



The Scottish Mountaineering Club East Greenland Expedition 2007



Drumglas and Drumglas Beag from the Upper Lang Glacier (Photo, M Litterick)

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

The Scottish Mountaineering Club East Greenland Expedition 2007

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30/04/2007 - Landed safely, now what ?

1 Expedition Summary

Colwyn Jones

The Scottish Mountaineering Club East Greenland Expedition 2007 consisted of eight experienced mountaineers. Greenland and even East Greenland covers a large area. The region to be visited was the Staunings Alps in the North East Greenland National Park.

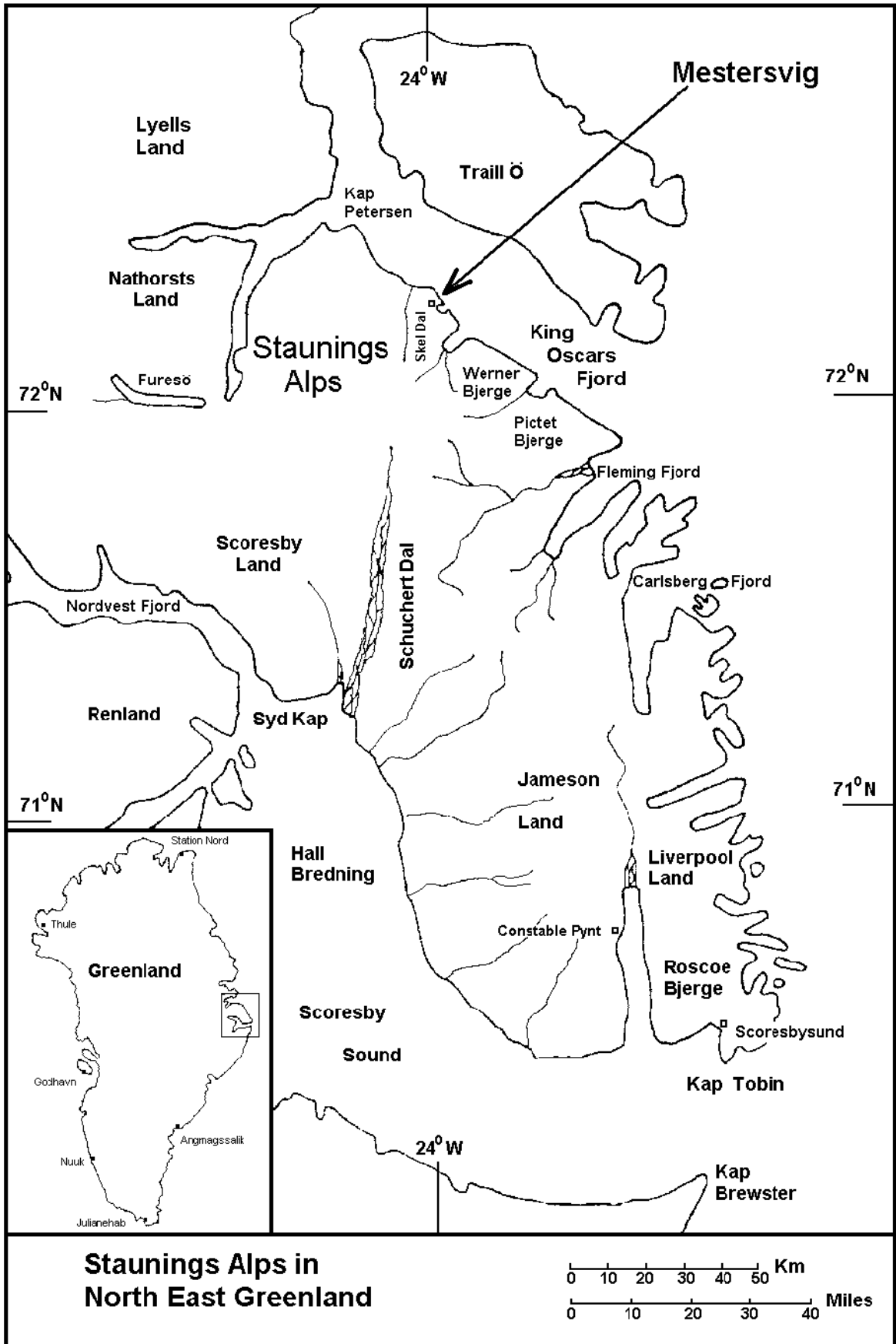
The Staunings Alps is a granite coastal range 500km north of the Arctic Circle lying between 72⁰ to 72⁰ 30' North, 24⁰ to 26⁰ West. The North East Greenland National Park was established in 1974 as the largest national park in the World covering 972,000 square kilometres. The mountain range sits within, but close to the southern edge of the park and covers 6000 square kilometres.

The expedition objectives were:

1. To enjoy a safe, successful and environmentally friendly expedition to the Staunings Alps.
2. To ensure all expedition members are able to safely use the expedition firearm and successfully hit a target at close range.
3. To attempt ascents of unclimbed peaks around the Lang (Stor) Glacier.
4. To attempt ascents of new routes of peaks around the Lang Glacier.
5. To explore an unnamed subsidiary glacier off the Lang and its surrounding peaks.
6. To climb Bolvaerket and Norsketinde by new routes and attempt the unconquered North Face of the Bersaerkertinde.
7. To attempt new peaks and routes during our descent of the Bersaerkerbrae glacier.
8. To prevent but if required to manage minor injuries/illness among the expedition members.
9. To ski tour back to Mestersvig to be collected from the excellent gravel airstrip on the Greenland coast.

The field period was 4 weeks between 28th April and 26th May 2007.

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After Bennet 1971, West Col productions

Introduction

The Staunings Alps of Scoresby Land in North East Greenland sit just within the southern edge of the largest national park in the World. The North and East Greenland National Park covers 972,000sq. kilometres and was established in 1974.

The Staunings Alps are 500km north of the Arctic Circle at 72⁰N and cover an area of some 6000 square kilometres. They are a complex range of granite peaks named after Thorvald Stauning (1873-1942). Stauning was Denmark's leading Social Democratic statesman, social reformer and an influential Government Minister from 1924 to 1940. He helped to shape the modern state of Denmark and died during the Second World War when Denmark was under German occupation.

The highest peak in the Staunings Alps is Dansketinde (Denmarks Peak) 2795m which forms the natural centre of the impressive northern peaks. From there a number of huge glaciers radiate outwards to reach the northern, eastern and southern coasts. In contrast those flowing steeply west into Alpe Fjord have dangerous icefalls with a reputation for onerous travel. The mountains have a well earned reputation for sound granite, soaring faces and complex ridges. Further south the rock is softer, more weathered and the mountains are more rounded reflecting this difference.

To allow ready orientation for those unfamiliar with the area a central pass called Col Major (Majorpasset), which links the Bersaerkerbrae (Bersaerker glacier) to the east and the highest reaches of the Gully Glacier to the west, should be identified. In the only published mountaineering guidebook to the area by Bennett in 1972, Col Major was accurately described as "The heart of the Staunings Alps."

The first European to set foot on the rocks of North East Greenland was the son of the Scottish whaler William Scoresby in 1822, who was confusingly also called William Scoresby. Scoresby is often described as an arctic explorer, but he captained the Whaler The Resolution and despite having attended natural philosophy and chemistry classes at Edinburgh University, contributed to the near extinction of the Arctic whale population. Scoresby surveyed and charted with remarkable accuracy 400 miles of the east coast of Greenland, between 69° 30' and 72° 30', thus contributing to the first real and important geographic knowledge of East Greenland. This, however, proved to be the last of his Arctic voyages. On his return he learnt of his wife's death, and on hearing of this event, with other influences acting upon his naturally pious spirit, he decided to enter the church.

The following year (1823) the English Captain Douglas Clavering met a group of Eskimos on the southern side of the island which was later to bear his name. This is the only recorded meeting with the last remnants of the North Greenland mixed culture eskimos which was made on 16th–19th and 23rd–24th August 1823. His ill-judged decision to demonstrate the power of a rifle scared the locals away and this was the first and only recorded meeting with

the indigenous people of this side of the coast. There were no inhabitants when the next expedition returned in 1869.

Scottish climbing has had a long association with the Staunings Alps starting with the 1958 Scottish East Greenland Expedition. Many of these early pioneering trips of the late 50s, 60s and 70s were organised under the auspices of the Scottish Mountaineering Club, the Junior Mountaineering Club of Scotland and numerous Universities. In the early 90s two successful trips to the area rekindled interest among a small number of Scottish Mountaineering Club members. A summer expedition in 1996 succeeded in landing a ski equipped Twin Otter on Col Major for the first time and they climbed 5 new peaks from this central location.

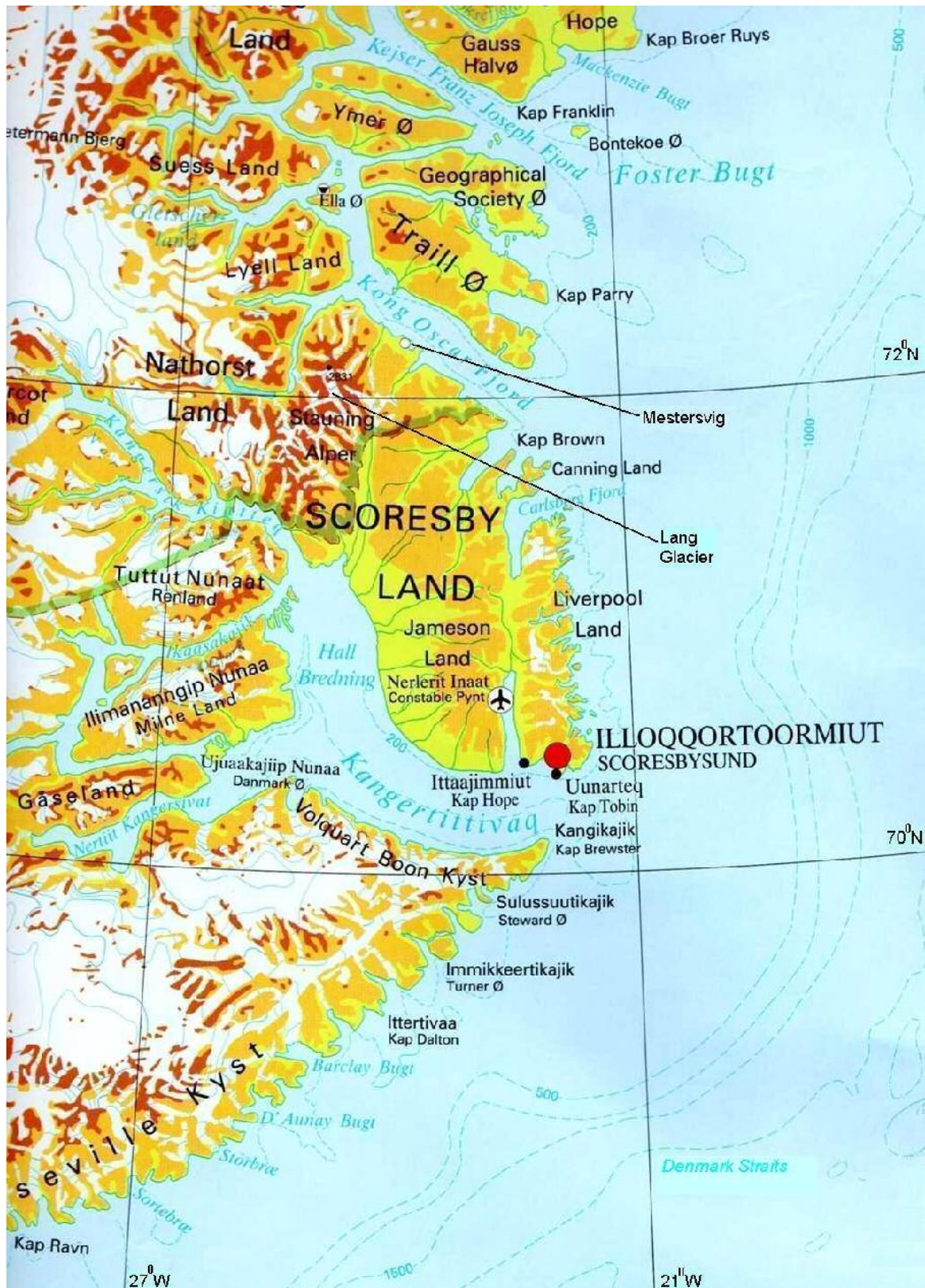
The region is largely uninhabited and isolated with a reputation for beauty and mountain grandeur. There are only 53,000 people in the whole of Greenland, the majority living in the South and West of the country with fishing, hunting and sheep farming the main occupations. Greenland has been a Danish colony since 1721 and in 1933 the International Court in The Hague granted Denmark sovereignty over all of Greenland following a dispute with Norway. Greenland obtained home rule Status in 1979 and along with Denmark and the Faroes form part of the Danish Realm.

The latitude means continuous daylight during the late spring and summer months with the combination of the low angle of the sun and searing white glaciers contributing to the stunning beauty of the area. During the short summer season settled anticyclonic weather and very dry air give extraordinary views especially early in the season. It is with good reason that Scoresby Land has been named the 'Arctic Riviera.'

This report records many details about the organisation, activities and outcome of the expedition and will, we hope, be of interest to our sponsors without whose help this expedition would not have been possible. Good organisation and logistics proved to be an important factor in the success of the trip and are covered in detail to give future prospective visitors to the area an idea of what is involved.

Arctic Fever.

Visiting the Arctic is reputed to lead to a condition known as 'Arctic Fever.' The diagnosis can be made after a short observation of the sufferer and manifests itself in fanatical attempts to return to the Arctic to the exclusion of all other activities. Clearly an obsessional disorder.



After Kort & Matrikelstyrelsen, 2000. Gronland Scale 1:2,500,000

2. Expedition Members.

Colwyn Jones, expedition leader and medical officer.

48, British, Dentist, qualified ski instructor. Member of Scottish Mountaineering Club, Junior Mountaineering Club of Scotland and The Alpine Club. Scottish summer and winter climbing, climbed in Europe, Africa, N. America, Borneo. Experienced Skier/Ski Mountaineer. Former mountain rescue team member.

Expedition Experience: Greenland (Staunings Alps, various first ascents 1996, 1998, 2001, 2003), 20+ Alpine Trips .



Brian Shackleton,

55, British, Project Manager
Member of Scottish Mountaineering Club. Scottish Summer and Winter Climbing, climbed in Europe and N America. Experienced Skier/Ski Mountaineer. Expedition Experience: Himalayas (Nanda Kot first British ascent 1995), Antarctic (Mt Vinson 2000), Greenland (Staunings Alps, various first ascents 1996,1998,2001), 20+ Alpine Trips.



Mark Litterick,

42, British, Engineering Consultant.
Member of Scottish Mountaineering Club. Scottish Summer and Winter Climbing. Alpine experience: European Alps, Spain (Pyrenees, Picos), Canada (Rockies), USA (Alaska, Cascades, Tetons, Rockies), New Zealand (Southern Alps). Experienced Skier/Ski Mountaineer. Expedition experience: Alaska (Denali 1997), South America (Sajama 1997, Aconcagua 1997, Chile 2002), Nepal (Trekking peaks 1997).



Laubie Laubscher,

31, British, IT Recruitment Consultant.
Expedition experience: China (Kuksay Glacier 2001 first ascents), Alaska (Denali 1998), South America (1997,1998 Argentina/Chile Patagonia and High Andes), Mt Kenya (1999 North Face route), Southern Africa (Various rock and big wall routes). UK Summer and Scottish Winter Climbing. Various European Alpine routes (Summer and winter climbing including ski touring.)



Kenneth Moore,

30, Irish, Chartered Surveyor
UK & Irish Summer and Scottish Winter Climbing. Norwegian Ice climbing, European Alpine and New Zealand Alpine. Rockclimbing experience throughout Europe, US, Australia, New Zealand, Africa. Skier/ski mountaineer.
Expedition experience to Atlas Mountains.



Stephen O' Sullivan,

30, Irish, Actuary
Scottish Summer and Winter Climbing. Alpine experience: Mt Blanc, Caucasus, Southern Alps (NZ)
Year in Andes (2002/3) Peaks including Illimani, Hyuni Potosi, Chachani, Aconcagua, Isinca, Urus.
Expedition experience: Alaska (Denali 2005).
High Altitude trekking in India/Nepal Morocco/Tanzania/Kenya



Heike Puchan-Whitworth,

37, German, University Lecturer & Outdoor Instructor.
Member of Scottish Mountaineering Club, Alpine Club and JMCS (Glasgow). Scottish Summer and Winter Climbing. Climbed in Canada (Bugaboos, Rockies, Squamish), USA (Yosemite, Tuolumne, High Sierra), Norway (Lofoten), Croatia (Paklenica), Greece (Kalymnos), Corsica, plus 7 summer Alpine seasons and 2 winter Alpine trips.
Expedition experience: Kyrgyzstan (2001 - attempted new routes, plus attempt on Khan Tengri).



Brian Whitworth,

32, British, Business Analyst
Member of Scottish Mountaineering Club, JMCS (Glasgow). Scottish Summer and Winter Climbing. Climbed in Canada (Bugaboos, Rockies, Squamish), USA (Yosemite, Tuolumne, High Sierra), Norway (Lofoten), Croatia (Paklenica), Greece (Kalymnos), plus 7 summer Alpine seasons & 1 Alpine ice trip.

Expedition experience: Kyrgyzstan (2001 - attempted new routes, plus attempt on Khan Tengri).



The human element of the expedition departed in two waves from across Europe. On Friday the 27th April 2007 two members, Brian Shackleton and Heike Puchan-Whitworth flew from Glasgow to Keflavik with Icelandair. They stayed overnight in a guest house in Reykjavik. On Saturday 28th they both flew with the domestic carrier Air Iceland from Reykjavik to Constable Point. The "*Hilton Hotel*" at Constable Point was where they stayed on the nights of 28th & 29th April.

On the morning of Sunday 29th April three members flew from Glasgow to Keflavik with Icelandair and three via London (from Munich, Cork and Gloucester) with British Airways to Keflavik. The six met in the arrivals hall at Keflavik international airport in the late morning and caught the appropriately named Flybus to Reykjavik domestic airport. From here they flew to an unusually warm Akureyri, arriving in the late afternoon sunshine. They stayed at the Youth Hostel in Akureyri overnight.

On the 30th April the "*Akureyri six*" awoke to a bright morning and in a chartered Air Iceland ski equipped Twin Otter aircraft were flown from Akureyri in Iceland to Constable Point in Greenland. Here they were united with the "*Hilton Hotel two*" expedition members and the food and gear they had freighted out about a month beforehand. They also collected 50 litres of Jet A1 fuel for cooking and a rifle and ammunition they had hired locally.

After loading the freighted gear and fuel the Twin Otter took off into a stunningly clear blue sky followed by a short flight with an exciting landing on the Lang Glacier arriving early afternoon. Basecamp was at 1390 metres, position N71°59'43" W024°48'44.2" (Stor Gletscher on some maps). After digging the plane out of the snow and cheering it back into the air, we erected the tents and made ourselves comfortable. One problem was that the two new MSR Whisperlite and the dragonfly stoves would not light! The two MSR XGK II stoves worked effectively.

This was a major concern with 3 of the 5 MSR stoves not working properly with the Jet A1 fuel! We cannot recommend them for use with Jet A1 fuel. The Whisperlite stoves used were a Whisperlite 600 & a Whisperlite International. It is worth mentioning that we had maintenance kits which contained the full complement of Whisperlite jets, which were all changed and tested but they never worked. The dragonfly worked intermittently but was never entirely satisfactory. This could have been a disaster. The two MSR GSK II stoves worked well.

On the 1st of May we climbed our first new peaks. Peak 1 was named Drumglas Beag, height 2060m, position N71°59'22.3" W024°53'02.2." The peak was climbed by two routes. The first from the Lang Glacier, the North Face was graded AD+. The second was climbed from the east off the newly explored Wuss glacier via an icy col (SMC Col) between Drumglas Beag and Drumglas, then up the south ridge of Drumglas Beag graded PD.

Peak 2. Drumglas, height 2330m, position N71°58'41.5" W024°52'49.5" was climbed by the North ridge, eponomously named the Biancogrät and graded AD. Four members descended the west ridge to the newly named LoLa col and then directly descended using a series of Abalakov anchors back to the Wuss glacier. Two others laboriously retraced their steps and descended over Drumglas Beag and down its north face to reclaim their skis. The 14 hour day was felt to be a good start to the trip.

Light snow and low cloud was allowed to restrict climbing activity on the 2nd - 4th May. For most expedition members they made the psychological transition from their home routine to Greenland time by sleeping and occasionally eating. Having "bagged" the first peaks of the trip, and having escaped the pressures of modern life, restful sleep came easily. On the 4th May a team of four members did a 9 hour ski tour to dump half of the food and fuel at Crescent Col N72°03'47.2" W024°55'42.0" 1984m which could be reached avoiding avalanche prone slopes. The food and fuel dump was strategically placed for the return journey to the coast. It is believed that the other four members continued sleeping!

On the 5th May Peak 3 was climbed and named Mollytinde, after the mother of the expedition leader, height 1670m, N71°59'21.1" W024°50'47" Grade Facile sup. It was climbed as a small consolation peak close to camp on the west side of the Lang Glacier. The surrounding glacier to Mollytinde was named The BASCD Glacier. BASCD is an abbreviation for the British Association for the Study of Community Dentistry and the then President of the association in May 2007 was the expedition leader. In the week before the expedition Colwyn had organised a conference for BASCD in Edinburgh which had been successful and the naming of the BASCD glacier was recognition of this success.

On the 6th May three new peaks were climbed. Peak 4 was named Cordulaspid, 2430m, N71°58'41.9" W024°54'28.1" and was climbed from the Wuss glacier. The descent used from Drumglas on the 1st May, graded (AD) was reversed to the LoLa Col, then the East Ridge to the summit was followed graded PD+. One expedition member Mark was engaged to be married to his delightful fiancée Cordula Wolf, hence the choice of the title. When this report was written in Autumn 2007, the other expedition members were looking forward to the wedding in December 2007 and are pleased that the naming of the new peak had facilitated this matrimonial event. I can now report that they married on the 1st December 2007.

Peak 5. Jobjerg, 2330m. N71°59'0.3" W024°55'17.1" was climbed by the South West Ridge which is continuation of the North Ridge of Cordulaspid. Jobjerg was named by the husband of Jo Laubscher. Graded AD. The descent was the reverse of the ascent, as was often the case, to retrieve skis.

Peak 6, named Juliasbjerg, 2058m, N 71°59' 35.8" - W 024°55'16.6" was climbed by a wide couloir from the west side of the Wuss glacier onto a col on the South Ridge. This col also forms the lowest point on the North ridge of Jobjerg. Juliasbjerg was named after a niece of Heike Puchan-Whitworth.

On 7th May Peak 7, named Puchwhitstinde, Alt 2339m - N72°00'38.8" W024°45'39.1" east of basecamp was ascended by the North flank from a col between it and peak 8 (Hasentinde). The col was approached by a gully north of 2 obvious spurs emanating from the col. The glacier on the approach was called the Raven Glacier for an obvious ornithological reason. On 8th May this peak was also climbed from the newly explored O'Sullivan/Moore glacier by a couloir on south face named Snowbunting Couloir, grade PD. Peak 8, named Hasentinde, Alt 2376m - N72°01' 24.5", W024°47' 08.4" was also ascended on 7th May by the south ridge from a Col between peaks 7 & 8. The south ridge was named the Igel Ridge (Hedgehog ridge). Puchwhitstinde was named as such by Heike Puchan-Whitworth and Brian Whitworth.

On 8th May Peak 9, named Margretabjerge, 2430m - N71°58'34.7", W024°50'58.0" was ascended by two routes. One via the South Flank and SW Ridge (PD). The large subsidiary glacier west off the Lang glacier was explored and named the MåL glacier. The second route was from the newly named Witches Cauldron glacier via the Presidential Couloir (SE Gully) with an exciting cornice to exit, Graded AD. The mountain was named in memory of the mother of one of the first ascentionists; Margaret Nelson Litterick 1927-2005. The peak coincidentally is a clear M shape when approached from the SW.

On the 10th May we moved camp from the Lang glacier over Crescent Col – collecting food and fuel - to a camp on the Gully glacier named The refrigerator Base camp, N72°05'27.4" W024°58'42.8" 1680m. En route a peak called Skartinde to the east of Crescent Col was climbed. It is believed it was first climbed in 1996 by a Norwegian expedition and this may have been a 2nd ascent. 2400m – N72°03'45.1", W024°54'21.6". North West Flank. Grade Facile.

On the 11th May, Peak 10 was named Himmelstinde (Heavens Peak). Altitude 2492m - N72°04'51.8", W025°05'22.5" ascended by the eponymous Eternal couloir to the Eternal col between this hill and the soon to be conquered Archangel Peak. The ascent and descent was then by the south ridge from the Eternal col, graded AD. The previously unnamed glacier used in approach was called the Puchan glacier.

On the 12th May – peak 11 was named Archangel Peak, height 2558m - N72°04'31.5", W025°05'23.5" was climbed via the Eternal couloir then the East Ridge. Graded Difficile. From the summit the climbers descended onto the very crevassed glacier on the west of the peak named, with hindsight, the Devil's Own Glacier. The difficult terrain encountered forced a reascent to the summit and descent via the ascent route.

Peak 12, named The Cold Shoulder, height 2450m, was climbed by the West Ridge, Grade PD. Lat / Long estimated as N72°04'32.4", W024°54'12". The summit is on the west ridge leading from the summit of C. F. Knoxtinde.

Hjornespids, 2870m, was also climbed by a new route, The Laubscher - Litterick Gully on the south west flank of the peak. Grade Difficile, 600m. The route then followed the West Ridge to the summit. We believe this is the sixth ascent and the fourth route up this fine peak.

On 13th May Peak 13 named An Caisteal (The Castle), altitude 2614m - N72°03'31.9" - W024°59'52.6" was ascended by a face and gully on the East flank then up the North ridge. Graded TD inf.

On 15th May Crescentinde, 2455m. N72°03'38.0" W024°57'15.0" was ascended by a new Route; the north-east Face, Graded PD. Peak 14 was named Ebensbjerger, 2510m, N72°03'34.9" W024°58'05.8" and was climbed from Daleens Col (between Ebensbjerger and Crescentinde) via the NE face. Graded AD. Ebensbjerger and Daleens Col were named after the father and mother of one of the first ascensionists Eben (1928-1993) and Daleen Laubscher.

Three members also climbed Skartinde, (third ascent) 2400m. The inviting and easy North West Flank was again climbed with super views down to the peaks we had climbed on the Lang Glacier

The second move of basecamp on 16th May was to a magnificent site on the top of Col Major. N72°06'53.1" W024°55'07.0" 2130m.

On 17th May, Peak 15, named Ian's peak, altitude 2607m - N72°07'13.3" W 024°55'01.3" was climbed by the established south ridge route (MVS) and a new route named the Accessory Rib (VS, 4C) which joins the south ridge route to finish on the summit.

The long descent of the couloir from Col Major was done over the 18th May with a camp on the flat upper reaches of the Bersaerkerbrae glacier below. N72°06'36.6" W024°54'04.0" 1655m.

On the 19th May we descended the enormous Bersaerkerbrae glacier to camp at the branch which extends to below the North face of Bersaerkertinde. N72°06'11.8" W024°42'19.7" 1025m.

On 20th May, Peak 16, named Skotsketinde (Scotland's Peak), height 1775m. N72°07'36.6" W024°45'20.4" was climbed by the shattered summit ridge. Grade PD+ via a long ski approach on the east flank to a point where skis were left at 1585m. N72°07'34.2" W024°44'56" the ascent then followed the east ridge.

Panoramic Peak main top was climbed with a corrected altitude of 1988m - N72°06'27.9" W024°4'35.3." The ascent was by a gully up the southeast flank to the south ridge Grade AD inf. A cairn was found on lower of the 2 summit needles which were both visited.

On the 21st May, in a whiteout we skied down the Bersaerkerbrae and safely off the snout to camp 6 next to the river in the Skeldal; N72^o11'59" W024^o19'43.6." 80m.

On the 22nd May, in typically Scottish conditions we skied north along the Skel to camp 7 adjacent to the old hunters hut (Fangsthytte) close to the mouth of the Skel; N72^o17'15" W024^o07'30." altitude 5m.

We skied over sea ice to the gravel airstrip at Mestersvig arriving late on 23rd May. Poor weather in the form of high winds prevented the chartered aircraft from collecting us until the 25th May when just after midday we flew back to Constable Point, then Akureyri and subsequently Reykjavik that evening. We spent the 26th May in Iceland with a swim in the Blue Lagoon and flew back to the UK on the 27th May 2007 after a very successful trip.

Mestersvig - north end of runway N72^o14'25.7" W023^o57'31.4" 5m.
- south end of runway N72^o14'04.7" W023^o54'29.7" 5m.



Mark Litterick leading the excellent rock of the crux pitch of Accessory Rib (VS, 4C), Ian's Peak. First Ascent 17th May 2007 (Photo; C Jones).

Summary

The need for considerable team planning is clear when considering an expedition to NE Greenland given the logistics of reaching the area, the uncertainty of the conditions for climbing and the overall duration of the trip.

There is always considerable benefit in looking back at the experiences of past expeditions in the area, this being readily available from two members of the expedition who had taken part in previous visits to the Staunings in 1996, 1998, 2001 and 2003. The approach for dealing with the necessary formalities for the expedition was based on past experience. The equipment and food choices, however, benefited from re-examination from the fresh perspective of those team members who had not visited the Arctic previously.

Team Composition

The Scottish Mountaineering Club has a long history of involvement and exploration in the Staunings and there has always been a pool of talent to draw upon when the decision is taken to put together a further expedition with a new set of objectives. The nucleus for the expedition therefore comprised SMC members along with tried and trusted climbing partners and friends with experience of climbing & skiing together in Scotland and abroad. The rationale of operating in climbing pairs with each pair responsible for their own camping, cooking and climbing equipment was accepted as the best approach. From the perspective of a participant in earlier expeditions to Greenland, some innovative ideas were apparent when individual pairs were planning their equipment and food. (Refer to section 6 Equipment)

The issue of whether the expedition should be 6 or 8 came down to whether it were possible to reach the preferred base camp site for the expedition in a single day's air charter from Iceland. On balance a team of 8 operating as 4 pairs was seen as offering the most flexibility for a 4 week expedition when some rest days were inevitable and some other days would demand close team collaboration. A team of 8 was also recognised as more able to maintain expedition momentum over a four week period. The logistics problem of taking 8 on the expedition was solved by arranging to freight in advance as much food and equipment as possible to the Constable Point airstrip in Greenland plus two expedition members flying to Constable Point by "scheduled" flight in advance of the remainder of the party. In this way, the chartered ski equipped Twin Otter could undertake the weight limited part of its journey from Iceland to Greenland with 6 expedition members and only a small proportion of the equipment. We had a nominal payload of 600kg for this leg of the charter. The remainder of the flight would be undertaken with all 8 team members and all expedition supplies and equipment with an acceptable element of risk, namely that this shorter element of the charter flight might have to be carried out twice if the total weight was excessive for a single flight. We had a nominal payload of around 900kg for the second leg of the charter.

Communication and Planning Meetings

Since team members were scattered across Scotland, England, Ireland and in one case Germany, communication during the planning stage for the expedition was mostly carried out by e-mail augmented by telephone calls when required. The initial planning phase was largely concluded by New Year 2007 with a meeting in Edinburgh to confirm team numbers and agree the timetable for advanced freighting of equipment. A further team meeting was arranged on 24th/25th February at the Scottish Mountaineering Club Hut at Lagangarbh in Glencoe to finalise the freighting arrangements and exchange ideas on equipment and food between pairs. This was the only occasion prior to the expedition itself when all 8 expedition members were able to meet up together. There was a final gathering of some expedition members on 31st March / 1st April, to complete packing and the weighing of boxes for advanced freighting to Greenland on the 3rd April.

Statutory Requirements

There is a statutory requirement by the Greenland Home Rule authority that expeditions must seek approval to visit areas such as the Staunings Alps within the North East Greenland National Park. The approval process is handled by the Danish Polar Centre in Copenhagen and requires completed application forms to be submitted by December 31st in the year prior to the visit. Expeditions must take an emergency radio beacon for which a Greenland radio licence must also be arranged with the Greenland authorities.

Expeditions to the North East Greenland National Park are also required to take a firearm for protection against large mammal (polar bear) attack. On the basis of previous expeditions, we arranged to borrow a 0.303 BSA rifle and applied for a UK firearms license in order to transport this to/from the airport within the UK. A copy of the UK licence has to be submitted to the Greenland authorities along with the payment fee to receive an import and export licence for the rifle. Owing to the rifle being unavailable to us at our departure date we managed to hire one in Greenland at short notice. The Greenland police in Nuuk were very helpful and the change in details to the licence for the rifle was completed by fax, just before we left the UK.

Team Roles & Responsibilities

The close co-ordination of permission paperwork, travel arrangements, expedition insurance plus support / grant applications is essential if this type of expedition is to succeed and the financial viability of the enterprise is to be maintained. This inevitably led to a concentration of such planning responsibilities with the Edinburgh based team members who had been to the Staunings Alps area before.

- **Leader and Medical Officer - Colwyn Jones**

- **Quartermaster - Brian Shackleton**
- **Travel and Permission Co-ordination- Colwyn Jones**
- **Team Safety Equipment - Brian Shackleton**
- **Medical Supplies - Colwyn Jones**
- **Equipment Spares provisioning - Brian Whitworth**
- **Insurance Arrangements - Brian Shackleton**
- **Grant and Sponsorship Application - Brian Shackleton**
- **Camping, Cooking and Equipment (incl. food) - by climbing pair**

Medical Kit

The primary aim of taking an expedition first aid kit was to be able to provide suitable emergency and short term medical care in the event of accident or injury until rescue / evacuation could take place. Individual expedition members were expected to carry their own small first aid kits for personal use to deal with minor cuts, bruises and blisters. Everyone was reminded of the need to take sufficient sunscreen or sun block for the duration of the expedition along with good quality eye protection. (Refer also to section 6, Equipment and section 9, Medical Equipment)

Safety Equipment

The team decided that each expedition member should equip themselves with avalanche transceiver (including spare batteries), shovel and an avalanche probe. Those who did not own their own transceivers were able to borrow one from the Scottish Mountaineering Trust (SMT) for whom one of the team members is the current keeper. The SMT also provided an Emergency Beacon (EPIRB) for the expedition for which a new battery was obtained (not without considerable difficulty) from a supplier in Reykjavik, Iceland. The team decided unanimously, that no means of external communication with the outside world (e.g. satellite phone) would be taken. This decision put a particular duty of care on the expedition as a group since the EPIRB then provided the sole method of seeking assistance in the event of any accident.

Team Insurance

Since the expedition planned the exploration of a remote and relatively unexplored mountain area plus the ascent of previously unclimbed peaks, additional insurance cover was required beyond the normal world wide "alpine & ski" type of cover. Although most insurance companies offer "expedition" type of cover for expeditions such as this to the greater ranges, there are additional requirements of the Danish Polar Centre which call for confirmation by the insurance underwriter of minimum level of search and rescue funds for

the expedition as a whole. The BMC Insurance are familiar with these special requirements for expeditions to this part of Greenland and can supply the necessary paperwork provided expedition members are resident in the UK or Republic of Ireland. Only late in the process did it become clear that the BMC were unable to provide individual cover for our German based team member. This was eventually resolved by him arranging insurance via the German Alpine Club (DAV) on the understanding that the DAV need not comply with the overall search and rescue minimum funding requirement. The expedition acknowledges the patient assistance of Ray Perry at the BMC in completing the insurance formalities required as part of the application process to the Danish Polar Centre.

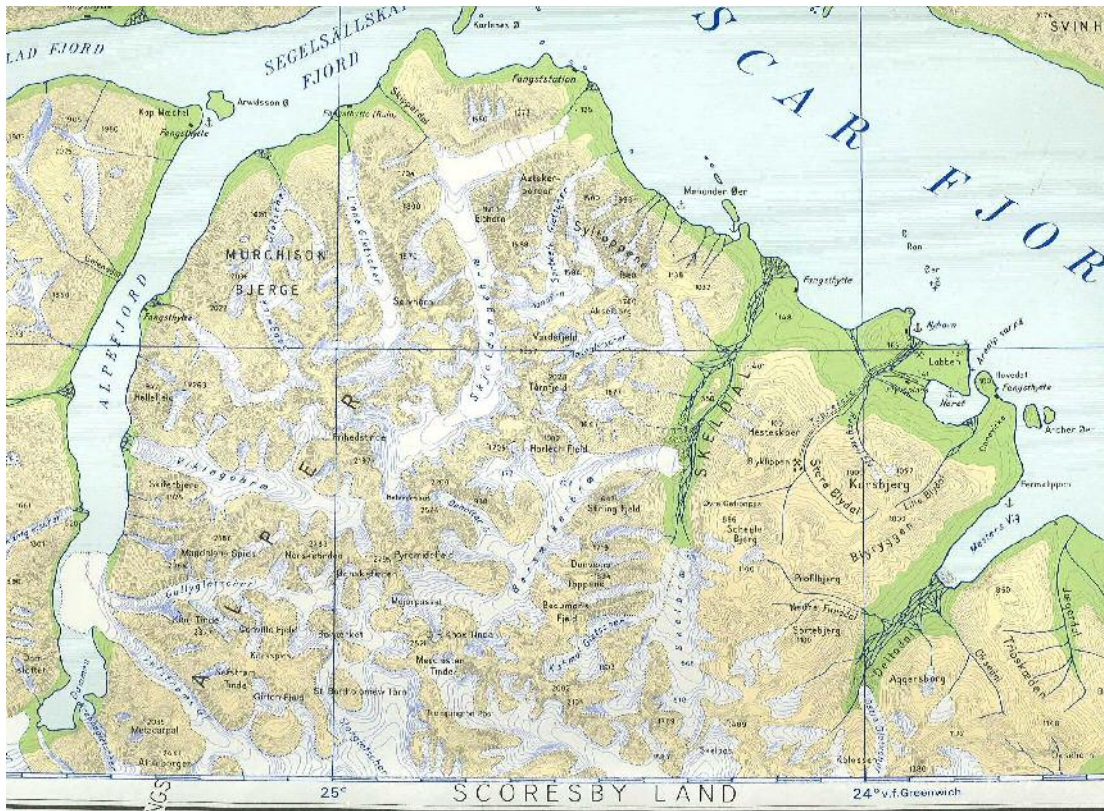
Food and Fuel

The responsibility for arranging food and cooking arrangements lay with each climbing pairing, it being agreed that this would be freighted to Greenland in early April, along with all other supplies. The only stipulation was that stoves be capable of operating with Jet A1 aviation fuel which we arranged would be made available to us on our arrival at Constable Point. Previous expeditions considered that 0.4 litres of this type of fuel per day be allowed for each pair in order to melt snow and prepare meals. For our 8 person team, therefore, we calculated we required 48 litres of fuel to last the maximum of 30 days duration of the expedition and accordingly we included 10 plastic petrol containers, each of 5 litre capacity in our freighted supplies. Food and Equipment for the expedition is discussed in further detail in later section of this report.



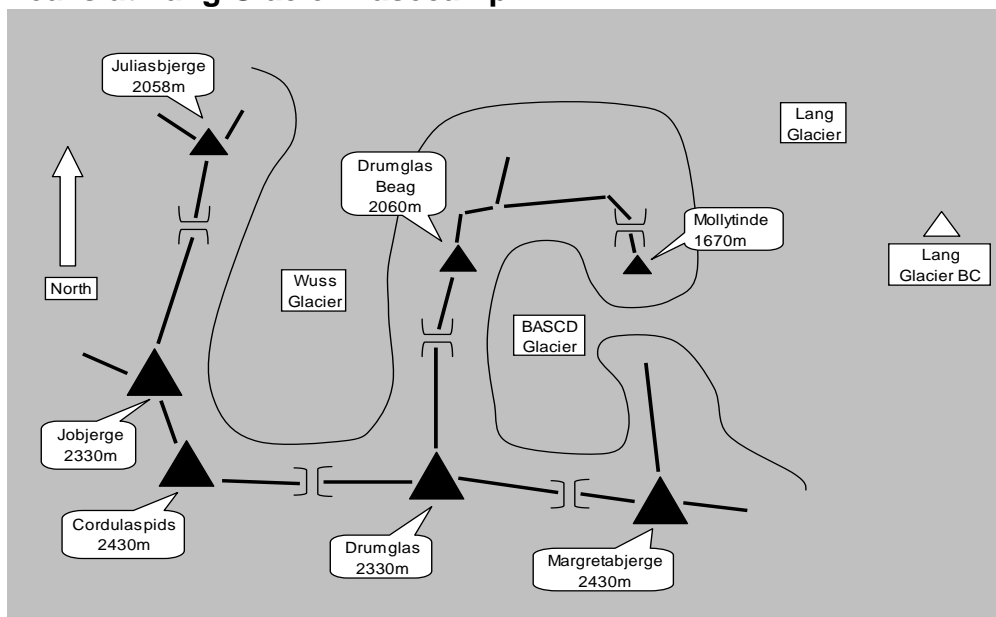
Laubie – a real man – enjoying a wash!

Northern Staunings Alps, from Kong Oscar Fjord, original scale 1:250,000
 Danish Geodaetisk Institut 1982. Sheet 72 O2.



Recent improvements to the maps of the east coast of Greenland allow better planning of expeditions to the area. Those planning to visit the area should contact the Danish Geodaetisk Institut directly for the most up-to-date maps of the area.

Peaks at Lang Glacier Basecamp



Drumglas Beag, 2080m. FA: 1 May 07

B Shackleton, C Jones, B Whitworth, H Puchan-Whitworth (E Face) & L Laubscher M Litterick (N Face)

North Face, AD Superior

From the junction at top of Lang (Stor) Glacier head south and then east reaching the approach to the Wuss glacier. Ascend a higher 2nd glacier to below bergschrund on the direct fall line from the summit. Cross the bergschrund where possible onto 55 degree ice. Belay after 60m then continue diagonally left and up on good snow/ice 50 degrees for a further approx 200m to the summit ridge. From ridge ascend steep sections keeping on the North face side to the summit 150m.

Descent:

Reverse from summit down to the lowest point of the ridge. Down Climb or abseil back towards the bergschrund

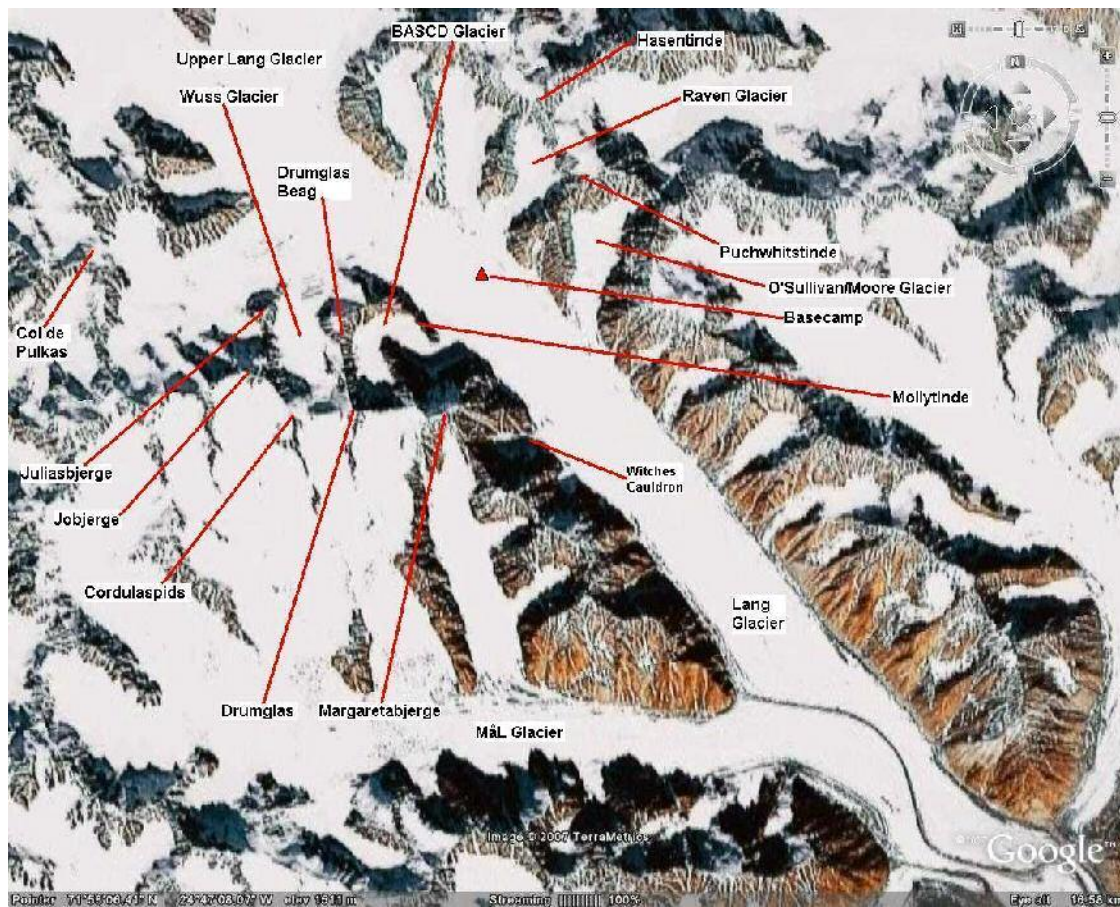
Time: 2.5 hours up, 2 down

East Face, Grade PD.

Skied from Lang Glacier Basecamp Northwards around the base of the previously unclimbed peaks and into a new glacial bowl to the West of the Lang. The new glacier is now named the "Wuss Glacier". Once on the Wuss glacier proper, skinned up through a crevassed zone onto the upper glacier before abandoning skis for the ascent up a wide ice sheet to the col between the two unclimbed peaks, the SMC col. From here scramble Northwards up the easy south ridge to the summit and await anyone coming up the North Face. Peak named "Drumglas Beag" 2063m. Grade: Facile.



Mark approaching the summit of Hjornespids (Photo L Laubscher)



Drumglas, 2330m, FA: 1 May 07, C Jones, B Shackleton, M Litterick, L Laubscher, B Whitworth, H Puchan-Whitworth. Having retraced our steps back to the col we then ascended southwards up the obvious ice arête (reminiscent of and therefore named the “Biancograt”) to the summit of the much higher neighbouring peak “Drumglas” 2352m. Ice screws were needed for protection due to the brittle nature of the ice. Grade: AD

North Ridge (Biancograt), AD

From the Wuss glacier head south to access the SMC col between Drumglas Beag and Drumglas from the glacier. Ascend the broad North ridge for about 300m to a 150m rocky section. Above the rocky section lies the “Biancograt” ridge approx 200m of a thin snow/ice ridge. Favour the west side of the ridge and climb on good ice to the summit blocks.

Descent:

Either via W ridge to the newly named LoLa col and down to the Wuss glacier. The descent is easy angled but an extremely icy ridge to the LoLa col. From the col 4 abseils Northwards from Abalokovs saw us over the bergschrund and an easy walk back to the Skis.

Or

Reverse the route.

Or

Reverse the route to SMC Col and ascend the rocky and rather loose S ridge of Drumglas Beag to the summit and descend down summit ridge at its lowest point. This is a good combination of 2 summits in a day although long.

Time: 3 hours from SMC Col up. Depending on route 2-4 hours descent

Mollytinde, 1670m, FA: 5 May 07, C Jones, B Shackleton, S O'Sullivan, L Laubscher, M Litterick

North Ridge: F Superior

Follow BASCD Glacier below the North face of Margretabjerge. From the small Col between the N ridge of Mollytinde and the S ridge/spur of Drumglas Beag ascend a rocky/snowy ridge easily to an arête. Climb over the loose arête to the summit.

Descent:

Reverse of Route

Time: 20 minutes from the small Col to summit

Cordulaspids, 2430m FA: 6 May 07

L Laubscher, M Litterick, B Shackleton, C Jones

North face and East Ridge, PD+

From the end of the Wuss glacier carefully cross the bergschrund and ascend the face; 60 degrees max. 250m to LoLa Col. Continue on east ridge taking one rock pinnacle directly. Skirt summit tower on the right to join the north ridge and follow this to summit proper.

Descent:

Reverse of route, down climb or abseil from LoLa col down the north face. Abseil over bergschrund.

Time:

4 hours from bergschrund to summit, 2 hours down

Jobjerge, 2330m, FA: 6 May 07, L Laubscher and M Litterick

SW Ridge, AD

From Cordulaspids descend its north ridge to join the SW ridge of JoBjerg. Pass 150m section of steep exposed snow/ice ridge. At a steep pinnacle drop down to the west 10m and continue to join the SW ridge again. One more rock step to reach the base of a headwall on JoBjerg. Follow a snow gully diagonally left for 2 pitches. Then follow a ledge right that meets a narrow gully 50m. At the top of a gully there is a good belay that overlooks the N Face. Traverse left 25m on rock to another rock belay. Step left onto a steep snow gully that meets a steep snow ridge, follow the ridge and then move

diagonally left to the base of the summit block and belay. Step down and traverse left for 6 meters to then ascend and gain the summit proper.

Descent:

Reverse ascent route

Time:

3 hours from Cordulaspids. 1.5 hours return to summit of Cordulaspids. Another 2 hours down from LoLa col.

Juliastinde, 2058m, FA 6/5/2007, B Whitworth, H Puchan-Whitworth.

Once again skied into the Wuss Glacier to ascend the northern most outlier on the West side of the Glacier. Ascended steep snow slopes to a col just South of the summit and then ascended the scrambly ridge Northwards to the summit of "Juliastinde" 2058m. Descent by the same route. Grade: PD sup

Puchwhitstinde, 2339m, FA 7/5/2007, B Whitworth, H Puchan-Whitworth.

Skied from the Lang glacier basecamp Northwards for about 1km then East into an unvisited glacial bowl. A Raven was spotted hence the glacier is now named the "Raven Glacier".

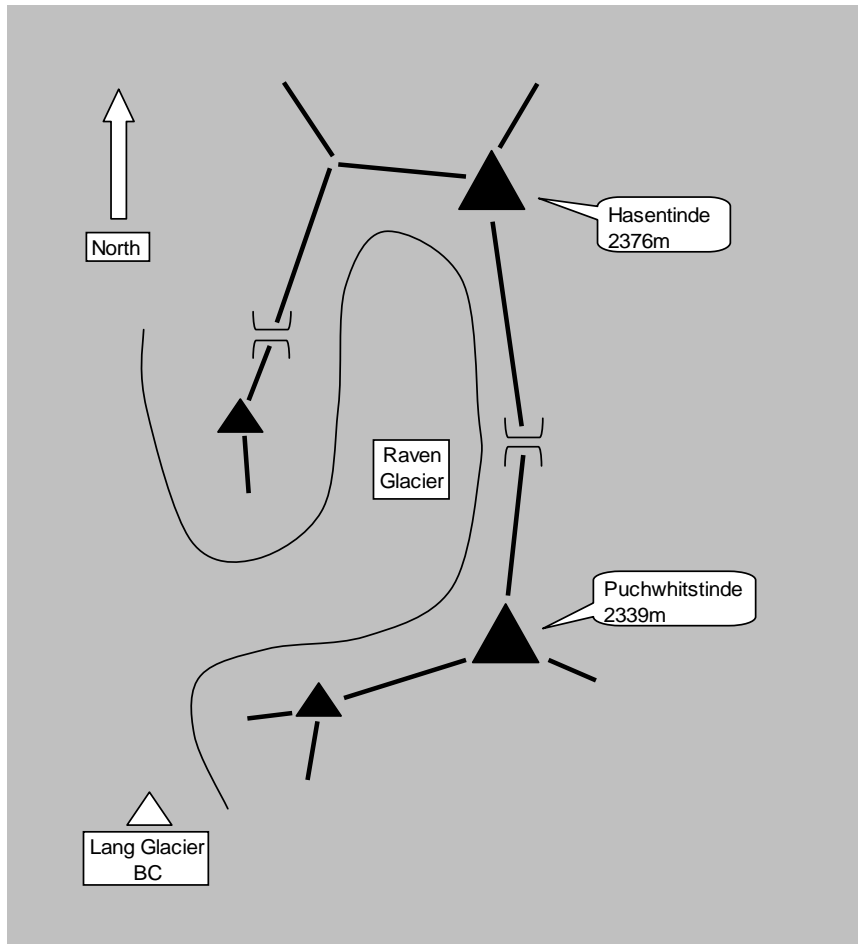
We skinned up to the bottom of twin buttresses leading up to a col between the two main peaks. A hidden gully (Grade 2) just left of these buttresses provided a straightforward but laborious ascent initially on ice but later through waist deep snow. This led to a stunning snow arête which in turn led to the col.

From the col a tiring ascent southwards up straightforward snow with occasional hidden crevasses led to the summit of "Puchwhitstinde" 2339m. Grade PD sup.

Hasentinde, 2376m. FA 7/5/2007, B Whitworth, H Puchan-Whitworth.

We retraced our steps to the col and traversed Northwards along an entertaining ridge with double cornices, snowed up rock and numerous pinnacles towards the other peak. This ridge was named the "Igel Ridge" (Hedgehog ridge). Once on the main bulk of the next mountain things eased up a bit but the deep soft snow and loose rock made for slow going. The twin rock pinnacles on the summit, clearly visible from the summit of Puchwhitstinde, led to the name of "Hasentinde" (Rabbit peak) 2376m. South ridge grade: D inf.

We descended down the west ridge to a plateau from where a steep downclimb was possible, initially down a perfect snow arête, then a quick sprint down a steep gully containing much avalanche debris. Grade AD inf.



Margaretabjerge, 2430m. FA: 8 May 07

L Laubscher, M Litterick (South Flank and SW Ridge), C Jones & B Shackleton (SE Gully “from the newly named Witches cauldron up the presidential couloir”)

SW Ridge, PD

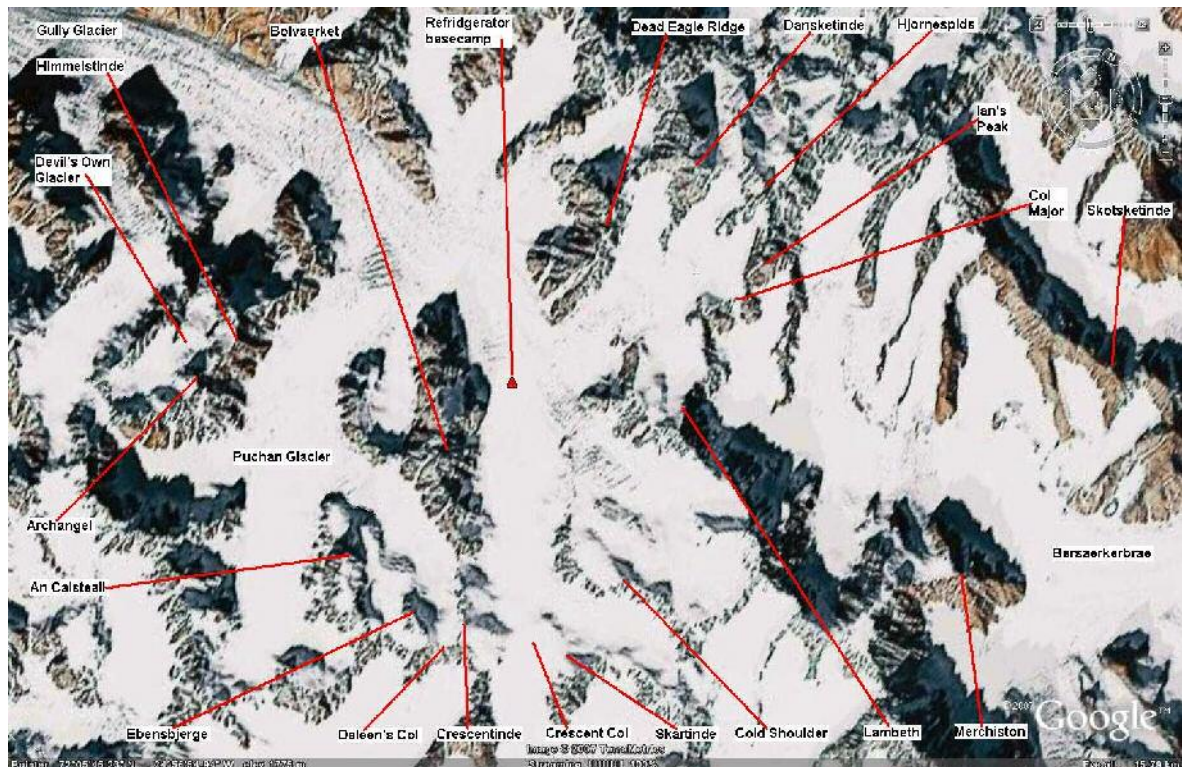
From Wuss glacier head south to the Lo La Col. Cross the bergschrund and ascend 250m max 60 degrees to the Col. Descend the south face of the col onto the MåL glacier. Skirt the south ridge of Drumglas between seracs. Turn East and head towards the south flank. Head right of a 200m rock buttress and climb up and towards its left above its top to a small flat area. Gain the SW ridge. Continue another 400m along with some steeper sections staying on the North side of the ridge avoiding the cornices to gain the summit.

Descent:

Reverse of SW ridge or SE Gully

Time:

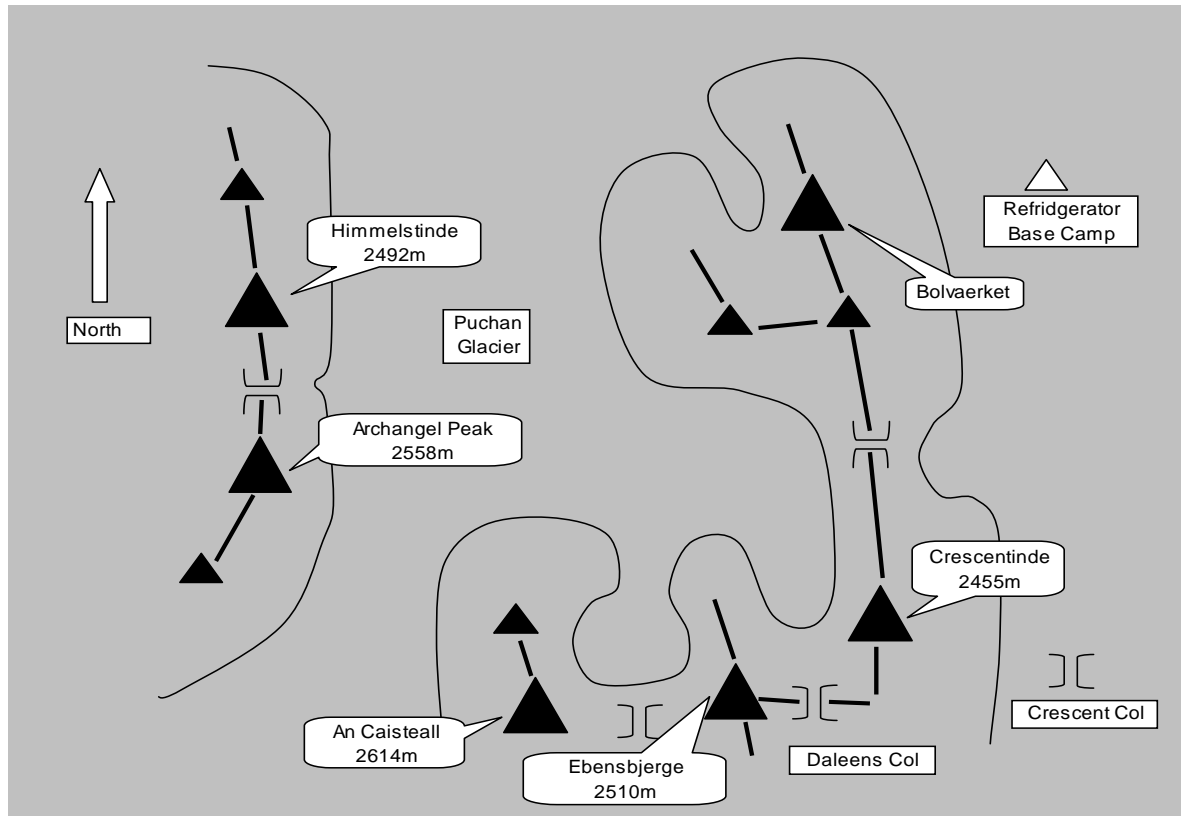
6 hours from LoLa Col bergschrund to summit, 6 hours return via MåL glacier +/-17 km.



On the 10/11 May the party moved to the second basecamp, collecting the food and fuel dumped at Crescent Col, to camp on the upper reaches of the Gully Glacier. Unfortunately the shadow cast by Bolvaerket in the afternoon crossed the camp which was christened the Refridgerator basecamp. Despite best intentions the camp was not moved owing to inertia.

Himmelstinde, 2492m. Grade: AD, 11/05/07 B Whitworth, H Puchan-Whitworth.

We skied from the Refridgerator basecamp North down the glacier and round the North ridge of Bolvaerket. At this point a heavily crevassed area had to be negotiated heading back South up onto an unexplored glacier – now named the “Puchan Glacier”. We headed South and West across this glacier and ascended an obvious snow and ice gully (Scottish grade 2) for around 700m to a col separating two unclimbed peaks. Due to the effort required to ascend to it the col was named the “Eternal col”. From here mixed terrain led North to the summit of “Himmelstinde” (Heavens peak) 2492m. Grade: AD. Descent by the same route involved very tiring downclimbing on occasionally iron hard ice. A possible second peak at the south side of the eternal col was not attempted due to the effort already expended breaking trail up the gully.



Hjornespids 2870m. FA: Slessor McNaught-Davis, Summer 1960 by S E ridge. New Route: 12 May 2007. Laubscher-Litterick Gully

Laubscher-Litterick Gully, D, 600m to West Ridge

From the base of the obvious 600m gully (right of first pinnacle) cross the Bjergschrund to gain the Gully proper. 100m of 60 degree at it's steepest. The gully is AD+, Scottish 3/4 for another 500m to the West Ridge.

From the top of the gully join the very steep west snow ridge. Head up and left for about 100m above the North Face passing the second rocky pinnacle. Descend 100m to a Col and move east another 100m on the ridge to meet the third pinnacle. From a good belay climb on solid rock up about 20 feet, traverse another 100m left on mixed terrain to the forth pinnacle. Climb a jamming corner for about 15 feet and continue up easier terrain to a col between pinnacle 5 and 6. Climb down on the south side of the sixth pinnacle to gain a system of snow covered ledges. Continue right diagonally first for another 100m. Descend a chimney to the seventh pinnacle. Ascend a mixed corner for 15 feet then traverse right into a steep gully. Climb the gully direct 40m to below the Final tower/pinnacle. Traverse the North side of the tower 30m to belay below a slab with a crack in its right side. From the top of the slab go steeply right and pull onto a ledge below a chimney formed by a huge leaning slab of rock. Climb into the chimney and gain a stance after 15 feet. Climb to the right and gain a steep slab to gain a huge flat ledge below the summit. Traverse right to another ledge and gain the Summit block.

Descent:

Abseil from the summit 25m to below the slab. Reverse route with some abseils. Continue past Laubscher-Litterick Gully and climb down the first pinnacle to the Col between Hjornespids and Dansketinde. Descend south from the Col 300m to glacier.

Time:

2.5 hours up Gully. 3 hours to summit from top of gully. 4 hours from summit to below Col.

Archangel Peak, 2558m, FA: 12 May 07, C Jones, B Shackleton

'Eternal' Couloir and East Ridge, Grade: Difficile, sup

Approach as for Himmelstinde, from Gully gletcher into the Puchan glacier and cross SW to the base of the eternal couloir (1.5 hrs). Cache the skis and follow the eternal couloir from its base at 1700m to around 2100m at a granite block belay. Move left into a basin which leads to a prominent icy gully, following the upper rim of the basin (rock belays) to avoid the bare ice. Climb the ice gully in 2 steep pitches with an awkward exit into a breche between 2 pinnacles on the east ridge. The east ridge is climbed in 5 pitches to the summit. A steep step out of the breche leads, after a few moves, to the ridge which is followed to a pinnacle and a step across a gap in the ridge. Follow rock ridges and snow gullies to the final gap between the two highest towers. The first ascent onto the summit tower was made from the gap by climbing the lower right hand tower and stepping sensationally across the gap.

Descent

Reverse the route of ascent down the east ridge to the breche and reach the granite block thereafter in 4 pitches of down climbing.

An alternate descent was attempted via the devil's own glacier with a view to traversing to the top of the eternal couloir but the way was blocked by a serac cliff and the glacier falling steeply away. A traverse along the summit ridge was also followed beyond two towers to the west of the summit, but once again with no obvious way back to the couloir. A descent by a couloir to the south of the summit was not attempted but this could be investigated by other parties as both a line of ascent and descent.

An Caisteall, First ascent, 13/05/07. 2614m, N72⁰03'31.9 W024⁰59'52.6"
Grade TD inf.

We skinned south towards Crescent Col and then swapped into mountaineering boots to ascended a minor side glacier to the col between Bolvaerket and Crescentinde. Considerable effort was required to carry skis, ski boots and climbing gear up the 200m ascent through deep snow.

A short abseil deposited us on the glacier on the other side from where we skinned up to the col at the head of this new glacier (actually a higher branch of the Puchan Glacier). From here there were wonderful views back to the

Lang Glacier and the peaks ascended earlier in the trip. A descent to the Lang from this col would be possible but not very pleasant.

We wanted to ascend the South buttress of the peak on the West of the col, however it appeared to be considerably harder than we were able to climb without rockboots. Considerable potential was noted for high altitude rock climbing on the excellent rock on this ca250m high buttress. Instead we traversed North a bit and then ascended a steep ice sheet followed by a Scottish style gully with a couple of mixed steps (Scottish 3/4). This led out to a saddle on the mountain. From here a narrow sinuous ice arête, requiring ice screw protection due to the double corncicing and iron hard ice, led to the higher South summit of the mountain – “An Caisteall”

The lower north summit was not ascended but looked like a straightforward exposed scramble from the col. Descent was made from the col back to the skis by multiple Abalokov anchors with some downclimbing. We then made the first ski descent of this arm of the Puchan glacier back to join our tracks to and from Himmelstinde to complete the circumnavigation of Bolvaerket – this gave around 8km of untracked ski descent. We only roped up for a short heavily crevassed section which saw a spectacular wipe-out by one of the team as one roped person went one way and the other went the other way!

Crescentinde, 2455m

Then first ascent of Crescentinde is believed to have been made by a Norwegian team in Spring 1996, although we have been unable to confirm these details.

15 May 07

New Route, NE Face, PD

From Crescent col head up the middle of the north east face avoiding seracs as necessary. Join the SE ridge. Stay on the north side of the ridge to avoid cornices and continue another 400m to the summit.

Descent: Reverse of route

Time: 1.45min from Crescent Col, 45min descent

Ebensbjerge, 2510m, FA: 15 May 07, M Litterick, L Laubscher

North East Face, AD

The route starts from Daleens Col which is accessed from Crescentinde summit by climbing down the south face AD 300m. From Daleens Col (Between Ebensbjerge and Crescentinde) head up the NE face. 50 degrees maximum 300m to gain a rocky notch on the summit ridge. Continue north on the ridge for another 300m to gain the summit.

Descent:

Reverse of route to Daleens Col. From the col head up the south face of Crescentinde to the summit and return via north east face to Crescent Col.

Time:

2 Hours from Crescentinde Summit, 2 hours return.

Ian's peak (2607m)

First summit on the South Ridge of Hjornespids 2870m. FA: Slessor McNaught-Davis 1960. Second ascent on 17/05/07. H Puchan, B Whitworth

From the newly repositioned base camp at Col Major we made our only true rock climbing ascent of the trip up the obvious South ridge of the peak above basecamp. Scrambling over mixed terrain led to the start of the difficulties at a steeper step. At this point rock boots were donned and some pleasant climbing up to around Mild VS was enjoyed for a few pitches before two towers were reached. These provided great entertainment for both ascent and descent including one abseil from a free standing rock tooth. An ancient peg was also discovered (and removed by hand) on the descent of the second tower. From there steep mixed terrain led to the summit. Route grade: AD sup

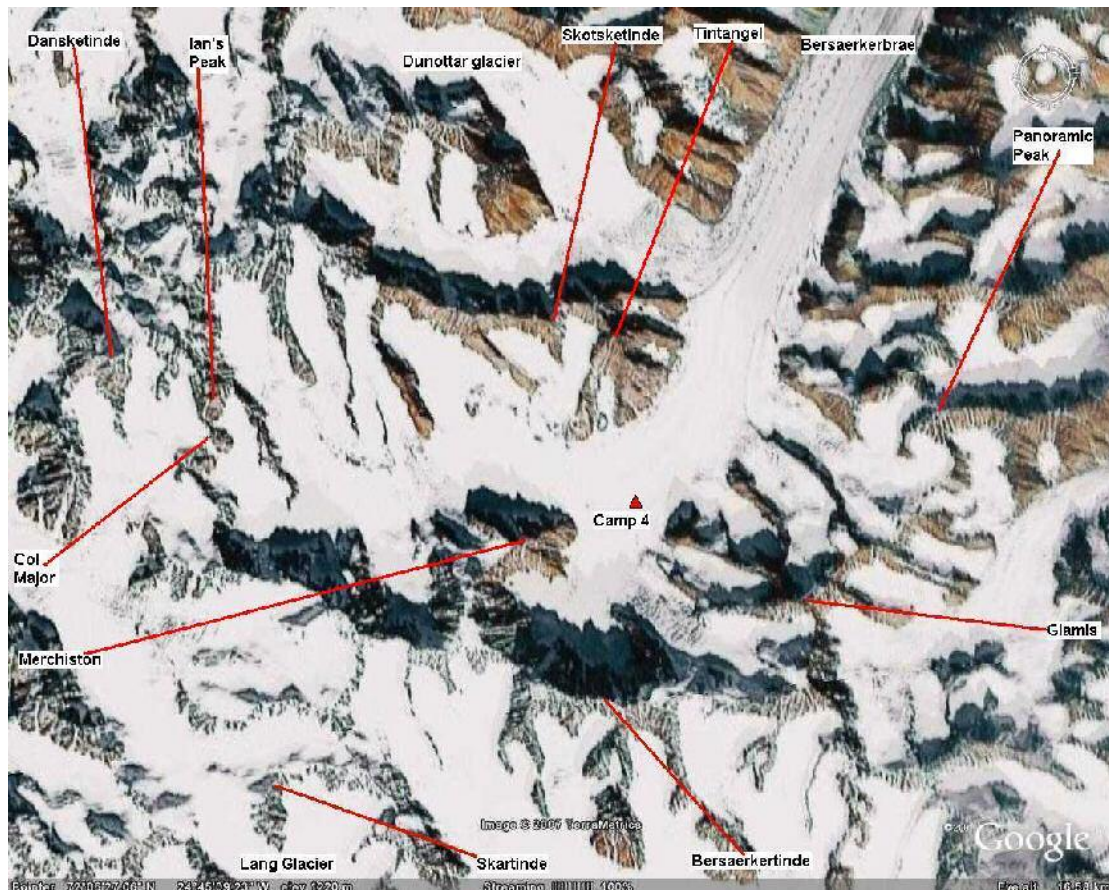
The ascent route was downclimbed with occasional abseils required – notably over the first tower and down the initial steep step.

Since the peak was unnamed it was christened "Ian's Peak" 2607m. This was in memory of Ian Angell, a member of the Scottish Mountaineering Club who had climbed Hjornespids in 1996. Sadly Ian Angell died in 2006. Ian's peak guards the north side of the descent gully of Col Major. A peak he climbed in 1996 which is immediately on the south side of the Col Major gully he named Shirley's peak after his wife.

C Jones & M Litterick also climbed Ian's Peak by a new route. From the steep ground, move left to the next main rib from the south ridge which was climbed in three pitches rejoining the south ridge thereafter. It was on excellent well protected granite and the crux pitch graded VS 4c.



Colwyn and Brian approach the summit of Cordulaspids (Photo, L Laubscher).



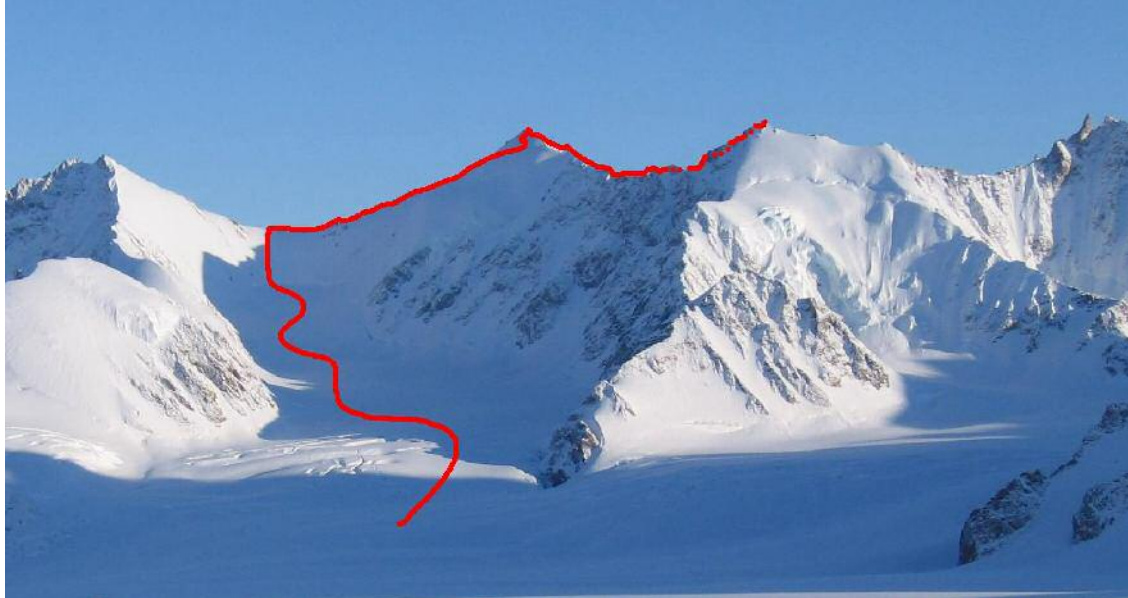
Skotsketinde, East Ridge, 1775m. FA: 20 May 07. C Jones, B Shackleton

From basecamp 4 on the south (right) side of the Bersaerkerbrae glacier, N72°06'11.8" W024°42'19.7" (1035m). Cross the glacier by heading north (magnetic) towards Tintangel peak. Continue up the right bank of the main glacier to the second subsidiary glacier which would lead to the Bersaerkerpire. Climb steadily up the centre of the subsidiary glacier avoiding crevasses, hopefully! On the east flank of the peak continue north until a wide gully leads almost up to the summit ridge. The wide gully contained avalanche debris. Stash skis at 1585m and continue roped up the East Ridge to the shattered summit block at N72°07'36.6" W024°45'20.4". 1775m, climbing grade Peu Difficile. First Ascent so we called it Scotland's Peak (Skotsketinde). Once we reached the ski dump there was a splendid off piste ski down gentle slopes to return to basecamp. It was noted that the Peak called Bersaerkerpire appeared to be mapped incorrectly.

Panoramic Peak, Ascent 20/05/07, Grade: PD sup, 1988m. H Puchan-Whitworth, B Whitworth.

From the newly repositioned base camp on the Bersaerkebrae glacier we skied downhill a couple of kilometres before heading up a side glacier aiming for the peak named as "Panoramic Peak" on the map – the most shapely of the surrounding peaks. A long skin up the glacier led us to within 250m of the summit. The final ascent followed an avalanche prone snow couloir then up a

shattered ridge to the summit pinnacles. A cairn was found on the lower pinnacle and we constructed a cairn on the higher pinnacle. Grade: PD sup. The altimeters showed 1988m – considerably higher than shown on the map. Descent was by the same route. The ski descent was particularly fine with perfect snow allowing even the poorest skier to make lovely carving turns.



First ascent routes for Cordulaspids and Joberg from the Wuss Glacier via LoLa Col (Photo, M Litterick)



Descending Col Major (Photo, K Moore)

Introduction

This chapter provides an overview of the main footwear, clothing, camping, mountaineering and miscellaneous equipment used on the expedition. Each section includes a general description of the gear used in that category together with a more detailed list of personal items from each of the team members. The team consisted mainly of experienced mountaineers; several of whom had been to this area of the Staunings Alps before. In general the team members were responsible for choosing their own equipment, with some guidance being provided by the more experienced members of the team.

Footwear

Most team members opted for a combination of plastic ski-mountaineering boots and modern lightweight alpine boots for the technical climbing. Two of the more experienced skiers chose to go with one pair of heavier weight mountaineering boots. The general consensus was that the dual boot approach worked well and provided maximum security in most terrains (a necessity for such remote mountains) as well as the added advantage of two pairs of boots for camp use. However, those with only one pair of boots had less to carry. Most members had minor incidents of cold feet, as expected, with one member experiencing superficial frost nip in one toe. One problem with the dual boot combination was that if the ski boots were cached in the shade for the duration of the technical climbing, the plastic was so hard from prolonged exposure to the cold, that the boots were frustratingly difficult to put on for the long ski home. The main problems with the single boot system were a lack of control for skiing (although no great technical difficulties were encountered) and an unexpected lack of reach when skinning (due mainly to the restricted ankle movement when the ski is slid forward).

Various sock systems were used by different team members including single pairs of good quality socks, dual sock systems with liners and occasional use of vapour barriers by one or two members. No particular problems were attributed directly to the sock system although several members had some discomfort due to blisters; perhaps more related to pressure points from boot-sock combinations and general new-ness of the footwear.

All members used good quality non-yeti style standard gaiters with no reported problems. One member had insulated over-boots which were used extensively in camp with tremendous results – well recommended for other spring trips.

Boots	
C. Jones	<i>Scarpa Alpha</i> : double boots, feet felt generally cold, poor ankle support for skiing but managed with the one pair of boots.
B. Shackleton	<i>Boreal Expedition</i> : insulated boots, warm feet but clumpy for rock work and poor ankle support for skiing particularly in heavy snow.
L. Laubscher	<i>Scarpa Avant</i> (ski): brilliant, no cold feet, great on snow/ice. Shells used with fleece booties in camp to good effect. <i>Scarpa Cerro Torre</i> : great on rock and ice, also warm.
M. Litterick	<i>Scarpa F1</i> (ski): excellent for skinning, adequate ski, great snow/ice, poor rock/mixed. <i>Scarpa Freney XT</i> : excellent and light, solid B3 crampon, warm enough (combined with insulated over-boots in camp for luxurious warmth), great technical boot rock/ice.
K. Moore	<i>Scarpa Denali</i> (ski): one incident with frost nip to big toe, otherwise generally excellent for touring and snow mountaineering use. <i>Scarpa Charmoz</i> : light and comfortable but recommend over-boots since feet very cold at camp all the time.
S. O'Sullivan	<i>Scarpa Denali TT Thermo</i> (ski): some blisters due to over-tightening during skinning. Once blisters healed however found them very good. Always felt warm ski-touring. Adequate support for downhill. <i>Scarpa Charmoz</i> : Extremely lightweight, would have been more effective on routes with more rock content, but still performed very well on gullies and ridges. Using Ski boots for all climbs was the original plan (to save weight); however, I am very glad to have taken these along - climbing in ski boots was quite nervy, never felt very secure or confident with footholds.
H. Puchan	<i>Scarpa Denali</i> (ski): excellent if only they were the right size. <i>Kayland Super Ice</i> : excellent for mountaineering but too cold for standing around in camp.
B. Whitworth	<i>Scarpa Spirit 3</i> (ski): nice and warm. As a non skier they felt quite clumpy bit I suspect all ski boots do. <i>La Sportiva Nepal Extremes</i> : were always very cold and never really thawed out after overnight freezes. It was always a relief to put the warm ski boots on again.

Clothing

The majority of members adopted standard Scottish winter mountaineering clothing (base, fleece and shell layers) with no reported problems. One member used the tried and trusted *Buffalo* system with a similar level of comfort. Due to the unexpected depths of cold when the wind picked up in the camps, good quality down jackets proved to be indispensable in keeping some of the occupants warm and happy. Of particular note is the level of comfort experienced by all members that included merino wool base layers in the clothing system. The *IceBreaker* brand was well represented and delivers exactly what it says on the label – warmth and comfort with unbelievable smell free performance. Nice touch when you have only two shirts for four weeks in the wilderness.

Everyone took a healthy mixture of glove combinations with *Gore-Tex* shells, fleece liners and steadfast *Dachstein* mitts for the bad days. One member acquired shallow (but rather alarming) frostbite on the knuckles, index fingers and thumbs of both hands as a result of prolonged exposure to the cold and (by his own admission) slight carelessness (using worn out fleece gloves during a very long couloir descent).

The usual mixture of fleece hats and thermal balaclavas was put to good use with most members expressing pleasure at remembering to bring an effective sunhat.

Outer Shell	
C. Jones	<i>Mountain Equipment</i> Karakoram jacket – heavy duty <i>Gore-Tex</i> . <i>North Face</i> mid-weight <i>Gore-Tex</i> trousers.
B. Shackleton	<i>Lowe Alpine</i> Triple Point <i>Gore-Tex</i> jacket. <i>Mountain Hardware</i> <i>Gore-Tex</i> over-trousers. Outer shells were necessary less frequently than in Scotland!
L. Laubscher	<i>Rab Event</i> over-trousers – brilliant and light, pocket too narrow. <i>Patagonia</i> Soft Shell jacket – lovely and warm but not very windproof. <i>Mountain Hardware</i> <i>Gore-Tex</i> jacket – good, not used much.
M. Litterick	<i>Arc'teryx</i> Theta AR jacket and trousers – absolutely totally brilliant jacket, trousers are good for technical climbing and skiing but a little fragile. <i>Rab</i> Expedition down jacket – super warm, a little bulky.
K. Moore	Lightweight <i>North Face</i> down jacket – not warm enough for the cold camp conditions; recommend a full-weight expedition jacket. <i>Mountain Hardware</i> <i>Gore-Tex</i> shell.
S. O'Sullivan	<i>Mountain Hardware</i> down jacket: this was my most valued item - made the campsite meals in cold weather pleasant as well as providing peace of mind in case of overnight epics. Bolivian over-trousers: these I hardly used, except when the winds whipped up after 7pm on the return leg of a climb.
H. Puchan	<i>Marmot</i> Glenmore jacket – excellent heavy duty <i>Gore-Tex</i> , very effective. <i>Mountain Equipment</i> Ama Dablam over-trousers – no drop-seat facility so always had to remove jacket to take off braces, not very good for a women specific design
B. Whitworth	<i>Mountain Equipment</i> Changabang jacket – very light but not very robust. <i>Mountain Equipment</i> heavy duty <i>Gore-Tex</i> trousers – pretty old but still wind and snow proof (not rain proof but it never really rained!)

Mid-Layer	
C. Jones	<i>Buffalo</i> salopettes & shirt top with hood.
B. Shackleton	<i>Millet</i> soft shell trousers- brilliant, rarely needed over-trousers as well. <i>Lowe Alpine</i> fleece or lighter weight <i>North Face</i> fleece depending on conditions.
L. Laubscher	<i>Mountain Equipment</i> windproof fleece trouser – great in camp, too warm for climbing. <i>Mountain Hardware</i> Monkey Man fleece – brilliant.
M. Litterick	<i>Mountain Equipment</i> micro-fleece trouser – 15 year old – comfy,

	warm. <i>Mountain Hardware</i> Monkey Man fleece (new) – got to be the best fleece on the market, light, warm, effective – totally un-windproof, but who cares when you have a shell?
K. Moore	Various combinations of fleece.
S. O’Sullivan	Bolivian tailor-made fleece pants: not only great colours ☺ but extremely effective at very cold temperatures - my legs were never cold. Fleece jacket and a base layer was all I wore for the majority of the climbing or ski-touring and found to be more than adequate.
H. Puchan	<i>Lowe Alpine</i> fleece pullover – a lovely salmon shade that turned more and more “stove black” over the weeks. <i>Lowe Alpine</i> power-stretch trousers with <i>Alpine stretch</i> trousers on top.
B. Whitworth	<i>Polartech</i> fleece jacket – was brand new for the trip so started very warm and got cooler as it thinned out. <i>North Face</i> power-stretch trousers with <i>North Face Apex</i> pants on top. A good combination which was always warm and quite snow resistant

Base Layer

C. Jones	<i>Peter Storm</i> wicking top. Mostly naked under the <i>Buffalo</i> clothing.
B. Shackleton	Merino wool underwear, highly recommended.
L. Laubscher	<i>IceBreaker</i> merino underwear – brilliant. <i>Helly-Hanson Active Thermal</i> top – good but smelly. <i>Patagonia</i> power stretch pants – great for touring and climbing.
M. Litterick	Only pure NZ merino will do from now on. <i>IceBreaker</i> tops, bottoms and underpants – great stuff, no smells... well OK some smells after 4 weeks.
K. Moore	Standard thermal underwear. No problems.
S. O’Sullivan	Merino Wool and <i>Helly-Hansen</i> : great to change out of one in use during the day to "clean" one to sleep in at night. The merino wool is superb.
H. Puchan	2 <i>IceBreaker</i> thermal tops. Excellent. Hardly smelled and were very warm.
B. Whitworth	<i>IceBreaker</i> thermal top. Excellent although it did start to smell a wee bit after the 4 weeks continuous usage

Extremities

C. Jones	<i>Dachstein</i> mitts for ice climbing, thin fleece for camp, thick fleece for skiing and rock climbing. <i>Tog-24</i> fleece hat.
B. Shackleton	<i>Millet Gore-Tex</i> Mitts, thin fleece gloves about camp, skiing and rock work. <i>North Face</i> down mitts for sitting around camp / belaying. <i>Patagonia</i> fleece / wool hat for cold conditions, cotton sun hat (bought in India) for warm/sunny conditions.
L. Laubscher	<i>Mammut Zermatt</i> glove (new model) – good shell, little bulky, inners are too big and useless on their own. <i>Marmot</i> fleece liner glove – brilliant general purpose glove. <i>Dachstein</i> mitts – a must for all. <i>Mountain Hardware</i> windproof fleece hat – warm but muffles sound, too big for helmet. <i>Berghaus</i> power stretch beanie – great for helmet, cold in wind. Power-stretch balaclava.
M. Litterick	<i>Mammut Zermatt</i> glove (old model) – great shell, dexterous (unlike new model), inners too thick – used others instead. Used <i>Mammut</i> liners as separate light gloves – fine. <i>Dachsteins</i> – used only 3

	days, but carried for emergencies! Non-windproof fleece hat for under helmet. Snood – neckerchief, great. <i>Patagonia</i> foreign-legion sunhat – great.
K. Moore	Leather palmed <i>Gore-Tex</i> mountain gloves were good when dry, but froze solid after wetting.
S. O'Sullivan	Mainly <i>North Face</i> ice climbing glove: used <i>Dachsteins</i> only twice (not really required for climbing, but using around the camp helped preventing fingers from chapping).
H. Puchan	<i>Phoenix</i> ski gloves for most everyday usage – good but rapidly fell apart (quite old to start with). <i>Extremities</i> Mitts for extra cold usage. Had a power-stretch balaclava but never wore it – relied on fleece hat instead. Perhaps the balaclava might have prevented frost nip on my cheeks.
B. Whitworth	Cheap fleece gloves for everyday use – were remarkably good but did require a few sewing sessions to prevent utter destruction. <i>Sealskinz</i> Porrelle mitts – were warm enough but got wet quite easily in the snow. Fleece hat was good and warm – never used the power-stretch balaclava. Used a buff almost continuously for sun protection – was very impressed how many uses it had.

Camping Equipment

All of the tents were good quality mountain tents and performed as expected; however, the relatively benign weather ensured the robustness of the tents was never really tested to the full. A mixture of securing methods was used (canes, snow pegs, normal pegs, snow-stakes, skis, etc) depending on the requirements for gear elsewhere on the mountain and the need to pitch a hasty camp.

Everyone had a good quality sleeping mat rated to at least -20°C and was glad of it! When combined with several sleeping mats (usually one inflatable and one closed cell foam) and a bubble-wrap (or similar) insulating barrier under the groundsheet, the result was a warm and comfortable night sleep despite the low temperatures experienced in most camps.

Stoves presented the biggest gear disaster of the expedition. All of our stoves were from *MSR*. The oldest two were XGK-II models which burnt the arctic grade Jet-A1 fuel with the familiar and comforting roar we all know and love. One stove was the Dragonfly model, which managed to burn fuel hot enough to smoke the water into submission. The other two stoves did not burn the fuel at all under any circumstances; despite much cleaning, tenderness and swearing – these were Whisperlite and Whisperlite-International models. While there is no doubt these stoves give a comfortable simmer with *Coleman Fuel* (white-gas) – they do not burn Jet-A1 despite what the man in the shop tells you. Related problems included priming gel (*Greenheat* ethanol fuel gel) which was essentially inflammable only above about -10°C (something that we should have determined before the trip!) and lighters that were afraid of the cold. We managed, by keeping lighters and the sachets of priming gel in an inside pocket, but it was a major inconvenience and could have been a

disaster if we did not have a variety of stoves (or more specifically the XGKs) to play with.

Tent	
Jones & Shackleton	<i>Terra Nova Quasar Ultra</i> – excellent, used with substantial thermal groundsheet. Bamboo canes for pegs.
Laubscher & Litterick	<i>Terra Nova Hyperspace</i> – brilliant and big enough for parties, the ultimate pleasure dome. Well worth the extra 800g compared to our smaller <i>North Face V25</i> option.
Moore & O’Sullivan	<i>Mountain Hardware Trango 2</i> : great tent in strong winds - wasn't really tested in Greenland. After spending time in the Hyperspace, Steve found the head space a little lacking in the Trango - it would also have helped if he had a "normal-sized" tent-mate!
Puchan & Whitworth	<i>North Face Mountain 25</i> – remained dry for the duration which was a bonus as it leaks like a sieve in Scottish rain. Used buried fabric shopping bags at first camp for anchors - worked very well but almost impossible to remove them intact. Used bamboo canes for remaining camps – much easier to use and worked just as well

Sleeping Bag	
C. Jones	<i>Rab Summit 900</i> + silk liner. <i>Rab pertex bivibag</i> used once. Bag has been sent for industrial cleaning as it was banned from entering house on return home.
B. Shackleton	<i>Rab 900</i> with silk liner – excellent for escaping the low temperatures overnight.
L. Laubscher	<i>Rab Summit 900</i> – good, sufficient.
M. Litterick	<i>Rab Premier 850</i> – fantastic, warm - 12 years old but works like new.
K. Moore	<i>Rab 1100</i> : very warm.
S. O’Sullivan	<i>Rab 1100</i> : very comfortable throughout trip - would not compromise on this.
H. Puchan	<i>Mountain Equipment Iceline 950</i> with cotton liner – excellent. Worked very well. Only the liner needed fumigating afterwards.
B. Whitworth	<i>Mountain Equipment Iceline 950</i> with cotton liner – excellent. Took a long while to warm up but once warm was never cold in it.

Stove	
Jones & Shackleton	<i>MSR XGK II</i> – fantastic. Not the same vintage as Mark’s XGK, but still old – best performing stove on trip. Plywood platform was a little small. Heat exchanger – worked well.
Laubscher & Litterick	<i>MSR XGK II</i> – great. 15 years old and still goes like a train. Trillium base and good sized plywood platform (40cm x 25cm). Heat exchanger.
Moore & O’Sullivan	<i>MSR Whisperlite & Whisperlite International</i> : disaster - in summary incompatible with Jet A1 fuel regardless of jet used - we had 2 full repair kits and tried all possible combinations but to no avail. The shape of the expedition for our team was radically changed as a direct result of this; losing all independence from other groups.
Puchan & Whitworth	<i>MSR Dragonfly</i> – Completely failed to work for 10 days despite multiple full services. For some reason started working then and got

	better and better. By the end of the trip was working as well as ever.
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Skiing & Climbing Equipment

All members had modern alpine ski-mountaineering skis with appropriate bindings – no major problems were reported; however, there was thought to be a certain amount of envy related to the extra-lightness of the *Fischer X-tralite*. Most members had *Black Diamond* flick-lock expedition poles which are excellent..... unless you fall hard on them (two careless members managed to break the top sections of their poles, but at least the design enables field repairs to be successfully undertaken).

All teams used double ropes however discussions suggest that a modern lightweight single rope may have been more appropriate for most of the routes we attempted (in fact much of the climbing was done on a single half rope). Most teams reported that they had slightly too much rock gear – but we did less rock climbing than expected due to the cold. It is noted that the *Grivel 360°* ice screws outperformed the competition (mainly *Black Diamond Express* screws) in the hard arctic ice – it’s just a shame they are impossible to rack. We would recommend bringing only new or top-class ice screws for similar future expeditions. Everyone had a pair of mountaineering ice tools (*Charlet Axars* most popular) with appropriate clip-on crampons (*Grivel G12* most popular) that gave no problems with either ski or mountaineering boots. In general, the snow did not present serious balling-up problems and the arctic ice was brick hard – a fact that only becomes apart after the rock wears down the points on your brand new crampons!

A final curse on the sledges: we had three *Snowsled* brand expedition sledges and five standard plastic toy sledges. The purpose build expedition sledges totally outperformed the smaller toy sledges in almost every type of terrain (up and downhill); not only could they carry more, but they offered a feature called “control” that was totally lacking in the toy sledges – the only minor drawback being a slight weight penalty.

Skis, Bindings & Poles	
C. Jones	<i>Fischer</i> Tour Extreme skis. <i>Silvretta</i> 404 bindings – old model but usefully takes climbing boot. Old heavy duty one-piece <i>Look</i> poles – Laubscher/O’Sullivan proof.
B. Shackleton	<i>Atomic</i> R9 Alpine Skis + <i>Frischi</i> bindings (removed ski brake plate to secure Boreal boots). <i>Black Diamond</i> Expedition Poles (10 yrs old)
L. Laubscher	<i>K2</i> Ascent skis – great & light. <i>Frischi</i> Freeride – brilliant ascent and downhill. <i>Black Diamond</i> Expedition poles – good but not strong enough to survive wipe-out.
M. Litterick	<i>Fischer X-tralite</i> – excellent for skinning (super-light), great for skiing. <i>Silvretta</i> Pure Performance binding – great. <i>Black Diamond</i> Expedition poles – brilliant poles, flick-lock works a treat, almost indestructible... unless you are Laubscher or O’Sullivan.
K. Moore	<i>Rossignol</i> B2 Bandit skis with <i>Fritschi</i> Freeride bindings: very heavy

	(189cm) but excellent to ski with. Solid.
S. O'Sullivan	<i>K2</i> Shuksan skis with <i>Fritschi</i> Freeride bindings: I think that I would have gone for a more lightweight set of skis if I was going again. These skis are quite heavy for long ski touring days, although much better for the downhill (says he after almost killing himself!). <i>Black Diamond</i> poles – broke one, don't know how much of this down to force of fall or how much down to quality.
H. Puchan	<i>Salomon</i> X-trail. <i>Fritschi</i> Diamir bindings. Worked well despite their age. <i>Black Diamond</i> poles – Worked fine
B. Whitworth	<i>Dynastar</i> Yeti with <i>Silvretta</i> 400 bindings. Still worked despite their ancient heritage. A plastic bit of the heel clip fell off after 2 days – fortunately that was it for the rest of the trip – otherwise performed OK. Should have been serviced as had to walk the gentle down hills. <i>Black Diamond</i> poles – worked fine. Bent one in a crash on the ski out but managed to bend it back.

Climbing Rack	
Jones & Shackleton	Set nuts, 4 pegs (not used), few cams, many slings, plenty tat, 2 stakes, 2 hexes, 4 screws (old ones took some effort to place successfully in the hard ice).
Laubscher & Litterick	Set Rocks, 6 Cams, 10 quick-draws, 3 slings, 2 snow stakes, and 7 screws. A little too much rock gear. <i>Grivel</i> 360° screws worked brilliant, better than <i>BD</i> Turbo Express.
Moore & O'Sullivan	1 snow stake, 4 ice screws, ascender, set nuts, selection friends & hexes. Recommend 2 stakes per man - these would have allowed ridge climbs to be finished much faster with added security.
Puchan & Whitworth	Set nuts, 6 cams, 3 pegs, 7 quick-draws, 4 slings, 1 dead-man, 6 screws, and ice-threader. Didn't use much rock gear due to the cold temperatures. Ice-threader got much use and was essential for descent from a couple of routes. <i>BD</i> Turbo Express always worked well for us.

Personal Hygiene Equipment

An average personal consumption of 1.5 toilet rolls was reported for the 25-day trip. Many members used alcohol based antibacterial hand gel for effective water-less cleaning. Wet wipes were also used (but were frequently frozen) and were particularly effective for post-stove-hand-disorder (from tackling non-functional Whisperlite stoves). No hygiene related tummy incidents were reported.

Several members successfully used contact lenses despite the cold temperatures and persistent freezing of the cleaning fluids. One optically challenged member reported excellent success with a pair of aptly named *Adidas* Evil Eye Explorer sunglasses fitted with prescription lens inserts. Most members had good quality glacier glasses and spare goggles which were only used during the Scottish weather experienced on the traverse to the coast.

Careful application of strong sun cream (minimal SPF 25) ensured no major incidents of sun burn. Some of the modern creams are just tremendous compared to a few years ago – for example *La Roche-Posay* Fluid Extreme SPF 50+ is lighter and more effective than anything else the author has ever tried.

Electronic Equipment

All team members had altimeter watches, mainly from *Casio*, *Altec* and *Suunto*. In addition we had 3 handheld GPS receivers – all *Garmin* eTrek summit models – which worked well. We had one *Silva* ADC wind and temperature instrument which was the reference weather station.

Most members borrowed the SMC *Tracker* DTS avalanche transceivers – which were functional if a little bulky. In field tests, the compact *Mammut* Barryvox model proved more effective and easy to use – especially when the final search mode is entered (since it stops flashing, beeping and pointing, de-clutters the display and guides you to the victim without the panic induced by the *Tracker* model). One member used an analogue *Ortovox* F2 which also proved reasonably quick and effective in the field tests.

Several SLR cameras were carried (in order to secure high quality slides); but most members relied on lightweight digital cameras which performed adequately despite the demanding circumstances. Hot-swapping the battery was the order of the day for effective photo management (but not required for other, less greedy, electronic equipment). One member reported outstanding success with one set of high capacity rechargeable batteries which lasted the entire trip; however, most climbers struggled with battery performance issues.

Camera	
C. Jones	<i>Fujipix</i> 5M digital – ate AA batteries but they could still be successfully used for other less greedy equipment (e.g. GPS, transceiver, etc.).
B. Shackleton	<i>Canon</i> Power Shot A7101S Digital- Excellent with only one set (x2 Rechargeable 2500mAh AA batteries) lasting the entire trip with 600+ photos
L. Laubscher	<i>Canon</i> EOS 33 with 28-70 lens – good but a bit bulky, worth it for slides.
M. Litterick	<i>Canon</i> Power Shot A520 digital – excellent, compact, usable, but eats batteries. Also internal battery died during trip – can't remember the date any more.
K. Moore	SLR Camera with zoom lens. Great quality pictures, but bulky for climbing.
S. O'Sullivan	Compact digital camera.
H. Puchan	<i>Sony</i> Cybershot 7mp digital – worked well. Took 3 batteries and only needed two. Kept in sleeping bag overnight. <i>Sony</i> Videocamera – managed to take around 60 minutes of film but the batteries died rapidly preventing further use.
B. Whitworth	<i>Pentax</i> Espio 105SW slide camera – worked well. Only required a change of battery once. Was also kept in sleeping bag overnight

and kept down jumper during the day

Safety Equipment

By unanimous decision we chose not to take a satellite phone into the wilderness on this particular trip – so our only means of summoning external help was a personal Search and Rescue beacon (mandated by the *Danish Polar Centre*). Fortunately it was never used.

We did have a fully trained medical officer with an extensive first aid kit and associated manual (Medical handbook for mountaineers by Peter Steele, Constable Books, London) – should he become the unfortunate victim! The dual intent, at least, was to have the ability to stabilise a seriously injured or ill member while awaiting evacuation, as well as being able to handle minor injuries requiring stitches, and rest, in the field thereby avoiding casualty evacuation.

The heaviest of all the equipment was the gun – a First World War *Remington* 0.308 bolt action rifle – rented at great expense from Nanu travel at Constable Point. At 7 kg this was a major dead-weight in an area where polar bears were about as likely as penguins. Nevertheless we did “kill” a cardboard box during practice sessions and of course we travelled to the globally-warmed coast at the end of the trip (without incident!).



Preparing to leave
Basecamp 1, Lang
Glacier (Photo, K Moore)

7 Travel arrangements

Colwyn Jones

Once the members of an expedition are selected a trip to the Northeast Greenland National Park requires a lead in time of perhaps 12 months. I recommend that as early a start as possible is made when preparing for a trip.

Two essential contacts for a trip to the Staunings Alps are the Danish Polar Centre and the charter airline Air Iceland.

The Danish Polar Centre www.dpc.dk provides permission for visitors to the NE Greenland National Park. The website contains all of the application forms and information on how to apply. Once the application has been received a unique expedition reference is needed to complete the process with the Greenlandic authorities. They also warn applicants that the Danish Polar Centre does not send out reminders! All of the necessary licences have to be sent to the Danish Polar Centre before permission is granted for the expedition.

The Greenland police need to be contacted for a firearms licence and the application form is on the Danish Polar Centre website. On this trip we were issued with a licence to import and export a firearm with a note stating that it did not allow us to hunt in Greenland. This change seems to be designed to stop illegal hunting by visitors. The licences for the rifle were free.

Greenland telecom have to be contacted about a radio licence and the form is on the Danish Polar Centre website. The fee for the radio licence (About £70 at that time) was paid by an international bank transfer.

Insurance has to be acceptable to the Danish Polar Centre and the appropriate forms are again on their website. As mentioned elsewhere in this report the British Mountaineering Council have considerable expertise and experience on this issue.

In addition we needed a UK export application for morphine in First Aid Kit, a UK firearms licence, and Iceland customs permission for a transit licence for the firearm.

Considerable time was spent contacting both Icelandair and the Glasgow airline handling service at Glasgow airport to find out the regulations regarding carriage of a firearm. The rifle and ammunition must be in separate locked cases. The ammunition seems to require a metal container although this was denied by one correspondent. The actual regulations are still unclear.

We had to freight all food and gear to Constable point one month before the people left the UK. We used the freight company Arbuckle Smith based in Paisley near Glasgow airport who have past form in freighting to Greenland. This included all food, skiing and climbing gear, tents etc. The freight weighed 452kgs in 31 separate pieces.

Arbuckle Smith & Co

106 Abercorn Street
Paisley PA3 4AY
Renfrewshire

Tel; 0141 887 5252

Travel:

Scheduled Icelandair flights were used from Glasgow to Keflavik, or British Airways via London to Keflavik. Individual members booked these flights to suit their own travel arrangements. They were all booked on-line in January 2007.

In Iceland. The *Hilton Hotel two* flew direct from Reykjavik to Constable Pynt on a scheduled Air Iceland flight. The *Akureyri six* flew from Reykjavik to Akureyri for an overnight stop, then on to Constable Point by Twin Otter.

The chartered ski equipped Twin Otter collected all freight and personnel from Constable Point for the flight to the Lang Glacier. Basecamp was $72^{\circ}\text{N } 00^{\circ} 97$, $24^{\circ}\text{W } 48^{\circ} 07$, (Lang Glacier is called the Stor Gletscher on some maps).



North face of Drumglas Beag and North Ridge (Biancograt) of Drumglas.
Margaretaberge on the left (Photo, M litterick)

Firearm and ammunition

A firearm and ammunition are required as a condition of the Danish Polar Centre licence for protection from large terrestrial mammals. UK and Greenland licences are required plus permission from customs for transit through Iceland. Greenland law forbids civilian possession of handguns and automatic weapons so a bolt action rifle is the firearm of choice

Rules governing the carriage of firearms on aircraft are, to my mind, not clear. Despite having permission to carry the rifle from both the airline and the ground handling company it appears that the Captain has complete discretion over whether they are carried and how they are carried. We had planned to borrow a rifle which had also been loaned to another Greenland trip some weeks beforehand. On returning from Iceland the Captain of the plane had asked for the rifle we were borrowing (with no ammunition) to be divided with the rifle separated from the bolt. The two parts then went on separate flights. The rifle went to Glasgow and the bolt to Heathrow where it was temporarily lost. This essentially prevented us from using it. Only by hiring a rifle locally from Nanu travel in Scoresbysund at very short notice were we able to meet the requirement to carry a firearm in the Northeast Greenland national park. This also involved a frantic exchange of faxed licences and e-mails with the Greenlandic authorities in Nuuk to change the Greenland licence for the rifle we had hired.

However, on arrival in Greenland we discovered that neither the make of rifle (Remington, 0.308) nor the registration number matched those given to us by Nanu Travel (Lee Enfield, 0.308). These were the details we had faxed to the Chief of Police in Nuuk and which appeared on the Greenlandic firearm import and export licence. The bolt of the rifle and rifle body also had differing registration numbers so were clearly an amalgam of two weapons. As the licence was for a different rifle we may technically have been in illegal possession of a firearm.

The rifle was also not ejecting spent shells when the bolt was opened after firing. Despite rigorous cleaning (initially the bolt mechanism was filthy) and oiling, the rifle continued to malfunction by not ejecting spent shells cleanly. After cleaning, the mechanism did improve so that the shells were partially ejected, but they still had to be flicked out by hand before the bolt was closed again. We bought 60 rounds of ammunition to allow each of the eight expedition members a number of practice firings of the rifle.

After practice we retained 10 live shells for protection during the trip. Five were loaded in the rifle magazine. For safety the rifle was stored with the breech empty, the bolt uncocked and the safety catch was on. Anyone using the rifle for protection would need to take the safety catch off and load a round into the barrel before firing.

On arrival at the military airstrip at Mestersvig, the rifle was inspected by the

military personnel on the base.

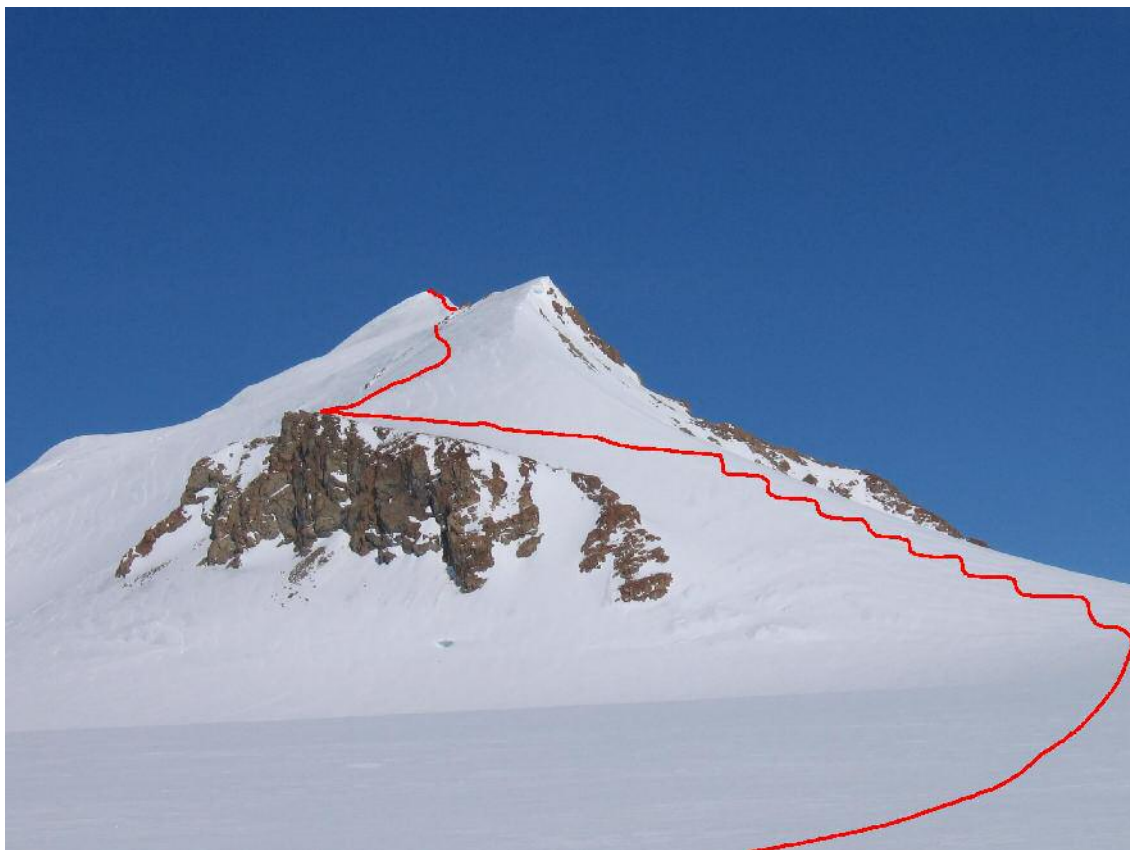
Telecommunications

The minimum Telecommunication equipment allowed was an Emergency Beacon (EPIRB) and licence required as condition of the Danish Polar Centre permit.

We did not take a satellite phone or VHF radio simply because of the weight of these items. All team members agreed this decision. The only means of summoning external help was by activation of the personal Search and Rescue beacon or by team members skiing to Mestersvig to request help.

The requirement for a radio licence for the EPIRB would allow emergency services to identify which group was likely to have “squawked” to help with planning any rescue attempts.

The Danish military authorities in Greenland also required the expedition to inform them when they entered Greenland and to confirm when they left the country. This was carried out by phone calls from Constable Pynt at the requisite times.



First ascent route of Margretabjerge from the south (Photo, M Litterick)

The expedition benefited from an experienced Medical Officer (who was a qualified dentist, trained in oral surgery, first aid and casualty care trained and a former member of two Mountain Rescue Teams) plus a comprehensive medical kit and supply of emergency drugs. There was also a first aid manual (Medical handbook for mountaineers by Peter Steele, Constable Books, London) – should the medical officer have become an unfortunate victim, which he had prefaced with an instruction requesting others not to give him any medication unless he had asked for it, or they definitely knew what effect it would have!

Expedition members also carried small personal first aid kits, as should be the norm for any hillgoers. They were also expected to have dressings for blisters (compeeds etc.), simple analgesics and sufficient sun cream or sun block for personal use.

In cases of injury / illness which could not be managed locally, the evacuation of a casualty or casualties would start with activation of the EPIRB and evacuation by Danish military / Icelandic Coastguard / Greenlandic civil / or perhaps American military, whoever found us first. Therefore the first aid kit included drugs and equipment likely to be useful to help stabilise a severely injured team member for up to 72 hours. Likely problems were a long bone or pelvic fracture, a compound fracture, head injury, frostbite threatening a digit/limb, penetrating wound to chest or abdomen, accidental gunshot wound or other serious illness, etc. Or perhaps all of these injuries in the unlikely event the victim survived a mauling by a polar bear.

The first aid kit also contained drugs and equipment for treatment of minor injuries, e.g. moderate lacerations, minor bony fractures, sprains, blistering, snowblindness, etc. Or perhaps all of these if they survived a mauling by a climbing partner!

All participants completed a pre-expedition medical history questionnaire which established that no member reported sensitivity or allergy to antibiotics, specifically the beta-lactamase antibacterials (Penicillins). Therefore fluocloxacillin was chosen as the main antibiotic which has a broad spectrum of activity and wide margin of safety at routine dosage. This was for injection either intravenously or intramuscularly. Augmentin (Co-amoxiclav) was the antibiotic taken for oral use.

Despite the bureaucracy of applying for a UK export licence and the hassle of trying to get a medical practitioner to prescribe it, morphine was included in the first aid kit. Morphine is a class 1 controlled drug and a licence to export it under section 3(2)(b) of the misuse of drugs act 1971 must be obtained from the Home Office;

Licensing Section
Action against drugs unit
Home Office

50 Queen Annes Gate
London SW1H 9AT

A dentist can legitimately use morphine for control of severe dental pain but wisely they almost never do! Interestingly, as the morphine was not intended to be used for a dental indication, the medical officer would have been guilty of serious professional misconduct if he had ordered it for non-dental use. Hence the need for a private prescription from a doctor. Post Shipman, new regulations have rightly been introduced for medical practitioners, which prevents many of them from prescribing opiates. This may present a problem for other expeditions and discussion with your general medical practitioner should be your starting point.

The UK export licence does not appear to have any legal standing outside the UK and import clearance / permission must be obtained from transit countries. Usually pre warning customs officials will be enough to provide clearance and all class 1 controlled drugs must be declared when crossing frontiers.

Diclofenac sodium (Voltarol) was another analgesic carried in the first aid kit. Members were asked to carry their own preferred analgesic in their personal first aid kits for headaches or muscular pain (Ibuprofen, aspirin or paracetamol).

Replacement fluids which would have required an intravenous line for maintaining hydration in an unconscious patient were not carried as they were simply too heavy and may have frozen.

Various proprietary antiseptic solutions and creams with suitable dressings were also carried. An oral airway and urinary catheters were included in case of an unconscious patient. Sun block, Chloromycetin and local anaesthetic drops for snow blindness were included.

The full list of drugs and equipment is in the table below.

Drug	Dose / form	Number
Cyclomorph, morphine tartrate plus cyclazine tartrate	15mg with 50mg in 1ml ampoules.	10 ampoules
Diclofenac sodium	50mg	12 tablets
Ibuprofen tablets	400mg	20 tablets
Flucloxacillin (powdered)	500mg/vial for I.M. use	6 vials
Water for injection	2ml	6 ampoules
Co-amoxiclav	500 mg tablets,	24 tablets
Chloromycetin	eye ointment/drops	20 single use
Oxybuprocaine (local anesthetic)	eye ointment/drops	10 single use
Povidone-iodine	dry powder spray	one aerosol can
1% Lidocaine	10 ml ampoules, 10mg/ml	2 ampoules
2% Lignocaine & adrenaline	Dental ampoules	12 ampoules
Equipment		
2ml syringes & green needles	2 ml	20 sets
Vicryl sutures size 3/0	size 3/0	10

Skin butterfly closures	Medium & large	6 packets
Male urinary catheter & bag		1 medium
Female urinary catheter		1 medium
Wound dressings	Various	
Bandages	Various	

Aside from blisters the first aid kit was only used for the care of one individual with frostbite. Superficial frostbite was diagnosed in three team members. They were all treated by gentle rewarming with several days of surveillance to ensure pulse, colour and skin temperature overlying the affected areas remained normal.

Frostbite cases

- 1) Right big toe – superficial and secondary to previous frost nip when in Norway.
- 2) Both hands, all knuckles of fingers and tips of right thumb and forefinger developed alarming blistering but as peripheral skin colour and skin warmth remained good evacuation was not deemed necessary although it was seriously considered immediately after the injuries were diagnosed. Two of the larger blisters were later decompressed; one burst spontaneously and the second was decompressed by aspiration of fluid with a needle and syringe. All the blisters subsequently reduced in size and resolved without further active treatment within 10 days.
- 3) Both cheeks, over malar eminences (cheek bones), symmetrical lesions were about the size of ten pence pieces (2cm diameter). Some loose dead skin exfoliated after a week or so after returning home with normal skin underneath.



First ascent of Litterick-Laubscher gully - new route on Hjornespids (Photo, M Litterick)

10 Food

Ken Moore

The Expedition was self supporting without the need for support or porters etc. and with a ski out to the Greenland coast at the end of the expedition. No glass or tins will be taken and all debris/rubbish removed from the base camp with the exception of human urinary/faecal waste.

The expedition was structured into 4 teams of 2 people. Each team was responsible for packing and preparing their own food and dietary requirements. Each team prepared food packages usually in 2-man day packs, although one pair organised their food individually. No communal food source or depot was established, although, surplus food did become available, typically just before we moved camp!

Food tended to be selected for its low weight, good taste, calorific/energy value and its cooking requirements – the simpler the better. The order of importance of these categories was decided by each group.

Generally, members provided well for themselves and although one team did run short of food in the later part of the expedition, most teams had some surplus food when 'Mestersvig' was reached.

Weight

Weight on the inward leg of the flight from Constable Pynt to the Lang Glacier was the limiting factor. With a payload of around 1000kgs, the individual weight allowance was 125kgs each. This included body weight. If we use an body weight average of 80kg, then there was 90kgs per pair available for each team to use for equipment and food. Teams were advised to allow approximately 1.5kg per day per team, or 750 grams per person per day maximum. In general this allowance was adhered to, although, some team members did exceed this achieving approximately 1kg per person.

Taste

Variety of food and taste of food was important to prevent boredom. Condiments such as salt, sugar, pepper and olives do help to 'change a meal'.

Drink

Energy drinks such as High 5 were used to mix with cold and hot water. Various black and herbal teas were used. Cadbury's Hot Chocolate (full fat) was a favourite. Cup a soups and Cappuccino's were also common. Lemon flavour effervescent vitamin C tablets also gave a refreshing hot or cold drink.

Most members brought a bottle (750 ml) of Malt Whisky, with some team members bringing blended whisky. The consumption of blended whisky was discouraged and the individual roundly castigated, although its potential as a reserve fuel and for cooking was recognised.

Calorific / Energy Value

Teams tried to allow for high energy foodstuffs where possible, although some teams prepared food packs on the basis of what they liked to eat rather than exactly what they should eat. Target calorie intake was circa 4000 to 5000 calories per day.

The psychological benefit of 'treats' of any kind was noticeable and it is recommended that future expedition members provide well for themselves in this regard, irrespective of calorific value. Jelly Babies were a particular favourite for one individual.

Cooking

Teams cooked with MSR stoves using Jet A1 fuel. It is important to note that the MSR Whisperlite and Whisperlite International Stoves did not function, despite cleaning and part replacement. They are not recommended.

Each team established a cooking bay of sorts, generally dug into the snow covering. Each cooking bay was constructed to various levels of comfort and generally designed to shelter from the wind. Full wind protection for stove and chef was almost impossible without constructing igloo style accommodation. This was done and did work well, particularly late in the evening when katabatic winds were strong.

Water for cooking was acquired through melting snow using the stoves. Some pots filled with snow and left out in midday heat also provided water.

A stout wooden base is recommended for the stoves. The trillium MSR stove base model was too small, not effective and is not recommended.

Recommended Foods and Ingredients.

The following foodstuffs are taken from team members recommendations submitted after the trip:

1. Sauce/preserves – Tabasco, Jams, Condensed Milk
2. Condiments – Sugar, Pepper, Salt
3. Freeze Dried Meals – Mountainhouse (USA), Travellunch (UK), Trekking-mahlzeiten, Adventurefood (GER)
4. Drinks – Cadbury's full fat hot chocolate. High 5 powder. Malt Whisky.
5. Rice - Uncle Bens Packs 2 min packs.
6. Cereals – Oats so easy, various muesli mixes
7. Crackers / Breads – Rivita, Scottish Oat Cakes
8. Cheese – Lots and lots of cheese.
9. Meats – German smoked sausage & Irish venison salami; John West Tuna with a Twist (soft packed)
10. Snacks – Snickers, Nutri-Grain, Miracle Munch muesli bars, Chocolate & Raisin Geo Bars, GORP.

Not Recommended

11. Nuts & Raisins – (muesli bars should suffice).
12. Dried Fruit – Apricots – (had laxative effect)
13. Drink – Non full fat hot chocolate
14. Packaged - Asda Mashed Patato.

Other Food Experiences

Upon reaching Mestersvig we were greeted by friendly staff who had kindly baked a cake and provided us with light refreshments. It was much enjoyed and very much appreciated.



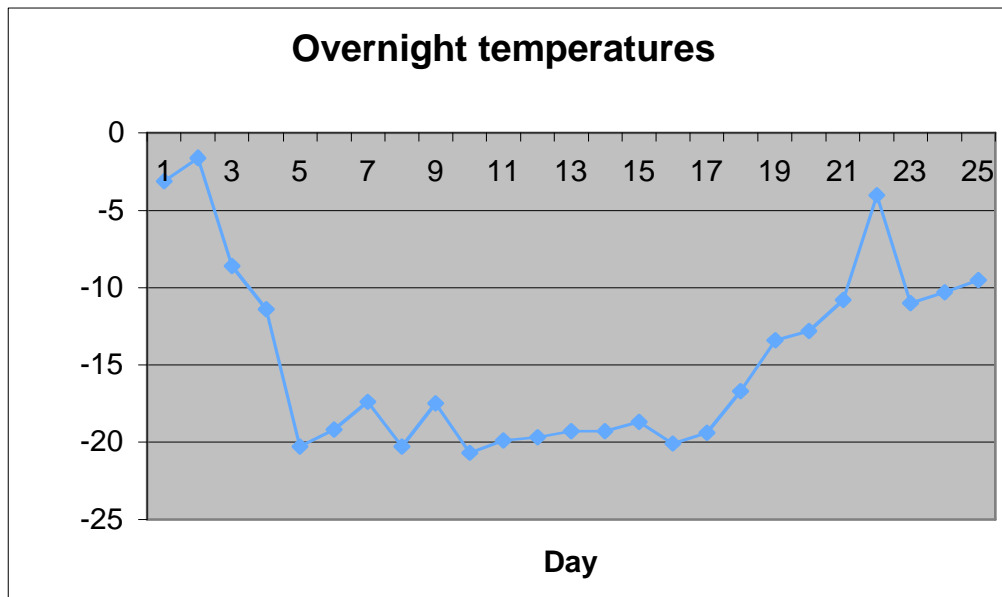
Route of Accessory Rib on Ian's Peak, Hjornespids on the skyline, from camp on Col Major (Photo, M Litterick)

The weather conditions during the expedition were generally very favourable. The advance party of two, who had arrived two days early at Constable point, enjoyed nice and sunny weather whilst waiting for the rest of the team and had the chance to do some ski-touring on the hills around the airport. The locals reported that these were the first days of the season where the daytime temperature had risen above -20 degrees Celsius.

The other six team members arrived on the 31st May to more glorious sunshine and light winds which allowed us to fly to our first base camp on the Lang glacier on the same day. On arrival at Constable Pynt it actually felt quite hot in the sun and the temperature was above zero. The next day, 1st May, was again quite warm and sunny. Everyone was very keen to get out and do something which turned a planned reconnaissance up the glacier into the ascent of two new peaks. This was just as well, as in the evening skies turned grey and during the night it started to snow.

The snow storm lasted for two and a half days and when the front cleared on 4th May, temperatures had dropped considerably and continued to drop/ stay low over the next couple of weeks. Prior to clearance, the period of snow was accompanied by banks of mist as a result of condensation of moisture from the damp snow pack.

Night time temperatures varied between -11 and -23 degrees C (see Figure 1 below).



From the 4th of May around lunchtime when the storm had cleared until the 20th of May, the weather was very stable with blue skies and bright sunshine and generally only light winds. In the sun, it felt quite pleasantly warm, in the shade however, daytime temperatures were distinctly chilly. Hence, the choice of campsite is a highly important consideration.

Our first camp on the Lang glacier was in the sun all day long and quite comfortable. The second camp on the Upper Gullygletscher glacier, however, was less so. Two of the team had arrived at 10pm at a nice flat spot which was fully in the evening sun and as there was a serac looming a little bit further down the glacier they decided that this would be a good place to stop and set up camp. Only the next day did they realise that the sun actually disappeared behind Bolverkaet at 2.30pm and then didn't reappear until 8pm. The drop in temperature when the sun disappeared was amazing. One moment it would feel fine to sit out in a fleece, five minutes later, the thermometer would reach -15 degrees C and it was time to disappear into the 5 season sleeping bag until the evening. In addition, as the glacier was steeper than the previous one there were anabatic and katabatic winds that could make cooking in the mornings and evenings quite chilling events. The team didn't stay too long in the "refridgerator camp"!

The weather only took a turn for the worse when we were skiing back out to Mestersvig along the Berserkerbrae glacier and then to the coast. It snowed pretty much continuously during the 21st and 22nd of May and once we had hit the coast the snow turned to slush and rain to give the weather a distinct Scottish feel. It cleared on the 23rd May to leave some cloud and fog, but at least it allowed us to see some of the pretty icebergs around the coast on the final section back to Mestersvig. Once there, the weather improved again to leave more crisp sunshine with much new snow on all the surrounding peaks. However, there was some wind around the coast (approx. 25-20mph) which prevented the Twin Otter from picking us up for a couple of days.

In summary, there was generally excellent cold and clear weather for most of the time in the field. There was snow and low cloud on the 2nd-4th May when camped on the Lang glacier. The ski out to the coast on the 21st-23rd May was again in poor visibility with snow and then sleet as we descended from the Bersaerkerbrae to the coastal plain.

The overnight temperature was lower than previously experienced with lowest



minimum's of minus 25⁰ Centigrade on two nights. This resulted in three cases of superficial frostbite.

Despite low temperatures, the prolonged sunshine in May led to some deterioration / destabilisation of snow pack on south facing slopes.

Nearing the summit of Ebensbjerge on the first ascent (Photo, M Litterick)

12 Snow Conditions Heike Puchan-Whitworth / Brian Shackleton

When we arrived on the Lang glacier on Monday 30th April, snow conditions were very settled and a lot of rock on the mountains was exposed. There appeared less than encountered in May 1998 when 2 members of the expedition had passed near to the area whilst skiing to the coast. Although not thawing, the rather heavy snow pack on the glacier caused the twin otter to become bogged down in the snow when it landed and in consequence considerable effort to dig it out. On the ascent of Drumglas Beag and Drumglas, much hard, old blank-ice was encountered which made any ice screw protection and Abalakovs placed for the descent extremely solid, but really hard to place.

The snow storm that followed from 2nd- 4th May dumped about 30-40 cm of snow but since this was accompanied by little wind, it took several days for the light cold snow to settle. With the depth of fresh snow, skis were an absolute necessity and we skied as far as possible to avoid breaking trail on foot. A lot of the blue, shiny ice that we saw from the plane and on the first day out became covered by snow and remained so during the trip due to the cold temperatures following the storm. Not much avalanche activity was observed after the snowfall with a few snow slides only and little overall degradation in the stability of the general snow pack.

The onset of settled weather on the 4th May dictated the condition of the snow for the period up to the 20th May. On glaciers and snow slopes facing north or locations seeing little sun due to shade, snow remained light and powdery. The slopes from Crescent Col down to the refrigerator camp typified such conditions. On south facing slopes or those with more open aspects, the snow became progressively less light and if tilted up to the sun, heavy and soft to be followed by a frozen crust as soon as the sun had moved off. The snow leading down from Col Major to the Gully Gletcher typified these conditions. In couloirs, the upper slopes of glaciers and on the mountains generally, snow remained well adhered to the parent ice below except when slopes were at a very high angle. The slopes leading up to the Lo La provided such conditions and a useful means of both ascent and descent on a number of days.

As might be expected, open sunny couloirs were unpleasant places to be. Descending from Col Major on foot and lowering sledges to join Bersaekerbrae we encountered some extremely unpleasant snow conditions of soft and lumpy snow which was reminiscent of wading in deep porridge that had not been stirred very often.

As the days went by between the 4th May and 20th May, there were undoubtedly changes taking place within some parts of the snow pack including the process of metamorphosis. This may have been responsible for an avalanche on the west (east facing) side of the upper Gully Gletcher below Crescent Col. The avalanche crossed the line of ascent taken by a party on the 13th May and forced a different line of ascent to be taken by a party on the 15th May.

By the 18th May, the expedition was established on the Baeserkerbrae at the base of Col Major with snow conditions for the ski descent remaining generally good. Some crevasses appeared to be opening on the glacier on the 19th but little avalanche activity was noted in the upper glacial bowl.

Although the period of settled weather broke on the 20th May, the ski descent of the lower Baeserkerbrae and the Skel river to the coast was unproblematic due to overall snow and ice cover. The Skel river flats in particular remained well frozen despite increasing temperatures and the somewhat dreich conditions overhead, to give a quick and easy highway to follow. It must be assumed that during the settled period of weather we experienced between the 4th and 20th May, still cold air had remained below freezing and trapped above the Skel to delay the onset of the spring melt. Such melt conditions could have resulted in a long detour upstream to cross the Skel and long days of ferrying of loads over the Gefion pass.

Skiing over the sea-ice was fantastic where it was on smooth, clear green-blue ice and arduous where it had melted and refrozen into waves and mini-icebergs. On our journey along the coast, we encountered two major icebergs one of them the size and shape of a small cathedral. Subsequently, we were told by the Danish military of the Sirius patrol that these are the only



ones within a 100 kilometre radius and we were also treated to some freshly chopped ice cubes off the large iceberg for our drinks in Mestersvig.

Brian, Mark & Laubie on the summit block of Cordulaspids
(Photo, C Jones)

13 Flora and Fauna (Where?) Colwyn Jones / Stephen O'Sullivan

The most important aspect of Greenland's wildlife is its marine life. However, on our trip the sea was frozen! Despite historical exploitation Greenland's marine fauna remains abundant and is largely responsible for the distribution of the country's population. During the late summer and early autumn whales swim close to the coast and are sometimes seen in the harbours. There are many different species of whales in Greenlandic waters including the two largest, the blue whale and the fin whale. Humpback whales, minke whales, narwhales, beluga or white whales, sperm whales, pilot whales and Greenland whales are among the other species found there. Seals are also abundant. An estimated two million seals of various species live in Greenlandic waters. Walruses are primarily seen in north and east Greenland.

The northeastern part of Greenland is a protected national park. With a size larger than England and France put together, it's the largest national park in the world. Polar bears, walruses, musk oxen and a growing stock of wolves live there along with smaller animals and many bird species.

Away from the coast at 72°N the Staunings Alps in winter, and at altitudes of over 1000m, the combination of glaciers and rock is, as you would expect, an extreme and barren environment. While in the mountains there were only two signs of animal life. Northern Ravens were rarely seen high overhead. The second were more often heard than seen and these were Greenland Snow Bunting migrating north after spending the cold, dark months further south. We even found fresh droppings from Snow Bunting on the summit of Margaretabjerge confirming they were active at altitudes of over 2000metres.

Closer to the coast in the Skel valley the number of Snow Bunting increased markedly with a flock of about 12 birds where we found the first break in the ice at the Skel river. We also heard geese in the distance when camped at the fangsthutte at the mouth of the Skel river. The number of sightings of ravens also increased at the coast but ptarmigan were never seen.

While at Mestersvig we were able to see a herd of Musk ox in the far distance using a powerful telescope of the Danish armed forces. Reindeer live all over the ice-free parts of Greenland but are reported to be extinct in Scoresby Land.

A condition of entry to the North East Greenland National Park is carriage of a rifle for protection against attack by large terrestrial mammals. Civilian hand guns are illegal in Greenland. If an attack was likely then a polar bear (*Ursus maritimus*) was the most likely candidate although wolves and musk ox with young were also a slim possibility. Polar bears are one of the largest land carnivores, with male adults weighing between 300-600 kg; adult females are typically half the size of males. As an apex species at the top of their food chain polar bears are enormous, aggressive, curious, and potentially dangerous to humans. Wild polar bears, unlike most other bears, are barely habituated to people and will quickly size up any animal they encounter, including humans, as potential prey.

The chances of meeting a polar bear in the mountains are small as there is no prey food away from the edge of the pack ice. However, if you did chance upon an individual, you could be sure that so far from the coast it would be very hungry!

While at Nyhavn with a member of the Danish armed forces, he did report that they had a few days earlier seen seals on the sea ice close to open water. We saw none and the species seen was not clear.

With complete snow cover in May there was almost no flora to be seen. At the coast some dwarf willow and arctic willowherb was seen poking through shallow snow.



Frostbitten and blistered fingers (Photo, C Jones)

Expenditure			Income		
BMC Insurance	£	1,743.50	C Jones	£	2,000
DAV insurance	£	274.85	B Shackleton	£	2,000
Freight charges	£	1,142.77	M Litterick	£	2,000
GP Plus	£	40.00	L Laubscher	£	2,000
First aid kit	£	115.86	B Whitworth	£	2,000
First aid kit	£	25.89	H Puchan	£	2,000
Radio licence	£	72.70	K Moore	£	2,000
Gun hire & ammo	£	236.14	S O'Sullivan	£	2,000
Flybus	£	57.90	MEF	£	1,150
Icelandair XS fare	£	72.82	Gino Watkins	£	1,000
Duna guesthouse	£	188.07	BMC/MCofS	£	400
Geysir bistro	£	459.54			
Taxi to Blue Lagoon	£	93.78			
North Lights Hotel	£	695.26			
XS baggage	£	105.14			
Blue Lagoon	£	94.20			
Bank charges	£	13.50			
Petty cash (Iceland)	£	300.00			
Air Iceland	£	12,192.19			
Petty Cash (UK)	£	625.89			
Total £ 18,550.00			Total £ 18,550		

The major costs for the expedition were the Air Iceland costs for flights. These were charged in Euros and the breakdown of the individual flight costs are given below for information.

Air Iceland Costs		£ - sterling	No.	Euros Unit cost	Euros total
Exchange rate £ = €1.4517					
28 th April	RKV-CNP	£405.04	2People	€294	€588
29 th April	RKV-AEY	£363.71	6People	€88	€528
30 th April	AEY-CNP	£4,773.71	1Charter	€6,930	€6,930
30 th April	CNP-Lang-CNP	£2,293.86	1.8Hours	€1,850	€3,330
25 th May	MVG-CNP-AEY	£3,533.79	1Charter	€5,130	€5,130
25 th May	CNP airport tax	£319.63	8People	€58	€464
25 th May	AEY-RVK	£484.95	8People	€88	€704
Total	Sub total	£ 12,174.69		TOTAL	€17,674
	Bank transfer charge	£17.50			
	Total	£12,192.19			

15 Future climbing possibilities

Laubie Laubscher

The Staunings Alps of North East Greenland has been sparingly visited in the past 50 years so there still remains fantastic potential for climbers on rock, Ice and general mountaineering/alpinism.

For most parts our observations are based on peaks/ lines and routes observed fairly close up. There will also be some speculative comments on peaks viewed from a distance. Access to the mountains may improve due to the molybdenum mining exploration due to start in 2008 around the Mestervig / Malmbjerg area.

Stor/Lang Gletscher Area

The area around the northern end of the Lang/Stor has mostly been explored but there are still some fantastic lines to be had and a few minor unclimbed peaks.

Possible routes/mountains:

Margreta Bjerg 2430m, North East face 1200m high

Jo Bjerg 2430m, North Spur, Partly climbed by Puchan and Whitworth

Unnamed small peak, NE from Margreta Bjerg on opposite side of Lang
Numerous lines on peaks from the south from the very top of the Lang, St Bartholomew, EbensBjerg etc.

2 Peaks directly south of Margreta Bjerg next to the Lang (They could also be accessed from the MåL Glacier as described below)

West of JoBjerg there is 3 very fine looking alpine ridges. The last of the three would be the NW ridge of one of the Diadem Peaks.

MåL Gletscher Area and surroundings

The c Gletscher has been a major new find on this expedition. Nearly the full length was skied and explored by 2 members(Laubscher/Litterick) The MåL lies West off the Lang/Stor Glacier south of the Margretabjerg- Cordulaspid area.

Glaciers named Post face glaciers north of the MåL give access to unclimbed ridges faces and buttresses on peaks such as Margretabjerg/Cordulaspid and Jobjerg.

South of the MåL lies over a dozen highly glaciated peaks. Their north faces overlook the MåL and are steep and very exposed with huge seracs and hanging glaciers. Very clean red granite was also observed on buttresses around this area, which may provide fantastic clean rock climbing.

There is a small unexplored glacier off the north end of the MåL that comes down the south of Margretabjerg. This was viewed from the west spur on the FA of aforementioned. There are some smaller peaks and long ridges that could provide some entertainment as well as access to the 2 unclimbed peaks directly south of Margretabjerge. A very steep rocky ridge was noted between these virgin peaks both east and west of the small glacier.

The junction of the Stor/Lang and the MåL is fairly flat and may be a good camp to explore the MåL area fully.

South ridge of Drumglas 2 members skied around both the west and east side. Access from the North post glacier from MåL Glacier

Hjornespids Area

The south Pillar on Dansketinde is still a major unclimbed rock route. We observed the bottom third and the top which may involve some big walling/hauling? The access start to this route may provide the key.

The East face of Dansketinde and the True west Face has huge rock climbing potential. For most the rock looked good and compact. The North face is mainly steep glaciated terrain.

Fantastic looking buttresses to side of Litterick-Laubscher gully - especially the right side has a big corner system. The rock on Hjornespids in general was great!

Hjornespids, The true south ridge from the very bottom of the Spur to the summit has not been climbed. The Jones route started further up the south Spur and missed the initial first few hundred meters.

Ian's Peak. There is a very steep wall 150 feet right of the existing two routes from Col Major. The Face is steep and high up. Climbing would be E1 and above minimum.

Crescent Col/ Bolverkaet Area

East of Crescent Col lies a number of peaks mainly a continuation of the already climbed Skartinde and Kvitfell. Opposite these peaks to the north lie a number of other peaks which also are unclimbed, near Froggies Beaut. They lie South of Lamberth and CF Knox Tinde

The Bolvaerket group from both the Crescent Col side and its west side has fantastic rock buttresses.

An Castail West face. A big 600 meter rock wall that would require potential hauling and big wall tactics. Quality of the rock seemed reasonable.

The east face of Bolverkaet above our camp has a great 200 meter solid rock face but a wee bit hard and dangerous as the ground above flattens out and hold snow/ice

Berserkerbrae area

The North Face of the Berserkertinde was explored but not attempted due to rock and serac fall. This face is approx 1300m high and looks possible. Litterick and Laubscher have identified a possible line taking a steep gully that meets the North face proper. At least three snow field's needs to be crossed with very mixed areas in between to reach the upper headwall and rock band. This looks again steep and will require some cold high rock climbing. The Face was almost always in the shade bar very early in the morning. It felt very cold when the base was explored.

The cirque around Bersaerkertinde has numerous peaks and all the north faces are unclimbed. The lines are steep with hanging glaciers. Rock fall scars were noted on the glacier below. Mostly faces and gullies, but in general there are still great ridges and mixed terrain.



One of the many unclimbed peaks on south side of MåL glacier (Photo, M Litterick)

16 Acknowledgements

Colwyn Jones

Support from the Mount Everest Foundation, the Gino Watkins Trust, The Mountaineering Council of Scotland and SportScotland

With thanks to The Danish Polar Centre, Forvarets Vagt Mestersvig, The Scottish Mountaineering Club, Ann MacDonald, Dr Peter Copp of GP-Plus, Lothian & Borders police.

Our two referees; Stephen Reid & John Peden

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

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Laubie after hauling / skiing for a day in a white out on the Bersaerkerbrae
(Photo, M Litterick)

Appendix 1 – Summary report for the Mount Everest Foundation



MOUNT EVEREST FOUNDATION
Patron: HRH The Duke of Edinburgh KG KT

SUMMARY REPORT

FROM AN MEF - SUPPORTED EXPEDITION

MEF support for an expedition is offered on condition that you submit detailed reports to the Foundation. To assist in fulfilling the initial part of this commitment, it is requested that you fill in this form and return (with three photo-copies, which we will forward to the AC, the RGS and the BMC) to the MEF Hon Secretary within six weeks of return from the expedition. Please feel free to continue on additional sheets if necessary.

1 - Name of Expedition: **Scottish Mountaineering Club East Greenland Expedition 2007**

2 - MEF Expedition Reference: **07/25**

3 - Country/Region: **Staunings Alps, Scoresby Land, North East Greenland National Park**

4 - Names of all expedition members, indicating leader, climbing and support members:

Colwyn Jones, leader, medical officer and climber.
Brian Shackleton, quartermaster and climber
Mark Litterick, climber
Laubius Laubscher, climber
Kenneth Moore, climber
Stephen O'Sullivan, climber
Heike Puchan-Whitworth, meteorology & climber
Brian Whitworth, climber

5 – Name of Leader/Organiser: **Colwyn Jones**

Address: **11B Ettrick Road, Merchiston, Edinburgh, EH10 5BJ , Scotland**

Home Tel: **0131 229 2065** Work Tel: **0131 536 9278**

Fax:.....

E-mail Address: **colwyn.jones@lhb.scot.nhs.uk**

6 - Objective(s) of expedition – mountaineering / scientific / medical, include location of objective (or study area) with indication of special points of interest (e.g. first ascent of NW Ridge) and heights of peaks:

Objectives; to enjoy a safe, successful and environmentally friendly expedition in the NorthEast Greenland National Park.

To attempt first ascents of 4 unclimbed peaks around the Lang Glacier. To attempt first ascents of new routes of peaks around the Lang Glacier.

Climb new routes; South Pillar of Dansketinde and the North Face of the Bersaerkertinde. Ski tour back to Mestersvig on the Greenland coast.

7 - Overall dates of expedition (e.g. March-June 2003) and if possible, details of dates spent on access, on the mountain and on return:

Departed UK on 29th April 2007. Flown to Greenland from Akureyri in Iceland on 30th April, arriving at basecamp early afternoon. Charter of a ski equipped Twin Otter aircraft from Akureyri - via Constable Point allowing collection of fuel and freight then on to an exciting landing on the Lang Glacier, 1390metres, N71⁰59'43" W024⁰48'44.2" (Stor Gletscher on some maps).

1st of May we climbed our first new peak. Snow and low cloud restricted climbing activity on the 2nd-4th May when on the Lang glacier with similar conditions affecting the ski out to the coast on the 21st-23rd May. Otherwise we were climbing, skiing and exploring the magnificent Staunings Alps where we enjoyed cold and clear weather conditions.

We skied back to the coast to the gravel airstrip at Mestersvig arriving on 23rd May. Poor weather in the form of high winds prevented the chartered aircraft from collecting us until the 25th May when just after midday we flew back to Constable Point, then Akureyri and subsequently Reykjavik. We spent the 26th May in Iceland and flew back to the UK on the 27th May 2007 after a very successful trip.

8 - Brief comments about expedition, with technical details of route and maximum height reached:

Basecamp and landing site: 1390m, N71⁰59'43" W024⁰48'44.2"

New peaks climbed;

1st May - Peak 1. Drumglas Beag, 2060m, N71⁰59'22.3" W024⁰53'02.2" North Face ADsup

1st May - Peak 2. Drumglas, 2330m, N71⁰58'41.5 W024⁰52'49.5" North ridge, Biancograt AD. Climbed from the newly explored and named Wuss glacier. 14 hour day, good start.

5th May - Peak 3. Mollytinde, 1670m, N71⁰59'21.1" W024⁰50'47" Grade Facile sup. Small consolation peak close to camp on west side of Lang Gletscher plus surrounding glacier named The BASCD Glacier.

6th May - Peak 4. Cordulaspitze, 2430m, N71°58'41.9" W024°54'28.1" North face (AD) then East Ridge, Grade PD+

6th May – Peak 5. Jobjerg, 2330m. N71°59'0.3" W024°55'17.1" by South West Ridge which is continuation of the North Ridge of Cordulaspitze. Grade AD.

6th May - Peak 6. Juliasbjerge, 2058m, N 71°59' 35.8" - W 024°55'16.6" Climbed by a wide couloir from the Wuss glacier onto a col on the South Ridge. This col also forms the lowest point on the North ridge of Jobjerg.

7th May - Peak 7 – Puchwhitstinde, Alt 2339m - N72°00'38.8" W024°45'39.1" - ascent by N flank from col between it and peak 8 (Hasentinde) - col approached by gully N of the 2 obvious spurs emanating from the col. Glacier on approach called the Raven Glacier. On 8th May this peak was also climbed from the newly explored O'Sullivan/Moore glacier by a couloir on south face, Snowbunting Couloir, grade PD.

7th May - Peak 8 – Hasentinde, Alt 2376m - N 72°01' 24.5", W024°47' 08.4" - ascent by S ridge from col between peaks 7 & 8. South ridge was named the Igel Ridge.

8th May - Peak 9. Margretabjerge, 2430m - N71°58'34.7", W024°50'58.0". Ascent from newly named Witches Cauldron glacier via the Presidential Couloir (SE Gully) Grade AD and the South Flank and SW Ridge (PD). Large subsidiary glacier off the Lang glacier explored and named MåL glacier.

10th May – Skartinde, (2nd ascent) 2400m – N72°03'45.1", W024°54'21.6". North West Flank. Grade Facile.

11th May, Peak 10 – Himmelstinde. Alt 2492m - N72°04'51.8", W025°05'22.5" - ascent by Eternal gully to the Eternal col between this hill and Archangel Peak. Ascent and descent then by S ridge from the col. Previously unnamed glacier used in approach called the Puchan glacier.

12th May - peak 11. Archangel Peak, 2558m - N72°04'31.5", W025°05'23.5". By Eternal couloir then east ridge. Grade Difficile. Also descended onto very crevassed glacier on west of peak named the Devil's Own Glacier.

12th May – peak 12. Cold Shoulder, 2450m. Climbed by West Ridge, Grade PD. No Lat / Long available, on west ridge of C. F. Knoxtinde.

12th May - Hjornespids, 2870m. New Route: Laubscher - Litterick Gully. Grade Difficile, 600m to West Ridge.

13th May - Peak 13. An Caisteal - Alt 2614m - N72°03'31.9" - W024°59'52.6" - Ascent by face and gully on E flank the up N ridge. Grade difficile.

15th May - Crescentinde, 2455m. N72°03'38.0" W024°57'15.0". Ascent by new Route. NE Face, Grade PD.

15th May - Peak 14, Ebensbjerg, 2510m, N72°03'34.9" W024°58'05.8"'. From Daleens Col (between Ebensbjerge and Crescentinde) via the NE face. Grade AD.

15th May – Skartinde, (3rd ascent) 2400m. North West Flank.

17th May – Peak 15, Ian's peak, Alt 2607m - N72°07'13.3" W 024°55'01.3" by established south ridge route (MVS) and a new route named Accessory Rib (VS, 4C) which joins the south ridge to finish on the summit.

20th May - peak 16, Skotsketinde (Scotland's Peak), height 1775m. N72°07'36.6" W024°45'20.4"'. Shattered summit ridge. Grade PD+ east flank then east ridge.

20th May - Panoramic Peak Main top - Alt 1988 - N72°06'27.9" W024°4'35.3" - Ascent by gully up SE flank to S ridge Grade AD inf. Cairn found on lower of the 2 summit needles.

9 - Weather conditions, and if appropriate, reasons for retreat:

Generally there was excellent cold and clear weather for most of the time in the field. The overnight temperature was lower than previously experienced with lowest minimum's of minus 25⁰ Centigrade on two nights. This resulted in three cases of superficial frostbite.

There was snow and low cloud on the 2nd-4th May when camped on the Lang glacier.

The ski out to the coast on the 21st-23rd May was again in poor visibility with snow and then sleet as we descended from the Bersaerkerbrae to the coastal plain. Despite low temperatures, the prolonged sunshine in May led to some deterioration / destabilisation of snow pack on south facing slopes.

We skied back to the coast to the gravel airstrip at Mestersvig arriving on 23rd May. Poor weather in the form of high winds prevented the chartered aircraft from collecting us until the 25th May when just after midday we flew back to Constable Point, then Akureyri and subsequently Reykjavik that evening. We spent the 26th May in Iceland and flew back to the UK on the 27th May 2007 after a very successful trip.

South Pillar of Dansketinde, the approach was raked by stonefall so the despite low temperatures an ascent was not attempted.

North Face of Bersaerkertinde was covered with unconsolidated snow and an ascent was not attempted.

10 - Note of any accident to expedition members or to porters; also cases of serious illness, especially oedema - pulmonary or cerebral:

Superficial frostbite diagnosed in three team members. They were all treated by gentle rewarming with several days surveillance to ensure pulse and skin temperature overlying the affected areas were normal.

- a) **Right big toe – superficial and secondary to previous frost nip when in Norway.**
- b) **Both hands, all knuckles of fingers and tips of right thumb and forefinger. Alarming blistering. Two of the larger blisters were decompressed; one burst and the second was decompressed by aspiration of fluid with a needle and syringe. All the blisters subsequently reduced in size and resolved without further active treatment within 10 days.**
- c) **Both cheeks, over Maler eminences (cheek bones), symmetrical lesions were about the size of ten pence pieces (2cm diameter). Some loose dead skin exfoliated after a week or so after returning home with normal skin underneath.**

11 - Any other relevant comments (permit, LO etc):

One major concern that 3 of the 5 MSR stoves do not work properly with the Jet A1 fuel! One dragonfly and the two MSR Whisperlights particularly! We do not recommend them for use with Jet A1 fuel. The Whisperlite stoves used were a Whisperlite 600 & a Whisperlite International. It is worth mentioning that we had maintenance kits which contained the full complement of Whisperlite jets, which were all changed and tested but they never worked. The dragonfly worked intermittently but was never entirely satisfactory. This could have been a disaster. The two MSR GSK II stoves worked well.

Rules governing the carriage of firearms on aircraft are not clear. Despite having permission to carry the rifle from both the airline and the ground handling company it appears that the Captain has complete discretion over whether they are carried and how they are carried. This resulted in our rifle being divided with the rifle separated from the bolt. The two parts then went on separate flights which essentially prevented us from using it. Only by hiring a rifle locally at very short notice were we able to meet the requirement to carry a firearm in the Northeast Greenland national park.

Seven of the Eight members were insured with the British Mountaineering Council expedition insurance but the 8th member, although a member of the Scottish Mountaineering Club, was ineligible as he was not resident in the UK. Insurance was thus arranged through the Deutscher Alpenverein (DAV) where he was living. This led to late completion of the special insurance arrangements for the Danish Polar Centre and much hassle just prior to departure!

It was noted that the position of the Bersaerker'spire is incorrectly mapped on the commercial map of the area.

12 - Brief financial details, with income and expenditure:

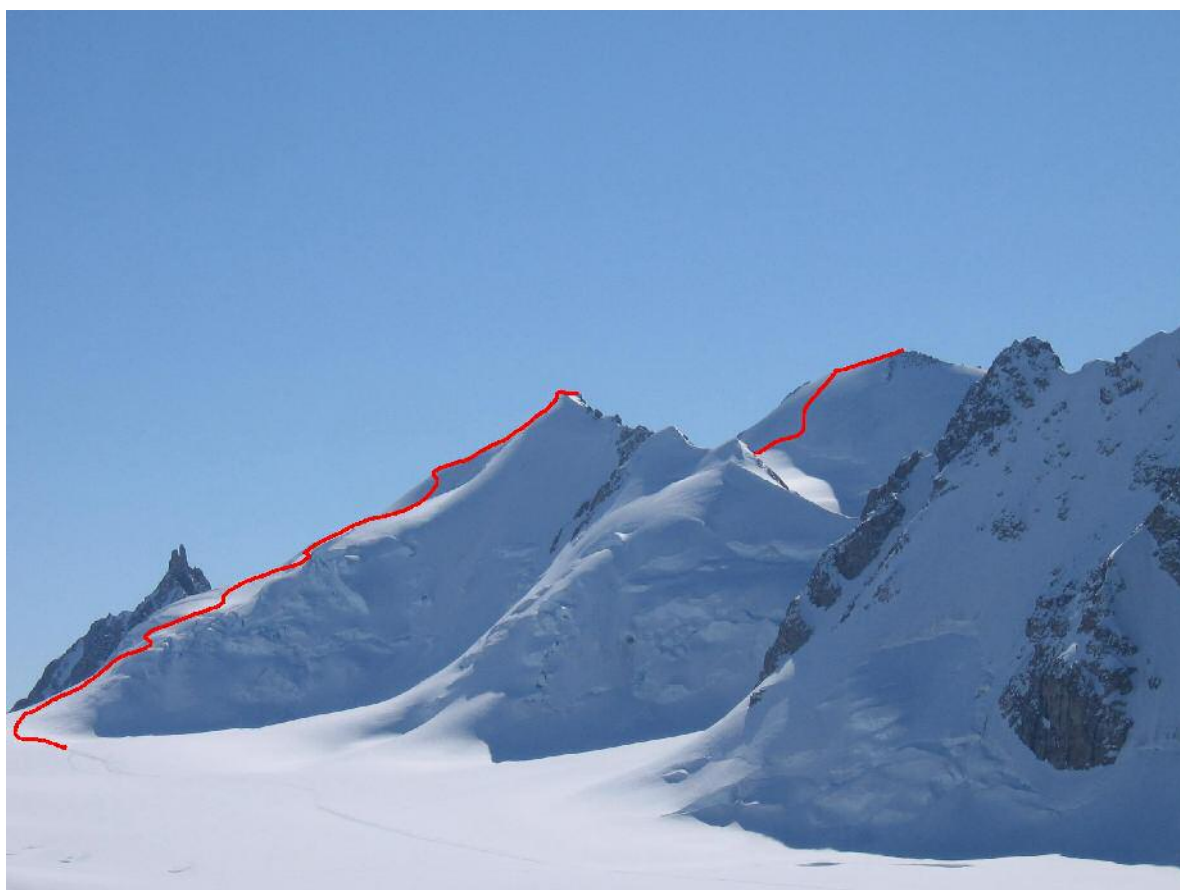
SMC East Greenland Expedition 2007

Expedition Expenditure provisional

Item	Cost	Expedition income Item	
Expedition Insurance	£ 1,992.00	MEF	£ 1,150.00

Flights Glasgow/London to Keflavik return	£ 1,760.00	Gino Watkins Trust	£ 1,000.00
Keflavik to Reykjavik flybus	£ 76.00	8 @ £2050 each	£16,400.00
Reykjavik to CNP (2 members)	£ 392.00		
Reykjavik - Akureyri (6 members)	£ 354.00		
Akureyri - Reykjavik (8 members)	£ 472.00		
Charter flight CNP-Lang-CNP	£ 2,220.00		
Charter flight AEY-CNP	£ 4,620.00		
Charter flight MVG-CNP-AEY	£ 3,420.00		
Accommodation in Akureyri	£ 125.00		
Accommodation in Reykjavik	£ 795.00		
Misc travel (taxis, food, etc)	£ 800.00		
Air freight costs to Constable Pynt	£ 1,142.77		
Radio Licence	£ 72.00		
Gun hire & ammunition	£ 300.00		
Total Expenditure	£18,540.77	Total Income	£18,550.00

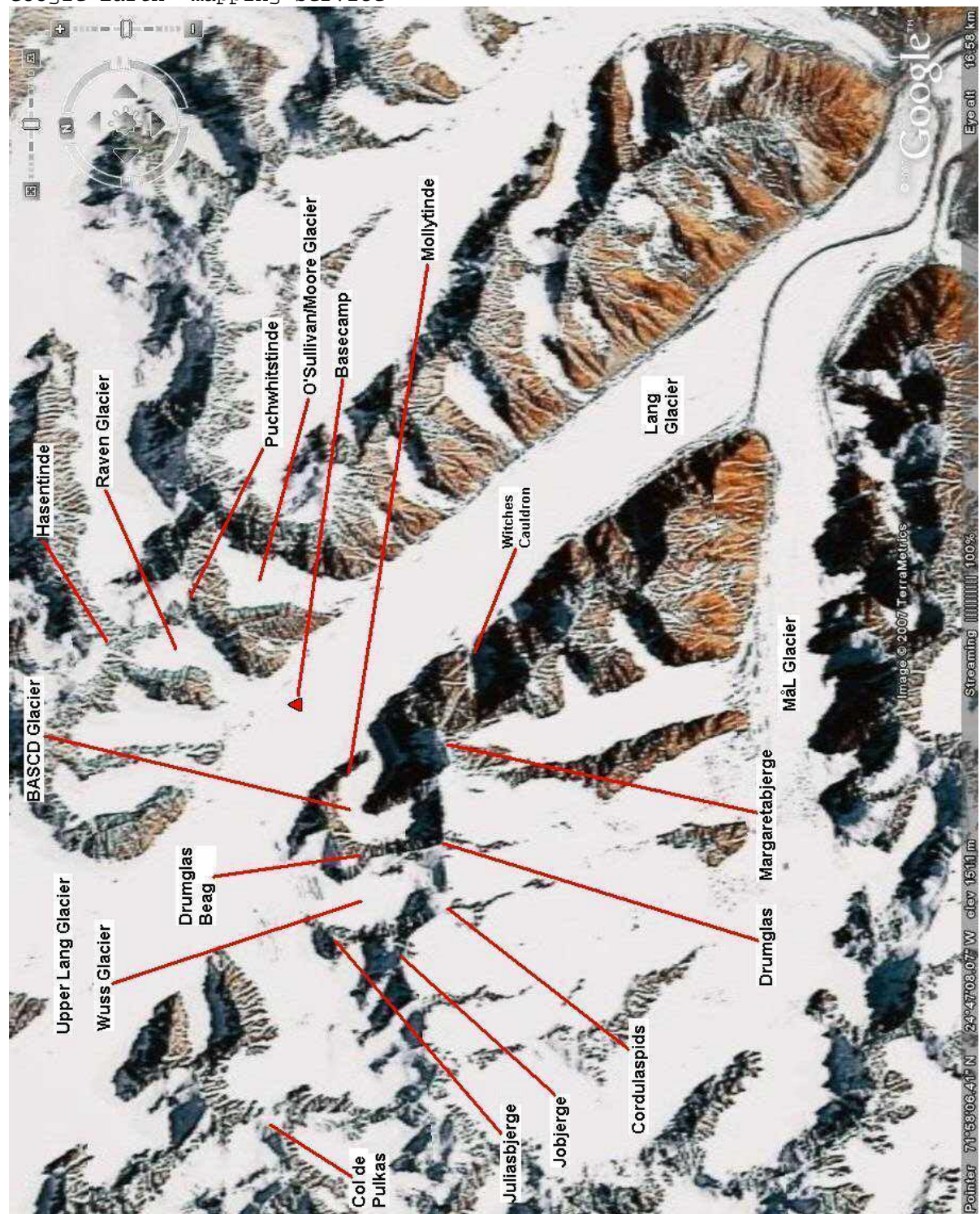
13 Approx date when Final Report will be submitted: **November 2007** MEF/Z



Second ascent of Crescentinde with first ascent route of Ebensbjerger on the right (Photo M, Litterick)

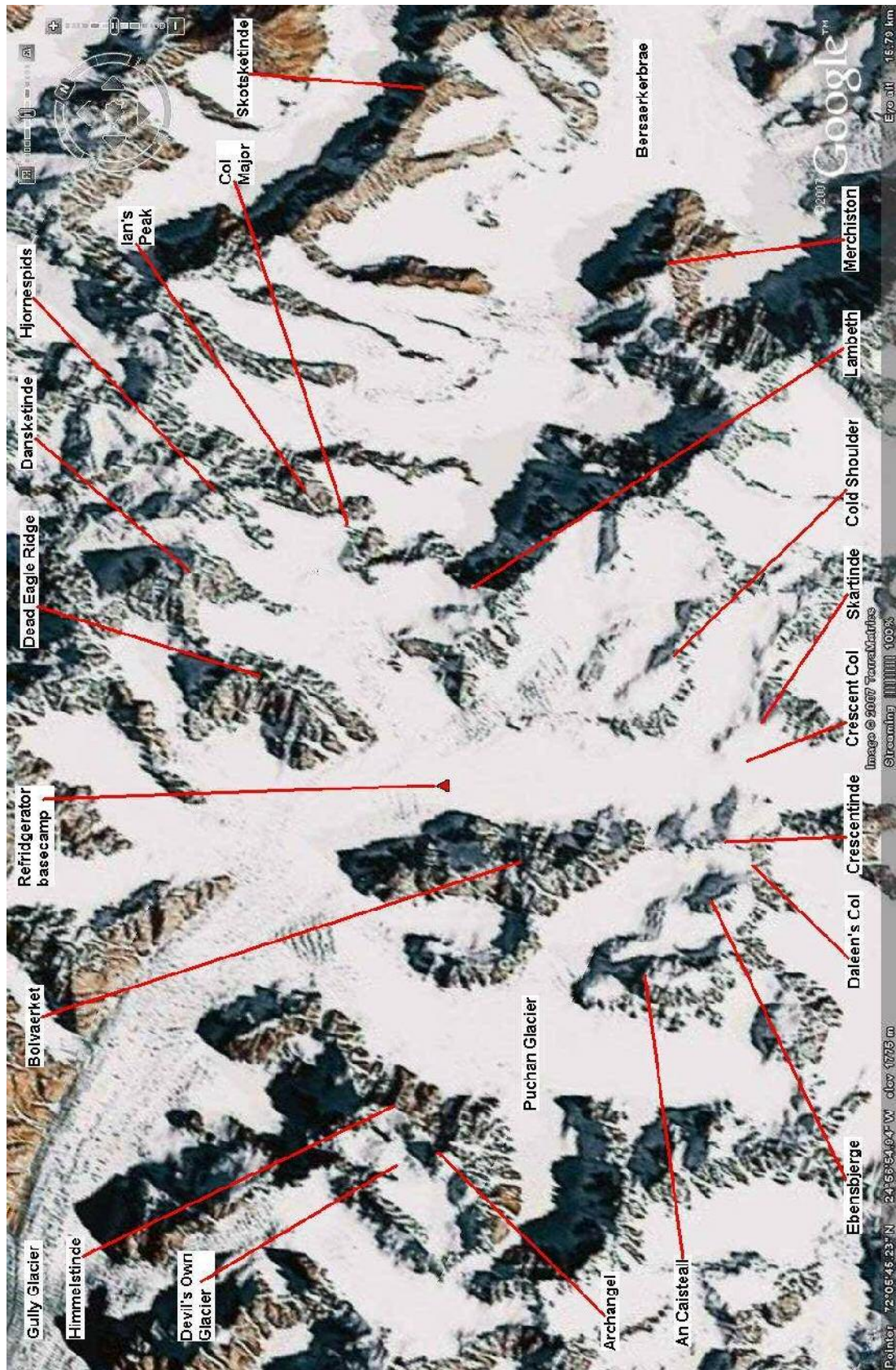
Appendix 2

Lang Glacier Basecamp with new peaks and features,
Google Earth™ mapping service



Appendix 3

Refridgerator Base camp, Google Earth™ mapping service



Appendix 4

Bersaerkerbrae Basecamp (No. 4), Google Earth™ mapping service

