

NORTH EAST RIDGE OF ULVETANNA,
QUEEN MAUD LAND, ANTARCTICA
DECEMBER 2012/JANUARY 2013



EXPEDITION REPORT



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ABSTRACT

Leo Houlding set out with his international team of climbers and film makers to make the first ascent of the 1750m North East Ridge of Ulvetanna in Queen Maud, Antarctica. The team understand this to be the most technically demanding peak on the harshest continent. The expedition planned to be in base camp for 35 days. They aimed to accumulate sufficient quality photography to produce a film documenting their adventure for posterity – *The Last Great Climb*.

In addition to the pure adventure of the expedition, the team used the planning and logistics of the expedition to involve local young people, giving them an original context within which to explore their curriculum, and inspiring them in the art of adventure. The expedition was also an opportunity to support the sponsoring company, Berghaus, to develop and test a collection of cold weather products. The team were successful in all their aims, safely establishing the first ascent of the north east ridge E6 6b, A2+, VI, 1750m.

ACKNOWLEDGEMENTS

Berghaus
MEF
Ivar Tollefsen
Robert Casperson
Canon,
Goal Zero,
DMM,
Adidas Eyewear
Onsight

The compilers of this report and the expedition members agree that all or part of it may be copied for the purposes of private research.

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INTRODUCTION

Leo Houlding led this international team to a successful first ascent of a major new route on the remarkable Antarctic peak, Ulvetanna (2930m). Widely considered to be the most demanding peak on the harshest continent, the mile long northeast ridge of the mountain has been described by the team leader as one of "the last great climbs". The team included Sean Leary (USA), Jason Pickles (UK), David Reeves (South Africa), Chris Rabone (UK) and award winning film-maker, Alastair Lee (UK).

Ulvetanna (the *Wolf's Tooth* in Norwegian) is the jewel in the crown of the Fenriskjeften (the *Wolf's Jaw*) group of mountains, within the greater Orvin range of mountains, Queen Maud Land, eastern Antarctica. After months of preparation, the expedition began in late December 2012, sponsored by British outdoor brand Berghaus.

OBJECTIVE

To safely complete a first ascent of Ulvetanna, via the northeast ridge. Capture the expedition and ascent in photography and film to a world class standard.

LOCATION

Ulvetanna is located at 71° 51' 0" South, 8° 20' 0" East in the Fenriskjeften Group of mountains within the Orvin Fell Range of Queen Maud Land, eastern Antarctica. The Ulvetanna peak is at 71° 51' 50.82" South 8° 21 '09.20" East. The northeast ridge extends for 1750m, presenting 1,200m of roped vertical ascent.

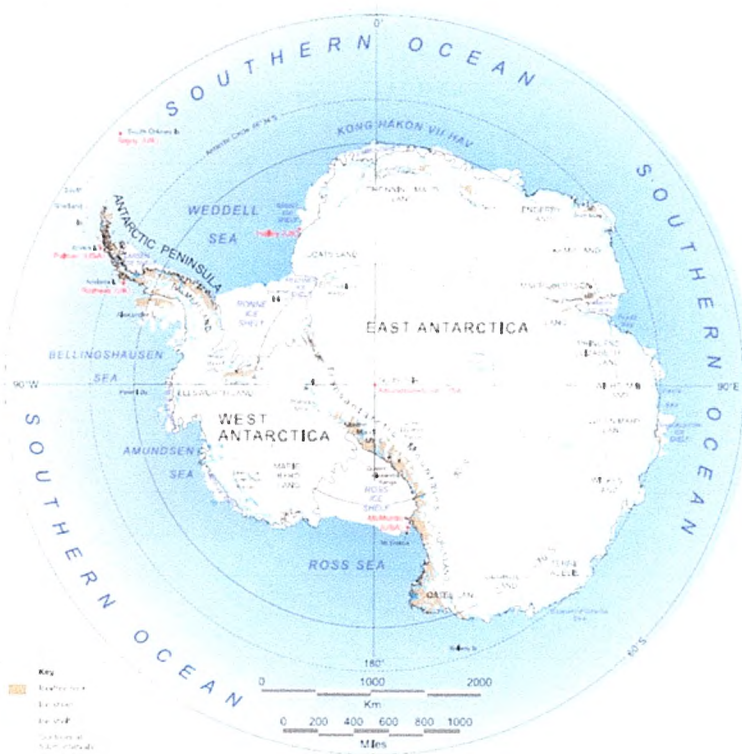


Figure 1 Map of Antarctica (showing Queen Maud Land as Dronning Maud Land) Landsat Image Mosaic of Antarctica (LIMA) Project

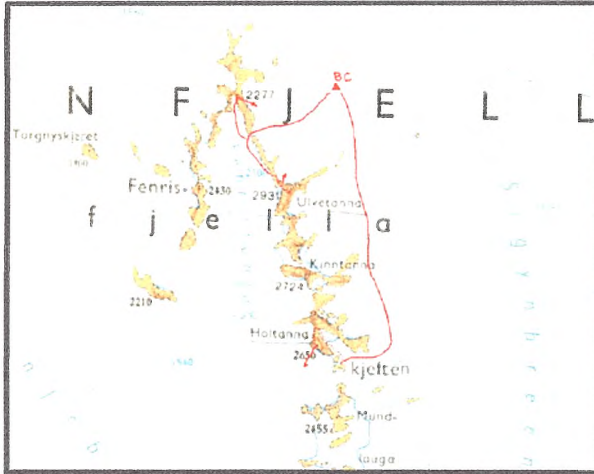


Figure 2 Map of the Fenris mountains

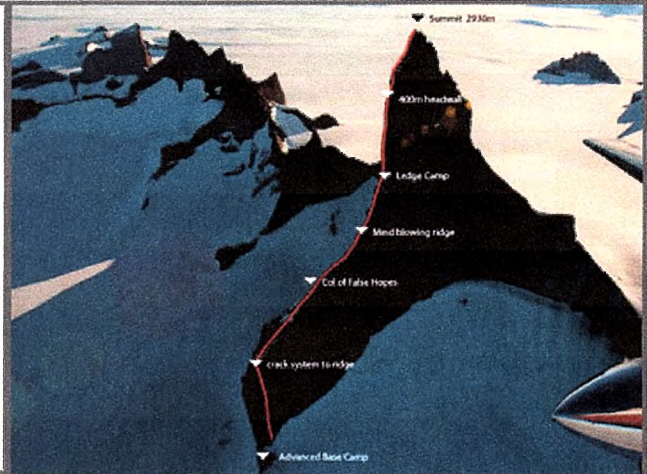


Figure 3 The objective – the NE ridge of Ulvetanna

EXPEDITION MEMBERS

Leo Houlding, 33 (UK), expedition leader

British climber and adventurer, extremely experienced big wall climber. Successful expeditions in Patagonia, Baffin Island, Yosemite, European Alps and to Everest.

Alastair Lee, 39 (UK), film maker

Photographer and climber. Widely travelled with successful expeditions to Asgard, el Capitan, Klien Winterhoek, SA, and Cerro Autana.

Sean Leary, 38 (USA), lead climber

Speed climber, known as Stanley. Resident, and unsung climbing hero, of Yosemite. Big wall climber, with successful expeditions to Patagonia, Baffin Island, Fitzroy, Torres del Paine. One of the unsung heroes of Yosemite climber.

Jason Pickles, 36 (UK), support climber

Big wall climber and rigger, with over 20 years' experience. Successful expeditions to Asgard, ten el Capitan ascents, Klien Winterhoek and Cerro Autana

Chris Rabone, 33 (UK) Support climber/base camp manager

Successful expeditions to Asgard, Yosemite, Yukon. Experienced climber and landscape gardener professional.

David Reeves, 34 (South Africa) Bespoke grip and rigging

Ground camera, film assistant, well-seasoned remote expedition member including successful expeditions to Moonflower Buttress, Alaska, Anapurna 3, Nepal, and Cerro Autana as well as extensive bush experience, SA

Table 1 Expedition members

SCHEDULE

Houlding and his team left the UK on December 16th 2012 for Cape Town. From there they flew to Novolazarevskaya, Queen Maud Land, Antarctica, at 11pm on 21st December. They landed on the blue ice runway of Novolazarevskaya, the main logistics entry point for this side of Antarctica, at 4am and in full daylight.

PLANNING AND LOGISTICS

"I may say that this is the greatest factor; the way in which the expedition is equipped. The way in which every difficulty is foreseen, and precautions taken for meeting or avoiding it. Victory awaits him who has everything in order; luck people call it. Defeat is certain for him who has neglected to take the possible precautions in time; this is called bad luck".

Roald Amundsen

INTRODUCTION

Antarctic expedition logistics are a complicated and expensive business, the expert services of the Russian operation Antarctic Logistics Centre International (ALCI), based in Cape Town who provide support for government and scientific operations in Antarctica, were employed through their sister company, The Antarctic Company (TAC), to provide support for the expedition. Their professional and reliable services were invaluable to this expedition. For further information re logistics please see Appendix I.

UK

All organisation and equipment supplies were completed by Leo Houlding in the UK in the months leading up to departure. The demands of an Antarctic expedition are extremely severe, requiring a heavy weight approach, with ample redundancy, spares, and backups accounted for in the plan. In total, 1500kgs of food supplies and equipment was packaged into a large wooden crate and shipped by sea to Cape Town. The sequence of kit lists prepared by Leo are shown in Appendix II.

CAPE TOWN

The 1500kg of cargo was all colour coded and labelled, to ensure organisation was easy to maintain. The shipment of cargo was received by ALCI at their warehouse at Cape Town International airport, upon their arrival, the team reorganised the gear, unloading the crate, colour coding and labelling to ensure easy organisation once in Antarctica. The flight from Cape Town to Antarctica was made in a Russian cargo plane, the Ilyushin IL76 (four engine strategic airlifter).

NOVOLAZAREVSKAYA

Arctic Trucks were required at Novolazarevskaya to load up kit from the plane, and drive it to a converted shipping container for re-organisation. These containers could also be used to get some rest before the next flight, especially if the team had to wait for suitable weather conditions.

BASE CAMP

The pilot of the Douglas DC-3 (fixed wing propeller airliner) had concerns about weather conditions on the flight to Ulvetanna base camp, and was initially reluctant to conduct the requested fly-bys. However, he was able to provide the team with a couple of low passes to assess the snow conditions.

Having 24-hour daylight means that sleeping masks were a must, and rudimentary basics took a considerable amount of time out of every day, mainly due to the cold temperatures. Protecting key pieces of kit from the cold requires constant management, as well as making sure each team member is able to manage their own temperature and comfort. Everything that must not freeze had to join the climbers overnight in their sleeping bags – boots, inners, hats, gloves, water bottles, batteries. Even a climber’s pee bottle must be kept warm, otherwise it will be impossible to empty it (indeed it may have to be boiled up alongside the morning brew!).

Once base camp was established, the team made plans and preparations for establishing an advanced base camp, and transporting across the multiple loads.



Photo 1 The arrival of the team and their kit

The transportation of kit to advanced base camp required the sledging of hundreds of kilos across the snow, via 45kg backpacks up a 45deg incline, several hundred feet up. The team needed to deal with knee-deep snow and a traverse via an exposed rock cliff to a significant rock scramble. This trip with full packs was completed twice a day for five days.

Unfortunately, the team’s solar power system at base camp struggled. The expedition went from having six large capacity batteries, down to two, which made communications and documentation difficult. Unfortunately, there had been a recall on the system the day the team flew out to Antarctica.

ADVANCED BASE CAMP

By 7th January, the majority of the kit had been hauled up to advanced base camp, which consisted of three tents, a massive balancing boulder, and a cave that had been carved into the side of a snow ridge (taking nearly six hours to complete). The cave fits four people, and was challenging to carve out, as unfortunately the snow was too hard for snow shovels. Within the cave, the team carved out a large bench, a work table, and shelf space, furnished by sheep skin furs and a vent hole/ sky light.

ULVETANNA WALL

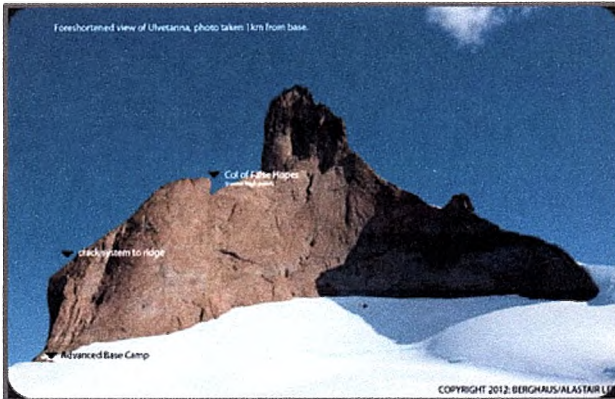


Photo 2 The northeast ridge of Ulvetanna

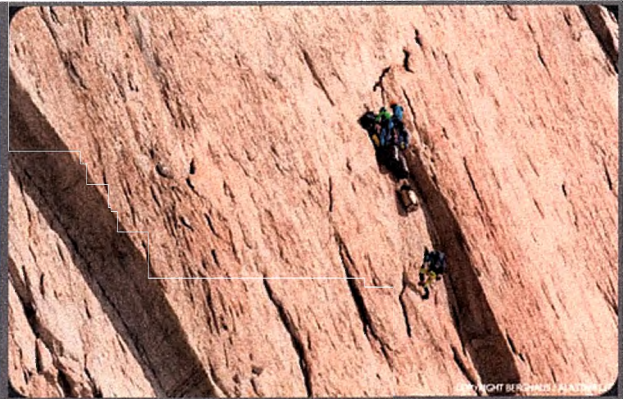


Photo 3 Hauling kit on the wall

SUPPORT

The expedition would like to thank the following people for their support and equipment:

Berghaus supplied the majority of the teams clothing, some of which was designed specifically for the expedition. The Antarctic-specific eight man base camp tent was on loan from Weather Haven UK, with other tents made by Terra Nova. The solar equipment was provided by Goal Zero, and the camera equipment from On Sight, with lenses from Cannon UK. Simon Garrod's advice and consultation as a remote field camp manager for the British Antarctic Survey was incredibly helpful, and we are grateful to Adventure Learning Schools for coordinating the educational side of the expedition. The expedition used DMM climbing hardware and Five Ten climbing footwear.

The expedition would also like to thank the families and close friends of all the expedition members.

FINANCES

£150,000 of the budget was provided by Berghaus, based on Leo's long term professional relationship with the company, and on the understanding that Alastair Lee's professional photography would be provided for promotional purposes. Berghaus were the main sponsor of the expedition film and are promoted within all public relation activities related to the expedition. The shortfall in the budget (£31,220) was covered by the expedition leader, Leo Houlding, due to the financial constraints of the fellow expedition members. Leo hopes to recoup that investment with slide shows and lectures, based on the expedition, over the next few years. A summary breakdown of the costs is shown in the table below:

| | |
|--------------|--------------------|
| Equipment | £22,916.17 |
| Food | £7,355 |
| Cargo | £3,305 |
| Flights | £7,849.32 |
| Comms | £3,109.61 |
| Insurance | £10,600 |
| ALCI | £126,086.08 |
| TOTAL | £181,221.18 |

Table 2 Summary of costs

TRAVEL AND INSURANCE

Securing insurance for this expedition was extremely difficult, complicated and expensive. The normal sources of insurance would not cover such an extreme and expensive expedition, including the British Mountaineering Council, which was disappointing. Eventually a bespoke policy was arranged through Ansell Insurance brokers, underwritten by Lloyds of London, which explicitly covered all the proposed activities of the expedition. However, this cost £10,600.

This insurance policy covered the insured person(s) to participate in the following list of specific activities: Mr Leo Holding + 1 other member of the team will be participating in all of the activities listed below, the four remaining participants will participate in all activities other than BASE Jumping and Wing suit flying.

BASE Jumping, Wing suit flying, Mountaineering with ropes up to 3000m Rock climbing with ropes, Ice climbing, Abseiling, Camping, Cross country skiing, Glacier crossing/hiking/skiing, Kite skiing.

Travelling to and from Cape Town, the team carried 500kg of luggage between six members, plus a 1000kg box of gear and food which was shipped out six weeks previously (and released by customs less than 36 hours prior to departure to Antarctica). This kit consisted of 10,000 different items (90% of them crucial to success!).

The team flew from Cape Town to the ice runway of Novolazarevskaya, Queen Maud Land, Antarctica, via a Russian cold war transport Ilyushin Il76. 75 pieces of luggage with a final weigh-in of 1490kg were loaded onto the plane. Once at Novolazarevskaya, we were told we may be delayed by up to a week, as the unstable weather patterns lead to an ever changing flight schedule.



Photo 4 Team with the Il76 at Novo'



Photo 5 Leo with the DC3 and Ulvetanna

FOOD AND WATER

The expedition carried four MSR XGK stoves and two jet boil sumo gas stoves. Fuel consisted of 100 litres of white gas (liquid fuel), procured at Novo' by ALCI. This is significantly more than would be required but due to its crucial role in the expedition success, and indeed survival, plenty of contingency was built in. Twenty pressurised gas containers were sent from Cape Town by special arrangement by dangerous goods shipping via ALCI.

The most efficient snow melting technique in base camp and advanced base camp was to use two stoves to heat one five litre pan. Once on the wall, the camp was situated close to a snow patch, providing accessible fresh water. The jet boils were used inside the porta-ledges.

Consistently sub-zero temperatures meant that all water must be sourced by melting snow or ice, and a daily, per-head ration of five litres for drinking and cooking equated to around five hours manning MSR® stoves.

Most of the food was dehydrated rations provided by Bee-Well foods. Six men over 35 days in base camp totalled 210 man days of food. This was packed into 24 hour ration packs containing breakfast, main meal, dessert, soup, military biscuits, protein shake, isotonic drink, hot chocolate, beef jerky and chocolate bar. Other rations included 20kg of South African steak, 8kg of specially prepared 'extreme expedition blend' Farners expresso coffee, and a crate of Glen Livet single malt.



Photo 6 Stan, Leo and Jason tucking in to the dehydrated expedition food.

EQUIPMENT AND FREIGHT

During the preceding 12 months, Berghaus and the team went to new lengths to develop, test and refine the very best kit required for this extreme expedition. Beyond this, the kit list for the trip was painstakingly considered (see spread sheet KIT LIST).

Kit list spread sheet

The equipment was packaged in a large wooden crate and shipped from the UK to Cape Town via road and sea with World Freight. The shipping agent in Cape Town responsible for customs clearance and storage was ALCI. Cape Town to Antarctica freight services were also provided by ALCI. Return of cargo from Antarctica to Cape Town was the same.



Photo 7 Leo in the down suit



Photo 8 The team's luggage for the flight from Cape Town to Novo'.

COMMUNICATIONS

The communication set up included two Iridium 9555 sat phones, and BGAN high speed satellite internet terminal, all within the studio/communications tent. 140W of solar power and deep cycle lithium ion batteries were used to charge all communications, camera and other electrical equipment (including laptops and batteries), and was powerful enough to charge equipment even in poor light. As a backup a 120 watt diesel generator was procured at Novo and 25 litres of diesel. The BGAN satellite internet worked well and kept the team online, sharing progress and photographs with the world. The team also carried eight shortwave personal radios with a transmission range of 30 miles for inter-member communications.

A detailed communications plan was in place during the expedition, between the field camp and the ALC base at Novo', which can be viewed in Appendix III.

EMERGENCY PROCEDURES

Please see Appendix III.

EVACUATION PLAN

Please see Appendix III.

CAMP ARRANGEMENTS

Base camp took 12 hours to establish. The camping set up was as follows:

One communication/storage/studio tent (eight-man double poled Hilleberg Atlas tent).

One mess tent (16 x 8 ft Weatherhaven Endurance, specifically designed for polar field camps).

Three Terra Nova three-man Hyperspace tents with double pole sets.

Three proto type two-man Berghaus alpine tents.

This arrangement allowed sufficient redundancy in case of weather damage. Preparation for inclement weather involved digging snow valances and building three-four foot high snow block walls to deflect wind. Each tent contained a carbon monoxide sensor (see the expedition kit list for further details).

24 hour solar radiation contributed to keeping the tents warm. The Weatherhaven cook/mess tent worked fantastically well, and formed the hub of camp. The toilet igloo consists of a wind break and a barrel sunk into the snow 30m downwind of camp, marked with bamboo stakes and flags.



Photo 9 Leo building up extra snow defences



Photo 10 Using the snow saw to construct



Photo 11 The team at advanced base camp



Photo 12 Dave at advanced base camp



Photo 13 Leo and Stanley in the snow cave

ENVIRONMENTAL AND SOCIAL IMPACT

The expedition did not leave any solid waste at base camp, or advanced base camp. All waste other than grey water was flown out. The only materials left were 35 abseil stations, on Ulvetanna itself.

During the trip, Houlding participated in an innovative education initiative with students from six schools following the team's progress live, as part of their curriculum. The result of a unique partnership between the Adventure Learning Schools (ALS) charity and individual schools, it is hoped that the project will inspire hundreds of youngsters. Houlding has collaborated with ALS and school staff to develop content for students, covering essential considerations that will keep the climbers alive on their expedition, ranging from logistics and planning to nutrition and dealing with the extreme climate. This was a great opportunity to turn it into something that benefits young people. Leo Houlding remembers the excitement of hearing about this kind of expedition as a child, and felt that Ulvetanna offered many opportunities to pass on rich learning to young people. This ranged from the mathematics of food rationing and calorie intake to the science behind the new Berghaus Hydrodown technology in the team's insulated clothing.



Photo 14 Leo with children from local schools, discussing climbing techniques at the indoor wall

PHOTOGRAPHY AND FILM



Photo 15 The collection of camera equipment

The team succeeded in its aim to document the entire expedition and ascent with world class photography and film. The photography has been seen by millions through online specialist national and international press publications. A film of the expedition provocatively titled "The Last Great Climb" will be made

available upon request to the MEF. This was released in November 2013 to great critical acclaim, winning the Special Prize for Film Craft at Kendal Mountain Festival, and Best Climbing Film at Banff Mountain Film and Book Festival.

TRAINING

All of the team are highly experienced in alpine big wall and expedition climbing trips. However a specific polar survival and extreme cold climbing trip was undertaken in April 2012 to northeast Greenland. Five days were spent training with polar guide Philip Poole based at a camp at Constable Point. Then a ten day traverse/observational expedition was undertaken to a remote and unexplored glacier in Renland, Greenland. It was extremely cold, with an average temperature of -25 and a low of -30 at night. The experience and lessons learned during this training trip were invaluable to the success of the Antarctic expedition. The team's preparation began in the Arctic with the Asgard Project, to Yosemite and up The Prophet, and on to the Lost World of Autana, deep in the Amazon.

PERMITS

A comprehensive permit was issued by the foreign and commonwealth office for the expedition. (Reference number S3-07/2012). Please see Appendix IV.

EXPED REPORT/EXPED LOG (DIARY)

December 20th 2012 4pm fly to Antarctica
December 21st 2012 Arrive at Novo 4am, gear sort.
December 22nd 2012 Good News – we leave in one hour. Fly to base cap. Start camp.
December 23rd 2012 Poor visibility, camp pimp
December 24th 2012 Approach reconnaissance
December 25th 2012 Load of climbing gear to ski stash.
December 26th 2012 Base camp pimp
December 27th 2012 Double load climbing gear moved
December 28th 2012 Preparation for storm – wall building
December 29th 2012 Food, portaledges to advanced base camp. Chris, Dave, Leo, Jason, Stan to the cave.
December 30th 2012 Base camp to advanced base camp/cave load
December 31st 2012 Base camp to advanced base camp – last load.
January 1st 2013 Move to advanced base camp
January 2nd 2013 Snowing. Rest at advanced base camp
January 3rd 2013 First climbing on the pillar
January 4th 2013 Rest at advanced base camp
January 5th 2013 Stan's California Crack, Leo and Jason Cosmic Ridge.
January 6th 2013 Stan and Chris epic to the col of false hope.
January 7th 2013 Leo and Jason to Plateau of Great Expectations
January 8th 2013 Rest day
January 9th 2013 Strip the pillar and re-fix (Al and Chris to plane wreck).
January 10th 2013 Rest day
January 11th 2013 Haul first load to col
January 12th 2013 Rest day
January 13th 2013 Blast off! Leave the ground for 8 days (big haul until 4am).
January 14th 2013 Rest day on wall.
January 15th -20th 2013 Wall climbing

January 20th Re-fix
 January 21st descending and cleaning the wall
 January 22nd descending and cleaning the wall
 January 23rd arrive back at advanced base camp
 January 24th strike advanced base camp
 January 25th return kit to base camp
 January 26th Picked up at 3pm to go back to Novo

| Date | Location | Conditions | Activity |
|----------|--|--|----------------------|
| 23/12/12 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | Temperature: 8 C, Whiteout, snow, 0 knots | Setting up base camp |

| Date | Location | Conditions | Activity |
|----------|--|------------------------------------|----------------|
| 25/12/12 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | -5 C, sunny and clear, 10 knots | Reconnaissance |

Christmas Day and the first recce to the mountain ski tour/recon to the base of the wall, flat wind packed snow. The safest approach took us to the absolute start of the NE ridge we plan to climb, where Ulvetanna starts to rise from the flat expanse of ice. We skied to a small col then ditched the skis and scrambled along a rocky spine separating the north and east faces. To our right, steep snow slopes dropped to the bowl beneath the north face, while to the left the terrain plummeted hundreds of meters over a cliff to a glacier far below.

The team scrambled along this ridge, Ulvetanna's sit-start, until the mountain shot up into sheer vertical alpinism and we couldn't continue without rack and rope. Here at the start of the climb, we found a sheltered scoop in the snow field which we decided would make a perfect advanced base camp.

We arrived late and although the sun was warm in our little snow valley, the cold shadow of Ulvetanna relentlessly crept closer. We ran away, nobody wanted to be caught in that icy shade. Once the sun leaves, temperatures plummet by tens of degrees and life stops being enjoyable. Existence is reduced to the most basic needs of food and shelter.

Today we could strap on our skis and head back to the sunlight but once on the wall we will be forced to endure until the sun completes its circle around the Antarctic sky and brings us warmth again. We'll live in terms of sun and shade rather than day and night.

After a quick stop for tea we skied away toward our distant base camp. Behind us the sharp spine of the NE ridged sliced upward toward our future camps. The weather was beautiful and the climb looked spectacular. Tomorrow we'll start shuttling loads the 4 km they need to be moved. It feels great to be moving toward our objective and we're looking forward to the adventure that's sure to come.

| Date | Location | Conditions | Activity |
|--------|--|--|---|
| 1/1/13 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | -5 C, clear, sunny, beautiful, 0 knots. | From base camp to advanced base camp |

The temperature has soared above freezing and the wind has dropped off entirely. Although the slightest air movement will have you reaching for your down jacket and face mask. This is mid-summer, Queen Maud Land, Antarctica and conditions do not get any better than this. Judging by the size of the task in hand we are going to need them and a little bit of luck to achieve our objective.

After a much needed rest day Stanley, Chris and Al headed up the fixed ropes on the initial crack system from where Stanley free climbed the stunning final 60m hand crack to the ridge itself and we managed to get some shots and footage of the ascent, whilst forearms cramped and guts churned.

Expedition life looks glamorous but the reality is it's hard, enduring and tough. The air here feels rarefied and many of the team have been suffering from symptoms similar to altitude sickness. The morning that Al made first contact with the wall came with the constant sensation of wanting to vomit, feeling light headed and low energy.

Even the gallons of adrenaline produced throughout the 250m jumar to the high point will not mask the sickness, and then the fatigue and dehydration start. Even holding the camera and unclipping a karabiner causes arms to go into spasm. Fortunately, Stanley is made of stern stuff and his almost bionic-like physical prowess saw him climb the crack in fine style with no rests and minimal cursing.

From here Leo and Jason took up the reigns and pushed the rope up further along the ridge another 200m or so.

Yesterday Stanley and Chris once more headed up to the high point to try to reach the col on the other side of the massive Gendarme (pinnacle). This was a point where we had sighted our next camp, and we were hoping for a good ledge system and for the ridge to be easy enough to ferry loads back and forth to stock the first wall camp. Stanley and Chris left at 7am and were out of radio contact all day until they finally appeared back over the ridge at the top of the crack system some 12 hours later and made the long abseil back to the relative comforts of advanced base camp.

The news wasn't good, another epic day of stretching the ropes out, climbing loose and hollow flakes on crumbly rock in ice filled cracks only to find the col was barely big enough to stand on never mind set up a camp. Stanley described the col as 'one of the most amazing spots I've ever been to, but not somewhere you'd want to hang out'.

It's also a lot more exposed to the icy wind on the ridge and loses the sun earlier than the north face. Plus the ridge was much longer than anticipated, and not so technically straight forward as it appeared from the ground. Even if the col had been big enough for a camp how would we get all our kit there? A tactical debate about the climb was to dominate the evening's hang out and proved inconclusive. More dehydrated food, hot chocolate, protein mix and sleeping through the midnight sun followed.

We're almost halfway through our time on the ice, and still so many questions remain as to how we are to make the ascent of the north-east ridge of Ulvetanna. Today Leo and Jason have headed up the ridge again to see whether we missed something in the cold and fatigue, is there an option not yet considered? The team's spirit is holding strong and if anyone can figure this out, it's Leo and the boys.

Everything we need for our next camp is in position and we are ready to move up to our stunning ABC, complete with en suite snow cave. Today we make the committing but exciting move of leaving the comfort and security of Base Camp to begin the upwards assault. Everything and everyone is working superbly. Spirits are high but energy is a little low, we have been working hard yet have barely begun. The task we have set for ourselves is huge. Our objective's character ranges from inspiring friend to terrifying enemy depending on sun, snow and wind conditions.

The forecast for the next few days is good. We should start climbing tomorrow; in these conditions we will be using free boots and chalk! Let's hope that the weather gods extend their welcome a while longer...

| Date | Location | Conditions | Activity |
|-------------|--|--|-----------------------|
| 4/1/13 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | 5 C, clear, sunny and beautiful, 0 knots. | Starting up the ridge |

Over the past few days, the boys have been missioning up multiple loads to ABC (Advanced Base Camp aka. Dungeons). This involves sledging hundreds of kilos across the snow with 45kg backpacks up a 45deg incline, several hundred feet up. The snow is knee-deep in places, and the journey includes a traverse along an exposed rock cliff, and an amazing, but quite technical, rock scramble. The team have completed this journey with loads, twice in a day for five days, and have found it tiring.

The majority of the kit that we has now been hauled up to ABC, and the boys have set themselves onto setting up 'Dungeons' as they call it. We have three tents, a huge balancing boulder and a cave that has been carved into the side of a snow ridge (taking nearly six hours to complete). The cave can just about fit four people but was difficult going to carve out as the snow was hard.

Finally, after all this prep work, and one day of rest, the team have started the first few pitches up the ridge.

All free climbing, with Leo starting off along a series of crack systems, Stanley climbing the second pitch which was an off-width crack system. Dave (rigging) watched most of Stanley's wedging and wriggling through the 600mm lens brought for filming, and said it looked like a very challenging pitch. Leo continued with another pitch whilst Chris and Dave came back to base camp for some battery charging and data back-up. The decision to continue with an additional pitch, despite the setting sun, was discussed, and we felt that the team would be happy with themselves for completing the majority of the pillar which leads up to the main ridge.

The climbers had a tiring day on the wall, and will need a rest day. Stanley apparently lost some skin during that off-width from hell. Leo has been frantically looking for a photo of the mountain with a less threatening perspective

The plan tomorrow is to complete the first part leading up to the ridge. Al will be filming Stanley while the others make a start at fixing lines up the massive ridge and prepare for an exhausting haul/ load ferrying mission. Dave will be joining the climbing team tomorrow in ABC with the 600mm lens.

| Date | Location | Conditions | Activity |
|-------------|--|---|-----------------|
| 7/1/13 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | 8 C, clear, sunny, no clouds, 0 knots. | Route finding |



Photo 16 The team admiring the wall on arrival

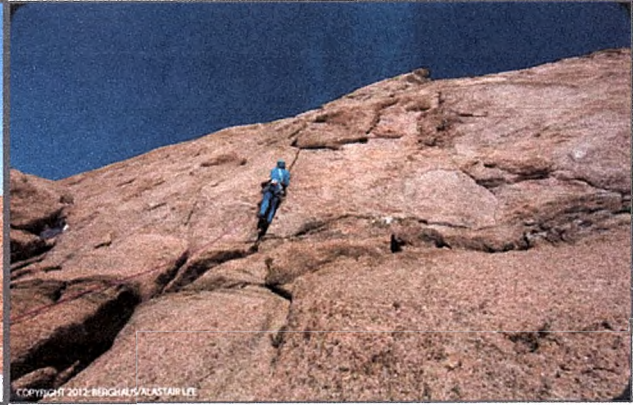


Photo 17 Stanley crack climbing

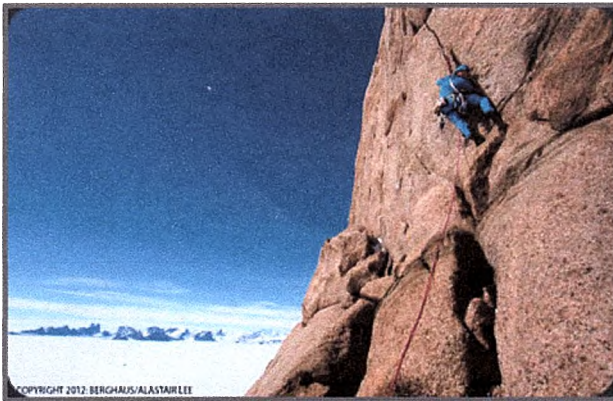


Photo 18 Stanley crack climbing



Photo 19 Leo at a stance on the wall



Photo 20 Leo hanging on the wall



Photo 21 Dave and Stanley

| Date | Location | Conditions | Activity |
|---------|---|--|---------------------------------|
| 11/1/13 | ' Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | 5 deg C, clear, high level clouds, 0 knots | Route finding, hauling and prep |

Stanley: "Hold on Guys, There is no way that we are going to haul all our sh*t up this ridge, never mind Al and Jason dealing (*with the retreat*) once we jump off, Over".

Jason: "....." (Silence)

Stanley: "Stop hauling and let's go down to ABC and have a chinwag. Over".

That conversation was the start to a slight turn of events and another epic undertaking.

It was Leo and Jason's rest day after an epic day of pushing and fixing a line up the ridge. It was now Stanley and Chris on the front line pushing forward fixing more rope and heading towards the headwall. The boys are making good progress; the day was warm, no wind and no cloud.

We had not had any radio contact with Stan and Chris for the whole day as we had lost line of sight for our radios to work. At around 14h00, Leo and Jas got out of their pyjamas and headed over to the start of the climb to begin with hauling the first load up to the ridge. The first load consisting of two large haul bags (each one big enough to smuggle a sheep) and three portaledges, all with a combined weight larger than Leo or Jas.



Photo 22 Stanley climbing

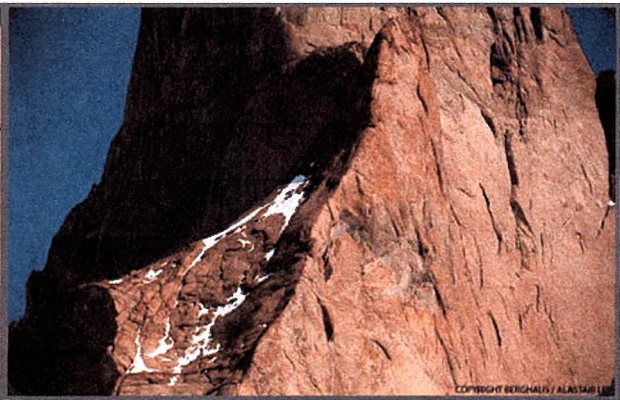


Photo 23 The ridge approach

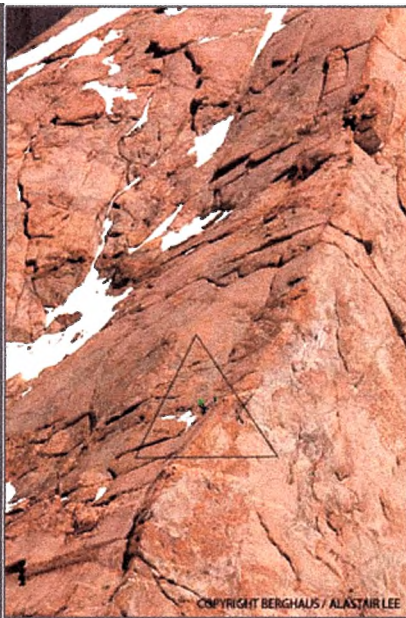
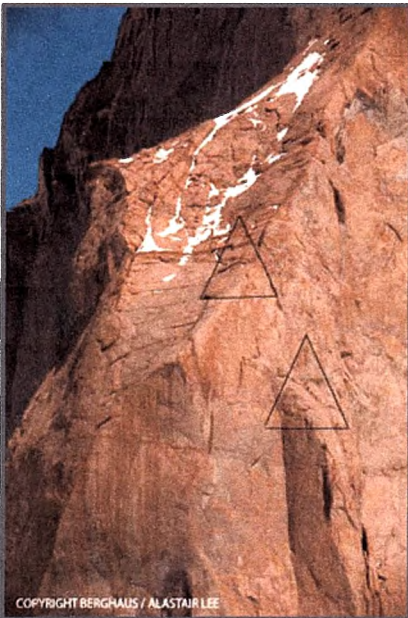


Photo 24 Photo 25 Photo 26 Leo and Jason Leo, Jason and Al fixing the new abseil line

The team jumared 100m up the ropes before starting to haul the load. Leo starts taking up the tension of the haul rope and (attached to the other end of the line), walks down the rock face as a counterweight). There isn't much reaction from the massive load sitting on the snow some 100 meters below them, so Leo begins to jump on the rope which eventually turns into violently throwing his weight onto the line. Finally there was movement and the load started its journey up the snow slope, until the load got caught on the first rock it hit. Both Leo and Jas attached themselves to the haul line, now both violently jumping on the rope in tandem (a rather beautiful synchronised display of rope access in action) trying to free the haul

bags. Still no movement, so Jason goes down to the bottom to free the load while Leo continuing with his violent jerking until Jason climbs back up again to give Leo a hand. Finally after a couple hours of hauling (with some great snag free examples too), the climbers are about ready to start hauling the load to a "ledge of sorts" 3/4 of the way up the face. Stanley rocks up at the top of the face, returning from an absolutely epic ridge traverse and radios in. Seems like the traverse was a complete nightmare with just a 15kg day pack, never mind dragging massive haul bags from your waist, always in a constant state of having to Jumar or abseil along the horizontal lines they had fixed. After much deliberation, it was decided that Leo and Jas were going to complete climbing and fixing ropes to the base of the headwall (up the ridge commonly known to us as the dinosaurs back.)

Then after a rest day, Leo, Jas and Stanley make one massive push of a day and completely strip off all the ropes from the bottom up to the 'Col of Despair' (17 pitches and 1100m of rope). Then about one pitch up the dinosaurs back they planned to fix ropes down to the snowline some 500m below.

Despite the fact that we had run out of rope and needed to retrieve a load of the rope used on the ascent for the rest of the headwall, it also meant there would be a realistic and safe route already in place for Al and Jason who were going to have to come down alone after Leo and Stanley's wing-suit off the mountain. Without this route in place, it would be very difficult for Al and Jason to descend. All the rope and climbing gear would be up on the wall so Leo and Stanley would not be able to climb back up the mountain to help, leaving Al and Jason on the mountain dealing with all the kit, climbing gear, haul bags and rope fixing.

So four days ago, Leo and Jas completed the ridge. The world's scariest VS. (Very Severe) route and two days ago, the climbers set off on their mission. 14 hours later, they all return (at around 23h00) having completed their objective. All looking pretty knackered but also looking happy. In fact they had not factored in the walk back on the snow slope, which required a 5mm tag line to abseil down (which ran out halfway down the slope). It is ironic that after that epic long scary mountain mission, they are now faced with negotiating the remaining 50 meters of slippery icy snow slope with rock boots. I think after so much slipping and falling, the boys just resigned to the sitting position and ended up sliding down the slope on their bums.

Yesterday was a rest day; today everyone is hauling everything up the new line that they just fixed. They then plan to make a move to the top of the ridge and establish a wall camp either tomorrow or the day after depending on how the hauling session goes (the boys are still hauling kit up the new line and it is 22h00. I am guessing it's going to be another rest day tomorrow).

| Date | Location | Conditions | Activity |
|----------------|---|---|-----------------|
| 13/1/13 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | 5 deg C, clear, high level clouds, Sunny, 5 knots | Hauling |

The major hauling session to get most of the kit up to the ridge took 12 hours. The guys came back to ABC completely exhausted, and will probably need a rest day. Dave has been in Base Camp backing up data, blogging and doing charging, and with access to any top up items of kit that needed transferring to ABC.



Photo 27 Chris and Jason hauling

Photo 28 Moving loads on the slope to get to the climbing

Dave eventually arrived at the "Rock" as it is known (just below the main hill to get to ABC) with a sledge weighing in around 100kg. The trip was difficult with only one pulk, which was so full it kept falling over on every minor bend, combined with the gradually increasing slope of the hill. He was met by the team, who came down to help carry everything up to ABC. Al informs Dave that the plan had changed slightly and that they were all going up the climb. Chris was being kidnapped, leaving Dave on his own for the next 10 days.

This will be lonely for Dave, but with Chris' help, filming will be easier (with two complete climbing teams), and the return trip safer. Even with the new easier route down the mountain fixed in place, it was going to be a significant challenge for just Al and Jas to deal with on their own. This has been a massive weight from Al's shoulders.

Before going to sleep that night in ABC, we all enjoyed another amazing evening of food (mainly meat!), with Stanley at the stove. There was much excitement, anxiety and anticipation about the next day's climbing. Stanley murmuring and chatting to himself, psyching himself up. Jason singing a song/war chant about a big wall suffer fest. Al was preparing his climbing harness and attaching all his camera and lenses pouches among his climbing apparel. Chris was kind of in limbo, still sorting general camp things out but also trying to get into climbing mode (being in a mind-set of reading and chilling out for 10 days and then being thrown into 10 days of scariness can be somewhat of a shock). Leo was dashing back and forth, sorting kit out and lost in his own thoughts with the occasional shout out to check individual's preparedness and kit. Bed time was around 23h00 instead of the planned 21h00.

| Date | Location | Conditions | Activity |
|---------|--|---|------------------|
| 14/1/13 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | 10 deg C, clear, high clouds, Sunny 15 knots | Leave the ground |

Departure time: 11h00



Photo 29 Chris and Jason hauling on the snow slope

The team set off with huge loads (despite having done two hauls earlier) stumbling with the occasional face plant under the weight of the bag and the unstable snow (the route up to the base of the wall is pretty steep). Most of the loads were carried on their backs one by one up the rope, and it took a while for all five of the team to get up. Next were the haul bags, which were pulled up the slope with a pulley system with both Jason and Chris acting as counterweight, running up and down the hill in short bursts, slowly edging the kit up the slope. The team only started juggling on the rock at 13h00. Al was first to go up to get into position to do a bit of filming, followed by Stanley and then Jason, Chris and then Leo.

Dave filmed as much as he could before starting to notice the steep area he was filming from was starting to avalanche. It was incredibly hot in the "snow bowl" and as the day moved on, more and more snow rivers started trickling down.

Throughout the day Dave heard them shouting to each other, spread hundreds of meters apart along the rock face, with the occasional "ROCK!" shout out. Dave filmed some footage from a different angle of the team slightly higher up the face, before running out of camera memory and heading back to Base Camp.

Around 18h30 Dave radioed in to tell the boys the wind had picked up and to expect high winds on the ridge (which is only 0,5m wide). Al replied and said he had just arrived on the ridge and could confirm the stronger wind.

Dave received word at 13h30 that the team are all fine, they have just woken up and put a coffee on. They only finished hauling in the early hours of this morning and after setting up portaledges and making dinner, everyone got to bed around 4am. They are all now camped at the base of the headwall on the ledge that has acquired the name "The Plateau of Great Expectations".

Today the team will rest and relax. They had planned on doing some filming on the ridge, but have decided to do that tomorrow. The day after, they may start climbing the headwall.

| Date | Location | Conditions | Activity |
|------------|---|--|---|
| 14/01/2013 | Mavericks, Ulvetanna Base Camp, S 71 49.146', E 008 21.867' | -15 C, clear, sunny and beautiful, 0 knots | NE Ridge Ulvetanna, 1750m, E6 6b, 5.12, A2 (C2) |

SUMMIT! We made it! And Louis just did a low fly by in the Basler!

Ulvetanna's fearsome North East Ridge allowed us safe passage up and down from her summit but not without showing a few teeth. We're back in base camp with all our stuff, the weather is great again and we're leisurely conduct another great gear faff.



Photo 30 Team picture on the summit

In this endless light we have lost track of the passing of days, measuring time in terms of energy spent and distance gained. There have been many 20 hour days of intense, gruelling effort and then days spent too exhausted to leave camp. We have conducted many complicated, scary missions (in truly savage conditions at times), and in the process safely climbed this beautiful mountain, leaving very little trace of our presence. We've all been pushed to our limits, taken a beating but come out top (well at the bottom thankfully!). We have just completed the first ascent of one of the finest alpine/big wall lines anywhere, and we are about to eat steak accompanied by The Glen Livet 18. It does not get any better than this. Nice one boys. We have done it. A decade of dreaming, a year of planning, a month on the ice, and a week on the wall and we have done it! It is just starting to sink in that we have succeeded and are safe. (Leo Houlding).

After a second gruelling haul and ferrying loads along the drop jaw ridge we established a magnificent well-stocked wall camp on the Plateau of Great Expectations in good conditions. The ledge at the end of the ridge is a feature of the mountain.



Photo 31 The tired team

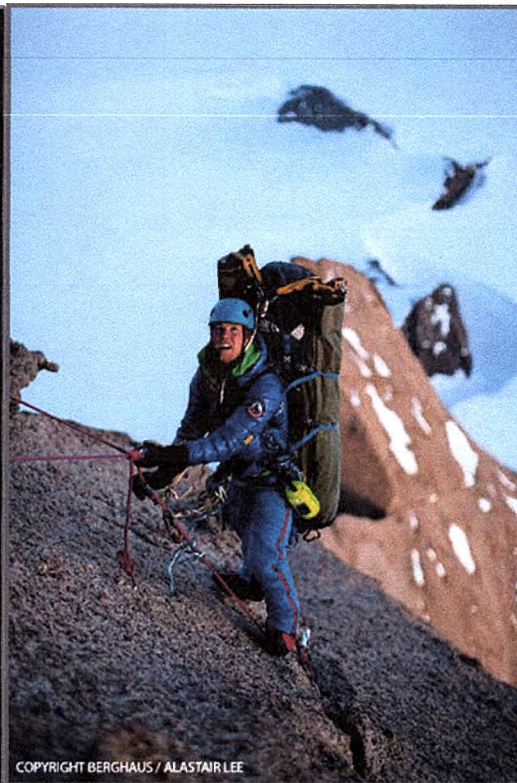


Photo 32 Leo on the wall



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Photo 33 Portaledge at the end of the ridge



COPYRIGHT BERGHAUS / ALASTAIR LEE

Photo 34 Leo with kit surveying the next pitch

The ominous headwall rises for 400m above. It is only in the sun from 07.00 until 14:00, forcing us to begin the arduous process of brewing, eating, preparing and dressing for battle, painfully early. On a countdown schedule we had to make continuous progress to be up and down in time for the Russians to pick us up.



North East Ridge of Ulvetanna

Photo 35 The North east ridge of Ulvetanna



Photo 36 Summit success

Though we had been discussing a couple of route options from afar, up close the line was unmistakable. A short blank slab that required two hand-drilled bolts led to wild climbing up a perfect system of corners and cracks for 200m to a giant roof. Stanley wriggled his way through the Roof Slot of Despair and we all braved shade and wind up the off-widths and chimneys above to reach the epic Snow Petrel pillar, below the upper headwall.

That was when the Antarctic conditions we've spent so long fearing finally showed up! For three days, high winds, low temps and heavy snow battered us and the mountain. Thankfully we were ready. Our sleeping bags are rated to -50 C and have been havens. We had sufficient clothing, kit, strength and

motivation to push on culminating in an unforgettable summit day during the worst conditions of the expedition. We reached the summit in -35 C with wind chill, wearing thick beards of ice, and hearts full of joy. The cloud even broke for five minutes dousing us in sun as we surveyed the panorama.

On the descent we cleaned the ropes until the Pillar. The most perfect BASE exit beckoned down the east face, a compelling wing-suit line to a landing zone below the 'rock' would've completed the dream. We considered leaving ropes fixed from camp and hoping for better conditions, but having seen Ulvetanna growl we were too terrified to wait around to be bitten. We continued down to wall camp cleaning ropes, braced for a scary descent in poor conditions, dreams of flight postponed.

The next day we were all exhausted, intimidating clouds finally broke into the fine weather we have been enjoying since, a God send for the complicated descent. Three endless days of hard, well executed (dare I say fun?) work and we are home. Our outpost on this glacier that a month ago felt like the edge of the world now feels like home. Before, the run to ABC felt like a serious day out, on our final load it was an enjoyable three hour round trip. The sun is now much lower in the sky and it is colder, -17 C earlier.

We are almost ready for airlift and keen to get out of here whilst the flying conditions are good. The weather gods of Ulvetanna, Queen Maud Land, and Antarctica have been so kind; we don't want to out stay our welcome.

CLIMBING CONDITIONS

After an initial scare of a cyclonic storm that battered Novo' with 80mph winds December 24th-28th but thankfully stalled before reaching base camp, we experienced an unprecedented spell of good weather. Stable high pressure provided temperatures between 0 and -10 degrees centigrade, and virtually no wind for three weeks. In the sun, out of the wind we were surprised to find it just possible to climb without gloves and in rock boots. On cloudy days, or in the shade, gloves and alpine boots were required. High on the wall at the most committed point we were hit by an Antarctic storm, with winds gusting to 52mph and a temperature of -35 with wind chill, and 35cm of precipitation. Thankfully we were sufficiently equipped and prepared for such conditions. A noticeable factor was the extreme contrast in ambient temperature between sun and shade, with an immediate difference of between 15-20 degrees C. One other factor of note is the exaggerated effect of altitude at very low latitude. We found base camp at 1800 metres to be more akin to 3500m and required ten days to acclimatise.

FUTURE OBJECTIVES

Although most of the obvious ridges and faces have been climbed there is extensive potential for more exploratory first ascents in Fenriskjeften group and further Orvin Fjell range. However, this expedition did not have time to explore further due to the extreme demands of the primary objective and its documentation.

WEATHER RISKS

We were introduced to the weather risks before we even arrived at base camp, being informed that the unstable weather patterns lead to an ever changing flight schedule. We are told we may be delayed by up to a week. Once we had established base camp, our next concern was the cyclone we which battered Novo. We were braced for it, preparing as best we could, but fortunately it stalled before reaching us.

Novo, just 100 miles away, was pounded for four days by winds up to 86 knots (well over 100mph) and blizzard conditions. Such a storm would have devastated even our well secured camp.

However mild the weather, we were aware we needed to pitch tents as though they'd be pinned in a storm for a week, as conditions can change in a heartbeat (see Photo 9). This means digging in snow valances and building a snow block wall to deflect wind. Temperatures in the area often sink to minus 50 degrees Celsius, and we may have been subject to winds that can reach 100mph. On some days, the white-out conditions meant there was no sign of the Ulvetanna wall. We realise that it would be easy to be lost within 100m of camp, and we must be diligent with GPS and compass whenever leaving camp.

Many of the factors regarding weather risks were considered when compiling the expedition risk assessment (please see Appendix V).



Photo 37 Hanging on the wall with the arrival of snow

LOGISTICS PLAN

British Ulvetanna Big Wall Expedition 2012/13

Overview

Expedition consisting of 6 people climbing in the Fenriskjeften Area, Ulvetanna Mountain.

Logistics required:

Return flight from Cape Town, RSA to Antarctica;

Transfer via DC-3 from ALCI Airbase to the area of Holtanna Mountain and back (including sightseeing flights in the Fenriskjeften region)

Daily communication and SAR support during stay at the mountains

Expedition duration is about 38 days;

White gas provided in Antarctica 100l (expedition must bring own canisters and fuel bottles)

Logistics Planning

Locations and their relevant co-ordinates

| Station / Location | Latitude | Longitude |
|----------------------------|--------------|---------------|
| Cape Town | 33°56'S | 18°20'E |
| ALCI Airbase / Novo Runway | 70°49'16"S | 11°35'19"E |
| Ulvetanna | 71°51' 49" S | 008°19' 07" E |

Provisional expedition schedule:

| Date/ Day | Activity |
|--------------------------------|---|
| 20.12.2012 / 00 | Flight Cape Town – Antarctica (departure around 23:30 Cape Town time) |
| 21/22.12.2012 / 01-02 | Preparation for the expedition at ALCI Airbase, |
| 22.12.2012 / 02 | Flight to Ulvetanna (weather permitting) - including sightseeing flight around the Fenriskjeften mountain range |
| 22.12.12 - 27.01.13/ 02- 37 | climbing at Ulvetanna |
| 27.01.2013 / 37 | Flight from Ulvetanna base camp to ALCI Airbase |
| 27.-28.01.2013 / 37-38 | Stay at ALCI Airbase or Guesthouse in Schirmacher Oasis, |
| 28.01.2013 | Flight ALCI Airbase- Troll |
| 28.01.2013 / 38 | Flight Antarctica – Cape Town (23:30 Cape Town time) |
| 29.01.2013 | Arrive to Cape Town (5:30 Cape Town time) |

Basler Turbo 67 flights and fuel planning

| No | Flight Code | Flight route Description of cargo and pax | Fuel JET A1 | Distance km | Payload kg | Flight time h |
|----|-----------------|--|----------------|----------------|------------------|------------------|
| 1 | BT-67 22 Dec | ALCI Airbase - Ulvetanna - ALCI Airbase (sightseeing) | 6 dr | 340 | 6pax +1200 kg | 2 h |
| 2 | BT-67 27 Jan | ALCI Airbase - Ulvetanna - ALCI Airbase | 6 dr | 340 | 6pax +1200 kg | 2 h |
| 3 | BT-67 28 Jan | ALCI Airbase - Troll - ALCI Airbase | 8 dr | 700 | 6pax +1200 kg | 2.6 h |

Fuel at ALCI Airbase: 20 drums
Total flight time: 6.6 h

Option of sharing flight 1 and 3 with other expeditions. Flight route will not be changed, costs will be reduced accordingly.

Note: All flights to and within Antarctica are weather dependent. Possible weather delays must be anticipated.

SIGNED by: Vasily Kaliazin
Authorised representative for and on behalf of
The Antarctic Company

.....

Date:

.....

SIGNED by: Leo Houlding
Authorised representative for and on behalf of
British Ulvetanna Big Wall Expedition 2012/13

.....

Date:

.....

| Base camp kit | Item | Brand | Quant | Unit Weight kg | Total Weight kg | Unit Cost RRP | Unit Cost Trade | Total Cost | Contact |
|----------------|---|--------------|-------|----------------|-----------------|---------------|-----------------|------------|-----------------|
| | Tents | | | | | | | | |
| sept | Weatherhaven Party Dome 16ft x 8 ft + Floor | Weatherhaven | 1 | 40 | 10/02/1904 | | 0 | | |
| snow vallances | Hilleberg Studio 8 man | Hilleberg | 1 | 20 | 21/01/1904 | | 0 | | |
| sept | Double Poles + Inner + Vest | Terra Nova | 4 | 5 | 21/01/1904 | | 0 | | |
| sept | Hyperspace 3 man + 2 spare sets poles | | 2 | 1 | 03/01/1904 | | 0 | | |
| snow | BH Pod 2 man | BH | 4 | 4 | 17/01/1904 | | 0 | | |
| | Bilber 2 man | | 1 | 2 | 03/01/1904 | | 0 | | |
| 30 | Snow stakes | | 100 | .1 | 11/01/1904 | | 0 | | |
| | Bamboo / bag snow stakes | | 50 | .1 | 06/01/1904 | | 0 | | |
| | Tent pole + fly repair kits | | | | | | | | |
| | Marker wands / flags | | | | | | | | |
| | Site tape | | | | | | | | |
| | 3mm Underlay | | 2 | 2. | 05/01/1904 | | 0 | 0 | Needle sports |
| | Tools | | | | | | | | |
| ordered | Shovels 3 x light 1 Heavy | Volie | 4 | 0.6 | 03/01/1904 | | 40 | 160 | whitby & Co |
| ordered | Snow saw | | 2 | | | | 0 | | |
| ordered | Tent snow brush | | 4 | | | | | | |
| ordered | Hand Drill + Bits | | | | | | | | |
| ordered | Hack Saw | | | | | | | | |
| ordered | Screw drivers | | | | | | | | |
| ordered | Spanner adjustable | | | | | | | | |
| ordered | File Crampons | | | | | | | | |
| ordered | File round Ice screws | | | | | | | | |
| | Fuel | | | | | | | | |
| | JetBoil Propane From ZA | Jetboil | 20 | 1.0 | 11/01/1904 | | 5 | | Collect in Novo |
| | Fuel cans 5 litre | | 15 | .3 | 05/01/1904 | | 5 | | Collect in ZA |
| | Fuel cans 2.5 litre | | 10 | | | | | | Collect in ZA |
| ordered | Fuel funnel | | 3 | .2 | | | 5 | | |
| ordered | CO monitor | | 1 | .1 | | | 10 | | |
| | Cooking | | | | | | | | |
| 1 | 2 burner | Coleman | 1 | 5.0 | 06/01/1904 | £100 | | £100 | |
| | Lantern | Coleman | 1 | 1.5 | | | | 140 | |
| | XGK | MSR | 4 | 1. | 05/01/1904 | £140 | | 200 | |

| | | | | | | | | | |
|---------|--------------------------------|----------|---|-----|--|------------|--|-----|------|
| | stove boards | | 3 | | | | | | |
| | wind shields | | | | | | | | |
| | Stove spares | | 3 | | | | | | 20 |
| | MSR Bottle 1 litre | | 4 | .5 | | 01/01/1904 | | | 20 |
| | MSR Bottle medium | | 4 | .5 | | 03/01/1904 | | | 20 |
| | Jet Boil Sumo | Jet Boil | 2 | .5 | | 02/01/1904 | | £90 | £180 |
| | Pan 10l | | 1 | .5 | | 01/01/1904 | | | |
| | Pan 6.5l | | | | | | | | |
| | Coffee pot | | | | | | | | |
| | Pans 2 litre, 2 pan set + Grip | MSR | 3 | 1. | | 04/01/1904 | | | 60 |
| | Heat exchangers | | 3 | | | | | | |
| | Pans Big 5 litre ? | | 2 | 1.0 | | 03/01/1904 | | | |
| | Funnel water | | 3 | .2 | | 01/01/1904 | | | |
| | Utensils | | | | | | | | |
| | Lighters | | | | | | | | |
| | Tupper wear? | | | | | | | | |
| | Dish sponge | | | | | | | | |
| | Dish/Clothes Soap | | | | | | | | |
| | <u>Camp Furniture</u> | | | | | | | | |
| | Table 4 man | | 1 | 2.5 | | 03/01/1904 | | | 50 |
| | chairs helinox | | 6 | 1 | | 07/01/1904 | | | 50 |
| | <u>OTHER</u> | | | | | | | | |
| | Finger tape | | | | | | | | |
| ordered | Duct Tape | | | | | | | | |
| ordered | Araldite Epoxy resin | | | | | | | | |
| ordered | Superglue | | | | | | | | |
| ordered | Hose Clips Jubille clips | | | | | | | | |
| ordered | Cable ties | | | | | | | | |
| | Wire | | | | | | | | |
| | seam seal | | | | | | | | |
| | Para Cord 2mm | | | | | | | | |
| | Bungee cord | | | | | | | | |
| | Sew kit | | | | | | | | |

| | | | | | | | | |
|------------------------------------|-----|------|------------|--|--|--|-----|--------------|
| Washing line & clothes pegs | | | | | | | | |
| Safety pins | | | | | | | | |
| Buckles / webbing | | | | | | | | |
| Cigarette Lighters | | | | | | | | |
| Nuts, Bolts, Washers, Screws | | | | | | | | |
| Fabric for repairs | | | | | | | | |
| Shower Bag | | | | | | | | |
| Branded wind socks | | | | | | | £60 | 50 |
| Logo banners / stickers | | | | | | | | |
| Decathlon | | | | | | | | |
| Black tarp | 2 | 1.5 | 04/01/1904 | | | | | |
| Heavy duty black bin bags | 0.7 | 2. | 02/01/1904 | | | | | 100 |
| Zip lock bags | 100 | 0.01 | 02/01/1904 | | | | | 20 |
| Xmas goodies (Tinsel, Crackers) | 100 | 0.01 | 02/01/1904 | | | | | 20 |
| 1 GPS Garmin 62 PLB | 2 | | | | | | | 10 |
| Compass | | | | | | | | |
| Maps | | | | | | | | |
| Climbing Beta | | | | | | | | |
| Objective photos | | | | | | | | |
| Chess Board | | | | | | | | |
| Playing Cards | | | | | | | | |
| Anemometer / thermometer | 1 | .2 | 01/01/1904 | | | | 200 | 200 |
| Kestrel | | | | | | | | |
| Telescope | | | | | | | | |
| Binoculars | | | | | | | | |
| First Aid Kit | | | | | | | | |
| Alarm Clock | | | | | | | | |
| Sharpie Marker pens | | | | | | | | |
| Note Books Pens | | | | | | | | |
| Paint set & Pad | | | | | | | | |
| Cargo | | | | | | | | |
| 5 Rubbermaid boxes | 6 | 1.5 | | | | | | |
| 120l Open top | 4 | 5.6 | 23/01/1904 | | | | £20 | £80 Ampulla |
| 3 60l Open Top | 6 | 3.0 | 19/01/1904 | | | | £20 | £100 Ampulla |
| TOTAL | | | 211.5 | | | | | 1580 |

| Item | Brand | Quantity | Unit Weight kg | Total Weight kg |
|---|-------|----------|----------------|-----------------|
| Insulation | BH | | | |
| Down suit | BH | 1 | 2 | 2 |
| Ramche Big Down | BH | 1 | 0.7 | 0.7 |
| Ilam Small down | BH | 1 | 0.5 | 0.5 |
| Asgard Hybrid small down/synthetic | BH | 1 | 0.5 | 0.5 |
| Primaloft Pant | BH | 1 | 0.5 | 0.5 |
| Shell | BH | | | 0 |
| GTX Jacket - Mnt Asgard or Kangchenjunga or Ulvetanna | BH | 1 | 0.5 | 0.5 |
| GTX Pant - Oktang Bib Pant | BH | 1 | 0.5 | 0.5 |
| Softshell | BH | | | 0 |
| Softshell Jacket | BH | 2 | 0.5 | 1 |
| Softshell Pant | BH | 2 | 0.5 | 1 |
| Mid Layers | BH | | | 0 |
| Scorch fluffy fleece | BH | 1 | 0.5 | 0.5 |
| Leo-Tard All in one | BH | 2 | 0.5 | 0 |
| Baselayers | BH | | | 0 |
| Long Sleeve Venting Tee | BH | 2 | 0.2 | 0.4 |
| Long Sleeve Tech Tee | BH | 2 | 0.2 | 0.4 |
| Short Sleeve Venting Tee | BH | 2 | 0.2 | 0.4 |
| Technical Tight | BH | 3 | 0.1 | 0.3 |
| POWER STRETCH TIGHT!!!! | | | 0.2 | 0 |
| SMOULDER HOODY !!!! | | | 0.2 | 0 |
| HATS !!!! | | | | |
| Insulated Yeti Gaiter | BH | 1 | 0.5 | 0.5 |
| Gloves | BH | | | 0 |
| Down Mitt | BH | 1 | 0.5 | 0.5 |
| Softshell Gloves | BH | 2 | 0.2 | 0.4 |
| Mid size gloves | BH | 2 | 0.2 | 0.4 |
| Powerstretch Gloves | BH | 4 | 0.2 | 0.8 |
| Hats & Headwear | | | | 0 |
| Balaclava | BH | 2 | 0.2 | 0.4 |
| Face Mask | BH | 2 | 0.2 | 0.4 |
| Neck gaiter | BH | 2 | 0.2 | 0.4 |
| Powerstretch Hat | BH | 3 | 0.2 | 0.6 |
| Logo Beanie (knitted / fleece lining) | BH | 1 | 0.2 | 0.2 |
| Headband | BH | 1 | 0.2 | 0.2 |
| Footwear | BH | | | 0 |
| Approach shoes? | BH | 6 | 1 | 6 |
| Socks? | BH | 6 | 0.5 | 3 |
| Travel clothing | BH | | | 0 |
| Tees | BH | 2 | 0.2 | 0.4 |
| Hoodies | BH | 1 | 0.5 | 0.5 |
| EO Expedition parka | BH | 1 | 1 | 1 |
| Cotton legwear | BH | 1 | 1 | 1 |
| Cotton Shorts | BH | 1 | 0.2 | 0.2 |
| TOTAL per Person | | | | 26.3 |
| TOTAL | | 6 | 26.3 | 157.8 |

| Item | Brand | Quantity | Unit Weight kg | Total Weight kg | Unit Cost RRP | Unit Cost Trade | Total Cost | Contact |
|-------------------------------|-----------|----------|----------------|-----------------|---------------|-----------------|------------|---------------------------------------|
| Personal | | | | | | | | |
| Helmets | BD/Petzl? | | | | | | | Go pro . Sony attack mounts, Stickers |
| Harness | | | | | | | | |
| Daisy Chains | | | | | | | | |
| Aiders | | | | | | | | |
| Jumars | | | | | | | | |
| Gri Gri | | 4 | | | | | | |
| Belay plate | | | | | | | | |
| Screw gates | | | | | | | | |
| Fifi hook | | 3 | | | | | | |
| Knee pads | | 2 | | | | | | |
| ICE Kit | | | | | | | | |
| Crampons | | | | | | | | |
| Ice axes | | | | | | | | |
| Leash/tethers | | | | | | | | |
| Ice screws | | | | | | | | |
| Bolocov | | | | | | | | |
| thread | | | | | | | | |
| ROPE | | | | | | | | |
| Static 10.5mm 100m x 6 | | 600 | 0.07 | 42 | | | | |
| Static 9mm 100m x 2 | | 200 | | | | | | |
| Dynamic 10.2mm 60m x 4 | | 240 | 0.06 | 14.4 | | | | |
| Lead 8.5mm 60m x 2 | | 120 | | | | | | |
| Tag Line 5mm x 60 x 2 | | 120 | | | | | | |
| Haul line | | | | | | | | |
| FREE Rack | | | | | | | | |
| DMM Cams | DMM | | | | | | | |
| Dragon Cams | DMM | | | | | | | |
| Camalot 6 | BD | | | | | | | |
| Camalot 5 | BD | | | | | | | |
| Camalot 4 | BD | | | | | | | |
| Small Cams | BD | | | | | | | |
| Hexes | | | | | | | | |
| Wires 1-12 | | | | | | | | |
| Wires Small | | | | | | | | |
| Peanuts | | | | | | | | |
| RP's | | | | | | | | |
| Quick draws | | | | | | | | |
| Snap links | | | | | | | | |
| Screw gates | | | | | | | | |
| Slings 4ft | | | | | | | | |
| Slings 2ft | | | | | | | | |
| Dyneema tat | | | | | | | | |
| AID Rack | | | | | | | | |
| Hammer | | 3 | | | | | | |
| Defunk | | | | | | | | |
| Peg rack | Size 1 | Size 2 | Size 3 | Size 4 | Size 5 | Size 6 | Size 7 | |
| Knife blades | 4 | 5 | | 5 | 0 | 5 | 3 | 0 extra size 1, |
| Bugaboos | | | | | | | | |
| Lost Arrows | 4 | 5 | | 5 | 5 | 3 | 4 | 2 extra size 1, |
| Angles | 6 | 6 | | 4 | | | | |
| Sawn Offs | | | | | | | | |
| Bird beaks | 3 | 3 | | 1 | | | | |
| Skyhooks | 3 | 4 | | 4 | 1 | | | |
| Copperheads | | | | | | | | |
| Chisels | | | | | | | | |
| Knee pads | | | | | | | | |
| HAUL Kit | | | | | | | | |
| Haul Bags | | 6 | | | | | | |
| Poo tube | | | | | | | | |
| Pro Traxion | | | | | | | | |
| Pulley Big | | | | | | | | |
| Jummar | | | | | | | | |
| 3 x 1 pulley | | | | | | | | |
| BOLT Kit | | | | | | | | |
| Drill | | | | | | | | |
| Drill Bits | | | | | | | | |
| 10mm | | | | | | | | |
| Drill Bits 7mm | | | | | | | | |
| Wrench | | | | | | | | |
| Straw | | | | | | | | |
| Brush | | | | | | | | |
| Bolts 10mm | | | | | | | | |
| Hangers | | | | | | | | |
| 10mm | | | | | | | | |
| Rivets | | | | | | | | |
| BASE Kit | | | | | | | | |
| BASE Rig | | 2 | 5kg | 10 | | | | |
| Wing Suit | | 2 | 2.5kg | 5 | | | | |
| Pilot chutes | | | | | | | | |
| Clamps, pull- up cords etc | | | | | | | | |
| Packing Tarp | | | | | | | | |
| Other BASE | | 2 | 2.5kg | 5 | | | | |

| Item | Brand | Quantity | Unit Weight kg | Total Weight kg | Unit Cost Trade | Total Cost | Sub | Contact |
|---------------------------------|-----------------|----------|-------------------|--------------------|--------------------|------------|-------------------|---------------------------|
| Solar Set Up | | | | | | | | |
| Li Battery Big Sherpa 120 | Goal Zero Solar | 3 | 1.7 | 5.10 | 350 | 0 | | Steve Roberts Mnt Boot Co |
| Li Battery small Sherpa 50 | Goal Zero Solar | 2 | .5 | | 200 | 0 | | |
| Guide 10 | Goal Zero Solar | 1 | .2 | | 50 | 0 | | |
| Solar panel Big Nomad 27 W | Goal Zero Solar | 2 | 1.5 | 3.00 | 300 | 0 | | Adam mnt boot co |
| Solar panel Medium Nomad 13.5 W | Goal Zero Solar | 2 | | | 150 | 0 | | |
| Solar panel Small Nomad 7 W | Goal Zero Solar | 1 | | | 80 | 0 | | |
| Inverter | Goal Zero Solar | 3 | 0.4 | 1.20 | 70 | 0 | | mnt boot co |
| Speakers 4xAAA | Goal Zero Solar | 2 | .5 | 1.00 | 40 | 0 | | |
| Light Elec 2W | Goal Zero Solar | 3 | 1.5 | 4.50 | 40 | 0 | 2890 | |
| Cables | Goal Zero Solar | | | 0.00 | | | | |
| USB + 12V car adpater | | | | | | | | |
| Lithium Disposables | Intercell | 24 | 0.7 | 16.80 | 120 | | 2880 intercell.eu | Al to buy? |
| Li AA | | | | | | | | |
| Li AAAA | | | | | | | | |
| AA 12V adapter | | | | | | | | |
| Comms | | | | | | | | |
| Iridium 9555 | G-Comm | 2 | 0.3 | 0.60 | 500 | 1000 | | |
| Extra battery | | | | | | | | |
| DC Charger | | | | | | | | |
| Laptop | Tough Book? | 1 | 1.7 | 1.70 | 500 | 500 | | |
| Iridium Open port | G-comm | 1 | 0.3 | 0.30 | 0 | 0 | | |
| BGAN | Thrane 700 | 1 | 3.1 | 3.10 | 0 | 0 | | |
| BGAN Airtime | GTC sat | 1 | 0 | 0.00 | 200 | 200 | | |
| Attack Cams | | | | | | | | |
| Go Pro | | 2 | 0.2 | 0.4 | | | | |
| Go Pro mounts | | | | | | | | |
| Sony NW30 | | 2 | 0.5 | 1 | 1000 | 2000 | | |
| Cameras Skills | | | | | | | | |
| Canon D40 + 3 lenses Leo | | | | | | | | |
| Batteries + DC Charger | | | | | | | | |
| Canon D5 + 3 lenses | | | | | | | | |
| Batteries + DC Charger | | | | | | | | |
| Memory Compact Flash | | | | | | | | |
| Mamiya 645 + 3 lenses | | | | | | | | |
| Fuji Panaratic + lenses | | | | | | | | |
| Film | | | | | | | | |
| Onsight Film Kit | | | | | | | | |
| Sony F3/Canon C300 | Onsight | 2 | 2 | 4 | 0 | 0 | | |
| Optimo lenses | Onsight | 2 | 2.5 | 5 | 0 | 0 | | |
| Compact Prime lenses | Onsight | 3 | 1 | 3 | 0 | 0 | | |
| Big Lens | Onsight | 1 | 3.1 | 3.1 | 0 | 0 | £50k! | |
| Memory Cards | | | | | | | | |
| Laptop Film Data | | | | | | | | |
| Hard Drive Main | | | | | | | | |
| Hard Drive Back up | | | | | | | | |
| | | | | 53.8 | | 3700 | | |

| Product | Quantity | Unit Weight kg | Total Weight kg | Total Cost | Sub |
|--------------------------|----------|-------------------|--------------------|------------|-----|
| <u>Brew Kit</u> | | | | | |
| Coffee | 35 | 250g | | 500 | |
| Hot Choc | 420 | | | | |
| Tea | 420 | | | | |
| Apple tea | | | | | |
| Sugar | 1260 | | | | |
| Milk Powder | 1260 | | | | |
| <u>Non Dehy</u> | | | | | |
| Flap jack | 210 | 0.125 | 26.25 | | |
| Pepperami | 210 | | | | |
| Biscuits | | | | | |
| Wraps | | | | | |
| Crackers | | | | | |
| Cheese | | | | | |
| Tinned fish | | | | | |
| Mustard | | | | | |
| Chilli Sauce | | | | | |
| Xmas Pudding | | | | | |
| Peanut butter | | | | | |
| Squeese cheese | | | | | |
| Salami | | | | | |
| Bacon | | | | | |
| Butter | | | | | |
| Granola Bars | | | | | |
| Protein Bars | | | | | |
| Carb Powder | | | | | |
| Chocolate | | | | | |
| Fudge | | | | | |
| Sweets | | | | | |
| <u>Fresh Food</u> | | | | | |
| Meat | 10 | 1 | 10 | 500 | 0 |
| Fish? | | | | | 0 |
| Veg | | | | | |
| Whiskey | 18 | 1 | 18 | 0 | |
| Champagne | 2 | | | | |
| | | | 54.25 | 1000 | |

| Item | Quantity | Weight grams | Total Weight kg | Unit Cost RRP | Total Cost | Sub |
|---------------------------------------|----------|-----------------|--------------------|------------------|------------|--------|
| 6 men x 40 days = 240 man/days | | | | | | |
| Be Well 0845 094 1700 | | | | | | |
| <u>BREAKFASTS</u> | | | | | | |
| Hot Cereal Start | 60 | 180 | | 5.49 | 329.4 | |
| Porridge & Sultanas | 40 | 180 | | 5.49 | 219.6 | |
| Museli | 0 | 180 | | 0 | 0 | |
| Porridge & Straw | 110 | 180 | | 5.49 | 603.9 | 1152.9 |
| <u>MAIN MEALS</u> | | | | | | |
| Beef curry | 26 | 180 | | 5.49 | 142.74 | |
| Beef Stroganoff | 26 | 180 | | 5.49 | 142.74 | |
| Chicken Korma | 26 | 180 | | 5.49 | 142.74 | |
| Chicken Tikka Masala | 26 | 180 | | 5.49 | 142.74 | |
| Chicken Veg Pasta | 26 | 180 | | 5.49 | 142.74 | |
| Shepherds Pie | 28 | 180 | | 5.49 | 153.72 | |
| Spaghetti Bolognaise | 26 | 180 | | 5.49 | 142.74 | |
| Thai Chicken with Rice | 26 | 180 | | 5.49 | 142.74 | 1152.9 |
| <u>DESSERTS</u> | | | | | | |
| Custard & Mixed Fruit | 26 | 180 | | 5.49 | 142.74 | |
| Custard & Apple | 26 | 180 | | 5.49 | 142.74 | |
| Custard & Straw | 26 | 180 | | 5.49 | 142.74 | |
| Rice pudding with Raisins | 26 | 180 | | 5.49 | 142.74 | |
| Rice Pudding Apple | 26 | 180 | | 5.49 | 142.74 | |
| Chocolate Chip | 54 | 180 | | 5.49 | 296.46 | |
| Peach Pineapple Dessert. | 26 | 180 | | 5.49 | 142.74 | 1152.9 |
| <u>SOUPS</u> | | | | | | |
| Spicy tomato Sp | 60 | 125 | | 4.49 | 269.4 | |
| Potato & Leek sp | 50 | 125 | | 4.49 | 224.5 | |
| Chicken & Veg sp | 50 | 125 | | 4.49 | 224.5 | |
| Vegetable soup | 50 | 125 | | 4.49 | 224.5 | 942.9 |
| Other man/day pack contents | | | | | | |
| Military Biscuits | 210 | | 1 in each pack | 0.99 | 207.9 | |
| B-Protein Milk Shake | 210 | | 1 in each pack | 1.19 | 249.9 | |
| Isotonic orange drink | 420 | | 2 in each pack | 0.99 | 415.8 | |
| Hot chocolate | 210 | | 1 in each pack | 0.59 | 123.9 | |
| Beef Jerky | 210 | | 1 in each pack | 1.5 | 315 | |
| Beef Jerkey hot n Spicy | 210 | | 1 in each pack | 1.5 | 315 | |
| Choc Bar (mars, yorkie etc) | 420 | | 2 in each pack | 0.69 | 289.8 | |
| Tissues | 210 | | 1 in each pack | 0.5 | 105 | 2022.3 |
| Man day pack | 210 | 1.25 | 262.5 | | 6423.9 | 1284.8 |

| Item | Brand | Quantity | Unit Weight kg | Total Weight kg | Unit Cost RRP | Unit Cost Trade | Total Cost | Sub | Contact |
|---|----------|----------|----------------|-----------------|---------------|-----------------|------------|-----|---------|
| Ski Arnes Admundsen + Skins | Arnes | 6 | 2 | 12 | | | | | Adpeaks |
| Binding Ice Trek Soft + | Ice Trek | 6 | 2 | 12 | | | | | Adpeaks |
| Baffin Boots | Baffin | 5 | 2 | 10 | | | | | Adpeaks |
| Poles BD | BD | 6 | 0.5 | 3 | | | 100 | | Adpeaks |
| Poles Cork handles | Arnes | | | | | | | | |
| Pole Poggies (gauntlets) | Arnes | 6 | | | | | | | Adpeaks |
| Pulk Harness | Ice Trek | 6 | 1 | 6 | | 300 | 1800 | | Adpeaks |
| Pulk + Ropes | Snowsled | 6 | 2.5 | 15 | | 135 | 810 | | |
| Pulk base board | Snowsled | 6 | 1.5 | 9 | | 0 | | | |
| Ski / binding / pulk / poles / skins spares & repairs | | | | 0 | | | | | |
| Ski Dynafit Seven Summits + Skins | Dynafit | 1 | 1.5 | 1.5 | | | | 400 | |
| Bindings Dynafit Vertical ST | Dynafit | 1 | 0.5 | 0.5 | | | | 300 | |
| Glacier Harness | | 6 | | | | | | | |
| Crevasse Rescue kit | | 6 | | | | | | | |
| Kites -vAccess 6, 8, 10 | Ozone | 3 | 3 | 9 | | 0 | 0 | | |
| Kite bars | Ozone | 3 | 1 | 3 | | | 0 | | |
| | | | | 81 | | | 2710 | | |

COMMUNICATION PLAN

British Ulvetanna Big Wall Expedition 2012/13

Normal, Abnormal and Emergency Operations

Every day British Ulvetanna Big Wall Expedition (BUBW) will be in contact with the TAC communication officer at ALCI airbase at 20:00 GMT, using Iridium telephones. The communication will be done either by calling in voice or by sending SMS / e-mail to the communication centre at ALCI airbase. If communication is being done by SMS the message receipt has to be immediately acknowledged to the sender.

If BUBW, after sending SMS / e-mail, does not receive the confirmation within 10 minutes, it has to put Iridium on stand by mode at 21:00 GMT for 10 minutes (5 minutes before and 5 minutes after 21:00 GMT) or try to call ALCI airbase by phone. Should the call fail for any reason, or should BUBW be unable to place the call, team BUBW should call to TAC office in Cape Town.

Once the Cape Town office has heard from BUBW, they (TAC) must contact the TAC communication officer in Antarctica. The Iridium phone at ALCI airbase will be on stand by 24 hours every day.

Every day BUBW must report to communication officer the following information:

1. GPS Position of the expedition
in the following format: **DD° MM' SS"** and **DDD° MM' SSS"** where **DD** – degrees latitude, **MM** – minutes, **SSS** – fractions of a minute and **DDD** – degrees longitude
2. Team status
The coding system is as follows:
BUBW **Green** (everything is ok);
BUBW **Yellow** (everything is ok, please provide weather forecast);
BUBW **Orange** (please stand by for possible evacuation);
BUBW **Red** (require immediate evacuation and medical support).
3. Weather status
temperature in degrees Celcius,
wind speed in km/hour or knots, wind direction (SW or S or SE, etc.)

If by 21:00 GMT on the following day the TAC communication officer in Antarctica still has not heard from BUBW and after double-checking with TAC Cape Town Office, SEARCH AND RESCUE will be initiated. **SEARCH AND RESCUE** procedure will begin **within 25 hours** after last scheduled signal from BUBW was missed.

SEARCH AND RESCUE procedure will be initiated immediately, if TAC or the expedition support team receives an **emergency call** from BUBW. SAR will be co-ordinated from the TAC office in Cape Town.

Search and Rescue (SAR) Operation

Once TAC receives an emergency call or has not heard from BUBW for 48 hours, a SAR operation will be launched. The BT-67 airplane stationed at ALCI Airbase or any other type of aircraft that is able to offer support will carry out all rescue operations. The first point of search will be the last known position as per coordinates provided by BUBW.

In case of minor injuries that prevent the expedition to continue and require medical attention, the expedition will be flown to ALCI airbase where medical support will be provided. In case of acute illness or injury, the

affected expedition members will be flown to Cape Town, South Africa on the first available flight. The cost of any emergency evacuation will be covered by the Insurance provided by BUBW.

Means of Communication and Contact Information

BUBW:

The expedition will use 2 satellite phones model Iridium 9555 and 1 Thrane & Thrane Explorer 700 on Inmarsat BGAN network for communication during the expedition. As a backup BUBW will bring one Emergency Personal Location Beacon (Fastfind 406 UIN; 9D0F40057C00309).

Main: +881631570789

Reserve 1: t.b.c.

Reserve 2: t.b.c.

Support Team:

TAC communication at ALCI airbase:

Main contact: t.b.c.

Communication officer – Slava Nebotov

Phone number (24 hours on stand by):

Main: +8816 414 269 55

Reserve: +8816 414 269 54 or +7 812 576 5446

E-mail: runway.novo@googlemail.com, novo.runway@amosconnect.com

TAC Cape Town Office:

| | | |
|-------------------------|--|-----------------|
| Contact person – | Anne Froehlich | reserve contact |
| Mobile Phone: | +27 767 343 101 | t.b.c. |
| Office phone: | +27 21 487 3470 | |
| E-mail: | anne@antarctic-company.info | |

SIGNED by: Vasily Kaliazin
Authorised representative for and on behalf of
The Antarctic Company

SIGNED by: Leo Houlding
Authorised representative for and on behalf of
Leo Houlding Climbing Expedition




Foreign &
Commonwealth
Office

**UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
ANTARCTIC ACT 1994
ANTARCTIC REGULATIONS 1995 - 2004**

Permit for activities under Section 3 of the Antarctic Act 1994.

This permit (No. S3-07/2012) granted under Section 3 of the Antarctic Act 1994 to **Leo Houlding of 3 Danes Road, Staveley, Kendal, Cumbria, LA8 9PW** (the "permit holder") authorises **the persons specified in Appendix I and identified in Appendix III to enter and remain in Antarctica** for the purpose of a **Tourism expedition**, as specified in Appendix I, and set out in more detail in the application attached as Appendix V.

This permit is valid from **16th December 2012 to 28th January 2013** and is granted subject to the conditions listed overleaf.

Signed  on behalf of the Secretary of State
Deputy Head, Polar Regions Unit
Overseas Territories Department

Date 27/09/12

Name and address of permitting authority:

Foreign and Commonwealth Office
London SW1A 2AH



RISK ASSESSMENT - BRITISH ULVETANNA EXPEDITION 2012/13

NOTE : FURTHER AMENDMENTS ARE STILL BEING MADE TO THIS DOCUMENT PRIOR TO ASSESSMENT

V = Very Low L = Low M = Medium H = High VH = Very High

| What produces Hazard | Hazard | Who at Risk? | Existing Precautions | Likelihood | Severity | Risk | Further Precautions needed | Risk Control Systems |
|-----------------------------------|---|---------------|--|------------|----------|------|---|--|
| Inadequate Clothing | frost nip, frost bite or hypothermia | whole team | A full and definitive clothing and equipment list has been compiled based on past experience and expert advice. All team members gear to be checked and approved by leader. | 2 | 3 | L | | Buddy check kit and approved by leader |
| Air transport accidents | air crash | whole team | Revert to airlines risk assessment | 1 | 5 | VL | | Check reputable airline used, Check risk assessment of private airline. |
| Ski touring related accidents | sprain, strain & trauma injuries | whole team | Expert advice sought and training undertaken on safe skiing practice and correct choice of skis. Skis and ski gear serviced and maintained in good safe order. First aid kit carried by one member per ski team. Ski in a control manner and roped in particularly hazardous terrain. Leader to dig snow pits where appropriate to assess snow pack and avalanche conditions. | 2 | 3 | L | | Buddy check suitability and settings of skis. Suitable experience and training. |
| Kite skiing | sprain, strain & trauma injuries | Kite ski team | Only those with sufficient experience to undertake kite skiing. No kiting in winds exceeding 35mph. Correct size kite to be used for wind conditions. Anemometer to be carried and used to assess wind speed. No kiting in poor visibility or flat light. Always kite in pairs carrying sufficient survival equipment for long, kite less journey in case of malfunction. Radios and sat phone to be carried. No freestyle (trick) kiting on expedition. | 2 | 3 | | | |
| Climbing related accidents | sprain, strain & trauma injuries | climbing team | Climbing team are all extremely experienced climbers. All have climbed extensively on big walls, in winter and in polar conditions. Suitable equipment and sufficient supplies will be carried to survive unforeseen circumstances. Climbing strategy will reflect scale and difficulty of objective. Climbing conditions will be evaluated on location and routes will be selected subject to safety evaluation. Helmets will be worn at all times. Fixed ropes will be protected from sharp edges and regularly inspected. | 2 | 4 | L | | Team have climbed together extensively. Know and trust each others judgement. |
| Equipment failure | trauma or burn injuries | whole team | All equipment is new (but tried and tested) or will be properly inspected prior to expedition and where deemed necessary on an ongoing basis checked at regular intervals during an expedition. Team will notify the leader immediately of any fault or failure or suspected lack of performance of any item of equipment. Spares of key equipment will be carried. | 1 | 3 | VL | | Check equipment regularly |
| Crevasse & bergschrund falls | sprain, strain & trauma injuries | whole team | Crevasse rescue training has been undertaken by whole team. All are knowledgeable in crevasse rescue, prussiking and pulley systems and carry out training together regularly on an annual basis. Teams will rope up wherever there is left to be a crevasse risk and always travel in pairs minimum. Travel on crevasse glaciers will be avoided during periods when the temperatures rise and it is felt travel is more dangerous. Team will be belayed across crevasses where there is a perceived risk that snow bridges are weak or unconsolidated. Skis will be used for most travel to disperse weight and helmets will be worn where appropriate. Safe paths will be way marked by GPS and Physically flagging in necessary. | 2 | 4 | L | | Maintain vigilance |
| Weather - general | cold injury or hypothermia | whole team | Weather forecasts will be received daily from ALGI Novos base. Plans and strategy will be adjusted accordingly. Base Camp, Advanced Base Camp, fly camps and wall camps will all be storm proofed in expectation of high winds, low temps and poor visibility at all times. During poor weather travel will be limited to essential only. Sufficient clothing and survival equipment carried at all times. | 2 | 4 | VL | | Check weather forecast by sat phone |
| Avalanche incidents | sprain, strain, trauma, cold, hypothermia | whole team | Team leaders are experienced in digging snow pits and evaluating snow pack conditions and snow pack stability. Climbing on avalanche slopes will be avoided. At times when there is a possibility of avalanche conditions, the group will carry and wear avalanche transceivers, snow shovels and avalanche probes. | 2 | 5 | L | | Check weather forecasts and pt analysis. |
| Rock Fall | trauma | whole team | The leader will always choose lines to avoid rock fall or areas of loose rock wherever possible. Any loose sections will be navigated with extreme care. Other party members to avoid fall line. | 2 | 3 | L | | Check helmets |
| Wingsuiting & BASE Jumping | sprain, strain & trauma injuries | EASE team | Only to be undertaken by experienced & current members. Wind, visibility and temperatures to be sufficiently safe. Helmets, Goggles, Gloves, Hook knife to be used. Parachute to be packed meticulously. Buddy checks to be undertaken frequently. Landing zones to be inspected prior jump. Wind sock to be placed at LZ. Ground crew to advise ground conditions. Only sufficiently overhanging and safe exits to be jumped. Those with at least 10 second rock drop. Buddy Checks on exit prior to jump. Parachutes to be opened at sufficiently safe altitude (min 200m). No low pulls. No proximity flying. No hook turns. | 2 | 5 | L | | Check all gear be current. Opposite within abilities. |
| Altitude Conditions | altitude sickness, cerebral or pulmonary oedema | whole team | All summit altitudes are below risk height. | 1 | 1 | VL | | Ensure itinerary includes acclimatisation. |
| Cold Injuries | frost nip, frost bite or hypothermia | whole team | Adequate clothing, tents, sleeping bags, etc provided. Everyone to carry spares at all times. Spare tents, sleeping bags, mats etc will be stored in base camp. A bivouac survival shelter is carried by one member of each climbing team to escape from the wind. Snow shovels are provided for each tent pair to be carried and used for digging snow caves or snow holes as and when felt appropriate by the leader. Teams will only set out on mountaineering ascents and ski tours when conditions look reasonably safe and stable for the anticipated length of the climb / ski tour. | 2 | 2 | VL | | Check leader training records. Ensure appropriate equipment taken for the conditions. |
| Heat illness | heat exhaustion and heat stroke | whole team | Hot conditions to be avoided by advising clients not to wear more than necessary and to avoid dehydration and over exertion during warmer periods. Hot drinks in flasks can be used to melt snow to provide cold drinks to reduce body temperature. | 1 | 1 | VL | | Check leader training records. |
| Over exposure to sun | sunburn & long term skin damage | whole team | All to bring more than sufficient sun cream, including some total sun block. Team advised to bring some after sun cream if prone to burning easily. Bacitroban burns cream is available in the medical kit for extreme cases of sunburn. | 2 | 2 | VL | | Check sun cream is of correct factor. |
| Stove, flare & rope burns | burns | whole team | Team advised to wear gloves when belaying to avoid rope burn. Teams are familiar with stoves and correct way to use in varying conditions. Cooking inside tents will be avoided where possible. Team know how to avoid a flare up of the stove when lighting them. Bacitroban burn cream and burn dressings are provided in the medical kit. Instruction and training is given in the correct use of emergency flares. | 2 | 3 | L | | Check leader training records. Check medical kit contents. |
| Poor healthcare & hygiene routine | illness, infection, diarrhoea | whole team | Team are requested to complete a detailed medical questionnaire prior to trip to ensure that they have no current injuries or infections. They are advised to notify leader immediately if this situation changes prior to departure. The environments in which we will operate are largely sterile and clean, illnesses or infections are unlikely. We do however carry four types of broad spectrum antibiotics to cover most scenarios, in both tablet and injection form. Leader to ask team to notify if they have recently travelled to a country in which they may have contracted an illness or infection with a delayed incubation period. | 2 | 2 | VL | | Check medical form. Check medical kit contents. Check leader training records. |
| Dental problems | toothache | whole team | All team to have a full dental check up and have any problems dealt with prior to departure on the expedition. Anti biotic, pain killers carried in case of emergency. Tetanus immunisation and wear gloves when sludging to reduce the risk of tooth penetration. | 1 | 1 | VL | | Check booking form. |
| Pre-existing health problems | | whole team | As for poor Healthcare & Hygiene | 1 | 3 | VL | | As above |
| Navigation error | difficult/unsafe fall, exposure, cold injury, hypothermia | whole team | Travel in bad weather avoided where possible. If forced to travel, all team are experienced navigators and carry compass and GPS per pair. We will have the best maps and/or aerial reconnaissance photos available in at least two copies of each. | 2 | 3 | L | | Check maps and navigation aids available. |
| Incorrect use of stove | carbon monoxide poisoning | whole team | At all times when cooking and during stormbound days when the tents can become buried in snow, seriously limiting ventilation. We advise clients to cook outside when and wherever possible and practical. CO monitor will be installed in BG tent. Possible poisoning from cooking stoves. Educate all clients in maintaining good tent ventilation. | 2 | 4 | L | | |
| Insufficient fluid intake | dehydration, constipation | whole team | Advise clients to observe colour of urine for signs of dehydration. Maintain good hydration levels by drinking regularly and being aware of the dehydrating effects of drinking alcohol. | 2 | 1 | VL | | Check leader training records. |
| Insufficient eye protection | snow blindness | whole team | We insist on all clients having 100% UVA & UVB blocking sunglasses and/or snow goggles. Each group carries at least one spare pair of sunglasses or goggles between them. | 1 | 2 | VL | | Check quality of glasses. |
| Food storage & preparation | food poisoning | whole team | Majority of food is dehydrated rations with long shelf life. Fresh food will be buried in snow pits and stored at sub zero temperatures, therefore maintaining its condition. | 1 | 1 | VL | | Check food dates. |
| Insufficient food intake | weakness, exhaustion & starvation | whole team | Ample food will be with enough surplus to last for multiple days beyond the planned pick up date. | 1 | 1 | VL | | Check food is adequate for duration. |
| Drug reactions | allergic reaction, drug overdose | whole team | All team complete a questionnaire prior to booking which asks them to stipulate any drugs or medication that they are aware of which they have an allergic reaction to. An alternative antibiotic to Penicillin is always provided in every medical kit. All medical kit contents are checked regularly to ensure that all appropriate contents are stored correctly, are in date and sterile (where appropriate). Individuals will carry short wave radios and Expedition will carry min 2 satellite telephone and have telephone numbers available to contact a doctor in an emergency or for further medical advice. Expedition will use a medical consultant Dr Jessica Come to advise and review our expedition medical kits and first aid kits on an annual basis. | 1 | 4 | L | Further leader training and (refresher course required) | Check medical form. Check medical kit contents. Check leader training records. Check telephone numbers ok. |
| Medical care | in correct medical or first aid procedure | whole team | All team are advised to only carry out first aid and medical procedures which are within their capabilities and training and to carry out such procedures in the recognized manner as their training would recommend. All medical kits and first aid kits carry a full contents list explaining each item in detail, it's correct usage, doses and possible side effects. | 2 | 4 | L | Further leader training and (refresher course required) | Check medical kit contents. Check leader training records. |
| Solo activities | injury, trauma, missing person | whole team | No solo climbing, ski touring, glacier travel what so ever will be undertaken during expedition, unless deemed sufficiently safe and necessary by Expedition leader and relevant member | 1 | 4 | VL | | Check booking form. |

RISK RATING

| LIKELIHOOD | |
|-------------------|---|
| 1. Improbable | Loss, accident or illness would only occur under freak conditions. Natural hazards are well controlled (e.g. good standard of accommodation). The situation is well managed and all reasonable precautions have been taken. |
| 2. Low | The situation is well managed, however occasional lapses could occur. Natural hazards are uncontrollable, but are minor (e.g. slipping on snow/ice, possible stone fall on stable rock face) This also applies to situations where people are required to behave safely in order to protect themselves, but are well trained or supervised. No particular personal skill is needed to stay safe. (e.g. operating around camp or on local walks) |
| 3. Medium | Insufficient or substandard controls in place. Natural hazards are uncontrollable and major (e.g. potential unstable rock above a traverse route, but no recent sign of rockfall). A level of personal skill is required to stay safe, but people are well trained or supervised. (e.g. ski touring or mountain walking). Loss is unlikely during normal operation, however, it may occur in emergency or non-routine conditions. (e.g. unpracticed staff needing refresher training, equipment checks not up to date). |
| 4. High | Serious failures in management controls. Natural hazards are uncontrollable, major and common (e.g. unstable rock above an abseil with regular signs of rock fall). A level of personal skill is required to stay safe and people are insufficiently trained or supervised. The effects of human behaviour or other factors could cause an accident, but it is unlikely without an additional factor. (e.g. unstable snow slopes). |
| 5. Almost certain | Absence of any management controls. If conditions remain unchanged, there is almost 100% certainty that an accident will happen. (e.g. rope in use with substantial damage, untrained personnel in charge of activity). |

SEVERITY

| | |
|-----------|--|
| 1. Minor | Causing minor injuries (e.g. cuts, scratches). No lost time other than first aid treatment. Minor loss/damage (e.g. ripped gloves). |
| 2. Low | Causing significant injuries, but no lost time at work (e.g. sprains, bruises, lacerations). Loss/damage is significant (e.g. broken ski/binding). |
| 3. Medium | Causing temporary disability - Lost time at work or major injury (e.g. fractures). Loss/damage causes short term disruption (e.g. damage to a vehicle or tent). |
| 4. High | Causing permanent disability (e.g. loss of sight, limb or hearing). Loss/damage causes longer term disruption (e.g. vehicle write off, avalanche hits camp). |
| 5. Major | Causing death to one or more people. Loss or damage is such that it would cause serious business disruption, e.g. cancellation or curtailment of the expedition. |

NOTES TO ACCOMPANY RISK ASSESSMENT FORM

- Produced by: Leo Houlding, 3 Danes Road, Stavely, Kendal, Cumbria, LA8 9PW
- First Produced: July 2012
- Last Reviewed/ Amended: 8th August by Mountain Guide/Safety consultant Phil Poole
- Recommendations: NONE. All measures currently identified and all preventative measures carried out.