

Avalanche Training & Equipment

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Foreword

After ten years independent teaching, consulting and developments in the fields of avalanche prevention and rescue, I would like to present you this brochure which is a summary of the products and services which have evolved during this period of time.

As the demand for these activities has raised constantly in the last years - and covers by now more than 14 countries in western Europe, Scandinavia and North America, I felt the need for a somewhat more structured and unified presentation than up to now. Furthermore, the brochure should help to answer questions which came up frequently when planning a training session.

Training modules

All training modules contain theory and practice. Besides the application orientated training, an important goal of all modules is to bring the participants to a higher level of understanding about the systems and technology they apply. Languages: English, French and German.

The content of the modules will be adapted to your specific requirements, capabilities and the pre-existing knowledge of the participants. Individual requests are always possible and allow a training program specifically designed for your organisation and participants.

Avalanche Rescue

Structure:

1. Overview and analysis of the available rescue and survival means
2. The theoretical base of the electronic search means combined with practical demonstrations
3. Learn basic search techniques combined with practical demonstrations
4. Learn advanced search techniques for multiple and deep burials combined with practical demonstrations
5. Practical application of the different search strategies in a workshop situation
6. Apply the different search techniques in complicated, mixed scenarios

Besides all transceiver models for terrestrial and helicopter based application, several modern learning tools like the EasySearcher 3 will be available at all courses!

Amount of time needed for the individual modules:

1+2+3 = 1/2 day 5 = depends on the amount of participants min. 1/2 day - optimal 1 day
1+2+3+4 = 1 day 6 = depends on the amount of participants min. 3/4 day - no limits!

The modules 5 and 6 together with a short theoretical lesson are ideal as a refreshes course!

Furthermore there is a special module for air rescue organisations on **helicopter based transceiver search**. This module will be customised to fit your specific needs.

Navigation with GPS

Structure:

1. The history of navigation - or - „tell me what time it is and I will tell you where you are”
2. The theoretical bases of the electronic navigation means combined with practical demonstrations
3. Learn the different navigation techniques combined with practical demonstrations
4. Practical application of the navigation techniques in a workshop situation
5. Advanced navigation techniques in the practical application

Amount of time needed for the individual modules:

1+2+3 = 1/2 day

4 = depends on the amount of participants min. 1/2 day - optimal 1 day

5 = depends on the amount of participants min. 1/2 day - no limits!

The modules 4 and 5 together with a short theoretical lesson are ideal as a refreshes course!

A basic know how about maps and the application of compass and altimeter are required for this modules. In case this requirement can not, or just partly be fulfilled, it is recommended to add a 1 to 2 hours introduction in these techniques.

Course materials

For almost all topics you can download the scripts for free at www.genswein.com

For preparation of the course, it is recommended that participants download and print out the scripts and bring them along to the training session so that they can add personal notes.

The past has shown that the requirements concerning paper format, quality and colour are widely varying. With the download from the internet site, every participant and organisation can decide in with format etc they would like to have the documents.

If you still prefer to get paper handouts from myself, this is no problem, but I need to change you the costs of printing.

Amount of participants

For the theoretical modules, the amount of participants is unlimited. As the lessons contain many practical demonstrations were it is important that the participants can, besides the voice well hear for example the tones of the avalanche rescue transceiver, it is recommended to use loud speakers. In case do not have a wireless microphone, I can bring my one along. (please let me know)

For the practical modules outside, the amount of participants per group is very limited. A group should never contain more than 7 participants, as otherwise the learning efficiency is going to decrease very rapidly. By taking group leaders from your organisation, the total amount of participants can be split in small groups which allows to manage even groups with more than 100 participants.

The group leaders will be separately trained and prepared for their task. This special training will take place before the participants arrive. In case the group leaders have already a very high level of understanding, their training can take place in the late evening / early morning hours of a seminar.

Suitable Dates / Time of the year

Many organisations plan their training sessions concerning avalanche rescue always for the early winter. However, in the last years, it became more and more clear that especially the practical modules show higher learning efficiency when they are taken in springtime. On one hand side, there is still a lot of snow in spring which allows without problems deep burial situations, on the other hand side, the participants will be much better prepared for the training. Their personal and practical experience during wintertime allows them to ask the right questions and to work more efficiently in the practical exercises.

The most efficient is to split the training by taking the theoretical modules with practical demonstrations in the early winter followed by the practical modules in spring.

Suitable terrain for the practical modules

For the GPS navigation lessons, a terrain with a lot of interesting features on a small distance is particularly interesting - especially if detailed maps with a scale of about 1:25'000 are available.

The practical modules of the avalanche rescue classes include at least the four workshops "multiple burials", "deep burials", "search strip width / range" as well as "learn different search techniques in a single burial scenario". The more groups of max. 7 participants there are, the more workshops need to be duplicated.

It is important that the individual workshops are not too far apart from each other so that the participants can quickly rotate between the different workshops. Altogether, it needs several hectares (=100mx100m). If there is no snow, the efficiency of the practical modules is much lower. In this case, you should evaluate suitable forests or farmland.

Personal Equipment for the participants

For the GPS Navigation classes, the participants should whenever possible bring along their personal GPS receiver, as well as a compass, altimeter, maps and a ruler to measure out the coordinates on the map.

For the practical modules of the avalanche rescue training you need skis **with skins** or if that is not available snow shoes. Furthermore, you should bring a probe, a shovel and the transceiver you are personally most familiar with.

Fee

Fee for training:

80 Euro / hour but max. 500 Euro / day (= daily rate)

Adaptation to the country specific price level might apply

Expenses

Accommodation, food, travel expenses etc. will be billed without any mark-up. I do not have a car. If possible, I use public transport. If this is not possible due to logistical reasons or time wise, I will use a rental car.

For course locations that are far away from Switzerland, I try in the interest of my clients to combine several events in order to share the initial costs. The earlier you let me know that you are interested in a course, the higher are the chances that other events can be planned in your region or country.

Training materials, training equipment and books

www.genswein.com

Here you can download for free the most recent versions of my scripts.

Book on avalanche rescue

A book on avalanche rescue is on its way... it will be published in English and German.

In case you are interested to be informed about the content and where you can buy at the moment of its official publication, you can send an email to manuel@genswein.com to set you on a list.

„Lawinenkoffer SAC“

The „Lawinenkoffer SAC“ represents with its publishers Swiss Alpine Club and Swiss Federal Department of Sports the official avalanche training kit of Switzerland. The kit contains two volumes, one with the transparencies and an instructor guide with pedagogical and didactical guidelines as well as extended explanations about the content of the transparencies. Over 100 transparencies contain information on the topics snow science, avalanche risk management, planning trips in the mountains as well as avalanche rescue. All important Swiss organisations where included in the development of the avalanche training kit. Different colour codes allow training level specific teaching. In 1997 I could take over the conception and realization of the "Lawinenkoffer SAC" (avalanche kit - Swiss Alpine Club). The kits are available in French, German and Italian and can be rented at the central office of the Swiss Alpine Club in Berne or the Swiss Federal Department of Sports in Magglingen.

Indoor-Transceiver- Training-Board

1,2m x 1,2m Indoor-Transceiver-Training-Board specifically to learn the search strategies for multiple burial situations. The training board can as well be used as training table and contains 8 Easy Searcher Pico. A control unit

controls the training transmitters which are invisibly mounted behind the board. The system includes several preconfigured training sessions. An Excel based teaching planer allows quickly and easily creating and printing out an almost unlimited amount of different scenarios.

Price: on request

Easy Searcher Pico - Multi Function Transmitter

While developing the Indoor-Transceiver-Training-Board the idea for a multi functional training transmitter was born. This transmitter-only device allows to adjust the transmit power so that you can adapt the size of the search scenario to the space you have available. Besides the transmit power, you can as well choose which type of transceiver (pulse rate) it should simulate so that you really can set up every scenario you want.

The device has the size of a matchbox.

Prize: 115 US\$

EasySearcher

After many days teaching helicopter based transceiver search, I felt the need to be able to quickly change the search scenario on the ground by a remote control device. Every change of the search scenario should be quick, reliable and actively confirmed by the targets below the snow.

The analysis of the already existing systems showed that they are unfortunately not suitable to fulfil the above mentioned tasks specific to the helicopter based application due to the lack of range, need for wired installation and missing confirmation of the status of the transmitters.



After some technical and application specific considerations the development of the EasySearcher started:

The **EasySearcher 1** is a remote controlled 457 kHz training transmitter. The system EasySearcher 1 allows to control up to 304 individual EasySearcher transmitters over a distance of several kilometres and includes an active, acoustical confirmation of the current status of the targets buried below the snow. The 304 individual targets can be split in 8 groups which can contain 38 transmitters each.

EasySearcher 1 allows an acoustic status confirmation over the helicopter's intercom system.

Avalanche Rescue Training System

Easy Searcher:

Left: Easy Searcher 1

Right Easy Searcher 3

EasySearcher 3

Already after the first courses with EasySearcher 1 in January 2003, it became clear that a confirmation if the target has been found, respectively hit by the probe is an essential additional feature. EasySearcher 3 detects if it has been hit by the probe and transmits this information back to the control unit. The first EasySearcher 3 was ready in March 2003 and worked very well. Finally it was not necessary any more to verify manually if the trainees did really find the target. It has become immediately clear that the probe detection functionality is a must in the future. As the target of every avalanche rescue is to find and not only to search the victim, this combination with a probe detection sensor lead to the first fully automatic avalanche rescue training system.

EasySearcher 3 can as well be used in "detect only mode" which is ideal for probing and Recco exercises. As the 457 kHz transmitter is not operating in this mode, you can avoid your probing or Recco targets to be found by the usually faster transceiver searchers in combined exercises. However, it is at all times possible to remotely activate the transmitter as well, which is important for dog exercises with living targets. All EasySearcher 3 are equipped with a Recco diode.

With the commercialisation of the project, it became clear that EasySearcher (at its beginning in Tupperware boxes) has to become mechanically more rigid. However, it should still be handy to be carried. In addition to that, some instructors asked for a permanent indication of the status of all targets. On my side, I wanted to be able to automatically run the workshop "multiple burials" after a few explanations. All those needs were taken into account in the further development of the EasySearcher. Unfortunately, it was not possible to implement all those functional extensions by using the old "control unit", a tiny radio.

EasySearcher 3 does not use the 457kHz transceiver frequency to inform the searcher that he has hit the target by the probe as such a function would not work for digital transceivers, respectively heavily disturb their multiple burial analysis functions.



Easy Searcher 3 Search Target for Recco, probe, transceiver and dog.
The top part of the Easy Searcher is the probe board.
All Easy Searcher 3 Search targets are handy transport boxes at the same time.

EasySearcher 3 product description

Remote controlled 457 kHz transmitter with probe detector and Recco diode

- Functions:

- Working mode 1: Remote controlled 457 kHz transmitter with probe detector
- Working mode 2: probe detector only
- User interface in English, French, Italian and German. Other Languages are possible on request
- Power supply: eco-friendly, cold resistant AA lithium batteries lasting for an entire season of use.
- Active monitoring of the battery status.

Mobile control unit with LCD screen and carrying box

Modes:

- **Manual mode / Mode for Instructors:**

- Individually control up to 16 targets
OFF / 457kHz transmitter & probe detector / probe detector only

Indication:

For each transmitter the working mode and the amount of probe hits will be shown

When a target gets hit for the first time by the probe, a beep sound will alert the instructor



The portable remote control unit can easily be operated with gloves.

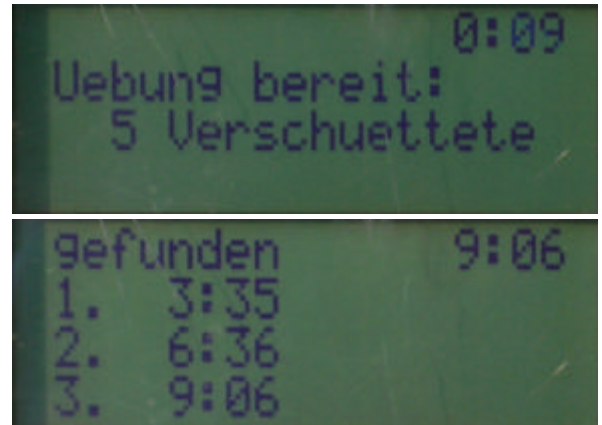
- **Fully automatic mode / public mode:**

The fully automatic public mode allows to use the system as a public avalanche rescue training facility. 3 buttons let you choose an “easy” (1-2 victims), “medium” (2-4 victims) or “expert” (3-6 victims) level scenario.

Easy to interpret indications on LCD screen:

1. “Choose an exercise:”
2. “Exercise ready x victims”
(if you choose an expert level scenario, the amount of victims will not be shown)
3. Search times for each victim

In the dark, the backlight of the LCD screen automatically switches on.



Easy Searcher 3: The mobile control unit can be place on the snow surface. It stays protected by its carrying case.

Permanently installed unit for unattended public use

This addition to the system allows the unattended application of the mobile control unit. The mobile unit will be clicked in the permanently installed unit. A cable connects the mobile unit with the permanently installed unit. Besides additional power sources, the unit has 3 external buttons to choose an “easy”, “medium” or “expert” level exercise. An optical and an acoustical unit can be connected.



Easy Searcher 3 XL

27.14

min sec.

2	14.38	2	14.38
2	14.38	2	14.38
2	14.38	2	14.38



Prices EasySearcher 1 (as long as supply lasts)

- Remote controlled transmitter CHF 500.00
- Mobile control unit CHF 200.00

Prices EasySearcher 3

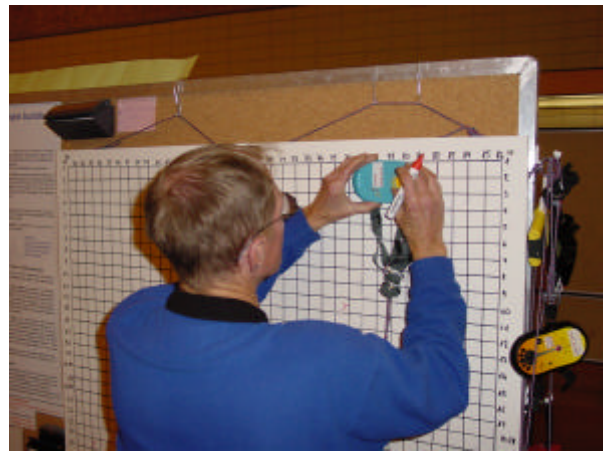
			Easy Searcher Standard	Easy Seacher L	Easy Searcher Standard	Easy Seacher L
Amount of			Switzerland CHF	Switzerland CHF	Abroad EURO	Abroad EURO
Search targets						
	4		5200	11700	3399	7647
	5		6300	12800	4118	8366
	6		7400	13900	4837	9085
	7		8500	15000	5556	9804
	8		9600	16100	6275	10523
	9		10700	17200	6993	11242
	10		11800	18300	7712	11961
	11		12900	19400	8431	12680
	12		14000	20500	9150	13399
	13		15100	21600	9869	14118
	14		16200	22700	10588	14837
	15		17300	23800	11307	15556
	16		18400	24900	12026	16275

Individual upgrade prices: (in Swiss Francs)	CHF
Search target	1100
Additional Mobile control unit Easy Seacher Standard	1500
Permanently installed control unit	6500
Set of batteries	40
Upgrade 2. battery compartment	30
Upgrade Easy Seacher XL with Scéen XL (on request)	starting at 25'000
Possible is as well a fully graphical version which allows to show advertisements during the brakes – for example from sponsors, form the ski resort or snow and weather information.	

The system is fully modular: you can at any time buy more search targets, a permanently installable unit und larger display options.

Technical specifications and prices may change without prior notice!

Picture gallery:



Top: ISSW 2002 Penticon, BC
Teaching with the indoor training board developed by Manuel Genswein



Centre: NGI Grasdalen, Norway
Left: Instructing „Fine search in a circle“

Norwegian Mountain Guide Association
Right: Introduction „Rescue and survival means“

Bottom: Last Frontier Heliskiing, BC Guides Training, Transceiver search by helicopter

