues die. The project assesses if mountain rescuers need psychosocial support and how this support is being afforded in the different organizations. A questionnaire is being handed out that each member organization is asked to fill out. Medcom also wants to know if the rescue organizations apply the

recommendations and whether they are published in rescue magazines and used in training. The question is also if Medcom should write a recommendation with regards to psychosocial support. The questionnaire data will help Medcom to assess the benefits of its recommendations. This is not to compare the psychosocial support quality between countries, it is solely a means to assess the current status with the goal to issue a recommendation on psychosocial support for mountain rescuers.

Tom Woods presents two cases. Brandon had been a paramedic until, during a rescue, he suddenly stopped giving CPR to the patient and was found staring blankly. After this incident he quit being a paramedic for the fire department but now works in cave rescue. A second case involves Robert whose 5 first missing people searches were body recoveries that included children. This led to stress and he was retrained. Today he is a psychiatric nurse.

Both these cases are successes in that both men found other fields of work, but that isn't always the case. Suicides happen, too. When someone is stressed after a mission, it is usually temporary. Volunteers get little support. When someone is aggressive or angry after a mission, it can be because of psychological stress, and team leaders handle it poorly. When someone admits to being traumatized, he should not be stigmatized. Training is the solution.

For questions Twood0318@gmail.com.

Comment Dan Halvorson:

In many countries there are volunteer rescuers who participate in maybe one or two rescues a year. For them there is no debriefing or other support, which is a problem. Volunteers need to be part of the debriefing.

Comment Dominik Letang:

I had nightmares for years and needed psychological support.

Comment from rescuer from France:

Our organization tries to observe the psychological health of its rescuers. It is important that everyone is integrated, including volunteers. The aggressiveness of the victims is also to be considered.

Comment Marie Nordgren, Norway: I would like more information.

File: 20181020-05-Psychological-Help.pdf

Inhalational Analgesia: Its role in mountain rescue; Prof. Dr. V. Lischke

The doctor informs about modern inhalation agents. It is important to be able to administer pain medications prior to hospitalization. Pain medication can be administered through inhalation, which has advantages over the intravenous method. In mountain rescue size and weight of equipment plays a role. Laws have to be observed. Two types of pain medication and when to use them are presented; Etonox and methoxyflurane.

File: 20181020-06-Penthrox.pdf

A Freezing Tragedy on Pigne d'Arolla; Fredy-Michel Roten, Greg Zenruffinen, Raphael Richard, Patrick Fauchère; Air Glaciers-MFXB/KWRO

Fredy-Michel Roten:

The incident happened on April 30, 2018 at the Cabane des Vignettes on Pigne d'Arolla. Because the criminal investigation is ongoing, no pictures of the slides

are allowed. The weather worsened that day within a few hours. The weather conditions the day before had already been extreme. There was a storm. The call came in through central dispatch at 6:41 a.m. The information given was that 4-6 people were in trouble and needed evacuated, so the rescuers prepared for an evacuation. A few minutes later the information update stated that one person was dead. A third call indicated that 4 people were dead and 5 alive. All victims were together at the accident site. The situation was very difficult. One couldn't tell how many victims there were as victims covered other victims, which led to counting shoes. Only one of the victims had tried to dig into the snow. The bodies couldn't be reached for EKGs because they were a frozen mass. The victims still thought to be alive were transported to the hut. The weather, however, kept worsening.

Patrick Fauchère:

The rescue was done with a Llama. The issues for the pilot were wind and two cables. The helipad by the cabin is very small, close to the hut, and moves during landing. REGA helped with two pilots. One pilot had difficulties landing as he was not familiar with the platform. The first Llama only worked with HEC.

Fredy-Michel Roten:

The victims were taken to the hut and triaged. The physicians knew the victims were hypothermic; however, they were actually frozen. Mouths couldn't be opened. CPR was performed. Conscious patients were separated from unconscious patients.

Greg Zenruffinen:

The weather just kept getting worse. The helicopters started flying to the accident site and not the hut.

Fredy-Michel Roten:

Hospitals were chosen for the patients. One couldn't just go to the closest hospital because they didn't have the capacity. Sion, Lausanne, Bern and Zurich have ECLS. There was only one phone line to receive information from dispatch. Additionally, when a patient was flown to Lausanne, for example, the helicopter was out of service for an hour.

Greg Zenruffinen:

If it is only hypothermia, everyone has a chance. The patients need to be hospitalized to get a core temperature and potassium level and to be treated accordingly. A debriefing was held sometime later. During a mission with several victims the physician will ask himself if he has done everything correctly. It can be helpful at that point to call someone, a friend, to ask that person what to do. An outsider looks at it objectively and can give helpful tips.

Comment Brugger: Call a friend is a good point. The Polish have such a system.

Nils Farlund: Prevention is key.

Q. You mentioned there was only one phone line. What about radios?

A. There was a phone line to the hut with contact to dispatch. There was no cell phone coverage. There were 5 helicopters that worked in very close quarters. There was too much going on for so many radios. The phone line was often overloaded because people wanted to make reservations for the hut, too.

High Alpine Mountain Facing Climate Change; Dr. Ludovic Ravel, Edytem/GSM

Temperatures have risen worldwide. In Chamonix they rose 2.1 degrees between 1936 and 2017. There is approximately 275 km² of glacier in the French Alps, which is 25% less than in 1985. Ladders have to be used so that

mountaineers can reach glaciers and huts. This led to reviewing routes and how they have changed over the years. On the Mont Blanc massif there are routes that no longer exist, for example the Bonatti-column. Other routes have changed, which has led to accidents. Some areas were easy to ascend because there was snow but now there is only ice. Some summits used to have permafrost and now have only rocks. Everything becomes more unstable. The distribution of permafrost can be measured. When the permafrost recedes, the rocks get loose. This can happen even at temperatures of -1 to -3 degrees and not just 0 degrees.

For questions Ludovic.Ravanel@univ-smb.fr.

File: 20181020-08-Ravanel.pdf

75 Years of Avalanche Dog Training in Switzerland; Meier Marcel, Alpine Rescue Switzerland

In 1937/1938, 18 people were buried by an avalanche in the area of the Schilthorn. Except for one person all were found. A dog named Moritzli did, however, find that one person alive far away from the search teams. Ferdinand Schmutz, a world-renowned cynologist, heard about this and started to train avalanche dogs. In 1940 he demonstrated the results of his work to General Guisan. In 1943 regulations were established. For 75 years avalanche dogs have now been trained in Switzerland; first by the military through WWII and now also through ARS.

Three short films about the development of the avalanche dog service from 1943 until today are shown. Avalanche dog handler Marcel Meier, technical director Dogs ARS, explains the avalanche dog service. The service began in

1943 when during WWI over 40,000 soldiers found their deaths in the Austrian and Italian Alps while troops continued to be sent into the mountains.

An avalanche dog training is presented.

Films: SRF Schweiz aktuell, 75 Jahre Lawinenhundewesen

File: 20181020-09-75Year-ARS-Search-Dogs.pdf

Proposal to Form a Registry of Rescuer Fatalities; Ellerton, Tomazin

Fatal accidents of rescuers should be analyzed more thoroughly. There are already such lists; for example, mortality rate in infants. The goal is to start a survey to analyze fatal accidents of mountain rescuers.

This project was introduced to TERCOM and MEDCOM on Thursday. The incidents should be logged to honor the fallen as well as to analyze the accidents. Various data is needed; a picture and bio for the honor list and a police report for the analysis, in addition to date, age, gender country, title (for example pilot), what kind of mission it was, and the circumstances of the accident. This is sensitive data and needs to be handled accordingly. Suicides should also be noted. An expansion of the list should include severe accidents and near misses. Please think about this, and if you have any ideas, send an email.

End of Meeting: 1 p.m.

For the English Translation: Olivia A. Cashner