

Cruachan Beag, Maol Buidhe and Beinn a'Mheadhain (17E)

Report of surveys carried out by Alan Dawson on 30 March 2014

Background

The purpose of these surveys was to measure three marginal Sims on the long ridge between Ben More and Beinn Talaidh on Mull. Cruachan Beag has a tiny 600m contour ring on OS maps, while Maol Buidhe has a 600m spot height. The col between the two of them and Cruachan Dearg is mapped as 567m, giving a drop of 33m. The survey of these two summits had three aims: to find out which one is the higher, to see if they are over 600m high, and to check if the higher one has the 30m drop required for Sim status.

Beinn a'Mheadhain is shown on OS maps as 602m high with 138m drop. Its survey had two aims: to check whether it is over 600m high, and to find out whether it might have a drop of 140m, which would make it a Submarilyn.

Heights were measured using a Leica Geosystems RX 1250 GPS antenna and controller, with subsequent processing using OS Rinex data to obtain precise results. Conditions for the surveys were good: clear and dry but with a cold east wind.

Cruachan Beag survey

This hill has a distinctive shape and summit. The highest point is a clump of thick grass, where the survey pole and equipment were set up. The col is a pleasant flat grassy area between Maol Buidhe and Cruachan Dearg. The col survey point was set up at almost the exact point marked with a 567m spot height on the OS 1:10000 map.

Summit feature: Grassy clump

Summit survey time: 35 minutes

Antenna height at summit: 0.80m

Margin for error: 0.03m

Base station data:

| | | | | | |
|-----------------------------|---------|---------|---------|---------|---------|
| <i>Base station:</i> | ARIS | LOCG | OBAN | TIRE | FAUG |
| <i>Distance away:</i> | 55 | 54 | 31 | 58 | 111 |
| <i>Summit ellip height:</i> | 656.58 | 656.581 | 656.576 | 656.582 | 656.514 |
| <i>Col ellip height:</i> | 622.133 | 622.296 | 622.238 | 622.115 | 622.146 |

Col survey time: 26 minutes

Antenna height at col: 0.87m

Margin for error: 0.06m

Only the four nearest base stations were used for the summit as all others were over 100km away. For the col, Fort Augustus was used instead of Lochgilphead, which gave a data reading out of range for use.

Mean elliptical summit height: 656.58m

Mean elliptical col height: 622.16m

WGS84 to OSGB36 adjustment: 55.873m for summit, 55.877m for col

Adjustment constant: 0.16m



Cruachan Beag summit survey in progress, with Maol Buidhe, Cruachan Dearg and Ben More beyond

Result:

Summit: 600.87m
 Latitude: 56° 26' 05.00791" N
 Longitude: 5° 55' 47.69893" W
 Summit gridref: NM 57821 33878
 Col: 566.44m
 Col gridref: NM 5738 3363
 Drop: 34.43m
 Outcome: No status change, Cruachan Beag remains a Sim as it is over 600m with over 30m drop



Cruachan Beag col survey in progress

Maol Buidhe survey

Maol Buidhe has a 600m spot height on OS maps but no contour ring. The survey point was set up on an area of tussock near the centre of the flat summit area. The col between Maol Buidhe and Cruachan Beag has a 579m spot height, giving Maol Buidhe 21m drop. This was not surveyed.

Summit feature: Grass
 Summit survey time: 35 minutes
 Antenna height at summit: 0.83m
 Margin for error: 0.06m

Base station data:

| | | | | | |
|-----------------------------|---------|---------|---------|---------|---------|
| <i>Base station:</i> | ARIS | LOGC | OBAN | TIRE | FAUG |
| <i>Distance away:</i> | 55 | 54 | 31 | 58 | 111 |
| <i>Summit ellip height:</i> | 655.528 | 655.398 | 655.405 | 655.381 | 655.450 |

Only four base stations were used, with Fort Augustus being used instead of Arisaig, which gave a data reading out of range.

Mean elliptical summit height: 655.41m
 WGS84 to OSGB36 adjustment for summit: 55.876m
 Adjustment constant: 0.16m

Result:

Summit: 599.69m
 Latitude: 56° 26' 00.19974" N
 Longitude: 5° 56' 08.84125" W
 Summit gridref: NM 57451 33750
 Col: 579m (not surveyed)
 Drop: 21m
 Outcome: Maol Buidhe is demoted as a Subsim as it is under 600m high and lower than Cruachan Beag



Maol Buidhe summit survey in progress, with Cruachan Dearg beyond

Beinn a'Mheadhain survey

The highest point of this hill has a small loose cairn, where the survey pole and equipment was set up. The col is a broad grassy area to the east, on the route to Cruach Choireadail. The col survey point was set up at almost the exact point marked with a 464m spot height on the OS 1:10000 map, south-east of a small lochan.

Summit feature: Cairn

Summit survey time: 35 minutes

Antenna height at summit: 0.80m

Margin for error: 0.06m

Base station data:

| | | | | |
|-----------------------------|---------|---------|---------|---------|
| <i>Base station:</i> | ARIS | LOGG | OBAN | TIRE |
| <i>Distance away:</i> | 55 | 54 | 31 | 58 |
| <i>Summit ellip height:</i> | 658.375 | 658.317 | 658.386 | 658.333 |
| <i>Col ellip height:</i> | 520.203 | 520.151 | 520.145 | 520.181 |

Col survey time: 26 minutes

Antenna height at col: 0.80m

Margin for error: 0.08m

Only four base stations were used for summit and col, as all others were over 100km away.

Mean elliptical summit height: 658.35m

Mean elliptical col height: 520.17m

WGS84 to OSGB36 adjustment: 55.855m for summit, 55.850m for col

Adjustment constant: 0.16m

Result:

Summit: 602.66m

Latitude: 56° 24' 43.88176" N

Longitude: 5° 54' 49.39564" W

Summit gridref: NM 58676 31315

Col: 464.48m

Col gridref: NM 5942 3107

Drop: 138.18m

Outcome: No status change. Beinn a'Mheadhain remains a Sim and a Hump but not a Submarilyn



Beinn a'Mheadhain summit survey in progress



Beinn a'Mheadhain col survey in progress, looking back toward Beinn a'Mheadhain