TERRESTRIAL RESCUE REPORT

International Commission for Alpine Rescue

Kommission für Bodenrettung • Commission pour le Sauvetage Terrestre • Commission for Terrestrial Rescue

IKAR-CISA

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INTRODUCTION

The International Committee for Alpine Rescue (IKAR-CISA) met for its annual congress in Cortina d'Ampezzo, Italy, between 12 and 16 October 2005. Cortina has a population of about 8,000 full time residents, and lies in the province of Veneto in the magnificent Dolomite range of northern Italy. It is considered one of the three most spectacular ski resorts in Europe, and was home to the 1956 Winter Olympics. Some well known movies were filmed in the region, including the Pink Panther series with Peter Sellers, and the infamous Cliffhanger with Sylvester Stallone.

The theme of this year's meeting was "Search 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 United States and the MRA at Cortina were Dan Hourihan and Rick Lorenz (Terrestrial Rescue Commission), Dale Atkins (Avalanche Rescue Commission), Ken Phillips (Air Rescue Commission), and Ken Zafren (Alpine Medicine Commission). Simultaneous translation was

provided for most sessions in English, French, German, and Italian with the latest equipment and headphones, as well as sound proof booths for the translators. Attendance by the U.S. delegation was made possible by a grant from CMC rescue equipment.

Delegates arrived in Cortina on the afternoon and evening of Wednesday, October 13, and the regular sessions began with a grand opening and welcome at 0830 Thursday morning. Delegates stayed in two hotels nearby and the general meetings were held in a large heated tent rented for the occasion. The meals and social functions were held in the Hotel Splendid Venezia, just a five minute walk from the general meeting area. Next door to the meeting area there was a vendors' exhibition with displays of outdoor and rescue equipment.

Hotel Splendid Venezia, Cortina d'Ampezzo

GENERAL TERRESTRIAL RESCUE COMMISSION ISSUES

This is taken, with permission, from Kirk Mauthner's (Canada) summary.

The Terrestrial Commission commenced their program with a brief review of existing IKAR Recommendations and Standards. These can be viewed on a publicly accessible website at www.ikar-cisa.org.

A motion was put forward to reconsider the carabiner strength requirement for work under a helicopter. A number of years ago, following an incident where an aluminum carabiner unexpectedly failed – with just a one-person static force being applied to it – the Terrestrial Rescue Commission made a recommendation that the minimum breaking strength of the primary attachment carabiner be at least 50 kN. This magnitude of strength requirement is being reconsidered as there are not many types of carabiners in production that meet this criteria, and more importantly, it is also being questioned since this value was not really based on anything other than it was 'very strong'.

A small working group, consisting of representatives from Switzerland, France, and Kirk Mauthner from Canada, attempted to draft up a revision to the strength requirement. Following considerable discussion, an agreement amongst this group was made to at least attempt to provide a basis or foundation for any recommendation. In other words, it was important to try and provide a premise for the recommendation so that in the future, the premise itself can be questioned for its validity, with the hopes that this leads to more sound IkAR recommendations.

Regarding the Carabiner Recommendation, the working group came up with a proposed minimum strength requirement of 36 kN, made out of steel. The primary premise for this strength requirement was based on the fact that 3 people could be hanging off this connection point, and since the maximum allowable peak force per person is 12 kN (from EN/UIAA standards), then there did not seem to be a need to exceed 3 times that value. Granted, there are inherent weaknesses with carabiner designs (i.e. weaker as more force is placed towards the gate side), but it was felt that not enough information was at hand to come to any strong conclusion. Also, the addition of the requirement that the carabiner be steel was added since it was felt that it is a distinct advantage to have the ductility of steel over aluminum, considering that this carabiner could easily be banged or

knocked around as part of normal operations. The objective now is for all the delegate countries to go back and think about these proposed revisions for consideration at next years' IKAR Congress.

THURSDAY, OCT 13, TERRESTRIAL RESCUE AND AVALANCHE RESCUE JOINT SESSION

Rappel accidents, **Concerns with Small Diameter Ropes:** Dominik Hunziker, Swiss Alpine Club-Mountain Rescue Service. (Summary provided by Kirk Mauthner, Canada)

With climbing ropes becoming thinner, there has been a documented increase in incidents (mostly rappelling and belaying) where insufficient gripping ability has resulted in lost control of the rope. Of note, was that even though ropes are rated as either Single (full), Half, or Twin ropes, there is no warning or recommendation by the rope manufacturers for users to use more effective rope friction methods with the thinner ropes. Also, most belay and rappel devices are designed with larger rope diameters in mind. Currently there exists an educational and equipment gap for these thinner ropes. Accident prevention is the primary thrust of this topic, and it is the rescue community that is noticing the pattern of conditions leading up to incidents. Discussions followed this presentation on what role or mandate IKAR has regarding accident prevention, and how IKAR could best serve to prompt other related organizations to address these issues. Dominik Hunziger will be the key contact.

Comment: Manufacturers are reluctant to be specific and/or precise when recommending the proper use of their equipment. The risk of legal liability requires a general disclaimer and you will find it in all the catalogues today. Nevertheless, if we note that the manufacturer could give some basic warning that is currently not provided, that should be brought to the attention of the manufacturer. Please see the section on standards later in this report. (Lorenz)

Rescue Specialist Training: Hans Martin Henny, Swiss Army

The speaker described efforts to create a uniform standard and training program for rescue specialists who may be called to function in any one of three countries, Switzerland, Austria and Germany. Under certain circumstances, military and volunteer rescuers may be assigned together to operations beyond their borders. The new standards will have minimum standards for a new combined course including:

- avalanche and medicine,
- rescue actions with static ropes,
- rescue actions with helicopters,

Three meetings have been held with the following results:

- completed the master plan;
- arranged technical conditions;
- put together a set of common training material;
- fixed the common training standard; and

worked out basic foundations for the course. In November 2005 there will be a training program in place with an approved Train the Trainer course, it will be hosted in Switzerland.

Comment: Regional training programs could benefit volunteer mountain rescue activities in the US. Although US teams rarely if ever go out of the country, we are regularly called to jurisdictions outside

of our own normal area of responsibility. The idea for a “combined course” or regional training should be considered by the MRA regions. (Lorenz)

Rescuers Safety and Rope Choice (**Maximizing Effectiveness of Rope Rescue Backup Systems):** Kirk Mauthner, Canada

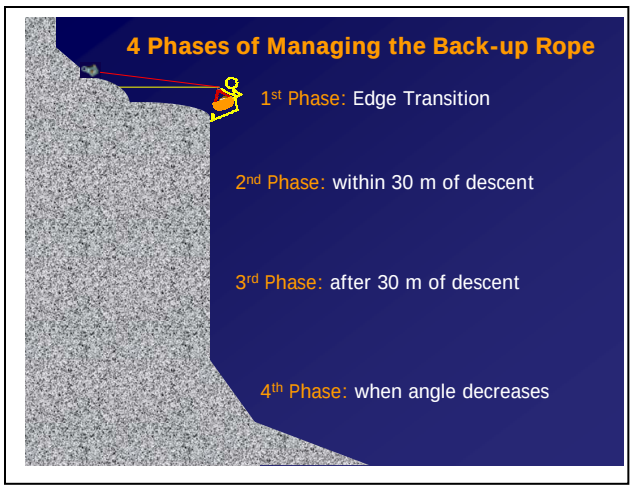
Text provided by Kirk Mauthner

The primary objective of my presentation was to summarize the key advancements in how to manage a back-up rope system (safety or belay system), based on essentially more than 20 years of research on that topic. The following is a condensed version of the full presentation.

First it was important to show that mainline system failures can and have occurred. A systems analysis approach was used to identify and categorize the key factors that can affect a mainline system failure. These key categories are: Human Factors, Equipment and Materials, Techniques and Methods, and Environmental Factors. By understanding the factors that can affect failures, preventative measures can be employed to reduce the chance of an incident taking place.

Proper training, good technique and good communication can prevent most causes of mainline system failure...
...but not all...and the consequence of failure is severe!

However, since not all factors can be managed to an ultra-reliable level, back-up (safety) systems are still employed in situations that carry high consequence if failure occurred. A risk analysis of the transit of a rescue load was divided into four phases. The <u>First Phase</u> is the edge transition. It is here where the highest potential forces on a back-up system can occur since the belay rope might be briefly elevated off the ground during an edge transition. Once the load is past the edge, the system essentially becomes a ‘top-rope’ belay. A back-up system should therefore be fully capable of quickly arresting a falling load, and maintain its integrity, should anything happen to the mainline system during this. The concept of being able to catch a 1 m drop of a 200 kg mass on 3 m of rope, and stop the load in a meter or less with a peak force of no more than 15 kN was presented as a test method used in North America to assess the minimum belay system competency considerations. Additionally, arguments were provided showing the advantages of maintaining a separately anchored and managed back-up system, with the belay rope kept only hand-tight, with no slack in the system.



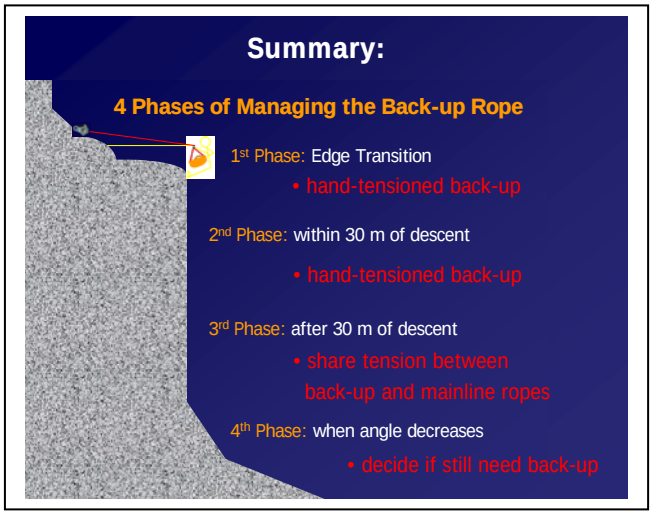
The <u>Second Phase</u> takes into account the management of the back-up system when the load is being moved with the first 30 meters of back-up rope in service. Through graphic video-taped demonstration drop tests, a very strong argument exists to use “Static” ropes over “Low Stretch” (based on the standard established by North America’s Cordage Institute), simply because of the significant difference in ‘settling-in’ difference between the two rope types. From a percentage point of view, Low Stretch ropes elongate basically twice as much as Static rope, yet the peak force of just settling-in to a back-up rope will be essentially the same (a well

understood concept in physics), regardless of the elongation rate, or lack thereof, of the rope type being used. The demonstration tests also clearly showed the significant risk of using “Dynamic” ropes as back-up ropes. Separately, for several reasons (from understanding factors affecting mainline failure – such as the rescuer may still be trying to get ‘used-to’ the load, and is still more prone to stumbling and inadvertently raking the ropes across edges), the back-up rope should still be only kept hand-tight, with no slack in the system. In other words, and un-tensioned rope is less likely to be damaged than a tensioned rope.

The Third Phase considers what to do with the back-up rope after 30 meters of rope is in service. Once again, demonstration tests show that even when Static rope is used, that just the amount of elongation due to settling-in becomes a serious concern. Also, a hand-tight back-up rope can still cause unnecessary contact with terrain; potentially causing a greater risk of rock fall than if the back-up rope was tensioned. Therefore, A switch in thinking is required due to a shift in the respective risks; as such, it is then recommended to now apply tension to the back-up rope such that the mainline and belay (safety) line are essentially sharing the load equally. The assumption is that the rescuer should by now have good control of the load and therefore a stumble is much less likely, and the rescuer will have a good feel for the descent route (again, the chance of a pendulum is significantly reduced), and therefore tensioning the back-up rope will help manage and mitigate the risks associated with rope induced rock-fall and excessive settling-in distance due to rope stretch. Several methods were shown on how to apply tension to back-up rope systems.

The Fourth Phase may or may not exist. For the remainder of the rescue load transit (e.g. a lower), if the angle of the slope is reduced to the point that a back-up rope system would not really provide any meaningful protection, and the consequence of a mainline system failure is low, then it is recommended to remove the back-up rope. This makes it easier for the rescuer to manage the load, and it also frees up one rope that could potentially be used to join to the existing mainline to allow a longer distance that the load could be lowered before re-anchoring. In summary, the presentation consisted of systems analysis of factors affecting a mainline failure, considerations for assessing the competence of a belay system based on the relative worst case event, and a breakdown into four distinct phases of the key considerations of and techniques for managing a back-up rope system.

This presentation was received with considerable interest and it generated numerous questions. At the conclusion of the question and answer session, Mr. Bruno Jelk, the Chair of the Terrestrial Commission put forth a motion that the basic premises of this presentation be formed into a formal IKAR Recommendation. Together with delegates from France, and Switzerland (basically a representative from each of the three major languages – English, French and German), I participated in the drafting of additions to an existing IKAR Recommendation. Below is the draft presented to the Terrestrial Commission.



International Commission for Alpine Rescue
Commission for Terrestrial Rescue
Recommendation REC B 0005 of the Commission for Terrestrial Rescue
of June 24, 2000 about Redundancy by lowering or raising people with fiber ropes
Cingov (SK) 1999 Revision in Chamonix (F) 2000
Revision in Cortina (I) 2005

The IKAR Terrestrial Rescue Committee recommends that for lowering or raising people with synthetic fiber ropes, two independent anchor systems – practically separated – shall be used. One anchor system is for the Main (load) rope, and the other anchor system is for the Safety rope. Dynamic rope (e.g. UIAA/EN 892) shall not be used as a Safety rope. The two rope system shall be rigged with some form of "Auto-lock" (on either the Main or Safety rope, or both ropes) to prevent an uncontrolled fall of the rescue load if for some reason the operators of both ropes accidentally lose control of their respective ropes (e.g. due to rockfall, etc.). A practical separation of the load rope and the Safety rope is necessary to prevent damage and/or shearing of both ropes at the same time. The Safety rope must be kept tight over the whole rope length. Slack shall not be allowed to develop. Within the first 30 m of rope in service, the Safety rope can be kept "hand tight". When lowering loads, once more than 30 m of Safety rope is in service, it shall be pre-tensioned to share the load between the Main and Safety ropes. When possible, this can also be done while raising loads. Any comments or feedback regarding the draft revision would be greatly appreciated. Please forward them to kmauthner@telus.net.

Comment: In the western US, the Rigging for Rescue (RFR) standards have resulted in substantial improvement in technique, equipment and standardization for US teams. See their website at http://www.riggingforrescue.com/ . At IKAR this year, Kirk Mauthner made a major contribution, as you can see from the above proposal. Back up systems were adopted as a formal recommendation by IKAR. (Lorenz)

Search in the Pyrenees: Bruno Vincent, France

Mr. Vincent summarized a search which took place in the Pyrennes Mountains in December, 2000, along the French and Spanish border. Fourteen people, involving five different groups, were reported missing in mountainous terrain during a severe winter storm with sub-zero temperatures and winds in excess of 100 miles per hour. More than 100 trained searchers searched for one week in poor conditions. Ultimately, nine of the missing were found deceased and five survived. The mission was seriously complicated by several factors:

- Inaccurate and incomplete searching and planning data at notification.
- Very large and unmanageable theoretical search area at search initiation.
- Poor weather.
- Media and political pressure which resulted in the imposition of large numbers of untrained and ill-equipped spontaneous resources.
- Coordination between French and Spanish authorities.

Comment: This tragic incident, when viewed in retrospect, highlights many of the negative factors encountered, almost genetically, in large and small searches throughout the world. Some, such as incomplete or inaccurate information, weather, and large theoretical search areas, are unavoidable. Coordination problems, effective media and political management, and dealing with spontaneous resources can be mitigated with preplanning efforts including joint training, multi-jurisdictional agreements, and written protocols. (Hourihan)

Search and Rescue Services in Switzerland: Vincent Favre, Switzerland

Professional mountain guides in Switzerland now receive special rescue training; there are about 50 currently with certification in helicopter evacuation and additional skills. In Switzerland, the federal law requires coordination of rescue services, and Station #144 is located in the canton (county) with the most mountainous terrain. Overall, there are thirteen Swiss regions that are part of a coordination network that involves all aspects of search and rescue, including volunteers. In addition, they are prepared to coordinate immediately with authorities in neighboring countries including Austria, France and Italy because their mountain areas are closely connected.

In Switzerland, there are two emergency call systems for the public and they require constant coordination. The police are in charge of general searches, but this can change if the search becomes concentrated in the Alpine environment. The search leader (incident commander) makes the initial decision on the types of search resources that will be required, and the degree of skill for the area to be searched. Cost is a factor and the family of the victim is commonly presented with a bill for more than $20,000 for a rescue. The following is a report on the Zermatt rescue service provided by Bruno Jelk (Chair, IKAR Terrestrial Rescue Commission), who is in charge of the Zermatt station:

Bruno Jelk

For those who get trapped, injured or simply bottom out, help is at hand in the form of Zermatt's rescue service, made up of a terrestrial mountain rescue team and a helicopter rescue team provided by Air Zermatt. The terrestrial team boasts 12 specially-qualified mountain guides and eight people who handle the avalanche rescue dogs. If more terrestrial help is needed, reserves can be called out from the ski school and the cable car companies.

Air Zermatt, a commercial helicopter company, provides the air support. Roughly a third of all it's flights are rescue missions and it offers a round-the-clock service, 365 days a year. From its base close to Zermatt's railway station, crews made up of a pilot, paramedic and doctor fly out to the accident scene and land as close as they can. There, they stabilize patients and transfer them to hospital. Often, rescue missions are a joint effort between the terrestrial teams and the helicopter crew. The terrestrial teams take over when the helicopters can't reach an accident scene, normally because of weather conditions.

However, the rescue service comes at a cost and, with more than 1,000 missions a year, the numbers soon add up. The terrestrial mountain team has an annual budget of SFr500,000 ($343,880) whereas each time a helicopter is called out it costs between SFr2,000 and SFr15,000. The difference in price depends on how long the rescue takes and the amount of drugs and equipment used to stabilize the patient. A subsequent transfer to a hospital in the nearby valley towns of Brig and Visp also adds to the costs, which are usually met by insurance companies. It's a slick operation run by everyday heroes, who really do save lives,

but according to the rescue services the Matterhorn still manages to claim more than 30 people each year.

Source:http://www.swissinfo.org/sen/swissinfo.html?siteSect=41&sid=1236756

Comment: In Switzerland, there exists a mix of professional and volunteer rescuers and, additionally, professional mountain guides are often part of the equation. Cost recovery is generally pursued in Switzerland and the Alpine regions of Europe, contrary to the practice in North America. In some areas, such as Austria, an inexpensive insurance policy (about $20) is obtained by most people who go to the mountains and this is used to fund volunteer rescue organizations. It avoids the problem of dealing with a huge bill following a search or rescue. It also provides a secure source of funding for volunteer rescue organizations. (Lorenz)

Search Operations in Switzerland: Bruno Jelk, Switzerland

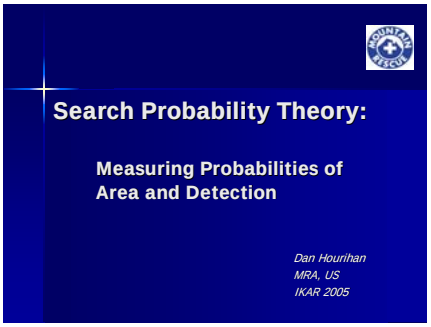
Mr. Jelk provided an overview of Search Operations as they are undertaken in Switzerland and, specifically, out of the Zermatt Rescue Station, which he directs. He outlined the stages of mission management from notification through mission termination. His steps included:

- Search Organization (Notification)
- Strategy Development (Planning)
  - Subject Profile
  - Subject area familiarity
  - Weather Conditions
  - Lost Person Category
  - History of Area
  - Witness Information
  - Medical Information
- Go/No Go Decision
- Dealing with Family Influences
- Active Searching
- Termination (Suspension)

Bruno discussed the factors to be considered in the termination decision including: survival probability, family agreement, and search area coverage. He recommended a waiting period be considered upon initial notification to determine if the subject/subjects were simply overdue. This consideration would be dependent upon the existing facts available.

Comment: Although not dissimilar with search management procedures employed by teams in North America, there does not exist a standardized protocol in the search for missing persons in Switzerland. (Hourihan)

Search Probability Theory: Dan Hourihan, United States (MRA)



Hourihan presented an overview of the procedure and techniques utilized in determining search area and search coverage by teams in North America. The foundation of this presentation was based on standardized methodology presented in current search management curricula (e.g. NASAR's Managing the Lost Person Incident Course). It included discussion on determining search areas based on

theoretical, statistical, and subjective analysis, area segmentation, and subject location probabilities. He also described the use of various types of search resources, their respective coverage expectations, and computing multiple search efforts.

Comment: This is new information to many in Europe. Much could be gained by bringing together North American and European, including Great Britain, practitioners in search management to share experiences, techniques, and processes. (Hourihan)

Use of Satellite systems in finding lost persons: Klemen Voluntar, Slovenian Mountain Rescue.

Transcript of his remarks:

It is very important for the rescue team to know their position all the time during a rescue mission, irrespective of the kind of rescue. It could be classic rescue, search mission in forest level or high mountains or even searching for the victims under a snow avalanche, the leader of the mission and leaders of individual rescue groups should always know their exact position and that of their team. Quick establishment of the exact missing person location, location of a snow avalanche or at least the assumed zone of the victim is also crucial. It could help in faster approach to the known location of the missing person (by foot, by helicopter), in choosing the most appropriate route, better and faster planning the safest route and eventual withdrawal or return of the rescuers.

In the search for missing persons at the forest level, and in high mountains, it may often require a large number of rescuers. Such a search often includes very extensive territory. Such missions are usually long lasting and happen in bad weather, at night and on every type of possible and impossible terrain. Therefore, in Slovenia, we use devices and software which are available on the open market with multiple uses. Those devices are simple and durable and their price is acceptable. The transfer of data should be made long distance by using the existing equipment and the consumption of energy should be low. The system should be useful in many situations. We hope that a rescuer or a dog handler shouldn't have extra work harder using navigation devices. We also want them to use this technology in their free time for their own safer movement on the mountains.

In Slovenia all the search activities are under police authority. In case of searching in high mountains the police call the Slovene mountain rescuers with search dogs to help. The main parameters of a search are promptly determined. We also determine a proper size of the search group, the ways of communication (even in searches on borderland between two or more states, in our case of Slovenia, Italy and Austria) and the main security request. The rescue team is completely independent and has full autonomy. The Communication Centre is professional department. All Centres are equipped with a basic navigation outfit for rough guiding of the search operation. All the gathered information is passed on to the head of intervention which enables him to put together the whole picture of the search.

The Centre communicates with the helicopter and other co-operating departments. Before he assigns the tasks, the head of intervention must have all the possible information. Based on them, he tries to accomplish the best possible picture of a missing person and his actions. He must consider the fact that we also search mentally disturbed people, children, potential self-destructive persons –

experienced leaders make better predictions of someone's behavior. As soon as possible he must fix searching areas and prioritize them based on significance. Based on the configuration of the terrain (overgrown, possible approach, intricacy) the size and boundaries of search areas are determined and then assigned to groups or even individual(s). Immediately the priority search areas are determined (the last place the person was seen, the surroundings of the buildings, caves, clefts…). If the areas are well known (perhaps with the help of local people) we can determine the concepts (methods) of searching.

Basic necessary equipment of a mobile base includes: a PC + backup power, radio station + backup power, topographic chart (map) of area. The operator and his assistant input data into PC immediately as they get them. They start to write the minutes book and on the electronic map they mark the area and significant spots (buildings, holes, heliport…). We must designate previously searched areas (perhaps the locals or friends or family). For each searching group the map (copy) of the whole area must be prepared. Consider the scale!! The mobile base must be located in a place to be able to cover communication with all the groups and if possible with the Centre.

After the decision on communication channels they must test it. GPS must be calibrated correctly – the height measurement is crucial, also the map date and measure units. The most common are degrees, minutes and decimal minutes (hdd; mmm,mmm). Before going on the terrain at least two rescuers must check the data of momentary position. Eventual differences must be eliminated immediately! Equal data is transferred into all GPS devices for the purpose of help on the unknown terrain. Don't forget the backup power.

SEARCHING METHODS:

1. Parallel: when the terrain is wavy or even plain the rescuers are searching in chain (parallel) from one side of the area to the other. The distance between them can be up to 100m if searching with dogs but never bigger that they are in visual distance (depending on terrain).
2. Spiral: in hill-like terrain when the parallel method is not suitable. When in front of a rescuer is hill or sinkhole the best solution is that operator direct him to top (bottom). The rescuer is then with the help of GPS investigating the hill (sinkhole) in spiral. This way the search is very thorough. The rest of a team is avoiding this obstacle and on the other side they form chain again for further parallel searching.
3. Zigzag: the operator is directing the rescuer to the starting point of a search. From that point on the rescuer is searching left and right from the path by himself (with the help of GPS). Generally the search is a combination of all three methods.

It is important to write down every departure on terrain of every individual, confirmed with his signature. In search activities there are too many people involved the operator to be able to remember all the names, especial if the search is lasting more than one day. In a case of an emergency (heavy weather, injury…) we must know exactly which individual or group is in trouble and his (its) position. In returning back to the base we should never just take a word of a fellow rescuer that everybody has safely return – everybody must report his arrival personally with signature!
The Centre and the Base can communicate with all participants. Under normal circumstances the head of intervention stays beside as operator. Only if a rescuer has need to communicate with the

Base adjust his frequency and talk – so we avoid confusion in reporting. In case of intervention on country border areas it was established best that every head of intervention has at least a primary and alternate predetermined frequency of neighboring countries (as Slovene captain has the frequencies of Austrian and Italian rescue services).

The way of communication is determined when preparing for intervention. If there is really no other way (the very last option) we can communicate through cell phones. Every rescuer has a mobile (smaller) radio station, the Base has usually larger, mobile or fixed communication centre. If the Base wants to be real support to the field operators (rescuers) good communication is crucial. The rescuers communicate with Base in cycles (most often they are called from the Base), when there is something new (finding someone or his personal belongings) and ALWAYS when they are leaving their area. Every movement outside assigned borders must be approved from Base. If communication fails the team leader's obligation is to notify Base as soon as possible. By uploading the GPS data from each GPS as the researcher returns to base, a detailed record is kept. In the map photo (Photo---), you can clearly see all the paths of all three rescuers. Yellow the points show points of communication with Base, red WPT are the points where the missing persons were found.

Comment: The Slovenians have developed a sophisticated way of incorporating GPS technology into their search operations, even providing a single combined graphic with all routes taken by searchers. I am not aware of this in current practice in the US, at least not in Washington State. One reason may be the fact that in Washington we often operate in forested terrain without the benefit of GPS. (Lorenz)

The Limits of Action in Searches for Lost Persons: Commander Bonneville of the High Mountain Police, France

Background: The birth of the current mountain rescue system in France can be traced to an incident on Mount Blanc in 1956. A mountain helicopter crash resulted in the slow deaths of three people and extensive publicity; all of France was shaken by the incident. Another climbing accident a year later, without a competent rescue response, resulted in a decision by the nation to take over the responsibility for mountain search and rescue for all of France. In 1958, the mountain rescue police were established on the theory that mountain rescue is a public service and French mountain rescue has operated on that basis ever since.

Today there are 250 full time mountain police in France, with their headquarters and training center in Chamonix. The career pattern for mountain police includes basic training and regular certification in all climbing, winter travel and rescue skills. There are exacting standards both in technique and physical conditioning, with an all weather capability. They follow the basic military principles in organization and mission accomplishment, and sometimes conduct training with the French military school for the high mountains in Chamonix. Overall, this brings a high degree of professionalism to mountain rescue in France.

Commander Bonneville's Presentation: In France over the past year there have been a number of cases of the use of "psychic assistance" in the search for last persons. The speaker believes that all possible sources of information should be used, and we should not automatically discount any source. He cited three examples of cases where this type of help might have been useful.

1. A businessman disappeared in Chamonix. He was last seen in a built up area and there was initially no reason to look in the mountains around the city. But his last cell phone

transmissions came from an area that indicates that he may have entered the mountains. This case was not solved.

2. A paraglider disappeared. He was wearing a cell phone at the time and calls to the phone seemed to indicate that the phone was still intact. A wing of the paraglider was found but the subject was not, and has not yet been recovered.
3. A third case was handled by PGHM (the mountain police) as a pure law enforcement issue, and there was some evidence that it may have been a planned disappearance.

At the conclusion, the speaker stated that French law requires that emergency calls be answered and that police may not ignore a request for a search. On the other hand, it is important to consider all relevant factors and alternatives such as staged disappearances and suicide. The numbers for this type of activity seems to be on the rise and we must not divert our resources away from those who need them.

Comments: France has one of the most highly respected mountain rescue services in the world, formed entirely of professional civil servants. Although a number of incidents of "psychic assistance" for searched were mentioned by Commander Bonneville, it was not clear whether any of them were cases where such information was responsible for the finding of a lost person. (Lorenz)

Note: In the US, mountain rescue can trace its roots back to the same year as Mountain Rescue of France, 1958. In the US we operate on the theory that mountain rescue is essentially a volunteer function. Although technically not "paid professionals", US mountain rescuers take pride in professional standards in their efforts on behalf of the US public. In 2008, both France and the US will celebrate 50 years of mountain rescue service, and we should plan some exchange with France as part of the commemoration. (Lorenz)

Results of Zermatt Workshop re: Rescuer Safety: Bruno Jelk, Switzerland

Mr. Jelk summarized the results of a workshop held in Zermatt, Switzerland which focused on those incident factors affecting rescuer safety. This workshop followed the work done at the 2004 IKAR conference in Zakopane, Poland. The theme of the Zakopane conference was "Safety of Rescuers". The work in Zakopane identified three main factors affecting rescuer safety: humans, nature, and equipment (see illustration). The Zermatt workshop further explored those factors and identified root causes and made mitigation recommendations.

Humans:

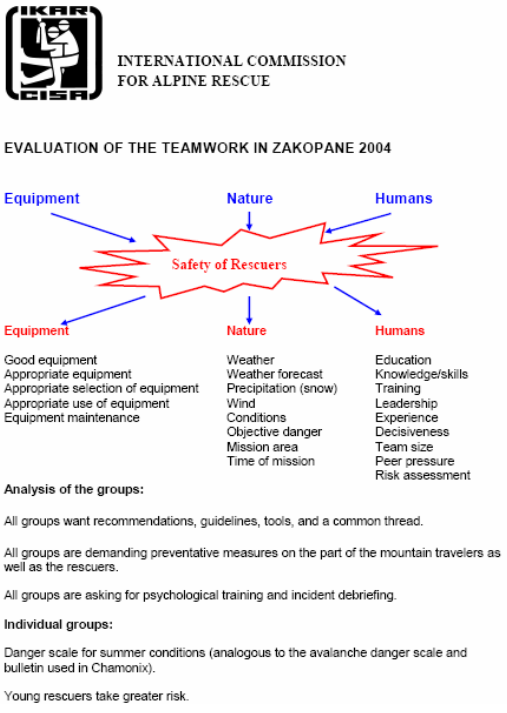
- New high risk activities
- Unnecessary cell phone alerts
- Bad terrain decisions

Weather:

- Weather
- Terrain
- Cataclysmic Events

Equipment

- Mission appropriate
- Functional
- Properly trained
- Helicopter training

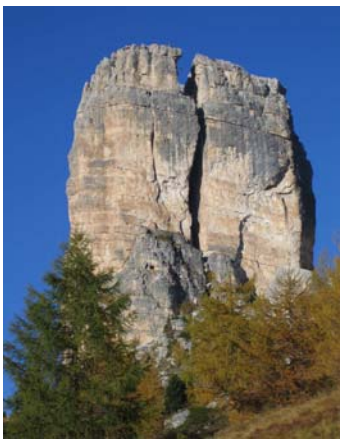


Bruno cited IKAR efforts and recommendations regarding equipment standards and manufacture, rescue techniques and training, and public education (PSAR). Additionally, he identified key considerations in any mission related risk analysis determination: subject survivability, rescue vs. recovery, terrain vs. daylight, and weather vs. aircraft.

Comment: IKAR plays a leading role internationally in the development of recommendations regarding rescue techniques, equipment, and rescuer safety. Although UIAA is the recognized leader in equipment standards, IKAR's focus is on the rescuer and their efforts in the mountains real time. It is expected that they will continue to lead the way internationally and, as here in the U.S., they wrestle with the concepts of standardization. Current U.S. efforts to type and credential wilderness and mountain rescue resources will have far reaching effects. (Hourihan)

Friday Morning Field Sessions: description by Kirk Mauthner, Canada (with his permission) and Dan Hourihan

Demonstration of Techniques by the Italian National Alpine & Speleological Rescue Organization (Soccorso Alpino E Speleologico Corpo Natzionale):



The Italian hosts put together an impressively organized and comprehensive demonstration of key rescue techniques that they use, ranging from helicopter hoisting and short-haul systems, to

counterbalance raise techniques used in caving, to a stranded climber pick-off technique using a hand operated winch and double-guyed gin pole. Six helicopters were involved in the exercise. Additionally, a ground search was conducted utilizing GPS tracking receivers and transmitters which track, real time, on computer generated map display. A DVD of all the demonstration events was going to be compiled but was not ready for delegates by the end of the conference. It is unclear at this time when the DVD will be available. Extensive hand held cameras (30+) were positioned throughout the exercise venues, including helicopters, and were broadcast, with a Director's coordination, on numerous wall mounted flat screen televisions in a large tent at the base of the primary venue, Cinque Torre (The Five Towers). Unfortunately, much of the rigging relevant to Terrestrial Rescue was out of view on top of a cliff, so details of the rigging are unavailable.

Comment: Italian mountain rescue teams receive considerable government subsidy for equipment, including vehicles, clothing, and technical gear, but the rescuers are all volunteers. The teams are organized as regional "stations", which operate with considerable, and often generational, tradition. (Hourihan)

Friday Afternoon Sessions:

Announcement of New Publication from IKAR: Consensus Guidelines on Mountain Emergency Medicine and Risk Reduction. Ed. By Dr. Fidel Eisensholm 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 Medical Commission that have been translated into formal recommendations. Our own Dr. Ken Zafren, Alaska Mountain Rescue Group (MRA), was a major contributor. There are a total of 29 short articles and recommendations included.. Also an enclosed CD Rom that includes translations into six languages, but the main text is in English. This is an excellent publication and was available at the conference in Cortina. Rick Lorenz carried back 20 copies and brought them to the MRA Winter Meeting in Salt Lake City. They sold out. You can send an e-mail to fmlorenz1@aol.com to inquire about the availability of additional copies.

Search Operations in Bulgaria: Ogynan Baldzhiyski, Bulgaria

In Bulgaria the mountains present somewhat less exposed and difficult terrain than other IKAR member countries, and of course the risk tends to increase with exposure of rescuers. But the same or similar questions are presented in terms of planning missions, including the question of when to start or finish a mission. In Bulgaria the Mountain Rescue Service is responsible for all searches and rescues at altitudes above 1,500 meters, with the Police responsible for operations below that altitude. In Bulgaria the Mountain Rescue Service has 700 volunteers and 42 paid professionals.

At present 40% of the mountain rescue operations in Bulgaria are for lost persons. In terms of lessons learned, the speaker recommended that the incident commander take time to consider the perspective of the lost person. Also it is important to consider the need for specialized tracking assistance. Finally, Bulgaria hopes to make better use of available rescue technologies, and this conference has been useful to that end.

Comment: As one of the newest members of IKAR and with much less resources than the other organizations, the Bulgarians are eager to join in the discussion. (Lorenz)

Simulations and 3D applications in the Search for Lost Persons, Allesandro Dibona, Italy

The Italians are using sophisticated software that creates a 3D representation of the search area, as well as key information on the missing subject including personal data and photo. The computer will display a 1:25,000 map with various search sectors that can be viewed from different angles and with different magnification. A single sheet can be printed at the search base for all searchers at the outset of the mission. On the main software the team's assignment can be tracked in real time by GPS from their initial departure. Each team is assigned a separate color code. A complete data bank is created that provides an accurate picture of the search area. The speaker stated that GPS is not the main element here, and that organization and leadership skill is still the main factor in a big search.

Comment: The software is "Eureka Mappa" but I was unable to find anything on this in English using a Google search. We can hope that this type of technology becomes more widely available in English. In response to a question, the speaker said that it would not be difficult to create an English Language version. (Lorenz)

Risky Business: Pat Fauchère, Switzerland He is a commercial rescue helicopter pilot for Air-Glaciers, *Rescue Organization of the Canton of Valais (OCVS)*

Reflectons on helicopter rescue missions at night
With the assistance of Doctor Stephane Oggier

Overview: Night operations are inherently risky and must be carefully planned. A review of missions in Switzerland gives some lessons that may be useful for other organizations.

Accidents in rescue missions: This is more than a matter of fate. There is always risk but the issue is whether the risk is justifiable. Psychology can be more important than other factors, and we look to personal experience for guidelines. The question is how to decrease the risks. The following is a survey of lessons from the night rescue operations at the air base Air-Glaciers in Sion, Switzerland in the 2002 -2003 period (66 missions).

The following list of "traps" can spell disaster for a mission:

1) Obstinacy: Once you take the first decision, the remaining decisions are easier to take if you stay coherent with the first …
2) Seduction desire: You go because you think that if you do the mission you will be seen or appreciated by others (boss, chief pilot, lead doctor, ect..)
3) Aura of the expert: In many cases, an informal leader will make decisions for the group… The Leader has a positive impression that will push the group to follow him, even if he is not competent.
4) Social place occupied: When a person is confident about his competencies he may have a tendency to take more risks … Even more if someone is watching…
5) Rarety sensation: The mechanism of rarity is when you place a great value on a spectacular mission. The greater the risk the better is the anticipated result.

Dangers: It is easier to start with the call for a helicopter instead of trying to elaborate another strategy. This can lead to a lack of careful evaluation of risk, from the base, colleagues, and witness of the accident as we start rapidly to launch the mission. As an example, after the alarm: The pilot thinks it is urgent, the crew member follows the pilot, the doctor follows as he does not want to stay

behind and this give more weight to the decision of the pilot. Ed. Note: Physicians fly with every rescue helicopter in Switzerland and most of the Alpine regions of Europe.

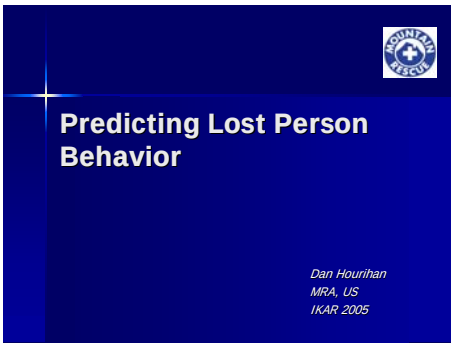
How can we minimize risks? By using good sense, not feeling guilty about past decisions, taking a coffee break before important decisions, using appropriate guidelines, and giving a call to someone not involved with the mission for advice when possible. As you get the alarm, you take some decisions. These decisions are not the same if you are not involved in the mission. And especially, beware of yourself!

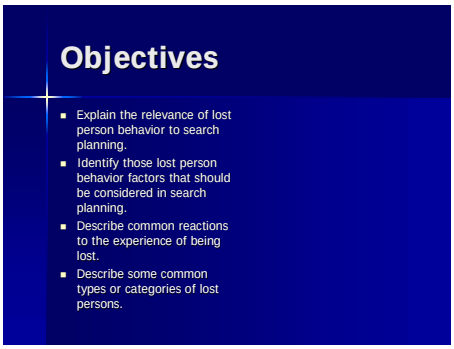
Additional advice: Make personal contact with the patient, or the witness if possible. This reduces errors due to the intermediaries, and allows you to judge the medical urgency. Allow yourself to take a few minutes and to think bit before going. Allow yourself to open a map, to discuss your plan and cancel the stopwatch effect…Leave some energy for improvisation; this is always good in the field. Avoid your brain overheating in increasingly complex and changing conditions. In the end, a careful plan and proper calculation will save lives.

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

Predicting Lost Person Behavior: Dan Hourihan, United States, MRA

Hourihan presented an overview of the information available and utilized in predicting lost person behavior and developing subject profiles by teams in North America. The foundation of this presentation was based on standardized methodology presented in current search management curricula (e.g. NASAR's Managing the Lost Person Incident Course). It included discussion on the importance of this information in the planning process prior to and during the deployment of resources into the search area. Additionally, the most common reactions and actions to becoming lost were described, as well as those behaviors statistically associated with specific categories of lost persons. Special emphasis was given to statistical data relevant to distances from the Point Last Seen (PLS) certain categories of missing persons are found (e.g. young children), terrain analysis, and search area incident history.





Comment: Although the original work done by William Syrotuck continues to hold tremendous relevancy to current search operations, this is an area which begs continued research. Of particular note is the need to expand existing data regarding distances subjects are found from the PLS or Last Known Position. These statistics become extremely important in developing statistical search areas and related probability zones. (Hourihan)

Saturday Program:

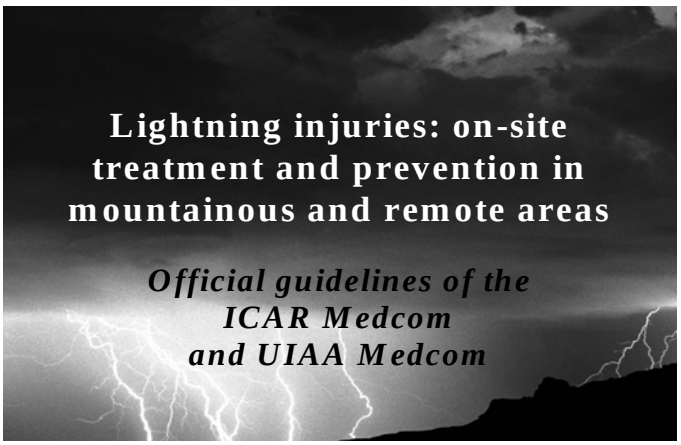
Lightning injuries: On-site Treatment and Prevention in Mountainous and Remote Areas: Dr. Ken Zafren, Alaska Mountain Rescue Group (AMRG), MRA

Presentation intended for physicians, paramedics and mountaineers, summarized from his PowerPoint slides.

Introduction: Lightning kills about 1000 people a year, 70% of injuries are not fatal. Lightning is an objective hazard in the mountains and lightning injuries are avoidable. Most deaths are from cardiorespiratory arrest, persons who do not have immediate cardiorespiratory arrest are likely to survive. Mechanisms of injury can be:

a. Direct strike (often fatal) b.Current splash from object or another person (side flash)
c. Contact injury d. Ground current e. Blunt injury

Blunt injury can be produced by shock wave, muscle contractions from current or falls.
Prevention: Lightning injuries are avoidable, check weather forecast; most thunderstorms are in summer during late afternoon and night. Lightning is associated with cumulonimbus clouds, but may travel many kilometers in front of a storm.



The 30-30 Rule: Danger of being struck when flash-to-thunder time less than 30 seconds
Don't continue climbing until 30 minutes after last lightning or thunder.
Rules for Shelter: hut or mountain refuge away from open doors or windows
In small, open huts there is a risk from side flash.
Tents don't provide protection.
Metal poles may act as lightning rods. Large caves or valleys are protective.
Small caves, overhangs, and wet stream beds increase danger.

Safe spots: Stay off ridges and summits. Avoid single trees, power lines, ski lifts.
"Safe triangle" for taking refuge definition: Safe distance from wall = height of wall
In forest - low area with small trees safer than clearing.

If you are caught in the open: Crouch with feet or knees together to minimize ground current. Sit on dry pack or rope. Do not lie flat. Metal ski edges, ski poles, ice axes, or antennae may act as lightning rods if carried above the shoulders.

Prevention: Carry mobile phones and radios in the center of the rucksack. Put away metal objects. Do not remove helmet. Stay belayed. Avoid wire ropes and safety ladders.
If hair stands on end or skin tingles, crouch with feet together. Crackling noises or "St. Elmo's fire" also warn of imminent strike. Groups of people should stay apart.

Injuries from Lightning: Direct Injuries from a. High voltage b. Heat production c. Explosive force are possible.

Cardiorespiratory Arrest: Asystole or ventricular fibrillation, respiratory arrest may be prolonged. Spontaneous return of circulation is the rule after asystole if ventilation is maintained. Death may result from hypoxia if patient is not ventilated.

Blunt Injuries from Lightning include: Head injury Burns Fractures Tympanic membrane rupture.

Neurologic Injuries are usually temporary and may include confusion, amnesia, loss of consciousness, seizures, deafness, blindness and paralysis (keraunoparalysis)
Burns may be direct or indirect. "Feathering" pattern on skin is not a burn, most burns are partial thickness or second degree. But entry and exit wounds are full thickness.

How to recognize a lightning victim: Diagnosis usually clear, but victims may be found later, especially on sunny days. Look for linear or punctate burns or feathering.

Risk management during rescue operations: Postpone evacuation if thunderstorm continues and consider moving patient to area of lower risk. Air rescuers at high risk and airborne helicopters can be struck by lightning. Also people can be struck by lightning while standing near aircraft.

Patient Care: ABCs (airway, breathing, circulation) first. Patients may benefit from prolonged CPR. Monitor (ECG, pulse oximeter) Follow ALS and trauma guidelines.

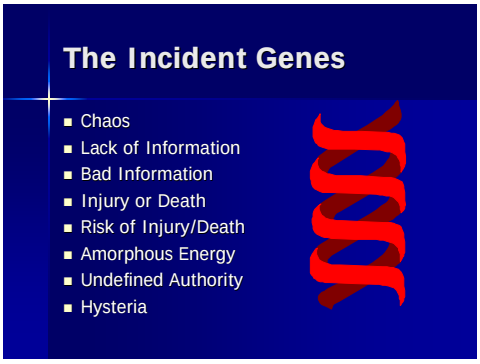
Note: Usual signs of brain death do not apply. Amount of external damage does not predict internal injuries. Remember that serious problems may be delayed. All patients should be transported hospital and admitted.

Special Triage Considerations: More than one person can be struck. Always consider your response, you may be able to "Resuscitate the dead." After that ventilatory support may be all that is necessary.

Lightning Myths
It is dangerous to touch a lightning victim.
Lightning never strikes the same place twice.
Lighting always hits the highest object.

Comment: Our own Dr. Ken Zafren is one of the leading physicians in mountaineering and high altitude medicine in the world, and a major contributor to the IKAR medical commission. (Lorenz)

Investigation: Search as a Classic Mystery: Dan Hourihan, United States, MRA



In this presentation, Hourihan discussed the critical importance of investigation during the search for missing persons. Due to the inherent lack of facts and information accuracy associated with missing person incidents, the investigative and information gathering effort needs to be an integral function from notification through ultimate resolution. He provided an overview of the types of information that received priority efforts at a mission's outset (e.g. initial planning and searching data) and those that required

continued investigation. Additionally, he reviewed the four types of evidence generally existent in any search investigation (physical, documentary, analytical, and testimonial) and detailed their relative merit and possible sources of this information. A brief discussion of general interviewing techniques and potential pitfalls (e.g. open-ended, closed, and probing questions) was provided. The presentation was concluded with an emphasis upon the potential for criminal activity involved in any missing person incident. The focus of searchers efforts are to find the missing person. But they searched be briefed and remain sensitive to the criminal possibilities. Close coordination between the investigation for information important to the search planning process and any parallel criminal investigative efforts is critical and often does not exist.

Comment: Although the search for missing persons is typically a law enforcement function in the U.S. and worldwide, often police officers receive inadequate training in basic search management. It, thus, becomes the responsibility of trained volunteers to provide expertise and ensure that investigative efforts are coordinated and that search efforts remain open to all possibilities. (Hourihan)

Use of Forward Looking Infrared (FLIR) Cameras in Search, Franz Marx, Bavarian Mountain Rescue

During this presentation, the speaker demonstrated a new generation FLIR camera that is compact and even smaller than a standard video cam. In the meeting room it was hooked up directly to the projector and we were able to view a real-time image of ourselves, looking like a ghostly group of aliens watching a movie. The model displayed was the Thermacam E25. The weight is 700 grams, about 1 and ½ lb, with battery. This type of technology could be very useful in a search for lost persons, and it can be held from the open door of a helicopter. The speaker showed images from a crevasse and also wooded terrain. It would not be effective for buried avalanche victims. This item is light enough to be carried by a ground search team and could vastly improve search coverage, and probability of detection.

Comment: This is a fast moving area of technology, with new and lighter products on the market all the time. From my quick search on the internet I was unable to find any US dealers or distributors of the E25. See one description from Hong Kong: http://www.peiport.com/e25-e.htm . This would be a good subject to bring to the attention of MRA membership, if any US mountain rescue has any experience with this technology. (Lorenz)

Proposed Training Facility for Mountain Rescue: Bavarian Mountain Rescue

In Bavaria there is an ambitious plan for a permanent Mountain Rescue Training Facility that would serve all of Germany, as well as the adjacent Alpine countries.

In Bavaria, there is a need for standardized training, there are more than 1,200 search or rescue operations per year. Ten different types of helicopters are used, with many professionals and volunteers mixed together. This requires training and practice, and development of personal skills. In a series of PowerPoint slides, the speaker showed plans for a large consolidated facility with an

indoor area with a helicopter mock-up and enough space to practice anchors and high-angle raising and lowering of a litter.

The proposal would create a “center of expertise” with a full time training staff, and regular courses would be offered. Participants from other countries would participate, for a fee. There will be a cafeteria on the premises and it will be close to hotels, and set in an Alpine area. The estimated cost will be more than 4 million Euros (about 4.5 million USD) and there would be a 300,000 Euro annual cost to operate. Estimated time to open would be 2008.

Comments: We are unlikely to ever see such a facility in the US, but the concept has already been adapted for fire departments and other professional organizations in North America. For U.S. MRA, we may be able to learn some lessons from this for regional training, and we have the capability to conduct periodic training events without the construction of a permanent facility. For example, teams in a particular region could rotate the hosting of regional training events for other teams. (Lorenz)

Developing Standards for Rescue: Dominik Hunziker, Swiss Mountain Rescue

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.

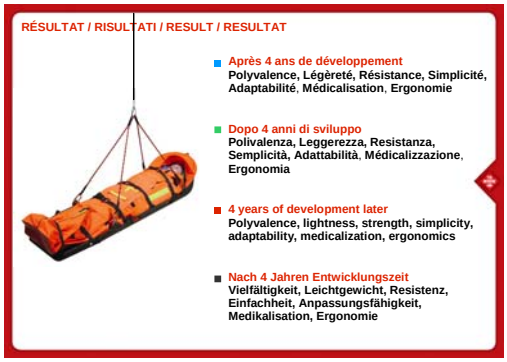
> ICAR is asking the manufacturers of the new equipment to eliminate the anomalies which the tests on their equipment revealed and to develop it further. The path they have taken is the right one. For example, promising solution principles were found with the locating system (Tracker DTS) or in the combination 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.

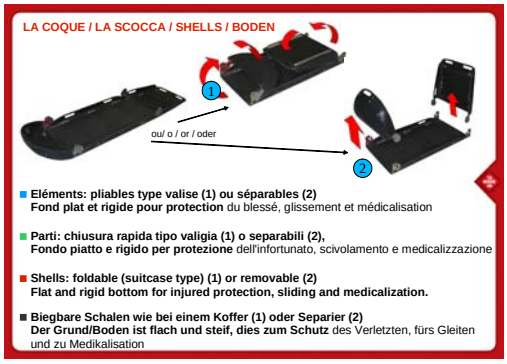
Comments: The UIAA is in the business of setting standards for equipment, and safety labels can be approved for mountaineering gear. See: http://www.uiaa.ch/?c=310
But there is a very big distinction between a piece of equipment that can be tested in a lab and a rescue practice that is situation and personality dependent. Mountain rescue organizations like IKAR and MRA should avoid setting standards, but they should have an important role in making appropriate recommendations. See the draft recommendation by Kirk Mauthner contained in this report. It goes a long way towards a standard, but is still in the form of a recommendation, and advisory only (Lorenz).

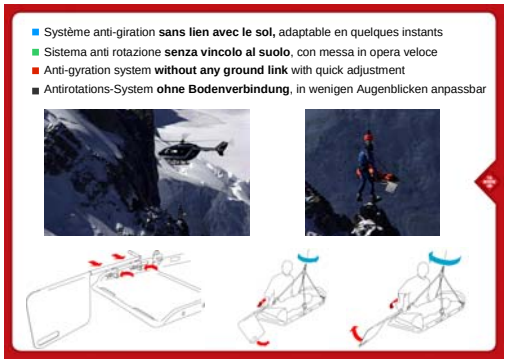
New French Anti-Rotation Rescue Litter: Roger Emin, France, PGHM

Mr. Emin, of the French Mountain Police, introduced a new litter that had been under development for four years. The development involved collaboration amongst numerous French and Italian experts and extensive testing by both French and Italian mountain rescue and ski patrol units. The litter is being marketed by TSL Sports Equipment. It can be purchased in rigid or foldable models. The folding model has three mobile joints that involve no threading mechanism or loose parts and can be assembled in 15 seconds. The following characteristics of this product were highlighted:



- Light
- Strong
- Stainless steel/composite construction
- Simple Construction
- Adaptable (mountain, ski)
- Ergonomic
- Waterproof cover w/ face protection





Of note, this litter incorporates a manually operated anti-gyration "wing" which eliminates rotation during helicopter sling and hoist operations. This innovation, as a litter modification, was demonstrated at the 2004 IKAR conference in Zakopane, Poland.

Comment: At the time of this presentation, this product was not available commercially and a price was not given. TSL Sports Equipment will market the product. This litter seems to have great potential in a broad variety of backcountry venues. As more is learned, the MRA lister will be notified. (Hourihan)

Final Terrestrial Commission Comments

This was a very successful meeting. For the first time in IKAR history, a major portion of the contributors hailed from North America. Dan Hourihan made three presentations on search, listed above, and they were well received. Dr. Ken Zafren has always been a key player and Dale Atkins has moved to an influential role in the Avalanche Commission as Vice-President. Kirk Mauthner made an important contribution, and the Europeans may soon be signing up for a Rigging for Rescue class!

This year there was an improved capability for simultaneous translation, with professional linguists in four languages, German, French, Italian and English. Just four 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 was an improved program at the meeting, with more practical demonstrations, rather than theoretical debates. We are seeing good use of 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 four-year 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.

IKAR has the potential to be much more than an organization of European Alpine countries. More input from North America is a first step. Rick Lorenz has been talking to the leadership of IKAR to make more effort to include the major countries in international mountaineering. China has shown interest, but more can be done to reach out to countries in South America and Central Asia, including Russia.

Significant IKAR products during the past year include the Medical Commission's publication Consensus Guidelines on Mountain Emergency Medicine and Risk Reduction and the Avalanche Commission's adoption of an international standard for color-coding avalanche site markings, as well as their work on the creation of a glossary of common avalanche terminology. The Air Rescue Commission continues to be a worldwide leader in the analysis and dissemination of mountain helicopter incidents and protocols. The Terrestrial Rescue Commission brings mountain rescue groundpounders together to share experiences and make carefully measured recommendations regarding rescue techniques and procedures. It is likely that the individual IKAR commissions will continue to serve as an international forum for the discussion of standards development, a controversial topic affecting all rescuers alike.

Terrestrial Rescue Commission President Bruno Jelk recapped the week's proceedings and noted the developments in technology in the search for missing persons. He noted, as well, that search success will always be dependent upon the human element and the efforts of searchers. He stated that he will convene a committee to analyze the presentations and discussions in Cortina possibly leading to the development of recommendations regarding the search for missing persons.

IKAR General Congress

Twenty-eight organizations representing eighteen countries attended this 2005 IKAR General Congress. IKAR President Toni Grab closed the meeting with thanks to the Italian hosts and an invitation to next year's General Congress in Slovenia. He encouraged all to continue communication with each other and to refer to the Futura 2010 report on the IKAR website, which lays out the strategic goals ands objectives for IKAR through the remainder of the decade. (Lorenz, Hourihan)

The 2006 IKAR General Congress will be held in Kranjska Gora, Slovenia, October 11-15.

Respectfully Submitted,

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