Spano Pole Snowpit Pirin

Elevation: 2055 m

Bulgaria

Aspect: S

Kalin Markov 06/02/2022 - 09:30

Co-ord: 41.71393N. 23.39964E

Slope Angle: 29°

Wind Loading: previous

Stability: Fair Air Temperature: Sky Cover: CLR Precipitation: NO Wind:

HS:205 Layer Notes:

205-202cm: Melt-freeze crust 155-140cm: Problematic layer 110-85cm: Sugary layer

Specifics: Pit is adjacent to avalanche: flank; Collapsing, localized; Cracking; Recent avalanche activity on similar slopes; Ski tracks on slope; We skied slope [ More Pit Specifics below ] Crystal Size Moisture kg/m³ Form Stability tests & Layer comments 205 <u>ඟ</u> -CT13, Q3 @202cm 200 205-202cm: Melt-freeze crust 190 180 170 160 CT25, Q3 @155cm 150 140 130 120 110 CT30 @110cm Block isolated 100 110-85cm: Sugary layer 90 80

Notes: Analysis of results and the nearby avalanche:

1F

4F

The snowpit profile and test were performed on a south facing slope that gets a lot of sun. Due to warm temperatures in combination with direct sunlight, which causes surface melting, then cold temperatures at night, a thin, few cm deep crust is observed on the surface. Since it is very thin, it is not a cause of concern the way it is at the moment. However, the next snowfall (tonight, 07.02.2022) for the region, in combination with predicted strong north winds, can deposit a lot of snow onto southern slopes, on top of this crust, which on steeper slopes could be a cause for concern, if the new snow does not bond well to the crust. Also, rising temperatures later in the week (10-11.02.2022) can add additional weight to the surface snow that falls tonight. It will be a dynamic week weather wise, potentially creating dangerous conditions.

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The current state of the snowpack, as of yesterday, is fairly stable, at least on moderate slopes of around 30 degrees. During the compression test, after tap 25 (approximately) the snow from last week (01-02.02.2022 - around 50cm) starts to break up and by CT30 it is fairly well broken up. Some cracking is observed in it before that, even before CT20, but with no real breakup. Also, no smooth sliding is observed on the layer below it (the layer below it is a small, hard layer, with potentially some sugar snow crystals).

By the end of the compression test, a block of almost 1 meter could be isolated (lifted up by hand) lying above another hard, sugary layer. Its bottom surface is smooth. No sliding occurs - on steeper slopes there could be potential for sliding, but since the bottom of this layer is now almost 1 meter deep, it is not a cause for too much concern, at least on slopes that are not very steep.

The analysis was performed adjacent to an avalanche on the same slope, near its bottom part. According to information from the nearby shelter, the avalanche fell on Friday (04.02.2022). It fell on the same slope and roughly same aspect we performed the test on, but at a much steeper location of around 45 degrees, at the top of a gully, with wind deposited snow. The crown seemed to vary in depth from around 20 cm to likely more than half a meter. Most likely the layer that fell was the snow from 01-02.02.2022, the same layer that broke apart without sliding at CT25 during our test. The most likely reason it fell is probably a combination of all of the following:

- 1) Wind-deposited snow on a steep slope
- 2) Rising temperatures to above freezing and direct sunlight on Friday, 04.02.2022, and also the avalanche fell sooner after the previous snowfall from 01-02.02.2022 the snow had less time to bond with the layer below, while our test was performed 2 days after it.
- 3) Main contributing factor information from the nearby shelter a snowmobile passed by near the bottom of the slope, caused vibrations, and a small avalanche was observed right after that. 10 minutes later - a second larger avalanche fell (at the exact same location)

No other avalanche activity is observed in the region except this one. Additional Pit Specifics: Snowmobile tracks on slope