

# TERRESTRIAL RESCUE REPORT

International Commission for Alpine Rescue

Kommission für Luftrettung • Commission pour le Sauvetage Aérien • Commission for Air Rescue



# IKAR-CISA



**Kranjska Gora, Slovenia, 11-14 October 2006**

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## **INTRODUCTION**

The International Committee for Alpine Rescue (IKAR-CISA) met for its annual congress in Kranjska Gora, Slovenia between 11 and 14 October 2006.

**A short history of Slovenia:** During the period of the Austro-Hungarian empire, Slovenia was part of the Austrian side of the dual monarchy and when it collapsed as a consequence of World War I, Slovenia, together with Serbs and Croats, came together as "The land of the South Slavs" out of which Yugoslavia would later be born. Within Yugoslavia, Slovenia held something of an anomalous position because of ties to Austria and the population was, on the whole, better educated and more advanced industrially than other parts of the country. After the brief break-up of Yugoslavia perpetrated by the Nazis, Tito reconstituted the country with Slovenia as a constituent 'republic.' In 1990, a decade after Tito's death, Communism fell and Slovenia wasted little time in proclaiming its first true independence in 1991. Slovenia was able to keep free of the deadly wars enveloping the rest of Yugoslavia just to the south between 1991 and 1995. Today Slovenia has a population of just four million people, smaller than most states in the US. With strong economic links to Austria, Italy,

and Hungary, Slovenia has remained prosperous and secure and, in the spring of 2004, it achieved both EU and NATO membership, firmly reestablishing Slovenia as a constituent part of Europe.

**Kranjska Gora:** A summer and winter tourist resort in northwestern Slovenia near the border with Austria and Italy, with Triglav National Park just to the south, Kranjska Gora provided an excellent location for this meeting. The imposing peaks of the Julian Alps, vast forests, and downhill ski areas attract hikers, climbers, mountain bikers and skiers. Kranjska Gora ski area was the first in Slovenia and today it has the longest ski jump in Europe and the world record jump of 235 meters. Ski areas easily accessible by international highways and, because of their altitude (the lower station is at 3100 ft), they offer favorable weather and snow conditions. Top international skiers compete annually for the Vitanc Trophy in World Cup men's giant slalom and slalom races.



Julian Alps, Kranjska Gora



A "Classical" Evacuation – GRS Demonstration

**Slovene Mountain Rescue Service:** In June 1912, the first rescue station in Slovenia was established in Kranjska Gora by the local Alpine Club. It is the world's fourth oldest organized team. Today, the Slovene Mountain Rescue Service (GRS) has 17 stations with 700 well trained volunteer rescuers. The Service performs an average of about 300 missions a year involving more than 8,000 hours of effort. GRS has a long history of involvement with IKAR, Slovenia hosted IKAR meetings in Vrsic in 1962, Bled in 1971 and Bovec in 1981. Since Slovene independence in 1991, its members have participated in every IKAR Congress and this was an opportunity to showcase their capabilities to the international audience.

**This Year's Congress.** The theme of this year's IKAR meeting was "Trends in Mountain Rescue" and presenters from around the world were required to submit proposals and papers in advance, with a standard 20 minute presentation period followed by 10 minutes of questions. Representing the MRA at Kranjska Gora were Dan Hourihan and Rick Lorenz (Terrestrial Commission), Dale Atkins (Avalanche Commission) and Ken Phillips (Aviation Commission). Simultaneous translation was provided for most sessions in English, French, German and Slovenian with the latest equipment and headphones, as well as sound proof booths for the translators. Attendance for the MRA terrestrial delegates was made possible by a grant from CMC rescue equipment.

**The Congress:** Delegates arrived in Kranjska Gora on the afternoon and evening of Wednesday, October 11, and the regular sessions began with a grand opening and welcome at 0800 Thursday morning. Delegates stayed in two hotels nearby and the general meetings were held in the Hotel Larix. Next door to the meeting area there was a vendor's exhibition with displays of outdoor and rescue equipment.

**General Commission Issues:** After a welcome by IKAR President Toni Grab, a presentation was made by Andres Luthi from Swiss Mountain Rescue. He raised the question of IKAR's role in making recommendations, and called for an improved method of issuing and cataloguing those

recommendations. He called for an increased role of IKAR in training, and suggested that IKAR maintain a “catalogue of norms” that could be searched on line by key word. He suggested that IKAR could “partner” with the European HEMS and Air Ambulance Committee (EHAC) and this relationship would assist in fund raising for IKAR.

Comment: You can find a list of existing IKAR Recommendations and Standards at the publicly accessible website at [www.ikar-cisa.org](http://www.ikar-cisa.org). IKAR is facing some of the same issues as MRA in terms of standards and increased government regulation. Most IKAR countries rely primarily on volunteer teams, with the exception of the professional mountain police in France. (Lorenz)

**Thursday Sessions:** Terrestrial and Avalanche Commissions met together for the opening session. Terrestrial Commission President Bruno Jelk made opening comments and thanked the organizers. Dominik Hunziker of Swiss Alpine Club-Mountain Rescue Service raised the question of photos from last year’s meeting and that fact that one of his had been exploited for commercial purposes. Gebhard Barbisch responded that all photos become public property and, from now on, photos that might be sensitive or copyrighted should not be used.

There was a brief mention that next year’s program would be hosted by Switzerland and that France will sponsor the 2008 program. Kirk Mauthner (Canada) recommended that, if there is a demonstration of equipment or procedures in Switzerland, there should also be some history provided as to the selection process and reasoning involved in the choice.

#### **Session 1** Andraes Dahlmaier, Garmisch Bergwacht, German Mountain Rescue

This was a presentation on the use of new plastic fibre rope (Dyneema) to replace steel cable systems. Mr. Dahlmaier presented test results which indicate that Dyneema compares favorably with more traditional rope/cable construction materials. He stated that the use of 400 meter lengths of 8mm is becoming standard. The advantages include the weight/length ratio. Dyneema is ten times as strong as wire cable per unit of weight and its strength is not diminished when wet. More information regarding this material can be found at: [http://www.dsm.com/en\\_US/html/hpf/ropes.htm](http://www.dsm.com/en_US/html/hpf/ropes.htm)

#### **Session 2.** PGHM High Mountain Police of France

Devolution of Technology in Mountain Rescue. This presentation traced the development of new rescue systems and a consideration of the benefits and risks associated with them. A summary:

“New systems are constantly evolving, all are supposed to provide benefit, but even a small change in parameters can create risk. The real question is when to discard or abandon equipment that is still reliable. We had the old Mariner sledge/litter in the 50’s, but you will not find it on the mountains today. Now we have a new litter system, jointly developed by France and Italy (Guardia System) that is much stronger, lighter, and performs better overall.

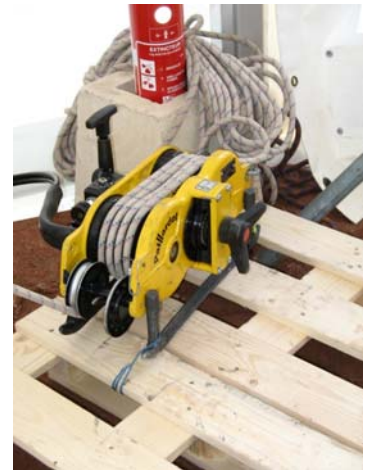


The availability of new high performance winches produced by Paillardet has changed the scene both for rescues on the ground and from helicopter. In France, the Aoulouette 3 Helicopter was standard, but it is now being replaced by the EC 145 with increased capabilities. But each time a new system is introduced, it requires careful evaluation, planning



and the developing of new protocols. We are now developing an entirely new system for the rescue of those trapped or suspended in overhead cable systems.

In France, we have an obsession for serious performance and professionalism, but this has led to an increasingly critical public. We are all civil servants and accountable to the citizenry. We now are expected to be “out the door” on a rescue mission within fifteen minutes of receiving the call. This means that the helicopter is in the air, if weather permits, with all rescue personnel aboard. With the proper training we can maintain a high level of performance and meet the expectations of the public.”



Paillardet Rescue Hoist

Comment: Last year, the PGHM recorded more than 1500 missions, most involved the use of helicopters operated by PGHM or the Department of the Interior. In France, and much of Europe, the Paillardet portable winch has become standard for MR teams, you can visit the site at:

[http://www.paillardet.com/en/treuil\\_sauvetage.html](http://www.paillardet.com/en/treuil_sauvetage.html)

Comment: To my knowledge, only one or two MRA teams have acquired this type of equipment, one is China Lake in California. (Lorenz)

### **Session 3.** Klemen Voluntar, Slovene Mountain Rescue Service

Klemen showed a movie demonstrating the use of the adjustable link between litter attendant and litter. The choice here was a Petzl “Grillon” mechanical device, and it appeared to perform well under the circumstances. A description of the product can be seen at:

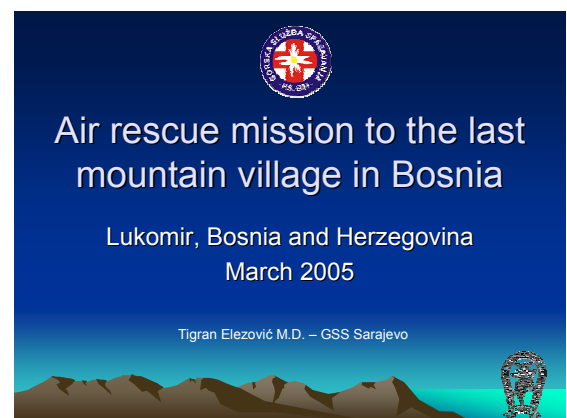
[http://www.rescueresponse.com/store/petzl\\_grillon2.html](http://www.rescueresponse.com/store/petzl_grillon2.html)

Note: For MRA teams in the Washington region, this function is normally performed by Purcell prusiks. The Purcell has multiple uses including the one illustrated in the movie. (Lorenz)

### **Session 4** Dr. Tigran Elesovic, Bosnia-Herzegovina Mountain Rescue.

Air Rescue Mission to remote Bosnia village of Lukomir in March 05. The victims were stranded by heavy snow fall.

The Bosnians are new members of IKAR. This year it was an enthusiastic delegation from a country that was the scene of large scale and deadly fighting just ten years ago. The speaker described a mission to a remote village entirely cut off from the surrounding world by record snow fall. Initial reports indicated that 30 people had no food or medicine and there were mostly old and infirm people in the village. This was a remote sheep farming area and the animals were reported to be at risk and there was a request for veterinary supplies, as well.



The physician who made the presentation was a member of the emergency medical response team in Sarajevo, and this type of helicopter response was apparently a first for him and his unit. He packed up cardboard boxes of emergency rations and a medical pack and flew in a Bosnian Army UH1 to the site. The pilot refused to set the chopper down



in the heavy snow so the rescuers had to throw out the supplies and jump from the helo as it hovered just over the snow pack. The physician was amazed to see some of his ration packs broken open and the contents flying about in the snow and rotor wash. Despite the confusion, the team was successful in supplying the village, and the eldest resident (85) was evacuated soon after by helicopter.

Comment: Despite limitations on equipment and financing, the Bosnians are putting together a capable network of volunteer teams. They receive no government support at present. Although they might be considered very primitive

by the standards of most IKAR countries, it can be helpful to review what rescuers can accomplish under difficult circumstances. The Bosnian team is looking for a US “partner” team to communicate with, contact Rick Lorenz if your MRA team is interested in making the connection. (Lorenz)

## Session 5 Paul Horder, Mountain Rescue Group of England and Wales.

Real Time GPS based tracking of search personnel.

Over the past ten years the Keswick MRT in the UK has been working to develop an improved “real time” tracking system for rescuers. The technology has changed dramatically during that time, just as the accuracy of GPS has improved. The new European GPS system to be operational in '08 will be accurate to within 1 meter (about 3 ft.). The Keswick team is currently working with GPS microphones for their radios that automatically transmit the user location whenever the mike is



“keyed.” Team members have developed software that loads the 1:25,000 map and provides a display that can show the locations of dozens of rescuers simultaneously, as well as their path and coordinates. This can be read either as lat/long or UTM. The software is in the final evaluation phase and will be made available at no cost to MR teams who request it.

Comment: Rick Lorenz can provide the e-mail for the Keswick MR team to any MRA team member interested in making the contact.

## Session 6 Dan Hourihan, U.S., MRA, Mountain Rescue Credentialing in the USA.

Hourihan presented an overview of SAR credentialing efforts being conducted at the national level by the Department of Homeland Security (DHS) through its NIMS Integration Center (NIC). He described the process undertaken by the appointed “Working Group” to establish definitions for the various SAR skills disciplines. Additionally, he explained the actions of the Mountain Rescue Association (MRA) in the development of MRA Policy 105.1, The National Compliancy Guideline, as an effort provide a mountain rescuer standards template for consideration by the Working Group in their definitions development. The “typing” of emergency response resources (e.g. mountain search and rescue team) was explained as a component of this national effort.

Comment: This presentation and the topic of “standards”, in general, received considerable discussion at this year’s congress. Similar national level efforts are occurring in other IKAR member

countries, with pressure mounting to create such in many others. The pros/cons expressed regarding this trend by non-U.S. IKAR delegates are very similar to those articulated by MRA members and others in the North American SAR community. There seems to be broad acceptance regarding the inevitability of basic standards for the performance of mountain rescue teams and rescuers. Such standards and recognized “best practices” already exist in many forms, not only in mountain rescue, but in most professional skills disciplines. The concern regarding the codifying of standards focuses on increased liability, constraints placed on field expedient creativity, and, perhaps most importantly, the inability of volunteers and volunteer teams to afford the time/financial cost of compliance. (Hourihan)



IKAR regularly issues “recommendations” on certain technical issues and comments that pertain to particular pieces of equipment. As an example, here is the recommendation for avalanche beacons from 1999.

ICAR is asking the manufacturers of the new equipment to eliminate the anomalies which the tests on their equipment revealed and to develop it further. The path they have taken is the right one. For example, promising solution principles were found with the locating system (Tracker DTS) or in the combination of analog and digital technology (Ortovox M1). Equipment must be developed so that, in future, even an untrained user in stress situations can search successfully for those buried in avalanches.

There is a continuing debate about the adoption of “guidelines” or standards that would have more weight than a mere recommendation. The question of adopting a “norm” presents a potential problem in mountain rescue because this implies an inflexible standard with no deviation allowed. The failure to follow the standard would automatically be considered negligence. The speaker concluded that IKAR should remain with its current policy of issuing recommendations in the right cases, but avoid setting standards that would imply a single inflexible rule.

The UIAA is in the business of setting standards for equipment, and safety labels can be approved for mountaineering gear. See: <http://www.uiaa.ch/?c=310> . But there is a very big distinction between a piece of equipment that can be tested in a lab and a rescue that is situation and personality dependent. Mountain rescue organizations like IKAR and MRA should avoid setting standards, and the trend today seems to be away from even making a recommendation. The issuance of a “statement” can accomplish the same results without setting a standard that could ultimately form the basis of a claim that someone has negligently violated the standard. (Lorenz).

## **Session 7**    Dominik Hunziker, Swiss Alpine Club-Mountain Rescue Service

Rescue from high transmission towers in remote areas.

The dramatic increase in the number of transmission (cell phone and radio) towers in remote mountain areas has increased the number of specialized rescues in Switzerland. Mountain Rescue teams have been asked to assist and Swiss teams are training to respond to this type of rescue. Statistics have shown that workers are often not wearing the right type of safety equipment, due to a lack of enforcement of existing regulation. This presents a challenge in dealing with a subject high above the ground, e.g. how to properly stabilize the subject before evacuation. Rescuers have found

that it is often difficult to turn off the power in the tower since there is no local master switch. Switzerland is making an attempt to increase the amount of technical information available to rescuers, and to provide for a quick means of shutting off power in case of an emergency.

Comment: In the US, this type of rescue is most likely to be performed by the fire department, but assisting or performing this type of rescue should not be ruled out. Fire departments may not always be able to get easily access the location of the more remote towers. (Lorenz)

## Session 8 Dr. Evelyn Ginterburger, Swiss Mountain Rescue

Crevasse Accidents: Stabilization of head and neck injuries in crevasse accidents.

Dr. Ginterburger reviewed the development of various means of medical treatment before evacuating patients from a crevasse. Statistics have shown that in crevasse falls, head and neck injuries are more common than originally thought. This presents a challenge in dealing with a subject high above the ground, e.g. how to properly stabilize the head and neck before evacuation. The Swiss have had very good experience with the Kendrick Extrication Device (KED) which is placed on the subject after he has been properly secured in seat harness or “diaper” device.



### K.E.D. / Kendrick-Extrication-Device

- Immobilisiert die gesamte Wirbelsäule
- umschließt den Rumpf unterhalb der Achseln und ist am Rücken bis über den Kopf hinaus verstärkt
- wird zusammen mit einem Halskragen eingesetzt



Comment: Bruno Jelk, the Terrestrial Commission President, made a comment that the KED had been used very successfully in crevasse rescue in the Zermatt area. It is light weight and provides the ability to stabilize the subject in a confined space. A description of the gear can be found at:

<http://www.wffire.com/website/front/index.htm?/website/medical/immobile/ked.htm&front>

## Session 9 PGHM, French Gendarmerie Mountain Rescue

Training of Operations Leaders

The speaker described an incident in Nepal and the formal training program of the operations leader (operations chief) for the Mountain Police of France.

In November 2005 the PGHM responded to an incident at Kang Guru in Nepal, there were 18 deaths including 7 French citizens. The Nepal authorities lacked the experience and resources to respond to large avalanches, a large PGHM contingent was flown after the French Foreign Ministry became involved. The team arrived after there was little chance of finding a live subject, and much of the remaining time was spent in locating and recovering the bodies. The French contingent brought along a dentist and dental charts and that was the primary means for identification for the French victims. Before returning to France the PGHM contingent conducted a training program for the Nepalese hosts.





The speaker outlined the three levels of certification for the operations leader of PGHM. The capstone course is a one week program at Chamonix, it includes incident command, media training (with journalists playing themselves) and a full day stress management session.

Comment: France has one of the most highly respected mountain rescue services in the world, formed entirely of professional civil servants. The size and scope of the program described here are beyond the capability of volunteer teams in the US. (Lorenz)

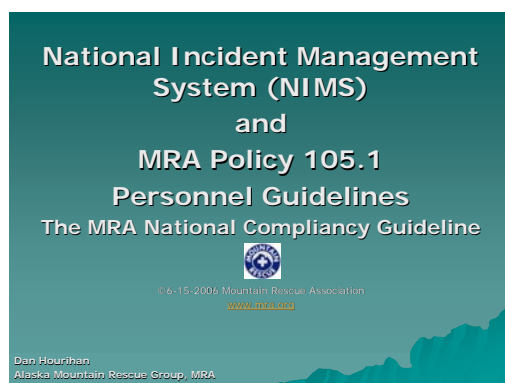
## **Session 10** PGHM, French Gendarmerie Mountain Rescue

### Professional Rescue Standards in France.

Mountain Rescue in France is undergoing a massive standardization based on new European Union guidelines. Although the EU does not speak specifically to mountain rescue certification requirements, France, with its 100% paid professional mountain rescue cadre, has included such with other professions. Professional SAR fields have been identified, as well as diploma requirements for each level. In France, this is undertaken by the National Commission for Professional Certification. As an example, to be certified as a “rescue skier” the applicant needs to complete a recognized 17 week course. There are nineteen “skills” that must be passed as part of the process.



Comment: This may be viewed as the extreme end of the scale in terms of government regulation of mountain rescue, but in a unique environment of civil servants this model is attained. This system can be viewed as an additional signal of future certification/regulatory control of search and rescue services. The trend towards SAR/mountain rescue standards and certifications is an international phenomenon, evidenced differently in each country. Forums such as IKAR, and the MRA in the U.S., are critical components in the development of tactically and administratively reasonable and attainable standards and protocols. (Lorenz/Hourihan)



## **Session 11** Dan Hourihan, U.S., MRA U.S. National Incident Management System (NIMS)

Hourihan provided an overview of the U.S. National Incident Management System. He provided further background regarding the mountain rescue typing and credentialing effort in the U.S., as mandated by NIMS, and the MRA’s subsequent development of Policy 105.1. He described the Incident Command System’s mandated role in the management of any incident of national significance and the associated ICS training and certification requirements placed upon any agencies

receiving federal emergency response funding. The presentation included an introduction to the knowledge, skills, and abilities detailed in MRA Policy 105.1 for mountain SAR technicians.

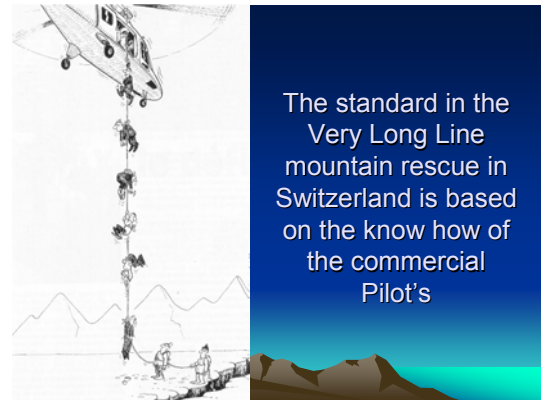
Comment: Hourihan gave an “Introduction to the Incident Command System” presentation at the 2003 IKAR Congress in Scotland. The ICS was a relative unknown internationally, and in many U.S. locales, at that time. It is noteworthy that three years later it is the federally mandated “standard” for incident management; tied directly to the receipt of federal funding. (Hourihan)



## Session 12 Pat Fauchère, Rescue Organization of the Canton of Valais (OCVS), Switzerland

Mr. Fauchère's presentation detailed the development of the "Very Long Line" helicopter rescue technique in Switzerland and associated pilot training requirements. A very thorough coverage of this presentation can be found in the 2006 IKAR Air Rescue Commission Report prepared by Ken Phillips, U.S., and Marc Ledwidge, Canada.

Comment: Pat Fauchère is one of the most experienced rescue helicopter pilots in the world, with experience in the Alps, as well as Nepal, India, and throughout the Himalaya. He speaks excellent English and welcomes communications from interested rescuers in the US. He can be reached at: [pat.fauchere@bluewin.ch](mailto:pat.fauchere@bluewin.ch).



## Session 13 Markus Eck, Pieps technical presentation

The representative made a claim that Pieps had made a significant breakthrough in transceivers that can deal with multiple burials. The new transceiver can detect other transmissions and adjust the timing of the signal so as to avoid the natural "masking" effect of multiple transmitters. See the Pieps home page at: <http://www.pieps.com/EN/index.php?cmd=frontendHighlightsSpecialAbilities>

Results of studies by SLF Davos (made in 2000) shows:

Number of burials	Number of accidents	Number of affected people	Cases [%]	Affected people [%]
2	320	320	72.7%	48.0%
3	72	144	15.9%	20.0%
4	10	40	2.2%	3.0%
5	27	54	5.9%	6.0%
6	10	20	2.2%	2.0%
7	3	6	0.7%	0.5%
8	1	2	0.2%	0.1%
9	1	2	0.2%	0.1%
Gesamt	484	698	100.0%	100.0%

- Over 50% of those buried are the victims of multiple burials
- Burials where 2 victims are in close proximity are the big problem!
- In cases with more than 2 victims we can assume that most of these cases will most likely resemble either a step by step single or a double burial search!
- Signal overlapping happens during trancing of beacons with different periodic time and/or different impuls duration.

Before the presentation was over it was challenged by a number of rescuers (and representatives of other transceiver companies) and the next two hours basically degenerated to a series of opposing claims.

Note: IKAR takes no position on this type of dispute and it may take some time for users to evaluate the new technology. (Lorenz)



## Session 14 Albert Wenk, Mammut Mountain Equipment.

### Bungee Jumping Accident

Last summer three young men set up a bungee jumping system from a high modern bridge in Austria. They were experienced and used quality "top of the line" equipment. They set the anchors properly and used a double rope for safety but when the first jumper left the bridge both lines failed and he fell to the bottom of the gorge. Although he survived, the jumper is blind and permanently disabled.



Accident Site

A careful analysis of the accident by the rope manufacturer revealed the following; several factors caused the failure. High winds, at the time, caused the rope to be abraded as it passed across the underside of the bridge. The abrasive pipes could not be seen from above when looking down from

the bridge. The second factor was that the jumper left the bridge 20 meters from the main anchor, causing an unplanned pendulum effect on the ropes.



The bungee ropes have 50% elasticity and one was intentionally made 3 meters (about 10 ft.) longer than the other. The theory was that the failure of one would place the load on the longer rope. But, when the first line failed (apparently at the knot tied to the jumper), the second rope took all the force causing an explosive reaction back along the line and damaging it enough to prevent it from holding the fall.

Note: Mr. Wenk provided the following “lessons” at the conclusion: All ropes have limits and a second rope may not guarantee safety. Avoid sharp edges that might not be

apparent from the anchor point. Consider the impact of wind and possible pendulum movement of the rope. Although we don’t use these high elasticity ropes in mountain rescue, there may be some valid lessons here. (Lorenz)

## Session 15 Dr. Itzok Thomasin, Physician, Slovene Mountain Rescue

### New Developments in Mountain Medicine Capability.



Medical treatment in the mountain environment is different to that in other rescue operations

There are now 16 locally certified Mountain Emergency Medicine physicians in Slovenia, each maintains his own medical rucksack at home that allows immediate response. All these doctors must work in emergency medicine and have the mountaineering skills necessary to perform in the mountains. They have regular training and recertification requirements to keep up their proficiency.

Slovenia is working to integrate physicians into mountain rescue at the earliest stage, flying them to the scene as part of the initial response whenever possible.

Equipment today is lighter and more durable, and can perform functions not considered possible a few years ago.

Comment: Unlike the U.S., where most mountain/backcountry medical responses are handled at the paramedic level or below, Europe relies heavily on physician involvement during on scene response. Despite that regional peculiarity, the need for mountain savvy, appropriately equipped medical personnel can not be overstated. Work within IKAR’s Alpine Medicine Commission leads the way in the development of mountain medical protocols and innovations. (Hourihan)

### ICAR MEDCOM GUIDELINES AND RECOMMENDATIONS ARE INTENDED FOR:

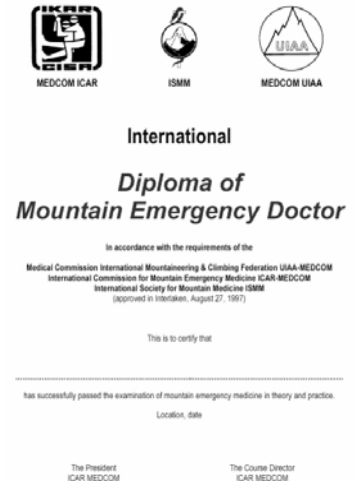
- Mountain rescue doctors
- Mountain rescuers
- Emergency doctors
- Rescue first responders
- Rescue organisations
- Mountaineers (some)
- Local authorities (some)

## Session 16 Dr Herman Brugger, President, IKAR Alpine Medicine Commission

### New international diploma program in Mountain Emergency Medicine (MEM)

IKAR, UIAA and the International Society of Mountain Medicine (ISMM) have a new certification program that has been ten years in the development stage. At the end of his presentation, Dr. Brugger awarded the first diploma to Dr. Gunther Sumann of Germany. Required elements of the diploma program include a 40 hour rescue medicine course and as well as a two week basic MEM course. There is a separate module for physicians who are qualified to fly in helicopters. According the speaker this opens a new era in mountain medicine, and will lead to an increased level of qualification and effective response.

During the past year the first IKAR sponsored training for physicians and paramedics was held in Patagonia at the high mountain school of the Argentine Army in Bariloche.



### Demonstration of History and Techniques by the Slovenia Mountain Rescue Organization

The Slovenian hosts put together an impressively organized demonstration of key rescue techniques that they use, ranging from helicopter hoisting and short-haul systems, to a stranded climber pick-off technique. The program began with a demonstration of early techniques by mountaineers in period costume with a subject evacuated by a rescue pole.



The second presentation was the rescue of a slightly injured climber with the help of a Gramminger Rescue Seat (left). The team at the anchor point sent a rescuer down to the injured climber by rappel, the subject was provided first aid and then placed in the rescue seat. The rescuer and subject were then pulled up to the anchor point by the team above.

The third presentation showed a highline transport of an injured climber (right) and the fourth part demonstrated the use of two helicopters, both UH1-B Hueys. One was operated by the Slovenian military, the other by the police. In the first case, the rescuers were lowered via a cable and winch, in the second the subject was evacuated by



helicopter using the litter bag. The last presentation showed the pick off by helicopter from a steep rock wall by a rescuer lowered by cable (left).

The handout for the field program ended with this note:

"As the work of mountain rescuers is very dangerous and demanding, the only guarantee for safety is constant training, caution and respecting as well as exchanging experience."



**Note:** Slovenia is a newly independent country, having just recently joining the EU, and the level of resources and equipment is much less than their neighbors to the north. For example, the use of single engine Hueys instead of the new EC-145. But the Slovenes use what they have effectively and put on an impressive demonstration. Although the Gramminger rescue seat described above could not be found on the internet, there was a similar one demonstrated during the equipment demos (right) and the seat was apparently named after the mountaineer described in the book “A Climb Up Hell”. (Lorenz)

<http://www.amazon.com/Climb-Up-Hell-Jack-Olsen/dp/0312194501>



**Equipment Displays:** There was a separate display area for vendors and it was open during the entire conference. The numerous manufacturers were represented including: Back Country Access, Ortovox, Peips, Tyromont, and Petzl.

Two boxes of brochures from U.S. delegation sponsor CMC Rescue were handed out and they were eagerly received by the rescuers.

## Saturday Program:

### Session 17 Dr. Herman Brugger, President, IKAR Alpine Medicine Commission

#### Influence of Equipment on Avalanche Mortality

We now have the first significant statistics that indicate the degree of protection offered in avalanches by equipment such as transceivers and air bags. Confirming previous research, statistics continue to show that the survival rate is much higher for people found within 20 minutes of burial. The increasing use of air bags and ABS systems (primarily in Europe) has resulted in some interesting statistics. The speaker concluded that “Statistics show slightly improved survival rates for ABS over transceivers. But he warned that this may be misleading because ABS is not as widely used, and further development should be encouraged. Of note, the reduction in mortality with the use of airbags was deemed “highly significant”.

Note 1: Some of the data during the conference was simply a restatement of the obvious. For example, that people are more likely to survive if they have a transceiver. But the continued accumulation of data can make a contribution to the field, and help us in making an informed decision about the purchase and use of avalanche equipment. (Lorenz)

Note 2: At the end of the presentation the speaker made a voluntary disclosure: That he had no financial links to any equipment manufacturer. This was an important step, and should help rescuers sort out potentially conflicting claims about the effectiveness and safety of equipment. Hopefully this trend will continue at this type of conference. (Lorenz)

Two initiatives of the Avalanche Commission were mentioned during this presentation, including a solicitation to equipment manufacturers to encourage research and development of a device that find avalanche victims who are buried without a responder (such as RECCO) or a transceiver. Additional work is underway to refine the width of search strips during an avalanche search.



## Session 18 Catalonia Mountain Rescue, Spain

Recent Crash in the Pyrenees of the new EC 145 helicopter on 5 June 2006.

The speaker indicated that there is concern about the safety of the aircraft in the mountain environment. Here is a write up found on the web at: <http://pistehors.com/news/ski/comments/the-dangerous-job-of-the-sr-worker/>

The crash of a Eurocopter 145 belonging to the Sécurité Civile in the Hautes-Pyrénées department brings to 8 the number of mountain rescue workers killed since December. The accident occurred during a training exercise close to the ski resort of Gavarnie. Three members of the mountain rescue services were killed in the crash and a fourth seriously injured. The accident happened at around 12h30 just after the pilot and mechanic from the Sécurité Civile had collected two members of the CRS (specialist mountain police units) from Gavarnie. The helicopter burst into flames after crashing at 3,000 meters altitude in an area that was difficult for rescuers to reach.

## Session 19 Alpine Medicine Commission announcements

Announcement of web availability of new **“Time is Life” DVD**. **“Medical Training in Avalanche Rescue”**

On this DVD you will find

1. A series of self running presentations (total of 78 minutes) in ten languages about practical and medical aspects of the avalanche accident, playable with any DVD player (PC or stand alone).
2. A Power point presentation for PC or Mac OS of 137 slides and videos for complete or selected oral presentations.
3. An interactive test and evaluation, as well as handout material.

The DVD is intended for skiers, snowboarders and mountaineers, who walk or ski in snowy mountainous terrain. It is also addressed to rescue personnel, paramedics and physicians who are, or may become, involved in avalanche rescue. It is composed of numerous photographs and videos focusing on practical and medical aspects of an avalanche accident. In addition, the impact of equipment to improve your survival is discussed. It is based on an international consensus of opinion of the most experienced experts in this field and offers a unique program for training in avalanche rescue.

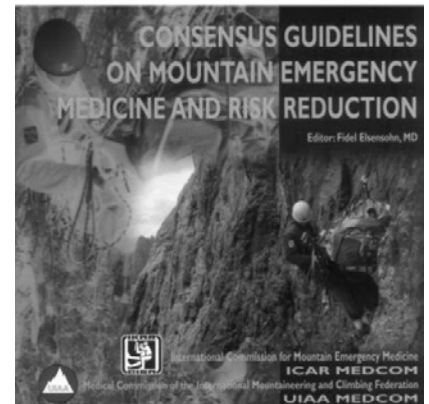


Announcement of web availability of publication from IKAR: **“Consensus Guidelines on Mountain Emergency Medicine and Risk Reduction”** Ed. By Dr. Fidel Elsensohn and Dr. Ken Zafren

Sample of Contents:

1. First Aid Training Guidelines for Mountain Rescue Service Members.
2. Qualifications for Emergency Doctors in Mountain Rescue Operations.
3. A Modular First Aid Kit for Alpinists

4. Treatment of Dislocations and Fractures
5. On Site Treatment of Avalanche Victims
6. On Site Treatment of Frostbite for Mountaineers
7. Activation and Rational Use of Helicopters
8. Emergency Treatment of AMS and High Altitude Pulmonary Edema
9. Hiking Sticks in Mountaineering
10. Nutrition in Mountaineering
11. Portable Hyperbaric Chambers
12. Recent Developments in Mountain Medicine Education



This booklet (130 pages) includes the efforts of the IKAR Alpine Medicine Commission that have been translated into formal recommendations. Dr. Ken Zafren, U.S., MRA was a major contributor. There are a total of 29 short articles and recommendations included.. Also enclosed is a CD Rom that includes translations into six languages, but the main text is in English. To order: <http://www.ikar-cisa.org>

## **Session 20** Christopher Berclaz, Swiss Mountain Rescue.

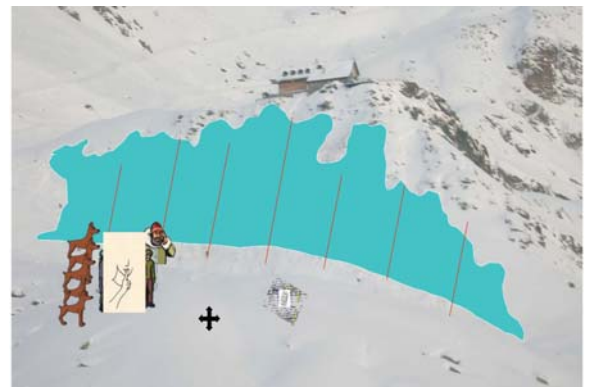
### Avalanche Accident in Western Switzerland, January 06.

This was a graphic presentation of a very unusual incident at a mountain hut in Switzerland. The caretaker was shoveling just after a massive snowfall. After losing his shovel down the hill, he attempted to ski down to the spot but triggered a massive avalanche in which he was buried. He had no transceiver, but did have a cell phone. The rescuers were promptly on the scene, in less than 15 minutes, since the hut was serviced by a mechanical lift. During the first three hours, the searchers used dogs and probing techniques without success. At that point, the physician on the scene went into the hut for a break



and received a cell phone call from the buried subject (Are you looking for me!?) who had spent the three hours conscious and slowly maneuvering the phone to his mouth. The subject was found by walking with a cell phone on the surface looking for a point with the strongest signal.

Another unusual aspect of this search was that the subject was 10 meters (30 feet) outside the debris field. He had apparently been “blown” or “propelled” beneath some soft, untracked snow with a very low density. This allowed him to move and breathe, even though he was buried about 2 meters below the surface. The speaker said that some lessons learned here included the fact that the subject may not always be in the likely zone directly below the point last observed. And this is apparently the first reported case of a buried subject calling on a cell phone.



## Session 21 Ion Sandolu, Romania Mountain Rescue

Recovery of bodies from Avalanche area 30 or more days after burial.



This was a huge avalanche in which four persons had been missing for an extended period of time. The total of the snow in the debris field was estimated to be 2 million cubic meters. The first three bodies were located using a variety of methods, including metal detectors. Early in the search, a number of dog teams were brought in from neighboring Hungary, but the dogs had no experience with avalanches and they were completely ineffective. This resulted in a number of holes dug in the snow to a depth of 10 meters (30 ft), but none of the “alerts” were near the buried victims. Finally, the speaker showed a demonstration of an improvised device, using fire hose, to run water through the snow as a means of search. Natural melt water was gathered above the search area and picked up by three hoses. This allowed the searchers to make a hole more than 10 meters (30 ft) deep in only 3-4 minutes, even with low pressure water. The last victim was finally discovered using this method.

Comment: Romania is a new member of IKAR. Their mountain rescue units are often challenged by the cost of new equipment developments, but we can benefit from some of their innovative techniques. (Lorenz)

### Final Comments and Report from the Terrestrial Rescue Commission

This was a very successful meeting with record attendance; over 200 rescuers from more than 30 countries participated. This year, there was an improved capability for simultaneous translation, with professional linguists in four languages; German, French, Slovenian and English. Just a few years ago, it was difficult to hear anything other than German, and more input from the East Europeans and North Americans means more demand for English. This year, there were representatives from Japan, for the first time, and new members like Romania and Greece favor the English language



Slovenian host Danilo Skerbinek with  
IKAR President Toni Grab (right)

Other improvements this year included more practical demonstrations, rather than theoretical debates. Of course, there are always exceptions, with a few overly technical presentations making very fundamental points. We have good technology with PowerPoint and movie clips available for every presentation. This is largely due to the efforts of IKAR President Toni Grab, who is now in his second term. The IKAR website is much improved, see <http://www.ikar-cisa.org/>, but still there is much room for improvement, particularly in English content.

**Next year's meeting** will be in Pontresina, Switzerland, 17-21 October 2007. Pontresina is in southeast Switzerland very close to St. Moritz. It is about a three hour train ride from Zurich. IKAR has a long history in Pontresina, meeting in 1956 and 1967. Details will soon be posted on the IKAR website.

Terrestrial Rescue Commission President Bruno Jelk, Switzerland, announced the establishment of a standardization/certification working group to analyze international developments on this issue and prepare a report for next year's meeting in Pontresina. Terrestrial Commission Vice-President Gebhard Barbisch, Austria, encouraged all members to submit annual mission statistics including total: personnel, hours, subjects (m/f), activity category, and fatalities. He indicated that a new statistics form would be available on the IKAR website in December, 2006.

## **General Congress:**

A number of new countries/organizations were voted into full IKAR membership during this meeting: Serbia, Greece, Japan, Spain (two organizations, Aragorn and Catalonia), the Canadian Ski Patrol and Guides Association, and an emergency physician's organization from Austria.

President Grab congratulated the Slovenian hosts on a very successful meeting, as well as all participant organizations on their hard work on behalf of international mountain rescue efforts. He stated that, although a final decision regarding the theme of the 2007 Congress had not been determined, it was very likely to be "Standards and Norms".

Respectfully Submitted,

Dan Hourihan, Alaska Mountain Rescue Group, MRA  
Rick Lorenz, Olympic Mountain Rescue, MRA