



Consiliul Judetean Arges

Serviciul Public Judetean Salvamont - Arges

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AVALANCHE SEARCH WITH UNUSUALLY METHODS

On 28th of December 2002, four tourists went from Balea Lac hut, 2034m in Fagaras mountaines, to make a winter route on the ridge and intending to sleep in Fereastra Zmeilor shelter, about 3-4 hours during winter time. They didn't announced the hutman about their intention, just that they will be missing 3-4 days.

On 1st of January 2003, I received a call from the neighbouring team, Salvamont Sibiu, asking to look also in our area, because nobody knew their intentions, so we all had to check the possibilities that the four missing persons to be in one of the huts or shelters arround. The weather was blizzarding and everybody assumed that they choosed that option. After checking with no result, we thought at the possibility that – they being very good speleologists – they could be in one of the few altitude caves arround. We asked a helicopter to check all theese, but visiting the glacier circuses, no move has been pointed.

The ground team continueing the search, has observed two ravens circling arround an area we went before, but checking it once more, we found the first body. During the time from the last search, it was heavily blizzarding, so the body has been very little recovered from the snow, just enough to be seen at the second search.

Now, we knew what's hapent and where, but because of the many days of blizzard, the itinerary of the avalanche was completely lost. We dug in several places to find clues from the snow and we used a metal detector, hoping that some things like crampons or iceaxes should be still on them and we might find the casualties this way. In the same time, we've marked some rectangle areas and begun probing.

We've found a glove, a down jacket and three walking poles, what gave us an idea about a potential way for the avalanche. The items were in an approximate line, so we figured out that the main stream of the avalanche was in that area, so we concentrated our forces on that part. All theese hapents on 2nd and 3rd of January, on heavy blizzard and in the morning of 3rd, the snow layer became heavier and heavier because of



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the snowfall what was bringing powder and rolls. The new layer of snow was about 30cm of very unstable snow, so in the evening of 3rd of January I declared suspended the searching, because of the danger of a new avalanche and possibility to have other casualties among the rescuers.

The upper part of the avalanche snow was at 2330m and the lower part at 1840m, the slope being quite inclined, starting with 20 degrees at the bottom and reaching 45 degrees at the top. The first body has been found at 1950m.

In the next weeks, it was snowing and blizzarding, successive avalanches running on the slopes of the valley. Weekly, a patrol composed of three rescuers were skiing in the upper part of the valley, to observe if the last avalanches revealed any other new clue.

In the middle February, the families announced that there is a dog searching group from Miskolc – Hungary who are available to come and search. Despite of the high avalanche warning, they finally came and we went in the valley, but searching only in the very low part of the valley, having three avalanche observers at the same time. I decided to use at least two avalanche observers, because of the particularity of the southern slopes of the Fagaras mountaines, where the light is still bright in the fog, so every 3-4 minutes, a person feels the necesity to relax its eyes, and in this time an other avalanche being possible. The frequency of the avalanches it is also due to the southern exposure of the valleys, what concentrates all the sunlight, even when cloudy and due to relatively low altitude (maximum alt is 2544m) which means a lot warmer than in other mountain places in Europe.

Before the hungarian team to come, a few days after the event, I asked mr. Heini Malue of Bergwacht Allgau if there could be any possibility to help me with searching dogs. He answered that he would be happy to do that, but he explained that in 24 hours, the freezed body doesn't exhale any particle of smell, so it is useless to do that. I explained that thing to the hungarian team, but they replied that the dogs are very good, and they trust them, so on 4th of February we went



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together and have worked in what we knew as the avalanche cone, for about five days.

The dogs indicated two places, where we dug vertical holes of 12 meters, respectively 4 meters, to the ground, not finding anything. The closest position of the nearest body, when we found them all, was about 150m away, so the dogs were not even close.

Finally, after the most heavy winter after 1995-96, at the beginning of May we started continuously serches, though in the first two days were many spring avalanches, but we estimated that the slope was safe.

In the search we have been helped by the colleagues from Salvamont Bihor, the team from which's area the victims were, in the north of the country. In some periods we were 60 persons searching, during some working week about 10-15.

We extended the searching area and accessed the upper parts of the slope with the metal detectors and we found clues that the avalanches started imediately after the four tourists begun to step on it and the dimensions were huge: more than 800m width, starting at 2330m and probably stopping at about 1800m.

The area and volume of snow were huge, so we begun searching to cover all the area. In about 10-12 days we found an other two bodies and concentrated to find the last one, but it didn't appeared anywhere. The days were gone and the feeling of frustration was very high, so at one point, one of the rescuers, Aurel Nica, came with the idea to use water. First, even if the phisician explanation was OK, I had doubts that it will work out in the field. But, I asked the firechiefs for what it was needed, transported upthere and put it together. In that valley, already in march, if you dig in snow for water, it is available, if you know the places.

The idea was: to capture water with a shield of iron, lead it into a firechief tube A type (about 18 cm in diameter) and transport it about 800m to the avalanche place. Here, a distributor receives the water and spread it into three other tubes C type (about 7 cm in diameter), where the water has about 6 atmospheres, being brought from about 60 m in elevation.



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Each tube C type was manouvered by a rescuer, by perforating a hole to the ground (about 3-4 minutes for a 5-6 meters thick layer) and somebody else, with a light, was checking the holes. After about 2 days of searching with water, we found the last victim in an area what was probed several times. It was surrounded by a very thick layer of hard ice an partially hidden under a big rock, position what tricked the rescuers when probing. We estimate that, if we have been used water from the beginning, the searching time would have been reduced at half.

We recommend this method anywhere where the water is above, if the probing was unsuccessfull from the beginning, or for any other type of activity which requires fast and effective digging in snow. It is suitable for the valleys, especially at the end of the winter season. I say this because the tube operator it is exposed to the extreme wet when moving the tube from one place to an other, because the pressure of water splashes arround and wets the legs of the rescuer.

Finally, after having all bodies and things found, we realised that the avalanche was huge, starting right at the top of the ridge, at 2330m, down to 1840m, so on 490m elevation and being about 900m wide, with a depth of 10-12m at the bottom, the bodies being spread on a very big area. We had to find three dead bodies of about $\frac{1}{4}$ cubic meter in a volume approximated by us at more than two milion cubic meters.