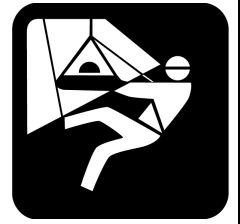




Internationale Kommission für Alpines
Rettungswesen IKAR
Kommission für Bodenrettung
International Commission for Alpine Rescue ICAR
Commission for Terrestrial Rescue
Commission Internationale de Sauvetage Alpin CISA
Sauvetage Terrestre



Presentations All Commissions

Place: Lake Tahoe, Nevada, USA, Nevada, Harveys Hotel

Date: October 9, 2014

Time: 8 a.m.

Participants: Members of the Terrestrial Rescue Commission
Members of the Avalanche Rescue Commission
Members of the Air Rescue Commission
Members of the Medical Commission

Chairman: Dr. John Ellerton

Minutes: Fabienne Jelk

M. Blancher, François Albasini: Medical Aspects in Disaster Management

The difficulties in these cases are the coordination and communication. The focus in the following is on the medical aspects.

There were about 15 multi casualty incidents (MCI) in the past 10 years in France. An MCI in the mountains is indicated by 10-15 victims. MCI refers to an incident where there are not enough resources available to handle the situation. Unique to the mountains is the fact that even healthy people can die if they are left to their own devices. Physicians have to rethink the situation because the rescue needs to be organized before medical attention is given. Hence, physicians have to follow the rules of disaster medicine and not emergency medicine.

The following steps are applied:

- Forming a rescue chain
- Command structure and communication among all rescue teams has to be ensured
- Calling in of additional resources
- Communication with authorities and media

The physicians are not at the accident site but at a collection point; the medical forward post.

There are two work phases: First the rescue phase in which the rescuers go to the victims at the accident site and perform first aid and triage. This is done with the help of the color codes. The second phase takes place at the medical forward post and is conducted by the physicians. The color codes include black (the patient will die), red (urgent care), yellow (can wait), and green (no injuries but maybe in shock). In avalanches one has to consider that victims who look dead can survive when their body temperature is restored. In these particular cases, catastrophe medicine has to adapt its rules.

Questions/Comments: None

File: 19-Medical aspect in disaster management.pdf

Fidel Elsensohn: Cold-Wet-Pain - Treat the Basics - Limitations in Multi-Casualty Incidents

Talks about care at base camp during MCIs. The reasons for MCIs in the mountains are manifold: avalanches, gondola accidents, sports meetings, etc. MCIs in the mountains are increasing due to the increasing amount of people in the mountains. MCIs usually require many people from different organizations. Language can be an issue if the incident is at the border or there is border overlap. Medical aspects of first aid are presented. First responders have an important job.

Questions/Comments: None

File: 20-2014_MCI_IKAR_Cold Wet and Pain.pdf

Mike Green: Why are Organization and Communication Important to Save Lives?

Accidents with multiple victims are overwhelming. There aren't enough resources to take care of all the victims. Organization and management are important in such incidents. The goal is to get people to the correct location within a reasonable timeframe. Triage needs to be performed; however, often personnel do not have the necessary experience.

The problem is that the same mistakes keep happening:

- Loss of communication
- Bad leadership
- Bad organization of resources

Communication: Communication isn't straight but more like a spider web. Issues mostly arise from human factors and not technical problems; for example communicating with the wrong person.

Leadership: The good personnel need to be trained and made leaders.

Organization: The plans for these kinds of incidents need to be simple and fit different scenarios.

Conclusion: Common sense counts. One has to learn from others. Organization and communication are important.

Questions/Comments: None

File: 21-Organisation and Communication Saves Lives.pdf

Manuel Genswein, Patrick Fauchère, OCVS: Helicopter Base Search for Buried Subjects in Avalanches

Patrick Fauchère: There are problems when searching with antennae from helicopters. In 2013 we collaborated with Manuel Genswein to find a solution. A checklist was made for each helicopter and personnel were trained. The mode had to be changed depending on whether it was a search or a rescue flight. During a search flight the devices in the helicopter need to be turned off as far as possible. A week after the training, a first incident occurred. A young man got buried in an avalanche. The search was conducted with Lama. First the search mode was engaged and within a short amount of time a signal was received. The mode was then changed to rescue and the buried victim was rescued.

Manuel Genswein: The search from the helicopter with avalanche beacons or Recco did not work flawlessly and there were attempts to improve that. The helicopter need to be equipped accordingly first. When searching the volume of the devices have to be adjusted to the circumstances. There can't be too much interference. Therefore, when searching with Recco, all devices that can be removed need to be removed. The "naked" helicopter is scanned and checked for interference. The rescuer who is working with this device also has to scan himself. A video is shown how to conduct a search with the avalanche beacon and the Recco.

Questions/Comments:

Dan Halvorsen: Norway has had this equipment. The crews and pilots thought that the antenna is not suitable for an avalanche search. Subsequently there was training led by Manuel Genswein which was very valuable.

Manuel Genswein: A proper setup is necessary.

Raphael Richard, Greg Zen Ruffinen, Patrick Fauchère, OCVS: Avalanche Pte de Masserey

On January 5, 2014 there were five avalanches with five deaths. The first avalanche happened at 1032 hours which buried one person who was found by the ski patrol. Then came the call that there was a cardiac arrest in Nendaz. This patient passed away. At that time the first problem occurred. The defibrillator was not on hand and when it finally arrived the batteries were dead. At 1349 hours the next avalanche came down and at 1446 hours another one. There was a delay in this operation because the helicopter was stationed near the airport and they first had to communicate with the tower. The information available was that there were 4-5 buried persons with avalanche beacons; however, it was unclear how many buried people there were in total. Seven tracks were seen leading into the avalanche. The first victim was found; having suffered cardiac arrest with free airways. The rescuer had to decide whether or not to treat the victim or to continue searching. At that time only one rescuer was on the field. This was a difficult situation for the rescuer. He

had also assumed that he could save lives since the helicopter arrived only 8 minutes after the avalanche went down. The rescuer assumed that the patient had a trauma and decided to continue searching. At that point the battery on the avalanche beacon ran empty (the device was in revision and the display light did not turn off). The rescuer had to switch batteries and soon after had a signal. The helicopter then dropped off another rescuer. A helicopter from Air Zermatt that was flying by was also called in. The second victim had also suffered cardiac arrest with free airways. There were two more victims to be found. All four victims had suffered cardiac arrest with free airways. The fact that statistically speaking these victims should have been rescued alive was very unnerving, especially since the cooperation and coordination worked fine.

Questions/Comments:

Jean Baptiste Estachy: The 98% survival rate within the first 15 minutes is referring to the victims that are dug out alive. To be aware of this might help the rescuers to deal with situations like this.

Raphael Richard: That is correct; however, the rescuer had it in his mind that the victims would be dug out alive and that was not the case. That was difficult to accept.

It was mentioned that after the death of five of the victims, eleven organs were donated, so despite the victims' demise, many other lives were saved.

File: [22-MVI-Pointe-de-Masserey.pdf](#)

Raphael Richard: Le Lezard

A video on how Lezard works is shown. The most important points of using Lezard are demonstrated.

Questions/Comments: None

File: <http://www.petzl.com/en/Professional/New/LEZARD?I=INT#.VG0BGL6IIW8>

Matthias Mock, Uepaal: New Products and Technologies

A new App was developed to localize humans in an avalanche. This App is not a substitute for the avalanche beacon. The App is useful for people who do not own a beacon. The search is complex. The signal only goes upward. The search is conducted by WiFi signal. A simulator was developed for testing. The search is divided into coarse and fine. The coarse search will get you within 5 meters of the victim. The results of the test were very good and the search did not last much longer than when using the avalanche beacon.

Questions/Comments:

Günther Sumann: The connection is established via WiFi. How about other people in close proximity who have WiFi activated?

There is little interference. When several signals are showing, they can be clearly separated.

Does only the searcher need the App or also the missing person?

Both need the App.

Can the App communicate with 457-Technology?

Would be possible but an external device is needed.

What is the distance between the first signal and the victim?

That depends on the snow conditions. On Jungfraujoch it was 30 meters in one case. In a worst case scenario it can be 8 meters.

Felix Meier: What was the burial depth? Were the devices covered by the bodies?

Tests were conducted at different depths. In one case the depth was 60 cm and the device was covered by the body. It was also tested at 1 meter and 50 cm.

File: 23-UEPAA-APP-Avalanche-rescue-beacon.pdf

Dale Atkins, RECCO: Road Safety to Mountain Rescuer Safety

In order to avoid road accidents, project Vision Zero was developed in 1997. The project is used in different countries. People's behavior in traffic needed to be changed. How can this project be applied to mountain rescue? Rescuer should have more information on victims in other areas. Data needs to be exchanged more often. Another point is divided responsibility. Collaboration between manufacturers and rescuers, for example, or rescuers and the people who write laws can bring improvement. The different responsible parties need to work on the system. Also, vehicles were developed so that they sound an alarm when encountering obstacles; the starting point was changed. The solution is based on the vehicle and not the obstacle or the driver. Vision Zero looked at a problem from all sides. The whole system is looked at. Vision Zero reduced traffic victims. If that were applied to mountain rescue, maybe similar results could be achieved. One would have to look at the overall picture and develop improvements.

Questions/Comments: None

Bruno Jelk: Presentation of a New RECCO Device

A new device from Recco can locate diodes up to a distance of 300 meters. This device is not necessarily suitable for avalanche rescue. It is too big. Twenty-six square kilometers can be searched within an hour. The device hangs off a rope below the helicopter. The pilot determines the length of the rope. Tests were conducted in Zermatt. The device weighs 240 kg, runs off batteries with a runtime of up to 10 hours,

and is hooked to the cargo handle. The test searches were conducted in the high Alps as well as the forest. The results were good. The diodes were located from distances of between 300-400 meters. The device in the helicopter has to be fine tuned. The data transfer is wireless. The problem is that the helicopter flies with an under-slung load. There is also a device that has a fixed installation but needs a certification. The ideal altitude for a search is around 150 meters. This provides a search corridor of 200 meters. Speed can be up to 130 km/h. The device was also tested in the water. The results were also positive. Another test search was done in crevasses. The diodes were at a depth of about 15 meters. The signal was audible up to an altitude of 200 meters. A large area can be searched in a short time. When flying in areas with lots of reflectors, a lower flying altitude is suggested. Power lines do not really interfere, but railway stations do. Cell phones can be located within 5-12 meters. Locating cell phones in snow would be difficult. Avalanche beacons can be located within 15 meters, vehicles at 40-100 meters. The device is suitable for searching for missing persons in large areas.

Questions/Comments: None

End of Meeting: 12 p.m.

For the English Translation: Olivia A. Cashner