

## Presentations Terrestrial Rescue Commission

Place: Borovets (Bulgaria), Hotel Samakov  
Date: October 20, 2016  
Time: 10:30 a.m.  
Present: Members of the Terrestrial Rescue Commission  
Members of the Air Rescue Commission (from 2 p.m. to 3:30 p.m.)  
Members of the Avalanche Rescue Commission (from 4 p.m. to 5:30 p.m.)  
Chairmen: Gebhard Barbisch and Kirk Mauthner  
Minutes: Fabienne Jelk

### sarOS (Matjaz Serkezi GRZS)

Software is presented which can be used to plan and organize search and rescue missions. Up until now all planning was done manually on paper with the aid of Google Earth, for example. However, this required Wi-Fi that wasn't available in the field and the preparations just took too long. While digital material was on hand, it was unusable because the corresponding Apps either didn't function or were too complicated.

The newly developed system is also suitable for beginners, functions without data transfer, and fits on a small flash drive. The goal was to standardize the mapping systems, to integrate modern search and rescue techniques, to cover relevant communication channels, and to standardize data collection of search and rescue missions. The system consists of modules. Each module can be used separately. Collaboration across borders is possible. The system is very simple, functions off and online, is supported by all maps (5-50, Orthofoto) as well as all other cartographic components, inclusive LIDAR. The system also works with Google Earth, can easily be integrated into other environments, and has management and communication possibilities.

#### Questions/Comments:

- Q: Could you please show how the colors are applied, can they be entered, and how does the GPS data transfer work?  
A: You can write on Google and the 2D viewer, it is really simple.

Q: What are RFID codes?

A: It is a member card that contains the rescuer's information. The data is read by the receiver so the incident commander can see how many people are on scene, when they came back, etc.

File: 20161020-TER-005-grzs-Serkezi.pdf

### **Lost Person Behavior – Evidence-based statistical analysis particular to Norway (Knut Skar)**

For eight years data on the behavior of missing persons has been collected and analyzed. There is a book called „Lost Person Behavior“, which was the basis.

Norwegian SAR Dogs is a non-profit search organization. They work with three different types of dogs; avalanche, terrestrial, and catastrophe dogs. The organization is deployed to about 500 incidents per year. Each dog handler has roughly 10 missions per year.

Different data was collected for the statistic: When was the person reported missing, was the person demented or suicidal, when was the person found, how far from the point of origin, etc. The statistic does not account for incidents in which the missing persons showed up again by themselves. Some of the findings are very interesting; for example dement and suicidal persons were mostly found on or near roads. This is a decisive point for the organization of the search. Based on the results changes for the organization of searches were enacted and the search was adapted to the behavior profile. This was also taken into account when training the dogs. Different search methods are now combined. First the search is along roads and paths and as soon as more people are available, the search area is expanded.

Q: Were the results sent to the author of “Lost Persons Behavior”?

A: No.

Q: Definition of points: APP: Is it correct that this is the point where we expect the person to show up again?

A: There are two different points: APP: Person comes back and last seen point. With demented and suicidal persons the point where the person could come back to is important and is where the search starts.

Q: So APP is an assumption, „last point seen“ is fact, and APP is the search organization’s decision?

- A: That is correct. APP is used as the starting point. If it is identical to the last seen point, it is not a problem.
- C: Read Alistair: Several police stations also collected similar data. It showed that persons are found close to roads and paths where they had been seen last.
- Q: Do you use Garmin Astra or the new device?
- A: Garmin Astra.

*File: 20161020-TER-006-NKH-Call-out-Skar.pdf*

### **Significant Change in How We Do Rope Rescue in B.C. (Kirk Mauthner, Parcs Canada)**

The capacity of two-rope systems was analyzed. The systems hadn't been evaluated in several years. The goal was to find out which two-rope system is best suited for minimizing risk (dual capability two-tensioned rope system vs. dedicated mainline-dedicated backup system). This became a national study. Currently, the dual capability two-tensioned rope system is being used. Both ropes must function as main and backup system at the same time. Two-tensioned systems are better safety wise than systems with a tensioned mainline and a non-tensioned backup rope. The best case for a non-tensioned belay is to be neither slack nor tensioned. The worst case for a TTRS is the best case for the non-tensioned belay. The TTRS does not solve all problems in rescue, but proves to be an increasingly valuable tool. There are certainly reasons not to use TTRS in every situation. There are applications where these systems are not the solution. Single rope technique, tensioned rope systems, highlines, and other instances may preclude their use.

- C: This presentation should be forwarded to the UIAA.
- A: The information is publicly available.
- Q: Felix Meier: Did you also look at the heat generation in the ropes?
- A: Yes, we checked if the generated heat broke the rope, especially on sharp edges. There are fiber melting points.
- C: There were similar studies done in Iceland. Overall those results align with the results shown here, but over edges the other system is better.

- A: Different techniques of belaying over edges were tested. Rarely do you belay a stretcher over a sharp edge. Two-tensioned ropes were safer in all tests than a tensioned mainline and a non-tension backup.
- Q: Felix Meier: Please explain the nomenclature on the slide..
- A: The names are from 1986. Two Rope: Two brakes on top, one fixing point. Dual Rope: Two brakes on top, two fixing points. Twin Rope: One brake on top, one fixing point. Double Rope: One brake on top, fixing point on the brake system.

Files: 20161020-TER-007-Rope-Rescue-Mauthner.pdf  
20161020-TER-007-Rope-Rescue-Mauthner.pptx (inclusive Videos)

**Joint meeting TER-AIR: Presentation of the national system for cooperation of alpine rescue and civilian helicopter (Stein Moller, Dan Halvorsen)**

Norway is an elongated country with a long coastline. There are more and more tourists and extreme sportsmen, which leads to more accidents. Norway has 10 regional teams in mountain rescue with 250 volunteers. The equipment and rescue systems are standardized, which is important in a service area this big. Rescue has been working with the military mostly, now civilian helicopters have become part as well. The rescuers' equipment has to be checked regularly. There are two persons per team who are allowed to check the material. These persons have been trained specifically for two days. All material is checked every 12 months. Once the material has been tested, it is marked with a color. During an incoming alert, the rescuers are informed by cell phone. For helicopter rescue there was tight cooperation with the military.

There are six helicopter bases (four in the south and two in the north) for Westland Sea King helicopters. There are local and national training sessions with the rescuers. It is important to hold annual coordination meetings. There is also the National Air Ambulance Service with 13 bases. A national system captures all data and reports from a mission, which supports the exchange of information between the rescuers. The plan is to also include information from other countries. There should be an exchange of experience and experts from other countries invited to training sessions in Norway.

- C: Patrick Fauchère: Next year the topic for the air rescue commission workshop will be base jumpers.
- C: Dan Halvorsen: often one flies to the scene thinking the person is dead. In the case of base jumpers it is often difficult to see whether or not the victim is dead or not. This should be addressed.

Q: What level is the training? Is it basic or advanced?

A: Not all rescuers are trained at the same level. Some are trained in a more technical manner and others not, for example.

*File: 20161020-TER-AIR-008-Coop-Norway-Moller.pdf*

### **Joint meeting TER-AIR: Automatic Release Sling (ARS) (Jan-Gunnar Hole)**

The development started in 2009. It involves the security of a person during the moment between being in the crag and being on the helicopter. Before the inception of the automatic release sling, the arm in sling method was being used. In case of a problem, the arm was pulled out of the sling. The consensus became that this system is not good and that the sling needed to open automatically. The arm in sling method carried risks with fatal consequences such as rock falls, static electricity, or the engine cutting out momentarily. The conclusion was that the arm in sling method was too dangerous. Therefore, a three-ring system was developed that would open automatically. The pilot cannot feel any jerking or tension. The product was produced in a different color than other materials so that it will be easily distinguishable. It will be available in a month or two.

#### **Questions/Comments:**

Q: Stephane Bozon: The problem had been obvious for a long time in Chamonix and therefore the Lezard was developed. During the Norway study, the results from Chamonix were known. What is the critique on the Lezard and what are the differences?

A: We are not criticizing Lezard. The main difference is the ARS' mechanism is open. It can be continually checked. The system is very easy to use. The mechanism is immediately obvious. The product is also very light, safe, and easy to use.

Q: Remy Bergon: Can the device be reset after it was used during training? Lezard allows one to reattach the tail.

A: After deployment new rings will need to be used.

Q: Patrick Fauchère: How many persons can be attached? One or two?

A: 220 kilograms. It depends on the winch and the ropes used.

Q: Patrick Fauchère: Could you fly out five persons?

- A: Constructionally that is possible, but the question will need to be answered by someone else.
- Q: Remy Bergon: A lot of victims are flow out in stretchers. How long does the device have to be to do so?
- A: The sling is about 30 cm long which is added on top.

Files: [20161020-TER-AIR-009-ARS-Hole.pdf](#)  
[20161020-TER-AIR-010-ARS-Video-Hole.mp4](#)  
[20161020-TER-AIR-011-ARS-Video-Hole.mp4](#)

### **Joint meeting TER-AIR: Emergency Card (Dieter Kotlaba, Ortovox)**

The goal is to improve the search ahead of the rescue. Analogous papers can also be helpful. When one goes up into the mountains, one wants to take the least amount of gear possible. Often one does not have any contact information for the companions in case of an accident. One does not know their medical conditions and other important information is missing. Therefore the Emergency Card was implemented. It is the size of a credit card, can be folded, and various information can be entered. Emergency phone numbers of several countries are also listed. The card is advantageous for first responders as well as rescuers and physicians as it contains applicable information. Mountain guides give the card to their customers who fill out the information. The card can be divided into contact information and medical information. It is also waterproof. The card is not a sales item. It is supposed to offer safety in the mountains and should be distributed as often as possible. Starting next summer the card will be integrated with all Ortovox backpacks. The card is available in English German, English French, and English Italian. If anyone is interested, email [fammon@ortovox.com](mailto:fammon@ortovox.com).

Questions: None.

File: [20161020-TER-AIR-012-Emergency Card\\_Kotlaba.pdf](#)

### **Joint discussion TER-AVA: AVA-REC Probing Strategies, Manuel Genswein**

Different strategies for probing are presented. These strategies were recorded on a poster and adhere to the recommendation introduced in January 2016. One addition to the poster is probing at a 90-degree angle.

The recommendation is as follows:

*To minimize search times, maximize survival chances and reduce risk to rescuers, it is recommended to apply the following procedure:*

- 1) *With limited resources, in cases with obvious terrain traps and around anchored surface clues, spot probe the most likely burial areas.*
- 2) *Coarse probe the likely burial areas:*
  - a. *On first passage limit the probing depth to 1,5m.*
  - b. *On second passage, probe with lateral offset and maximum probing depth.*
- 3) *Fine probe the entire avalanche debris including the immediately adjacent areas to maximum probing depth.*
- 4) *Remove the fine-probed debris to within 1m of the probed depth. Repeat steps 2, 3 and 4.*

*Accurate marking allows a systematic continuation of probing in subsequent passages (according to AVA-REC0003).*

*Risk to rescuers and resource availability may influence the rescue procedure.*

### *Slalom Probing*

*Slalom probing has been demonstrated to be an efficient coarse probing method.*

- 1) *Space rescuers 1.5m apart (outstretched arms, wrist to wrist) to create a 50 x 50 cm grid (88% probability of detection).*
- 2) *Ensure correct forward spacing by placing the probe forward 50cm before the forward step.*
- 3) *The leader is probing in the center and gives commands: "probe" - "right" - "right" - "forward" - "left" - "left"... and "align left to right", if required.*
- 4) *Probe at 90° to the slope surface in front of the rescuer.*

*If resources allow, split rescuers into multiple probe lines of 6 to 10. Higher levels of rescuer training allow for longer probe lines.*

*In certain circumstances e.g. very rough/soft debris, forest, or untrained volunteers, other coarse probing methods may be more suitable.*

**Questions/Comments:**

**Q:** Andres Bardill: What is the reason for the 90-degree angle?

**A:** When you probe in a straight line down, the probe is being bent forward and the searcher loses his balance. Tests were done in which rescuers used different angles. All agreed that the 90-degree angle was the most

comfortable, and there is no more bending. A 90-degree angle ensures the same depth each time. When the terrain is uneven, you don't have to change the search angle as the deviation is marginal. The grid chosen was the 50-cm system, which is a very tight grid for coarse probing, but allows compensation for mistakes made by the rescuers.

- Q: Gebhard Barbisch: The first coarse probing is done at a depth of 1.5 meters. The second pass is recommended at maximum depth. The poster states maximum depth but at least 2.5 meters. Why is there a difference and wouldn't we have to adjust the recommendation? The poster and the recommendation need to be the same.
- A: The reason for the 2.5 meters instead of maximum depth has to do with rescue stations using probes that only reach down to 2.2 meters. Also, we need to continually improve and not become static. But it's a valid point and the recommendation will be adjusted.
- Q: How do you perform a slalom probe if you have personnel on scene that are not familiar with the system?
- A: With minimally trained rescuers a point probe is done; shoulder on shoulder in a line. It is important to distribute probing strategies among mountain guides, UIAA, and SAC so that the training reaches as many people as possible.

### **French PSAP solution for victim's location (Eric Giroud, Stephane Bozon)**

Two geo-localization systems are presented. In the Mont Blanc massif we often have people calling in an emergency without knowing where they are at. A lot of them carry Smartphones that can potentially be used to locate them. Police and fire services have developed products for this purpose, but there are problems; i.e. only few people have them, there is no standardization, a registration through the website is necessary. Also, localization through the national dispatch centers was inaccurate.

The new concept was developed by the fire departments: Through a website a text message containing the URL is sent to the lost person who then allows rescuers to locate him via GPS on his Smartphone. Confirming the text message connects the Smartphone to the website which then starts the localization program. The method is quick and the Smartphone can be tracked if it is moving. The localization is accurate to within 5 meters. There are no legal issues since the lost person approved. The GPS function on the phone has to be on.

GENDLOC is another system, which was primarily developed for the mountains by PGHM. It is a simple geo-location tool that is compatible with all OS. No App installation is necessary. The lost person has to approve the localization. The approval is only valid for the rescuers and during the rescue mission. The rescuer sends a text message to the lost person who clicks on a link that approves the localization. This method is being used by several organizations. It is also a helpful method when the victim is not visible from the helicopter, for example if he is in the woods, at night, or bad weather. Additionally, unnecessary rescue missions can be avoided if there are no injuries as the lost person can be guided to a safe place.

- Q: Who receives the emergency call in France and who has the software?
- A: GENDLOC was the first method developed by PGHM and the police. All police stations can use the system. It was made available to the fire departments after its heavy use. Emergency calls are answered by the respective department. There is cooperation between police and fire services, either one could receive the emergency call. For example, if the call comes from the Mont Blanc massif the call is answered by the fire department who then forwards it to the police. The systems has also been used for ocean rescues.
- Q: Right now this requires internet connectivity. Are there plans for offline application in the future?
- A: Not at this time.
- F: How often does a lost person not know how to activate the GPS locator on his phone?
- A: That is truly a problem. Therefore, a short guide showing how to do that was developed that can be sent to the lost person to help.
- C: There is a function in which the rescuer can activate the GPS via backup system.
- A: That is correct but legally one cannot access the phone of another person.

Files: [20161020-TER-AVA-013-French PSAP diffusion.pdf](#)  
[20161020-TER-AVA-014-pghm-et-sms.mp4](#)  
[20161020-TER-AVA-015-Geoloc.mp4](#)  
[20161020-TER-AVA-016-gendloc.pdf](#)

End of Meeting: 5:20 p.m.

## **Recommendation Discussion:**

### **ICAR Recommendation – TER-REC 0001**

Discussion points:

It is not the goal to eliminate screw-lock carabiners.

It is about central anchoring, which should be included. The wording central anchoring could be wrongly interpreted. At this time one could interpret this to mean that Delta cannot be used.

Suggestions for different wording? Add a Q to EN 12275? Not necessary.

No changes suggested.

Comment Gebhard Barisch in addition to the minutes:

After the meeting open topics came up which require a work group. The recommendation will get a note on the homepage indicating that changes are being worked on.

### **ICAR Recommendation – TER-REC 0004**

Streibel Herbert objected that certain knots had been excluded; for example two-loop figure eight.

Result of the discussion:

There is no argument against including certain knots; however, for certain uses certain knots are not useful. The usage has to be the deciding factor.

The recommendation will not be removed from the homepage but a comment will be added that the recommendation is being edited. The work group will continue to work on the recommendation.

### **ICAR Recommendation – TER-REC 0005**

Herbert Streibel asks regarding the two rope system.

The last update on the recommendation is from 2005. It is necessary to overhaul the recommendation.

Question: What exactly is meant by „three dimensional separation“?

Answer: It refers to two anchoring systems which are independent of each other. The anchors have to be separate. The anchors are not connected to each other.

Kirk Mauthner: This needs to be discussed as two anchors do not protect.

There will also be a comment on the homepage on this recommendation that it is being revised. The work group will update the recommendation.

### **ICAR Recommendation – TER-REC 0007**

Discussion point: The UIAA and ICAR need to cooperate more closely regarding standards.

Kirk Mauthner: UIAA has already been contacted. The material used needs to be added.

The recommendation will be revised and discussed with UIAA. There will be a comment on the homepage.

### **ICAR Recommendation – TER-REC 0009**

This needs an addition that states when a system is changed, the whole system will need to be re-tested and not just the changed part.

This will be done.

For the English translation: Olivia A. Cashner

#### **Important information:**

If to this minutes belonging files are not available on our homepage, please send a mail to me ([terrestrial.rescue@alpine-rescue.org](mailto:terrestrial.rescue@alpine-rescue.org)). I can send you a link where a download of all this files are possible.

Rankweil, 14.12.2016  
Gebhard Barisch