Internationale Kommission für Alpines Rettungswesen IKAR
Kommission für Bodenrettung
International Commission for Alpine Rescue ICAR
Commission for Terrestrial Rescue
Commission Internationale de Sauvetage Alpin CISA
Sauvetage Terrestre

Presentations of the Terrestrial Rescue Commission

Place:	Bol, Croatia, Hotel Elaphusa
Date:	October 17, 2013
Time:	10 a.m.
Present:	Members of the Terrestrial Rescue Commission
	Members of the Air Rescue Commission (partially; for Jean Baptiste Estachy's presentation as well as the debriefing of the practical meeting)
Chairmen:	Gebhard Barbisch and Kirk Mauthner
Minutes:	Fabienne Jelk

Jean Baptiste Estachy, GSM: New Hoist Interface Device-Le Lezard

Jean Baptiste Estachy and Adrien Dumas introduce the „Lezard" system (Lizard). The idea is to solve the problem of the critical point when the rescuer is secured to the rock and the helicopter is tied to the mountain, whether that be dropping off or picking up the rescuer. The system currently in use is self-releasing; however, this system is unsafe. There was an accident on August 31. Two people who needed to be evacuated had established a fixed stand with drill anchors. When the rescuer was secured to the stand, there was an updraft. The aircraft auxiliary fed more cable, but the helicopter still climbed before the rescuer could release himself. The rescuer's safety catch ripped out. He was hanging underneath the helicopter when the anchor ripped. A bad accident could have happened.

The new system is presented. It is called lizard because lizards can release their tails in an emergency, and it is also self-releasing.
There are 3 rules to be followed with Lezard: only use it if it is necessary; only the helicopter is tied to the hoist hook, and a human being is never tied to the yellow part (tail). The system is only used to drop off or pick up rescuers. It is not used during a rescuers work on the mountain face. Using Lezard requires good training. The device has to be mastered correctly before being used. There are sources of error. Further tests will be done with the system.

Presentation: 01-LEZARD presentation_IKAR-CISA_2013.pdf

Questions/Remarks:

Bruno Jelk: A rescuers is always afraid to tie down a helicopter. This system can take away this fear. This system has future, but it does require good training.

Jean-Babtiste Estachy: We are trying to find a way so that only the helicopter can be tied to the hoist hook but so far we have no solution.

> Question: Rescuers don't like to be tied to the mountain face. What does the release mechanism look like?

The mechanism is demonstrated in a drawing.

> Question from a participant: Are 20 kg of tensile strenght enough?

Alain Maurice (system developer): Final values have not yet been determined. They can still be adapted. We took the weight of the rescuer plus 20 kg. Problem: the higher the value, the more delicate it becomes for the helicopter. We took a lower value to avoid blows to the helicopter. Not all tests have been completed. When the rescuer is dropped off and the yellow part receives a thrust, the system could release. A compromise needs to be found.

> Question Gebhard Barbisch: There are 2 types of rescues; static winches and dynamic ropes. Is this system only applicable to winch rescues?

Jean Babtiste Estachy: No, there is no reason for that.

Bruno Jelk: I don't think the system is made for operations with 100-meter longline but with shorter ropes.

Jean Babtiste Estachy: That is correct. The advantage of Lezard is that the victim cannot make any mistakes.

> Question Dan Halvorsen: Has the system been tested in flight?

Blaise Agresti: There was a test on a helicopter. A permit was needed for the tests in France.

Participant: There will be sources for errors because for rescuers, mechanics, and pilots it is a new system. Everyone involved in the rescue process needs to be trained. There will be further tests which hopefully will resume in January. There is an inhibition level for using anything new.

Dan Halvorsen: It is always good to have new equipment, but there are human sources of errors. It was the same with Grigri. It is always about training and introduction. Thank you for the development.

Gebhard Barbisch, Patrick Fauchère, Dan Halvorsen: Summary of Workshop Debriefing

The demonstrations from yesterday's practical meeting are briefly discussed.

1. Demonstration

Theo Maurer: Picking off a rescuer with a patient on a steep stand where a safety catch is used. Shown was the common system with the transfer lanyard.

Questions/Remarks:

> Question from a participant: Is the munter hitch at the mountain or the rescuer?

The munter hitch is always at the rescuer. The rescuer needs to be able to reach the munter hitch at all times.

2. Demonstration

Bruno Jelk, KWRO: Vertical pick off. The system worked with Grillon from Petzl. The advantage is that the pilot can hover and doesn't have to move up and down.

3. Demonstration

SAGF Italy: There will be a separate presentation regarding the demonstration of this system.

4. Demonstration

Brian Webster, Canada: Transfer from the mountain to the longline.

A video is shown about the demonstrations with the helicopter from yesterday afternoon.

Lukas Marin, Croatia: The Croatian rescuers showed a combination of terrestrial and air rescue. An army helicopter was used. A first scenario included several victims on the mountain face, a second scenario a victim on a ridge. Together with Air Zermatt a rescue off a technically difficult mountain face was shown. First the system was shown with the munter hitch and then with cutting the rope.

> Question Dan Halvorsen: Did you train for these demonstrations beforehand?

Yes. Anchors had been set beforehand. Two years ago there was training with the crew of Air Zermatt.

Dan Halvorsen: What we saw yesterday went extremely well.

> Question: In France the lanyard is always on the rescuer. Yesterday it was shown differently. The lanyard was on the helicopter. Why?

When we trained, the lanyard was taken off the helicopter. Yesterday only one lanyard was available. Usually the lanyard is with the rescuer.

Bruno Jelk: It has happened that we had to fly out up to 15 people. Our rescuers now all carry double lanyards.

Dan Halvorsen: There are variances depending on the country. There are always human sources of error.

Patrick Fauchère: Mistakes happen during bad weather and in communication. We are a team, communication is essential. Nowadays there are radio systems with microphones that can be used without buttons to press. Lezard is a good system; however, using this system with the old Llama helicopters will be difficult. We cannot forget to have a cutting tool ready to use. Saturday we will give an overview of accidents and incidents that have happened during the past years.

Recess: 11:45 a.m. until 2 p.m.

Jacek Jawien, GOPR: Rescue Mission on Broad Peak

Talks about 2 expeditions this year on Broad Peak. In spring 2013 Polish mountaineers went on Broad Peak for the first time in winter. The expedition was organized and guided by Krzysztof Wielicki, who stayed in base camp and coordinated everything. On March 5, 2013 the climbers reached the summit. During the descent, two climbers disappeared; Berbeka and Tomasz Kowalski. They died on the mountain. A film from the day of the summit is shown. It was -45 degrees Celsius in the tent. The weather was very good. There was therefore no obvious reason why these two couldn't make the descent. They did not have enough strength for the descent. Possibly one of the two fell into a crevasse. After the expedition in mid June, a search group was organized. Jacek Berbeka and Jacek Jawien were part of this team. They wanted to recover the bodies. In the meantime 12 mountain climbers were shot in this region. The body of Tomasz Kowalski was found at 7950 meters above sea level in a couloir. The body of Madiej Berbeka was not found.

RECCO was used during the search. Several crevasses were searched to no avail; probably because his body is lying at the very bottom of a crevasse. The expedition for the recovery of the bodies was controversial in the media.

Presentation: 03-ICAR Broad Peak presentation.pdf

Questions/Remarks: None.

Jörgen Modin, Swedish Police: Crisis Operations in an Extreme Environment

On March 15 a C-130J Hercules crashed on Kebnekaise. It was flying to Kiruna as part of a military maneuver. The plane broke into several parts during the crash, and the bodies of the 5 crew members were also severely dismembered. Kebnekaise is 2102 meters above sea level. The plane was unable to clear the ridge. It was difficult to work with dogs in this steep terrain, but without dogs, the body parts would not have been recovered. When the plane crashed, an avalanche was triggered. The search area covered approximately one kilometer from the lowest to the highest point. It is very important that the dog is secured to the handler. Pictures from the search are shown. One of the problems encountered was that the dog is used to lying down as a way of pointing but couldn't do this in this steep terrain or he would have slid down the mountainside. The dog's claws were not trimmed in order to give

him better traction. The weather during the search was very bad. The search area also had crevasses of 20-30 meters in depth. They were practically all covered by the avalanche, so they were invisible in spring. In fall they saw all the crevasses over which the search teams had walked. The body parts were brought to the top of the mountain fist due to ethical reasons. The first DNA samples were taken on the mountain and the bodies were transferred to the forensic institute.

Presentation: 04-Sweden-Kebnekaise.pdf

Questions/Remarks:

Question Jean Babtiste Estachy: How long was the dog able to work per day?

It was difficult to take breaks in this area. We worked approximately 8 hours a day.

Alberto Tartaglia, SAGF Italy; Nicola Campani: The PNEUSPINE Stretcher

The Pneuspine Stretcher is shown. The device is used on mountain faces, crevasses, canyons, etc. and can also be used in various weather conditions. One advantage is the ability to adjust the angle of the stretcher in just a few seconds. Therefore, obstacles can be overcome. The engineer, Nicola Campani, explains the device. It is an inflatable stretcher. 0.7 bars are enough to inflate it. It weighs 4 kg, very light. After the stretcher is inflated, it is very stable. A patient can be well immobilized. The stretcher floats in water. This device was introduced first in Krynica. 21 stretchers are now being used and tested in different terrain. Next year the stretcher will be tested in caves, out of bounds, as well as in ambulances. The stretcher is shown and explained. Another stretcher device is shown that is also very light. The stretcher can be inflated with a cylinder up to 4 bars. The use of this stretcher is also demonstrated.

Presentations: *05-pneuspine on the snow.avi*
05-Pneuspine-Strecher.pdf

Questions/Remarks: None.

Darko Baksic, Croatia: Cave Rescue in Kita Gacesina

There are about 9000 caves in Croatia; 15 of these are deeper than 500 meters. There are caves with or without water, deep, complicated caves etc. Rescues in caves are done by the Croatian Mountain Rescue Service. The first cave rescues started in 1950. In 1990 new deep caves were found in North Velebit. This led to new problems. The rescue methods had to be adapted, so a cave rescue commission was established. 319 rescuers have basic cave rescue training; roughly 150 also are trained in deep cave rescues. 5 physicians are specially trained to work below 500 meters. There is cooperation with other countries. Between 2000 and 2009, 53 rescue missions were done; from 2010 through 2013, 25. The tendency is on the rise. 130 persons and 31 animals were rescued. On July 16, 2011 and June 7, 2012 we had rescue operations in the Kita caves. On July 16, 2011 a caver suffered hypoglycemia. He was at a depth of 600 meters. The cave is in the middle of Croatia. The cave system is very complicated. In the second incident the caver suffered a spinal cord injury caused by an anchor plate that broke. An organizational chart of the cave rescue organization is shown. The second incident was in the deep part of the cave. First the French and then, in the

vertical, the Italian system was employed. The operation lasted 26 hours. They thank the Croatian Air Rescue, Slovenian Cave Rescue Service, CNSAS, and Alliance of Speleological Organizations of Serbia.

Presentation: 06-Cave Rescue in KG 2012.pdf

> Question from a participant: What kinds of anchors are needed, and why don't you use cordless communication?

Standard split anchors are used. The minimum distance between anchors is 25 cm, but it basically depends on the quality of the rock. Regarding communication, we just got offered a system that works with SMS.

Josip Granic, Croatia: Swift Water and Flood Rescue

In Croatia, the law states that the Croatian Mountain Rescue has to rescue in all rural areas. The Croatian mountain rescue has only been in existence for 25 years. In rescue one has to think ahead. A concept was developed of who is doing what. Water is always a difficult environment in rescue. You can't breathe under water and water does not forgive mistakes. In 2001 there was a fatal accident of a rafting guide. The victim was only half a meter under water in a syphon. It took the rescuers 3 days to recover the body. They didn't have enough equipment and no know-how for such a rescue. For example, no one had thought about bringing life vests. The rescue was analyzed and improvements applied. Rafting specialists were integrated into the team. R3 was the training partner. They came to Croatia and we went to England for training. There are now 6 instructors for water rescue and 220 members of the Croatian mountain rescue are trained in water rescue. There was enormous high water in June in Croatia. The mountain rescuers cared for the safety of all involved. Today there are no water events like a boat race without involvement of the mountain rescue. The safety of tourists and rescuers was improved. Between 2001 and 2013 they made a huge leap. They received an award for this improvement.

Presentation: 07-SRT HGSS for IKAR-granic.pdf

Questions/Remarks: None.

Michael Rust, Pieps

There is a practical demonstration outside which couldn't be held yesterday due to the bad weather. It is about minimizing effects of external interference.

End of Meeting: 6 p.m.

Gebhard Barbisch
Commission for terrestrial rescue
President

For the English Translation: Olivia A. Cashner