



Baffin Island 2003



(Twin Summits Mt Asgard; note climber on right)
(Cover photo; Paul Raistrick on unnamed peak above Nerutusoq Glacier)

Contents:

- 1 *Introduction*
- 2 *Members*
- 3 *Background*
- 4 *Expedition Narrative*
- 5 *Logistics*
- 6 *Environmental monitoring*
- 7 *Acknowledgements*
- 8 *Useful contacts and sources, selected bibliography*
- 9 *Appendix*

Introduction

The scenery of the Cumberland Peninsula is unique, with hundreds of steep granite faces, a few of which rise unbroken for nearly 1300m, fringed by wide glacial basins, with numerous lakes and wide river valleys. Surroundings to rival any mountain area in the world. The scale is immense, and without any frame of reference, as 1000m unbroken crags are uncommon in our home countries, it takes some time to get used to, with distances hard to judge in the clear Arctic air. We were the only party in the ca. 20,000km² Auyuituq National Park, and outside the main valley saw no signs of humans.

All five team members arrived in Pangnirtung, the nearest Inuit settlement to the Cumberland Mountains, on the 27th May, and set off by snowmobile the next day. After four days walking with 40kg packs we reached our gear cache and we were then able to spend 5 nights at each of our high glacier camps, along with 13 nights in the main valley. We returned to Pangnirtung on foot on the 20th June after a rough 75km walk with heavy loads.

We were fortunate to fulfil many of our objectives while accomplishing things we hadn't expected. Though we were unable, due to poor snow

conditions and cold temperatures, to climb the long routes on Mt Asgard, we were able to climb part of a new free Alpine rock route on impeccable granite in the Asgard cirque, and one of our team was able to climb and snowboard down a series of long and steep couloirs and gullies on Asgard, Mt Freya and an unnamed peak. In addition two team members made the first ascent of an unnamed, unclimbed peak to the south of Mt Asgard; a fine narrow ridge with superb exposure and views.

We were lucky to observe a variety of flora and fauna, including many beautiful arctic flowers, hares, geese, ptarmigan, fox and wolf tracks, and a polar bear skull.

Our sincere thanks to our sponsors without whose help our adventure would not have been possible; the Scott Polar Research Institute (Gino Watkins and Arctic Club awards), Scottish Arctic Club, Scottish Mountain Trust and the New Zealand Alpine Club, for financial support, Mountain Equipment Coop for snowshoes, and Icebreaker for merino wool thermals that refuse to get smelly even after 24 days constant wear!

Clive Johnson, Blyth Wright, and Chic Scott were particularly generous with their time and experience – helping us with logistics and providing inspiration. This formal report will be followed by a series of talks and an article in the Journal of the Alpine Club of Canada.



(Team members beneath Mt Asgard. Left to right: Duncan Kemsley, Allan McKay, Paul Raistrick, Emeline (Em) Lamond, and Mark Raistrick.)

Members

Mark Raistrick – 28, Scotland, geologist. (leader) Scottish Winter to V, New Routes to M6 (Canada), Canadian Rockies Alpine Routes (NE face of Ha Ling, North Glacier Mt Aberdeen, S. Ridge Mt Fable). Ski descents of graded climbs Scotland and New Zealand. 12-week scientific expedition to NE Greenland, 1997.

Duncan Kemsley – 28, New Zealand, civil engineer. Scottish Winter to Grade VI, Ascents of peaks up to 5,500 in the Bolivian Cordillera Real. French Alps to TD (four 4,000m peaks), Southern Alps (including W Ridge of Malte Brun, Mount Elie de

Beaumont - winter, first ski descent of Minarapa Gully on Mount Taranaki). Taranaki mountain rescue team member.

Emeline Lamond – 28, Canada, geologist. Scottish Winter to Grade IV, Canadian Rockies Alpine Routes (NE face of Ha Ling, S ridge of Mt. Fable, N. Glacier Mt. Aberdeen), ski tours (e.g. Wapta Icefields Traverse), Solo overland travel from Delhi to Tehran, unsupported cycle from Lhasa to Kathmandu. Ascent to 4,750 m on Mt Kenya.

Allan McKay – 31, Scotland, geophysicist. Scottish Winter to VI, European Alpine to TD, (NE Ridge of Lenzspitze. NNE Buttress of L'Aiguille de midi, Frendo Spur), SE Buttress of Cathedral Peak (Sierra Nevada)

Paul Raistrick – 30, Scotland, hydrographic surveyor. Scottish Winter to IV, Ski descent of 60 graded winter climbs to Scottish II (technical IV), (e.g. Ben Nevis, Gullies 2,3,4,5). Norway, descents of 15 graded routes (Visbretinden N Gully, Stroe Bukkohel Stin S face, Dovrefjell, Snowhetta NF), CAA training – level 1. Kendal Mountain Film Festival 2002 Peoples Choice Special Mention for “Pushing Winter”; Also shown at Edinburgh 2003 (Best Film Award) and Fort William Mountain Film Festivals



Background

The Cumberland Peninsula of Baffin Island, which is equal in area to a medium sized European country is the most mountainous part of the Canadian Arctic. The topography comprises an indented coastline surrounding a highly incised plateau with numerous sharp rock peaks reaching an average max elevation of 2000m.

The coastline of the Cumberland Peninsula has been known to the Inuit for a few millennia, but only to Europeans since 1585 when John Davis first explored the area. Most European visitors between the 16th and 20th centuries were whalers who followed the bowhead whales along the edge of the pack ice. The only major settlement in the area, Pangnirtung ('Place of the Bull Caribou'; pop

1300 95% Inuit: 5%non Inuit), was first settled in the early 1900s when the Hudsons Bay Company established a whaling station. The RCMP (Royal Canadian Mounted Police), accompanying the Hudsons Bay Company, began to patrol the interior in the winter, and the area quickly gained respect as difficult sledding terrain.

The first scientific exploration and recorded mountaineering took place on an Arctic Institute 1953 expedition led by Pat Baird. Baird was accompanied by four Swiss guides, who, led by Jurg Marmot, made the first ascent of Mt Asgard, Tete Blanche and a few other peaks. The journal

Mountain World (1954) includes an excellent account of the first ascent of Mt Asgard, a technically hard climb for its day. Jurg Marmot went on to be part of the second team to summit Mt Everest in 1956.

Further exploration since 1953 has been sporadic, with the highlight being Doug Scott's productive visits in 1971 and 1972. After 1972, interest in the area increased, and the last 30 years of development has led to the establishment of testing aid routes over 1000m long (e.g. Midgard Serpent on Mt Thor; A3-1200m), magnificent free routes (e.g. East Pillar on Mt Asgard; 1250m 5.10), A Base Jump from Mt Asgard (In the James Bond Film - *The Spy who Loved Me*) and ski and snowboard descents of the less vertical peaks. Despite the publicity, and the fact that the area is said to include '50 El Capitans, 500 Half Domes' (High Mountain Sports 1993), it has never become a popular climbing venue, perhaps because of a combination of complicated sea-ice access, low temperatures, dangerous wildlife, hazardous river crossings, and unpredictable weather. Annual visitor numbers average 100-200, with the majority hiking in the main valley in July and August. In order to manage access and protect the fragile arctic mountain environment from exploitation, the federal government of Canada on April 9, 1976, defined the boundaries of a the most mountainous, highest part of the Cumberland



(Mt Thor)

Peninsula to create Auyuittuq ('the land that never melts') National Park a 20,000km² reserve within which most of the climbing now takes place.

The Inuit of Baffin Island and the rest of Eastern Arctic Canada achieved semi-autonomous status in 1997 with the establishment of the Territory of Nunavut, previously part of North West Territories. Nunavut's affairs are now run mainly from the capital Iqaluit (previously Frobisher Bay). The Parks are managed by a joint Federal-Nunavut authority, with the Park employees mostly drawn from the Inuit community.

Apart from using the main valley as an access route to the east coast of Baffin Island, and for hunting caribou and geese, the Inuit have not explored the interior. Most mountain and glacier names reflect European or North American explorers (e.g Thor, Battle, Northumbria), though some have Inuit names because of their usefulness as way markers or distinctive shapes (e.g. Nerutusoq glacier – narrow mouth glacier).

A variety of wildlife frequents the region, especially during summer, including arctic hare, arctic fox, wolf, geese, snow buntings, ptarmigan, and

occasional bumblebees. Polar bears are not particularly common and are rarely found away from the coasts. During the short summer, numerous flowers add colour, the most attractive being the purple arctic primrose, and the tiny blue flowers of the dwarf gentian.



(Iviangearat Peak; unclimbed 500m Pillars)

Expedition Narrative

Approach march

At 1230 am on the 2nd May all five expedition members; Duncan Kemsley from New Zealand, Emeline Lamond from Canada, and the three Scots, Allan McKay, Mark and Paul Raistrick met in Toronto's Pearson Airport. After a day of frantic last minute shopping we all left Ottawa on First Air's ageing Boeing 727 to Iqaluit. The First Air flight is the only way for freight or people to get to and from Baffin Island between September and April, and it is usually packed with both. At 3pm on the 27th May after a short flight on a turboprop we arrived on the dirt runway in Pangnirtung, then only settlement on the west coast of the Cumberland Peninsula. After an evening of bureaucracy (reviews of bear activity, sea ice, glacier and valley conditions) and packing, we had a decent sleep and were up loading the sleds by 12pm. We would avoid walking the first leg of the journey by a snowmobile ride across the sea ice. After manhandling the snowmobiles and sleds over the tidal pressure ridges, we started the 35km journey down frozen Pangnirtung Fiord. The weather was clear and sunny, with light winds and about 0C. After 1 ½ hours of racing down the ice we were offloaded with our 200kg gear, waved goodbye to our Inuit friends and in high spirits prepared for the first of many days of walking with heavy loads, and resting leaning on ski poles in ever more ingenious ways.



We were now within Auyuittuq National Park, and knew we were alone. The Park authorities strictly control access and they are aware of any visitors, there had been some skiers in April, and there was talk of some visitors in early July, but for the next 24 days we would have all 20 000km² to ourselves.

Our first 6 hours of walking up the wide and flat lower Weasel river valley were punctuated by continuous avalanches from a minor peak to the south, and numerous photo stops. The first day finished just beyond the cairn that marks the position of the Arctic Circle, by a bend in the valley which revealed the first of the many granite walls that were to dominate our weeks ahead.

Another two days load carrying brought us past famous Mt Thor (the second longest unbroken cliff in the world ca. 1250m), Mt Odin, and Mt Northumbria to our camp at the Summit Lake emergency shelter, near the site of Pat Baird's 1953 base camp. We used the little orange hut to cache our gear while we were in our high glacier camps, and to occasionally hide from the worst of the weather.

On the 31st May we left with our pulk to look for our food cache that had been dropped a month earlier; without it our expedition would only have lasted another day or two! Fortunately Joavee's basic map, without scale, north arrow or immediately recognisable features allowed us to quickly find the location of our 100kg stash and celebrate with some chocolate bars and bouldering. We shuttled the food back to camp and began to sort it into daily rations.

Average temperatures on the first few days were about +3 during the day and -2 or so at night (10pm-4 am), on the fourth night, after we had collected our supplies, low cloud preceded by alto cirrus heralded the arrival of the first of many depressions. Slow moving low cloud accompanied by light precipitation was a major feature of the weather during our time in Auyuittuq Park and we had only four or five days of fine clear weather.



(Pulking)

A rest day studying our topographic maps and glimpsing peaks through the occasional breaks in the cloud had us scheming and plotting; first a trip to Mt Asgard, climbing and looking for couloirs to snowboard down, and then some exploring of the unnamed peaks above the Nerutusog glacier to the south.

The Caribou Glacier and Mt Asgard

At 8pm on the 3rd June we left with all our Alpine gear and 5 days food and fuel for the Caribou glacier and our Mt Asgard 'advance' base camp. Five hours later we were busy digging down to the glacier ice, probing for crevasses and building snowwalls for our first high camp, the twin towers of Asgard dominated the view, and along with dozen other big walls visible left butterflies in the stomach. In some ways Mt Asgard resembles a gigantic sea

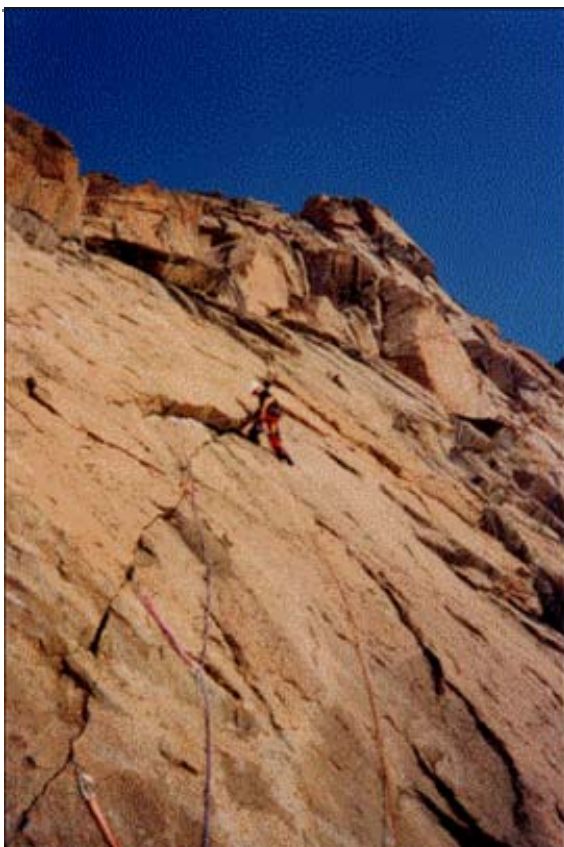


(Poor weather at Base Camp on the Caribou Glacier, climbing party returning centre-right)

stack marooned in a glacial sea, but with vertical faces of around 800m on three sides and good solid rock the comparison ends there.

After a days rest all five of us set out for Asgard at 11:30pm. Travel on the glaciers, and on any snow for that matter was only possible between 10pm and 5am, when the snow surface had hardened enough to support our weight. At all other times the going was arduous, wading in the porridge-like spring snow. Often we would sink up to our waists, and occasionally a foot would find itself wiggling in the void as it broke through thin snowbridges. Our MEC snowshoes helped a great deal, but on high angle terrain the only option was to travel through the night, and as it does not get appreciably darker at night this poses few problems other than when to eat dinner.

As our original intended route, the East Pillar, was still heavily iced on its lower slabs, we decided to investigate the Swiss Route; first climbed in 1953 by the Swiss guides. The Swiss route is graded 5.9 (about HVS/E1), and at 1250m long, but with only 300m of technical rock, is the easiest way to the summit of Mt Asgard. Our first attempt would be better termed a reconnaissance. 2½ hours of glacier travel brought us to a high cirque, directly beneath the south tower of Mt Asgard, and here we left Paul and his snowboard at the base of a long couloir. Paul climbed the couloir, past some slabby seracs and had a good first run back down to the cirque. We tried to negotiate the 45° snowslopes and mixed ground of the lower shoulder of Mt Asgard, but after a few hours had enough and returned to the cirque by 5 am. We were confident that we had found a reasonable route up to the level ridge that led to the upper snowfields and the steep rock of the upper part of the north tower. The remainder of the day (i.e. until 10am) was spent filming Paul snowboarding another 500m couloir, while Duncan and Allan climbed the start



of a new rock route on the sunny solid granite of a 700m high outlying summit in the Asgard Massif (see picture below). With solid rock, good natural protection and a reasonable grade of 5.7/5.8 (VS) they were pleased with their attempt. The weather on the first mountain day was around 0°C, sunny and with little wind. We returned to camp by 2pm or so and promptly slept for > 12hours. We rested for most of the 5th and 6th of June, reading in the sun, eating or dozing in our tents, and decided to have another go at the Swiss route on the 7th. We reckoned that it was too cold to climb on the more exposed and time consuming East Pillar route.

Our timing in the Park was dictated by the fiord ice conditions and, had we arrived between mid June and mid July access would have been very difficult as the fiord

would be impassable to skidoo or boat. A late season arrival (e.g. August) was considered, but with a burgeoning insect population, deep river crossings and more visitors, we opted for the solitude, simple access and increasing light of a pre-midsummer arrival.

(Duncan - Asgard Cirque)

At 11:30pm on the 6th June we emerged from our tents into a strong easterly wind and blue skies. After a huge helping of porridge and brown sugar we



(Paul snowboarding; Mt Asgard)



roped up and left for the Asgard cirque. Knowing the approach well, we quickly reached the base of the Swiss route and then our previous high point by about 2am. By 3:30am we gained the level ridge that led to the upper snowfield beneath the twin summits of Mt Asgard. With copious snow, a vertical 500m drop on one side and steep snow covered granite slabs on the other the ridge made for entertaining travel, and we were grateful for a rope across the narrower sections. The climbing resembled a classic Scottish Ridge in midwinter, but benefited from a 900m high tower of granite on one side (the East Pillar) and on the other innumerable unnamed and (unclimbed) granite prows, towers and more conventional mountain forms; one strongly resembled K2, another Mt Cook, a third the Mustagh Tower. The ridge brought all four climbers to the start of the upper snowfields. A snowpit revealed a slabby 10cm crust over granular snow that in turn lay on 60° slabs, this, along with evidence of previous releases worried us. Two ropelengths into the snowfield a creak from the snowpack encouraged the digging of another pit, and sent us scurrying back to the safety of the rock ridge. We were a few minutes of easy snow

climbing from the summit towers and the last 8 rock pitches. Unhappily we decided that crossing the upper snowfield, above 500m of slabs, eight times (four climbers there and back) too much of a risk and turned round at a high point of 1775m. A few hours spent climbing back along the ridge, and then three 60m rappels allowed us to reach the top of the lower snowslopes where we unroped and made our way down to meet with Paul who had been filming from below.

Prior to filming us Paul had summited the outlying peak and descended the original 'serac' couloir that he had investigated 3 days before. He found this in far better condition due to the much colder conditions.

The wind had remained with us all day, and high frontal cloud was beginning to appear. Once we were back at camp resting and eating it began to snow and our drinking water puddle quickly grew a rind of ice. A watch hanging on a ski pole outside recorded 7 degrees of frost, unpleasant conditions for rockclimbing and we were glad not to be up on the mountain. Five nights on the Caribou Glacier by Asgard had depleted our food and fuel, so after another rest, and a miniature marzipan birthday cake (it was my 28th birthday) we began to break camp. We couldn't see how the conditions on Mt Asgard would improve

(Swiss Route Mt Asgard)

until later in the season, when most of the snow had gone, so we thought we would spend the remainder of our time exploring the Nerutusoq glacier to the south of the Weasel Valley. Our departure in the early evening of the 8th June was pleasantly delayed by Paul climbing and snowboarding a 700m long gully on the SW shoulder of Mt Freya.

The Nerutusoq Glacier



(Unnamed peaks above the Nerutusoq Glacier 'Mt Cook' centre-right)

Back in the valley Summit Lake was still well frozen, and the snowbridges across the river looked fairly solid. We spent part of the rest day recording and photographing flowering plants, the dwarf willows had flowered

producing downy buds that at around 10cm high towered above the other plants, and the primroses had emerged and had started to flower. Overall the valley was noticeably greener – it was of course the 9th June and spring was nearly upon us.

After 24 hours of rest we reloaded our packs with another 5-6 days rations. To reach our next objective, the Nerutusoq glacier, we needed to cross the Weasel River and then a large and complex moraine system with large rivers, perhaps part of the reason, we speculated, that many of the peaks above the Nerutusoq had been unnamed so far. Six hours later, after scrambling up a medial moraine, we scraped out our second glacier camp, again amongst large boulders that harboured small frozen puddles of drinking water. The glacier surface was beginning to be dissected by numerous small blue-green rivers, similar to the larger river systems common on the Greenland ice cap. After an early morning dinner we slept, hoping the next few days would see us attempt a number of different peaks to the south and east.

Sadly for the whole of the 10th, 11th and most of the 12th June it rained steadily and we were stuck in our two small mountain tents, reading and snoozing, with occasional speedy exits to make a brew or some soup. Nearly



(Unnamed Peak above Nerutusoq Glacier)

72 hours of inactivity was testing for those of us who didn't treat sleep as a sport.

On our penultimate day of food and fuel supplies the weather suddenly broke and we emerged stiffly from our tents late in the evening of the 12th June. The following day was one of our most productive, from a 1:30 am start we split into two groups. Em and I went northeast, hopping the supraglacial streams, making for an unclimbed 1800m peak, the culmination of a long ridge that bounded the Nerutusoq for a few km. The unnamed peak had a 500m vertical rock face on its east side, with overhanging cornices fringing overhanging rock. Our approach up the more mellow western slopes involved

400m of scrambling up a small spur followed by a gradual climb of 500m to the ridge crest. We were forced to stick to the ridge crest by easily sheared windslab (the product of the last few days precipitation) overlying granular snow. The well – defined summit was gained at about 4:30am by a short rocky scramble and had awesome views in every direction. Mt Thor and Mt Asgard were relatively inconspicuous in the sea of granite walls and spires.

During the descent we were able to watch the rest of the team (and keep in touch with them by radio) on the graceful peak opposite, which we had given a pet name of Mt Cook for its resemblance to the famous peak in the Southern Alps of New Zealand.

Auyiituq's 'Mt Cook' was also guarded by seracs, through which our friends were weaving. Paul had climbed to almost 2/3 height and had a long descent by snowboard, winding between the seracs and rock outcrops. Duncan and Allan climbed higher, but after being forced out onto the open snowy face above 2/3 height they decided to back off, once more Rutsch block tests revealed an easily sheared snowpack, Old partially deformed faceted crystals were identified at the base of the ca.1m pit; snowpack stability was only maintained laterally as isolated blocks were unable to take the weight of the slab above. Unlike Em and I, they were unable to find easy



(Em Lamond; summit unnamed peak above Nerutusoq Glacier)

angled terrain to continue on. We were able to tell them that even though they were not far from less steep ground, the summit lay far along a foreshortened double-corniced ridge not easily seen from below.

We all met back at our sunny camp at 12pm and spent the rest of the day like soggy lizards sunning ourselves on the big erratics by camp. Em and I had been soaked swimming in bottomless glacial snow and wading the supraglacial meltwater streams. This was our first strong sunshine in 6 days and we thoroughly enjoyed it. We relaxed on our fifth evening on the Nerutusoq, eating the last of our food and gradually running out of fuel as we

rehydrated. The process of breaking camp and descending to the Weasel Valley was contemplative and slow as we realized we'd had our last mountain day.

We were cheered that we were able to have had so many attempts despite encountering poor snow and having fairly poor weather. Paul had descended about five substantial (500m+) gullies and couloirs, and we had climbed a part of a new rock route, and a previously unclimbed and unnamed peak, not technically hard but with good character.

We had six days remaining before our return flights and 75km to walk with 40kg+ loads so we didn't rush back to Summit Lake.

The Walk Out

After fixing our gear-drop barrels to our packs, adding our rubbish and the remainder of our mountain gear, we took some botanical photos and data and then began the unsteady walk down the valley. We hadn't had any contact with the outside world for 21 days and wondered in such dramatic times what big event may have taken place. It seemed that commercial jetliners were absent from the sky for a number of days in what is a reasonably busy bit of airspace for transatlantic flights. On reflection it was probably the poor weather that stopped us seeing them.



(Paul Raistrick, snowboarding on 'Mt Cook')

From when we set off, at 10 pm on the 14th June, we slowly followed the tracks of a solitary wolf down the valley. On the evening of the 15th June we collected a small food cache we'd left on the walk in (just as our packs were losing weight from food consumption they got heavier again!).



Late on the evening of the 16th we were in the lower tidal reaches of the Weasel Valley and we were able to radio the Park Warden about ice and bears. We could see the ice was still in the Fiord, semi broken up and impassable for snowmobile or boat – possible for hovercraft, but so far there are none in Pangnirtung. We were informed that there had been no sign of bears near the settlement, though as no one had been near the Park for the past 3½ weeks what lay between us and Pangnirtung was unknown. It would be a good few weeks before anyone was able to boat up the Fiord towards the Park.

Our walk along the Fiord was delayed for a few hours by a concerted attempt to eat anything heavy, then at 6pm on the 17th we hopped onto the fringe of ice that flanked the shoreline and seemed to offer the most efficient pathway along the rocky shore. The intertidal zone is a chaotic pile of unstable stranded fragments of sea ice – good fun for hopping on without a heavy load (see above)! Inland the ground was rocky and undulating, so we stuck to the ice-fringe. Our walk was interrupted by unusual shoreline geology, a huge bleached bear skull, scared geese (goose eggs are a popular summer food for the Inuit), and curious seagulls. After half a days walk we halted for 5 hours to wait for low tide so that we could cross a big glacial river downstream in its intertidal zone. After 15 more hours of walking we camped and slept for 13 hours, this being our last camp, we tried to relish the experience, though exhaustion kept introspection to a minimum. The last 10 hours towards Pangnirtung were pleasant, and at 4am on the 19th a dead tabby cat and empty soft drink cans announced the proximity of humanity. The 2 km of gravel road that led into Pangnirtung was particularly pleasant, and accompanied by heavy rain we scurried for an early breakfast at the lodge in town. Our last 36 hours in Pangnirtung were spent people watching, scrounging seal meat and taking photos, with the highlight a fine game of Frisbee with the Pangnirtung kids.



Logistics:

(Access, Hazards, Contingency, Environmental considerations, Food, Fuel, and Finance)

Introduction

Some aspects of expedition logistics that are peculiar to the Arctic environment in general and the Cumberland Mountains/Auyuittuq Park in particular are discussed in detail in the following section, along with more general comments on logistics. Tables listing rations and first aid are included in the Appendix.

Access

Early season, i.e. pre-June access to Auyuittuq Park requires a 35 km snowmobile ride down the frozen Pangnirtung Fjord. During June and most of July the sea ice is in a state of break-up and neither snowmobile nor boat access is possible. Most visitors enter the Park in late July and August, at this time, though the fjord is clear of ice and access is simple, most rivers are in spate, making valley travel difficult. An alternative, though rarely used means of access, avoiding ice break-up issues, is to walk the 40km of indented, trackless coastline between Pangnirtung and the head of the fjord.

Our party went in by snowmobile in late May, two weeks before the fjord became impassable, and we left on foot, walking the coastline to Pangnirtung. We shipped 100kg of food to Pangnirtung in early April, and had veteran Inuit outfitter Joavee Alivaktuk snowmobile it to the middle of the Park, allowing us to make the trip in with only one load.



(Pangnirtung)

Hazards

Though the Polar Bear (*Ursus maritimus*) is occasionally seen inland in Auyuittuq Park (an adult male was spotted in the valley, 20 km from shore in July 2002 and the community of Pangnirtung is more than able to hunt its quota of 20 bears a year), bears are relatively rare in the region. As guns are

prohibited in Auyuittuq Park (as with all Canadian National Parks), and normal bear deterrents like bangers and pepper spray not yet proven to be useful, bears are best avoided. The chance of an encounter with a bear is an order of magnitude higher on the coast than inland, so the short-wave radio installed by Parks Canada at the head of Pangnirtung Fjord is helpful to get information on bear sightings, signs and activity. When camping near the shore, it is sensible to cook and store food 150m from the tents and downwind. On the glaciers, where bears are very rarely seen, we usually cooked immediately beside, or in the tents. We found a large bleached bear skull on the shore on the way out of the mountains, but we saw no signs of live bears; scat, tracks or prey carcasses.

River crossings can be a problem in Auyuittuq Park, especially at the height of summer, and a couple of people have been unfortunate enough to drown while crossing the worse torrents. Fortunately, for the early season traveller, the rivers are mostly still frozen in early June, as the mountain snow has not yet completely melted. By mid June as the glaciers had begun to carry numerous surficial streams, and the snow bridges over the main river had weakened, the Weasel River was beginning to look threatening. On our way along the coast to Pangnirtung we had to wait until low tide and waded out across the tidal mud flats to cross one large river.



(Wolf; *Canis Lupus* tracks; Weasel Valley 18th June)

Despite the vertical nature of much of the terrain, and the abundant high-angle glacial ice, we did not see or hear many serac collapses, and there appeared to be little of this sort of debris. A few of our routes did cross beneath serac bands and we were grateful that the glaciers seemed relatively inactive compared to lower latitudes. The steep nature of the terrain, along with the warming temperatures of summer would seem to encourage abundant rockfall, however there was little noise, perhaps as the temperature was rarely

above freezing on the higher mountain cliffs. Being struck by direct sunlight did not appear to make much difference to rock stability.

The snow pack varied from about 25->100cm thick. Typically, on 45° slopes in the mountains at ca. 1000m, the snowpack was 75cm thick, granular and poorly bonded to the slope beneath, with an upper 5cm of frozen hard snow ice (between 11pm and 4am if it was cold and clear) or porridge like granular consistency (at all other times). There was plenty of evidence of wet snow slides on the steeper snow slopes (see front cover), and occasionally these appeared to have been full-depth releases. On ca. 45 degree slopes Rutsch block failure with minor loading suggested a moderate-high avalanche risk, and on two occasions climbs were abandoned when slope failure seemed possible. At 1750m on Asgard the slope creaked, and a quick pit revealed 100cm of granular snow on 50° rock – encouraging retreat. It may be that these are typical conditions (Sean Isaac reported a similar snow pack on the Swiss Route on Asgard in August 2002, after the main thaw), though this spring saw atypical weather conditions of rain and high temperatures in mid-April.



('Serac Couloir' near Asgard)

In general, all aspects had similar snow textures and weaknesses and route choice often became a matter of linking mixed ground and avoiding open slopes. After fresh snowfall on the 12th and 13th June, between 2 and 20 cm of windslab accumulated on lee slopes (SW facing), presenting an easy shear and further entertainment.

Contingency (first aid, sat phone, two way radios – rescue, insurance)

There are no mountain rescue personnel or specialist equipment on Baffin Island and no permanently stationed helicopter within 1000km. The last major mountain rescue required specialists to be brought over from Banff National Park. The Inuit are willing and highly capable of valley rescue, though with poor ice conditions in Pangnirtung Fiord may be 5-7days walk from the

main climbing areas. Climbing in the Cumberland Mountains/Auyuittuq is therefore quite serious and this makes for very satisfying mountaineering, requiring a high degree of self-reliance. We were fortunate enough to have served our climbing apprenticeships in mountain areas where a high priority is placed on self-sufficiency.

Our equipment needed to include anything we might need to stabilise and remove a casualty(ies) from the hill, however we brought little in addition to 'normal' winter alpine climbing gear other than a comprehensive first aid kit (Appendix 1) and a pair of light Motorola two-way radios. The two-way radios were useful for communication between the climbing teams, snowboarder and base camp. We also hired an Iridium Satellite phone in Canada, which had



(Duncan and Allan retreating from the Swiss Route; Mt Asgard)

good reception at every camp and gave us a measure of security previous expeditions would not have enjoyed (though we never used it). There were also short-wave radios at the emergency shelters built in the main valley by Parks Canada, running on solar power, these fixed frequency systems provide back up security, and are monitored regularly in high summer (but less so when we were there). All team members had emergency mountain first aid training and we took the excellent book 'Medicine for Mountaineering' which includes many expedition medical scenarios (good for bed time reading).

In addition to the satellite phone, first aid kit and two-way radios, we took Ortovox avalanche transceivers and spare batteries and two shovels (axe-adaptable). The remainder of our equipment was standard for cold weather alpine climbing. There is little need for head torches in Baffin in June, except for emergency dental work.

Insurance was provided through the British Mountaineering Council, American Alpine Club, and the New Zealand Alpine Club (Scottish, Canadian and New Zealand members respectively), and was typical of their 'greater ranges-expedition' policies.

We took a variety of photographic equipment including: two SLRs (a Canon A1, and a Canon EOS with wide angle lens), two Olympus compact 35mm cameras, and a Sony digital video camera, which with 4 spare batteries allowed us to shoot 12 hours of film. We used 45 rolls of various slide and print films (Fuji, AGFA and KODAK).

Food -

Our diet of ca. 4000 kcals/day was ample (Appendix 2), and though we had the same meal every day it didn't become monotonous. Couscous was an excellent base for the main meal as it cooks quickly and requires little stove time (4-5mins). Soya-based dehydrated chilli and Bolognese was a filling



dinner, and our supplements of soluble Vitamin C, multivitamins, olive oil, and condensed milk (often boiled in tin) were thoroughly enjoyed.

Fuel

Naphtha or white gas is the ubiquitous fuel of the Cumberland region, for skidoos, all terrain vehicles, and stoves. We filtered our fuel through a <math><1/2\text{mm}</math> mesh and had the use of two reliable, clean-burning, MSR Whisperlite International stoves for our whole trip. It is worth noting that Naphtha has a low flash point and as a result is hazardous to use in a tent.

We used approximately 17L fuel in 25 days without melting snow, and as we had planned for the latter eventuality (being lucky to find small icy pools on the glacier, and running water in the valley) we had 8L remaining which we gave back to Joavee Alivaktuk.

Environmental considerations

All litter was packed out, including toilet paper. Our campsites were usually on the glaciers, and our approach march was on an established trail, minimising impact on the fragile arctic soils.

Parks Canada removes faeces from the outhouses adjacent to the emergency shelters by helicopter – we left some of our solid waste in the outhouses, and the remainder was buried in crevasses.

Finances – a summary

Expenditure		Income	
Flights ¹ (Ottawa- Pannirtung)	3144 ²	Scott Polar Research Institute (Gino Watkins Memorial Fund and Arctic Club Awards)	700
Park fees	255	Scottish Arctic Club	500
Freight (Nova Scotia- Pangnirtung)	392	Scottish Mountain Trust	250
Freight (Pangnirtung- Summitt Lake)	265	New Zealand Alpine Club	160 ³
Food	315	Personal contributions ^{3,4}	3951
Fuel	50		
Insurance	650		
Snowmobile (Pangnirtung- head Pangnirtung Fiord)	190		
Miscellaneous (accommodation, satellite phone rental etc.)	300		
TOTAL	5561		5561

Table 1 Summary of Finances

notes

1 Excluding travel to and from Canada

- 2 All costs UK-Sterling.
- 3 Personal contributions = £790.20 per person (3951 / 5)
- 4 Total money raised (total income-personal contributions) = £1610

Environmental monitoring

We were keen on contributing to the understanding of the mountain environment, and as well as recording weather patterns and snow conditions during a time when there are rarely any visitors, after discussion with Parks Canada, we collected data on flowering plant blooming dates, and wildlife activity

Observations at Summit Lake were taken on a 20m high south facing terminal moraine with a sandy matrix (65° 13'W, 66° 37'N).

Genus species	Flowering date	Comments
Arctic willow (<i>Salix polaris</i>)	2-12 June onwards	On all aspects below 500m from early June. At 700m by 12 June. Bud heights max. 15cm.
Arctic primrose (<i>Primula mistassinica</i>)	10th June onwards	On S. aspects began flowering by 17 th at 500m and below 500m sometime before this date.
Purple saxifrage (<i>Saxifraga flagellaris</i>)	mid-late June	Difficult to identify as flowers were just emergent
Dwarf Gentian (<i>Gentiana tenella</i>)	After 17 th June	Beautiful tiny pale blue flowers (Yellow arctic poppy – not flowered at any altitude by 17 th)

Summary of Summit Lake Botanical Observations

Other biotic activity

A pair of hares, still with full winter coats kept us company at our camp at Summit Lake from the 9th June onwards
Adult wolf tracks were followed down the main Weasel valley trail for the 15th, 16th and 17th. Fox tracks were seen in the valley, on the main trail and many minor game trails.

Numerous Canadian Geese noisily passed all our valley camps. Snow bunting and a pair of ptarmigan were seen on south facing slopes on the approach to Mt Asgard on the 4th June.

A bumble bee flying north passed us high on the Caribou glacier on the lower slopes of Mt Asgard, it is not obvious where the bee was it going – there is only an ice cap for the next 300km north. Perhaps it was my colorful climbing helmet.



(Purple saxifrage; *Saxifraga flagellaris* 17 June)



(Budding Arctic Willow; *Salix Polaris* 10th June)

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Scott Polar Research Institute
(Gino Watkins Memorial Fund and Arctic Club Award)

Scottish Arctic Club

Scottish Mountain Trust

New Zealand Alpine Club

Equipment and logistical support:

Icebreaker New Zealand (Merino wool thermal underwear)

Mountain Equipment CO-OP Ottawa (Snowshoes)

First Air

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Useful contacts and sources

Auyiittuq National Park, Pangnirtung, Nunavut

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Joavee Alivaktuk (Alivaktuk Outfitting), Pangnirtung, Nunavut

Phone: (867)-473-8721, email: jalivaktuk@nv.sympatico.ca

Scott Polar Research Institute

<http://www.spri.cam.ac.uk/> (Gino Watkins Memorial Fund)

<http://www.sun.rhbnc.ac.uk/~uhap057/ArcticClub.htm> (Arctic Club)

Scottish Arctic Club

<http://www.scottisharcticclub.org.uk>

Scottish Mountain Trust

www.smc.org.uk/trust/trust.htm

New Zealand Alpine Club

www.nzalpine.org.nz/

First Air (Ottawa)

<http://www.firstair.ca>

Phone: (613)-839-3340

Icebreaker (New Zealand)

<http://www.icebreaker.co.nz/Flash.html>

Mountain Equipment Coop (Ottawa)

<http://www.mec.ca>

Phone: (613)-729-2700

Selected Books:

Himalayan Climber, Doug Scott, Baton Wicks Publications; ISBN: 1898573166

The White Bear, encounters with the master of the Arctic Ice, Charles T Feazel, Holt Henry and Company ISBN: 0805011536

The Nunavut Handbook, Marion Soubliere, Eakin Press, ISBN: 1550365878

Medicine for Mountaineering, And Other Wilderness Activities, James Wilkerson, The Mountaineers, 5th Edition, ISBN: 0-89886-799-1



(Striking Camp beneath Mt Asgard)

Appendix 1

First Aid

Voltarol 100mg suppositories x 5
 Paracetamol 500mg tabs x 16
 Ciproxin x 6
 Loperamide 2mg x 6 / Immodium x 20 (for diarrhoea)
 Rehydration Sachets x 5 (+spoon)
 Solpadeine
 Chlorpheniramine tablets (Anti-histamine) x 28
 Tyzet Throat Lozenges pack
 Hydrocortisone cream
 Ciprofloxacin (Antibiotics) 500mg x 24
 Panodil 500mg Sachets x 5
 Codeine Tablets
 Antacid Tabs pack
 Sterile saline 20ml tubes x 5
 Tweezers
 Thermometer
 Scissors
 Cotton Buds
 Condoms
 Safety pins x 10
 Sterile Gloves x5 pairs
 Lancets x 2 (sterile needle)
 Medi-swabs x 3
 Sterile gauze swabs
 Plastic Fabric Strip 5 meters
 Plasters assorted x 20
 2nd Skin tape
 Non-adherent dressing 5cm x 2
 Non-allergic Tape
 Wound Dressing
 Triangular bandages x 2