

Report on 14th Congress of the European Avalanche Warning Services Association from 21st and 22nd June, 2007 in Starý Smokovec, the High Tatras

Section 1 – Small avalanche warning services and new members

Introduction of new or small avalanche warning services in Europe:

Slovakia: Avalanche reports on a daily basis (warnings) for the Low, High, West Tatras, Malá and Veľká Fatra in Slovak language, a 35-year existence, (the beginning in 1972), recent problems are caused by avalanches from the forest crop (thin forest, forest aisles, deciduous forest).

Poland: Avalanche reports (warnings) for the Tatra area (most of the avalanche problems) in Polish language. (began in 1997). Extension of the area would be advisable. They are using a programme Geliniv, as well as the Safran-Crocus-Mepra. Beside avalanche bulletins, they also issue weekly reports on the snow situation (including snow profiles).

The Czech Republic: Avalanche reports (warnings) for 7 areas. Avalanche-related problems, especially, in tourist areas. The issue of sliding snow due to, predominantly, grassy underlying layer.

Romania: Daily avalanche bulletins for the Bucegi, Fagaras, Piatra Craiului, Leaota Mts since 2004. They are planning forecasts for three more mountain ranges. At the moment they are issued in Romanian language, English is planned. They are using a programme Geliniv, as well as the Safran-Crocus-Mepra. The avalanche danger scale has been “translated and used”.

Slovenia: Avalanche reports (warnings) since 1980s. The avalanche report is issued 3 times a week (in critical situations more often) in Slovenian language, a meteorological institute is in charge of the reports. Particularly, tourist areas are in danger, sporadically, also roads.

Iceland: Avalanche issues concerning settlements and traffic routes has had a longer tradition. At the danger level 3, routes are threatened. Problems in the tourist areas are growing, esp. due to snowmobile riders. At the moment there are no operational avalanche reports (warnings) available, but there is an effort to introduce them.

Scotland: Daily avalanche reports (warnings) in 5 climbing areas in English. Fatalities: 90% climbers, 8% skiers.

Discussion, comments:

Using a unified European avalanche danger scale is not simple for different climatic regions, various types (features) of the mountains and settlements and their respective avalanche problems. Despite this fact, unification to the largest possible extent is needed. Ján Peťo presented a list of requests (the full text in the Supplement). It was generally welcomed and it will be accepted, in this sense, by the EAWS.

Section 2 – Harmonisation of avalanche reports (bulletins) and avalanche danger scale

Working group activities: A short excerpt from history. Jacques Rhyner pointed out a good position, in which we are (in relation to other natural dangers): the common denominator being the European avalanche danger scale.

Present results of the working group:

- avalanche danger scale
- Bavarian matrix
- avalanche size classification
- glossary

Issues to be solved:

- restructuring of reports (bulletins)
- simplification and unification of information

15 years of the European avalanche danger scale – successful history!

The working group has been meeting since 1983, a breakthrough in 1993 in the issue of a danger scale thanks to the advance work of Bernd Zenke.

Rudi Mair, the presenter, commended numerous advantages for both avalanche warning services and users.

Results of the working group meeting on the unification of avalanche report, in October 2006

The presenter Michael Staudinger explained how important graphic unification is, in respect of region and state boundaries. Taking the information pyramid as an example, he showed how information must be integrated to be comprehensible and concise. Scenario: if we miss the chance to standardise the information, we will lose 20 million users.

Harmonisation of regional avalanche reports (bulletins) in the Italian Alps.

The presenter Anselmo Cagnati pointed to the variety of avalanche warnings in the Italian Alps. The different avalanche warning services (7 services/43 climatic regions) are autonomous and the standardisation will take time.

Basis:

- the results of the working group

Assumptions:

- a report (bulletin) must be available also in a paper form
- black and white print must not lead to a loss of information
- different times of issuing by different avalanche warning services

AINEVA, as an umbrella organisation, will issue recommendations.

Objectives:

- more common features in the Italian reports (bulletins)
- to adopt working group conclusions
- to standardise the report layout

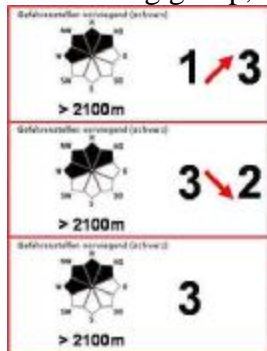
Discussion on representing danger (graphic representation of danger levels, aspect, elevation, which have been designed by Michael Staudinger):

“a.m.” and “p.m.” are not possible to adopt by all avalanche warning services, as the increase of danger may occur in various day and night hours. And the time delimitation is too sharp. The representations are incomprehensible, unclear. Staudinger urges unification as soon as

possible. If anybody wants, they may adopt the representation of danger according to his design.

Final suggestions on representing danger (final discussion, summary):

The following should be represented graphically: elevation, aspect and daytime history by means of an arrow or two maps. The layout of reports shall be made over once more again by the working group, having a great time priority. The most important suggestions:



Ex.1.:



Ex.2:



Ex.3:



Ex.4:

Example 1: the current design of the working group (through representation by means of arrows, the difference “am” and “pm” will be avoided).

Example 2: Michael Staudinger’s design; variant representation of a situation with a day time-danger diagram (compare Example 3); [on the basis of a concentration, for the morning situation, a corresponding border would be necessary (red here); care needs to be taken with the consistency of data!]

Example 3: a design for variant representation of a situation without a day time-danger diagram (compare Example 2)

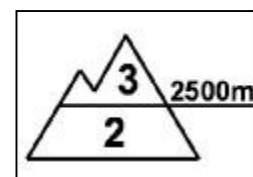
Example 4: a solution containing two maps

Further comments:

There is good experience with placing an additional text saying “Dangerous locations **predominantly** (black)” directly above the symbol representing aspect.

The symbol of aspect by Michael Staudinger, in which the cardinal points are incorporated in the aspect rose, saves space and looks equally good.


Tirol will, from 2007/2008, replace the currently used three-cornered symbol for altitude dependency of avalanche danger by the following symbol (which is already in use by other avalanche warning services): (eventually, this symbol might become a standard?)




Section 3 – Harmonisation of avalanche bulletins and avalanche danger

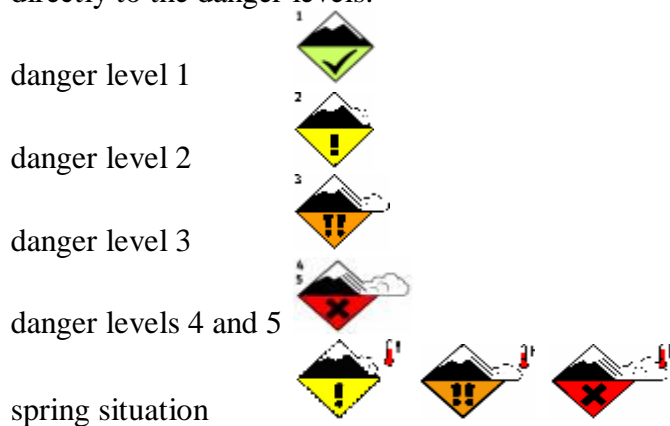
The icons from Canada: They have been in use for three years (TV, magazines, newspapers, etc.) with positive experience

danger levels 1 and 2 

danger level 3 

danger levels 4 and 5 

The icons from Switzerland: Since in Switzerland, as well as other European countries, more fatalities occur at the danger level 2, the Canadian solution is not optimal. Therefore, Switzerland has developed new icons, which will be tested in winter 2007/08. The icons relate directly to the danger levels.



Discussion on icons:

The differences in the number of fatalities at the danger level 2 and 3 between Europe and Canada must be put down to different forecasts:

(ISSW 2006, [http://www.avalanche.org/~nac/NAC/techPages/articles/06 ISSW Greene etal.pdf](http://www.avalanche.org/~nac/NAC/techPages/articles/06%20ISSW%20Greene%20etal.pdf)).

Generally, the Swiss icons were welcomed for Europe, also because they are related to the danger levels. On the map of danger levels there are too many colours. Colour icons would do.

Conclusion regarding icons:

Switzerland will put the icons to test in winter 2007/2008 with a possible aim to use them in Europe. The icons may be tested also by other avalanche warning services. After the winter 2007/2008, the working group will evaluate them and decide on the further steps.

Discussion on the avalanche danger scale:

The Canadian approach to determining of avalanche danger is accepted in Europe and it shall be monitored further. But for Europe, the Bavarian Matrix remains authoritative to determine avalanche danger. The parallel development (Europe/Canada), which may be of mutual benefit, is welcomed.

Discussion on the danger level “considerable” > “danger level 3”:

The way the danger level 3 is viewed, can be affected by education and communication. The danger level 3, particularly in tourist areas, should not be presented as the danger level “medium”. If we are not to take into account the danger level 5, which is hardly authoritative in tourist areas, it finds itself in the more dangerous half of the scale. Icons may improve the way people view it.

Section 4 – Harmonisation of avalanche danger levels

Conclusion:

The following examples have been accepted by all participants:

- danger level 1 (Mauro Valt)
- danger level 2 (Bernhard Zenke)
- danger level 4 (Thomas Stucki)
- danger level 5 (Patrick Nairz)

The following examples have been put back/returned:

- danger level 3 (Thomas Stucki)
- danger level 4 (Cécile Coleou)
- danger level 3 spring situation (Christoph Oberschmied)

Further examples will be gradually elaborated on by the working group in a clearly defined structure.

Discussion:

Particularly, the danger levels 3 and 4 need a further discussion. Understanding of this issue still varies. The following points have been discussed:

- danger level 4: usually all slope aspects are affected (an opinion of Bavaria) <-> aspects are often clearly delimited (an opinion of Switzerland and South Tirol). In their view, what is determining, is the number of dangerous places, and not the area of their occurrence. Just as well, at the danger level 3, dangerous places may occur in all aspects.
- danger level 4: is possible even without a considerable activity of naturally released avalanches, especially, due to high degree of avalanche proneness/in avalanche prone locations??? (an opinion of France) <-> the danger level 4 should be associated with a “certain” activity of natural avalanches (an opinion of Switzerland, Tirol). Switzerland gives, in the description of a danger level in the category “Consequences for transportation routes and settlements / recommendations”, for the danger level 4, the following: “Exposed areas mostly endangered. Safety precautions are recommended here”. This implies a “certain” activity of natural avalanches.

Section 5 – Avalanche bulletins, contacts with report users, prevention

Glossary: This year it will be extended by adding 30 more terms. The glossary is a step towards unification. The photographs in the glossary are for public use and can be used for further purposes.

Telephone 187 (Switzerland): The number of calls has fallen dramatically – discussion needed. Transition to new technologies with an extended graphic support of audiovisual information and extension of the range of services (MMS, SMS services).

Whiterisk: Presentation of a CD, which is available in German, French and English (Italian version is being prepared).

Discussion concerning Telephone 187:

An idea of a single European number for avalanche danger (possibly natural threats) has been accepted and it has had a positive response. In Tirol, there is a similar problem with a falling number of calls. The working group should include the issue in the project. P. Nairz (Tirol) and Th. Stucki will assess the technical potential.

Further suggestions:

A password protected section of the avalanche warning services website with news and information (Rudi Mair).

Section 6 – Information systems and new technologies

MetGIS, Spreizhofer: A meteomodel with geographic data with high resolution. Verification of meteo data is difficult, because measuring network is not sufficiently dense. The cost of the model must be assessed individually.

Automated meteorological stations network, Slovakia, Poland: An EU project to build a measuring network containing 15 stations. Currently, issues concerning land owners and measuring instruments are being dealt with.

XML-File: A unified XML-File of avalanche reports and, possibly, other data would be desirable in order to simplify the exchange of data. The Tirol Avalanche Warning Service is monitoring a further development.

Snowprofiler: It is an Internet-based snow profile programme on the basic data bank. Contact: Hans-Jürg Etter (etter@slf.ch), Lukas Dürr (duerr@slf.ch), Jakob Rhyner (jrhyner@slf.ch).

Avalanche Safety Program: see the presentation.

FP7 research project: An EU project may contain various works of the European avalanche warning services. Associated partners are still sought, contact: Jakob Rhyner (jrhyner@slf.ch)

Snow PAD: Importing snow profiles through mobile devices. See the presentation.

Section 7 – New technologies, summarisation and future topics

Newest Technologies in Tirol: The presenter Patrick Nairz introduced numerous innovations of the Tirol Avalanche Warning Service. The bulletin has been altered several times in recent years, according to the working group suggestions, meeting just with a positive response.

Further products:

- various maps based on the automated stations data
- automated stations data are further forwarded to the persons interested
- slope maps
- mobile phones for avalanche committees in order to expand additional and important information
- a protected section of the website for avalanche committees, on which access is registered

International snow classification (ISC): The presenter Thomas Stucki introduced innovations: symbol – abbreviation – alphanumeric code; subgroups according to the development process. The ISC proposal will be available on the EAWS website. Further suggestion address to Charles Fierz: fierz@slf.ch, please.

Modelle Meteofrance: Cécile Coleou, the presenter, showed the latest model development in France. The Safran, Crocus and Mepra models facilitate meteo data analysis, a model calculation for a snow cover and establishing a danger level. New model calculations (snow profiles) for different elevations and aspects have been published. They have been through first winter tests. Forecasters still have to get accustomed to the models; feedback from forecasters is positive.

Summary: the most important points by Jacques Rhyner.

Conclusions:

- graphic representation in bulletins: elevation, aspect, day time history (by means of an arrow or two maps) must be represented graphically.
- “icons for beginners – greenhorns”: they will be tested in winter in Switzerland, the experience will be reported to the working group. The icons are available to all avalanche warning services.
- standardisation and harmonisation: the working group is monitoring development in Canada.
- comprehensibility of “considerable”: to start from the fact that for a tourist area only danger levels 1 to 4 on the danger level scale are relevant, “considerable” is in the upper half: without a need of a further discussion.

- Danger level examples: the following examples have been accepted by all participants:
 - danger level 1 (Mauro Valt)
 - danger level 2 (Bernhard Zenke)
 - danger level 4 (Thomas Stucki)
 - danger level 5 (Patrick Nairz)
- further examples will be gradually elaborated on, according to a clearly defined structure. Particularly, the danger level 3, transition from the danger level 4 to 5 -> the working group

- to extend the avalanche size classification by the size 5 (according to the Canadian scale)? -> the working group

- a password protected section of the European Avalanche Warning Services website should be established

Content:

- decided issues
- guidelines
- law issues
- forum
- projects

- a European telephone number for natural threats (avalanche danger) -> the working group

- requests of new avalanche warning services (see the Supplement)

- Rudi Mair from the LWD Tirol suggested Innsbruck as a venue for 15th Congress of the European Avalanche Warning Services Association, which was accepted by the participants

Suggestions:

Further examples of danger levels, which need to be made over, they should be selected on a 2-day meeting of the working group. In general, even more different examples are necessary.

SUPPLEMENT:

Full text of requests of smaller avalanche warning services addressed to the EAWS, presented by Ján Peťo.

Requests of small and new avalanche warning services to the working group of EAWS

- 1/ Requests concerning automated stations of avalanche warning services (kind of sensors, measurement frequency, data transmission, localisation of station, etc.)
- 2/ Requests concerning observation stations of avalanche warning services, supervised by an observer (kind of observations, frequency of observations, etc.)
- 3/ Requests concerning stable snow-profile places and snow profile measurements on leaning slopes (dimensions of the snow-profile place, orientation/exposition, methodology of measurements – the hammer probe, the hand-profile, unification of the methodology of determining snow stability on the slope – the slide block test, the wedge test, the compression test, the K.O. test, the Norwegian method, etc.).
- 4/ Unification of the methodology of measurements and observations, a multilingual software development, exchange of experience at avalanche courses organised by the EAWS countries.
- 5/ Summarisation of the guidelines in the individual countries, as far as blasting avalanches and avalanche defences are concerned.
- 6/ Legal regulations (laws, guidelines, regulations) regarding avalanche accidents, fatalities, tragedies and material damage caused by avalanches.
- 7/ Continuous upgrading of the multilingual avalanche glossary by adding special terms and definitions.

In Jasná, 28th **May/June** 2007

Recorded by: Ing. Ján Peťo, Head of the
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