

The Svalbard Atomfjella Expedition Report



Location: Svalbard

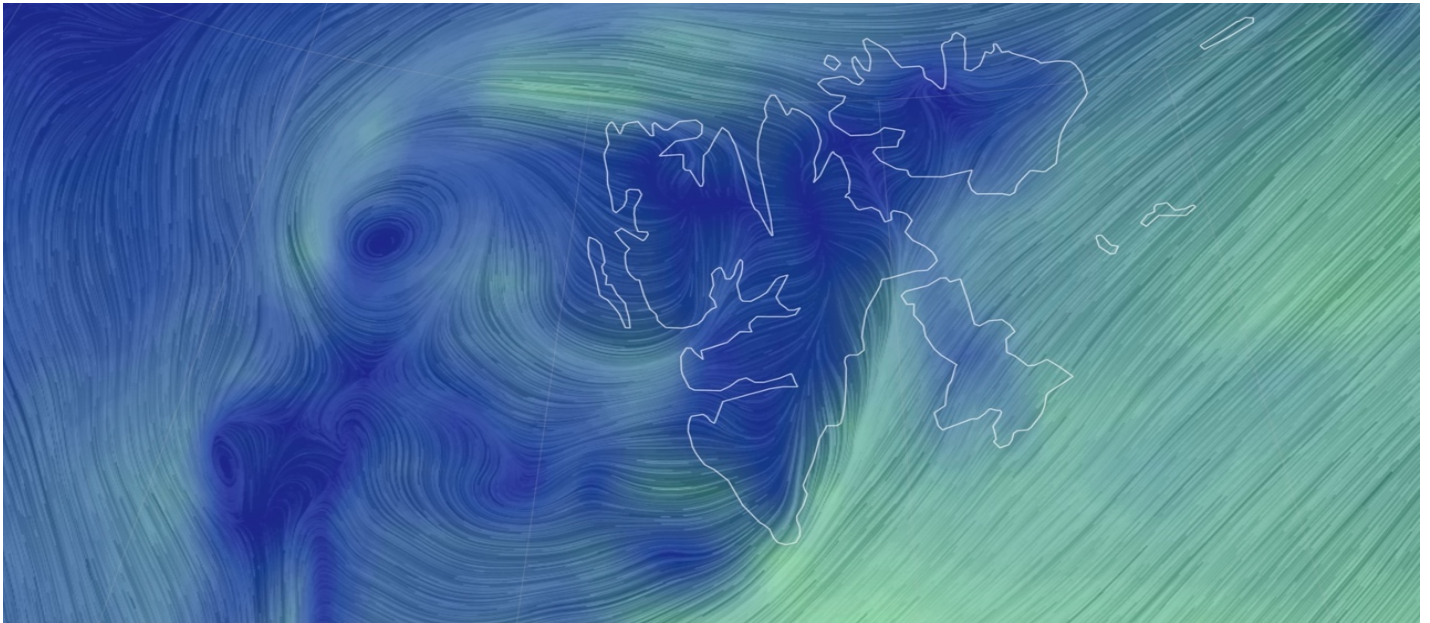
Dates: 06/04/2024 – 11/05/2024

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Acknowledgements

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Jean Burgun – our technical advisor for power kites and light weight polar expedition practises. His sharing of knowledge and insights into the extremely niche world of expedition kiting has been essential.

Niklas Gerhardsson – one of the best parts of big trips is the people that make them. This couldn't be stated more so than for Niklas. A 25 year resident of Svalbard his knowledge, experience and advice really made this trip what it was.

Iain King & Tom Lawson – our firearms advisors. The paperwork and practical learning for this element of the expedition was one of the most involved parts pre-departure and we are thankful to have had good advice and training.

Sam Doyle & Tina Luke – our remote weather and comms managers. A task made a little easier this year by all of the wilderness reaching phone signal in Svalbard. Despite that, it is indispensable to have dependable people back at home.

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The Gino Watkins memorial fund



THE ANDREW CROFT
MEMORIAL FUND



Summary

by Expedition Leader Sasha Doyle

We decided we'd like to go on an adventure we weren't really sure we'd be able to pull-off, and this one turned out to be a good choice. Our journey in Svalbard was long, arduous and incredible testing. I knew it would be, we wanted it to be, yet I never fully appreciated the depth of the challenges this trip would present. Reaching our proposed base camp in the Atomfjella mountains took us two and a half weeks, a week longer than anticipated. Our journey would begin by travelling down long valleys that wind up and pop us out onto the icecap. We learnt quickly that the winds loved to whistle down all the valleys, but unfortunately for us, in the opposing direction! We battled against the headwinds for some time; attempting to gain some ground with the kites but would become overpowered and underpowered with the fickle and gusty winds, and after much persistence we eventually succumbed to hauling. It feels like torture when the difference in wind direction can mean hauling 100kg into 30km wind, in -20°C, or cruising happily downwind without a care in the world. After a long week of the former, we opted for a more direct route up onto the icecap, which was much steeper and proved quite a feat. We broke this into two days of shuttling, which in the end felt like a great tactic. Once we were up there, the winds luckily turned in our favour, and we were blown North for some time along the icecap...without a care in the world. There were moments where arctic terns flew along with my kite, and the great expanse of ice stretched out ahead of us and I felt like I was floating on top of a gentle world of white. The hardships of the week before melted away.

After a day of fairly easy kiting, we lost all visibility the kiting felt strange and unnerving. We would have to stop occasionally to regroup after losing sight of each other. That being said we continued to make steady progress until being becalmed with clear blue skies near Newton toppen, the highest peak in Svalbard. From this point we did two final days of hauling into base camp.

Arriving into our base camp the weather was incredible. Only the squawks of nesting Auks pierced the silence of the dark blue sky towering over this timeless world we had found ourselves in. We were exhausted, but elated to have finally made it and celebrated with a sip of Fireball 'whiskey'.

Despite being exhausted, we feared the weather wouldn't last and so decided to get up early the following morning and go and find something to climb. Straight away we were drawn to a long ridgeline leading up to Chadwickryggen, with big rocky spires, and we decided that it would be rude not to give it a go! It proved a little longer than we first thought, 1100m and challenging at times, but we were back at our tent for 1am and thrilled to have had such an adventure already. The following week we managed to climb one short but technical route on a subsidiary summit of Westbyfjellet and also a direct line up the SE face of Chadwickryggen in an evening (when the snow had re-frozen).

We then decided to leave as spring was arriving and we feared we may be becalmed and the valleys lower down near Longyearbyen melted out. Despite leaving early we were right. We hauled for two days, had a day skiing up and down Newton toppen (as we waited for some wind) but even the forecasted wind only got us a little way along the ice cap before forecasts of calm came in and news from a friend in Longyearbyen that the valleys had already started to melt out. Unsure of what to do, we hatched a plan to head down to the coast, via the old settlement of Pyramiden and onto Billefjord, hoping to jump onboard a tourist ship and safely return to Longyearbyen. It was a very difficult push to make it down to the bay and the edge of the sea ice, and we came across many fresh polar bear prints which got the heart pumping! All being said, it all worked out, we were delighted to not see any polar bears, and be lucky enough to walk straight off the sea ice edge onto the safety, warmth and real food on the tourist vessel.

The Team



Image 1: Ed Luke & Sasha Doyle, Naustet, Longyearbyen.

Objectives

Our aim for this expedition was to make it under our own power to the Atomfjella mountains and climb new routes. The Atomfjella are considered by many to be the most beautiful on the island, and are a prized destination among the skiing community. A positive and inviting climbing account from the Slovenian, Swiss-German expedition of 2007 fuelled the fire and from this inspiration we had a plan starting to form. On account of the limited new routing done in the area, we didn't manage to obtain pictures of the mountain faces from earlier parties as is normally possible in more established climbing areas. This added an even more adventurous feel to our plan as no amount of squinting at Google Earth can reveal the unknown dimensions of a mountain face or the feeling of watching avalanches crash down through a silent arctic morning. Another factor to keep in mind for this location is the high outfitter cost for snow machine travel which runs to 200NOK/£15 per kilometre. Another desire for this expedition was to be fully self-contained and able to fend for ourselves, a very different experience would have been had if we were to have stepped off the back of a snow machine after 8 hours and begin climbing the next day, well rested and fresh from civilisation.

Preparations & strategy

The majority of our time in the Atomfjella and the way to, would take place outside of what the Norwegian authorities call Management Area 10. Therefore, we applied for a 'Notification of travel plans in Svalbard for individual travellers' on the Governor of Svalbard's website (Sysselmesteren) in mid September of 2023 and were granted a permit in early October.

When to go and for how long? The spring is the obvious choice with the balancing game between very cold temperatures at one end and big thaws on the other. We intentionally booked initial flights 6 weeks apart to allow plenty of time for the unknown temperament of the wind. From April 16th onwards Svalbard has the midnight sun – 24 hour daylight. We were advised that by May 20th the lower valleys of Adventdalen and Sassendalen are melting out and typically unpassable by snow machine, making a pick up due to equipment failure or food shortage very unlikely.

Despite our work in Antarctica we would both say that every cold place has its own qualities and new things to learn. In preparation for Svalbard we spent 2.5 weeks on the Hardangervidda plateau in Norway hauling, kiting, camping and testing our choice of foods. This was a good training experience despite the

warm temperatures and days without flyable wind. We managed to test fly all 7 kites and got to grips with what our hauling set up would be, especially with hills involved. We didn't drag old car tyres around any sports fields ahead of this trip and I really don't think that we suffered for the lack of this enterprise.



Image 2: Tacking upwind on the 11m Ozone EXP kite, Sassendalen.

Route, Navigation and Comms



Mapping is available online for Svalbard - <https://toposvalbard.npolar.no/>

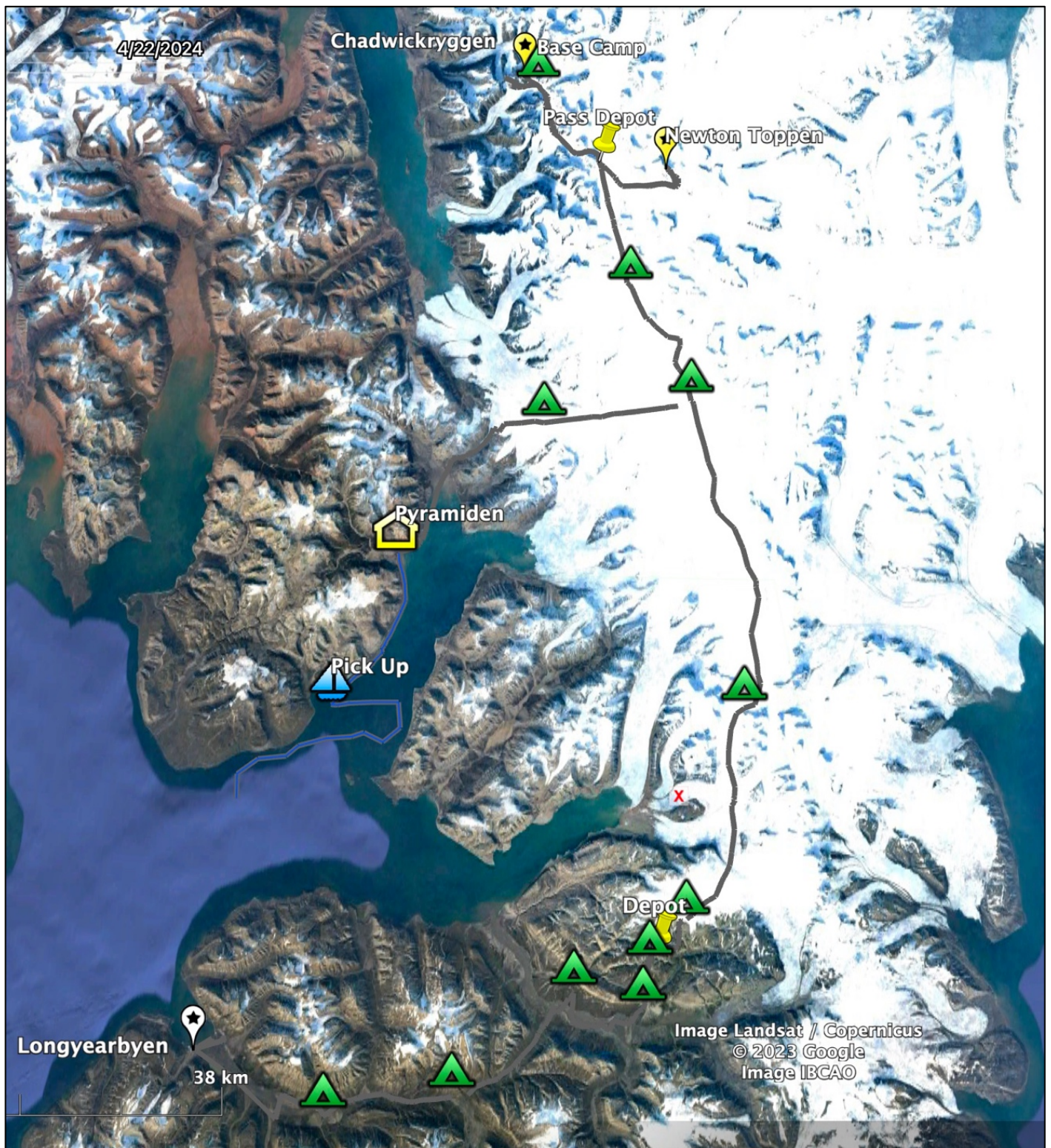
A combination of Svalbard Topo, Google Earth and the downloadable phone app 'Norgeskart' (logo above) was used to plan the route. We then checked this over with Niklas Gerhardsson for any major turning points or well known hazards – open crevassing. On the move in whiteout conditions with a kite the Garmin Foretrex 601 wrist mounted GPS was essential, retrospectively to have one each would have been much better. We took a Garmin 65s GPS handheld which rarely left the rucksack and the backup for this unit was a Garmin Explore+ which we ran on long interval tracking mode for the first time, both when traveling and climbing.

We were lent two Icom IC-M73 marine VHF radios which were a brilliant addition. There's a big distance between two people with 25m/50m lines out with kites, and pulks following behind so a means of communicating clearly is very handy and makes things safer as well. Extension mics for these didn't work too well and we removed these eventually. The batteries on these radios can really handle the cold and to get over a week's use out of them was not uncommon. Two Garmin Inreach units were also taken and prior to launching the kites we would always check that both radios and Inreaches were switched on, should we become separated.

Wilderness 4G phone reception. This was a very strange experience and whilst it certainly made getting the weather forecast easy, it was odd to receive Whatsapp messages and emails about work in the middle of nowhere. Phone reception was with us all the way into Sassendalen and then very surprising around spot height 1245m on the Northern reaches of the ice cap. In addition to this we took a satphone which we

borrowed. This was to provide guaranteed comms in the event of a medical emergency or to contact the authorities if we required rescue.

Google Earth overview of the recorded track:



Fuel & Food

We took 14 litres of Primus 'power fuel' (petrol) carried across 16.5 MSR 887ml bottles, fitted with child resistant fuel caps. After 27 days out we returned with 3.5 bottles. The first 8 days were quite cold at -20°C. 1L hot water Nalgene bottles were made most nights until towards the end of the trip. All of our food supplies were just add water. And we typically started the day with 2L of fluid each across a thermos and 1L Nalgene in an Outdoor Research insulated sleeve.

All of our food preparation was done in the UK, a zip closure cool bag was used for each week's ration between the two of us, typically weighting 8-9Kg. In total we took 5 of these bags and after a false start ditched a further 5kg of food out of the total supply. In reality we ended up doing considerably more hauling than anticipated, due to the direction or lack of winds. This form of travel burns a huge number of calories, and after 27 days we had lost a considerable amount of body fat.



Image 3: Dreaming of food and making sure we don't eat it too quickly. Stock checking.

Polar Bear Protection

When people think of Svalbard, they think polar bears. Which is a good reason to be fearful, but not a reason to never go and explore these amazing islands. I had started to note people's experiences and advice on this topic since starting to spend time in the Arctic in 2019. Advice is at times quite varied and perhaps in the majority of cases lacks experience to back it up. With this in mind we listened to the most experienced people we know who are Nick Cox and Niklas Gerhardtsson. For documentation on the topic the University of Copenhagen's 'Safety Manual for Field Work in the Arctic' page 35 has good information on bear behaviour and what not to do: <https://eastgrip.nbi.ku.dk/documentation/safety-in-the-arctic/>

At the time of writing Sysselmasteren require for the borrowing of a firearms from a local resident the following documents; passport, criminal record certificate not older than 3 months and documentation that you have undergone weapons courses, military service or the hunting test. For us in the UK the Pre-DSC1 course was sufficient to meet this requirement. We used <https://wildtrackpro.com/> for this course based near Carlisle. In addition to this we spent time with local deer stalker Iain King in the Highlands and had many phone calls with Tom Lawson. This discipline is very much a skill in its own right, and I would advise spending

as much time as possible developing it well ahead of time. On arrival in Longyearbyen Niklas also took us to the local range to check the rifle sights, test fire the flare gun and make sure we were familiar with local procedures for rifle handling. We borrowed two 30.06 rifles from him and once out of town loaded them with lead tipped bullets. A note for those who want to travel in Svalbard independently. If you do not know a local the rental option will quite possibly be limited to the shop Longyear 78 who charge a considerable fee per week.

We took an 'Ice Bear Alarm' fence and set it up every night. To dispel any miss understanding, triggering of the fence by a bear is to wake you up, not scare away the bear. This may be a lucky side effect of the very loud bang. The system is heavy, expensive and very fiddly to assemble in the cold. It is also incredibly dangerous as the 4 Cal cartridges would probably take your fingers off and make you blind if set off accidentally during dis/arming. We used 8 alarms (2 per pole) with two strands making up our perimeter, an upper and a lower, the later being no higher than knee height. The total size was the recommended 5-8 metre spacing. We went to the extent of equipping each of the 4 corner poles with 3 bamboo pegs and guy lines. The trickiest part of putting up the fence is tying the trip lines in. We used a continuous line that we clove hitched and knotted onto small carabiners clipped to each of the activation plates (sears). This allows for adjustment at each camp set up. A good quality line reel would be recommended as we used the provided plastic one and a pencil to spin it on. The shop Longyear 78 stocks spare parts and sells the 4 Cal ammunition for the Ice Bear Alarm fence (check expiry date). Older military trip wire fences have been used in the past but are now no longer available these look to be much smaller units. A well set up fence can make for a much better night's sleep.

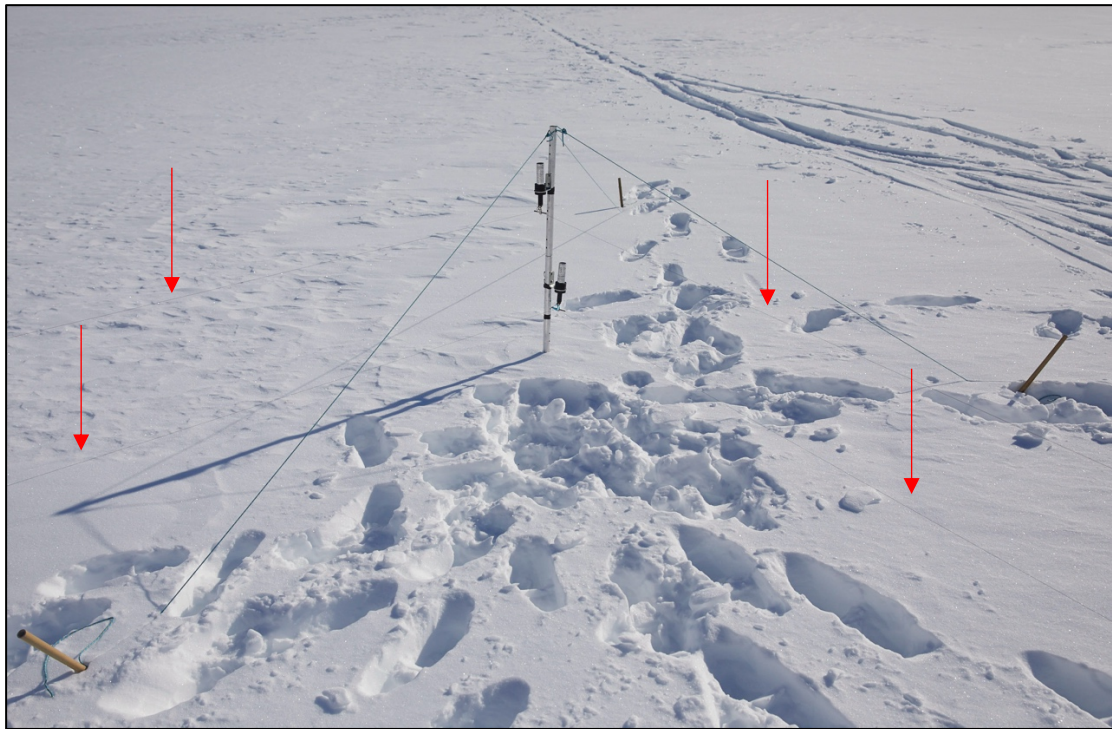


Image 4: shows a corner pole of the fence with two trip lines (arrowed) and 3 guy lines. The firm fixing of the corner poles is paramount to the effective functioning of the system.

In addition to the rifles and flare gun we also took rape alarms stashed in a chest pocket or clipped to the roof of the tent. These make a loud 120dB noise when a pin is pulled out and only cost £4 each.

Insurance

The Sysselmasteren's issued permit stated the following:

'Search and rescue insurance

Pursuant to the Regulations relating to tourism and other travel in Svalbard, Section 7, individual travellers must have sufficient insurance, or as the case may be put up equivalent guarantee, to cover any expenses incurred by the authorities or others in connection with search- and rescue operations or the conveyance of patients which have to be carried out in connection with their travel in Svalbard.

The insurance or guarantee shall cover such expenses without regard to negligence by the tour participants. Every person in the group must have coverage at all times for the insurance sum that is set. The insurance must cover the planned period of the trip with an addition/ safety margin of 50% of the trip period in case of delays.

In a situation where an accident occurs where we will demand the rescue expenses refunded, and if you wish to continue the activity, it is expected that your insurance/bank guarantee is adjusted such that there always is security for the below set amount.

The amount is hereby fixed at **NOK 150 000, -.**

At the time of writing, this amount is approximately £11,000. To cover this we both renewed our membership to the French Alpine Club, who's global insurance covers up to €30,000 and cost €209.10 per year.



Image 5: Checking out leads in the sea ice and more concerning fresh polar bear prints, Billefjorden.

Ascents

We arrived at our intended base camp on the Upper Smutsbreen Glacier (N79.086198, E16.862618) on the 25th of April, 15 days after leaving Longyearbyen. We noted two ski tracks in the valley and approximately 0.5 metres of accumulated snow on the glacier. Temperatures were now much warmer > -10°C and the weather calm and stable.

SE Ridge of Chadwickryggen 1100m 23 pitches, Scottish grade IV, 5

26/04/24

Weather conditions: Sunshine, 0 wind.

Traverse into the ridge from the Right making use of a natural ledge system that starts just above a large boulder.

1. 300m (6 pitches) of rock slabs bring you to a steep black chimney filled with loose flakes. Once out of the chimney step back left to easier ground.
2. 3 pitches bring you to the top of a small pinnacle and the base of the big tower.
3. 2 pitches to the top of the big tower.
4. 60m abseil down the West side of the big tower into the snow Col.
5. 1 pitch - a spur is seen up and left of the col, climb the icy groove leading up to this and then the cracked wall above to belay on a sloping ledge.
6. 1 pitch – steep loose ground leads to an open slope.
7. 30m trend up and across the slope to emerge over a crest and belay beneath a big clean orange wall.
8. 90m traverse across and up until a snow gully after 60m brings you back onto the ridge.
9. A snow chute is seen to the left and can be down climbed to reach a broad colouire.
10. Climb up the snow slope to reach and climb a steep compact wall to the left of a large chock stone.
11. 2 pitches of snow ramps.
12. 1 pitch to the crest of the ridge
13. Finish on level ground 200m from the final pinnacle.

Descent: Avoid the first deep gully seen down to the Left and cross slopes to reach the second deep gully. Follow this all the way down to the foot of the mountain.



Chadwickryggen's SE ridge as viewed from base camp

Weather conditions: Low cloud, poor visibility <300m, light breeze West, -10°C



1. Ascend 150m of snow slope to belay at the foot of a notch
2. Climb notch and gully above 60m
3. A snow mushroom is over come to reach a chockstone with a cracked wall to the Right. After the chockstone belay on a ledge out Right.
4. The gully now becomes a narrow chimney/groove. Climb this and pull over exposed slabs to reach a ledge (crux).
5. Climb the cracked and blocky face above and Left to reach the ridge crest. Follow the ridge Rightwards through loose pinnacles to the summit and belay on a pinnacle.

Descent: Abseil directly down to easier ground in 4 x 60m rope lengths. Possible alternative option would be to traverse further right from the top out into the wide couloir and descend this if snow conditions allow (unchecked).



Image 6: Sasha on the crux moves of pitch 3 of the new route Slush Puppy.

We waited until late evening for frozen conditions underfoot. Total ascent time 2.5hrs, predominantly snow slopes with the occasional icy/rock step.



Image 7: looking down the face from near the summit.

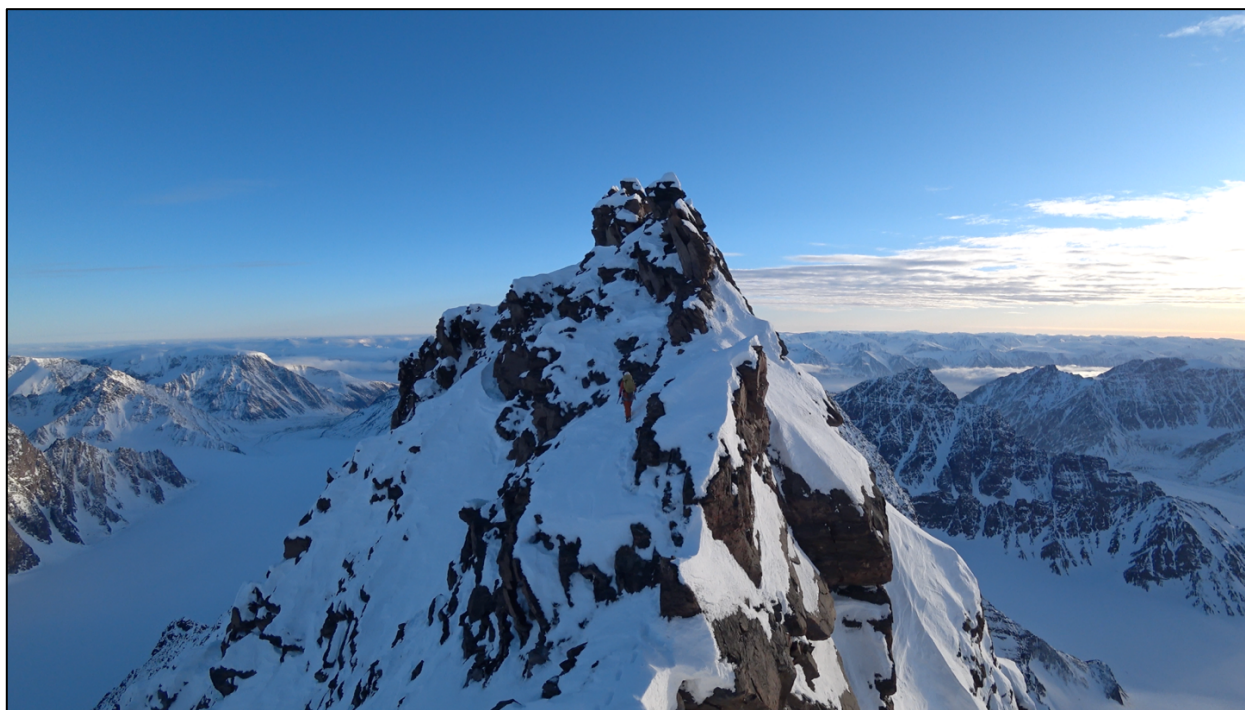
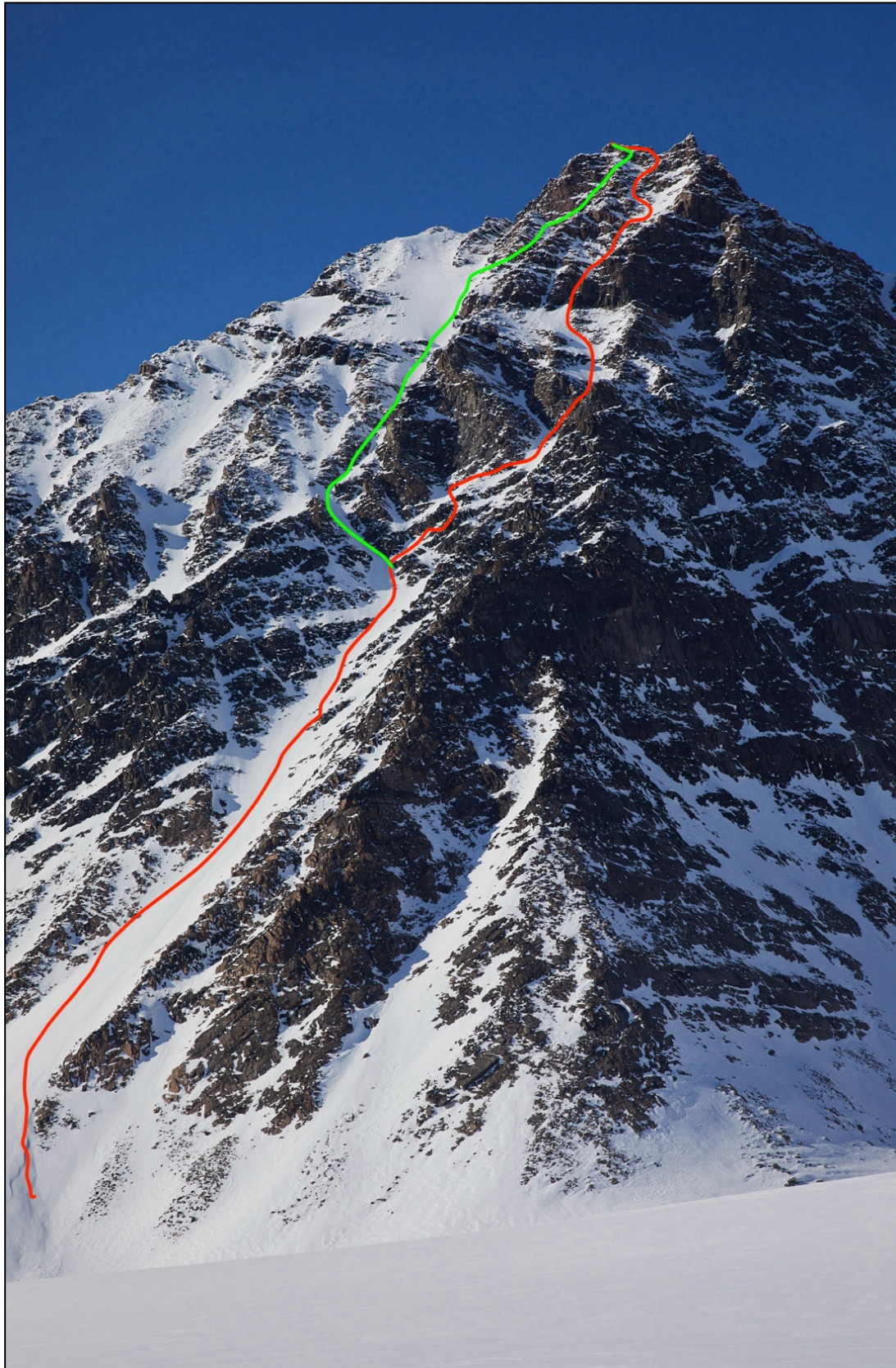


Image 8: Heading towards the summit block of Chadwickryggen.



Chadwickryggen's S/SE face, line of ascent in red, descent in green.

Expedition accounts

Expense		Income	
Flights	1661.86	Mount Everest Foundation Grant	4000.00
Insurance	354.00	Gino Watkins Memorial Fund	3000.00
Equipment	11600.00	The Arctic Club	500.00
Communications	408.90	Andrew Croft Memorial Fund	800.00
Consumables	1139.50	The Fell & Rock Climbing Club	500.00
Accommodation	260.26		
Training	500.00		
Total:	15924.52		8800.00
 Personal contributions:	 7124.52		

Itinerary

Trip Day	Exped Day	Date	Brief	Description	Camp Location
1		Apr-06	Fly	Manchester to Longyearbyen	
2		Apr-07	Longyearbyen	Preparation Naustet workshop	Longyearbyen
3		Apr-08	Longyearbyen	Preparation Naustet workshop, paperwork/permissions Sysselimesteren	Longyearbyen
4		Apr-09	Longyearbyen	Preparation Naustet workshop	Longyearbyen
5		Apr-10	Longyearbyen	False Start from Naustet	Longyearbyen
6	1	Apr-11	Longyearbyen Departure	-20°C E 25+kts, departure from road head Adventdalen	N78.175235, E16.196251
7	2	Apr-12	Adventdalen	-20°C Calm, E 10kts. Hauling into wind up 'Gorge' feature of Adventdalen	N78.19481, E16.716496
8	3	Apr-13	Adventdalen	-20°C NE 40+kts no move	N78.19481, E16.716496
9	4	Apr-14	Sassendalen	-20°C Brentskaret pass NE 30kts - Calm beyond. 25kts farside Sassendalen.	N78.281139, E17.200555
10	5	Apr-15	Sassendalen	-20°C E 35+kts no move	N78.281139, E17.200555
11	6	Apr-16	Nr Moskusdalen 'Hut'	-20°C E 0-30kts across valley increasing later, Strongest North side. Tacking up wind in Sassendalen.	N78.269519, E17.490212
12	7	Apr-17	Kolldalsnosa	-15°C, 0 winds, Depoted equipment at N78.314853, 17.529373. Hauling up hillside in stages.	N78.269519, E17.490212
13	8	Apr-18	Kolldalsnosa	-8°C SE 10kts snowing. All equipment up from Sassendalen. Same as previous day.	N78.306911, E17.51019
14	9	Apr-19	Ice Cap - Fimbulisen	-8°C E 30-40kts, Zero visibility to start. Collect depot equipment and establish camp on icecap	N78.342086, E17.645285
15	10	Apr-20	Ice Cap - Fimbulisen	-5°C SE 40+kts Visibility <100m no move	N78.342086, E17.645285
16	11	Apr-21	Philippbreen	-12°C Calm to start, PM: 5-10kts, SE 30kts by evening with heavy snow, low vis.	N78.522945, E17.893038
17	12	Apr-22	Lomonosovfonna	-10°C SE 15-20kts, PM 10-15kts.	N78.793891, E17.634473
18	13	Apr-23	Nr Sentralishetta	-10°C S 10kts whiteout until evening.	N78.899045, E17.33692
19	14	Apr-24	Trebrepasset	-15°C AM:SE 10-20kts PM: calm and sunny. 5am start to catch winds.	N79.009873, E17.18472
20	15	Apr-25	Atom Base Camp	-10°C calm and sunny. Depot'd none essential equipment on Trebrepasset. Haul over to Planetbreen.	N79.086198, E16.862618
21	16	Apr-26	Atom Base Camp	-8°C calm and sunny. Ascent - SE ridge of Chadwickryggen	N79.086198, E16.862618
22	17	Apr-27	Atom Base Camp	-5°C calm and sunny, restday	N79.086198, E16.862618
23	18	Apr-28	Atom Base Camp	-10°C 10kts W, low cloud, vis <500m. Ascent - Westbyfjellet East.	N79.086198, E16.862618
24	19	Apr-29	Atom Base Camp	-5°C calm cloudy at first then clearing. Ascent - SE face of Chadwickryggen	N79.086198, E16.862618
25	20	Apr-30	Planetbreen	-12°C Calm, low cloud, vis <500m. Haul over to Jelstrupfjellet, low clouds no visibility of mountain.	N79.038626, E16.965595
26	21	May-01	Stuttbreen	-5°C SE 10kts, low cloud damp air, vis <100m to whiteout. Picked up depot at Trebrepasset	N78.991473, E17.287931
27	22	May-02	Stuttbreen	Low cloud to start, clear by 10am. Calm & sunny. Newtontoppen ski	N78.991473, E17.287931
28	23	May-03	Spot Height 1245m	-10°C calm & sunny. Repositing haul up to Ice cap summit area at 1245m	N78.862341, E17.398181
29	24	May-04	Lomonosovfonna	Intermitent winds arriving from West with clouds at this height. Pitched tent 5 times	N78.788838, E17.577245
30	25	May-05	750m	-12°C Calm, cloud layers with sun above. Haul toward established ice cap exit/egress - Ragnardalen	N78.771596, E16.968835
31	26	May-06		Rest camp only at Pyramiden, arrived 9pm, depart 1am for boat pick up.	N78.651841, E16.352205
32	27	May-07	Sea ice edge	Boat pick up at sea ice edge - N78.517581, E16.101300 12:30pm	Longyearbyen
33		May-08	Longyearbyen	Breaking down equipment, drying, packing for return flights.	
34		May-09	Longyearbyen	Breaking down equipment, drying, packing for return flights.	No Travel Days: 3
35		May-10	Fly	Flight Longyearbyen - Copenhagen airport floor.	Kite Days: 6
36		May-11	Fly	Copenhagen - Manchester	Person-Hauling Days: 14
					Atomfjella Days: 4



Conclusion

With the demanding and challenging location chosen for this expedition the team successfully completed their intended goal of travelling unsupported over 300kms, moving considerable weight to arrive safely at the Atomfjella mountains. Three new routes were established in alpine style, carefully taking into account the increasing Spring time temperatures. With an eye to the remaining food supply and a first-hand awareness of the return journey, the long way home was made with substantial days and nights of hauling to minimise time spent in polar bear territory.