

January 3 2012, Juferhorn, Avers (GR) – Group of four engulfed by avalanche. Two killed. ¹

An avalanche overwhelmed all four members of a ski touring group as they made the ascent to the Juferhorn. Rescuers were alerted by the only member of the group who was not completely buried. Help arrived too late for two of the completely buried victims.

Sequence of events and rescue mission

On the morning of January 3, a group of five back-country skiers were planning an ascent in the direction of the Juferhorn (2967 m). They had consulted the avalanche bulletin and were very well equipped. Before leaving, they performed a transceiver test. One of the group felt unwell and decided to remain in the valley. The other skiers began their ascent, without maintaining any spacing, to the south of the Mugmolbach stream. As the group were ascending the steepening summit slope, a slab avalanche was released about 80 m above their location. It engulfed all four of them and swept them along. Two of the group released their ABS backpacks. The one member of the group who was not completely buried alerted the police immediately.

Around ten minutes after the avalanche was released, the person who placed the alarm call located the first of his companions, who was buried 30 cm deep. This victim was uninjured. The other two group members were buried about 1 m deep. The first was freed from the snow masses 30 minutes, the second about 45 minutes after the rescuers arrived. Despite immediately initiating resuscitation attempts, one of the victims died at the scene of the accident; the second person was airlifted in critical

condition to the cantonal hospital in Chur. This second member of the group died that same evening.

Weather and avalanche situation

During the days that spanned the turn of the year, around 30 cm of snow fell in the region. The snowfall was accompanied by moderate winds. Snow drift accumulations formed. On north facing slopes along the main Alpine ridge the snow layering was to some extent unfavourable. However, the weak snowpack fundament did not play a part in this accident. Only the most recently fallen fresh snow and snow drift accumulations of the previous days were released.

The weather was sunny on the day of the accident. Visibility was good.

Extract from the National Avalanche Bulletin for January 3 2012, valid for the region in which the accident occurred:

– *Avalanche danger forecast: Considerable avalanche danger (level 3).*

Avalanche prone locations are to be found, in particular, on wind-loaded slopes in all aspects above approximately 2200 m. Both fresh and older snow drift accumulations can be released easily in some cases. In addition, on the Main Alpine Ridge and the Upper Engadine in particular, avalanches can be triggered from deep layers of the snowpack on north facing slopes above approximately 2500 m. For those venturing off piste, caution and experience in the assessment of avalanche danger are important.

TABLE 1 – Weather conditions in the region where the accident occurred, as measured by manned and automated stations. The indicated figures are mean values (for wind and temperature) and the quantity of fresh snow in 24 hours. The manual readings are taken at 8 am, and the automated measurements refer to a 24-hour period from midnight to midnight.

Date	Air temp. (°C) PMA1 ^a	mean wind strength (km/h)/direction PMA1 ^a	Fresh snow (cm) VMA2 ^b	Fresh snow (cm) 5JU ^c
31.12.2011	-7	20–NW	7	17
01.01.2012	-2	22–W	6	12
02.01.2012	-5	41–W	0	0
03.01.2012	-6	23–N	18	18

^a PMA1: ENET wind station Piz Martegnas 2670 m; distance of 17.7 km.

^b VMA2: IMIS snow station Val Madris, Schwarzseen 2530 m; distance of 8.7 km.

^c 5JU: Observer station Juf 2117 m; distance of 2.6 km.

1. Extract from: *Teichel, F., Pielmeier, C., Darms, G., Teich, M., Margreth, S. 2013: Schnee und Lawinen in den Schweizer Alpen. Hydrologisches Jahr 2011/12. WSL Ber. 5: 118 S., Seiten 57 – 60, translation: TTN Translation Network*



FIGURE 1 – View of the track made by the group as they ascended the Juferhorn. The avalanche fracture is visible near the top (photo: Grisons cantonal police, January 3 2012).



FIGURE 2 – The area where the avalanche fractured (photo: Grisons cantonal police, January 3 2012).



FIGURE 3 – General view of the slope showing the ascending track (left) and the avalanche. The group were overwhelmed near the very top of the avalanche path and swept along for several hundred metres (photo: Grisons cantonal police, January 3 2012).

Avalanche data

Avalanche – app. 12.30 pm			
Map Nr.	1276	Fracture depth min. [cm]	30
Length [m]	550	Fracture depth mean [cm]	40
Width [m]	70	Fracture depth max. [cm]	50
Terrain			
Aspect	NE	Slope angle on map [°]	41
Altitude [m]	2820	Type of terrain	open slope
Release information			
Release type	person	Safety distances	no
No. of triggering persons	4	Activity	back-country tour, ascent, skiing
No. of involved persons	4	Tracks	no
Involved person			
1 st person	Injury fatal	Type of burial fully buried	Duration of burial approx. 45 min.
2 nd person	fatal	fully buried	approx. 30 min.
3 rd person	injured	partially buried	–
4 th person	uninjured	fully buried	approx. 10 min.

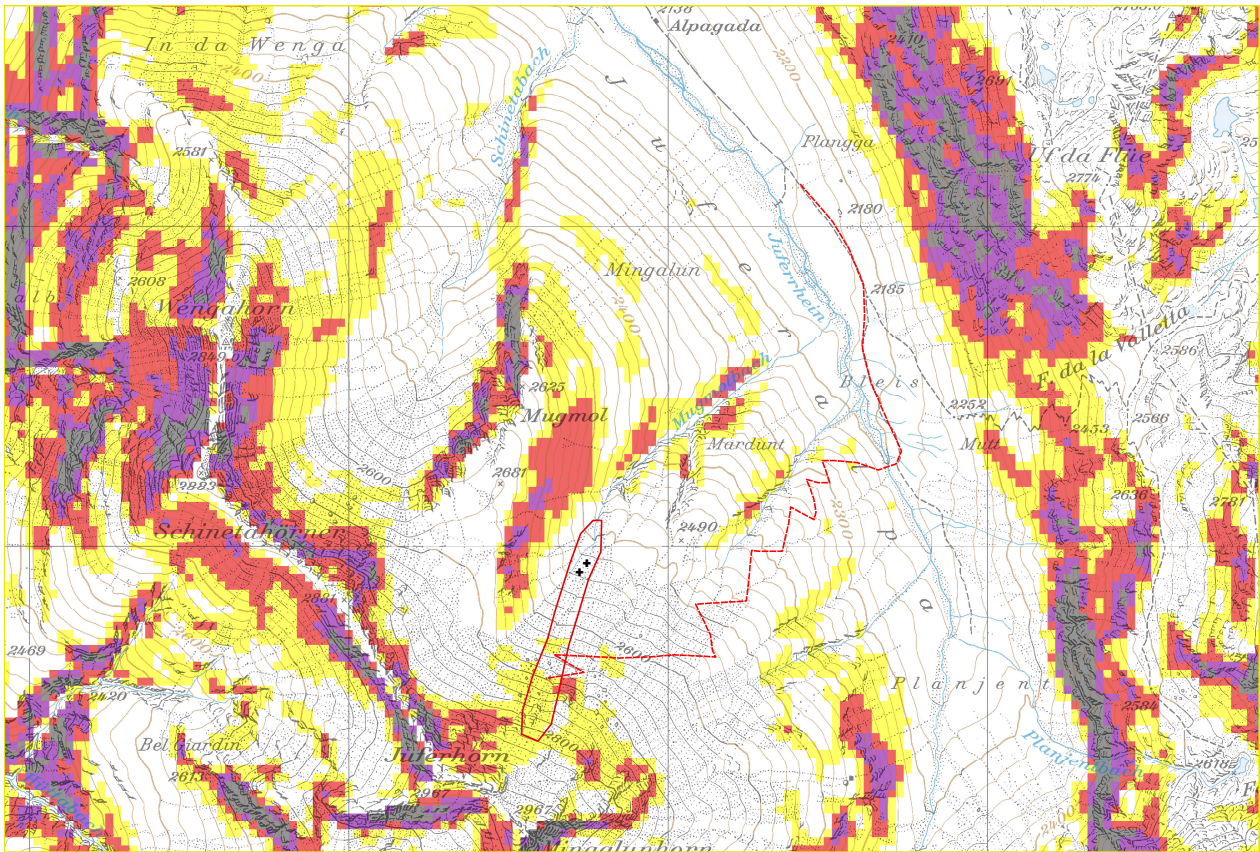


FIGURE 4 – Map section of accident site (1:25,000, national map sheet 1276) showing the approximate route of the ascent (red broken line), the avalanche outline (red), and the places where the victims were found (black crosses). Map reproduced with permission from swisstopo (JA100118/JD100040).