NO LIMITS CRUISING

WHAT DO YOU NEED FOR A BOAT THAT REALLY CAN GO ANYWHERE? TOBY HODGES ASKED THOSE WHO KNOW BETTER THAN ANYONE

The wish to go off-grid, to escape the crowds and to find some purity and adventure in remoteness has led to a surge of interest in high latitudes cruising and spawned a trend for rugged cruising designs. Bare aluminium hulls, which have a purposeful, expedition, 4x4-of-the-seas look, are more popular than ever – think brands like Bestevaer, Garcia, Boreal and Futuna.

We asked some of the most experienced sailors for their thoughts on the best designs and features to look for when contemplating remote exploration cruising.

Prior to revealing his answers though, Skip Novak – one of the world's leading authorities on expedition sailing – points out that a distinction needs to made within the term high latitude cruising.

"There are differences in, say, going to Svalbard and going to Antarctica, with respect to what is actually required," he says. "Various venues can be safely navigated with normal cruising boats, whether they be metal, GRP or wood," says Skip. "In the north these are: the west coast of Svalbard/Spitsbergen, parts of the south and west coasts of Greenland, Baffin Island, Labrador, and the Alaskan coast. In the south: Patagonia/Tierra del Fuego, the Falklands, South Georgia.

Go anywhere yachts – especially those destined for extreme latitudes – need to be very ruggedly built

"Although in most of these there is a risk of colliding with floating ice, the risk is minimal, especially operating in daylight hours, which are long in high summer. In the above examples I would be happy to take a wood, GRP or composite yacht cruising, with the caveat it is done in high summer (maximum daylight). For sure in a place like Svalbard/Spitsbergen, on the west coast, there are many GRP charter boats operating every season.

Sometimes only metal will do

"Conversely, these are the places where a metal boat is required. In the north: north and east coasts for Svalbard, east coast of Greenland, northwest coast of Greenland, Baffin Island early in the summer, anywhere in Arctic Canada (North West Passage). In the south: Antarctic Peninsula, South Georgia in spring, fall and winter (dark nights increase the risk of collision with ice).

"A metal boat, alloy or steel, is required if you are looking to really get stuck in and do some creative navigation, let alone being able to relax a bit within ice. This is impossible in a GRP/composite or wooden boat in a truly high latitude environment without risk to the vessel and crew. It is true that composite boats have gone to Antarctica, but they were on tenterhooks the whole time and avoided any contact with ice – which for me is the attraction!"

Skip Novak Pelagic Expeditions

Below: Skip Novak's *Pelagic* and *Pelagic Australis* are built specifically for high latitudes cruising

Tom Zydler

'A METAL BOAT IS REQUIRED FOR CREATIVE NAVIGATION WITHIN ICE'

Shoal draught benefits

Jimmy Cornell agrees that a metal hull is needed anywhere that poses a risk of collisions with ice. He also thinks a centreboard design with twin rudders is the wise choice, as he had on his last Garcia 45 when he did the North West Passage.

"The two aluminium rudders were supported by skegs, and, as an added protection, the upper section of each rudder blade incorporated a crumple area," Cornell explains. "Should the rudder be pushed upwards in a collision, this sacrificial area made of light composite material would crumple and compress without causing any damage to the hull itself.

"About two weeks after we'd fought our way out of an area with a high concentration of hard, old sea ice, I noticed some damage to the portside rudder.

"The crumple zone had been badly damaged but the rudder itself didn't seem to have been affected.

"We continued sailing like that for several months until we returned to the boatyard in Cherbourg where the rudder blade was extracted and the crumple zone rebuilt.

"I found that the best way to deal with the unavoidable collisions was to keep up a speed of around four to five knots so that the ice would be deflected sideways by the bow wave and pass harmlessly by."

Cornell thinks a shoal draught centreboard design ideal for exploring places fixed keel yachts cannot reach and provides a safety factor by allowing you to shelter from storms. (See Skip's thoughts on 'Appendages' on page 45).

"Another important advantage is that it can be used as a sounding board when entering an unfamiliar shallow anchorage," Cornell continues.

"While entering a poorly charted anchorage in the North West Passage we hit an uncharted rock in an area that showed a minimum depth of 4m. Although we hit the rock quite hard, the centreboard did its job and swung up. It scraped along the top of the rock, then dropped back into its lowered position. We later checked the damage with an underwater camera but it showed just a small dent in the leading edge of the board. I am convinced that any other boat would have been in serious trouble."

What about size?

"If I had a choice in using *Pelagic* (56ft) or *Pelagic Australis* (74ft), for my own high latitude cruising it would be *Pelagic* every time," says Skip. "Small is more capable."

"Size is about price, speed and tank range – 55ft is a good size for four people with 2,000lt tanks for example," thinks Eeuwe Kooi, owner of KM Yachtbuilders, which built *Qilak* (see page 34). KM has manufactured a large number of aluminium yachts for high latitudes cruising including the Dykstra-designed range of Bestevaer yachts. They currently have a new Bestaever 72 in build for an owner-operator to go high latitudes cruising and will soon start work on Skip Novak's new Tony Castro-designed Pelagic 77.

SKIP'S TOP FEATURES FOR EXTREME SAILING

SKIP NOVAK IS A VETERAN OCEAN RACER WHO HAS SPENT THE LAST THREE DECADES SAILING IN ANTARCTIC WATERS WITH HIS PELAGIC EXPEDITION YACHTS

Skip Novak Pelagic Expeditions

1 DECK LAYOUT

A well-appointed pilothouse should be the heart of any high latitude design. You will be spending the majority of your time there. The cockpit should be well protected with a hood that is an extension of the pilothouse roof, and extends far enough aft to fully protect the companionway door and allow crew to sit in the outside section without foul weather gear, to 'take the air.'

Treadmaster or similar rubberised material covering a metal deck cuts down on noise and is the best non-slip surface in icy conditions.

2 RIG AND SAILS

The rig has to be robust. Minimise the sail control systems as much as possible and stick to manual furlers if below about 70ft LOA. Radically swept-back spreaders are also problematic as they make it very difficult to reef the main downwind in heavy air. Tubular spreaders to help avoid chafe on the mainsail are also a good idea.

I prefer a triple head rig: a 130% high-clewed yankee, a 90% high clewed jib (the working sail) and a high-clewed blade storm staysail. High-clewed equals good visibility – fundamental on any cruising boat. The fourth reef should be the same size as a trysail. Rigging a storm jib, or for that matter a storm trysail, in 30 knots plus and in a seaway is a laugh... Try it!

Skip Novak Pelagic Expeditions

Arthur Sinkets

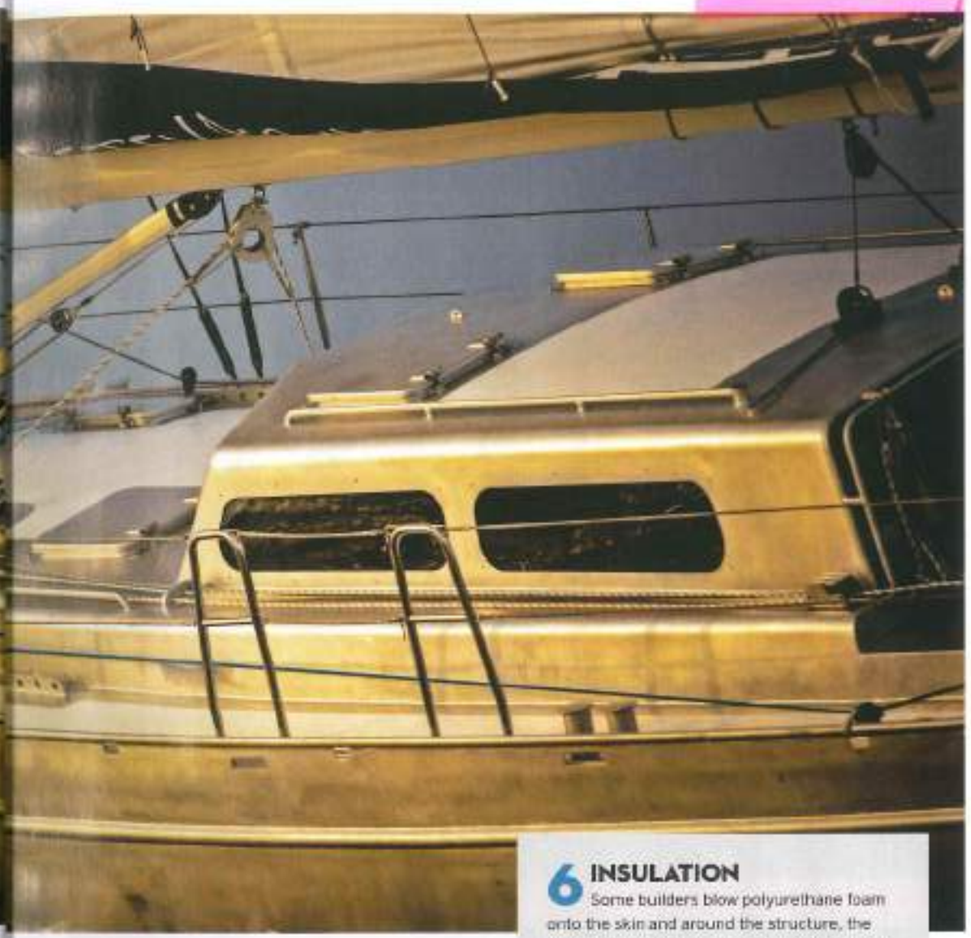
3 HULL

For true far north and far south high latitude cruising a metal hull is required. Steel is the preferred option – stronger, more pliable, less likely to breach. But alloy has taken precedence for maintenance purposes and it is generally accepted that it is pointless to paint the hull, deck and dock structures.

4 HEATING

Heating systems must able to run indefinitely with a minimum or zero power drain. The Danish fishing boat stoves from Refleks are the standard. This can be backed up by a Webasto/Eberspächer system, but these should never be the primary system as they rely on electronic management systems prone to failure, and are power hungry.

Good ventilation is part of the story of keeping the boat dry. Oversized dorade boxes allow natural ventilation in even rough conditions. Every compartment should have hatches in the deckhead to allow a purging of foul, humid air that naturally gathers in an interior. Even in the coldest conditions, at least when it is safe to do so, the boat should be opened up and purged of stale air daily.



Skip Novak Pelagic Expeditions

5 APPENDAGES

For truly ambitious high latitude work, a swing lifting keel and lifting rudder(s) are very favourable for navigating in uncharted waters where grounding is a given. Being able to dry out on the tide for any reason, lying on the canoe body, is a big plus. In ice-covered waters, being able to reduce your draught allows you to anchor/moor shallower to avoid risk of collision with deeper draught ice. This is especially critical in Antarctica.

The keel should be unpinned inshore so if you do ground, it simply lifts with the impact with no stress on the structure. Twin rudders must not be positioned or canted too far outboard or they'll be damaged when pushing through drift ice.

6 INSULATION

Some builders blow polyurethane foam onto the skin and around the structure, the preferred option to cut pieces which will never be a perfect solution. A 75mm depth of foam from just below sole level up the shell and over the deck is minimum spec. Deck fittings should be welded in when possible and other fittings bottom-tapped on plinths to prevent wicking of condensation and potential leaks into the interior via through-bolting. Double glazed windows are preferred, as are insulated soleboards (say 40mm deep). A meticulous approach is required early on in the build stage.

KM Yachtbuilders

7 PROPULSION SYSTEM

It's getting more and more difficult to find a manually configured engine for certain horsepowers. An electronically managed engine is a negative for the obvious reasons of difficult fault finding compared to traditional diesel mechanics where, with a good spare parts inventory and some miscellaneous materials, you can always make do. Direct drive systems are the simplest to deal with. A folding or feathering propeller should be backed up by a fixed-blade spare.

It is fundamental to have a propulsion system that is powerful, low rpm at the propeller and with a high torque configuration – high latitude cruising involves a lot of motoring, especially against wind and chop in confined or ice bound spaces.

8 TANKAGE

If you are designing a boat from scratch, double the fuel tankage that is considered adequate for a vessel of this size.

9 SYSTEMS

This is a complicated subject beyond the scope of this article, but here is one piece of advice. Look at every piece of technology that is on offer – think clearly and then discard everything that is absolutely not necessary. You will have a much more enjoyable experience. If you plan to winter over 'iced in' then there is a very different design approach you will have to take for most of your systems on board.

10 TOOLS AND SPARE PARTS

Assume that your primary systems will fail. An inventory of spares and tools to swap out all components should include all engine parts. Remember, there are no services where you're going.

JIMMY CORNELL'S TOP 10 PRIORITIES

JIMMY CORNELL SAILED ANTARCTICA AND THE NORTH WEST PASSAGE IN ALUMINIUM BOATS. *AVENTURA III* WAS AN OVNI 43 AND *AVENTURA IV* A GARCIA EXPLORATION 45

1 A STRONG HULL

Essential for high latitude sailing is a metal hull that can deal with collisions with ice. *Aventura IV*'s aluminium hull was provided with watertight collision bulkheads both fore and aft.

The substantial aluminium tang welded at the base of the forefoot was also a great help and was originally meant as a point of attachment to drag the boat ashore with a tractor if we were to spend the winter in the Arctic. In our case it acted just like the rostrum fitted to Roman galleys for ramming enemy ships, sweeping the ice out of our way, and allowing us to proceed unimpeded.

Jimmy Cornell

KM Yachtbuilders

2 CENTREBOARD

The main reasons for having a centreboard is to increase your cruising options, and having a boat with draught that can be reduced instantly is an important advantage. It's also a safety factor, because it allows access to a protected shallow spot if needing shelter in an emergency. While threatened by an impending storm in Antarctica we managed to squeeze into a shallow cove where smaller bergy bits had grounded at the entrance. With her draught of only 1m, *Aventura III* survived the 50-knot gusts in complete safety.

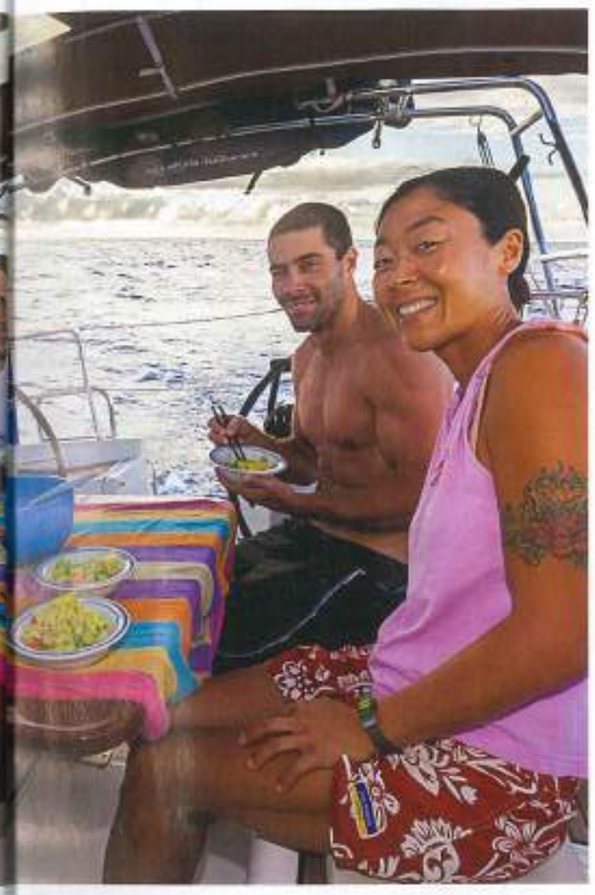
Tor Johnson

3 COMMITTED CREW

No other factor has affected the successful outcome of a high-latitude voyage than problems with the crew. The captain must ensure that the crew understand and accept that they are setting off on an expedition and not on a leisurely cruise. In order to bring the voyage to a safe and successful completion, this requires strict discipline and commitment from everyone on board.

4 MAST STEPS/ DRONE

Either can be essential when scouting for free leads. A video-equipped drone may do a better job, although landing a drone on a moving boat can be challenging.



Jimmy Cornell

5 ICE POLES

In several instances we had to push ice floes out of the way, usually assisted by the bow thruster. The 4m long poles were provided with spikes and could also be used to lower the GoPro camera to check the propeller or rudders.

Jimmy Cornell

6 UNDERWATER CAMERA

A GoPro model with a waterproof housing can very useful in checking for underwater obstructions.

7 SONAR

Forward-looking sonar can be helpful in scouting for any dangers ahead in shallow or uncharted anchorages. It also acts as a benign deterrent to signal your presence to whales.

8 SATELLITE COMMS

The Iridium Pilot delivers global broadband data and also voice communications. It is very useful in downloading high-resolution ice charts. Iridium is the only satellite system providing reliable coverage in polar regions.

9 DIVING GEAR

If having a compressor is not feasible at least two full diving tanks should be carried as well as a dry suit.

10 TOOLS AND SPARES

Self-sufficiency and the ability to deal with emergency repairs are of utmost importance. Mains electric tools used in conjunction with an inverter are preferred over battery-operated models.

*The points Jimmy Cornell covers here are described in more detail in his book, **200,000 Miles, A Life of Adventure**, available on Amazon.*

EEUWE KOOI'S TOP PICKS FOR HIGH LATITUDES

Eeuwe Kooi runs KM Yachtbuilders, specialists in construction of aluminium expedition yachts.

- Keep everything simple, sturdy and strong. Oversizing is a good idea so make the anchor and chain triple the normal size, for example.
- No paint, no maintenance. A shot-blasted, corrosion proof deck means you can shovel ice and not damage anything, while a workboat-like finish on the hull is easy to repair. A preferred substitute to paint is anti-skid foil.
- A carbon mast and good sails for good sailing and stability. It's important to still sail well. A carbon mast doesn't get cold, so doesn't ice up as quickly.

Arthur Smeets

- Good stowage – a big forepeak with room for hiking gear, warps, spares.
- Good heating. A furnace or something you can fix yourself as a backup and a central heating system as a primary heating source. Storing enough diesel so you can keep warm when you're frozen in is important.
- A proper space for a dinghy.
- Keel cooling/dry exhaust. If you intend to stay in the cold, a dry exhaust and keel cooling are good options so you can run the engine to charge batteries and you do not to have to winterise the boat after every start-up.
- Watertight bulkheads and doors. Our yachts always have two watertight bulkheads as standard and, if budget and space permits, the engine room should be watertight as well.

Arthur Smeets