International Commission for Alpine Rescue

IKAR-Congress – Killarney / Ireland 2015
Presentations Terrestrial Rescue Commission

Place: Killarney (Ireland), Brehon Conference Center

Date: October 16, 2015

Time: 8 a.m.

Participants: Member Terrestrial Rescue Commission

Members Avalanche Rescue Commission (after 9 a.m.)

Chairman: Kirk Mauthner

Minutes: Fabienne Jelk

1. D. Clarke, MRA, J. Myers MRA: Two Tensioned Systems

D. Clarke (Portland Mountain Rescue (PMR) Oregon) and J. Myers (Olympic Mountain Rescue (OMR) Washington) talk about two tensioned rope systems. PMR and OMR both work with this system in which each rope carries an equal load. Other organizations still work with a mainline and a safety line. Both teams were looking for options to reduce the fall height if the rope that carries the main load breaks. Both teams recognized that the extent of falls is less with two tensioned systems than with the main/belay systems. When testing the two tensioned rope system to see if it is better, the following was also considered: safety, culture, training, and cost. The tests were to show how far one falls and whether or not the ropes break. The two tensioned system showed the better results. The assembling is easier. Both ropes can be pulled up with technical equipment.

When switching to this other system, rescue teams need to be open to new ways. It should also be evaluated whether the currently used system is appropriate for the type of rescues and the team itself. How does the team feel about a switch? Who decides which system to use? Is everyone in agreement that a switch needs to happen?

The most difficult part when switching is not the purchase of the new material but the human factor. Both rescuers working with the system need to be prepared at all times to catch the complete load. This is probably the most important human factor to be considered.

Another question is training. Will the current system be obsolete? How can the use of the new system be integrated into the current training? What systems are used by other teams you work in conjunction with?

It is possible that no new material needs to be procured, but if new material is obtained, is it compatible with the currently used equipment?

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Question: How did you ensure that the systems were introduced in a way to ensure operational consistency of response? How did you manage the impact on the teams as new information about rope rescue systems is introduced?

Good documentation is very important. It doesn't exist yet but we are working on it.

*File: 20151016-**TER**-01-MRA-TT lessons.pdf*

2. Marcin Józefowicz, Witold Cikowski, TOPR: The use of Dyneema Ropes in Tatra

Technical specifications of Dyneema: very strong (15 times stronger than steel), abrasion and UV resistant, static (shock absorbers are not necessary), does not tolerate high temperatures, light (8-mm Dyneema weighs 3.3 kg per 100m), simple to use.

TOPR heard about Dyneema first in 2007 at the ICAR congress when it was presented by the Bavarian Mountain Rescue. In 2010 TOPR used Dyneema ropes for the first time during a rescue. In 2012 Dyneema ropes were used to rappel 760 meters off the north face of Mt. Giewont (longest rappel). Dyneema was a good replacement for the steel cable system that had been used for evacuations on cliffs up to 200 meters. The advantages of the new systems are the simplicity of use, the light weight, and the safety. When rappelling, the usual rappelling devices cannot be used due to the heating. With Dyneema, they use the HMS brake or the double HMS break. To splice the ropes, the same method is used as when splicing steel cables. The ends of Dyneema ropes cannot be tied into knots. Use, equipment and tests are shown.

Conclusion: the double HMS brake is the best option to brake Dyneema ropes. Figure eight knots are a possibility; there is no breakage but they cannot be untied. An eye splice is the best option at the end.

Question: Our team demands an auto-lock function. Is this part of this system?

We use a technique like the Bavarian Mountain Rescue and use a triple sliding hitch over both ropes behind the HMS brake. The brake is operated by the person who relays both ropes for rappelling.

*Files: 20151016-**TER**-02A-TOPR-Dyneema.pdf*
*20151016-**TER**-02B-Tczysta-stara.mp4*
*20151016-**TER**-02C-Tpolwyblinka.mp4*
*20151016-**TER**-02D-Tdwojna-polwyblinka.mp4*
*20151016-**TER**-02E-Tosemka.mp4*
*20151016-**TER**-02F-Tdziewiatka.mp4*
*20151016-**TER**-02G-Twyblinka-stoper.mp4*
*20151016-**TER**-02H-Tbasic.mp4*

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20151016-TER-02I-Tbasic2.mp4
20151016-TER-02J-Tpro-traction.mp4
20151016-TER-02K-Tpro-traction2.mp4
20151016-TER-02L-TBrummel.mp4
20151016-TER-02M-TBrummel2.mp4

3. P.O. Wikberg, SMCS: Smartphones as Support for Out-of-Bounds Skier Decisions

A study aimed to find out how terrain and avalanche information through an app affects the behavior of out of bounds skiers. The question was how to best communicate avalanche information to reach skiers. Today everything is communicated through the internet. 98% of skiers carry a cell phone. There is an increasing number of out-of-bounds skiers. They differ from touring skiers. An app was developed and field tested with 20 skiers. All testers had an iPhone. The app is explained. It contains a map that shows areas recommended/not recommended to ski in green, yellow, and red. The test proved that a lot of people could be reached that way. A combined depiction of avalanche danger and avalanche terrain is possible and makes sense. It is better to communicate when and where one should ski as opposed to just generally pointing out dangers. It is also better to have real-time geo-referenced information since skiers usually make decisions on the spot or on short notice. It is useful to collect data on out-of-bounds skiers with regards to behavior and decision making process. More tests need to be done. Did we open Pandora's app?

Question: Did you test whether or not you were able to reach the risk group with the app?

The risk group is between 20 and 35 years of age. They use the app.

Question: Can the information be constantly updated depending on the changing conditions? How up-to-date is the database?

The information about avalanches is updated each morning. During the day changes in weather, for example, are considered. The evaluator is already within the app.

Question: Are the changing weather conditions considered?

Yes. The recommendations adapt to the weather changes.

Question: Did you test how often the app is used during the day?

The tendency is to check the app too often rather than not enough, to keep checking

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one's location.

Nils Farlund: One has to be open to new things and not denounce new possibilities from the start.

File: 20151016-TER-03-Smartphones-Skiers_Decisions.pdf

4. M. Amlert, SPMR: Strategies of Small Team Leadership and Decision Making in Remote Areas

Amlert talks about leading small teams and the decision-making process in remote areas. There are three rescue teams in Sweden (National Police Mountain Rescue); one each in Kiruna, Östersund and Hemavan. The helicopter bases are far away from the team in Kiruna. A team consists of a team leader, rescuer one, rescuer two, and rescuer three; the latter being the medical expert. Rescuer one has more responsibility than rescuer two. He leaves the helicopter first and re-boards last. The distances the Kiruna team has to cover equal the area of Switzerland. As an example, an accident on Mont Blanc would deploy a team from Zurich and a helicopter from Milan. Many areas can be reached by snowmobile. There are about 10 rescues a year. Noticeably, many victims do not know where they are when they call for help, or they give a completely wrong position. Team spirit is important.

Questions/Comments: None.

File: 20151016-TER-04-AMLERT.pdf

5. R. Head, BSAR, Peer Support Coordinator: The Unique BSAR Approach to Peer Support

The Bush Search and Rescue Victoria (BSAR) supports the Victoria police in searches and rescues of missing persons in the bush and alpine regions within Victoria. The organization of the team consists of: administrative – convener for the management committee and executive; operational – police liaison officer, field organizers, group leaders, and search teams. BSAR has approximately 200 trained rescuers. Most of them are volunteers. These rescuers are spread out over the area and meet only rarely. The need for psychological support during search and rescue operations is nowadays widely recognized, but how can these people be supported during an operation? Each operation has an assigned peer support team. This team keeps phone contact with each rescuer and assures psychological help if needed. The team also monitors whether the rescuers return home, gives them ample recovery time, and then contacts them by phone to discuss possible problems and how to deal with them. All telephone conversations are confidential.

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Problems the peer supporters encounter:
- A rescuer cannot be reached by phone.
- There are not enough supporters for a large-scale operation.
- Continuing and appropriate education and examination of peer supporters.
- On-time assistance.
Peer supporters are well accepted by the rescuers.

Questions/Comments: None.

*File: 20151016-**TER**-05-BSAR_Psychological First Aid.pdf*

6. Lukasz Migiel, Sylweriusz Kosinski, Tomasz Darocha, TOPR: Successful Avalanche Resuscitation

On February 21, 2015 there was an avalanche in Wielka Swistówka. The call came in at 1428 hours. First reports spoke of three buried persons, later corrected to four. Two had already been freed, two were still buried. None of the four carried avalanche beacons. The avalanche site was difficult to access. The weather conditions were extremely bad (winds up to 120 km/h and whiteouts). Helicopters could not fly. The rescuers had to access the avalanche run-out on skis. At 1622 hours the first rescuers are on scene. Two patients. The first patient had been freed by his friends after 20-25 minutes. He had been buried 50 cm, face down, no air pocket. Resuscitation commenced immediately and lasted 1 hour 25 minutes. No pulse, no breathing, airways filled with water. Resuscitation was ceased. Death caused by asphyxiation. The second patient had been freed by his friends after 1 hour 50 minutes. He had been buried 40 cm, face up, with air pocket, conscious but not communicative. Decision: This patient had priority, possibly hypothermic. At 1730 hours cardiac arrest. AED was used twice, after which time the electrodes could not be used anymore due to the melting snow. Heart massage was started, intubated with 100% oxygen through a manual resuscitator. The patient was transported on a SKED stretcher with continuous heart massage and artificial respiration. The transport was very difficult. Eventually the use of a snowmobile was possible. At 2035 hours the patient was transferred to the ambulance. Body temperature was less than 17 degrees. CPR and artificial respiration were continued. At 2130 hours the patient was transferred to the helicopter and transported to Krakau. CPR was continued during all of the transport. At 2315 hours the patient arrives at the hospital. Body temperature 16.9 degrees. The patient, a 25-year-oold woman, survived and recovered completely. CPR was given for a total of 6 hours 45 minutes! Conclusion: As rescuers we have to accept alternative techniques. CPR should be continued until the re-warming of the core temperature.

Questions/Comments: None.

*File: 20151016-**TER**-06-TOPR-Reanimation.pdf*

7. B. Jelk, OCVS: Nepal Earthquake – Private Relief Efforts and Problems of Organizations

On April 24, 2015 Nepal was shaken by an earthquake of 7.8 magnitude and on May 12, 2015 by an earthquake of 7.3 magnitude. Bruno Jelk went to the scene in Nepal. Two movies are shown; one about the effects of the earthquakes and the other one on how relief supplies were transported. One of the problems was that the relief supplies were thrown out of helicopters and shattered on impact. Later winches were used to lower the supplies without damage. The country lacked coordination. The government failed and was corrupt. At the airport of Kathmandu tons of relief supplies had been stored which the government refused to release. In order to use the relief supplies as well as helicopter rescue equipment, they asked for $13,000. After negotiating, the price was dropped to $1860. The areas accessible by vehicle received help. The small villages in remote valleys were left empty-handed. Many valleys received help late and mostly through private organizations. However, the International Medical Corps worked great. They chartered helicopters and flew to the valleys to provide medical help. Otherwise the government would have had to organize this. The aid organizations and maybe even the governments of other countries should have put more pressure on the Nepalese government. The Swiss ambassador could not be reached despite several attempts. The helicopter companies cannot fly for free; therefore, tourists were flown out because they could pay. The locals could not afford to pay, but a lot of them still received aid from helicopters. What should have been organized? A crisis committee with different departments and responsibilities, a coordination center, and headquarters. The helicopters should have been coordinated from one central point, as well as the trucks, backhoes, and other special machinery. Regional, town, and local leaders would also have been necessary.

Comment: Gebhard Barbisch: The relief supplies are being thrown out of helicopters when there is no control on the ground. If the helicopter lands, it cannot take off again. The problem was that the supplies were not adequately packaged.

Bruno Jelk: It was offered to deposit the relief supplies where there was control on the ground and then use the winch to relay the supplies. This offer was rejected.

Question: How is the relationship between Swiss rescuers and the Nepalese government?

The Swiss government did not react to the call for help, so the private sector reacted. The advantage was that we already knew helicopter outfits in Nepal.

Question: How many independent, private organizations did help?

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At least 20.

Comment: Gebhard Barbisch: The problem was that Nepal blocked international help until the UN got involved. Private aid works well if established contacts are available. Otherwise it doesn't work. It is important that the aid efforts be coordinated.

Bruno Jelk: Local helicopter companies asked for help. They did not have the technical material to use winches and were unable to manage the task. They did receive help.

*Files: 20151016-**TER**-07A-Erdbeben-Nepal 2015.pdf*
*20151016-**TER**-07B-Indian Airforce M1 17 dropping materials.MOV*
*20151016-**TER**-07C-Nepal.mov*
*20151016-**TER**-07D-Simrik Sling Ops.MOV*

8. Mike Wiegele: The 5-Step Checklist System - A proven Method for Avalanche Forecasting, Loss Prevention and Safety

The goal is to establish a new risk management plan to avoid accidents. The 5-step checklist for avalanche danger is shown; a systematic method for stability rating. Human errors should be reduced. The checklist helps to not forget anything important regarding the avalanche situation.

The five steps are:
- Daily weather data.
- Graphics [Cosmic solar radiation (CSR, high cycle), humidity, temperature, load]. These are the three important factors to determine snowpack stability.
- Snow profile overviews (different tests such as the shovel test)
- Cutting test and stability check (every turn is a ski test).

The checklist was developed based on several years of recorded avalanche profiles.

The results are rated from 1 to 7. Also important are the choice of terrain and route.

Question: You put a high priority on field tests, which has lost priority with many.

I am aware of that, but field tests are indispensible to taking measurements.

*File: 20151016-**TER**-08-Mike Wiegele.pdf*

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9. Stephanie Thomas, TCSAR: Backcountry Zero in the Teton

The community of Jackson Hole (Wyoming) has a vision of reducing the accident/death rate in the Tetons. In 2013, 22,268 residents lived in Teton County. The highest mountain is Grand Teton at 13,766 feet above sea level. In summer over 3 million visitors come to the area, in winter about 500,000. The main ski area is the Jackson Hole Ski Resort. The Teton County Search and Rescue team was established in 1993. Why Backcountry Zero? There were several deaths within the team. Backcountry Zero collaborates with several partners.

The heart of the program:

- Experience and knowledge.
- Broad foundation collected over a long time.
- Sharing the vision with others.
- A living process.

The program is based on the 4 p's: Prepared, practiced, professional, present.

What else can BC Zero be:

- A means to receive funds for equipment, lodging and other things.
- A place to research and develop possibilities to save lives.
- A model which can help other communities as well.

Questions/Comments: None.

*File: 20151016-**TER**-09-BCZ.pdf*
*20151016-**TER**-09B-backcountry_safety.mp4*

End of Meeting: 3 p.m.

For the English Translation: Olivia A. Cashner

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