



COSMIC DANCER V



OXFORD WEST GREENLAND **EXPEDITION 2013**

SAILING REPORT

By Clive Woodman and Angela Lilienthal

BEGINNINGS

In early February we received an e mail from the General Secretary of the Royal Naval Sailing Association, Mike Shrives. It went something like this: “We’ve just had a request come into the RNSA office from a group of climbers who are looking for a yacht to take them to Greenland so they can go and climb some vertical cliffs 200 miles north of the Arctic Circle. You are the only 2 people I know who might just be mad enough to do it with them?!” Thus began our involvement with the Oxford West Greenland Expedition.

Two weeks later we met with the Tom Codrington, the climbing team leader, in an Oxford pub armed on our side with nothing more than a freshly downloaded set of Navionics Greenland charts on an iPad, and on his side some ideas as to what the climbers would like to achieve. Many e-mails later, and following a further meeting in the Royal Geographical Society together with Bob Shepton, the acknowledged expert on all things sailing and climbing in Greenland, the germ of a plan was beginning to emerge.

The Easter weekend saw the putative expedition team assemble in Torpoint for a sail training weekend on a Bavaria yacht kindly lent to us by the HMS RALEIGH Sailing Club. In what was the coldest Easter weekend since records began, we embarked on some team building, both afloat and in the pub afterwards. By the end of the week-end it was judged that we stood a fighting chance of getting to Greenland together and still end up on talking terms at the end of it – so the expedition was on!

COSMIC DANCER AT ANCHOR IN UMMANNAQ

THE EXPEDITION YACHT: COSMIC DANCER V

On the face of it “Cosmic Dancer V”, our 26 year old Sweden 38 sailing yacht, was far from ideal for an expedition of this sort.

She was more than seaworthy enough to cope with the open ocean voyage to Greenland and had all the required safety equipment, but she lacked a few things that many would consider essential on an Arctic expedition yacht.

She has no deckhouse, nor even a spray hood, to protect the crew from the Arctic elements, only a wide open deck. She sports a comfortably appointed interior and is ideal for cruising with 2-4 people but has all too little storage space for the mountains of equipment and food that a party of 2



sailors and 4 climbers needed to sustain themselves for 2 months. Finally, she only has a fiberglass hull and a small 28 horsepower engine, so prolonged motor sailing to windward or punching our way through broken sea ice were never going to be viable options.

The ideal boat would have been a 50ft+ aluminium or steel hulled yacht, with a powerful engine and acres of storage and bunk space. The only problem was that one was not available, or at least not at a price that we could all afford!



THE OWNERS – CLIVE & ANGELA

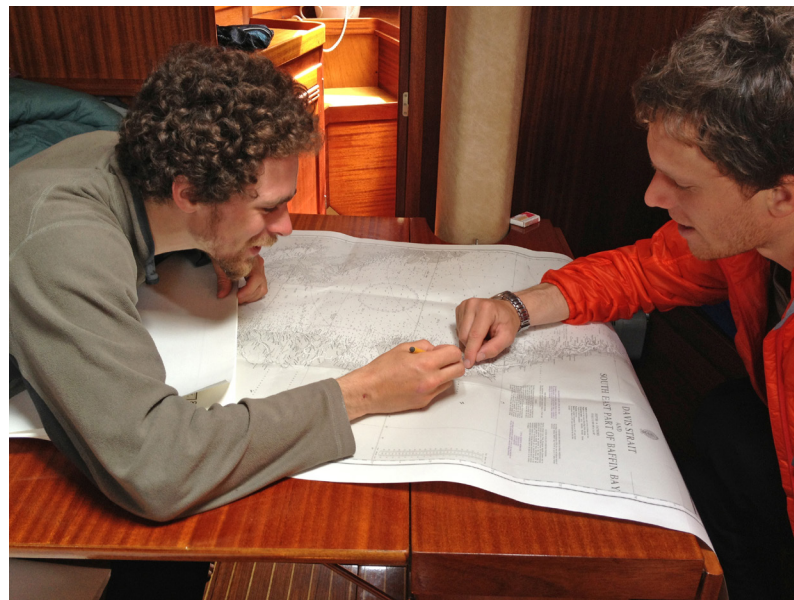
On the plus side Cosmic Dancer did have 2 owners who had been inspired from their earliest sailing days by Tillman's accounts of his sailing and mountaineering expeditions to Greenland and, possibly more importantly, who had a "somehow we can get this to work" attitude. This, coupled with over 120,000 miles sailing experience between them, which included 4 previous combined sailing/mountaineering expeditions to South Georgia, Antarctica, Svalbard and Arctic Norway, were sufficient for us to set aside Cosmic Dancer's shortcomings as an Arctic expedition boat and try to make it all work.

GETTING TO GREENLAND

At the time we signed up to helping the expedition, Cosmic Dancer was laid up ashore for the winter in Milwaukee following an extended 4 month cruise into the Great Lakes the previous season.

Our initial thoughts went something along the lines of "Well, we're on the right side of the Atlantic for this. We've done the hard bit of crossing the ocean. It can only be a short hop from the east coast of the USA up to Greenland". How wrong we were!

It was only when we got down to some serious passage planning that the full enormity of the task began to dawn on us. We would have to sail over 1,500 nautical miles to get from Milwaukee to Montreal where we were to pick up the first of the climbing team. It would take a further 1,000 miles of sailing to get from Montreal to St John's Newfoundland, our stepping off point for Greenland. The crossing of the Labrador Sea and passage up the West Greenland coast would account for a further 2,000 miles, so by the time we reached



TOM AND PETER PORING OVER THE GREENLAND CHARTS

the expeditions first objective, the Horn of Upernavik, we would have already sailed almost 4,500 nautical miles.

In contrast, had we been setting out to do the same trip from Scotland we would only have needed to sail a little over a third of that distance! Such are the tricks that Mercator charts play on you when estimating relative distances at these latitudes.

Covering these distances, and arriving in Greenland in time for the climbers to do their bit, meant launching Cosmic Dancer at the earliest possible point in the season. The pilot optimistically stated that the sailing season in the Great Lakes starts in early May. That may well be so, but we didn't find any other yachts on the water when we set out on 8 May and it didn't take us long to find out why!

With the water temperature on Lakes Michigan and Huron no more than 2 degrees Celsius, and with the ice only having cleared from many of the harbours a week or so earlier, the first 800 miles of the trip from Chicago to Detroit were a truly "chilling" experience and far colder than anything we were later to experience once in the Arctic. This, coupled with a tight timetable which made overnight sailing unavoidable, all added up to making this the toughest leg of the entire trip.

The leg from Detroit through Lake Erie, the Welland Canal, Lake Ontario and the Upper St Lawrence River to Montreal was slightly warmer, but once again the deadlines made for a punishing schedule with us having to average over 70 miles a day in a series of long day sails.

On reaching Montreal we faced 2 new challenges.

The first was somehow stowing the vast quantity of food and climbing equipment that had either come out by air with Peter, or had been purchased whilst in Montreal. At first it seemed impossible, but somehow we did it in a marathon 48 hour session, at the end of which Cosmic Dancer was floating several centimetres lower in the water!

The second challenge was to take our 2 newly joined climbers, Tom and Peter, whose sum total previous offshore sailing experience amounted to one weekend in Plymouth Sound, and turn them into a crew that was capable of sailing Cosmic Dancer 1,500 miles across the Labrador Sea to Greenland. To do this, we had a couple of hundred miles relatively sheltered sailing in the outer St Lawrence River, followed by 800 miles of altogether more serious sailing in the Gulf of St Lawren-



TOM LOADS ALL THE CLIMBING EQUIPMENT

ce and along the southern Newfoundland coast with its infamous reputation for fog and icebergs.

It was a baptism of fire. With only 3 of us on board, within 24 hours Tom and Peter found themselves taking alternate 3 hour solo watches on deck, with the skipper, Clive, permanently on call for sail changes and doing radar watches down below in the frequently foggy conditions.

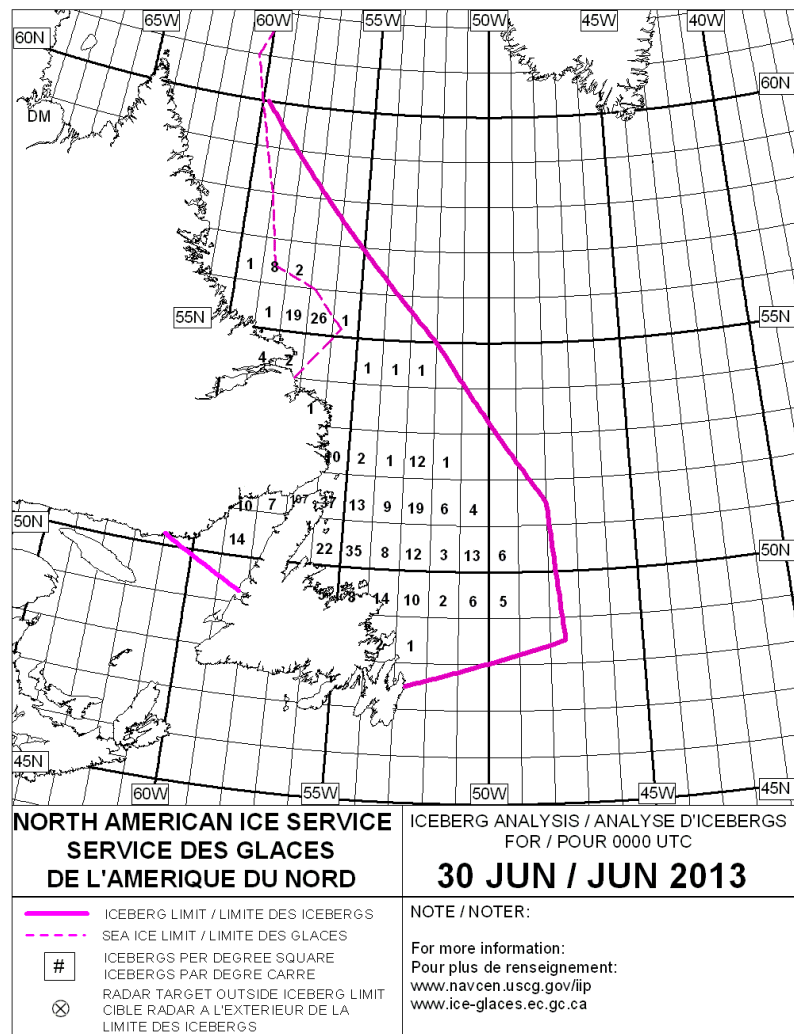
Between Quebec and St Johns, we made 3 short stops to take on fuel and water, Cap D'Aigle, St Anne de Montes, and the French Island of St Pierre, with the remainder of the 1000 nautical mile trip being made non-stop.

The learning curve during this period was as vertical as the cliffs Tom and Peter were to climb later during the expedition. However it represented a massive achievement. Tom and Peter started the leg as essentially complete novices and ended it as competent watch leaders with enough logged miles under their belt to qualify them as RYA Coastal Skippers.

On reaching St Johns, Newfoundland we were joined by Cosmic Dancer's other owner, Angela for the crossing to Greenland. This allowed us to relax to a 1 in 3 watch system, with Tom, Peter and Angela doing 2 hours on 4 hours off with Clive once again permanently on call.

We had never expected the leg across the Labrador Sea to be easy, but we also never expected to have to deal with 3 full gales in less than a week. Whilst the winds never got much above Force 8, the sea states we encountered during this time were out of all proportion to the wind strength. They were short, slab sided and confused, the sort of waves you might expect to encounter in wind against tide conditions in a Force 8 Gale in the Alderney Race, but not in the open ocean. We suffered one knock down when a particularly ugly wave came at us from nowhere and hit us broadside on, and on another occasion had to heave to under storm job alone for 12 hours.

It was an exhausted but ultimately very relieved crew that arrived in Nuuk, some nine and a half days after setting out from St Johns. It was a tribute to the strength and seaworthiness of the yacht that Cosmic Dancer sur-



STORMY SKY OVER NUUK



vived the experience unscathed, even if her crew were feeling more than a little battered and bruised!

We spent 3 enforced days alongside in Nuuk waiting for yet another gale to blow through, before setting out on the back end of the gale bound for Illulisat in Disko Bay, where we were to pick up the final 2 members of the climbing team, Ian and Jacob, before continuing north to the Horn of Upernavik.

This was ultimately to prove the most frustrating leg of the entire

trip. After 12 hours of almost “too exhilarating” sailing with the tail end of the gale behind us, we subsequently encountered persistent strong headwinds and a one knot counter current. With only a 28 horsepower engine, there was no chance of motor sailing against these headwinds and we were reduced to tacking, often at angles greater than 100 degrees, into a short uncomfortable chop making good little more than 2.5 to 3 knots in the direction we wished to travel.

On reaching Disko Bay a challenge of a different sort faced us. The wind died, only to be replaced by thick fog and heavy ice. We got to within 8 miles of Ilulisat only to be confronted by a seemingly impenetrable wall of ice blocking our way. Whilst our radar was good enough to stop us running into any of the individual icebergs, it was never going to allow us to find a lead through the maze ahead.

We waited until midday when the fog started to burn off, sent Tom to the top of the mast to try and spot open leads, whilst motoring backwards and forwards for almost 12 hours trying to find a break in the ice, before finally giving up and backtracking to Aassiat, with instructions being given to Ian and Jacob to somehow RV with us there. This they did, with the help of local seal hunting boat who with their vastly superior local knowledge (and more “robust” attitude to crashing their way through ice!) found a way through that that had eluded us.

Once again ice was to frustrate us on the very final leg from Aassiat to the Horn of Upernavik. We set off hoping to sail anticlockwise around Disko Island through the stunningly scenic Vaigat channel. For 14 hours all went well, but just as we were about to enter the Vaigat we once again found the entrance blocked with ice, necessitating a lengthy backtrack and taking the longer clockwise route around the island. Not for the first time since arriving in Greenland, a leg that we had thought we would take a mere 30 hours to complete, ended up taking almost twice as long.

NUUK HARBOUR



However, shortly after midnight on the 19 July, 74 days and 4,411 miles after first setting out from Milwaukee, we dropped the 4 climbers off at the foot of the Horn of Upernavik. It had been a long, hard, exhausting trip which at times had pushed us all close to the limits of our physical and mental endurance, we had arrived a few days later than originally planned, but we had done it!

It was now over to the climbing team to do their bit, whilst we looked forward to what we hoped would be a more relaxing period of sailing as we dropped back into a supporting role for the climbing team. Not for the first time on the trip we were destined to be proved wrong!



THE CLIMBERS WITH THE HORN OF UPERNAVIK IN THE BACKGROUND

SAILING IN GREENLAND

On recovering the climbers after their successful ascent of the Horn of Upernavik, we subsequently took them to 4 other climbing locations in Umanaq fjord, 3 of which were previously unexplored and unclimbed. In the periods whilst the climbers were on the rock, we set out to explore as much of Umanak Fjord as possible. We succeeded in doing plenty of sailing, but it was not always quite as relaxed as we had hoped for.

Even in the innermost reaches of the fjord, we were to discover that the wind in the region seemingly only has 2 strengths. It is either flat calm or it is blowing a gale. Add to this a vast quantity of free floating glacier ice, and the fact that there is no such thing as an all-weather ice free anchorage in this area, and you have a recipe for plenty of sleepless nights spent on anchor watch, or shifting at short notice from one anchorage to another.



UMMANAQ FJORD

In the ideal world it would have been good to have had another couple of sailors on board during this phase to share the burden of anchor watches and fending off stray “growlers” and “bergy bits” (small pieces of iceberg) with the spinnaker pole in the middle of the night. However, there simply was not enough room on board for another 2 sailing crew along with the 4 climbers, so we had to put up with interrupted sleep patterns for a little longer.

On the positive side, one of the great joys of

cruising in this remote part of northern Greenland is that there is real scope for “exploratory” sailing in the truest sense of the word. Granted, there is a Royal Cruising Club Pilotage Foundation Cruising Guide to Greenland, but it does little more than scratch the surface of the countless anchorages and natural harbours that are waiting to be discovered along a thousand miles of heavily indented coastline with huge icebergs calving into almost every fjord.

The sense of exploration became even more acute once we got north of Disko Bay. To the south of Disko Bay the coastline is relatively well charted, even if there is a distinct dearth of traditional navigation aids such as buoys and lights. However once north of Disko the charts become progressively more “blank”, with only occasional lines of soundings and scant topographical detail showing only the broadest outlines of the coastline. A smattering of isolated rocks may be shown on the charts but for every rock that is charted there are probably a hundred more that are not!

The staple of modern yacht navigation, a GPS enabled electronic chart plotter, is possibly one of the most useless pieces of equipment you can have on board in these latitudes. During the course of our time in northern Greenland we lost count of the number of times that our chart plotter showed us apparently tracking across dry land whilst our echo sounder showed depths in excess of 100 metres and our eyes are told us that the nearest land was at least half a mile away – errors that even adjusting the GPS chart datum wouldn’t make go away! Small islands that were shown on the chart sometimes didn’t exist in reality, whilst in other places there were off lying islets, large bays and protected pools that simply don’t feature anywhere on the chart

It was not long before we discovered that our best navigational aids in these parts were a good pair of binoculars, someone sitting in the bows “rock spotting”, and a boat speed just sufficient to maintain steerage way whenever entering any potential anchorage or confined waters. To this list could be added a navigator’s sixth sense as to whether any given feature on the shoreline is likely to project out to seaward as a reef and, when necessary, another crew member up the mast spotting leads through the ice. Last but not least, we found that the local 1:250,000 topographical land maps were actually far more useful when it came to identifying potential anchorages than any nautical chart!

Armed with these largely long forgotten navigational skills, whilst the climbing team were putting up new rock routes on 5 different mountain areas, we had great fun exploring Umanak Fjord looking for new anchorages that were not shown on the chart or listed in the pilot.



ICEBERGS IN UMMANNAQ FJORD

THE QUEST FOR THE "PERFECT" ANCHORAGE – STILL ONGOING!

Part of the imperative behind this exploration was that the “perfect” anchorage, sheltered from all wind directions and always ice free, simply does not seem to exist in these parts. It only takes a small change of wind direction or strength to turn what is a perfect anchorage one day into a an ice filled yacht death trap the next day. If one is to safely spend any time in the area and get a little bit of sleep at night, then you need a good repertoire of anchorages from which to choose!

We won't claim to have found that “perfect” anchorage, but we certainly found some stunning ones - and there are still plenty more waiting to be discovered – something for us to look forward to next season when we return to Greenland.

CONCLUSION

The objective of the Oxford West Greenland Expedition was simply to “Sail to GreenlandClimb Big Walls!”, admirably concise, but also wonderfully understated.

Leaving aside the challenges associated with climbing the “Big Walls”, simply getting to them was in itself a massive achievement. By the time the expedition was over Cosmic Dancer had sailed 5,102 nautical miles, over a third of which were north of the Arctic Circle, had been at sea for 109 days, and had visited 43 different harbours and anchorages. 3,600 of those miles were sailed with a crew whose previous offshore sailing experience amounted to little more than a sailing weekend in Plymouth Sound.

Most importantly of all, we finished the arctic phase of the expedition with the same yacht and the same people on board it as we started with – not something that can always be taken for granted when sailing in this part of the world! Even in the modern “post Franklin” era of Arctic exploration, it is not altogether unknown for an expedition party to return in a different boat from the one they started out in – one only has to read some of Tillman's sailing/ mountaineering books to appreciate that.

ANCHORAGE IN IKERASAK



IAN LEADS THE FIRST PITCH FROM THE DECK

It was not always plain sailing and we had our fair share of adventures and mishaps en route, which those who are so inclined can read more about it from the links listed below. However, I think we can safely claim to have achieved our objective and that Cosmic Dancer and her crew will go on to have more adventures in Greenland and beyond next season.



FURTHER READING

A fuller and more informal account of the sailing aspects of the expedition can be read online at:

www.cosmic-dancer.com

www.facebook.com/cosmicdancerv

A short video of the passage to Greenland is viewable on line at:

<http://vimeo.com/70504947>

ANNEXES

- A. Sailing Legs and Harbours Visited
- B. Greenland anchorages and climbing locations used on the expedition – Pilotage notes
- C. General Greenland Sailing Notes
- D. Supporters & Sponsors



ANNEX A

SAILING LEGS AND HARBOURS/ANCHORAGES VISITED

LEG 1 – MILWAUKEE TO CHICAGO (7 MAY – 60 NAUTICAL MILES)

Crew: Clive Woodman

LAKE MICHIGAN

Milwaukee

Chicago

LEG 2 – CHICAGO TO DETROIT (12 MAY TO 24 MAY – 725 NAUTICAL MILES)

Crew: Clive Woodman, Angela Lilienthal

LAKE MICHIGAN

Racine

Sheboygan

LAKE HURON

Mackinac Island

NORTH CHANNEL/GEORGIAN BAY

Thessalon

Gore Bay

Little Current

ST CLAIR RIVER

Port Huron

Detroit

LEG 3 – DETROIT TO MONTREAL (26 MAY TO 9 JUN – 642 NAUTICAL MILES)

Crew: Clive Woodman, Reini Schulz

LAKE ERIE

Put in Bay

Cleveland

Ashtabula

Erie

WELLAND CANAL

Port Colbourn

Port Weller

LAKE ONTARIO

Toronto
Cobourg
Kingston

ST LAWRENCE RIVER
Ganacoque
Prescott
Chrysler Park
Montreal

LEG 4 – MONTREAL TO CAP D’AIGLE (13 -16 JUN – 221 NAUTICAL MILES)

Crew: Clive Woodman, Peter Hill

ST LAWRENCE RIVER
Lac St Pierre
Quebec City

GULF OF ST LAWRENCE
Cap d’Aigle

LEG 5 –CAP D’AIGLE TO ST JOHNS, NEWFOUNDLAND (18 -25 JUN – 876 NAUTICAL MILES)

Crew: Clive Woodman, Peter Hill, Tom Codrington

GULF OF ST LAWRENCE
St Anne des Monts
St Pierre

NEWFOUNDLAND
St Johns

LEG 6 –ST JOHNS, NEWFOUNDLAND TO AASIAT (1 -16 JUL – 1604 NAUTICAL MILES)

Crew: Clive Woodman, Angela Lilienthal, Peter Hill, Tom Codrington

GREENLAND
Nuuk
Aasiat

LEG 7 –AASIAT TO AASIAT SUPPORTING CLIMBERS (17 JUL – 14 AUG - 974 NAUTICAL MILES)

Crew: Clive Woodman, Angela Lilienthal, Peter Hill, Tom Codrington, Jacob Cooke, Ian Faulkner

GREENLAND (CLIMBING LOCATIONS MARKED WITH *)

Horn of Upernavik *, Qeqertat, Uvkusigssat, Uummannaq*, Ikerasak*, Niaqornakavsaaq, Ninneq, Appat, Ilusigsoq*, Nugarsuk, Akuliaruserssuaq, Igdlerfiussaq*, Kugssupnua

ANNEX B

GREENLAND ANCHORAGES AND CLIMBING LOCATIONS-PILOTAGE NOTES

This Annex contains pilotage notes on the Greenland anchorages used by Cosmic Dancer during the expedition, together with notes on access from seaward to the climbing sites.

The notes are split into 3 sections.

Appendix 1 relates to those harbours which are described in the RCCPF Faroe Iceland Greenland Pilot (Third Edition – ISBN 0 85288 765-5). In this case the information given is intended to supplement and not duplicate the information contained in the RCCPF Pilot and the notes should be read in conjunction with the pilot. Unless indicated to the contrary it may be assumed that we found the detail provided for these harbours in the RCCPF Pilot to remain valid.

Appendix 2 lists those anchorages which, as far as we are aware, have not previously been documented in any pilot or guide. In this case a more detailed description has been given.

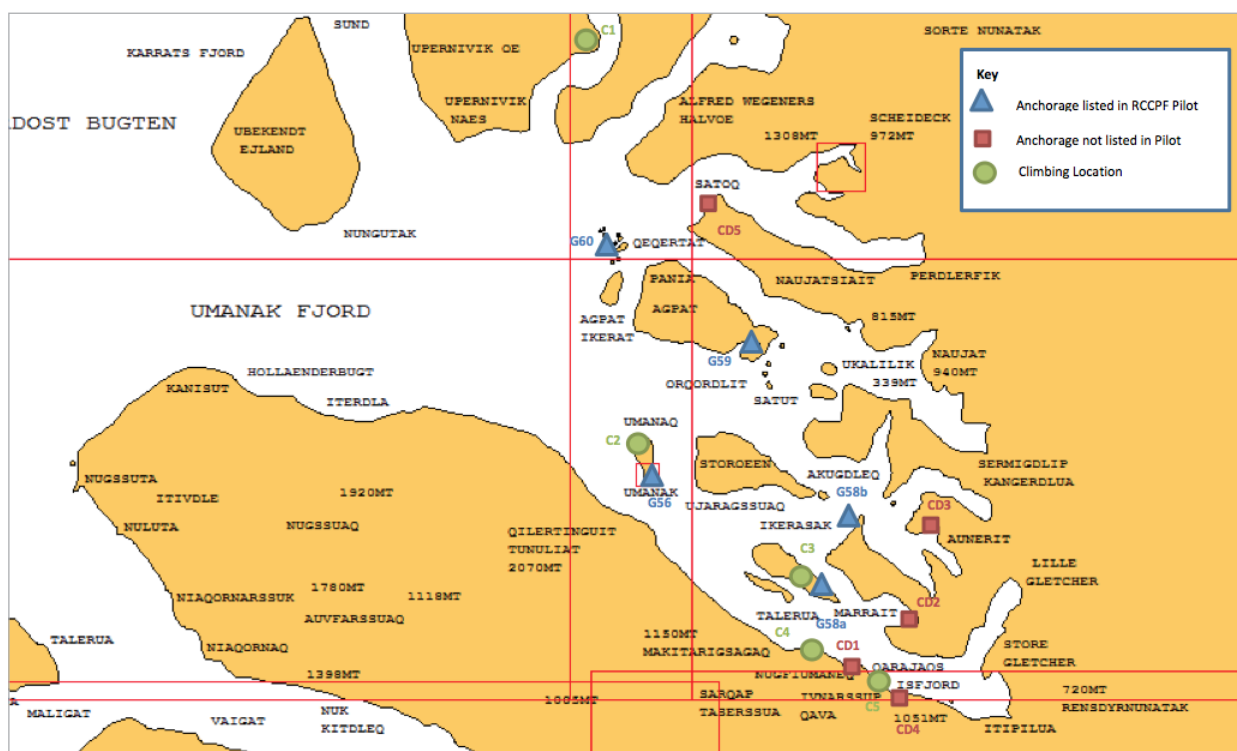
Appendix 3 lists the climbing locations used and access/recovery possibilities from seaward.

Although the number of ports and anchorages visited was relatively small, most were visited on a number of occasions and under varying conditions. The notes reflect this cumulative experience. However they make no claim to be anything more than notes based on our own experience and like the RCCPF Pilot should only be used in conjunction with official hydrographic data and publications.

PASSAGE TO GREENLAND – ROUTE



UMMANAQ FJORD - ANCHORAGES USED AND CLIMBING LOCATIONS



PASSAGE TO GREENLAND – ROUTE

UMANAQ FJORD - ANCHORAGES USED AND CLIMBING LOCATIONS

APPENDIX 1

HARBOURS/ANCHORAGES LISTED IN THE RCCPF FAROE ICELAND GREENLAND PILOT (THIRD EDITION)

(The letters/numbers after the harbour name relate to the numbers given to the port in the RCCPF Pilot)

NUUK (G3)

Although the Nuuk Boat Club marina is reported as only suitable for small yachts, we met a 37' German yacht who had successfully moored there. We were also offered the possibility of laying up our 38' yacht for the winter ashore at the marina, but without the benefit of any shore side security.

AASIAAT (G20)

Good quality water can be obtained by hose from the Royal Arctic Lines jetty. There is supposedly a nominal charge for filling tanks, but this was waived when we topped up there.

Laying up ashore is still possible in the ship yard which is under new management, but prices have increased dramatically.

For those prepared to freeze in, it is also possible to spend the winter afloat med moored between the boat yard and a large fixed metal mooring buoy with electrical shore power available.

ILULISSAT (G25)

We tried to reach Ilulissat in early Jul for a crew pickup. However we ultimately failed to reach the harbour because in the prevailing conditions (moderate SW winds) the entrance was blocked by ice. We followed the advice given by the local harbourmaster and in the RCCPF Pilot and headed north up to Rodebay before turning southwards and trying to find a route inshore of the bergs but even this ploy was unsuccessful.

In retrospect, Aasiaat, Sisimiut or Nuuk might have been better locations for a crew change relatively early in the season.

NUUSSUAQ (VAIGAT) (G55)

We found this passage to be completely blocked with ice in mid-July and impassable.

UMMANNAQ (G56)

The ice boom between Kodo and Smedeo was no longer in place at the time of our visit and we were consistently bothered by growlers and bergy bits in the harbour. The local craft avoid the worst of these by mooring in the lee of Kodo or Smedeo, but visiting yachts are obliged to med moor off the western shore opposite the harbour entrance and are exposed to the full brunt of any incoming ice.

The narrow passage between Kodo and the main island of Uummannaq is no longer navigable as it is blocked by local fishing craft moored fore and aft across the channel.

The hotel with bar is no longer open. It is understood that it is being converted into a boarding house for the local secondary school. Likewise getting showers in the local leisure centre is problematic.

Fuel is available 24/7 from credit card operated pumps in the small bay just to the south of the main harbour (70 40.39N 52 07.29W). Shoal draft craft may be able to come alongside the fuelling jetty at high tide, but deeper draft craft have to refuel by jerry can.

Good quality fresh water is available from hose at the jetty on the seaward side of the harbour used by local fishing boats to offload their catch (70 40.39N 52 07.14W) just underneath the large jib crane (being careful not to hit it with your mast!). Alternatively you can refill tanks by jerry can from any of the public stand pipes scattered around the town (located in brightly painted blue huts).

There are no public internet facilities ashore, although there is a very fast mobile 3G connection available for those with a Tele Greenland PAYG SIM card or for those prepared to pay astronomic data roaming charges on their normal SIM card.

IKERASAK (G58A)

A delightful well protected anchorage with plenty of swinging room despite the large number of small fishing boats moored in the harbour.

Large quantities of ice are to be found floating up the main channel between Ikerasak and the Drygalskis peninsula, but the prevailing currents seem to keep them clear of the bight in which the anchorage is located. We found this to be a far more sheltered and ice free anchorage than Uummannaq, despite the fact that it is some 20 nm closer to the Qarajaqs Isfjord.

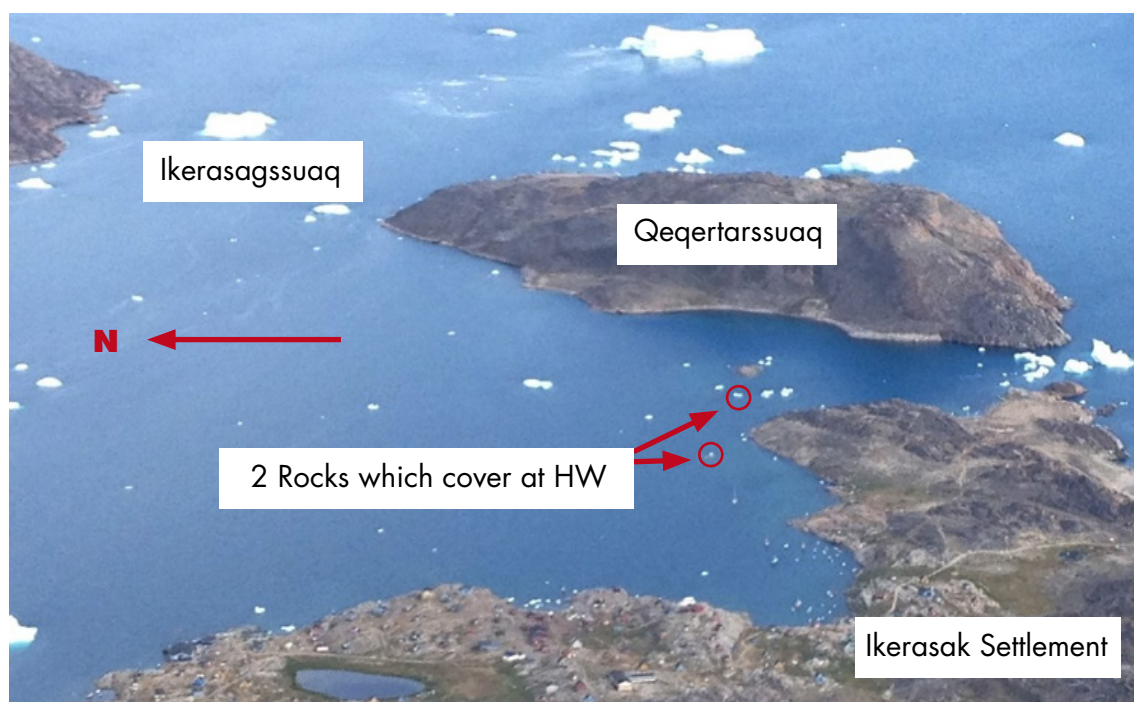
The passage between Ikerasak and the 112m high island Qeqertarsuaq is navigable with care and has between 3-4m of water at LW, with the deeper water lying on the Qeqertarsuaq side of the channel. The Ikerasagssuaq passage between Qeqertarsuaq and the Drygalskis peninsula carries far more water. However both of these passages are prone to becoming blocked with ice and under such circumstances the only approach to Ikerasak may be from the NW.

If leaving Ikerasak to the S using the channel between Ikerasak and Qeqertarsuaq care should be taken to avoid 2 uncharted rocks which are only visible at LW (see picture below for approximate locations).

There is a remarkably well stocked store ashore with a surprising range of goods ranging from rifle bullets, International antifouling and anchors at one extreme to freshly baked bread and pastries at the other.

A heliport offers connections to the STOL airfield at Qaarsut.

Fresh water is available by jerry can from the blue hutted standpipes in the settlement and fuel from pumps close to a floating pontoon in the main anchorage (dinghy access only).



NIAQORNAKAVSAK (G58B)

We enjoyed a pleasant lunchtime anchorage here in settled conditions, but when returning to seek shelter from an easterly gale, we judged the entrance to be too narrow to attempt under such conditions.

APPAT (G59)

This anchorage did provide us with shelter from an easterly gale, without the violent squalls falling down off the mountains we encountered in other anchorages. However the anchor must be dropped extremely close to the shore (<20m) and even relatively small shifts in wind direction made it necessary to re-anchor in a sector of the bay most appropriate to the wind direction at the time. In more settled conditions this might have been avoided by taking lines ashore, but we did not have sufficient confidence in our kedge anchor holding to try this in the conditions we encountered.

QEQERTAT (G60)

The anchorage at the mouth of the narrow channel leading into the inner pool, offers extremely good holding in sand. We sat out a full easterly gale without dragging, although the close proximity of rocky cliffs on either side made it a rather nerve racking experience! However in all our time in Umanaq fjord we found no better place to sit out strong winds from the east.

In contrast, the anchorage on the north side of the bay shown on the RCCPF chartlet (anchoring in 10m) has extremely poor holding (thick kelp on rock) and we could only recommend it as an anchorage in the most settled of conditions.

APPENDIX 2

ANCHORAGES NOT DESCRIBED IN THE RCCPF FAROE ICELAND GREENLAND PILOT (THIRD EDITION)

The letters/numbers after each anchorage relate to those used on the annotated chart included in Annex A.

NUGARSSUK (CD1)

70 24.0 N

51 13.9 W

Chart D1600

GENERAL

A wonderfully scenic and well protected anchorage on the northern shore of the Nugssuak peninsula, close to the mouth of the Qarajaqs Isfjord. Scramble up the rocky knoll to the east of the anchorage for fantastic view of the Isfjord and the Store Gletshcer flowing into it. To the south is a wide open grassy glen with a sparkling mountain stream flowing down it, whilst to the west 2 hanging glaciers from the Sermerssuaq icecap can be clearly seen. Looking north west from the anchorage the impressive mountain peaks of Umanaq and Ikersak can both be seen.

The bay is popular with local fisherman who in the summer set up camp on the shores and can be seen fishing in the stream with nets. They also set nets around the edge of the bay.

APPROACH

The approach from the NW is straightforward with no immediately apparent dangers on either side. 2 Red painted rocks on the eastern shore of the bay provide a leading line transit into the anchorage.

ANCHORAGE

Anchor in 10-15m in the centre of the bay, clear of any fishing nets that may have been set around the shores. These are often poorly marked using transparent plastic bottles as floats. The anchorage offers far more shelter than the chart would suggest and is only really open to winds from the NW. It is also remarkably ice free, despite the large amounts immediately outside emanating from the Qarajaqs Isfjord. It would appear that the current from the fast flowing stream entering the bay is sufficient to keep most of the ice out.

AKULIARUSERSSUAK (CD2)

70 27.2 N

50 58.8 W

Chart D1600

Saga Maps 1 250,000 Series Nuussuaq/Umanaq Sheet

GENERAL

Don't expect to find this anchorage on the chart because it simply is not shown. Plot the position on either the paper or the electronic Navionics charts of the region and it will show as being on dry land! However, the Saga Map does hint at a possible anchorage in the SE corner of a wide open bay located on the SW shore of the Drygalskis peninsula, approximately 6 nautical miles SE of the island settlement of Ikerasak. Hidden from view until you are within half a mile of it, this enclosed pool offers perfect shelter from all directions and fantastic hiking and scrambling possibilities ashore.

APPROACH

Enter the wide open bay from the SW. Both the Danish and Navionics charts show a small rocky outcrop called "Marrait" located in the middle of the bay. We found no evidence of this existing, but there are a number of small rocky islets much closer to the southern shore of the bay (these are called "Akuliaruserrap" on the Saga Map). The waters around these islets are relatively shoal and should be negotiated with care. Pass to the north of the islets and look for the narrow entrance to pool which lies just to the east of a prominent rocky wall on the north shore of the bay.

ANCHORAGE

Anchor in 10-15m in the middle of the pool with plenty of swinging room, or if conditions allow, in shallower water in the NE corner. Despite large amounts of ice in the outer bay the inner pool was completely free of ice. The pool is perfectly sheltered from all sides, although the topography suggests it might be subject to squalls falling off the mountains to the east. Anchorage should also be possible in several of the other smaller bays lying to the west of this anchorage but they lay in the shadow of the Akuliarserrssuak ridge and are a little gloomy.

NINGEQ (CD3)

70 36.6 N

50 51.7 W

Chart D1600

GENERAL

A good anchorage in a wide inlet on the NW corner of the Drygalskis Peninsula. Unusually for this region, it is almost completely free of ice since there is no glacier calving into the sea at the head of the fjord in which the anchorage is located.

APPROACH

The approach from the NW is straightforward leaving the islet of Itivsap Qeqerta to starboard. However the Alanguarqap Suvdlua, the approach channel between Storoen and Qaqugdlugssuit, may be blocked with ice since the bigger bergs ground on the 15m shoal patches in the middle of the channel and smaller bergs raft up around them.

ANCHORAGE

Anchor in 5-10m at the head of the inlet close to the stream that runs into it. Holding adequate in fine matted weed on mud, but if your anchor does get torn free in a gust then it is unlikely to re-

gain hold until you lift it completely and clear the weed from around it. The anchorage is generally well protected from all sectors but is subject to vicious squalls coming down from the mountains in an easterly gale and is not recommended under these conditions.

KUGSSUPNUA (CD4)

70 21.4 N
51 03.6 W

Chart D1600

GENERAL

A spectacular and wild inlet on the south side of the Qarajaqs Isfjord. Strictly a settled weather or daytime anchorage when wind and ice conditions permit. The valley heading up from this inlet marks the start of a traditional dog sledging route across the Nugssuaq peninsula. There are a couple of other inlets closer to the head of the Qarajaqs Isfjord, but even late in the season these were found to be too filled with ice to make usable anchorages.

ANCHORAGE

Anchor very close to the sandy beach in 7-8m of water just to the west of where the stream enters the inlet.

UVKUSIGSSAT (CD5)

71 02.8 N
51 53.3 W

Chart D1600

GENERAL

A fair weather anchorage just off the scenic fishing settlement of Uvkusigssat offering stunning views of the mountains on the Alfred Wegener peninsula. This anchorage offers more shelter than the chart would suggest, but nonetheless is likely to be untenable in winds from SW-NW.

ANCHORAGE

Anchor in 7-8m of water in the small bay just to the south of the settlement, clear of the fishing boat moorings that lie closer inshore. It should also be possible to temporarily moor alongside the supply boat jetty.

APPENDIX 3

CLIMBING AREAS AND ROUTES

This is an outline description of the routes that were climbed by Tom Codrington, Jacob Cook, Ian Faulkner, Peter Hill and how they were accessed by sea. The letters/numbers before each location relate to those used on the annotated chart included in Annex A. For full details of the routes see <http://oxfordgreenlandexpedition.com/technical-reports/climbing-reports/>



C1 Location: Uppernivik Island

Access by yacht:

Possible to get within 15-20 m of shore by yacht. Land and recover climbers by dinghy on scree slope. No anchorages were found in either the Pakavsá or Inukavsait fjords. Closest anchorages are either Qeqertat or Uvkusiggsat

Horn of Uppernivik Island (1700m)

Multi Pitch Routes climbed:

'Cosmic Rave'

E6 6b 1000m 21-25/07/13. Jacob Cook and Ian Faulkner followed George Ullrich & Matt Burdekin's 2010 super-direct attempt on the face, fixing lines to 300m before pushing to the top to claim the first ascent of the main face and the third ascent of the mountain in a 30h push and descending via Choss, the Universe and Everything. Their first attempt at a push was aborted after rockfall caused by Tom and Peter above. The team placed one bolt on the route.

'Choss, the Universe and Everything'

E2/XS 5c 1200m 21-22/07/13. Tom Codrington & Peter Hill made the second ascent of the mountain in a single 42h Alpine push up a series of weaknesses before down-climbing and abseiling the route, meeting the line of 'Cosmic Rave' at half-height.

'Choss, the Universe and Everything'



'Cosmic Rave'



C2 Location: Uumannaq Island

Access by yacht:

Anchor in main harbour and walk overland to foot of mountain.

Uumannaq NW peak (1170m)

Multi Pitch Routes climbed:

'Islands in the Sky'

E4 6a 810m. Ian and Tom climbed the lower tier of the peak Alpine-style before rain forced a retreat down a scree gully. Jacob, Tom and Peter returned up the scree gully to extend the route up the headwall in a 20h push to make the second ascent of the peak, descending via one troublesome abseil and a series of scree gullies.

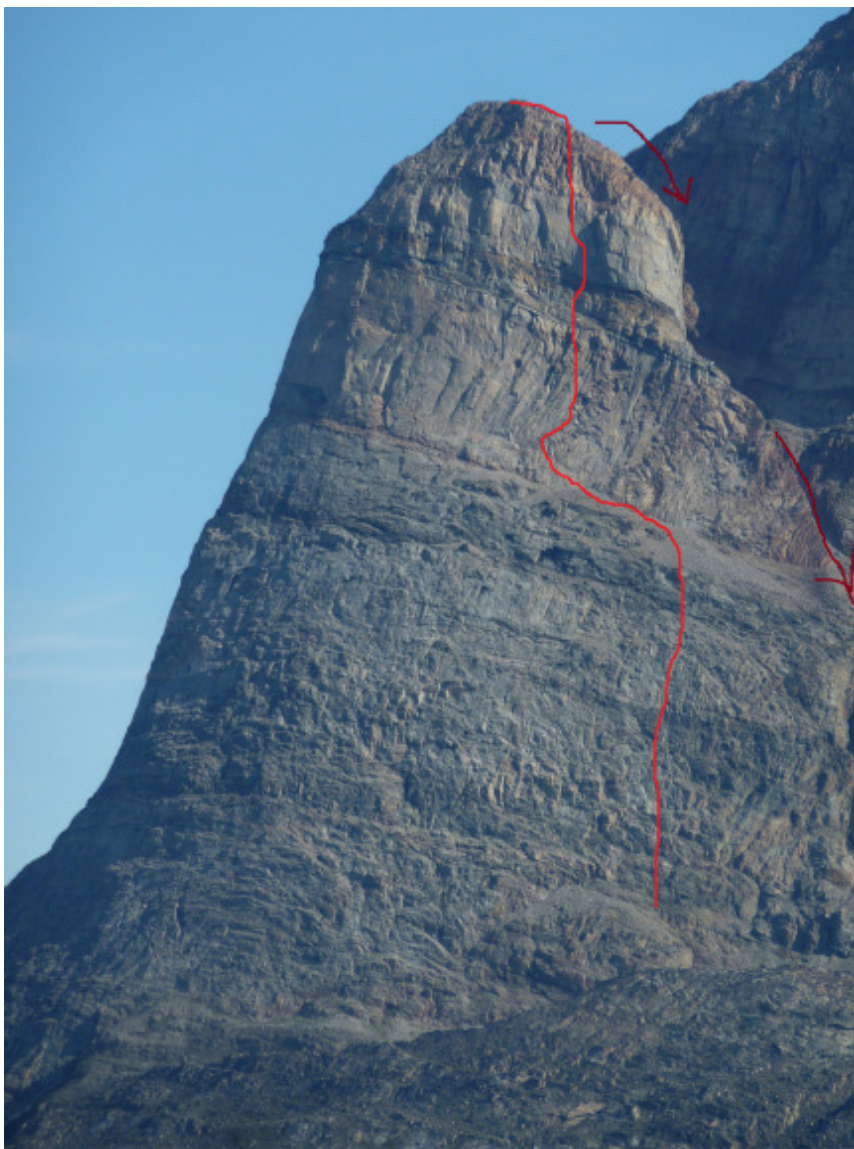
Single Pitch Routes climbed:

'Crumbs in the Bilges' E3 5c

'Bilgefruit' HVS 5a

'Strong Headwinds' E1 5b

'You Make Your Own Luck' E3 5c



'Islands in the Sky'

C3 Location: Ikerasak Island

Access by yacht:

Anchor in main harbour and walk overland to foot of mountain.

Umanatsiaq Mountain (824m)

Multi Pitch Routes climbed:

'Flake or Death'

XS 5b 200m. Peter and Jacob established the first climbing route on Umanatsiaq Mountain on very loose rock before descending an oft-climbed ridge. They were previously repelled on a more ambitious route after Jacob took a large fall, injuring his ankle.

Single Pitch Routes climbed:

'The Devil Wears Prada' VS 4c

'The Devil Wears Rab' E3 6a

'Raging Punters' S 4a

'Touching the Floyd' VS 4c



'Flake or Death'

Location C4: Ivnarssuaq

Access by yacht:

Come right alongside rock wall and climb the first pitch direct from the yacht of the deck. It is possible for the climbers to walk off the back of the cliff and be picked up from the anchorage in Nugarssuk (see Appendix 2)

Iv narssuaq Great Wall (1270m)

Multi Pitch Routes climbed:

'The Incredible Orange'

E3 5c 800m. Tom and Ian made the first ascent of this previously unknown face in a 72h Alpine push, bivying twice on poor ledges. The plumb-vertical Great Wall is actually a pillar connected to the mainland by an unstable bridge.

'The Incredible Orange'



Location C5: Igdlerfiussaq

Access by yacht:

Come right alongside rock wall and climb the first pitch direct from the yacht of the deck. It is possible for the climbers to walk off the back of the cliff and be picked up from the anchorage in Nugarssuk (see Appendix 2)

Nugssuaq (986m)

Multi Pitch Routes climbed:

'That Sinking Feeling'

E5 5c 300m. Jacob, Ian and Peter made the first ascent of this previously unknown face in a 20h push. The striking knife-blade feature offered little gear and was connected to the mainland.



'That Sinking Feeling'

Location: Others

One single-pitch climb in St John's, Canada, and two single-pitch climbs in St Pierre, France.

ANNEX C

GENERAL CRUISING NOTES

As with Annex A, the notes in this section are intended to supplement and not duplicate the information available in the RCCPF Greenland Pilot. They focus primarily on advances in communications and electronic charting that have been made since the Third Edition was published in 2004.

CHARTS

Although we found the Danish Charts to be excellent for the areas south of Disko Bay, once north of the Nugssuaq Peninsula they became increasingly less useful, with only occasional lines of soundings/spot depths and scant topographical data.

When it came to locating possible anchorages we found the 1:250,000 Saga maps contained a far more detailed representation of the coastline and topography. They even contained a reasonable degree of maritime data such as locations of isolated rocks and known anchorage locations, some of which were not shown on the nautical charts.

Our electronic Navionics Gold charts showed a similar level of detail to the Danish paper charts but could not be relied upon for inshore navigation. On numerous occasions our GPS track showed us apparently tracking across dry land or anchored anything up to a mile inland. Even adjusting the datum on the electronic chart plotter was not sufficient to remove these discrepancies!

SATELLITE COMMUNICATIONS

Knowing that we would be operating right on the outer edges, and sometimes beyond, the advertised satellite coverage envelope for our Inmarsat BGAN Sailor 150 satellite phone/broadband data system, we contacted Inmarsat for an experts view on whether we could rely on their system in northern Greenland.

We were told that we could expect patchy coverage at certain times of the day, but that generally the Inmarsat satellites would be too low on the horizon to give us good reception. On the strength of this recommendation, we fitted an Iridium Pilot system which is guaranteed to give coverage even in the Polar Regions.

The Iridium Pilot did indeed perform as advertised and we never encountered any gaps in coverage or noticeable degradation in upload/download speeds. We were able to send e mails with up to 1Mb of attached images in 3-4 seconds, download GRIB files in 1-2 seconds and even browse web pages and connect to our office server via Windows Remote Desktop Services at acceptable speeds.

However, much to our surprise the Inmarsat Sailor 150 system continued operating well beyond the advertised limits and we were still getting coverage at 71N. However we did not have sufficient airtime resources to extensively test whether we could have relied solely on the Inmarsat system for our satellite communication needs.

SHORESIDE INTERNET FACILITIES

Internet facilities generally can be found ashore in the major towns and settlements in the Seamen's missions and other places such as cafes and libraries. Connections speeds are adequate although prices are generally extremely high by European standards. The only place we discovered free internet connectivity was in the library in Nuuk but that was strictly rationed (book a slot by appointment only) and connection speeds were slow.

Once north of Disko Bay we encountered no publicly available shoreside internet facilities, and the only way of getting access ashore was to befriend a local inhabitant and use their connection.

GSM MOBILE PHONE COVERAGE

We found good GSM mobile phone coverage in all the towns and settlements we visited, although the smaller ones did not always have 3G data coverage. However, when 3G data coverage was available we found it to be of an excellent standard with generally far higher reliability and connection speeds than you can expect to encounter in many European cities. However the GSM coverage was extremely localised and rarely stretched more than a mile out to sea beyond the town/settlement so could not be relied upon for communications whilst under way.

Whilst you can connect to the voice/data network using your normal home based SIM card, roaming charges make this prohibitively expensive. It is now possible to purchase a "Pay as You Go" Tele Greenland data only SIM card which can be inserted in most mobile devices such as iPhones, I Pads, USB dongles etc. The PAYG data prices are not cheap by European standards, but much cheaper than roaming data charges and broadly comparable with the price of shoreside internet connectivity in Greenland. If you are cruising in Greenland for more than a week or so and need internet connectivity, then investing in one of these cards would be a cost effective investment.

Setting up one of these SIM cards on your mobile device is not as straightforward as the instructions (available in Greenlandic and Danish only) would lead you to believe, if only because one vital setting is omitted from the instructions. If purchasing one of these cards from a shop you would be well advised to get the shop to get it setup and working for you on your particular device before leaving.

However once setup they are simple to use and provide excellent connections speeds. Moreover the SIM card supports mobile tethering so one card can be used to provide mobile data hotspots for all your other internet enabled devices.

ANNEX D

The expedition would like to thank the following supporters and sponsors without whom non of this would have been possible:

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The Irvine Fund
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