

# Meall Garbh and An Stuc

Report of survey carried out by Alan Dawson on 8 August 2013

## 1. Introduction

Meall Garbh and An Stuc are two high mountains in the Ben Lawers group, north of Loch Tay in the southern Highlands. Both have been classified as Munros since An Stuc was promoted to Munro status by the Scottish Mountaineering Club in 1997, but only one of them qualifies as a Marilyn, as the drop between them is shown as 127m on OS maps, which is less than the 150 metres required for Marilyn status.

The primary purpose of this survey was to measure the height of Meall Garbh and An Stuc, which are both shown as 1118 metres high on Ordnance Survey maps. The secondary purpose was to establish the precise location of the highest point of each summit. Heights were measured using a Leica Geosystems 1250 GPS antenna and controller, with subsequent processing by John Barnard of GJ Surveys, using OS Rinx data to obtain precise measurements. Conditions for the survey were adequate: dry and fairly calm but with mist covering both summits for much of the time, though there was intermittent clearing at both summits.

## 2. Meall Garbh summit survey

The mountain has a long summit ridge running roughly north-south, with a shorter arm running east-west. According to the large-scale OS map, the area above 1100 metres high is about 220 metres long and up to 40 metres wide. Two cairns are marked on the largest-scale map but neither have a spot height at that scale. The 1:25000 map shows a 1118-metre spot height for the southern cairn, at NN 64391 43645, but no spot height for the more northerly cairn. A visual inspection was carried out of the summit ridge, but there was no survey undertaken at the southern cairn, as it was obvious even in misty conditions that the northern cairn was higher, so that was the only point surveyed on Meall Garbh. The GPS antenna was placed on the grass at the edge of the small summit cairn to record satellite data for 50 minutes. There was very little margin for error on the short grass, though it is possible that there was natural ground a few centimetres higher beneath the cairn. Processing of the raw data was successful, with all eight relevant base stations being used to calculate the final result:

Summit cairn: 50 minutes at NN 64436 43757, height 1123.04m  $\pm$  0.04m

The result shows the northern cairn to be the highest point of Meall Garbh, which is five metres higher than the OS mapped height for the mountain.

## 3. An Stuc summit survey

An Stuc is an extremely steep mountain for the top 100 metres, and its ascent can be challenging in difficult conditions, but the summit is fairly flat. There is a small cairn on the summit area, and the first survey point was set up at the edge of this. In order to get a good level surface and raise the GPS a little above the base of the cairn, a flat rock was moved to the grass at the edge of the cairn and the GPS antenna was placed on top of an Abney level case positioned on the flat rock. The combined height of rock and case was measured to be 13cm, so that figure was entered into the GPS controller as the height of the antenna above the ground (this is usually the pole height). Satellite data was recorded for 30 minutes at this location. There is a large grass-covered rock about 25 metres from the cairn. Sightings were made with the Abney level between cairn and rock while the first survey point was collecting data. The sightings suggested that the top of the large rock was at least as high as the base of the cairn, so a second survey point was set up on the rock. This time the GPS antenna was placed on the grass on the top of the rock. Results:

Summit cairn: 30 minutes at NN 63874 43085, height 1116.77m  $\pm$  0.05m

Large rock: 30 minutes at NN 63890 43102, height 1117.04m  $\pm$  0.01m

The results show the rock to be the highest point of the hill, by 25-30cm, and that An Stuc is exactly six metres lower than Meall Garbh, showing clearly that Meall Garbh is a Marilyn whereas An Stuc is not.

## 4. Summary and conclusions

Hill name:	Meall Garbh, section 2B
Summit:	1123.0m at NN 64436 43757
Drop:	198m
Hill name:	An Stuc, section 2B
Summit:	1117.0m at NN 63890 43102
Drop:	126m
Outcome:	Meall Garbh is confirmed as a Marilyn, with An Stuc no longer a twin summit. Both mountains remain Munros, and An Stuc remains a Hump.



Summit cairn and survey point on Meall Garbh

Meall Garbh summit, with An Stuc beyond



Survey point at the cairn on An Stuc

Second survey point on An Stuc summit,  
with Meall Garbh beyond

