

With safety more fun in winter sport activities

A common action of the Swiss advisory bureau for the prevention of accidents bfu, the Swiss Ski- und Snowboard schools, the Swiss cable way association, the professional sport trade firms and the Swiss commission for the prevention of accidents on snow sport slopes SKUS.

Fun and safety in winter sport are of major concern. Switzerland is fully aware that instruction, equipment, safe ski arenas and safety campaigns play a central role. The Swiss advisory bureau for the prevention of accidents bfu, the Swiss ski schools, the cable way association, the professional sport trade firms and other institutions coordinate their efforts to ensure this safety.

I will try to give you a short overview of the safety efforts, invested in the domain of winter sport. The bfu statistic related to accidents shows the result of these efforts. The accident rate dropped for more than 10% during the past 5 years. In 2001, 68'000 skiers and snowboarders living in Switzerland were injured.

Personal responsibility of snow sportsman, FIS- and SKUS-rules

As for other sport activities the principle of personal responsibility is also valid for snow sports. Skiers and snowboarders exercise their sport on their own risk. The ski sport arenas represent the infrastructure, similarly to the road net for traffic. The international ski association FIS edited 10 rules of behaviour, defining the duties of carefulness to be observed by all skiers and snowboarders. They are mandatory for all.

Additionally the Swiss commission for the prevention of accidents on ski slopes SKUS has brought together all representatives of associations and organisations involved in ski sport, in order to edit guidelines for the conception, operation and the maintenance of ski arenas. These guidelines are legally binding.

The correct equipment reduces the risk of accidents

This fact alone is insufficient; a correct training is also a must. But the equipment and its maintenance are of major importance for the reduction of risks of accidents.

When a client buys equipment, the professional sport shop assistant first defines the needs and expectations of the client, in order to be able to present alternatives of equipment, adapted to the client's profile. Correct equipment optimizes the sportive experience and the safety. Salesmen are aware of news and trends.

Having bought equipment, it is important to control and maintain it periodically. Intact equipment guarantees safe and better sporting. The professional sport traders employ accordingly well trained employees and dispose of a large service park in order to ensure the maintenance of sport equipments. Approximately one million of ski pairs and snowboards are repaired each year. The 300 specialised sales spots are opened seven

days a week and maintenance is immediately carried out often even directly along the slope.

The correct adjustment of the binding is of major importance in case of a fall.

The correct adjustment of bindings are a must

Bindings designed to open in case of bad falls, must be adapted to the height, shoe size, age, experience and weight of the skier. The control is done on a special control device (in accordance to DIN 11'088). The Swiss advisory bureau for the prevention of accidents recommends checking the bindings by professionals each year before ski season begins. 14 years ago the bureau successfully introduced a binding control vignette. Each year more than one million of bindings are checked. The bfu vignette confirms that the check has been fulfilled on a homologated device and gives a hint, not to forget the next check. A special TV spot is broadcasted each year in December.

The importance of personal protection equipment is more and more accepted. The readiness to protect itself has improved.

Protection equipment: a bfu- campaign "Enjoy sport – protect yourself"

The demand for ski and snowboard helmets increased last winter; end of season they were sold out. 13% of all skiers and even 20% of all snowboarder's wear now a helmet. Helmets are a trend, mainly for children and youngsters. 50% of them wear a helmet. Expert adults also discovered the safety advantages given by helmets.

To wear a helmet is not only cool but protect the head from bad injuries. The bfu, together with the support of the Swiss insurance association, launched therefore its campaign "Enjoy sport - protect yourself", a campaign organised to last for many years. TV- and cinema-spots, as well as flyers and events animate to wear personal helmets and protective clothes when skiing or snowboarding. For more than 10% of snow sport accidents the head is injured; hand and forearm are involved in 20% of all accidents. By wearing correct protective equipments - helmets and forearm support devices - many injuries may be avoided or reduced in their gravity. The modern helmets are quite comfortable and give the last touch to the sportive outfit.

The sport trade association supports the campaign and offers a large choice of helmets and protective supports for wrist and back. The bfu has edited a special instruction card "recommendations for buyers of ski sport helmets". The instructors of all Swiss ski schools also pay attention to correct equipment, recommend such equipment and set good example for their guests.

Instruction is in

Snow sport with its various disciplines requires great technical skill. The well trained ski instructors of SWISS **SNOWSPORTS** offer an appropriate instruction for beginners, advanced students or person learning the use of other snow equipment. An advanced

technique and safe behaviour improves the pleasure and supports the prevention of accidents. Swiss ski and snowboard schools put the safety aspect on the top.

SWISS SNOW LEAGUE Training Programs in addition to the basic training include the following safety aspects:

- Blue League: Equipment, how to use transportation facilities
- Red League: Warm up, FIS-rules
- Black League: Behaviour in Park + Pipe, the preparation of equipment, avalanches, weather forecast

In the SWISS SNOW KIDS VILLAGE the most little ones are taken care in a closed area for beginners with safe conveyers, and for their pleasure with Snowli and his friends.

A quality signet is awarded for well designed quality and safety concepts, for an elimination of risks of accidents and training fully adapted to the conditions. Only ski and snowboard schools, which teach after SWISS SNOW LEAGUE and are offering the SWISS SNOW KIDS VILLAGE and have the quality signet and which are fulfilling the conditions, will be licensed.

Carrier's bear a large responsibility

As operators and managers of ski arenas the rope way enterprises are not only responsible for the safe transport of their winter guests, but also for ski slopes allowing safe down-hill runs, free of alpine dangers on the marked pistes. The safety provision represents 30 to 40% of the overall budge of a winter season. A medium sized ski arena with a budget of 6 millions invests nearly 2.5 millions of Swiss francs only for safety and preparation of slopes.

Piste and rescue team patrols are responsible for the protection measures. They look after the safety nets, the safe release of avalanches by explosions and many other items in order to protect the winter guests against all alpine danger or obstacles on the slopes. 2500 persons work in the piste and rescue teams and they control about 7300 kilometres of pistes. The professional association of rope ways is responsible for the instruction of drivers of piste machines, specialists in handling explosives and of the heads of rescue teams. All measures necessary to assume the safety of the users of ski pistes are listed in the directives "the liability to insure for snow sports arenas".

109 checks of Snow Sport Arenas in Switzerland

The operators of snow sport arenas may ask for a voluntary check of their safety provisions. Since 1982 numerous experts of the quality commission check and control 173 criterias to be fulfilled by snow sport arenas. For several days, the quality of pists, the kindness of custom advisory services and the degree of training of the persons responsible for pistes and rescue services, as well as many other safety aspects will be checked in detail, to make sure that all safety, quality and service, characteristic of a high standing snow sport resort, are offered.

The costs are about 1000 to 3000 Swiss francs in function of the importance of the snow sport resort. A periodical control is foreseen all three years.

You may realise that safety in snow sport is a task for a community including all responsible persons. For the next winter the SKUS intends to launch a poster campaign with the following message: “control your speed!” The aim is to motivate snow sportsman to pay attention to the second FIS- rule asking to adapt his speed to given circumstances and to their personal skill.

A bfu safety research: aspects of prevention of accident in the domain of snow sports instruction

Snow sports research is also of major concern. Last winter a new research has been launched, consisting in detailed queries and observations studies. On one hand the wearing of, and the way of bearing a helmet, and on another hand the quality required for helmets and wrist protections have been precised. The general behaviour and the behaviour of snow sports instructors has been analysed, as well as the quality of major teaching aids and the general knowledge of snow sportsman.

Questioning of instructors

The aim of such an inquiry was the following:

- How do the instructors behave in connection with safety aspects, which preventive measures do they apply in their lessons and which safety information's are they transmitting during their instruction?
- Are the teaching aids of their training courses including all aspects of prevention of accidents, are they used and are these aspects entirely transmitted?

Independently of their teaching level, all Swiss experts (250 in total) in charge of the instruction of snow sports instructors and all instructors of the first level (2350 in total) got an questionnaire. 557 out of 2600 were returned; 96 by experts and 450 by instructors of the first level.

Results

Personal protection equipment

Most instructors wear protection equipments (helmet, back and wrist protection), whilst few experts with a low teaching experience wear a wrist protection, but most of them normally wear a helmet and a protector for their back.

86% of all responsible instructors and experts recommend participants of ski courses to wear a helmet during the lesson; for snowboard courses the figure is even of 92%. Even knowing the effectiveness of protective equipment, they often forget that they are expected to behave in an exemplary manner.

In ski courses, 52% of all instructors wear a helmet and recommend wearing one, whilst 34% recommend wearing one, without wearing themselves one.

In snow board courses 65% of all instructors wear a helmet and recommend wearing one, whilst 26% recommend wearing one, without wearing themselves one.

Behaviour of the instructors

All instructors pay much attention to the safety of their students. For many safety measures, they behave in an exemplary manner; this goes for warming up at the beginning of the lesson (82%), for information's given on the importance of protective equipment (54%) and for joint evaluation with free riders of risks of avalanches (74%). In some cases even the bindings will be checked. But the warm up after a long break is mostly forgotten (only 19% do it). The same goes for the checking of the knowledge of the FIS- rules (24% do it regularly, 27% never do it).

Teaching aids

Most teaching aids have no chapter dedicated to safety problems. Teaching aids including all safety aspects are not to be found. That means that the assembling of safety documents, dedicated to the prevention of accidents, is quite time consuming. .

Following aspects were analysed:

| Preventive measure of the first level | Preventive measure of the second level | Preventive measure of the third level |
|--|---|---|
| Binding check Adaptation of bindings | Training how to fall, types of falls | Safety precaution and alert in case of an accident |
| Content and importance of the FIS- rules | Use and benefits of protective equipments | Handling of the search device for persons trapped in an avalanche |
| Evaluation of the relevant avalanche situation | | |
| Adapted warm up | | |

Out of 25 teaching aids analysed in respect of their content, 6 are used in courses by more than 50% of the ski experts, 11 are used by more than 60% of the snowboard experts. Aspects of prevention of accidents are normally not considered or transmitted. No teaching aids cover the whole field of safety considerations. Teaching aids used in snow sport lessons covers aspects of technique, of didactic and of methodology. Documents dedicated to the protection against accidents are mostly specialised publications of organisations explicitly involved in prevention, as the Swiss advisory bureau for the prevention of accidents, the federal institute for research in the domains of snow and avalanches in Davos and the safety commission for the prevention of accidents on ski slopes SKUS, or the Swiss insurance against accidents SUVA.

In a 16 point rating of various publications the SWISS SNOWSPORTS teaching aids (Snowli, aids for the snow sports instruction of children) got 10 points, those of the Swiss Ski League 9 points and those of the bfu (Information brochure for snow sports) 8 points. Half of all ski experts use the Snowli documents in their courses.

Recommendations

Personal equipment

- As an instructor behave in an exemplary manner, recommend wearing protective equipment and don't forget to wear your personal protective equipment.
- Try to offer or make available personal protective equipment throughout the training on favourable terms.
- Inform utmost on the necessity to wear protective equipments and on their qualitative requirements; support the bfu campaigns.
- Use teaching aids referring to protective equipments, illustrated by sketches and drawings.

Behaviour of instructors

- Improve your personal behaviour in connection with protective equipments, when warming up after a break, when checking equipment or knowledge of regulations.

Teaching aids

- Include more informations on prevention of accidents in teaching aids, or use specialised publications on "safety and prevention of accidents" as common products of all involved organisations.
- Produce check lists for instructors containing all relevant safety aspects, which they will have to consider and to transmit.

The bfu- Research Study will be available beginning of summer 2004 under:
<http://www.bfu.ch/forschung/ergebnisse/index.htm>

Sulc, V.; Brügger, O.; Walter, M.; Schild, M. (2004): "*Aspects of prevention of accidents in instruction of snow sports*". Berne: Schweizerische Beratungsstelle für Unfallverhütung = Swiss advisory bureau for the prevention of accidents.