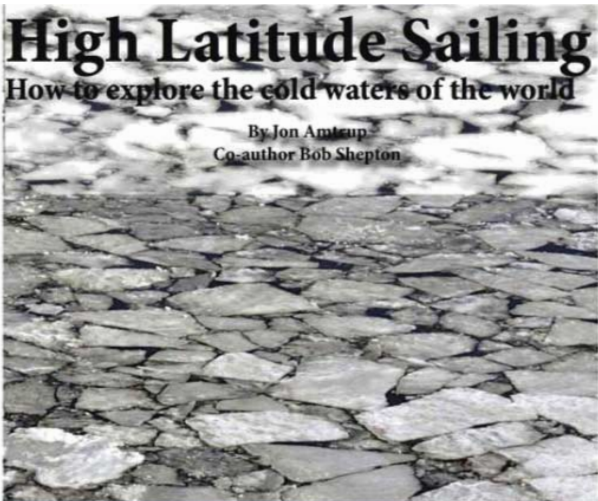


# High Latitude Sailing

How to explore the cold waters of the world

By Jon Amtrup  
Co-author Bob Shepton



# Contents

[Content](#)

# High Latitude Sailing

1. Introduction
2. About the authors
3. Preparing yourself
4. Preparing the boat
5. Sailing in ice - by Bob Shepton
6. Safety

7. Communication

8. Weather

9. Anchoring

10. Clothes

11. Areas

12. North West Pass

Trond Aasvoll

## 14. Literature

This book will also be published as an ordinary book with pictures and illustrations. More info about that on [www.explorenorth.no](http://www.explorenorth.no) and follow us on Twitter @Jonamtrup.

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# **1. Introduction**

## **Ice is everything**

I could barely see the bow 43 feet away. The ski goggles took the pain away from my sore eyes. I was still captured in the white stuff. The snow was everywhere and so could other boats be. I couldn't see them, and they couldn't see me. I just had to accept the fact and be happy in the all white world,

The one thing in my favour was that it was mid February

and I was sailing well above the Arctic Circle. I hadn't seen any other boats since I hoisted sails in the pitch-dark morning 12 hours ago.

As day broke, I sailed through a maze of low islands and skerries. The high water mark was where the snow line ended. I was on a falling tide with following winds. All was in my favour, except for



the fact that I was sailing south in the Northern Hemisphere.

To quote Rolf Jacobsen, one of Norway's most respected poets:

*North is best.*

*The fiery winter sky, summer  
night sunshine miracle*

*Walk in to the wind, Climb*

*mountains.*

*Look to the North.*

*More often.*

*This country is long*

*Most of it is North.*

I was running low on water.  
The fresh snow was very  
welcome in that respect. Due

to the cold I had not been able to get any fresh water from taps on the docks. Everything was closed down and wouldn't open before winter retreated to the mountain tops. I had to melt snow. It just made the wilderness experience more intense, bordering on an expedition experience. It was a truly different world.

We live in a world where

everything is just around the corner. Water on tap. Water in bottles with 1000 different tastes. It's so ordinary that not even yet another tasty water bottle that gets introduced makes you wonder when it will stop. Everything is available. All the time. You don't have to plan a single thing. Everything can be fixed by picking up the phone and either call, mail, chat, tweet, or Google it.

When you sail in remote places like Svalbard, Greenland or South Georgia you can't do that. You are on your own in all respects of the word. You have to be totally self-sufficient and lay your plans accordingly. But when you have done that and acted on it, you are free, and satisfied. Free from everyday trivialities like bills, newspapers, crappy TV series, driving to the shop just

to buy oregano, and all the other stuff that doesn't necessarily make you happy. Here, it's just you and nature, and it's up to you and your own competence.

Day in. Day out. All that changes is the scenery as new landscapes appear, and the wonderful feeling of remoteness.

The environmental side of a

trip to the high latitudes is in itself worth the effort. As you plan the trip you will have to consider how to economise with water, electricity, fuel and food. Resources may be scarce globally, and most certainly are on a trip in a boat with limited or capacities. You are a small self-reliant community when you sail to the high latitudes, and must be self-sufficient.

And when you are sailing you have to manage the waste you produce. And it's a lot. It makes you think and it makes you wonder where this is going. But most of all, it might change your habits when you get back to what is called real life.

**Get out there**



*Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do.*

*So throw off the bowlines.*

*Sail away from the safe harbour. Catch the trade winds in your sails. Explore.*

*Dream. Discover.”*

Mark Twain (1835-1910)

Twain seemed to appreciate

the shorts and t-shirt sailing in the warm trade winds, but as the true adventurer he was, I expect that he would have loved some more demanding sailing as well. Some prefer warm days, no rain and marinas with all the comforts within walking distance when they sail. Most people have a perfect life that way. Some of us, and I expect it will be more and more, think that the more clothes you have to

wear, the greater the experience. The goal with a vacation is not to get a tan. We want an adventure. We want to challenge ourselves. We want more out of life. The high latitudes are where you still can do some proper exploration. The rest of the world is more or less just well established infrastructure by comparison.

We can accept the occasional

gale just to experience something completely different. Dealing with the gale in itself becomes the icing on the cake, so to speak. And we are prepared for it. We have planned for it, and we can take it. Sailing in the high latitudes is all about how you adapt and learn. You have to calculate risk and improvise, because there is no definite answer to any question. That's when you get

the exhilarating feeling of meeting the challenge.

## **2. About the authors**

**Jon Amtrup** has been sailing and writing for most of his life – and intend to continue. He has sailed the Norwegian coast summer and winter a number of times, crossed the

Atlantic twice, the North Sea eight times, circumnavigated Svalbard, and competed in a number of double handed and shorthanded regattas national and international. He has also assisted several high latitude sailing expedition with advice and weather and routing assistance.

He has studied political science, sociology and eastern European studies at

the University of Oslo,  
journalism in Bodø and PR  
and management at BI. He  
has worked as a journalist in  
newspapers and magazines in  
Norway, and as a freelancer  
contributing to  
SEILmagasinet and various  
international sailing  
magazines.

He is a member of [The Explorers Club](#) and [Royal Geographical Society](#).

See [www.explorenorth.no](http://www.explorenorth.no) for more information and contact information. All feedback is very welcome.

**Bob Shepton** is a highly experienced Arctic explorer who has led several sailing and climbing expeditions to Greenland and Arctic Canada in his yacht, the Westerly 33 ft sloop 'Dodo's Delight'. He will act as Arctic Advisor/Ice



Pilot to sailing and climbing expeditions and undertake yacht skippering and delivering anywhere in the world. He has circumnavigated the world via Antarctica and Cape Horn, and made 14 Atlantic crossings so far.

Bob traversed the North West Passage east to west in 2012, and then west to east in 2013, in his own small boat. He is

now experienced and qualified to act as Ice Pilot and Adviser for this Passage, and the Arctic generally. See [www.bobshepton.co.uk](http://www.bobshepton.co.uk) for more information and how to get in contact.

**Trond Aasvoll** is an experienced shorthanded sailor and explorer. In 2010 he and two fellow explorers set out on a circumnavigation

of the North Pole. The plan was to do it in one season. It wasn't lack of grit or the ice that stopped them, but the Russians. They finished their circumnavigation the year after and became the first Norwegians ever to transit both the North East Passage and North West Passage. Aasvoll has also logged thousands of miles as skipper and shorthanded sailor in regattas and cruising. He is a

member of [The Explorers Club](#).

**Elena Solovyeva** is the first woman who has sailed both the North East and North West Passage in one season. She did it as the only female crew aboard the Russian yacht Peter 1<sup>st</sup>, which did the record-breaking circumnavigation in 2011. After that she played a vital

part in arranging an arctic rally to Franz Josef Land before she founded the company that helps foreign sailors cut through all the bureaucratic red tape you have to handle if you want to sail in Russian waters. See <http://russian-passage.com/>.

# **3. Preparing yourself**

## **State of mind**

Sailing in the high latitudes requires experience, planning, stamina, guts and a special state of mind. As most other things you can train for the high latitude expedition. If you live in a country with

winter season – use it actively for cruising. Don't put your boat on the hard for the cold season. Spend the weekends and afternoons sailing so that you are prepared for the real thing. Start in the autumn. Anchor in small bays that are partially exposed to learn anchoring techniques and how to arrange lines ashore. Read the weather forecast thoroughly to avoid putting yourself in dangerous

situations when training.

When lines and anchor are set properly, you will be surprised how much wind and sea you can ride out. Be sure to always have an exit plan if things should turn out for the worse.

Exploring in remote areas is a challenging mind exercise. It's not just about keeping warm and alert. As you sail along a new coast where the



weather can be highly unstable, you always have to have contingency plans.

*"I may say that this is the greatest factor -- the way in which the expedition is equipped -- the way in which every difficulty is foreseen, and precautions taken for meeting or avoiding it.*

*Victory awaits him who has everything in order -- luck,*

*people call it. Defeat is certain for him who has neglected to take the necessary precautions in time; this is called bad luck."*

*Roald Amundsen, The South Pole*

Think worst case scenarios both when sailing, before anchoring and after you have set you anchor. What if the wind shifts? Will the anchor

hold? Will ice come drifting?  
Where can I escape to? Do I  
have enough room to  
manoeuvre?

Always have a back up plan  
for the back up plan.

Redundancy and self-  
sufficiency is the key in high  
latitudes. And to avoid  
problems it is important to  
have established routines that  
work.

Always have the boat ready for rough weather, both below and on deck. Make sure everything has its own place on board, and that everyone puts things back after use. This will give you the ability to hoist anchor immediately without a lot of things breaking or being thrown around down below.

Establish routines on deck so that you sail with a clean

deck. If you have to have diesel cans, dinghy etc. stowed on deck, make sure they are always secured when not in use.

Potential breakages or chafe or anything else that can become a problem must be fixed straight away. If you end up thinking “it can wait until tomorrow”, then the problem might be a whole lot bigger and the weather much

worse when you have to fix it. The moral is to fix thing immediately. Always.

Also establish routines when sailing into the night. It's a good habit to check all halyards and sheets before the night falls. They must run free and not be tangled with other lines or the rig. Also prepare the sails you expect to use during the night. If you are sailing along a coast think

about which anchorages or harbours you could go in to along the way if the weather should turn bad, or the feeling of tiredness becomes too overwhelming.

When starting the engine always check for lines in the water before pushing the button. Then check that the cooling water is pumping out freely and no unusual sound is coming from the engine.

Check the oil level every morning before heading out.

You are probably doing these things already but all this is routine that will heighten your awareness and most likely give you a trouble-free and happy expedition.

Think comfort before speed. It is always better to wait a few hours or even a day or two instead of setting out into



a nasty sea or bad weather prognosis. It is easier on the boat and crew. And to be perfectly honest: What does a day or two mean in the big scheme of things? Take the time to enjoy yourself where you are, right now.

## **Risk assessment**

Sailing in high latitudes should be a continuous

exercise in risk assessment. You are often far away from help, hospitals, medicine or transport other than your own vessel. That's why it is very important to always identify possible risks together with possible solutions. You have to be more careful than usual as help can be very far away and even small injuries can be potential lethal in the worst case, or put an end to the expedition at the very least.

## **Familiarisation with area**

One of the many joys of going on an expedition is studying maps, books, videos or speaking to people who have been in the area before you. Gather as much knowledge and information as you possibly can, and be sure to write it down as your research progresses. Don't be scared to call or mail other

explorers to get their take on the area and conditions. Most people like to share their knowledge and many people even are honoured to be contacted and asked if they can share their experience.

## **Possible ports/refuges**

Study a map or chart of all possible ports and safe anchorages along your

planned route before you leave. Do the same exercise as you sail so you have at least a sketchy, plan for where to head if the weather turns bad, ice starts coming in, the engine fails or the crew are on the brink of exhaustion.

**SAR facilities in the area**

Solitude and the feeling of

utter remoteness is one of many reasons why we sail to the high latitudes. You can only depend on yourself.

A few of the really hard core high latitude sailors also refuse to push the emergency button when things start to go bad. They have accepted that they are taking risks out of the ordinary and don't want expose other people (aka rescuers) to the same risk just

because they have done so.

In most areas in the high latitudes a rescue mission is highly risky, and expensive, and what's even worse for the persons in peril: the rescue can at best be days away. Sometimes weeks.

Svalbard is the exception as the whole area, weather permitting, is covered by a rescue chopper out of

# Longyearbyen.

In the North East Passage you can't expect to be rescued at all as the north coast of Russia has very few helicopters and rescue vessels stationed within reach. In the North West Passage the situation is somewhat better due to the Canadian Coast Guard, but even there they might be hours or even days away. And if you get caught



in ice, you can't expect to be rescued by an icebreaker.

There have been examples of ice breakers coming to rescue trapped yachts, but that is not something you can demand or expect. You can only wish for it – and be fully prepared to cope with the situation yourself without any outside assistance. And to be towed by an icebreaker can be a frightening experience in itself.

## **Hospitals and doctors**

Be sure to map out where hospitals and medical centres are along your planned route. Gather contact information for them, and it might also be a good idea to have contact with a doctor back home, or even better an experienced expedition doctor who has been out in the wilderness before, so that you can call to

get advice if required.

## **Crew exit points**

If you have crew on board who are on a tight schedule – which you should avoid in the first place if at all possible - be sure to have information on all nearby airports, helicopter services or small plane companies who can reach you if you run out of

time. It will off course run the costs through the cabin roof – but that’s the crews’ choice. No crew should come on board without accepting the fact that he or she might not be able to reach their designated flight or other means of transportation out. The high latitudes are highly unpredictable, unforgiving – and in total command.

## **Shipyards/haul-out possibilities**

Getting a haul out in remote places can often be very expensive, if it is possible at all. All things related to having the boat out of the water should be done before you leave the more civilised parts of the world. But none the less – you should have a clear view of where it might be possible to get the boat out

on dry land for emergency repairs, or even to leave the boat for the winter (e.g. Cambridge Bay in the North West Passage.) Divers can also be a possibility – or bring your own diving equipment to fix a fouled propeller or a rudder that won't function properly.

## **Crew preparation**

The aims and expectations of the crew must be in line to accomplish onboard harmony.

Crew might have different expectations on signing up for an expedition to the high latitudes. Once on board you or anybody else have nowhere to run if relationships don't pan out as expected. That's why it is very important to clarify

expectations – why do you want to be part of the crew and cruise? How will you contribute? What are your strong points and what are your weak points?

It would be a help to get a firm grip on who knows what and what they are comfortable doing on board. Give everyone responsibilities and try rotating those during long



voyages so that everyone can learn new things and feel more confident.

It is also important to go through the whole boat with everyone so that they know where such things as communications, first aid kit, valves, shut of valves for gas, heating etc are located. Also to prepare them for losing social media and communication services

generally on being locked off from communication services, e.g. Facebook, phone etc. What they see on board are what and who they will get for the duration of the expedition.

People react differently when they venture to remote areas. The usual negative symptoms are signs of being reclusive, aggressive, and seasick. Not necessarily all the above at

the same time, and it is usually those who are flown in to the boat and start on a long trip to remote areas such as Antarctica without the possibility to adapt and get familiarised before they leave who are most affected.

Man overboard practice is also something that you should do with new crew.

Prepare and explain what are the on board routines you use

for getting crew back on board if you have an MOB incident. Give clear instructions on what everybody on board should do, and how and in good weather get one of the crew to suit up in a survival suit and jump overboard. The exercise usually gives everybody a very clear understanding of why it is very important to stay on board at all cost.

## **4. Preparing the boat**

### **The perfect boat**

There is no such thing as a perfect boat. All boats are the result of a series of compromises. It comes down to the size of your wallet, how many people you are going to take, how long you

plan to be away, and not the least where you are going. But if one were to describe the perfect yacht for a two month long high latitudes expedition with 2-4 people, and money were no object, my suggestions would include the following:

## **Hull and deck**

Aluminium or steel?

Unpainted aluminium is

preferred as it is nearly maintenance free - no polish. Steel, if not treated properly, will eventually rust, but on the other hand, it will stand up to most forces, and it is cheaper.

## **Deckhouse**

You can be as tough as you want, but the constant cold and wind will eventually

wear you down. If you have an inside steering position you can sail longer in more comfort. The alternative is to build a hard dodger on your existing boat. A hard dodger will provide more shelter than the usual soft sprayhood, and plexiglass or hardened glass will also give you a better view.

The hard dodger may also allow you to install solar



panels on top. And you can design a canvas cover on the back of the hard dodger to keep the elements out and the warmth inside.

If you install a remote for the autopilot and the chart plotter under the hard dodger you will be able to sail longer and at the same time be more relaxed. If you are using windvane steering a short trip out in the open is all it takes

to adjust the course.

Tartaroooga is one producer of custom built hard dodgers and biminis, and their site is a good inspiration if you want to take the building matter into you own hands:

<http://www.tartaroooga.com>.

Ocean Navigator has also a good article about how to build a hard dodger in aluminium:

<http://www.oceannavigator.co.uk/Exclusives-2013/Hard-dodger-building-logistics/>.

## **Heating**

Full insulation from the waterline upwards will keep condensation to a minimum and the heat at maximum.

Insulation will also keep you boat cool when you are sailing in warm waters.

The metal frame on the hatches will always lead to condensation. Using thin plastic film to make an airlock will get the water on the framing to freeze, or bubbleplastic for those hatches you may need to open from time to time.

Reflex, Dickinson or Taylors diesel heaters with day tank is the preferred heating source. That way you will not need

any electricity to keep the temperature up as the heater is gravity fed. The diesel burners also keep the boat relatively dry as they burn up the moist air. Consider central heating with warm water radiators if you have a larger boat. Whether to keep a diesel heater on when sailing is debatable, and might depend a little on the boat

# Rig

Cutter rigged ketch is the traditional choice, and it gives you more sail configuration options and smaller sails that are easier to handle.

The more modern approach is a cutter rigged sloop as it is easier to handle when shorthanded. In harsh climates you often end up sailing short handed because

the rest of the crew needs to rest or are seasick. This is when it is crucial to have an easy set up that you know and can handle on your own.

When it comes to fitting out a boat for high latitude sailing there are many options. My suggestions would be:

## **Electronics**

As few electronic gadgets as possible as it is important to keep electrical consumption to a minimum. Men explored the world with not even a sextant at their disposal. It would of course be utter madness to go back to the past like that, but when you decide what kind of electronics you need, be sure that it doesn't just end up as a "nice to have"-list.

Electronics require electricity



and they can be complex and often very delicate instruments that don't exactly thrive in a harsh salt-water environment.

If you were to go a step over paper charts and compass requirements, a Panasonic Toughbook with built in GPS and satellite connection to download weather and ice reports can be a solution that will get you through most

times. To back up the hard disk with electronic charts is also important.

## **Electrics**

There are two ways to handle the electrical issues of sailing in remote places: Produce electricity and use as little as possible. Both strategies should be followed.

A wind generator on the mizzenmast or aft gantry, and solar panels on the gantry or deckhouse will produce green energy. The downside to wind generators is that you often prefer to sail downwind, and that means little apparent wind to drive the generator. And when you anchor you often do that in sheltered places.

Sailboats with their rigging

and sails often create a lot of shadow, and that is not the best environment for solar panels either. But the technology has made big leaps in the last couple of years and new and improved solar panels will only cut out part of their charging cells when in shadow. Not the whole panel as they used to. It is best if the solar panels can be tilted towards the sun to get maximum effect.

A combination of wind and solar are a good option.

Another option is a hydrogenerator. The towing solution has been around for years and has helped a lot of sailors, and will in the future too if the price goes down and durability goes up.

All lights LED, if possible, as LED lights use very little electricity.

A travel solar panel with a battery pack that will charge the laptop, Iridium phone and external GPS, is useful in case of total redundancy should all the boats electricity fail.

## **Steering**

A wind vane, which demands no electrical consumption, and even better with the

possibility to connect a simple autopilot when motoring.

## **Tanks**

This is of course all dependent on how remote and how long your expedition will be. If your plans are to sail the Norwegian coast in wintertime, you will have to search a little bit extra to find

fresh water. But you will find it on the fishing docks, and everything else is at hand without too much trouble. But if you are going to the Antarctic Peninsula and from there via South Georgia to Cape Town we are talking about no diesel for water maker or ice melting to resupply the water tanks. For such a journey it would be good to have 1-2000 litre diesel, 1000 litre water, 60-



100 litre black water tanks with a crew of 4-6. But most boats will not have this ideal. Containers stored on deck can help, with fuel especially. But the need to have power saving facilities will be important.

## **Keel**

A shallow draft fixed keel is one option preferred by some

when cruising in high latitudes. It is cheaper than a lifting keel, there are no mechanics involved and you will get in to most areas. A lifting keel will let you explore uncharted areas and get you in to even shallower water, which can be useful for skirting round pack ice close inshore. But it might not be necessary for most of the high latitude cruising you have in mind.

## **Dinghy**

For the most remote locations it would be wise to carry two inflatables. The main one preferably in hypalon so that it can withstand UV light and general wear and tear better. An outboard that will power the dinghy through high winds is also recommended. It is when you are trying to get lines ashore fast with a

9,9 hp outboard, and two foldable kayaks.

## **Sails**

Dacron yankee, mizzen, main, cutter and storm sails. Genaker on spinnaker pole. Nowadays with stronger sail cloth some prefer a mainsail with four reefs where the fourth reef is the storm sail. Or use a dedicated try-sail to

save your mainsail. The cutter staysail is either rigged with a roller or on hanks. Hanks is the more secure choice as the roller can unfurl in lots of wind when you have the sail halfway rolled up, and it is easy to set up a smaller headsail on hanks when a big blow is expected or upon you. But again if you make sure you keep your furling line well secured, to have a rolling inner foresail/storm sail

makes life easier still, unrolling and rolling it up from the cockpit, and saves going forward to a bouncing foredeck. But it must be well secured.

## **The basics**

Your boat is your home and your lifeline. Make sure it is in the best possible state before you cast off on your

adventure. If you have the three basics in good order you will manage most things: The rig will make sure your structural sound hull keeps moving through the water and the steering will keep you in the right direction.

Everything else is just nice to have. Think about it. When you sail to places like Ushuaia, Greenland or Svalbard you very seldom find off the shelf production

new boats. You will find the oceans' 4x4's built like tanks. They look the business, and won't win any beauty contest. But experienced sailors will always go for strong and practical before 4 toilets and a built in espresso machine. Every time. They see the beauty in the functionality. Standard production boats can in general do a trade wind round the world trip without too much trouble. It's



downwind sailing in warm climates and almost anything will do. But that's not the case in the high latitudes. The conditions are too harsh and you have to be utterly self-reliant. Complex systems are not the way to go here. Keep it simple, and you have to be able to fix it yourself – or manage without it until you reach a place where they have 7 Eleven and McDonalds. That's when you know you

are back in civilisation.

But all this is just a dream for most people. The perfect boat is usually the one you have and know, and can bring up to standard. It is at least the boat you are able to afford and know how to sail on a big adventure. Just to make it clear: having made all the above ideal suggestions having said all the above,

there are still a lot of standard production boats which have made and are still making expeditions to the high latitudes, perhaps with slight modifications and additions in some cases.

## **Stable**

The boat has to be stable. The experienced charter skippers working in Antarctica and the

Southern Ocean have been, or have friends that have been, pitch poled or rolled at least once in their career. Then you have to be certain that the boat eventually will end up the right way up.

Having said that too, there are a lot of lifting keel boats that sail in the high latitudes. The most famous of them all is Damien II, designed by sailing legend Michel Joubert

and sailed by Jerome Poncet, for many years the guru of Antarctic sailing. Another variant is the Ovni series. ARC founder and round the world veteran Jimmy Cornell has sailed in both Antarctica and the Arctic with an Ovni 43, though he has just had a new boat designed and built for the next circumnavigation, via the high latitudes – the Exploration 45.

But again GRP production yachts suitably equipped or modified have sailed in Antarctica and rounded Cape Horn, and one has just completed the North West Passage both ways.

## **Strong**

You might end up getting a serious beating in the high latitudes. It's all mathematics

really. The longer you sail the more experience you will gain – mostly this is good, but some of it won't be so good. And that's what makes the good stories.

I suggest you make a “Nice to have” and a “Must have” list. There is a lot of electronics and electronic gadgets that tend to end up on the “Must have” list, which then in turn that may need revising again.

It is important to remember that the more things you install, the more complex systems get and the more time you have to spend fixing them when they break down - because something eventually will. Another important aspect is the economic side of it all. You can spend a lifetime installing things you don't need and spend too much money on it all. Money and time you could have



spent exploring and gathering memories for life.

## **Standing rigging**

A wise person puts cable ties on all shackles to prevent them from loosening. Check every terminal. If you see rust or loose strands, change the standing rigging. If you have rod rigging on your boat – change it to wire. Rod breaks

without any warning and you can't use the broken rod for anything. A wire will usually give a sign of wear and tear by either rust or broken strands near the terminal fitting. Makes sure you remove things such as old tape to enable a proper inspection of the areas most prone to hazardous areas.

Go aloft to check for cracks in spreaders, terminals and

mast all the way to the top. Lubricate all movable parts in the mast while you are up there.

It is good practice to check standing rigging often on passage as well, even if only from the deck. Binoculars can be useful here for the above deck rigging.

Norseman Swageless Rigging Terminals lets you do the

rigging job yourself. And if you have a rig failure in the high latitudes it might save your trip, or the boat, if you can fix broken standing rigging.

## **Running rigging**

Crossing oceans and sailing for days on end takes its toll on all the equipment.

Running rigging is specially

exposed during long distance sailing, and when sailing in the high latitudes it is easy to become somewhat negligent about inspecting all the running rigging due to the cold. It's seldom very comfortable to get on to the foredeck in all sorts of weather to see if there are any signs of chafe; do it anyway. Check all running rigging for chafe frequently. Typical chafing points are where the

halyards are locked on the rope jammers. To prevent this you can sew on a larger diameter rope cover in the exposed area, or use duct tape temporarily. The end of the halyard where the sail is attached is also a risk area. If you have some extra metres on your halyard it is wise to cut 20-30 cm off this end every year to prevent it from breaking.

## **Sail configurations**

I'm an old regatta sailor who likes to play around with and test different sail options. It keeps me busy, gets the boat going faster and it can make life on board more comfortable.

Dead downwind I pole out the genoa on a fixed spinnaker pole. That way I can easily reduce the sail area

without having to bother about the spinnaker pole. It will just stand there until I find it safe to take it down. And I can roll the sail in and out without it furling badly or having to go on the foredeck every time.

Modern boats are usually set up with backswept spreaders. This makes the rig simpler and thereby cheaper. Not a bad thing of course, but not



so good if you intend to do some serious sailing – sailing dead downwind we usually want to sail wing-to-wing style, goose-winged, with the genoa poled out to one side and the main on the other side. With backswept spreaders you won't be able to get your mainsail as far out as you would like. This leaves you with three alternatives: Rig twin headsails on two poles or fly

a sail like the Parasailor ([www.siatc.ag](http://www.siatc.ag)), or just bite the bullet and sacrifice 1-2 knots of boat speed.

If you are looking to buy a new boat, or new rig, intended for offshore and high latitude sailing I would most definitely recommend a rig with straight spreaders, and personally I would either buy or refit a ketch solution. A ketch gives you far more

options A ketch rig gives you more sail options to play with, the masts are lower than on a sloop and will most likely not catch the higher winds that you have the higher above the surface you get. This is off course good when the wind is blowing hard, but not so good when you are in the light stuff. Two masts will also give you the opportunity to mount radar and wind generator on the

mizzen(aft mast), and for instance use the mizzen boom as a crane to lift on board dinghies, engines and fuel.

An inner forestay where you can have a hanked on or a roller reefing staysail is much sought after as it gives you more leverage, and brings the centre of effort back on the boat. The hanked on solution makes it easy to lower and hoist if you leave it hanked

on, the size of the sail is usually sufficiently small that it just falls on deck and you can leave it there until a more convenient moment for tidying it up. Bob Shepton did this often when rounding Cape Horn against the wind in the early 90s before he had roller reefing. A roller reefing inner headsail makes life easier still, as long as you look after it and secure the reefing, or furling, line

properly.

## **Hull**

“Steel is real”, an offshore friend of mine wisely said. They have sailed thousands of nautical miles and even overwintered in their steel boat in Antarctica. With all the debris floating around in the world’s ocean as well it might be wise to choose

either aluminium or steel boats when planning to sail in the high latitudes. But the main point is that the hull has to be structurally sound and safe.

All hull through fittings need to be checked and evaluated. If you even think that a valve should be replaced – do it. This reflects sailing in general. If you just think about it, it is not worth much

– just do it!

## **Steering**

You don't need much boating experience to realise that sound and reliable steering is essential for a long distance cruiser. There have been several incidents in the last few years where the rudder shaft has worked itself loose, chewing through the hull and



in the worst case resulted in the boat sinking.

Check the rudder, the shaft, the quadrant and transfer to the wheel or tiller before setting off. Any signs of wear must be taken very seriously and left to professionals to check. Lay in spare cables or necessary replacements before you leave.

# **Autopilots**

There is nothing as boring as steering hour after hour when offshore. It's fun some of the time— but it all loses its appeal after a short while. There are more enjoyable things to do on board. That's why we have autopilots.

Nowadays autopilots are very reliable. Autopilots can be one of the most essential

items on board, and if you are sailing shorthanded the autopilot is a pair of extra hands. It enables you to rest and sleep, and gives you time to do other chores on board.

When sailing in cold weather and your autopilot drive unit is exposed to the weather there is a possibility that the cold may affect the pilot. The pilots are often greased up with very thick grease from

the factory, and in the cold it clogs up and destroys the bearings.

One solution to this is to have the drive unit heated by spill over warmth from the heater or engine.

In any case you should have a back up for both the computer and the linear drive. It is expensive, but an autopilot failure has foiled many

expeditions.

## **Self steering**

But what if the electrical system fails or the autopilot breaks down and you don't have a spare? Then you are left with one person on the wheel at all times.

The answer is the good old wind vane. It is reliable,

doesn't need electricity and never gets tired.

I have used several different models through the years, and don't really have any preferences as I have managed to get one I have been using on that particular boat to work. It takes a lot of trimming to balance the boat, but once it is done you can sail for days without any adjustments.

I can recommend the site <http://windpilot.com> and the book that the manufacturer of Wind Pilot has written – and you can download for free on his site. Of course he wants to sell his products, but he offers valuable information, and he has good products.

If everything else fails you can try to balance the boat's sail configuration, and set the tiller or wheel up with a rope

or shock cord on the windward side of the steering. Balance the sails, set a steady course with the tiller or wheel, tie off with clove hitches, and go down below and make a cup of tea. When you find the right balance you can sail for days and weeks with this solution as long as the wind remains fairly constant. There is a more complicated solution using the jib or genoa sheets and



shock cord to the tiller on the other side, but try this first!

## **Light**

The good thing about sailing in the Arctic and Antarctic is the constant daylight in the summer months. But when the sun starts to set it gets dark quickly, and in the later months of the summer it draws in earlier each evening. And even if the aurora

borealis is worth a winter sailing expedition in itself, the green light doesn't give you enough light to see icebergs or navigate in close quarters. LED technology is the way to go due to its very low consumption of electricity.

Some mount a searchlight on the targa (arch on the back of the boat) or somewhere else on the back of the boat, but

end up with shades from sails and rigging, and reflections from the same will blind the helmsman. If you have a man on the bow, he will get completely blinded when turning towards the helmsman. I have a 2600 lumen LED light that I fix to the pulpit when needed. The 12 V cable is stretched across the deck and under the sprayhood where I have mounted a switch so that I

don't have to run below to pull the plug every time I turn it on or off. I also have a good powerful hand torch/searchlight in the cockpit to light up areas either side of the boat.

## **Dinghy**

It could be argued that every yacht should be built around the dinghy, because the

dinghy is the key to all shore based activities in remote areas. If you lose the dinghy you are basically stuck on the boat, and might as well sail back home - though some crews have swum ashore for the sake of it! Or let time work with you and build your own dinghy out of driftwood, sails and gaffatape.

The dinghy is not only for exploring. It is also a vital

safety element. You use it to set lines ashore, haul water and diesel out to the boat, and to check out anchorages before you venture in to them with the yacht, and much more.

That's why you should take extra good care of your dinghy in the high latitudes. Hoist it on board, on deck or in the targa, every night. You don't want a curious polar

bear or leopard seal to bite through it. If you leave the dinghy on the beach it is wise to put up tripwires connected to flares to scare off polar bears. They usually destroy everything they check out, so beware.

Hypalon dinghies are more durable than ordinary kayaks and will accept more beating and sunlight. They are more expensive, but it is worth

considering.

Never tow the dinghy for long stretches. You could lose it. Hoist it on board.

An outboard is also a must if you don't want to be stuck on shore because a big onshore blow keeps you from getting back to the boat.

Good advice is to have two dinghies and two outboards. But that might be too much



for most boats as it takes up quite a lot of space. An inflatable, or foldable, kayak might be a good second boat, and it will also give you a chance to explore and experience the high latitudes in a very silent and intimate way. And it is good exercise.

Be sure to carry a dinghy repair kit on board.

Dinghies are fragile and

repeated landings on beaches or over rocks takes its toll.

I know you are supposed to carry the boat, but if there are only two of you seldom do so since it is too heavy work. One good solution that will prevent holes in the dinghy and split bottoms is mounting foldable wheels on the transom. Just lower them when you get near the beach and one or two people can

easily roll the boat up on the beach. Be sure to roll the boat well over the high tide mark so that waves from calving ice won't reach it. Best always to tie it to something.

## **Engine**

High latitudes isn't the place where you want things to break down; at least not the essentials like the rig, engine and steering. These are the

things that have to function on a boat. You can manage without the engine for a while, but if you don't have any alternative ways to charge your batteries you will soon find out how power draining all your instruments, heater, fridge, PCs, TVs, radio and so forth actually are.

Another thing to remember in the high latitudes is that

everything is far away. We can't really expect a Raymarine expert to just materialise on the guest pier in Ushuaia if you need him.

You will have to rely on your own resources when things go wrong, and if you have to get spare parts or experts to Ushuaia or anywhere else out there it will take time and a lot of money. That's why it is important that you are fully

prepared for most things that could happen whilst on the adventure.

Change the oil, oil filter, diesel filters, and impeller before the trip. Buy double of everything you have just changed – also oil.

## **Steering**

Make sure all your bearings

are in good shape, and check the rudder stock for wear and tear. All cables must be checked thoroughly, and make sure that you have a back up cable if it should fail.

Emergency steering is also a point to focus on. Be sure that you have your emergency tiller available, and that it actually fits. On some boats you have to set up a rope and block system to the winches.

Get everything ready and test everything before you leave.

If the rudder should fall off have a thought-out plan on what parts to use to make an emergency rudder. Or make up an emergency rudder before you go.

## **Hatches and ports**

Double glazing - thin acrylic



sheets over hatches and ports, can be simply held in place by magnetic tape or bungee, or duct tape.

## **So, a Summary re Equipment**

This is the fundamental question - how much and what equipment to bring? You can spend a lifetime equipping your boat for the

ultimate expedition that never gets off the dock. It is not only economy and time to spare that influence these choices - most of all it is your and your crews' competence and feeling of security. Some people are happy to sail with a Maxi 77 without more planning and preparations than "just woke up one morning and felt like it". While others again would prefer trailing the Coast

Guard in a 62 footer with all the state of the art equipment money can buy. You must decide, but also think of paring down your list to a ‘what I really need’ list, which might mean more in some respects and less in others. Polar regions can be an unforgiving place to sail – but it is all worth it in the end.

## **Charts**

This is probably something that I need not say, but in the light of developments in recent years where more and more sailors just depend on their electronic charts, I would strongly recommend getting paper charts for the area you are venturing into, and also to areas where you might end up, as a back-up.

There are a lot of areas in the high latitudes that are still

uncharted – at least on electronic charts. And paper charts are a critical asset when and if your electrical system fails or your on board electronics black out.

But it's not only that. Paper charts are also very valuable when it comes to getting an overview and the big picture, and when it comes to planning the voyage in the comfort of your home

beforehand, nothing beats the feeling of rolling out big maps on the kitchen table.

Topo maps or Saga maps in Greenland are also very useful. Not only for hiking, but also to find out where people live. They will also show you where small fresh water rivers run out in to the sea. Here you can fill your tanks, and maybe even catch salmon if you are lucky. Saga

maps can also be another useful back up to your chart plotter or nautical charts, though obviously depths are not shown.

## **Ice**

Getting into high concentrations of ice is something you should avoid, or undertake with care if you have to. Small changes in

weather and current may result in compressing ice destroying your boat.

Night time sailing in ice infested waters is not recommended. Even if you are a radar-tuning master who can spot even the smallest bergy bit of ice, you will not be able to see the ones floating just at the surface, and especially if there is any sea speckle. These bits of ice



can weigh 1-2 tons and with you travelling at any speed, it has the potential for disaster. Heaving-to is a good option in such circumstances. Then you will drift with the same speed and directions as most icebergs. Be aware too that sometimes an ice floe at night when it is dark can appear like a band of light under the cloud on the horizon as you drift, and in fact be quite close. In daytime you should

try to keep upwind of an iceberg as there might be growlers and brash floating downwind of it. There is always a “but” in icy waters; remember that icebergs are not only influenced by the force of wind. Current is also a factor, so keep a good lookout even when hove-to. They can travel through the ice the opposite way to the wind.

Be very aware of swell, wind and currents in ice situations.

If you should end up in ice it is important to slow down to minimise the effects of possible impact. A long plank or boathook, or dedicated tuk, a pole with a metal blade attached such as the Inuit use to test ice, is essential for pushing ice aside. You should try to avoid reversing as you can suck bits of ice in to the

propeller and damage the rotating blades. Even a little damage to the sharp edges of the propeller can cause vibrations that are both uncomfortable and damaging for the engine and gearbox in the long run.

Use the radar actively and tune it so well that you end up getting seabirds on the screen. This is a very time consuming and tiresome job, but it is

vital in mist or at night. Learn how to use the radar before you end up in ice. In clear daylight steering by sight is better.

Ice can also be used effectively to find out where there is shallow water as the bergs get stranded on rocks and sandbanks. If you are close to shore and need to get away from the ice, shallow bays and inlets are what you

should be looking for.

Detailed ice charts are usually too detailed and therefore too big (high resolution) to download via an iridium satellite link. An alternative is to use a friend back home to download the charts, resize them and send them to you. Alternatively they can interpret them and send their advice, but it is better actually to view them yourself.

Sea ice symbols are in the shape of eggs, and are graded 1 to 10/10ths where 0 is open water and 10/10ths is uniform solid ice. A sailing yacht should in general not venture in to conditions above 3/10ths ice, though steel or aluminium yachts may be able to manage more than this.

## **Sails**

Sails in the high latitude are all about durability. I know sailors who have been advised by sail makers to buy expensive laminate sails for a high latitude expedition. One of them returned with only the storm sail intact. All the other sails had been delaminated and destroyed by the constant beating and sunlight.

Dacron sails still do the trick



as they are very durable and they can be fixed with tape, sticky back and needle and thread. Make sure you have a sail maker's glove, a set of needles and thread on board. Stock up on sail tape and buy some sticky back (sailcloth with glue on one side) from your sail maker.

Be sure to cover up the sails when not in use as the UV light takes its toll on them

and there is more UV in polar regions.

If you have the space and wallet a sewing machine can save you both time and money. Sailrite.com sell very good sewing machines that you can have on board, and they can also be operated without electricity.

**Ice screws**

Climbing and sailing aren't that far apart when it comes to endurance and skills. Some gear from the climbing world that you should bring with you in to icy waters are ice screws. Use them to anchor the boat to icebergs. This little piece of high tech equipment can be a real life saver when you are totally exhausted and just need some rest. Get on the leeward side of a flat ice floe and use two

ice screws for every line. The metal in the screws will attract heat and after a while they will melt the ice around themselves. With two ice screws you will be good for approximately 24 hours.

There are also on the market these days some small but heavy s.s.grapnel type anchors that could be used in this way.

# Cooking

Propane works best in the high latitudes, and be sure to stock up on propane containers before you leave. If possible keep a variety of attachment devices or regulators in case you have to change to a different propane container and system along the way.

Freshly baked bread is always

welcome among the crew, but it is not very economically sound to bake bread with a propane stove. You use far too much propane, and you would be better off buying half baked bread before you leave.

Investing in a pressure cooker will not only save propane, it will also help you make very good meals in the form of stews, pots and casseroles.

# **Diesel**

Enough diesel is a challenge and bad diesel is a problem. Sailing in the high latitudes in the summer often means “no-sailing” as the wind is often too weak or non-existent, at least in the Arctic. Diesel is also used to heat the boat, propulsion and charging all the systems.

If you are sailing towards

cold water from warmer climates make sure that you use up all diesel bought in warm areas as it will turn to wax when it gets cold. Diesel bought in colder areas will already contain a wax-breaker.

It is important to have a water separator filter in your system, both for contaminated fuel and condensation in the tank.



You have to be careful with what kind of diesel you fill your tanks. Seldom used gas stations can have old diesel, and/or bug-infested diesel. Good advice is to always use a filter in your funnel on deck too, so you catch the most obvious before it gets in to your tanks. Diesel cleaning fluids can also be a help.

In Greenland you can buy barrels of diesel. The best

way to get it to the yacht is to dump it in the water and tow it with the dinghy. Then hoist it aboard using either the main boom or the spinnaker boom.

## **Water**

Water is always a scarce resource when you are sailing long distances. The same goes for high latitude sailing

and not all boats have big enough water tanks for extended periods. You have three options at least:

1. Don't waste water. If you have both manual and electrical fresh water pumps, turn off the electrical. Man's tendency to laziness will make sure he only hand pumps the least amount of water necessary. Or only use the electrical pump to fill one

gallon containers, and then only use fresh water out of the containers. That way you can keep a check on consumption. Cook fish, vegetables and pasta in half and half seawater and freshwater. You can also do the dishes in salt water. No showering, everyone can take a bath in the sea if they feel the need. Most expedition boats in the south can switch the domestic water system to

salt, this is used for dishwashing and showering. Or fit separate salt water taps at all sinks/basins. Salt showers in cold water areas are not at all sticky and are great when you get used to them. That leaves the sweet water for drinking only.

## 2. Collecting water.

In the wintertime you can melt fresh snow, or ice which

gives more water. If you are sailing in areas with ice you can melt old ice. If sea ice is old enough, at least a year old or more and then it is usually blue-gray as on glaciers, it will have lost its salt concentration. Be sure to taste it first to make sure it isn't salty. Glacier ice on the other hand is formed from fresh water and should be broken off or collected from icebergs and used by preference. It is

also important to remember that melting ice means that you use propane or whatever fuels your kitchen stove.

Rivers are also a source of fresh water. To collect it you should get a flexible water tank. We carry a 100 litre soft pack that is a bit of a hassle moving when it is full, but its size also makes it worth it. We also use it in places in

Greenland where there is no tap water on the dock or the hose isn't long enough. Or you can collect from mountain streams or lochans with care. 15 litre plastic folding containers sold by some chandlers are also handy, and can be carried by one person, and can be flattened and stowed easily when not in use.

Another solution is to have a



tarp that you use as a cover inside the dinghy. Bring buckets and drive into a fresh water river or find a small dam on a floating iceberg. Just pour the water in to the dinghy and drive back to the boat with the dinghy half full. Pour the water into the tanks. You will be surprised how fast and efficient it is.

A funnel and length of hosepipe can also be used to

replenish the tanks from glacial melt-water run-off with very little effort.

There are relatively inexpensive plastic siphon tubes with a screw down release cap which can be purchased at most chandlers, for transferring water or fuel - but be careful not to get them mixed up!

### 3. Make water.

Water makers are becoming more and more common as the price goes down and the reliability goes up. To make water you have to use electricity, and that usually means running your motor, which requires more diesel. So you have to carry more diesel to make water. But you will have to run your engine anyway from time to time so

it is a good use of diesel to have a water maker - if you can afford it, plus the membranes.

## **What you should have**

Paper charts for the area you are planning to sail to – and then some.

Rifle or shotgun (if in the Arctic)

Survival suit – easy packed

Warm clothing – double set

Satellite telephone, and consider having a data kit with it to download weather and ice charts, or a friendly computer guru at home.

EPIRB

Full set of emergency flares

Life raft

Dinghy with outboard

Knife and axe

Binoculars

Watertight bag to carry  
equipment

Two handheld VHF's

AIS

Radar

**Spares**

Engine oil x 2

Gear oil x 2

Oil filters x 3 +gaskets

Diesel filters x 3

Oil for outboard

Gas for cooking

Emergency water, keep 20-30 litres in bottles tucked away for bad times

Propeller - consider having a spare.

Starter motor

Alternator

Injectors

If you have a heater with electronic control such as Webasto, Eberspacher etc., consider taking spare electronic control units.



Consider taking a spare carburettor for a Refleks or Dickinson.

Snow shovel – will also be handy to dig out a hole where you can sit in hotspots on volcanic ground such as Deception Island. Not bad for shovelling snow when needed either....

Spare dinghy

Chain saw – might be useful

if stuck in ice

## **Insurance**

Not every insurance company will insure your boat and crew for the most remote areas of the world, or they will set the insurance fee so high that it makes no sense. Be sure to check around with different companies to get a fair price, a company that

understands what you are doing, and actually covers the area you are sailing in.

Topsail Insurance in the UK and Pantaenius in Denmark comes highly recommended as they specialise in maritime insurance, and have insured boats recently in polar regions.

# 5. Sailing in Ice

By Bob Shepton

Sailing in ice is not much different from sailing anywhere else, until we define our terms more accurately perhaps. Really, I would say, sailing properly with a breeze is only possible with open ice. I remember doing it down the Gerlache Strait in Antarctica, and fun it

was; there were bergs and bergy bits around to be avoided but in no way were we in close ice or pack ice at that stage. And of course one can sail in the open sea with bergs around, though one year in Greenland we had a narrow escape when a big berg suddenly loomed dead ahead out of the mist. But in pack ice we would be using the term sailing in ice loosely, meaning we would really be

motoring on engine, in all likelihood with all sails down. One year in Greenland when my engine was giving trouble I invented the ditty:

**‘Sailing in Greenland  
without an engine**

**Is not nice**

**Because of the ice’**

And then remarking, but did not the old masters do that all the time? Yes, but remember, many never came back. So though for sailing folks it is a terrible thing to have to admit, sailing in ice requires a good, reliable engine, and a crew member on board 'who is good with engines' is worth two on the shore, whether he or she be contactable or not. And in any case, as I am fond of pointing out, in the Arctic

(and Antarctic though my experience there is more limited) there is often either too much wind or too little, and an engine is almost a necessity for making progress in today's terms.

## **Cheap diesel**

I am no engineer, but when it comes to engines it is worth making one or two points. Having a number of fuel



filters fitted is important, with a stock of filter elements for renewing from time to time. My friend Rich Haworth of High Latitudes always advises people to fit a set of filters back to back, or rather side by side, with a change over lever so that if you are having trouble with one you can swop over to the other and deal with the recalcitrant member when more convenient, or whilst the

other one is still allowing the engine to run. Diesel in Greenland is good, clean, and at the moment the only cheap thing in Greenland! In Canada and Alaska in the settlements it seemed satisfactory but transiting the North West Passage, west to east in 2013, we had to do a lot of motoring and when we took off the bowl of the water separator unit to change the element towards the end, the

bowl was full of water. It was colder in the Arctic in 2013 so this may have been due to condensation rather than compromised fuel, as we had constantly run down and re-filled the tank, and condensation can occur in a tank with the boat warmer than the outside temperature (hopefully!) when it is not full. Incidentally, if leaving the boat anywhere over the winter, or for a lengthy period

of time, it is wise always to leave the tank full, or completely empty, But I am sure you knew that...

But what of the boat? Clearly the preferred material for the boat's hull must be steel or aluminium. So why do I have a GRP boat? Simply because that is the only boat I have and I cannot afford another one. But to encourage any who have a GRP boat and

fear that sailing in ice is therefore not for them, it is worth pointing out that I have found GRP to be much stronger than you might expect. I remember arriving at the Meek Channel in Antarctica and wanting to get through to what was then the British Antarctic Base of Faraday in the Argentine Islands; the channel was completely full of brash and small growlers with not a lead

to be seen. We did not want to retrace our steps quite a way back and look for another route round so we pushed gently on the engine into and through this ice with Pebs and Henchy pushing ice away when and where they could with jib and genoa poles. OK, so it was only brash and growlers but if you had been down below and heard the noise of the ice scraping along the hull you

might have thought your last hour had come, and I was convinced the ice must be scratching the hull disastrously. When we lifted the boat out thousands of miles later in Darwin, Australia, it was the first thing I looked for. Not a scratch.

**Watch out**

What about a direct impact collision with ice then? One dark autumn night when I was preparing to winter alone in the Arctic in Greenland, in spite of having four lines ashore from bow and stern I slipped all four lines to get out of the cove where I was moored, hopefully for the winter. A north wind had been blowing strongly for three days or more, and ice floes, growlers and bergy bits



had been brought round the corner into the cove where I had moored in spite of it being two turnings off from the main fjord. Some trick of the tidal currents. By then I had had enough of fending off and being bumped and scraped, and set forth down the main fjord towards Upernavik. Fortunately it was not completely dark as the lights of the airstrip on the hill above Upernavik acted as

a sort of moon.

The fjord was full of growlers and bergy bits and I weaved and dodged my way down the fjord but eventually, in spite of having some light, I missed seeing a sizeable lump of ice ahead and hit it full on. True it was with the point of the bow, one of the strongest parts of the boat. Nevertheless it made a fearful whack and I was sure it must

have stove in the bow to some degree. When I got into Upernavik harbour, for a very disturbed night still with ice floes floating in, and inspected the damage in the morning there were one or two small slithers of gelcoat missing but nothing significant. I still would not make a habit of doing this by choice though.

There have been one or two

other close shaves I could mention, such as when I took a short cut to the Vaigat north of Disko Island with three glaciers calving to the east, which turned out not to be such a good idea, and when all is said and done, given the choice and sufficient resources, going into ice I would choose steel or aluminium. There is one other possibility: a friend of mine John Gore-Grimes, who has

done a lot of sailing in the Arctic over the years, when his new Najad was being constructed in Sweden he had it laid up with Kevlar from bow to amidships as a strengthening against ice. The boat being basically GRP it was probably still more economical, yet strengthened, and also easier to work on and maintain.

## **Hull choices**

But if steel or aluminium is the preferred material, which one should it be? Here the discussion becomes endless, complicated and highly technical, if you let it. To mention a few salient points. Aluminium is more expensive, and it may be more difficult to find people in certain parts of the world to work on it if needs be than with steel. You need good specialised equipment for



long as you don't leave anything steel anywhere near it which causes a reaction through electrolysis. It does require more insulation, to combat heat loss and noise which it transmits more easily. We could go on forever. I would suggest you Google it for respective merits, ask around, and make your own decision – what are the more important points for you? It is beyond my ken, and



pocket.

Some sort of doghouse or cuddy can be helpful, for warmth and shelter in stormy weather. My son David built a cuddy, or solid spray hood, for both of my Westerly 33foot boats (a long story there) and what a tremendous boon they have been, though because of winches and the position of the mainsheet we could not bring it right back

aft. Fine if we are on some form of self-steering and can sit forward but not so sheltered when we have to sit or stand aft and hand steer. But then I wonder how well you can steer when sailing from a doghouse? Some form of shelter in stormy weather however is a boon, whether in polar regions or anywhere else for that matter.

**Minimalistic does it**

When it comes to instrumentation you are talking to the wrong person really, because of my comparative incompetence with modern technical systems, and because I tend to be more minimalist. I remember helping an American friend sail his boat, not in polar regions but in the Pacific, and gained the impression, if they will forgive me saying so, that

Americans love gismos. There was endless chatter on the HF radio for instance, with long lists of weather, temperature, sea state and your position – where was the peace and solitude of ocean sailing, and the self sufficiency – a paramount aim for anybody sailing in ice I would say.

So what do you need? Everybody will have different

priorities, but thank God, and the Americans, for GPS – and being a Reverend I mean that literally! How did Amundsen find his way safely through the North West Passage, though he could see land most of the time of course? But how about the old whalers out at sea when sun and stars were hidden for days at a time? I have even recently spoilt myself by getting a chart plotter. Of

course it is cheating - it makes the whole thing so much easier – but a point of information, if you are going through the North West Passage you will need a plotter for C-Maps as I found Garmin did not do anything between Lancaster Sound and Alaska. I have VHF which is obligatory really anyway; I do not have HF radio since they no longer monitor 2182 and Portishead is down, but it

could be useful for weather and ice reports, and these seem almost essential nowadays. Again how did people do without these things in the past? We can only admire them for their skill, in reading the weather signs for instance, and realise how spoilt we are. Which raises the whole matter of Internet access.

This is obtainable on boats

nowadays but at a price. The requisite systems are expensive. But why could it be important? Because, as I say, we think it almost essential nowadays to obtain ice reports and weather information and these are disseminated via the Internet. It also gives an email facility for communication with family and friends. But there is a way round this for the more impecunious, though



this does require obtaining a satellite phone which requires some outlay but is a fraction of the costs of a broadband system on board. Also weather and ice reports, and email, require a laptop computer which most boats have now anyway, and a suitable server for email on a boat via a sat. phone. And finally it requires someone 'good with computers' back home. Then for us sailors

feeling impoverished all that happens is your guru back home downloads the Danish, Canadian, or American ice charts depending on where you are, crops them and reduces them in size, as my email system for instance will not take too large an attachment, attaches it to an email which you then download via the sat. phone onto your laptop and there you are. A little hint here,

make sure your man (or woman) at home keeps the colour depiction of the various areas of ice concentrations (more of that in a minute) as you get used to simply telling the concentrations by a glance at the colours. I am indebted to John Harries with his Attainable Adventures website for passing on this method, which I have used to good effect on two transits of

the North West Passage now, and Mike Anderson my guru in Scotland for downloading and cropping and sending which has been such a life saver.

## **Ice charts**

We must digress to ‘eggs’! That is the egg symbol, an integral part of any ice chart. Basically each line within the egg on these charts gives

information regarding the ice you will encounter in that area, the most important of which to my mind is the top line which tells you the concentration of ice covering the surface of the sea in 10ths – 2-3/10ths is passable for my boat, 9-10/10ths is not! Imagine you are looking down from above, in order to estimate the coverage (concentration) of ice over the sea in that area in 10ths.

The other lines give you more detailed information such as the thickness of the ice, whether it is new or old ice, the extent of individual floes within the pack and so forth. It is a job to remember exactly what each line represents but for the record the top line is the Concentration, the second line is Partial Concentration, the third the Stage of Development and the fourth

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A sat. phone then is 'almost essential'. It is also useful in case of emergencies. Personally I have found that it is a boon here to purchase a permanent antenna and rig it outside with a cable coming back to the chart table. It works better and it saves trying to stick the mobile antenna onto a winch or some such every time you wish to use it, or having to go outside to use it. I have also found



that whereas using a satellite phone for voice eats up your minutes' allowance, to use it with a modern email system uses very little owing to its ability to compress and send, and to receive quickly. Again I use the satellite phone for weather, but this requires someone like the ever helpful Peter Semiotuk in Yellow Knife to keep sending you weather forecasts. Or you could get your guru to copy

GRIB files, or synoptic charts of Greenland's ice or weather for instance, and send them on the same system as for your ice reports.

And radar can be useful. A friend of mine who has sailed a lot in the Arctic used to say 'Men don't need radar'. His boat now has it. Certainly on our first visit to Greenland, not knowing any better in those days we came down

from Iceland and passed close round Cape Farewell to get up to Qaqortoq (or Julianehab as it was called in those days) and found ourselves in a lot of ice in thick mist. We spent the day steering the boat practically on radar alone, one of us sitting down below and shouting directions up to the helmsman 'steer to port now, back to starboard now, OK straight ahead for a while, oh, port again' and so

on. It was our first experience of ice and our first use of radar and it saved the day for us. Again skippering someone else's boat one year and coming out of St. John's, Newfoundland, to cross the Atlantic, it was a great comfort to have the radar in the fog that is almost traditional in those parts, and to spot what must have been big icebergs to be avoided out at sea. Or Tash, waking me

early one morning off Cape York in Melville Bay, Greenland, where ice bergs from the local glaciers meet and the radar looked as if it had caught a dose of measles. Or approaching Northumberland Island in the far north with our newly acquired chartplotter plus radar and picking up the coastline and anchorage without being able to see anything in the mist until we

got right there. Yes, radar can be useful, especially in fog and mist, or at night, but you do need calm conditions so that there is little or no sea speckle to confuse the situation. In clear visibility and daylight, eyeballing is better.

## **Get the tuk**

What else might you need? A tuk or preferably two is

another essential. A tuk is a metal blade attached to a pole; shorter ones are used by the Inuit to test ice to see whether it is safe to walk on, and for making holes to catch seals by then shooting a net under the ice with a tuk (very clever), and longer ones by sailors to push ice away. At first it will not seem that anything is moving but as you persist then it will move away and it is not just your boat

moving backwards either, though that is probably happening too. Quite large lumps of ice can be moved with a bit of effort in this way. We had a bit of a complication this last summer in the Tasmanian Islands, off the Boothia Peninsular in north east Canada: an ice floe kept on coming back after we had pushed it away with our tuk. It was not only the awkward tidal currents in that



particular cove; it was also caught on our tripping line. In the end crew member Rich jumped onto the ice floe, we let out more line, he jumped back, we motored close round the floe and eventually managed to hook and flick the tripping line off the floe which then sailed sedately away. As a general rule, don't use a tripping line in ice; I had thought we were going to be anchoring in another place

with kelp and rocks but it did not work out.. Still that's one better perhaps than when one year we were caught in pack ice off Bylot Island, north of Baffin. Without further ado Polly and Tash stripped to their sponsored thermal underwear and jumped onto a big ice floe for a photo-shoot. Probably the best photo-shoot that firm has ever had. Or if you are a big boat with a powerful dinghy and

outboard you can gently ram the bergy bit and push it away with the dinghy and your powerful engine, with or without a tuk.

### **Spare prop**

Be aware too of the danger of getting your anchor stuck under ice floes, or pack ice moving in. One year in the far north of Greenland I came to the conclusion it was better to abandon anchoring and motor

a little way out to sea and just drift in clear patches until it became necessary to turn the motor on again to get to another clear patch and so on. It saved the rather stressful situation we had just endured of trying to fish your anchor up from under the ice floe that had just covered it.

I am assuming that you have an EPIRB, preferably with GPS incorporated, and a

liferaft on board, and a well stocked panic bag should you have to abandon ship. But these are not exclusive to polar regions.

On the North West Passage transits I have been carrying a spare prop in case the existing one got damaged by ice – it was quite a drama drying the boat out against a wall in Scotland to get the old one off to measure the required

angle and length at the shaft end for the new one. I even carried a chain saw which is also still on board in case we were caught in impenetrable ice. So far I have not had to use either of them, I am glad to say. This last summer I bought and fitted an electronic autohelm, or rather Rich, our Mr. Fixit, fitted it for me. Because there is often either too much wind or too little and you do a lot of

motoring in the Arctic and Antarctic, this was to give some relief from hand steering for the crew. In 2012 we had hand steered across the Atlantic, up the long west coast of Greenland and through the North West Passage; so it is possible; but then these climbers are tough! We did have some trouble calibrating this new self-steering, but it certainly proved its worth when we

eventually got it working. And a word about windvane steering, which you may well use on the ocean and sea approaches but not in icy waters themselves I would think. Be careful that you have one where the servo-pendulum rudder can be cocked up or, better still, removed altogether, so that it is clear of the water and not bashed by lumps of ice around you. Beware also,



because with some systems the pole or upright to which the servo-pendulum rudder is bolted can itself be on or below the waterline even when the rudder has been removed, and this will then suffer the same fate. Might you have to remove the whole system altogether before you get into ice? Perish the thought.

Talking of rudders it is wise to have some form of spare or emergency rudder should your boat's main one get bashed, broken or bent. So far again we have not had to use this, for which I am thankful as I am not entirely confident as to how well my home made wooden emergency rudder system would have work.

**Get close**

So you are in the Arctic or Antarctic and there is ice around. When you first see it on the horizon it will appear as a long, white, unbroken, impassable line of ice. The cardinal rule here is: you will not be able to tell what it is really like until you get right up to it. Only then will you be able to see whether there are any leads, and to assess what concentration it is and whether you are likely to be

able to get through. We probably went too far south this last summer when we encountered a long tongue of pack ice off the Bathurst peninsular by Amundsen Gulf coming down from the north, before we turned into it to choose a narrow channel through. We had not initially gone right up close to look. Then again passing through the Snowgoose Channel between Bathurst and the

Baillie Islands, there was ice on the other side too, which from a distance again looked impassable. Only when we got close did we see it was 2/10ths as forecast, and we spent an enjoyable afternoon weaving and dodging our way through to get down to the remote but safe enclosed bay of Summer Harbour.

It is ironic that the main aim of an Ice Pilot is actually to

avoid ice, or at least to avoid becoming embroiled in ice that is going to threaten the boat. But if you are in ice it can be useful to have mast steps so a crew member can climb up the mast and spot leads if it has got that concentrated. A friend of mine who has a superyacht on which I have worked tells the story of how when passing through the Prince of Wales Channel in the North West

Passage in 2012 she sent Hank up the mast to spot the best way through. Hank pointed one way, she as the lady owner chose another and steered the boat the opposite way, with Hank still waving frantically from the mast! That's another thing about ice, everybody has their own, usually different, idea of which way you should go. I remember on the same boat in the Bellot Strait between

Newfoundland and Labrador a year or three back, it was a dark night and there were big icebergs and smaller bergy bits around. There were five of us up there in the cockpit and I am sure we all had our own ideas of which way we should go. I was steering and thought we should go to port round the next bit. The skipper shouted across to go to starboard. I went to starboard – it is important in



ice to have one person clearly in charge at the time whether it's the helmsman or skipper, and whose directions are therefore followed without question.

But you are in ice, what should you do? There is not much advice I can give here. Obviously you search for leads of open water to try and get through. You send someone up the mast. You

use your tuk, you push gently with your boat. I have not had to use it but I do now carry a chain saw in case of being badly beset. And patience is a virtue .... get out onto the pack ice if you are stuck and take pictures of your boat in the ice, and wait. Ice can change, and very quickly sometimes.

Have fun: it's challenging, it's enjoyable, and sailing in

ice beats the Mediterranean or Caribbean any day. For a start you will probably be the only boat there .....

## **6. Safety**

Safety is not only rests in the things you have. It is also a state of mind and should be a factor in all the things you do. Remember that you most likely are very far from any external help, so the slightest mistake may be fatal or expedition-ending.

**Safety Brief – some suggestions**

On long voyages you might end up switching crew or getting guests on board from time to time. You have been on board a long time so you have the routine and the safety approach that is needed. Now you have to make sure that the new crew gets up to speed.

Everybody has to have their own lifejacket with safety line and strobe light. All

lifejackets to be adjusted to size.

Walk everyone through where and what to clip on to in the cockpit and on deck.

## **Man Overboard**

All on board must know where the MOB button is, how the lifeline ring and danbouy are deployed. Go through the routine to be followed if someone falls

over board:

- Press MOB button
- Throw life saving equipment over board
- Have 1-2 designated spotters that at all times watches and points at the MOB
- Get all hands on deck

- Alert nearby vessels – if any...
- Get sails down and be sure that there are no lines in the water before starting the engine.
- Turn boat
- Rig equipment to get the MOB back on board



## **Also:**

Explain how the life raft functions and routines for evacuating the boat

You should always step into a life raft if possible (the boat is sinking below you).

Demo test the EPIRB

Make sure everybody on

board can operate the VHF and Iridium phone

Have Mayday procedures written and highly visible at the navigation station

Show where the bilge pumps and filters are, and where to switch them on. How to clean the filters is important knowledge as they are very exposed to clogging in an emergency.

# Fire

In your briefing show where the gas valves are, and how to operate them. Also inform about additional stoves that use an open flame. Point out how to turn off the diesel for the engine. Show where fire extinguishers and fire blankets are, and how to operate them. Make it very clear how one would

evacuate the boat in case of fire.

## **Seasickness**

There are three stages of seasickness:

1. Feeling terrible
2. Afraid you might die
3. Afraid you won't die

This list always brings out the smiles when told safely tied down to the dock. But it has an element of truth in it.

Many people can handle standing watches and helping out on a passage in stage 1. Others will just be useless and lie in their bunk. It's when they reach stage 2 and 3 that you will feel the overall effect. Not only are you one crew less to stand watches, cook meals, navigate, and do

chores; you might also have to look after them actively. This not only sets you back one crew but at best 1 ½ or even 2 for each sick crew member. But most crew can look after themselves in these circumstances – give them a bucket and get them into their bunk.

It is also worth pointing out that crew often feel better if they do get up and stand their

watches as it gives them something else to do and think about.

But it is important to get everyone's take on how they usually react to potential seasickness, and take precautions accordingly.

Have an assorted number of anti-seasickness pills and remedies on board. On long offshore passages such as the Drake Passage or Denmark

Strait severe seasickness can be a real danger to health and safety as the seasick get dehydrated. Remind them to keep drinking – water or juices.

## **At night**

When at anchor be sure to put the boarding ladder down. If one of the crew should fall in to the water that little



precaution could mean the difference between life and death.

Always think in terms of keeping an anchor watch. But if you are feeling good about the anchorage, weather forecast and anchoring arrangements you might want to consider not having a physical anchor watch.

Sometimes a rested crew is better than sticking to routine.

Using an instrumental anchor watch, the depth alarm is often better to use than the anchor alarm. As it is not reliant on GPS it can be more accurate and instant, and the noise is louder. But remember to take the tidal effect in to account before adjusting the depth alarm. And remember to switch it off in the morning.

As remarked elsewhere it is

useful also to put the chart plotter on high (or close) resolution. Then the track lines on the chart will pile up into a black smudge as the boat swings to her anchor, and it will be easy to see if and when the track takes off backwards should the anchor happen to drag. If keeping a physical anchor watch this also saves the watcher having to go up to look around so frequently.

## **First Aid**

For Antarctica where there is no search and rescue and no evacuation most boats carry the full medical kit described in the Ship Captain's Medical Guide with perhaps the exclusion of oxygen and IV fluids if nobody is trained to administer them. Also carry a couple of good books on wilderness first aid and

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a weapon – and know how to use it. Canada also virtually insist on you carrying a rifle in arctic regions and charge comparatively little for a permit – obtainable when you check in. Certain areas such as parts of the North West Passage and the North East Passage also have a high density of polar bears.

## **Glaciers**

Glaciers fascinate most people, but they might be as dangerous and unpredictable as polar bears. Keep the recommended distance of 200 meters from the front of a calving glacier. It is very important to keep a safe distance as a group of tourists and crew learnt the hard way in 2007. Ice falling from Hornbreen in Hornsundet hit the deck on a Russian cruise ship and injured 18 of the



passengers and crew as the ice slammed on to the deck.

It is impossible to predict when calving may occur, the size of the ice block that will fall off, or how it will enter the water. 200 meters is a safe minimum distance, for avoiding both direct hits and the largest waves. When big blocks of ice fall off the ice front it can also create a hailstorm of smaller ice bits

that can harm crew and boats close by. The surge that follows a calving can be dangerous for both small yachts and especially dinghies out exploring.

This is what the Norwegian Polar Institute recommends: At the level of individual events, calving is a random process. It is impossible to predict precisely when calving may occur, how large

a block will be created, or how it will enter the water. 200 m is a safe minimum distance, with a good margin for safety, for avoiding both direct hits and the largest waves.

Furthermore:

- Using calving cliff height as a means of estimating the minimum safe distance (MSD) is really inadequate since the hinge point can lie

beneath the waterline. In addition, submarine calving events can bring large ice blocks much farther out than the calving cliff height.

- Waves that are created closest to the block, in the so-called splash zone, are very large, unpredictable, and dangerous, particularly for small boats. The MSD for avoiding direct hits from ice blocks needs to be larger to ensure that vessels are outside

of the splash zone.

- Outside of the splash zone, waves become more consistent, and can be ridden out. However, as waves become grounded, either in shallow water, or on shore, tsunami waves can also be created.

- Small boats should not land on shores near the edge of calving cliff faces.

- The 200 m distance should be increased in narrow fjords,

in shallow fjords, or locations with ice cliffs higher than 40-50 meters.

When hiking in Svalbard you might end up wanting to cross or walk on a glacier. Glaciers have crevasses and all walking on glaciers should be done with sufficient safety equipment such as harnesses, ropes and ice axes. You must have a back-up plan for how to hoist a man out of a

crevasse if the worst should happen. If uncertain: practice beforehand, or avoid walking on glaciers.

## **Operation procedures dinghy**

The dinghy is our most important piece of kit for exploring. If we should lose it, and don't have a second one, it could mean the end of

your expedition. It is also one of the most exposed items with regards to accidents such as attack by polar bears, walruses or leopard seals. Falling ice and strong winds are also potential dangers.

- Always let the skipper know when the dinghy is being used, who will be on board and where you are



planning to go. Bring a VHF and make sure that the VHF on the yacht is turned on to the same channel.

Worth testing together on the boat before setting off.

- Bring the emergency barrel. Explained below.

- Make sure the

engine is running  
before you cast off – a  
simple mistake  
sometimes made!

- Have a contingency plan if the engine fails; drop the anchor, row to nearest shore downwind. Always carry paddles even when using the engine.

- Carry the dinghy well out of the tidewater range.
- Secure it well.
- It's a good idea to clean your boots before you step back into the dinghy.

If you are in polar bear country, these rules must also

be followed:

- Bring at least one gun.
- Protect it from saltwater spray in the dinghy.
- Keep a sharp lookout on the beach where you are planning to land. Do not step ashore if you suspect polar bears to be

nearby, or if there are obvious hiding places for the bear close by. Polar bears hunt ALL living things.

- Don't load the gun before you are on shore, or 'make safe' beforehand if you are experienced with firearms.

## **On shore**

The exploration on shore is one of the reasons most of us venture in to the high latitudes. Security in remote areas is vital, and you would be wise to have a plan and the necessary equipment at hand for most situations. That said, you can't carry a replacement boat on your back every time you go ashore. The following list is substantial, and will not

suit all. Take this as advice and make your own selection pending the circumstances.

## **Basic rules for travel on shore in bear infested areas**

Make sure you stay together as a group.

If you split up, each group must have at least one weapon.

OR it is recommended that any groups that don't have weapons should have a pen flare gun or the like at the least.

Always keep a vigilant lookout for polar bears and their potential hiding places.

At least one of you should wear or carry a waterproof survival suit in case you have to swim to the boat. It takes



only a few minutes in polar water before you become hypothermic.

## **Dinghy safe barrel**

Extra VHF with fully charged or extra batteries

Flares

Matches

Food and water

Multi-tool

Dinghy and outboard repair kit

Vacuum packed dry suit so that one can swim back to the boat

**Onshore barrel**

This is the extreme variant of “what if” thinking, but it might save your life if you

are in a very remote and cold place. I have friends that have returned to the bay where they anchored their boat before they went on shore for a hike to find the bay empty. The offshore wind had blown their yacht to sea. Luckily they found it just as they were about to give up. The heavy fog didn't help the search.

Or what if there is a fire on board and you have to

evacuate the boat and watch it burn and sink? Or even the less extreme scenario that the weather turns so bad that the on board skipper has to leave the anchorage while you are on shore. That's when it pays to be prepared with a set of life saving spares on board ready for the shore. The barrel is chosen to keep polar bears out of it. If in Antarctica or polar bear free country other storage

alternatives can be used.

## **Equipment to be stored in the barrel**

Tent

Sleeping bags

Sleeping mats

Cooking equipment and fuel

Food and water

Toilet paper

Matches

1<sup>st</sup> aid kit

Solar charging panel with  
chargeable battery that fits  
VHF and Iridium

**Backpack for shore  
expeditions**

VHF

Iridium phone

Map

Compass

GPS

Shelter of some sort

Matches

1<sup>st</sup> aid kit

Warm clothes

TPA (Thermal Protective

Aids) or one-piece immersion suits

NB: And we always carry at least one shotgun/rifle and the ones without have flares. In Antarctica you don't need a gun as there are no polar bears.

**On the boat**



# Grab bags for emergencies

Items from around the boat, which of course may be in general use, but should be considered for the grab bag or such a list are:

- Hand held VHF (fully charged / spare batteries where appropriate)
- Hand held GPS (fully charged / spare

batteries where appropriate)

- EPIRB / PLB
- Sea sickness tablets
- Torch
- Extra flares

TPA (Thermal Protective Aids) or one-piece immersion suits, warm clothing, glasses and essential medication might make the time you

spend in the life raft easier and beyond this there are also items which, whilst not essential, will make your life a lot easier once back on dry land.

These include:

- Passport
- House / car keys
- Wallet /credit cards

- Mobile phone
- Ships documents
- Think of taking those one gallon water containers with you

## **OPERATING PROCEDURES IN POLAR BEAR TERRITORY**

Advice from the Norsk Polarinstitutt states the following:

“The bear’s behavior often reveals whether it is curious or aggressive. A curious bear will usually approach slowly. It will pause, stretch its neck and sniff. The head and neck weave from side to side, and bob up and down.

An aggressive bear is more assured in its movements. It may attack without warning, but sometimes gives various attack signals. It can, for

example, snort through its nose, or snap its teeth with a smacking sound. In that event one should be particularly on guard. The attack often comes very quickly. The bear takes a course directly towards its prey at a quick trot, or in big bounds.

Always carry a weapon with you in areas where polar bears might be encountered. Stay calm if a bear

approaches. Keep your weapon ready. If you think the situation is becoming dangerous, toss away your mittens, hat, scarf, or something similar. The bear might stop and sniff at the garments, giving you a chance to get to safety. If you have time, fire some warning shots at the ground in front of the bear.”

In order to gain the maximum experience in the Arctic – including, of course, some good polar bear sightings, it is necessary to follow some basic safety procedures.

Inevitably each and every bear encounter will require specific action but the following is intended as an outline.

Read more in *Sail to Svalbard* and [www.cruise-](http://www.cruise-)



[handbook.npolar.no/en/](http://handbook.npolar.no/en/)

## **Weapons**

On Svalbard you are required to carry a weapon at all times when on shore. Weapons can be rented in Longyearbyen. You can rent weapon here:

[Sportscenteret](#)

[Ingeniør g. Paulsen AS](#)

In Greenland it is not usual to

carry a gun for polar bear protection. It may be advisable in remote areas in east Greenland and in the far north. Guns and ammunition can be bought in the main store in every settlement, or second hand in a shop KIK-IND in Sisimiut. Do not choose any weapon smaller than calibre 30-06. Smaller calibre will not stop the bear – just make him angry. Use full metal jacket bullets for

the rifle and slugs if you have a shotgun.

Make sure that you know how to operate the gun, and practice target shooting.

When or if a bear suddenly appears it is too late to try to find out where the safety catch is. Polar bears are a threatened species so try at all cost to avoid killing one.

Shoot warning shots; make noise to try to scare him off

before he gets too close to create a dangerous situation, fire flares. But if push comes to shove and you have to shoot to kill, it is highly advisable that you shoot quickly. They can move very fast.

If you are unfortunate enough to have to kill one, it must be reported to the authorities at the earliest opportunity.

## **7. Communication**

VHF is mandatory: Have a permanent installation on board, and at least two hand held are a minimum. On every dinghy tour take one handset, and make sure that the main VHF on board is turned on and the volume on high. Decide on which

channel to communicate, and that both sets are tuned to the same channel. Be sure to use dual watch so that you also monitor channel 16.

Onshore parties can also carry a VHF if necessary, with agreed channels.

Satellite communication on board is the way to go. It is easy, reliable, portable and slowly becoming reasonably

priced.

Iridium – is the only system covering both poles with their satellites. It is a good thing to save all important phone numbers before you leave: SAR in the region, home, friends, medical service, MRCC, your SAR back home and all other numbers you might find useful.

## Spot/InReach

There are two devices that use Iridium satellites, which are the only system with coverage in the high latitudes in the Arctic. You have SPOT which lets you send pre-programmed messages to selected friends, tracks you on a web based map, and works as an emergency beacon when you hit the button. Spot utilises



GlobalStar satellites and does not guarantee coverage in high latitude areas such as Svalbard because the satellites will be too low on the horizon at times to be picked up by the device. However; this author has used it on a circumnavigation of Svalbard and it did provide tracking all the way.

The InReach goes one step further as it is a two way

satellite communication tool, and it uses Iridium so it guarantees coverage on both poles and in between. It does the same as SPOT, but if you download an app to your phone you can send and receive email and SMS through the satellite system. The brand new InReach SE (2013) is an all-in-one-device that doesn't need the app for texting.

This is a very affordable way to keep in contact, keeping a high focus on security at the same time.

But all this pre-supposes you have afforded the type of satellite phone, which has a tracking device. Other satellite phones can still use email through a laptop with a suitable marine server.

# SSB

The growth of satellite communication has reduced the use of SSB, but it is still a very useful way of communicating. You can listen in on nets and other sailors in your area discussing weather, ice and cruising conditions, listen to radio when off the beaten track, download weather reports and

it also lets you send and receive mail, if you have a suitable modem. And it's all for free, when you have paid for the machine and done the course to obtain your licence. But they are quite expensive.

Mail via Sailmail or Winlink works well in most areas of the world and has global coverage, necessary for the NW Passage, and works well on the Antarctic Peninsula.

The Airmail software also has a very good interface for requesting GRIBs and a viewer built in. UUplus (onsatmail.com) is another system that works well.

[www.sailmail.com](http://www.sailmail.com)

[www.winlink.org](http://www.winlink.org)

[www.siriuscyber.net/airmail](http://www.siriuscyber.net/airmail)

[www.uuplus.com](http://www.uuplus.com)

# 8. Weather

## Weather routing

Shore based weather routing has grown very fast in the last couple of years, and there are a lot of companies and weather gurus, more or less experienced, who offer these services. But the decision

whether to use them, or take their advice if you do, is always yours, and be sure to talk to the weather router before you hire him. It is important that he gains knowledge about how prepared the boat and crew are, and that he knows how much weather you are prepared to tackle. How the boat handles under different circumstances, what kind of sails you have and how fast



your boat is sailing in different wind conditions are also important information and considerations for the weather router.

It is also good to check references to make sure that they are the real stuff.

I have used a few different weather routers on various offshore passages in my time, and I have never done exactly

as they have advised. Again, it is important to remember that you are the one that in the end, as skipper, is responsible for all decisions and you have the best feel for the boat and the weather you are in. I have used my knowledge of the boat and crew, downloaded other GRIB files and weather information, watched the barometer and sailed accordingly. Having said that,

I have never diverged hugely from the advice they have given. They have mostly been spot on. But if you are cruising in polar regions you may prefer to make your own decisions as you have more challenging conditions with wind, waves, current and possible ice.

**Commanders Weather**

[www.commandersweather.com](http://www.commandersweather.com)

**Weather4expeditions**

[www.weather4expeditions.com](http://www.weather4expeditions.com)

**Weather Routing Inc**

[www.wriwx.com](http://www.wriwx.com)

**Weather guy**

[www.weatherguy.com](http://www.weatherguy.com)

**YachtWeather**

[www.yachtweather.com](http://www.yachtweather.com)

## **Do it your self-weather routing**

I always gather as much information about the weather as I possibly can before I cast off. This includes following the weather system at least one week before departure, and then downloading the latest GRIB-files and local weather reports before we slip out of GSM range. On long offshore passages of

more than 2-3 days, I download GRIB files via satellite or get friends ashore to send me text messages with weather over Iridium or the InReach 2 way satellite communication device I always have on board. Or friends can send via whatever email system you have on board

If you want to interpret weather charts and weather in

real time, I highly recommend Linda & Steve Dashews Mariners Weather. See [www.setsail.com](http://www.setsail.com) for more information.

But weather forecasting in the high latitudes is still unreliable, and no single source of forecast will get it right all the time. The weather systems frequently move either more slowly or more quickly than expected.

Sometimes the sequence is right; the timing is not. Lows can quickly develop out of what for a layman seems like nowhere, and high-pressure systems can stall and block an incoming low.

The best approach is to keep track of the barometer every hour, and then matching it up to the various forecasts will give you a more precise view of how quickly systems are



moving and what is likely to happen next. The more you pay attention to the forecasts and how it matches up with real weather and the barometer, the more knowledgeable and confident you will become. And don't forget to study the sky...

## **What are GRIB files?**

GRIB is the format the

meteorological institutes of the world use to transport and promulgate weather data, and is the foundation of the forecasts we see on most forecasts in our daily life. They can be obtained free and many sailors use them as a low cost way of getting a lot of weather information. Once downloaded you will see GRIB files in the form of weather arrows indicating heading and strength of the

wind overlaid on a chart. The files will show how the wind develops over the coming hours or days. The higher the resolution, the more accurate are the predictions.

The GRIB files will also give info on rain, barometric pressure, cloud cover, air temperature at sea level and wave height.

# **GRIB.US**

[www.grib.us](http://www.grib.us) - free software that works very well on satellite uplink as the file sizes are small.

# **Predictwind**

[www.predictwind.com](http://www.predictwind.com)

# **Theyr.com**

[www.theyr.com](http://www.theyr.com)

# ZyGrib

Open source and very comprehensive GRIB viewer

[www.zygrib.org](http://www.zygrib.org)

HF Fax weather charts good in Canada, Pacific side of Antarctic Peninsula, and for NZ and Australian Antarctica.

[www.saildocs.com](http://www.saildocs.com) - essential weather resource can provide

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- [iGrib](#)
- [PocketGrib](#)
- [WeatherTrack](#)
- [Weather 4D](#)

## **Android**

### Android Apps for GRIB

- [mobileGRIB](#)
- [PocketGrib](#)
- [SailGrib](#)

# Ice charts

Ice charts are usually published in high resolution, and since most of us rely on Iridium in those waters it is both time and money consuming to download the charts from for instance:

## **Danish Met Office**

<http://www.dmi.dk/dmi/iskort>

## **Canadian Ice Service**

<http://www.ec.gc.ca/glaces->



[ice/](#)

## **Polar View European Arctic Node**

<http://polarview.met.no>

One solution is to do the same as with weather routing. Let a friend back home download the charts, convert it to a low-resolution image and mail it to you. If he has your position you can also let your friend warn you with an Iridium text message if there

is potential ice situation in your area, but this requires that your friend on shore is very reliable and knows how to interpret ice charts, or can chop and compress to a smaller size to send attached to an email, for you to interpret. It is helpful if he keeps the colour of the areas of concentration on the transmitted chart as this makes them quick and easy to interpret; you soon learn the

colours for each  
concentration i.e. 4-6/10ths  
etc.

There is also the time factor  
to be aware of. Ice charts  
often have 1-2 days delay.  
And being in polar waters a  
lot can have happened in that  
time. Both wind and current  
affects the movement of the  
ice, so when you get a 1 day  
ice report you have to use the  
actual weather information

from where you are and add this to the equation to estimate how the ice has moved in the last 24 hours, and how it will behave in the next 24 hours.

## **9. Anchoring and mooring**

When anchoring in high latitudes you often have a

combination of strong winds, tidal currents, exposed anchorages, and rocky, kelp-covered bottoms to contend with. That's something completely different from what most people are used to, and the challenge should not be taken lightly. Ground tackle that has worked well for years in temperate and tropical waters may prove inadequate in the high latitudes.

The best advice is to keep it simple, get at least one modern anchor such as Spade or Rocna, pick one size bigger than the producer recommends, and stick to the solutions that you know work for you.

Have at least three anchors when sailing in the high latitudes. Not only for the risk of losing one, but also so you have the possibility of putting out extra anchors in a big

blow. Use 60-100 metres of anchor warp and a short length of chain attached to the main anchor (less overall length if chain is used all the way), and 50-100 metres of warp and a short length of chain for the kedge anchor. Let out at least 5:1 of the depth you are anchoring in and back up until the boat doesn't move. Now you have to pay attention to possible wind shifts, drifting ice that

can take out your anchor chain or boat and gusting winds. Be sure to have one person on board at all times to make sure that the boat is OK. There are a lot of examples of the whole crew going ashore only to come back to the beach to find either the boat gone or on its side well up on the beach.

In the high latitudes you end up anchoring in places where



you wouldn't ordinarily even consider spending the night given normal conditions. But there is very little up here that is normal when it comes to cruising. That's why we come here.

Anchoring is a question of minimising risk as much as you can, to get as much adventure as you can at the same time. It's all a question of imagining worst-case

scenarios and thinking “what if....”.

You have to evaluate if the anchor is reasonably attached to the bottom, and if the wind is going to change. It is important to understand general anchoring conditions and have 2- 3 anchors on board with chain, warp and kedge. It is also advisable to have one or more lines that are 100 meters long, or 2-3 that you can tie together, so

that you also can tie the boat to land in tight spaces.

It is advisable always to use either an anchor alarm or a depth alarm when at anchor. Set the alarm extra loud. If the weather is unsettled you should also consider setting anchor watches with the crew in rotation, or use a wake up alarm every hour to check the boat and surroundings. As mentioned before, it is

also useful to set the chart plotter to a high resolution, and the track lines will pile up together on the plotter as the boat swings on her anchor. It will then be easy to see the track line take off backwards if the anchor drags.

Holding in high latitudes can be bad as there is no vegetation on the bottom and therefore very little mud,

there is clay in some places but often just rock. Or there is kelp, which is vegetation you do not want!

If there is a serious amount of pack ice or icefloes around consider another alternative to anchoring, as described in Ch 5, Sailing in Ice

## **Types of anchors**

Fisherman's Anchor: This design has been used by sailors for hundreds of years

and was perfected in England in the 18th Century. Nothing beats weight to cut through kelp and find a purchase on an uneven bottom. Big heavy Fisherman anchors are still popular among some high latitude sailors as they cut through kelp and hook into rock very well. The down side is that they are very difficult to stow on board when not in use. Consider this as a secondary anchor to

a modern anchor like Spade or Rocna when sailing in areas like Greenland and Svalbard where the kelp and rocks sometimes makes it challenging to anchor.

Spade Anchor: This is an anchor from the late 1990's which has only one tip like the CQR and Delta, but the concavity is inverted to be spoon-like. As the concave profile moves through the

bottom, it is designed to compact the sea floor material within its form, rather than sliding through it like a plough. Nearly 50 % of the anchor's total weight is applied onto the tip when the rode pulls on the shank. The goal of the design is to penetrate the sea floor, even into hard sand and through weeds. Spade recommends a slightly heavier anchor per boat length than Delta, but



offers an aluminium version at less than half the weight of their steel offering.

CQR: The plough is a seasoned design from the early 1930's, with characteristics of a hooking anchor and plough-shaped flukes for holding in soft sand and mud. The hinged shank allows a wide degree of effectiveness, but it may not reset well if it does break free. This anchor relies on

weight to penetrate the bottom: the heavier it is, the more firmly it will set. The more scope the better.

Delta: This design is a hybrid combining the best of the CQR design and the Bruce. A one-piece steel casting, it is a hooking anchor in many ways similar to the Bruce. It has a weighted point for penetrating mud, hard sand bottoms, and kelp that give it

more versatility. Like the CQR, it has flukes for holding in sand and mud, but the Delta's flukes are more obliquely angled and therefore present a broader, flatter surface than does the CQR, providing greater potential holding for the same size and weight. It was suggested as the best anchor in the more moderate price ranges tested, before the better but more expensive

anchors (Yachting Monthly, July 2013).

Bruce: Originally designed in the early 1970's, this is a one-piece cast steel anchor that is both strong and versatile.

Huge versions are used to secure giant drilling platforms in the North Sea. With its three-pronged hooking design, this anchor will grab coral and ledge very well, and its wide shape helps it to bury

itself in the sand or mud. Its design makes it easy to set and it will hold at its maximum loading on quite short scope, 4-to 1 or even 3-to-1. Because it sets easily and quickly, it also resets easily when the wind or current changes.

**Rocna Anchor:** This is one of the new generation anchors offering the best features of the Delta and the Spade. The

design offers concavity for holding power and superior penetration ability from its contoured bottom. A roll bar prevents the anchor from dragging on its side or upside-down. It will reset quickly in most situations. But it is more expensive.

Fortress: A well proven lightweight anchor made of aluminium. It is notable for its high weight to holding ratios. The have adjustable

flukes enabling you to either set it for sand and shell bottoms or for soft mud bottoms. In the latter conditions, ooze and swamp mud, the Fortress may have no equal. This anchor disassembles and folds for storage.

These anchors vary enormously in cost. In the end it is probably a combination, or compromise,

between cost and holding power that will dictate what anchors you carry.

## **Mooring lines**

Four mooring lines of 100 to 120 metres are a necessity if you are planning to spend a season in the Chilean channels, Antarctica or Greenland. In most situations, floating lines like Polypropylene or Spectra are preferable to nylon. These



lines don't absorb water, so they remain lightweight, easy to handle from the dinghy and relatively free of kelp.

But when you have to anchor in ice it is preferable to have lines that sink to let the ice float over them. Commercial fishing chandleries carry a wide range of Polypro lines. Shore lines can be somewhat smaller than ground tackle if you get out of areas where

shock loads from waves or gust are frequent. 3-4 cm thick lines are adequate for boats up to 50 feet.

On the other hand if you are wintering the boat in the ice it is important to keep pulling the lines free of the ice, to prevent them being cut or dragging the boat down or around.

When setting up your spider's web of shore lines speed is of the essence, and having an

easy deployment system is essential. If your boat is big enough you can have fancy custom-made stainless steel reels mounted somewhere on deck and they will make both deployment and retrieval quick and easy. Or you can use large mesh bags for deploying your lines, setting them up on the side deck before you reach the anchorage with the line led through large snatch blocks

on the stern quarters. This has worked very well for deploying but it took a half hour or so after retrieval to flake all the lines back into their bags. Where we could drop the anchor within five hundred feet of shore without swinging into anything, we would use a reel of 600 feet of 10-millimeter line.

We use Spectra as a first line ashore. We winch the boat

into place using that line and then replace it with the Polypro lines at our leisure.

In much of the North including the Faroes and Iceland, floating ropes can trap ice which can be useful to protect the boat keeping ice out, or can be a hazard preventing it from getting out. Sinking ropes will not trap ice but can catch on uneven seabeds. You can also use a

metal sinker to weigh a floating rope down.

Some recommendations would include:

Rock strops (steel wire loop of 2m diameter or so: just a simple loop with the ends fastened to each other with bulldogs, there is no need for fancy spliced wires or mucking about with thimbles and shackles). But long climbing slings can also be

used, perhaps doubled up if you are a large boat, or you can attach the main rope directly round the rock if you have enough line.

Some lengths of steel angle iron for use as giant pitons or for hammering into ice, or snow.

Minimum 100m of chain which allows a 7:1 scope in around 12m of water would

be great if you have the space and wallet to match.

When tying to trees there is no need for wire or chain; simply tie on with the mooring line taking an extra turn around the tree before securing. This ensures that the line will not move on the tree either up or down or back and forth and will eliminate chafe that may damage the tree or the rope.



Rope bags are the way to go for smaller boats (up to 12m). It can be a lot easier to put the rope in the dinghy and pay it out that way, and much easier to row that way too.

## **Lines ashore**

Lines ashore from the back of the boat and the anchor out front are a combination that works well in secluded anchorages. There are various

methods for doing this, but here is one way of doing it: Use the dinghy to check depth first, spotting any rocks or if you have a portable echosounder. You are going to back in towards the shore and running aground going in reverse is not something you want to do. You might end up damaging propeller or rudder.

The dinghy crew should prepare strong holding points

for the lines on shore before you start to back in. Use natural attachments such as rocks and trees, but try not to harm the trees. Wire or chain is best around big objects, and have dedicated systems for hooking them together and for tying in the rope. Have designated people and a firm plan that everybody knows. Here routine comes in to play. Use handheld VHF's and/or agreed signals.

As the skipper is backing in, the anchor goes off the bow and the dinghy crew starts running lines to the shore. It can be hard to measure the distance to shore, so a laser rangefinder can come in handy to measure distances. That way you don't run out of either shorelines or anchor warp before you are firmly secured. But be warned: it is a very expensive piece of kit

and you will not use it that often. So, it is on the nice to have list.

Four 100 meter lines are a minimum. Use line that doesn't absorb water as they get very heavy and if temperatures are below freezing they become very hard to handle. The lines can be stored on big rolls. They are very easy to operate, but take up a lot of space.

Another solution is webbing on a roll, also known as anchor rolls. They produce a lot of friction at the beginning, so be sure to take out 10-20 meters before you start rowing.

An even more flexible solution is to modify a small spinnaker bag. This is the best solution for boats from 40 feet and smaller.

Cut a hole in the bottom of it so that you can get one end of the rope through. This end you tie off on the boat. The other end of the rope comes out on top, ready to be pulled straight out of the bag. Don't coil the rope in the bag. Just stuff it in meter by meter. That way it will not get tangled when you run it ashore. Use a carabiner to attach the bag itself to the guardrails of the boat. Attach

the line around your waist and the line from the dinghy, the dinghy's painter around your leg. That way you can row to shore, run up to the nearest strongpoint without getting delayed by securing the dinghy. Be sure to have a long dinghy rope, or painter, so it doesn't stop you on the way. Practice and refine this technique in good conditions in anchorages where you don't really have to use this



technique, so you are prepared when it gets real. Be sure to dry the bag and rope after use before storing it. The hole in the bottom will help drain the bag.

## **Leaving the boat**

The main rule here is: don't let everybody go ashore at one and the same time, unless the boat will be in sight of someone all the time. There are several examples of eager

hikers and sailors who have left their boat at anchor to explore either by dinghy or on foot, with disastrous results. Even if it seems like the anchor has a good hold, the wind may change direction or increase.

Katabatic winds (fall winds) may push your boat out of the protected bay while you are miles inland. When you return there is only the dinghy left, and even that may have

been destroyed by polar bears or even blown out to sea as well.

If you all have to leave the boat for a short time for some reason, make sure you have at least one line tied to shore. In the high latitudes this means that you have to carry at least one 100 meter on board. The best is to have at least 2-3 x 100 meter lines so that you can run several lines ashore in

addition to the anchor.

## **10. Clothes**

There are two types of clothing you might need in the high latitudes: hiking clothes and sailing clothes. After a number of years with both activities in high latitude waters I have come to the conclusion that hiking

outdoor clothes are the right clothes for me, both on and off the water.

There are mainly two reasons for this. First off all it is more practical to have one main set of outdoor clothes, and today's clothes' technology is really outstanding, so in most conditions that do not involve heavy rain or sea spray I use standard GoreTex jackets and trousers. If the weather gets

really nasty I have a waterproof coat with a big hood and an insulating layer to keep me warm when I go outside. The few times I have to go on deck it will do the trick. But be aware of the difference between standard Gore Tex trousers and salopettes. You will end up wet sitting on deck if you don't wear salopettes as the water more often than not will find its way down or into

regular cut rain trousers.

The same goes for the 3-layer principle. Using this layering principle, items made by well known and reputable companies such as Patagonia, The North Face, Rab, Helly Hansen and several others work very well in high latitudes.

During physical activity we produce surplus heat and our

body regulates its temperature by perspiring. When the perspiration evaporates, the body temperature cools down. Where our clothing does not allow the perspiration to evaporate, there is hardly any cooling possible. Therefore, the layer closest to the skin must allow perspiration to evaporate. If it does not, the perspiration will create an uncomfortable damp feeling, and in extreme



cold this could even be dangerous. The second layer acts as an insulation layer. The third layer is the protection against the elements. However, the perspiration must still be allowed to pass from the inner layer through the next layers to the outside. The thinner the three layers, the more precise the regulation. If all layers are properly coordinated, they can work

interactively with each other.

- Close to the body: Do not wear cotton as it retains sweat and “never” dries up. Use wool, and preferably merino wool. The colder it is, the more layers you can add. It is better with many thin layers than one thick one as it is easier to regulate the

temperature, and the layers provide insulation in themselves.

- Mid layer:  
Use wool or fleece.
- Protection:  
Water and wind resistant. Hood and high collar. It is better to have an oversized jacket/coat than one

with a tight fit as the extra air gives extra insulation.

On the feet I prefer thick soled sailing or fishing boots, or boots with furry linings built in. The stuff you get in the serious fishing or workmen shops are not necessarily the smartest, but they will do the job.

Remember that the fishermen are out in the freezing cold

nights on a daily basis and years of experience have taught them what to wear – and not to wear.

So, boots – some of the warmest that we have used, are Dunlop thermokings. But the soles are a bit thick and clumsy. Muckboots, from Canada, are good, not as warm but more comfortable and you can hike in them. People working in extreme

cold, such as snowmobile drivers in the high north, are the right kinds of people to ask for advice when it comes to both gloves and boots.

Fishermen also know what to wear on their hands. Forget expensive GoreTex gloves. As soon as you start handling long lines soaked with ice-cold water they will become wet. The same goes for when you have to remove tons of

kelp from you anchor hanging off the bow. Cold hands are a real pain. Get yourself a couple of pairs - no need to save a few bucks here - on solid rubber gloves. Buy the ones whiteout liner. The liner will get wet and the process of drying them will take longer. Use fleece or wool inner gloves, and have 3-4 pairs so you can have a pair drying out while one keeps you warm.

Have at least three windproof warm hats, you'll probably lose one over the side and the other two can be rotated, one wet one drying.

Ski goggles: You won't look very "yachty", but when heavy cold rain or snow is blowing horizontally right in your face, you won't worry about looks - just comfort and the ability to actually see where you are sailing.



# 11. Areas

The iconic high latitude sailor H.W. “Bill” Tilman started to sail to Patagonia after his days as a pure mountain climber were over. He wanted to combine the adventures of sailing and climbing together, there in the south. He found the adventures he wanted

down there, but as he was living in England he started to look for areas closer to home. He found Greenland. He continued to sail and climb until at 79 years he disappeared in a fierce storm off the Falklands in 1977. He was on his way to yet another climbing expedition in the south.

This goes to show that many of us can sail towards new adventures in the high

latitudes at any age – and that we have areas worth spending a lifetime in just weeks sailing away. Here is a rough guide to the high latitude areas.

## **Svalbard**

Svalbard is a very accessible wilderness where you can explore both your own boundaries and the nature. In fact it is the high latitude area most easily reached. From

Tromsø to Svalbard on your own keel will take around 3 days, and put you right among icebergs, glaciers, polar bears and wildlife.

Some miles further north you will reach the pack ice, and the rest of the way to the North Pole you will have to walk.

As a sailor you have to apply for a cruising permit if you are going to Svalbard on your

own boat. The only exception is if you are going to sail only within Area 10, which covers parts of Bellsund and most parts of Isfjorden. It can of course be enough cruising ground in itself, but if you have already taken your boat that far you should take the trouble to do the paperwork for the rest of the island.

The treaty gives you as a sailor the right to sail in the

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Svalbard has a polar climate and you must expect temperatures between 0 and 10 degrees Celcius in the summer time. If you venture into the far north, into Hinlopen or east of Nordaustlandet, expect colder temperatures as the water from the polar basin comes in to play instead of the Gulf Stream.

The prevailing winds in summer are generally light

and variable, so make sure to stock up on diesel.

Arctic fog is frequent in the summer as the mild air from the south comes in contact with the cold water surface. But as a general rule with ice the fog is often low lying and if you get up the mast you can get above the fog.

The best time to enter Hinlopen or Nordauslandet is from mid-August to the end



of September. But this is also the time when the weather gets more unsettled and you risk more heavy weather. And the sun goes below the horizon.

When you sail east of Verlegenuken – the most northerly point of Spitsbergen you must keep a very keen eye on the weather and the weather forecast. Download ice charts via Iridium, or have a person on land watching the

charts and sending you satellite SMS warnings. If a strong northerly or north easterly wind sets in, it can be a matter of hours before the ice reaches land and you are at risk of being trapped. If you are in Hinlopen the ice can actually close you in as it comes drifting on both sides of Nordaustlandet. If you are on the north side of Nordaustlandet you also risk being trapped.

## **Cape Horn**

If you dream of high latitude sailing, then Cape Horn stands out as one of the real landmarks for making a toast as you sail past. Rounding the Horn, under sail, on a non-stop passage of more than 3,000 miles passing through the latitude of 50 degrees south both east and west of Cape Horn grants sailors eligibility to apply for

membership of the exclusive International Association of Cape Horners: an

organisation whose origins lie amongst those who rounded the Horn as professional seamen serving upon the tall ships of the Clipper era.

There are no exceptions to the strict joining criteria whose membership now includes members of crews from several notable Round the World Yacht races and others

in small boats who have shared the same unique experience - the “Mount Everest” of ocean sailing.

The main season is December to April, and usual starting points are Puerto Williams or Ushuaia, or the Falkland Islands, or even Antarctica.

## **Antarctica**

It is roughly 600 nautical miles from Cape Horn to The

South Shetland Islands just north of the Antarctic Peninsula. You can expect at least one gale during the crossing as the low-pressure systems push through the Drake Passage every third day as a general rule. There is also a good chance that you will end up in the middle of a low. The wind will decrease significantly. But even if it feels a little too laid back, don't bother to shake out

those reefs. It's only a brief lull with 2-3 hours of relief. Then it will start blowing hard again.

Be sure to follow the weather closely before departure, and if you think about getting external help from a weather router – do so. They will most likely contribute to making your crossing, both ways, more comfortable and safer. There is a list of weather routers in the back of the

book.

Equipment for Antarctica - a voyage to the Antarctic Peninsula from Tierra del Fuego will likely be of long duration for a small boat - you must carry supplies for at least 8 weeks, as it is not unknown for smaller private yachts to wait for up to six weeks for a weather window to return north. You cannot resupply anywhere in Antarctica, period! So if you



want a supply drop there you must make your own arrangements with a national authority, expedition support specialist company or a cruise ship operator, at considerable cost.

A good buy before leaving for Antarctica is the Wildlife Awareness Manual 'Guide to Antarctic Wildlife' by Hadoram Shirihihi here:

<http://www.amazon.com/The->

## [Complete-Guide-Antarctic-Wildlife/dp/0691114145](#)

General information for sailing to Antarctica is available from the IAATO website, specifically the yacht outreach pamphlet. See here for more information:

[www.iaato.org/home](http://www.iaato.org/home).

Antarctica permits must be sought from the flag state of your yacht or expedition,

there are no exceptions, a permit is always required. The paperwork is substantial, but it will help you prepare both mentally and boat-wise for the trip. Highlatitudes.com might be able to help.

The South Shetland Isles is rarely a place to stay for long as the depressions usually hit the islands every time they pass. So take a breather,

stretch your legs and watch the barometer as you get prepared to continue to the Antarctic Peninsula. Here the weather is much more stable because it is dominated by high pressure.

There are several bases along the Antarctic Peninsula and most of them are manned during the summer months, when the area is most likely to be visited by cruising boats. None of them should

be visited without prior arrangement, or they should be at least contacted on VHF radio before going ashore.

The nearest are the Chilean and Argentine bases in Paradise Harbour ( $64^{\circ}53'S$   $62^{\circ}52'W$ ), the Ukraine base at the Argentine Islands (formerly the British Faraday base at  $65^{\circ}15'S$   $64^{\circ}16'W$ ) and the US Palmer base on Anvers Island ( $64^{\circ}45'S$   $64^{\circ}03'W$ ).

## Ross Sea

After the tragic incident with the yacht Berserk in 2011 in the Ross Sea where three sailors were lost at sea, there has been a lot of commotion about sailing to Antarctica. It is important to point out that the only loss of life from a private sailing yacht in Antarctica, to the best of our knowledge, has been the Berserk. They were sailing in an area where few, if any,

sailing boats venture due to a high concentration of ice and violent winds. This is an area only suitable for ice class ships of the big variety.

Usually sailors are cruising around the Antarctic Peninsula where the conditions are much safer and manageable – but don't let your guard down even here. So, if you really must, absolutely, see the Ross Sea – book a cabin on an icebreaker

and live to tell the tale.

Cruising in the Ross Sea will not only be very risky for you, but it may also affect the lives of the people who might end up searching for you.

## **South Georgia**

South Georgia is by many high latitude sailors regarded as their favourite place. It's utterly remote: 800 nautical miles from the Falkland Islands and 2600 nautical



miles from the Cape of Good Hope. The scenery \*is just outstanding, with glaciers, snow covered peaks stretching up almost 3000 meters, and the wildlife.

Captain James Cook circumnavigated the island in 1775 and made the first landing. He claimed the territory for the United Kingdom, and it is still a British overseas territory. The island has a rich history with

whaling. The Norwegians ran big operations out of stations such as Grytviken, and caused certain whale species to become nearly extinct. Ernest Shackleton's epic sail from Elephant Island, Antarctica, to the south west coast of South Georgia on a rescue mission in a small boat in 1916 is also part of its unique history. Shackleton died there in 1922 on another expedition, and is buried in

Grytviken.

South Georgia is 167 kilometres long and between 1.4 to 37 km wide. The side that faces southwest is constantly battered by waves from the depressions that run round and round Antarctica. All the settlements are on the north east side.

The combination of high mountains, glaciers, and fjords on the northeast side makes for a dangerous

breeding place for williwaws. When the heavy dense air meets the mountains' west side, it is forced up along the mountainsides, over the top and increases in speed as it plummets down on the other side. If you feel a sudden rush of warm air or see a crater in the sea near the shore expect big gusts. In South Georgia they can reach up to 100 knots.

Typical daily maximum temperatures in South Georgia at sea level are around  $0^{\circ}\text{C}$  in winter (August) and  $8^{\circ}\text{C}$  in summer (January). Winter minimum temperatures are typically about  $-5^{\circ}\text{C}$  and rarely dip below  $-10^{\circ}\text{C}$ . Annual precipitation in South Georgia is about 1,500 mm, much of which falls as sleet or snow, which is possible in any month. Inland, the snow

line in summer is at an altitude of about 300 m.

Charter yacht visits usually start in the Falkland Islands, last between four and six weeks, and enable guests to visit the remote harbours of South Georgia and the South Sandwich Islands. Sailing vessels are now required to anchor off and can no longer tie up to the old whaling piers on shore\*. One exception to

this is the recently upgraded yacht berth at Grytviken. All other jetties at former whaling stations lie inside a 200 metre exclusion zone; and berthing, or running ropes ashore, at these places is forbidden. When visiting South Georgia, yachts are normally expected to report to the Government Officer at King Edward Point before moving round the island. Here you will find all the

applications and documents  
you need to fill out  
[www.sgisland.gs](http://www.sgisland.gs).

Weather forecast:

<http://www.weather-forecast.com/maps/South-Georgia-and-the-South-Sandwich-Islands>

## **Patagonia**

The Argentine climate ranges from subtropical in the north to cold temperate in Tierra



del Fuego. The central zone is temperate, while Buenos Aires is hot and humid, the summer months December to February being the hottest. In Rio de la Plata the prevailing winds in summer are easterly, while SW winds are more common in winter. They are often accompanied by pamperos, violent SW squalls that affect most of Argentina's coastal waters. There aren't many boats

sailing in the Patagonian archipelago, and you can go for days without seeing anything else other than local wildlife and snow capped mountains and glaciers. You have to report your position regularly to the Chilean authorities to comply with the local rules. The guide 'Patagonia and Tierra Del Fuego Nautical Guide' by Mariolina Rolfo and Giorgio Ardrizz is a must have for

everyone going there – and for every explorer wanting to sail there...

## **Canada**

Baffin Island has mostly easterly winds, and the cold current flowing south brings fog and ice to the area. The best time to sail here is mid July to mid August since the light will be fading fast the later you go, and ice and darkness is not the best mix

in the world. The North West Passage through Canada is a story of its own - see the next chapter.

## **Greenland**

The weather on the west coast is mostly stable and good.

The farther north you get the more stable and good it can be. It is much the same as with the high pressure system over the Antarctic peninsular. The best time to sail in

Greenland is early July to August or into September, due to the ice conditions. It can be earlier still up to about the Disko Bay area. Generally speaking going further north it is a case of the later the better from the ice point of view. Earlier approaches close to the south coast can be blocked by storis, the arctic ice travelling down the east coast and round to the west coast. Even later

approaches here can be stopped by ice, but usually it clears in the later months of the summer.

But you also have to consider your return trip. If you don't plan to overwinter your boat in Greenland, or Iceland which can be a good alternative, you will have to deal with dark nights and the possibility of an autumn Atlantic gale or two if you leave your return till

September or even October. That might not be the best ending for a high latitude cruise, but it gives you more time in Greenland, and provides a challenge!

Cape Farvel can be a crux. This is the Cape Horn of the Arctic, and you basically have two options. One is to take the inland route of Prinz Christian Sund ice permitting, which is very scenic and has

a lot of mountains and walls you could climb. The Weather Station on the east side is a popular stop for most sailors, with some tricky pilotage into the small harbour, but Danish pastries at the end if you are lucky. The other option is to avoid it altogether and go round to the south, but then you should leave at least a 100 nautical mile between you and the cape. The weather can be



violent and combined with the current that runs south along the east coast and pushes the storis (pack ice) and ice bergs the same way can create pretty nasty conditions in the area.

## **Iceland**

Iceland consists of one main island and numerous smaller ones. During its short summer, a passage to Iceland and a cruise along its rugged

coasts offers an experience difficult to match anywhere else in the North Atlantic.

Although there are not many local yachts, repair facilities are relatively good,

particularly in active fishing harbours such as Reykjavik, Isafjördur and Olafsvik.

Reykjavik and Keflavik are the most frequented in Iceland, although visiting yachts are relatively few in number. The Vestmannaeyjar

Islands in the south are also well worth a visit.

In spite of the closeness to the Arctic Circle, the climate is not too harsh and winters are relatively mild, mainly because of the warming waters of the Gulf Stream.

The average temperatures are  $10^{\circ}\text{C}$  in summer and  $1^{\circ}\text{C}$  in winter. Prevailing winds are from the SE or E. Summer winds are often light and

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crew on the 36 foot American fibreglass boat RXII established a new record by becoming the first Norwegians to circumnavigate the North Pole. Here is Aasvolls story and hard earned experiences.

## **Boat fact**

Name: RX II

Builder: Designed by Jerry Cartwright, built at

Oddington Yachts, Newport  
Launched: 1977  
Material: Fibreglass  
Displacement: approx. 9000  
kg  
Length: 10.97 m LOA  
Beam: 3.08 m  
Draught: 1.70 m  
Propulsion: Volvo 2030  
engine, 30 HP  
Crew of 3

As with most expeditions it  
started with a temptation that

a restless soul couldn't resist. No one had ever sailed round the North Pole in one single season. The ever-increasing temperature had sadly enough made both the North East and North West Passage open for smaller yachts. Several leisure boats had sailed one or the other of the famous passages, but no one had done both in one season. So why not, I thought, and started to look for suitable

crew.

It is not an easy feat to find crews for such a hard voyage.

Ice, fog, remoteness, insecurity, polar bears, storms, living in close quarters for months on end, and with rough sailing at the best of times.

Knowledge on how to sail a boat was not necessarily the deciding factor. The ability to adapt, improvise and have



physical stamina would be far more important.

And most of all we had to get along together and work as a team when the days became long, wet and windy. That was an absolute requirement if the expedition should be successful.

I eventually managed to get hold of Hans Fredrik Haukeland, who is a quiet and cool headed man in all

situations. No wonder, as his occupation was a fire-fighter – and he could sail and knew his way around an engine. His training as fire-fighter included first aid so he instantly became the ship's pharmacist and doctor.

Finn Andreassen was the youth on board, and he had just finished his agricultural education. He was the most feisty so he could be sent up

the mast in a hurry when needed. He was a competent sailor with experience of ocean sailing. He became our electronics expert and took care of both the software and hardware on board.

I took on the role as skipper and expedition leader. All my experience from a lot of shorthanded and solo sailing in Scandinavia and Europe, two eastward Atlantic crossings and a lot of sailing

in the Mediterranean would come in handy. I have a graduated skipper D5L and also have a light aircraft certificate. So my responsibility became weather, ice maps, navigation through the ice and making sure that the boat kept an average speed of 4.5 knots during the passage. That was the speed we needed to average in order to get through in time.

My only high latitude sailing experience so far had been a February solo sail from Arendal to Bodø above the Polar Circle.

So, on June 29th the three sailors started from Arendal on the south coast of Norway. Next stop Vardø close to the Russian border. That's 1100 nautical miles as the crow flies just to get to the starting point.

Statistically the North East passage opens August 12th (2009) and the Northwest Passage closes September 24th. That leaves 45 days to cover the 3125 nautical mile long round trip of the North Pole. RX II isn't a fast boat, but we reckoned that she would manage 100 nautical miles on average every day. It was just about right. We used 29 days from Vardø to the Bering Strait. It was a

cold experience. For heating inside the RX II, we had a pot burner type 3 Kw Refleks oven and a 3.5 Kw Eberspacher air heater - both diesel burners. They were most useful when the days where cold, stressful and wet.

We knew no-one with experience to tell us about the ice and conditions we could expect: when the ice was

open, where the current was favourable, where it was deep enough to sail and when and where it was best to stop for a power nap. And not least, how to navigate in dense fog, dense ice, and where the compass is totally useless. After all, our main goal was to sail through all of this with a 36 foot fibreglass sailboat with a small 30 hp diesel engine – and live to tell the tale.



The wildlife was spectacular, and we had encounters with birds, polar bears, walrus and seals every day. But that's not the only thing we had encounters with. The Russians were on our tail and did not accept the clearance papers we had received from other parts of the Government before leaving. This forced us to sail to Providenia, and thereby effectively ended our

attempt to sail both passages in one season. While the bureaucracy ground away, the ice in the North West Passage went and came. We were disappointed to the point of tears and had to leave RX II in Nome for the winter. We would have to wait, and only return the next spring.

## **Food**

Based on our experience from the North East Passage the

year before we opted for a whole reindeer, which was salted and dried, as our main meat source. Was this a powerful and nutritious diet? Sailing in cold weather requires a lot of carbohydrates.

We supplemented this with long-life milk and bread, eggs, bacon, beans, , butter, margarine, coffee and cocoa among other things.

When the weather got really

bad we stuck to the Norwegian high tech dried meals Real Turmat. Just add boiling water and you have a nutritious and good tasting meal five minutes later. In storm conditions we added more water so that it all turned in to soup. Much easier to just drink the whole meal straight from the bag instead of fiddling around with cutlery. One hand for the meal, and one hand for the

boat.

## **The numbers**

I calculated that 900 litres of diesel for the two heaters and some motoring in the light airs would be sufficient to reach Cambridge Bay, Canada. Here we could refuel

.

We used 587 litres of diesel from Nome - Cambridge Bay at a distance of 1771 Nm.

- We left Nome July 31st

and came to Point Barrow  
August 4th.

- Herschel Island, Pauline Cove, August 7, and arrived Booth Island August 11th, and then we came to Cambridge Bay August 16th.
- That's 17 days of sailing including the pit stop.

For the next 1462 nautical miles which took us from Cambridge Bay to Clyde River we used 570 litres of

diesel.

Cambridge Bay August 19th -

Bellot Strait August 24th

Barrow Strait/Lancaster

Sound August 25th- Clyde

River August 30th.

Clyde River - Nuuk 100 liters  
of diesel, distance 584 Nm.

Dep Clyde River August 31 -  
Sept. 4 Nuuk.

Total distance Northwest

Passage 3817 Nm. A total of  
36 days.

Nuuk - Arendal 560 liters,  
distance 2040 Nm. Avg Nuuk  
7 Sept - Norway arrived  
September 29. Home in  
Arendal October 9.

Total distance Total 5857  
Nm. Overall 61 days to  
Norway.

Consumption of about 1.7  
litres - 2.4 litres per hour of  
heating and engine operating  
charging current.



## **Navigation - Safety equipment**

We had water tight waterproof 120 litres grab bags that contained tents, clothing, cooking equipment, miscellaneous, and Real Turmat for 40 days. This in case we had to leave the boat in an emergency.

We used a SPOT Satellite GPS Messenger to give our shore crew back home our

position and to let them know that everything was OK. This, or the InReach, is a great boon to have, and it also covers rescue insurance through the monthly subscription. Our Iridium satellite phone was used to download GRIB files from Ugrib.us and ice charts from NSIDC-AMSR-E satellite, and from the Canadian Ice Service.

We sent the U.S. Coast Guard

our sailing plan in Alaskan waters and made sure to check in and out of Canada. The Canadian Coast Guard keeps a helpful service and lookout in their waters, so it is a good thing to keep them informed as they can provide ice information and possible assistance if needed.

It is very important to have shore crew on such expeditions. We had Jon

Amtrup, Lars Ingeberg, Vincent Frigstad and Knut Espen Solberg standing by at all times with advice and information. Each one has their special field of knowledge with ice in the Arctic, weather, locations, media, shipping and co-ordination of bits and bobs. A number of times it paid off to have someone to gather information and with whom we could then discuss things

so we could choose the right course - when to sail and when to wait for the ice up ahead to clear, or just to have another person to talk to other than the other two on board. After having been awake for two days sailing in difficult conditions in ice, gale and fog we needed someone else to get our heads straight and to help us make the right decisions. Sometimes we were completely worn out

both physically and mentally. But that's part of the adventure and when getting out on the right side is the result – it is all worthwhile.

For navigation we used 2 Panasonic CF29 Toughbook laptops with built-in GPS. They are waterproof and shockproof and a must when sailing in a boat with an open cockpit. They functioned without a glitch on both

passages. See [www.custom-toughbooks.com](http://www.custom-toughbooks.com) for information.

The compass was completely useless in certain areas of the North West Passage due to massive magnetic variation. Therefore we programmed the internal GPS unit to update the position every 3rd second, so when we sailed in 1 knot or less in thick fog without any steering

reference, we could see the bow up marker on the screen. The variation also rendered the autopilot useless as it from time to time took us on a 360 degrees turn, then a 90 degrees turn and so on. The only solution was either hand steering or to let the autopilot steer to a waypoint.

## **Close passage**

After leaving Nome in July 2010 with a heavily loaded



boat life was good and we enjoyed the lovely sight of the sea and Alaskan nature. But life changes quickly in the high north. The wind came up to storm force and we had a counter current kicking up a nasty sea. Just to add to the mayhem we also got ice.

The wind had pushed the ice all the way to the coast and, according to the ice charts, had also filled the north coast

from Point Barrow to the border to Canada. As we sailed into the ice the wind dropped and the fog came rolling in with a slight breeze from the east. Eventually the ice became too dense to sail through. We had to get out. Ice charts showed little or no ice close to the coast. It was our only chance, and we went for it. The chart was quite right: the big ice had run aground in 4-10 metres of

water, so we sailed along the inside edge of the ice in 3 metres of depth all the way east to the border of Canada.

We arrived in Cambridge Bay on August 16th. This is also the date when the Northwest Passage statistically has opened in the last few years, so we were on schedule.

There was still a lot of ice west and east of King William Island and even in

the Bellot Strait, so we had to wait a few days.

Here we finally got to meet the legendary Peter (Semiotuk). The man who helps sailors with weather reports worldwide over the SSB radio. He gave us a great welcome and it was fun to meet him at last. Many sailors have just talked to him over the ham net, but very few who have benefitted from his excellent service have ever

had the opportunity to actually meet him personally. Peter could tell us that we were the first boat to reach Cambridge Bay this year

Here we resupplied the RX II with diesel, gas, and food before we set off on August 19th through the Queen Maud Gulf. We were blessed with fair weather but almost no wind. In the James Ross Strait we had to be extra

careful with our navigation. Here Roald Amundsen ran aground with Gjøa and got stuck in gale force winds. He had to throw everything that could be thought of as not necessary overboard to lighten the ship, to get her afloat again.

Amundsen's groundbreaking voyage must have been a totally different and far more challenging experience than

our expedition. We had half decent maps and GPS, while he had no maps and a compass, which was totally useless because of the huge (often 35-50 degrees, or more) magnetic variation in the area.

This is what we wrote in the logbook the coming days:

August 22nd

"We have been informed now Bellot Strait is packed full and completely clogged with

ice. Franklin Strait and Peel Sound is open up to Barrow Strait and Lancaster Sound! "

## **August 23nd**

"James Ross Strait is behind us now. Compass and autopilot on a magnetic compass course go completely crazy because of the variation. On Tasmania Island, we meet the Swedish yacht "Ariel 4" sailing west and a few hours later the



Swedish ship "Anna" and the Polish ship "Solanas." All well: wind and sun. "

## **August 25th**

“We entered the north of Parry Channel, 74N12 093W25 and sailed east into Lancaster Sound. 1.5 Celsius, fog, sun shines through the fog, icebergs.”

The wind freshens the following days with easterly

and north-easterly winds, and it was very cold. We choose to go north and east of Bylot Island, because there was a lot of ice in Eclipse Sound. We are still struggling with the compass heading on the autopilot and must use “course to waypoint”.

## **August 30th**

Arrived Clyde River. There have been a lot of icebergs along the way, so we had to

keep a constant lookout. This is very tiresome with only three people on board as only one can rest at a time. As we head further south the nights gets darker, and this makes the sailing even more challenging. Crossing from Clyde River to Nuuk, we got gale force winds from the north and much ice in Baffin Bay.

**September 4th**

Arrived Nuuk. Northwest Passage done without problems with a 36 feet fibreglass boat with an open cockpit and a crew of three. Very happy.

The last part back to Norway we sailed with only two on board and had the- not- so - good experiences of breaking the boom at Cape Farewell, the autopilot breaking down, an unreliable engine, and two big storms.

We were totally exhausted both mentally and physically on our return and had to spend a whole week in bed. But off course, it was all worth it.

**Expedition leader and captain of the "RX II"**

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# **13. The beauty and challenges of sailing in Russia**

Sailing in Russia for foreigners is no walk in the park as several explorers have discovered. But there is help to be found, and it is highly advisable to get a local expert to guide you through the

paperwork and people, institutions and bureaucracy that exist. Here Elena Solovyeva, CEO of Russian Passage and high latitude sailor, shares her knowledge.

Sailing on the Russian north coast is regulated by different laws of the Russian Federation and requires special permits. The number of such permits depends on the route you choose, and the

places and ports of call that you are planning to visit. Calling at ports closed to foreign vessels, or visits to the territories of National Parks, or areas with special boundary regimes, requires you to get additional papers.

The most popular routes and destinations for sailors are to Franz Joseph Land, Novaya Zemlya or the North East Passage.



The most beautiful cruising ground is the Franz Joseph Land Archipelago. There are a lot of glaciers and icebergs, different animals including polar bears, seals, walruses and whales. Also if you are fond of the history of exploration in high latitudes, you will find it interesting to visit the points from where the great expeditions started, the places where they wintered, and Soviet polar

stations preserved to the present day.

Novaya Zemlya is closer to the mainland, but you will be able to visit only the northern part: Cape Zhelaniya and Russian Bay. The rest of the archipelago's territory is closed by the military. It is not as impressive as Franz Joseph Land, but is still very beautiful with its glaciers.

Both Franz Joseph Land and the northern part of Novaya Zemlya are National Parks, so you have to comply with the national rules. Probably one of the most inconvenient for sailors is that you have to have a national park ranger on board during your stay in the territory of the National Park.

The North East Passage lies between the Novaya Zemlya

archipelago and Cape Dezhnev. The special NEP service regulates sailing on this route. After they receive the set of documents for your boat, they will give their recommendations for the voyage. You can be recommended to have an ice pilot on board, or to follow an icebreaker on some parts of the route, but the usual requirements for sailing yachts is to stay in areas of

ice free water. Mostly these terms depend on the ice conditions that season. You can also be ordered to have a technical inspection in one of the Russian ports before NEP. Special equipment like dry suits should be on board.

Communication is very important. You must have a satellite telephone on board as you will have to send your position reports to different

services. The same goes for sailing to Franz Joseph Land or Novaya Zemlya.

The best time to sail in the Russian north is from the middle of July to the middle of September. Ice conditions are not good for yachts before this period and the storm season starts late September. If you are thinking about sailing the North East and the North West Passage in one

season, you should start your voyage in the middle of July. The most complicated parts on the North East Passage are near Taimyr Peninsula and Ayon Island where Taimyr and Ayon Ice Massifs cause trouble not only for sailing yachts, but even for big ships and icebreakers.

If you are planning to sail only the NEP and you don't have to hurry; you can start

your voyage in August. The ice conditions of the last few years indicate that this is a good time for sailing there on a yacht.

Those who are planning to pass over both Russia and Canada have two possibilities: sail straight from Murmansk to Alaska, or sail along the Russian coast with the possibility of entering Russian ports. The



first option is much faster, but you have to be sure that you have enough diesel, water and food so you won't have to enter any port. Almost all of them are closed to foreign vessels, so a special permit for entering is required. Of course you can call at ports in case of emergency, but you will have to prove that you actually had a life and death situation on your hands. If you fail to do that you will

pay a fee and lose visa rights to enter Russia for 5 years. Being out of food, water or diesel is not a valid reason as far as Russian border services are concerned, that is just a question of bad planning. If you get into such a situation, you have to inform the border services in your daily reports and ask for a permit to enter the nearest port.

The second possibility

takes more time  
because you will have  
to sail to Providenia to  
pass border and  
customs controls. But  
the advantage is that if  
you have the permits to  
enter Russian ports for  
the entire trip, you can  
refuel and replenish  
supplies, and meet up  
with the local  
communities.

So as you can see the expedition has to be well planned. (And time is very important: The set of documents for the permits should be sent 6 months before the expeditions. Otherwise the officials can refuse to give you the permit because the application was sent in too late. We would advise you to start planning the route earlier as there are a lot of things that have to be

decided: if you will make stops along the route or not, do you need to call at ports for refuelling and so on.

## **About Elena Solovyeva**

Elena Solovyeva got involved in sailing as a hobby, but eventually it turned into her work and passion. Being a professional sailor she knows how to make your voyage go smooth. During her sailing career she took part as a chief

mate in the circumnavigation of the yacht "Peter I" through the North East and North West Passages and became the first and so far the only woman who has sailed around the North Pole in one season.

After coming back she became CEO of a yacht travel company and director of "Adventure Race 80dg" Regatta. During this period

she was working on projects related to the voyages of foreign yachts to Russia.

Now she is running her own business named Russian Passage, continuing to maintain a high level of service.

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## **14. Literature**

A proper shop has to have a good library. Not just to gain knowledge but also for inspiration. Here are some books from which we have learnt a lot.



There are some useful cruising guides to South Georgia, Antarctica and TDF available, for free download, online at the RCC website.

Falkland Islands Shores -  
Ewen Southby-Tailyour  
ISBN 0 84177 341 9 and the  
RCC supplement

South Georgia - notes for  
cruisers, Andrew O'Grady -

Ulla Norlander - Balaena  
(RCC)

Robert Headland, The Island  
Of South Georgia

Tim and Pauline Carr,  
Antarctic Oasis

Jerry Clark, The voyage of  
“Totore”

Pete and Annie Hill, Island  
anchorage in the Southern  
Ocean / RCC publication /

Badger Press, Cape Town  
1995

Admiralty Sailing Directions,  
Antarctic Pilot, Chapter 3,  
USA PUB. 124 Sector 10.66  
– 10.89

Stephen Venables, Island at  
the edge of the world

Mountaineering in Antarctica,  
Damien Gilden

# **Inspiration and wisdom**

Vildmarkshav, Rolf Bjelke &  
Deborah Shapiro, Norstedts  
Forlag

Northern Light – one couples  
epic voyage from the Arctic  
to Antarctica, Rolf Bjelke &  
Deborah Shapiro

A Passion for the Seas -  
Reflections on three  
circumnavigations, Jimmy  
Cornell, Noonsite

MingMing – & the Art of  
Minimal Ocean Sailing,  
Roger D. Taylor

Endless Sea – Alone Around  
Antarctica – as Far South as a  
Boat Can Sail, Amyr Klink

Into the Light – a family's  
epic journey, Dave & Jaja  
Martin

One Island One Ocean –  
Around the Americas aboard  
Ocean Watch, Herb

McCormick

Time on Ice – A winter  
voyage to Antarctica,  
Deborah Shapiro & Rolf  
Bjelke

North to the Night – A  
Spiritual Odyssey in the  
Arctic, Alvah Simon

The Eight Sailing/Mountain-  
Exploration Books, H.W.  
Tilman

The Tototore Voyage, An  
Antarctic Adventure, Gerry  
Clarke

Antarctic Oasis, Under the  
Spell of South Georgia, Tim  
Carr

Island at the edge of the  
world, Stephen Venables

Mountaineering in Antarctica,  
Damien Gilden

Sailing Alone Around The

World, Captain Joshua  
Slocum, Adlard Coles  
Nautical

Mariners Weather, Steve and  
Linda Dashew, Beowulf

High Latitude North Atlantic  
– 30.000 Miles Through Cold  
Seas and History, John R.  
Bockstoce, Mystic Seaport

Addicted to Adventure, Bob  
Shepton, Adlard Coles (May  
2014)



## **Guides**

Patagonia and Tierra Del Fuego Nautical Guide' by Mariolina Rolfo and Giorgio Ardrizzi ISBN 88-85986-34-x for information on sailing in Patagonia and Tierra del Fuego.

Admiralty Arctic Pilot Vol 3  
Sail to Svalbard, Jon Amtrup,

Skagerrak Forlag

Arctic and Northern Waters,  
Andrew Wilkes, RCCPF and  
Imrays, 2014

Harbour guide 4 Bergen-  
Kirkenes, Jon Amtrup,  
Skagerrak Forlag

Patagonia & Tierra Del  
Fuego Nautical Guide,  
Mariolina Rolfo and Giorgio  
Ardrizzi

Southern Ocean Cruising,  
Sally and Jérôme Poncet

Chile – Arica Dessert to  
Tierra Del Fuego, Andrew  
O’Grady, Royal Cruising  
Club Pilotage Foundation,  
Imray

World Voyage Planner,  
Jimmy Cornell, Adlard Coles

World Cruising Routes,  
Jimmy Cornell, Adlard Coles

Cornell Ocean Atlas. Jimmy  
Cornell,

[www.cornellsailing.com](http://www.cornellsailing.com)

Norway, Judy Lomax, Royal  
Cruising Club Pilotage  
Foundation, Imray

There are some useful  
cruising guides to South  
Georgia, Antarctica and TDF  
available, for free download,  
online at the RCC website:

[www.rccpf.org.uk](http://www.rccpf.org.uk)

Falkland Islands Shores -  
Ewen Southby-Tailyour  
ISBN 0 84177 341 9 and the  
RCC supplement

South Georgia - notes for  
cruisers, Andrew O'Grady -  
Ulla Norlander - Balaena  
(RCC)

Svalbard Guide, Pål  
Hermansen, Gaidaros Forlag

Den Norske Los, Svalbard og  
Jan Mayen, Norges

Sjøkartverk

The Atlantic Crossing Guide,  
Anne Hamimick, RCC  
Pilotage Foundations

## **Resources**

[www.myyacht.no](http://www.myyacht.no) - news for  
the real sailor

[www.explorenorth.no](http://www.explorenorth.no) -  
company that offers high  
latitude consultancy, Ski &

Sail in Norway and other sail related services. Run by the author of this book, Jon Amtrup.

[www.bobshepton.co.uk](http://www.bobshepton.co.uk) - the co-author( s company *delete* – *I never formed a company as such*) offers delivery, climbing and sailing in Greenland and pilot services in high latitudes.

[www.yachtapps.no](http://www.yachtapps.no) -

company that has created an app called MyYacht that lets you keep track of the maintenance and equipment on board.

[www.highlatitude.com](http://www.highlatitude.com) - high latitude sailing consultancy.

[www.blueplanetodyssey.com](http://www.blueplanetodyssey.com) - if you want to sail the North West Passage and Antarctica together with other like minded; Jimmy Cornell has



created a truly adventurous rally.

[www.morganscloud.com](http://www.morganscloud.com) -

here you will find highly experienced sailors, engineers, boat builders, high latitude sailors and others willing to share knowledge and inspiration.

[www.cornellsailing.com](http://www.cornellsailing.com) -

Jimmy Cornell has sailed where most people dream of

sailing, and he is still living  
his dream.