



Presentations Terrestrial Rescue Commission

Place: Soldeu, Andorra
Date: October 21, 2017
Time: 0800 hours
Participants: Members of the Terrestrial Rescue Commission
Members of the Air Rescue Commission
Members of the Avalanche Rescue Commission
Members of the Medical Commission
Chairmen: Dan Halvorson, Dan Hourihan
Minutes: Fabienne Jelk

Rescue Techniques from Big Walls (Theo Maurer, ARS)

Theo Maurer shows the techniques that are used for rescues from big walls in Switzerland. Helicopters and specialist crews are used in 90-95% of operations. Exceptionally, the specialists will go in terrestrially.

The following two techniques are being applied: Helicopter with winch (winch cable up to 85 meters long) and helicopter with a longline on a central carabiner (rope length up to 230 meters). Winch operations are handled by a pilot, a paramedic and a mountain rescuer. The physician waits at the intermediate landing site.

Such a winch rescue happened on December 18, 2016 at 1815 hours on the Eiger north face. The rope length was 80 meters. For such operations, realistic training, a powerful helicopter, and appropriate technical equipment (for example night vision and floodlights) are necessary.

The longline method is handled by a pilot, a paramedic, and 2-3 mountain rescuers. The physician waits at the intermediate landing site. Important here is communication. The disadvantage over the first method is that the rope can

not be retracted like on a winch. Therefore, a landing line is used during landing. When approaching the wall, we use a telescoping pole, when leaving a transfer lanyard. The same transfer method is used with the winch.

The example shown involved a rescue of a base jumper in Lauterbrunnen. The accident happened on August 7, 2016 on the Mürrenfluh. The parachute of the jumper didn't open and he ended up beneath an overhang that protruded 25 meters. A first attempt at rescuing him directly with a longline failed, so two rescuers were lowered to just above the victim. The rescuers then reached the victim terrestrially. They then rappelled with the patient to a point where they could be flown out with the longline. It was a combined rescue.

File: 20171021-0800-ARS-Big-Wall-Rettung.pdf

TERCOM – New Recommendations

The recommendations are all formatted the same way.

The following recommendations have been revised:

Using Connector/Carabiner in Mountain Rescue Organizations

20051016-TER-REC0001 Commission for Terrestrial Rescue Recommendation

The ICAR Terrestrial Rescue committee recommends for organized mountain rescue operations for main/central attachment points and for air rescue operations only the use of:

- Triple action gate carabiners or
- Connectors/carabiners with a screw gate.
- Connectors/carabiners must conform to EN 12275 or EN 362 and/or NFPA 1983 US-Standard
- Steel main or central connectors if used with air rescue.

Connectors/carabiners used in flight rescue operations as a part of the equipment of the crew or helicopter are regulated by an extra recommendation AIR-REC0014HEC-HHO-Equipment from the ICAR Air Rescue Commission.

Rope Connections for Rope Extension

20141007-TER-REC0004 Commission for Terrestrial Rescue Recommendation

Suitable knots for connecting ropes to extend them are:

- Ropes with sewn terminations: 10-mm standard maillon connector
- Ropes with NO GROUND CONTACT:
 - o Double or triple fisherman's bend.
- Rope with NO GROUND CONTACT BUT HIGH TENSION:
 - o Reef (square) bend with double fisherman's backup
 - o Double or Triple fisherman's bend or
 - o Figure eight bend
- Ropes WITH GROUND CONTACT:
 - o Flat Double overhand knot
 - o Postman's knot
 - o Single flat overhand knot with ropes of the same diameter and type.

Pictures of these notes can be found in Section 4. Glossary.

All knots must be properly dressed and all strands must be individually set prior to use. Bends require tails to be at least 10 times the rope diameter. Knots require sufficient tail to allow at least one roll.

Redundancy for Lowering or Raising People with Fiber Ropes

20051016-TER-REC0005 Commission for Terrestrial Rescue Recommendation

The ICAR Terrestrial Rescue Committee recommends Two-Tensioned Rope Systems for high consequence terrain when lowering or raising with fiber ropes that provide a mutual backup in the event of a failure of one of the rope systems.

Redundant anchor systems should be used for Two Tensioned Rope Systems, preferably with some separation between ropes.

Whether using fiber rope winches or pulley systems, sharing the tension between rope systems is recommended, including when switching between lowering and raising.

If all tension is to be placed on one rope, then an additional risk assessment must be made.

The recommendations and definitions are on the ICAR website.

The Rigopiano Disaster (M. Milani, Gianluca Facchetti)

The accident happened on January 18, 2017. It snowed intensely and because of earthquakes large areas were without power. The avalanche had unbelievable destructive force due to great amounts of materials being carried along. Due to misunderstandings during the alarm notification (the hotel manager first said that all was okay), the rescue start was delayed. The road to Rigopiano was completely snowed in. At 0300 hours the first rescuers with skis arrived in Rigopiano. All survivors were in the lower level. Cameras were used to see what it looked like in the hotel, and so three children were rescued in good condition after several hours. The IMSI catcher was used for locating cell phones. This helped to find another survivor, 69 hours after the avalanche. The survivor lay between two deceased people. The signal the IMSI catcher received was from one of the dead. More survivors were found on the third day. There were 11 survivors and 29 dead.

Debriefing results: The hotel should have never been built in that location. The roads should have been closed. Alarm notifications should not be ignored. The rescue teams should have arrived earlier. Whenever possible use helicopters.

Canyoning Guidelines (I. Soteras)

Talks about canyoning guidelines that are being used to treat patients on scene as well as for transporting. Most injuries are broken bones and sprains of the lower extremities, back, and chest. Secondary: hypothermia, drowning, heart conditions. Three to 10% of accidents end in death. The recommendations are shown.

First Aid Kit (O. Reisten)

The First Aid Kit's goal is to reach mountain climbers, mountain guides, and medical professionals. It was developed for outdoor sports accidents. The kit should help bridge the time between the accident and the arrival of professional help. It can also be used by rescuers. One of the problems in developing the kit was the legal availability of medications in different countries. The kit comes in three modules: Basic (mountain climber, mountain biker, anyone outdoors who does not have any specific first aid training; Advanced (people with specific first aid training such as rescuers and mountain guides; Medical (medical professionals such as physicians or nurses). Also considered are the region, the length and the type of activity. The First Aid Kit is based on ICAR recommendations on mountain medicine, emergency medicine as well as expeditionary medicine (in collaboration with UIAA and ISMM).

Suspension Trauma (Eurac), Strapazzon

This syndrome develops when a person is in a vertical position without movement for a certain amount of time. The person can become unconscious and that position can become life-threatening. The problem is the loss of muscle strength due to gravity. The blood pools in the lower extremities and creates a reduced cardiac preload, reduced cardiac output, and reduction in blood circulation in all vessels. Often, the person will be feeling fine before suddenly collapsing. The patient needs to be brought into a horizontal position.

Prevention: The pooling of blood in the legs needs to be avoided. If possible, when the patient is in the sling, he should elevate his legs. Patients should be moved into a lying position as fast as possible.

File: 20171021-1100-Suspension-Trauma-EURAC.pdf

Mountain First Aid – GSM

Talk about first-aid courses that were developed for mountain rescuers. A film is shown on medical care in the field. Police and gendarmerie developed medical training for rescuers to improve medical care of victims. The training consists of three modules that include different topics such as altitude sickness, frostbite and so forth. The goal of this training is to improve field care of victims in the mountains through intensive and specific training as well as to ensure correct action by the mountain rescuer during difficult circumstances.

File: 20171021-1130-GSM.odp

Base Jumping Fatalities in Berne – Statistics about „people falling from the sky“ (Schön)

Since 1981 there have been 315 deaths in base jumping, 74 of which were in Switzerland. Realistically, though, not all incidents are included in this statistic. Most incidents are collisions with the rock face, not pulling or opening of the parachute.

The Lauterbrunnen valley in Switzerland is well known for base jumping. There are about 11 exit points that are all easily accessible by railroad. That area experienced 60 deaths between 2001 and 2016. Over the past several years, incidents with wingsuits have increased. Most deaths occur between July and September, more often in the morning. What led to these accidents? Mostly the chutes not opening or opening too late as well as flying too close to the wall. Only in 4 cases was a material problem the cause. In 46 cases the base

jumpers were already dead when the rescuers arrived. Autopsies are not usually done on base jumpers, and identification is done visually.

File: 20171021-1400-BASE-JUMP-Schoen.pdf

„Triage Strategies“– A concept for optimizing avalanche rescue strategies (Reiweger/Paal/Schweizer/Genswein)

Presented are strategies on how to care for victims in certain situations. Basically, it is always the brain that needs to be rescued.

If there aren't many rescuers on scene: CPR for at least 20 minutes (recommendation 2015) or none (recommendation 2010). The problem is how to decide whether to do CPR or try to find another victim that is still buried. For patient 1 it is best to do CPR for 20 minutes. The survival rate of patient 2, however, is decreasing. For patient 2 it would be best to unbury him right away. If you take both patients into consideration, patient 1 would get CPR for 5-7 minutes and then patient 2 is freed.

File: 20171021-1430-Triage-Lawinenfeld.pdf

End of Meeting: 1530 hours

For the English Translation: Olivia Cashner