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Waiting for the tide

with the editor

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String theory for leisure mariners

If there's one thing that separates the leisure mariner from their land-lubbing compatriots, it's their love of string. Motorboaters are not immune to this – see the carefully cheesed mooring lines and flaked davit falls sported by some boats – but the prime culprits are those of the rag-and-stick persuasion.

Only the other day I was standing in our project boat *Hantu Biru*'s cockpit sorting out the tangle caused by an over-long topping lift, and on our mast lift at Beaulieu the forestay hooked behind the port spreader and the spinnaker halyard decided to knit one, purl one at the masthead. Both of these were oddly pleasurable experiences. Handling lines and tripping over standing rigging is such a defining characteristic of our sport that it makes an inert tub into a boat. Forget plumbing, painting, varnishing: satisfying though all these jobs and their results can be, it's hoisting *Hantu Biru*'s rig that has really brought her to life.

Hoisting *Hantu Biru*'s rig has brought her to life

This month, our project boat article details how we renovated and re-rigged the mast ready for sailing. This marks the beginning of the home straight as regards our restoration – the next stage, already booked in with our local marina at Cobb's Quay, Poole, is to attempt to fit the centreplate, give her a trial dip to check our waterline is correct and apply some antifouling. Most other tasks can be carried out afloat – with the season ticking away, we're getting desperate to be afloat and find out what our project boat is really like!

For those of you wondering what we plan to do about an engine, the answer is cheat, pro tem. The original petrol engine, although I progressed it to a stage where rebuilding would be possible, is impractical by modern standards. Two members of *Hantu Biru*'s past crew have recalled its heat, smell and reliability with horror. The engine had two holes (one in the exhaust port) which I repaired with Durafix, but the zinc-rich nature of the product would likely result in failure with the combined effect of a marine environment and corrosive exhaust gases. Add to that the poorly glassed-in engine bearers falling out during our investigation of the bilge while fixing the leaking keel and I'm afraid the engine's fate was sealed.

We'll be fitting an outboard bracket this season, but during the winter we hope to fit a BMW D7 diesel kindly donated by PBO reader Stefan Bartkowiak. Stefan has already carried out much of the work necessary on the engine, but we'll be giving it an overhaul and checking it runs reliably on the bench before installation.

We've often talked about how to recover a man overboard, but rarely what to do with them once on the boat. This month, consultant anaesthetist Gilbert Park gives some essential advice for care of shocked, hypothermic and possibly injured crew.

Elsewhere, we've got summer in mind. Anticipating warm zephyrs, David Harding tries three ways of hoisting and dousing a cruising chute, while Laura Kitching puts six electric cool boxes through their paces to see whether they're worth their cost in current and cash. David Lewin finds that cruises in company can be fun even for those of us who prefer to sail incognito, Tony Smith explains how it's quite possible to get away from it all with just a few miles of muddy creek and a steak-and-kidney pudding, and Sarah Norbury gives some insider tips for cruising her favourite stamping ground: the River Vilaine.

Enjoy this issue, and don't forget to visit pbo.co.uk for great subscription deals, to join our active and helpful online forum and to find out about our digital editions, which now include an iPhone edition in addition to the devices listed below.

Fair winds,

David Pugh

HGP Architects of Fareham PPP

British team base for America's Cup bid

Southampton and Portsmouth under consideration

Olympic sailor, Sir Ben Ainslie, has confirmed plans to base an America's Cup team on the South Coast of England.

The Lymington yachtsman is putting together a UK team to challenge for the prestigious sailing prize. The Ben Ainslie Racing company has submitted a planning application to Portsmouth City Council to build his team headquarters on East Street in the city.

A team spokesman said: 'Ben Ainslie Racing would like to establish a base on the South Coast, and a number of sites are currently being considered. The site at Camber Quay in Old Portsmouth is one site under consideration along with two sites in Southampton.

'Planning consent is being sought for the site, so should the decision be made to progress with the project in Portsmouth then work can start as soon as possible.

'The proposals at Camber Quay are for a fully sustainable team base and would incorporate the team's sailing operations, research and development facilities, boatbuilding, sports science and fitness facilities, along with a visitors' centre to showcase innovation and technology along with developing the skills required for the campaign's success.'

The plans have been drawn up by Fareham-based HGP Architects, which designed the Spinnaker Tower, Port Solent and the Sails of the South.

Bring the cup home

Last year Sir Ben famously won the America's Cup as navigator on board the US boat *Oracle,* but now his sights are set on winning the prestigious trophy for Great Britain.

The historic competition first took place off the Isle of Wight in 1851, but it has never yet been won by a British team.

Announcements will soon be made about the team members, who are all expected to be British. The team's AC62 designers will also be unveiled.

Sponsors are yet to be confirmed, but Sir Ben's team and new office premises near Southampton plus his Extreme Sailing Series campaign, which has provided experience of helming multihulls, have been funded mainly by British sailing enthusiasts Sir Charles Dunstone, co-founder of Carphone Warehouse, and entrepreneur Sir Keith Mills. Both magnates have publicly supported the idea of bringing the America's Cup back to Britain.

■ **www.benainslieracing.com**

Theta returns home

Possibly the most iconic boat in the history of the Junior Offshore Group (JOG) has returned home to England from the USA.

After being exhibited for several years in the US Museum of Yachting, *Theta*, a 20ft double-ended gaff-rigged boat, has been repatriated by JOG club members.

The boat was designed and built by Kenneth Gibbs, largely to sailor Patrick Ellam's own specification, and launched from Townsend's Yard at Bourne End in August 1948. After cruising her around south-west England and frequently across the Channel, Patrick raced her in the JOG's first ever race in 1951, when his later boat *Sopranino* was helmed by Colin Mudie.

The repatriation of *Theta* from the museum in Newport, Rhode Island has largely been the brainchild of Mark Wynter with the support of Mr Ellam, now resident in Arizona.

Roger Townsend provided help with the administration and logistics of her shipment to Southampton and the purchase price with the Museum of Yachting.

Theta left Boston in April, and after some remedial work by Mark will be donated in tip-top condition to the Classic Boat Museum in Cowes, to sit proudly alongside *Sopranino*.

Nick Barlow, the Captain of JOG, said: 'This is a significant moment in the history of JOG.'

■ **www.jog.org.uk**

JOG Yacht Racing

Round the Island... any questions?

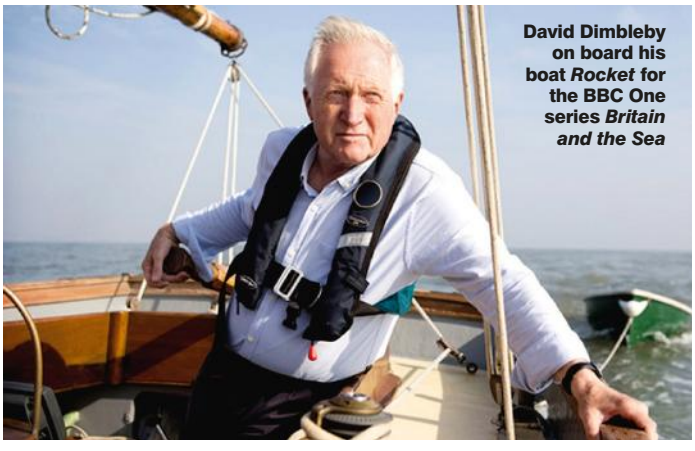
Television presenter David Dimbleby will start this year's Round the Island Race before competing in the event.

He will fire the 0630 first start gun from the Royal Yacht Squadron on Saturday 21 June.

Mr Dimbleby, of BBC's *Question Time*, previously competed in the round-Isle of Wight race in the 1960s on a Scod, but spent the first half in the cabin with seasickness as they went through what the Times later referred to as 'Atlantic seas off Hurst'.

These days he does most of his sailing in the summer in the South West on *Rocket*, his Heard 8.5m (28ft) gaffer built for him in 1980.

His 2014 RTI Race experience should be far less gruelling as he is being joined by his 16-year-old son Fred on board a Farr 65. The pair will be racing with Olympic silver medallist sailor Luke Patience and his crewmate Elliot Willis, who are campaigning for gold in Rio 2016 in the Men's 470 dinghy class.



David Dimbleby on board his boat *Rocket* for the BBC One series *Britain and the Sea*

BBC Media Centre

The JP Morgan Asset Management Round the Island Race has long been dubbed a 'race for all' and this year is no exception, with hundreds of entries vying to win the JP Morgan Family Trophy. Among them, Bill Collins, aged 82, is finally achieving a long-held ambition to compete. He will be on board *Eleanor* (T120), a 1969 Trident triple-keel, entered by the Collins family from London. Bill's two sons and his daughter-in-law are joining him on board this 24 footer.

■ **www.roundtheisland.org.uk**

New awards for inland waterways

Chandleries and marinas are just two of the 11 award categories up for grabs at the inaugural Waterways Awards.

The awards by *Waterways World* will highlight those companies and organisations that have shown a dedicated commitment to their craft or community project and achieved excellent standards of workmanship and service.

They are open to all organisations operating on non-tidal, inland waterways within England, Wales, Scotland and Northern Ireland. Companies and organisations of any size can enter. The deadline for entering has been extended to Friday 13 June.

■ **www.waterwaysawards.com**

Sailing club fire crash

A South Coast sailing club was forced to close temporarily after a car crashed into it, starting a fire and causing 'some structural damage' to the club building.

The collision at Hampshire's Emsworth Sailing Club occurred at 6.36am on 22 April. An 82-year-old man from the village was rescued uninjured from the Volvo vehicle and treated for non-life-threatening injuries. He was arrested on suspicion of arson and later bailed until 28 May pending further police enquiries.

The car is reported to have struck the building at some speed. A Hampshire Fire and Rescue Service spokesman said flames from the car, which was totally destroyed, ignited the building's roof, damaging 30% of it.

The club reopened on 26 April with several temporary measures in place but an 'unaffected sailing programme'.

Commodore Chris Clode said: 'Much work has been carried out in order to get the club up and running as quickly as possible'.

He praised a 'large working party' of club members who turned out to clean up the damage.

Established in 1919, the club is thought to be one of the oldest in the UK. It is situated at the top of Chichester Harbour and has about 1,800 members.

The revamped club was reopened last year following a £35,000 renovation.

A joint investigation between Hampshire Fire and Rescue Service and Hampshire Constabulary is being carried out.

Emsworth Sailing Club

Destruction at Emsworth Sailing Club

BOAT SHOW NEWS

Changes announced for Britain's biggest boat shows

Shake-ups are planned for the London and Southampton boat shows.

National Boat Shows, a subsidiary of the British Marine Federation (BMF) which organises both events, has announced that it is making a 'significant investment' to boost the appeal of both shows following exhibitor and visitor feedback.

The PSP Southampton Boat Show will be promoted as a family festival of boating, with new attractions on the land as well as more opportunities to get afloat. The aim is to attract more visitors and 'create the best possible sales platform for traders.'

Meanwhile, the organisers will be striving to put the 'show' back into the London Boat Show.

London will be a 10-day event once more, with a return of the Friday preview day.

The show will also start a week later, with the 2015 event scheduled to run from Friday 9 to Sunday 18 January. A new London Classic Car Show will run from Thursday 8 to Sunday 11 January 2015, offering boat show traders the chance to show off their products to a new, complementary audience. The Telegraph Cruise Show will also take place from 9 to 11 January.

National Boat Shows (NBS) managing director Murray Ellis said: 'We'll inject the energy and excitement that's been missing and create an amazing first impression.'

He added: 'The profit from both the London Boat Show and the PSP Southampton Boat Show contributes significantly to the Federation, enabling us to deliver the services and support to our 1,500 members and the industry as a whole.'

More plans will be announced over the next few months as they are confirmed.

■ **www.britishmarine.co.uk**

A toast to David Thomas

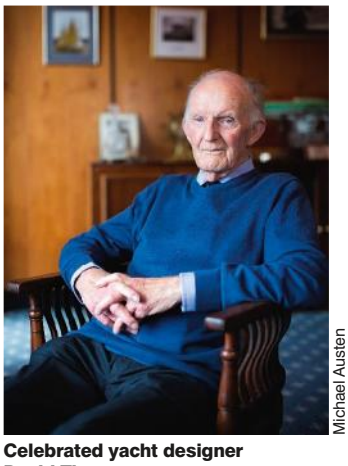
Britain's influential yacht designer David Thomas was celebrated in style at a Royal Southern Yacht Club dinner packed with family, friends and many of those who have taken to the water in one of his boats.

David was lauded by numerous speakers for the pleasure his many and various designs have provided over a career spanning half a century. The evening marked David's 25th year as a member of the Royal Southern.

The main speaker was PBO contributor Peter K Poland, a long-standing friend of David, who built many of his designs as co-owner of Hunter Boats.

He said: 'David has an instinctive understanding of what sailors want – he has been the Pied Piper of yacht designers, that's his secret. People from all divisions of sailing have sailed out on a David Thomas design. They will go on for ever.

'He is also responsible for the largest One Design fleet in Round the Island Race history, 105 Sigma 33s, a record that will never be beaten.'



Michael Austen

Celebrated yacht designer David Thomas

Among the attendees were Runar Steinsen and friends who travelled from Iceland.

Earlier in the day, race officials were forced to cancel the planned racing due to gale force winds. A parade of sail also fell foul of the conditions.

The intention is for those who entered to be given free entry to the July Regatta on 12-13 July with prizes awarded from extracted results. It is further planned that the Solent Snooker race event will be held on 19-20 July.

■ **www.royal-southern.co.uk**

SAILING IN GREECE

Simplified regulations for cruisers in Greece

Sailing regulations for yachts in Greece have become much easier under a new law, according to the Cruising Association (CA).

But the CA, which has hundreds of members sailing in Greece, warns that the law also calls for certificates of insurance giving higher public liability values.

All vessels under 300 tonnes now need insurance of €50,000 per passenger and not less than €500,000 per event to cover civil liability for bodily harm or death of passengers and third parties due to collision, crash, sinking or any other cause.

The old limits (which most policies currently cover) were €300,000 for bodily injury or death, €150,000 for third-party, and €90,000 for sea pollution.

The new law follows the new Greek cruising tax which charges all boat owners using Greek waters – up to €400 for boats under 12m and, for boats over 12m, up to €100 times the metre length of boat for a full calendar year. The higher rate can be reduced if the boat spends less than seven months a year in the water. Also, if the boat spends more than 11 months in Greek territory – afloat or ashore – owners can claim a 30% reduction on yearly rates.

A system for making payment of the tax is expected to be in place in May but a period of transition will follow. The relaxation of port police procedures is already in effect.

Multiple methods for paying are being arranged: online, through port police, tax offices and agents, and possibly through banks.

Boats of 12m and less pay a single fee on arrival in Greece or on launching. This will permit them to cruise for the rest of that calendar year in Greek waters. There are three bands: 7.1m to 8m, €200; 8.1m to 10m, €300; and 10.1m to 12m, €400. After a transition period, boats which try to evade paying this tax face a harsh penalty if caught.

■ **www.cruising.org.uk/news/greektax**

NEW BOAT UPDATE

New Southerly 36 shoal-draught cruiser

Built in Britain: a new twin wheel, twin rudder cruising yacht designed by Stephen Jones

Like many yacht builders, Southerly has been moving up the size range over the past few years. A new 535 will be introduced at Southampton, slotting in between the 47 and the 57RS, while a 675 is also on the way.

Given that there's only so much development a yard can do at any one time, it's no surprise that the bottom of the range received rather less attention for a while. In fact it was thinned out, the discontinuation of the 110 and 35RS (which shared the same hull) leaving a sizeable gap between the Stephen Jones-designed 32 and 38.

Now, at last, that gap is being filled. Having seen how the 32 and 38 combine an enormous amount of space in boats that also sail extremely well, Southerly has commissioned Jones to design a new 36 to take the place of the 110 and 35.

You won't be able to see the new arrival until the London or Dusseldorf shows, because the hull plug has only just been delivered to the yard at Itchenor on Chichester Harbour, but the first two boats have already been sold and the 36 should be well worth waiting for if you're after a fast, high-volume, shoal-draught cruiser.

As you would expect from a new Southerly, this one features twin rudders and twin wheels, together with the trademark swing keel. And the keel is a deep one: in sailing mode its tip plunges to 2.62m (8ft 7in) below the surface. When you're designing a boat that will float in just 0.81m (2ft 8in) of water with the keel raised, maximum draught need no longer be compromised.

Orders are now being taken for the new Southerly 36

Again in line with modern thinking, the 36 is powered by a high-fractional rig with a self-tacking headsail. An overlapping genoa can be added.

Cruising concessions include the mounting of the mainsheet traveller forward of the companionway to keep the cockpit clear, though it can be controlled from both wheels. A fixed windscreen is an idea borrowed from the Southerly 420.

Below decks the layout adopts the same approach as the 110, with the galley by the companionway and the saloon at a lower level further forward. Windows in the forward end of the raised superstructure will not only give a view forward but will also open.

David Harding

■ **www.southerly.com**

A lasting legacy

The Andrew Simpson Sailing Centre has officially opened at the Weymouth and Portland National Sailing Academy (WPNSA) in Dorset.

Sailing stars including Sir Ben Ainslie, Iain Percy, Paul Goodison and Olympic windsurfer Bryony Shaw gathered to mark the occasion, along with Andrew's wife Leah and two sons Freddie and Hamish.

The centre was declared open on the poignant first anniversary of Andrew 'Bart' Simpson's death. Andrew's eldest son Freddie cut the ribbon.

The Andrew Simpson Sailing Foundation (ASSF) set up the Royal Yachting Association-accredited centre in memory of the Olympic sailor who tragically died in an America's Cup training accident on May 9 2013.

onEdition

Cutting the ribbon: Sir Ben Ainslie (right) with Iain Percy (centre), Paul Goodison and Andrew Simpson's children Hamish and Freddie

Andrew's best friend and Olympic Star keelboat class sailing partner Iain Percy, a triple Olympic medallist and ASSF trustee, said: 'It was a tough decision to launch the centre on the 9th May, being a year today that we lost the great man, but we felt that it was another great opportunity to celebrate him. Not a time to reflect and be sad, but a chance to continue the great things that he did in his life.'

Based in Andrew's home county and at the London 2012 Olympic sailing venue, the new sailing centre will act as a hub for all ASSF's activities, inspiring the next generation of sailors.

Subsidised sailing

Foundation trustee Sir Ben Ainslie said: 'We are starting our activity, including subsidising sailing sessions for children, on a local level, but want to partner with clubs from around the country with similar objectives; and ultimately do that on a global scale.'

The new sailing centre will also work closely with the Chesil Trust and the WPNSA to deliver the 'Rod Shipley Sail for a Fiver' scheme, which has enabled more than 12,000 Dorset schoolchildren to experience sailing over the past 10 years.

■ **www.andrewsimpsonsailing.org/weymouth**

Essex Boatyards

***Barnaby Rudge*, Sir Paul McCartney's Groves and Gutteridge Dickens Class Mk2 GSL motoryacht**

Beatles star's boat for sale

Music legend Sir Paul McCartney is selling his former fishing vessel after 27 years of ownership.

Sir Paul bought the classic wooden craft with his first wife Linda in 1987.

The 14.6m (48ft) Dickens Class motoryacht was built as a fishing boat in 1956 by the Groves and Gutteridge yard in Cowes, Isle of Wight. It was converted into a comfortable family cruiser with a restored wooden interior and is named *Barnaby Rudge* after a Charles Dickens' novel.

It is powered by a pair of Foden FD6 diesel engines of 68hp and has a top speed of around nine knots. The exterior is due to receive a fresh lick of paint before any sale is completed.

It is being sold by Essex Boatyards with a guideline price of £99,950.

Offers must be submitted in writing by early June. Sir Paul is giving all proceeds from the sale to Oxfam.

■ **www.essexboatyards.com**

Trio and dog rescued

A British couple, a Belgian crewman and their dog were rescued when their 14.9m (49ft) yacht sank during a storm.

Leonard and Lisa Rorke of Oundle in Northamptonshire, Henri Worthalter, and a terrier called Dexter were found clinging to a liferaft amid 7.6m (25ft) waves hundreds of miles off the coast of Bermuda after their yacht *Blue Pearl* sank in heavy seas and complete darkness.

The trio and Dexter jumped ship after the yacht began taking on water. They were saved after several hours on 28 April by the Manx-registered tanker *Tilda Kosan*, which diverted course while on its way to Mexico following a distress call via the United States Coast Guard.

Two other vessels in the vicinity, about 900 miles north-west of Bermuda, also responded.

Mr Rorke, a computer technician, told a UK newspaper: 'I cannot find words to adequately describe how skilful the captain was in getting alongside us. We were being tossed around in the liferaft and literally clinging on for our lives.'

Isle of Man Ship Registry

Henri Worthalter, and Leonard and Lisa Rorke with their dog Dexter

Dick Welsh, director of the Isle of Man Ship Registry, said: 'We are very proud of the actions of the master and crew on board the *Tilda Kosan*. We are delighted that there was a happy ending to this incident and commend the captain and his crew for their rescue efforts.'

BEAULIEU REVIEW

Wet and wonderful

Beaulieu Boatjumble shines despite early rain

Mud, mud, glorious mud interspersed with glorious sunshine made the 2014 Beaulieu Boatjumble one to remember for bargain hunters and jumble sellers alike.

The sunshine and showers forecast didn't put off boat owners keen to find a bargain or pick up the odds and ends they needed to improve their boat – more than 7,000 visited the hundreds of stands and Trunk Trader stalls on the day.

Beaulieu events manager Judith Maddox said: 'The heavy rain of the morning made for a rather slow start to the event, but sailors know how to dress for the weather and spirits remained high. By lunchtime the fields were busy and visitors were rewarded with blue skies and bursts of warm sunshine during the afternoon, which encouraged them to stay on until show closing time.

'People seemed intent on buying and exhibitors reported brisk trade. The delivery vehicles were certainly kept busy – more so even than last year – taking purchases back to the car parks.'

Practical Boat Owner was there along with the almost-finished project boat *Hantu Biru*, attractively dressed overall at the Boatjumble field entrance. Hundreds of visitors took the opportunity to see how the PBO team have got on with the Snapdragon 23 restoration, many of them climbing the viewing ramp to have a look inside the boat and unknowingly taking part in a PBO test at the same time. The ramp was painted in a variety of non-slip deck paints and Boatjumble visitors were helping to see how they coped with a large footfall – you can read all about it in a future issue of PBO.

The new Walkabout Auction at the end of the day – buyers could bid for lots that sellers were keen to dispose of – was popular with both exhibitors and visitors. Bargains ranged from 50p for one box containing a stainless steel sink unit to £13 for another with assorted paraphernalia including an outboard fuel tank, a hardwood tiller, a fishing rod, a fender and an oar.

Exhibitor Ben Metcalfe of marine equipment installers Landau UK was delighted with the response from visitors. 'We've made more sales this year and had more ongoing enquiries from a vast range of boat owners,' he said.

It was sloppy underfoot following early morning rain – but that didn't stop the Beaulieu Boatjumble bargain hunters

DIARY DATES

- **Devon Boat Jumble,** Newton Abbot Racecourse, 24 May, 10am, £3 entry for adults.
- **Crick Boat Show,** 24-26 May, inland waterways boat show, Crick Marina, Northamptonshire, www.crickboatshow.com
- **OGA East Coast:** Crouch Rally, 24-26 May, contact: trevorrawlinson@yahoo.co.uk
- **Pirates on the Prom,** 26 May, celebrating the town's 400th anniversary, Penzance will be making a bid to regain its record for the most pirates in one place. Boat owners are invited to take part from the 24th – bring your pirate gear! www.piratesontheprom.co.uk
- **Yarmouth Old Gaffers Festival,** 29 May-1 June, yarmoutholdgaffersfestival.co.uk
- **All Wales Boat Show,** 30 May-1 June, Conwy Quay Marina, www.allwalesboatshow.com
- **Essex Volvo Sailing Academy,** 31 May, on-the-water taster sessions at Brightlingsea Sailing Club for all ages as part of a series of nationwide Volvo Sailing events, www.volvocarssailing.co.uk
- **Beale Park Boat Show,** Berkshire, 6-8 June, www.bealeparkboatshow.co.uk
- **OGA Lake District Rally,** 6-8 June, Ullswater, bhealas@yahoo.com
- **Seafair Haven Biennial Maritime Festival,** 7-14 June, traditional and classic vessels will gather on Milford Haven Waterway in Pembrokeshire, www.seafairhaven.org.uk
- **Falmouth Classics Regatta,** 13-15 June, Falmouth, www.falmouthclassics.org.uk
- **Round the Island Race,** 21 June, www.roundtheisland.org.uk

See more online at www.pbo.co.uk

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Get the latest boating news online every day. Visit the PBO website, **www.pbo.co.uk**

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PBO Regional News

News from your cruising area

Send us your local news stories. Email PBO news editor Laura Kitching at newspbo@ipcmedia.com, tel: 01202 440825, or write to the address on page 5

SOUTH

COWES EXCLUSION ZONE

Construction of the new detached breakwater for Cowes is under way with an exclusion zone in place, marked by lit buoys. Cowes Harbour Commission (CHC), in partnership with the Homes and Communities Agency (HCA), appointed Boskalis Westminster on a £7million fixed-price design and build contract following a tender process.

The initial construction phase will be completed in the autumn of 2014, when the gravel core will be visible approximately 5m clear of low water spring tides. Following a settlement period, Boskalis will return in spring 2015 to complete the project. The result will be a 350m-long, detached rock and rubble breakwater to protect existing homes, businesses and harbour users.

www.cowesharbourcommission.co.uk

NAVITUS BAY WIND FARM

The Planning Inspectorate (PINS) has accepted Navitus Bay Development Limited's formal application for development consent, on behalf of the Secretary of State.

The application will now progress to the pre-examination stage. Members of the public can register as an interested party in order to provide comments and be kept informed of the progress of the examination.

Navitus Bay Development is proposing to build an offshore wind farm with up to 194 200m-tall wind turbines situated in popular sailing waters off Dorset, Hampshire and the Isle of Wight.

www.tinyurl.com/nbayportal

CHANNEL ISLANDS

BOATS GOING NOWHERE

Boat movements across Guernsey have come to a standstill over a dispute about hauliers' permits.

The situation has left many boat owners unable to transport their boats to the sea or haul them out.

It comes after the States of Guernsey Environment Department issued a reminder to island boat hauliers that unbraked trailers with a laden weight of more than half the kerbside weight of the towing vehicle cannot be used without permits or being fitted with brakes. This followed a complaint about a haulier and an investigation that indicated some people were breaching laws by using overweight unbraked trailers. Island boat hauliers operate because many boat owners take their vessels out of the water in winter and keep them at home. The department is now assisting hauliers to obtain permits and ensure trailers are legal. It is also considering reduced speed limits to minimise the need for braked trailers.

Boat movements across Guernsey have come to a standstill over a dispute concerning trailer permits

Tony Rive

TIDAL POWER SCHEME

A major deal has been signed to install a 150-turbine tidal power project off Alderney by 2020. Tidal technology company OpenHydro and Alderney Renewable Energy (ARE) has announced the 300MW project in the island's waters.

The waters around Alderney contain one of the world's largest tidal energy resources which, once fully developed, is estimated will power 1.5million homes.

Related to this is a joint venture developing a power interconnector between France, Alderney and Britain. This link will enable the tidal power generated in Alderney's waters to be exported to European markets, as well as allowing energy to be traded between France and Britain.

SOUTH-WEST

HI-TECH IN PLYMOUTH

Following the acquisition of the Turnchapel site in Plymouth from the Ministry of Defence in March, Yacht Havens Group have started to develop the site for hi-tech marine commercial use.

It has been renamed Turnchapel Wharf Ltd and Yacht Havens has exchanged contracts with their first tenant on site, Marine Services (South West), a family business providing marine civil engineering services, repairing and maintaining navigation aids and breakwaters, dock walls and dock furniture.

GREEN LIGHT FOR BIDEFORD MARINA

Plans to create a new marina at East-the-Water in Bideford are to go ahead. The multi-million-pound waterside development across Brunswick, Queens and Clarence Wharves includes floating pontoon berths while the river will be dredged to allow larger vessels, such as preserved historic ships, to come alongside.

The scheme, which includes riverside walkways, cafes, restaurants and boutique stores as well as flats and houses, could begin before the end of this year and will take around two years to complete.

WALES

RHYL HARBOUR RELAUNCH

Two days of celebrations will begin on 30 May to mark the official opening of Rhyl Harbour; a £10.5million regeneration project in Denbighshire.

The development includes a new bridge, a public square and a quayside building to create a hub for the harbour, new quay walls with pontoon facilities, a full-size slipway and a mooring pontoon for 10 boats, plus a secure compound for boat storage with lifting facilities.

www.denbighshireleisure.co.uk/rhylharbour.html

SOS RESCUE

Two yachtsmen were rescued after raising distress flags and flashing 'SOS' in Morse code via the mast light of their 13.7m (45ft) catamaran.

The duo were nearing the yacht's base at Ynyslas after completing a long-distance passage from the Azores when they raised the alarm.

They had made the last part of the journey under sail alone due to fuel problems, but at around 9pm on 4 May they began drifting up the estuary on the incoming tide.

Their distress signals were picked up and Aberdyfi's RNLI lifeboat crew set up a tow to bring the boat under control before checking up on one of the yachtsmen who had collapsed earlier, suffering from exhaustion.

IRELAND

DIESEL IN KILMORE

Kilmore Quay in County Wexford has installed a new diesel fuel oil facility. The new facility will help to ease the problem of a lack of fuel supplies around the Irish coast. The self-service system dispenses filtered low-sulphur diesel 24/7 and is available to harbour users.

NORTH-WEST

PORT ACADEMY LIVERPOOL

Bootle-based Hugh Baird College is launching a specialist academy to train an army of skilled workers to help drive the Liverpool City region's £1.8billion SuperPort project.

The training facility, called Port Academy Liverpool, is scheduled to open at the college in September and aims to provide a one-stop-shop for port operations and maritime logistics-related training courses.

The SuperPort transport and logistics strategy is designed to expand the freight and passenger capacity of the River Mersey. A deepwater container terminal is scheduled to open in 2015.

www.portacademyliverpool.com

SCOTLAND

COMMONWEALTH FLOTILLA COUNTDOWN

The Commonwealth Flotilla has had an 'overwhelming response' from boat owners with all 250 places filled already. The official Festival 2014 event, held from 25 to 27 July, will see the largest number of boats ever assembled on the Clyde. The mass flotilla will gather on 26 July to travel 17 nautical miles (32km) from Greenock to Pacific Quay in Glasgow.

Follow the event on Facebook or Twitter (@Flotilla2014) for updates.

www.ryascotland.org.uk

NORTH-EAST

RIVER TEES INVESTMENT

Plans for a water taxi service for Teesside have been unveiled.

Businessman Lindsay Eccles has bought two river taxis – alongside the *Teesside Princess* and the *Endeavour* replica – for an undisclosed sum.

The *Endeavour* replica will be opened up to visitors and groups once again, and the *Teesside Princess* will offer longer river cruises.

Mr Eccles, who owns boat business Infinity Marine and Infinity Cafe at Stockton Riverside, wants to make his new premises a visitor 'destination' with a fleet of motorboats and rowing boats for public hire.

Meanwhile, pontoons are being launched at Preston Park to encourage more people to visit the newly-revamped attraction by water.

EAST

YACHT CLUB DEMOLISHED

Alexandra Yacht Club, situated on the cliffs at Southend, is to be demolished. Built in 1873, the building has been a landmark in the town since its inception, but has been closed since November last year over safety concerns following a landslip. Further investigations revealed it was not possible to save the building.

The nearby Naval & Military Club has offered its premises in the short term while the club considers its future. The launching slipway on the Marine Parade is not affected and is still in use.

COLNE RESTRICTIONS

As part of the planned maintenance program by the Environment Agency, the gates of the Colne Flood Barrier at Wivenhoe are being refurbished.

Preliminary work will be carried out by contractors from a series of floating pontoons moored around the gate areas, and the gates themselves will be lifted from their hinges and brought clear of the barrier structure.

Work will last until 30 June. Mariners are advised that for the safety of contractors working afloat, navigation through the Colne Barrier must be undertaken with zero wash. There may be occasions when navigation through the barrier could be temporarily suspended: call 'Colne Flood Barrier' on VHF Ch68 if in doubt.

MARINA RESURRECTION

Blackwater Marina and boatyard in Maylandsea, badly damaged by fire in May 2009, is to be refurbished and extended. Plans submitted to Maldon District Council include an extension to the existing brick structure adjacent to the corrugated tin shed, a new terrace facing Mundon Creek, refurbishment of the tin shed and construction of 13 new homes.

Chichester Harbour Conservancy director Siún Cranny opens the Chichester Marina boatyard

SOUTH-EAST

BRIDGING THE GAP

A new project aims to strengthen the internationally important trade link between the ports of Dover and Calais. The two independent ports will be the focus of cross-Channel collaboration and major investment, as freight traffic between Dover and Calais is expected to rise by 40% by 2030.

The Building the Resilience of International and Dependent Gateways in Europe (BRIDGE) Project aims to protect the 'European motorway of the sea'.

The BRIDGE Project was unveiled at a joint event held in Calais and a Memorandum of Understanding between the two ports was signed.

In the short term, the BRIDGE project will see the two ports adapt berths to the highest technical standards of ship accommodation, as well as reorganising cross-Channel traffic flows and enhancing local transport networks.

CHICHESTER BOATYARD GRAND OPENING EVENT

Premier Marinas celebrated its new Chichester Marina boatyard with a grand opening event on 26 April that raised more than £1,400 for charity. Chichester Harbour Conservancy director Siún Cranny unveiled a plaque on the boatyard building before berth-holders, Premier Marinas directors, members of the design and build team, and local council representatives.

INLAND

WATERWAYS REOPENED

Boat owners visiting London have a new stretch of the inland waterways to explore. The Queen Elizabeth Olympic Park, known as the Bow Back Rivers, was once a key transport network but fell into disuse after the Second World War. It was transformed ahead of the London 2012 Olympics as part of a £20million investment programme that included new and refurbished locks and water control structures; dredging to create deeper channels; new river walls and towpaths, and improved wildlife habitats. The first public boats took to the reopened waters on 10 May as part of a flotilla led by the St Pancras Cruising Club and Inland Waterways Association.

LINCOLNSHIRE MARINA

Plans have been revealed for a 300-berth marina to be built at Kirkstead near Woodhall Spa. The multi-million-pound development would be linked by a new canal to the River Witham and would include boatyard facilities, office accommodation, a cafe and restaurant, and up to 250 new homes.

BOATABILITY VENTURE

Organisers at the launch of the Boatability joint venture

Boatability, a new joint venture by the Rivertime Boat Trust and Bisham Abbey Navigation Sailing School, has been launched. The scheme offers disabled participants the opportunity to experience on-the-water activities.

Run from the Bisham Abbey sailing school. taster sessions will include dinghy sailing, bell boating, raft building and open-top kayaking.

PBO Next month

SUMMER ISSUE ON SALE THURSDAY 19 JUNE

Summer visitors' guide to marinas

What you'll pay and facilities you can expect at marinas around Britain this summer

PRACTICAL — PBO PROJECT BOAT

Fit a centreplate
- *Hantu Biru* gets her keel back and we show how to paint a waterline
- Make a jury rudder from a shelf
- Adapt an inflatable dinghy for more efficient rowing

BOATS

Best of British: GT35
- A brand-new British boat from the board of Stephen Jones

Sailcloth evolution
- How the material driving our boats has changed over the years

Saare 41
- A new boat from Estonia

SEAMANSHIP

Working on the foredeck
- Tips for safe working for'ard

Channel crossings
- Plan an English Channel excursion

CRUISING

Looe in Cornwall
- West Country pilotage

TESTED

Binoculars
- Do you need to spend a fortune on a good pair of binoculars?

Drogue sea anchors
- On-the-water test

Contents subject to change

SUMMER ISSUE ON SALE THURSDAY 19 JUNE

PBO Letters

Email pbo@ipcmedia.com
or write to us at the address on page 5.
Photos are appreciated, letters may be edited.

Readers share their thoughts and opinions

SAVE YOUR BACK – AND SAVE MONEY

Less weighty way to weigh anchor

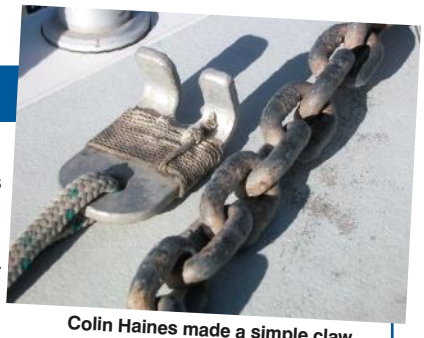
■ PBO Sketchbook (PBO June) covered an important and very relevant item – bad backs. Dick Everitt's drawings showing how a simple block can halve the load for boats without an anchor windlass are the exact means I use to protect my bad back when raising the anchor.

Colin Mark's back-relieving anchor raising arrangement

The method uses two chain grab hooks and a simple block – all low-cost items – plus a normal mooring warp. One chain hook is fitted to a rope lanyard for holding the anchor chain still, while the other chain hook is fitted to the simple block. The mooring warp is secured to an on-deck cleat at one end then passed through the block and the loose end is taken back to the cockpit. I fit the second chain hook to the anchor chain and indicate to my cockpit companion to haul away.

As the block acts as a single whip, the actual load that the cockpit companion is hauling is half the weight of the anchor, the other half being taken by the deck cleat. When a yard or so of anchor chain has been hauled in I fit the holding chain hook to the anchor chain, then move the chain hook with the block forward so the process can be repeated. If sailing alone, a mast-mounted winch can be used until the anchor breaks out.

Colin Mark
Medway Yacht Club



Colin Haines made a simple claw to secure his anchor chain

Clawing back the pennies

■ Re Sketchbook (PBO June), Dick Everitt suggests that somebody pulling up an anchor manually should install an anchor pawl to the stemhead fitting so that the chain can be locked off when muscles demand a rest.

This might be a very expensive thing to do if the whole stemhead fitting has to be replaced in order to mount a pawl. A far cheaper solution is to have a claw positioned where it is ready for the chain to be dropped into it, and hold the claw in this position with a long cord tied off onto one of the bow cleats. The picture shows the claw I made for my boat from a piece of scrap 6mm-thick aluminium. The whipping-line wrapped round the claw is there to protect the deck from being damaged by the metal.

Colin Haines
By email

Dick Everitt replies:
Thanks for your chain claw email, Colin. I thought I'd mentioned them in PBO quite recently, but on checking it proved to be back in November 2012: how time flies!

Hooray for Biscay

■ I have really enjoyed Peter K Poland's series of articles looking at boats by individual builders and designers, so I was particularly looking forward to the June issue when the designs of Alan Hill were his subject. I know it's not possible to mention every boat in an article, but I was disappointed to find no mention of what I consider to be one of Alan Hill's most attractive and seaworthy designs; a design that has circumnavigated the world with a family aboard, completed numerous transatlantic cruises, completed the OSTAR and AZAB and ventured far south into the Antarctic ice. There may not have been many built – 20-odd, I believe, a mixture of sloops and ketches – but they still give great service as sea-kindly, elegant cruising yachts. I give you the Biscay 36. (OK, I'm biased: my wife and I have owned one since 1995.)

Ian Horne
By email

Ian Horne's Biscay 36 *E'le May* off the coast of Arran

UV and epoxy

■ I read your epoxy resins test (PBO May) with interest as I am about to make some deck fittings moulded in epoxy. However, there was no mention of UV degradation. As I understand it, epoxy is particularly susceptible to UV radiation, so I was hoping for information about which (if any) of the products tested had UV inhibitors.

Roger Sturton
by email

PBO's Ben Meakins replies:
To my knowledge the only epoxy around with any UV-inhibiting properties is West System 207 Special Clear Hardener – but they still recommend using a UV-filtering varnish. All the epoxies we tested are, as far as I'm aware, susceptible to UV damage.

There's an interesting test at www.oneoceankayaks.com/Epoxtest.htm where six epoxies were left in the sun and compared. When building a canoe a few years ago I was told that all epoxies will need painting or varnishing to avoid UV damage: two-pack varnish was recommended for a clear finish.

PBO tested epoxy resins in the May 2014 issue

PBO PUZZLE 177

Solution to No 176
2 He spent part of his career as Governor of New South Wales

Which of the following terms do not relate to air flow or types of wind?

A. Geostrophic
B. Katabatic
C. Föhn wind
D. Isotach
E. Isothermic
F. Meridional flow
G. Valley breeze
H. Zonal flow
I. Derecho
J. Haboob

HAVING YOUR SAY ON JACKSTAYS

A few more lines

Regarding Peter Taylor's letter (PBO June), I normally sail single-handed on longish trips and have thought long and hard about going overboard. A lifeline on a jackstay keeps you with the boat: this is vital when single-handed and it's too far to swim to shore.

But there are two scenarios which must be avoided: one is dangling over the side (you are very unlikely to be able to pull yourself back on board) as Mr Taylor says, but the other is being towed.

My Nauticat has smooth rails all the way round, so a lifeline will pull aft on the jackstay along the rails to the stern: there I keep a thick knotted rope dangling just above the water, tied to a rope ladder which stays coiled up on the aft deck. So I will get dragged to the stern on the (short) lifeline, pull the ladder down and climb on board. Sounds easy: one day I will try it for real!

Alan Wilson
Colchester

Coachroof jackstay

Re Peter Taylor's letter, he might be much safer in his BayCruiser if he stayed inboard. I fitted a coachroof jackstay in our 6m Red Fox 200E *Gentle Jane* in 1997. It is a single wire bight ending inboard of the winches and led round the tabernacle. Our harness and lifeline tethers are short, only 44in (112cm). With a short bow I can reach the pulpit. There is no need to change jackstays.

The normal method of going forward in any sea is sitting on the coachroof. When going to the mast to slab reef I often loop the tether round the jackstay, thus halving the scope, and occasionally loop it round the lee jackstay to keep even further inboard. This scheme has kept those on board from going overboard or even against the guardwires during four voyages to the Netherlands including some in very severe weather (Force 7-8).

A coachroof jackstay is incompatible with a sprayhood because of the impossibility of clipping to it from the cockpit, so I do without a sprayhood.

Michael Collis
Sharnbrook, Bedfordshire

One price fits all?

Your annual UK marina price guide (PBO April) was very interesting, but what was also interesting in the same issue was 'Adventure on an African lake', in particular the fact that the cost for an overnight stay was a fixed price and not per metre.

Marinas only put one boat on a pontoon, so the price should not be per metre but a price applied to all vessels. I only pay for the duration in a car park, and not on whether I have a long or short car. The RYA is trying hard to dispel the image of boating as an 'elite' sport, but while marinas charge their ridiculous prices in the manner they do this elitist attitude will never go away.

John Coe
Inverness

Searching for Skippers lore

I am looking for information on the Skipper 22, a lovely small long-keeled cutter designed by Peter Milne and built by Richmond Marine. I bought mine a few months ago and would love to hear from anyone who has or had one.

George Malynicz
gmalynicz@hotmail.com

Peter Jones' compass is unchanged whichever side of it his glasses are

A proper frame-up

Chris Beeson (Letters, PBO June) need not change from steel to plastic spectacle frames to avoid problems with his hand bearing compass, as PBO Editor David Pugh suggested. Instead he can go a bit upmarket, from steel to a non-magnetic metal alloy. My metal frames have no effect at all on a compass, I suspect because my optician is also a sailor and was aware of the potential problem. I also have glass lenses to reduce risk of abrasion from dried salt.

To be on the safe side, perhaps Chris could take his compass with him next time he chooses frames?

Peter Jones
Woodbridge, Suffolk

PEYTON'S PICK FROM THE PAST

'No, she hasn't come out of her berth.'

Taken from Practical Boat Owner September 1983

SEADOG OF THE MONTH

This is our westie, Pola, aboard our Rival 32 *Caribue*. She likes to know I am plotting the course correctly! Pola always knows when we are coming into our home port. Secretly, I think she would swim for it if we didn't have her tied on. I'm not saying she doesn't like sailing: but let's just say she likes the arriving more than the journey…

Mark, Heather and Jess Easton

Seadogs galore!

Visit our seadog gallery at **www.pbo.co.uk/seadogs** or scan this QR code with your smartphone

Send us your seadog photos for our web gallery and your pet may be lucky enough to become Seadog of the Month and win you £30

Reckoning without leeway

I enjoyed PBO March, but would like to point out an inconsistency regarding the dead reckoning and estimated position in the 'Isle of Man without GPS' article. To be fair, it is consistent with a lot of RYA teaching to say DR should take no account of leeway. However, if you know that a vessel is making consistent leeway, the easiest way to include this in your EP is to add it or subtract it from your steered course. Indeed, it would be more complicated to allow for leeway any other way.

Jim Hennefer, by email

David Rainsbury replies:
I always include only course steered and distance run by log in DR. Leeway, like tide, is included in the EP calculation, allowing for it last of all so it is simple to isolate it from other, more empirical factors and allow a bracket of uncertainty. I'm not saying that to include leeway elsewhere is wrong. I just like to do it this way. A more detailed account of working up an EP was published in PBO January 2014. PBO

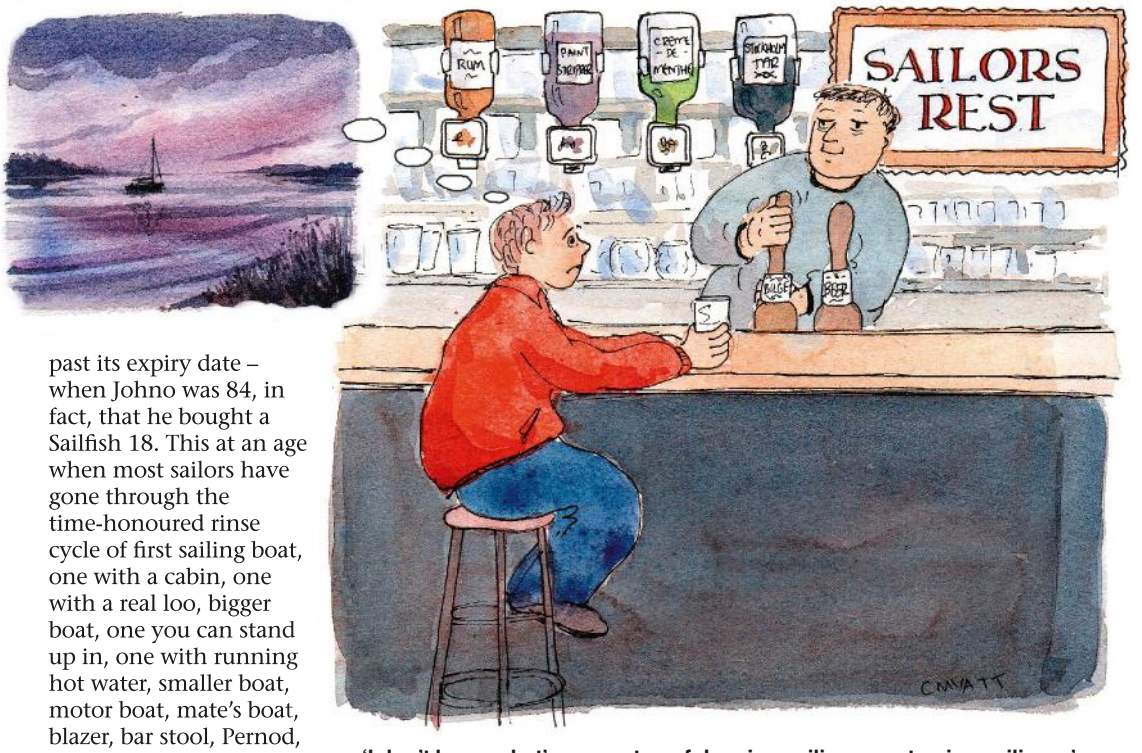
Dave Selby

Mad about the boat

Dave Selby is the proud owner of a 5.48m (18ft) Sailfish, which he keeps on a swinging mooring on the picturesque Blackwater estuary in Essex

Blazers and other balderdash

Ignoring the bar-room gossip, age is no bar to going sailing



'I don't know what's more stressful: going sailing or not going sailing…'

There comes a time when all ageing sailors swallow the anchor, buy a polyester blazer, start wearing cravats, describe their trousers as slacks and retire permanently to the sailing club bar to embalm their once-vital organs for the voyage into the afterlife by drinking strange, fluorescent concoctions that dissolve varnish and dissipate memory.

If only they could remember what was in it, such a potion would surely win marine product of the year.

And what wonderful stories these old salts would have to tell, again if only they could remember, and would stop talking about cholesterol, gout, lumbago, dodgy hips and dicky knees.

But not Jazzy Johno, so named for his love of syncopated rhythms and Django Reinhardt in particular. He's eighty-something-ish and always dresses overall in more colours than the Edwardian Royal Navy spruced up for the Spithead review. In fact Johno wears colours that haven't even been invented yet, although experiments late one night in an unnamed local sailing club came close… and proved surprisingly moreish. Trouble is, no one can remember the precise ratio of Pernod, crème de menthe, Angostura bitters and Stockholm Tar.

It was only a couple of years ago, as I recall – although time for sailors is a troublesome concept as stuff we still consider new is invariably long past its expiry date – when Johno was 84, in fact, that he bought a Sailfish 18. This at an age when most sailors have gone through the time-honoured rinse cycle of first sailing boat, one with a cabin, one with a real loo, bigger boat, one you can stand up in, one with running hot water, smaller boat, motor boat, mate's boat, blazer, bar stool, Pernod, Drambuie on the rocks.

I first met Johno at Maldon Yacht Club, and when he bought his Sailfish I was overjoyed at having a companion to share our grief. As someone who considers himself versed in the ways of the Sailfish I gave him the benefit of my experience, which mainly involved cautioning him about all the bits that break, fall off and go wrong.

Time for sailors is a troublesome concept as stuff we still consider new is invariably long past its expiry date

This is what happened to me when I got my Sailfish, and although I ignored it all I held on to the worry.

Johno decided to ignore my sage advice, jettisoned the worry too, promptly sold the outboard and went sailing. The one modification he made was to sew a one-foot tuck in the foot of his mainsail to raise the boom as he's not quite as flexible as he once was.

And we haven't seen much of him since.

Unlike most of us, who are fretting about catastrophic rig failure, bursting hull-deck joints, crazed windows, keels falling off, dirty tea-towels, 1970s Melamine crockery and non-slip coasters, compass deviation, making curtains, sinking and mostly waiting for wrong spare parts to arrive, Johno goes sailing, without an engine and without a worry.

He'll cast off, kedge out, hoist the sail, wait for a puff and he's away, exploring the magical Blackwater for days (sometimes weeks), the empty imprint of his Sailfish in the mud taunting us and reminding us of the adventures he's having, and we would be having too if we weren't waiting for the wrong-sized trailer wheel bearing to arrive.

And when Johno comes back, brown as a berry, what tales he has: of walks ashore to far-flung Goldhanger, a foaming pint at the Chequers, the wild women of Tollesbury, driftwood fires on the beach, sunny days, sunsets and seals, succulent samphire and sights to savour.

Then he'll doze contentedly in his cockpit as the last of the ebb runs out and his Sailfish settles back to rest a while on her soft pillow of yielding mud.

Meanwhile we're kept busy waiting for the blasted wrong-sized bilge-pump to turn up.

Then, as the sun goes down and the evening air cools, Johno will wake and saunter off to listen to music with a reviving foaming beer at a local pub. We'd join him too, if we didn't have to reassemble the chainsaw and hack back the shoulder-high grass and saplings enveloping our boats. I just don't think Johno takes this sailing lark seriously.

PBO LISTEN ONLINE

Hear Dave Selby's podcasts on the PBO website **www.pbo.co.uk**

Sam Llewellyn

Flotsam and jetsam

Sam Llewellyn is editor of *The Marine Quarterly*, www.marinequarterly.com, and author of nautical thrillers. A year ago he bought a Corribee on eBay

Put the kettle on...

If you run aground on a soft Cornish mudbank there's only one thing for it – make yourself a cuppa

The other week we went for a sail with Luke Powell, who has built eight Scilly pilot cutters in Gweek. We were on his *Agnes*, 47ft on deck with another ten of bowsprit, twenty-odd tons of the purest seagoing joy built from two-inch oak on massive oak frames (see more on www.workingsail.co.uk).

The Lizard looked horrible, so we sailed back into the Fal and had a spot of lunch round the huge table in *Agnes*'s saloon. Most of the party then crashed out on their bunks like digesting anacondas. The remainder hauled up the jib, the staysail and the main, and we set off upriver.

I steered the boat up the brown road of water between slopes of gnarled oak trees, the wake murmuring, huge oak tiller steady under the hand. A mellow, reflective mood flowed from the ancient woods. On the depth sounder the numbers were doing a little dance of their own, heading downwards, as if engaged in the limbo. I sat there meditating on the great beautifulness of it all...

There was a slithering sensation, followed by a dim swearing. I had sailed the most beautiful boat in Cornwall onto a mudbank. We were about to become the subject of public opprobrium, plus someone would certainly put us on Facebook. This must be avoided at all costs. Clutching the head with the hands, I began to consider the options. They were as follows:

- Get on the phone to a tug, double-quick. Plus points: it would pull us off the bank in seconds. Minus points: it would be insanely expensive, and Luke would probably notice it churning round the corner in a cloud of half-burnt diesel immediately before it yanked the Samson post out of his beautiful boat.
- Lay out an anchor with the dinghy and haul ourselves off with the windlass. Plus points: more economical than tug. Minus points: we would first have to lift the anchor into the dinghy, and the anchor was a fisherman so heavy that it behaved as if it was welded to the deck. Furthermore, the windlass was of a type invented during the Napoleonic Wars, made a huge clacking noise as it revolved, and required the services of a one-legged man playing a fife to inspire the operatives. None of those on board had a fife.
- Bend the peak halyard on to the anchor chain, lay out the anchor, haul the boat down on her beam ends, thus reducing her draught so she would skid round into deep water. Plus points: none. Minus points: too many to mention, but for the record, it would involve dropping the mainsail, laying out the appalling anchor (see above), going through all the stuff about fifes, plus several of the crew would just be mentioning in passing that they were not as young as they were, it was nothing really, just a slipped disc.

Sam Llewellyn

***Agnes* is a 47ft (14.3m) traditional wooden pilot cutter**

We plumped for the thinking man's solution. Put kettle on. Leave companionway hatch open so steam would emerge, demonstrating to passing boats that we had stopped for a cup of tea and did not want all that sailing palaver to distract us from the fragrant PG Tips. To prove, in fact, that we rejected the bourgeois convention by which boats are meant to float. We had done it on purpose. And we were happy with our decision.

So we sat there, and had tea with a choice of banana bread, fruit cake and chocolate brownies, waving our teacups at passing acquaintances while Luke expressed forgiveness in an undertone. After perhaps ten minutes the tide floated us, and we set off upriver much refreshed.

OLD TECHNOLOGY

Oily experience

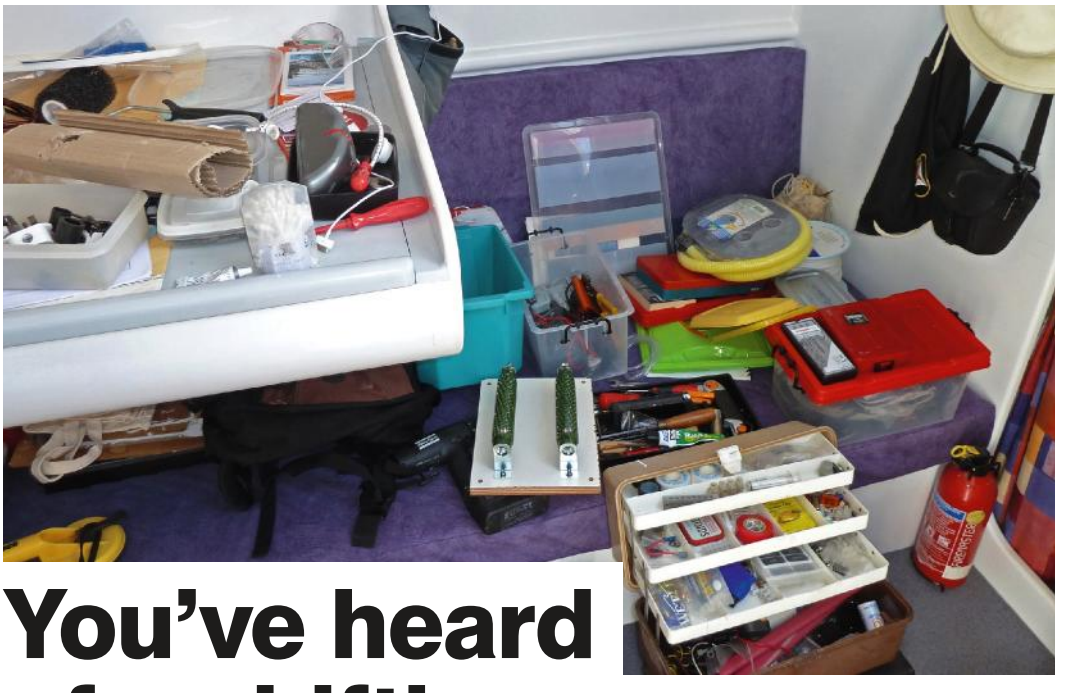
An insight into the reason oilskins are called oilskins comes from the excellent Maritime Museum in Reykjavik, Iceland, home of giant cod and bubbling volcanoes. To make early Icelandic oilskins: get a sheep. Eat the inside bit. Scrape the wool from the outside bit until it resembles vellum. Dry near volcano and sew into trousers and smock, using string, whale sinews or anything else to hand. Then take several large cod and squash the oil out of them. Marinate vellum suit in oil until thoroughly soaked and leave to dry until rigid. On first signs of rain or breaking seas, force your way in, using hammer if desired, and attach to body with more string.

Come home Lloyd, Musto, Gill, Cotten and the rest of you. All is forgiven. PBO

Andrew Simpson

Monthly musings

Yacht surveyor and designer Andrew Simpson cruises with his wife Chele in his own-design 11.9m (39ft) yacht *Shindig*. Read his blog at www.offshore-sailor.com



You've heard of a shifting spanner...

Tackling several jobs on the boat at once is tricky enough to manage without your tools going walkabout as well

Whether for repair or installation purposes, extensive work within the confines of a small boat can be arduous and frustrating. When you're living on the boat at the same time, it can also be extremely disruptive.

Now, I'm not exactly what you might call a 'tidy worker'. Indeed, had humankind been unlucky enough to have had me as a surgeon, I believe there would be entrails everywhere and operating theatre floors slippery with blood and gore. I simply don't do keyhole surgery in whatever form it comes. Opencast mining would be more my style. Chele talks of carpet bombing.

I confess I like to address several jobs at once. To pursue the surgical analogy, I might be doing an appendectomy and a couple of transplants while working on a detached retina during the coffee break. The reality of course, is more mundane. Having returned to Spain at the end of *Shindig*'s winter lay-up (it's April as I write) the actual tasks that face me are as follows: the replacement of our old VHF and chart plotter with a combo giving AIS and the possibility to display radar; ditto a new and more powerful autopilot to replace the old Simrad TP30 tiller pilot which has given an amazing 12 years of service (though only used under power, since when under sail the required wind allows the Monitor windvane gear to take charge); a replacement regulator for the Superwind wind generator (the old one was from another manufacturer and was disconcertingly wayward in its voltage regulation); and a complete strip-down and replacement of bearings for the aforementioned and altogether wonderful Monitor.

And, of course, there's a lift-out scheduled for next Monday, and I'll be presented with all the below-the-waterline delights of applying a couple of coats of antifouling, servicing the folding prop, checking and possibly replacing the anodes and, of course, polishing the topsides.

That's the major list, but – you know the sort of thing – there are lots of fiddly little tasks as well: filters to be changed, a couple of halyards to be renewed... all manner of 10-minute jobs to be ticked off the list. It seems that everywhere you look there's something to be done.

I have yet to see any tool actually move, but they are rarely to be found where I left them

At this point I should assert that my seemingly inefficient scattergun approach to the work isn't just to suppress my admitted aversion to boredom. It has much more to do with advancing decrepitude. Crawling through tight spaces to thread electrical cables might be tolerable for half an hour or so, but can be excruciating for longer. To be able to skip to more comfortable work where you can stretch your limbs or – oh yes! – even sit down comes as blessed relief. Changes in posture allow the blood pressure to abate, the joints to realign themselves and the various muscle cramps to ebb away. If I give up imaginary surgery and ever become an osteopath I shall advise this methodology to all.

But there is a downside to adopting a parallel task schedule. For I've come to be convinced that, to compound the various agonies and frustrations that I inevitably incur, my tools have become surreptitiously nomadic. At first I blamed Chele but she denies having moved them and, since she's an awesomely honest soul who I have yet to ever discover fibbing, I have come to believe her.

The strange thing is that I have yet to see any tool actually move, but they are rarely to be found where I left them. An example: just yesterday I was using a 7mm socket and ratchet to tighten a hose clip (I was fitting a new foot pump in the heads) when a spasm in the lumbar region bade me withdraw my upper torso from under the sink. After perhaps 10 minutes doing something a little more vertical I returned to the sink to find my ratchet and socket had vanished. Chele was ashore, so patently blameless.

Mounting a search, I eventually found the wretched implement on the chart table. How it got there is beyond my comprehension, but these incidents occur with increasing frequency. I have a favourite screwdriver that surely has legs, because I only have to put it down for it to run away and hide. It once disappeared for over a month until I found it hiding in my shirt locker.

All very puzzling and worrying. I think perhaps psychiatry is the one for me.

NASA MARINE INSTRUMENTS

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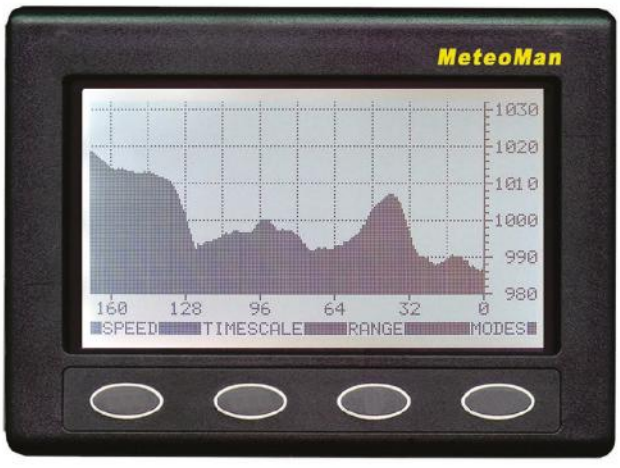

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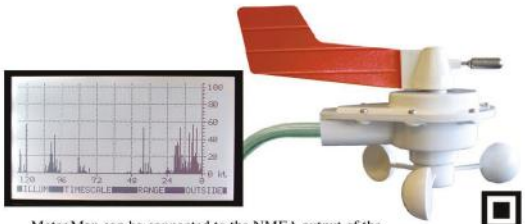

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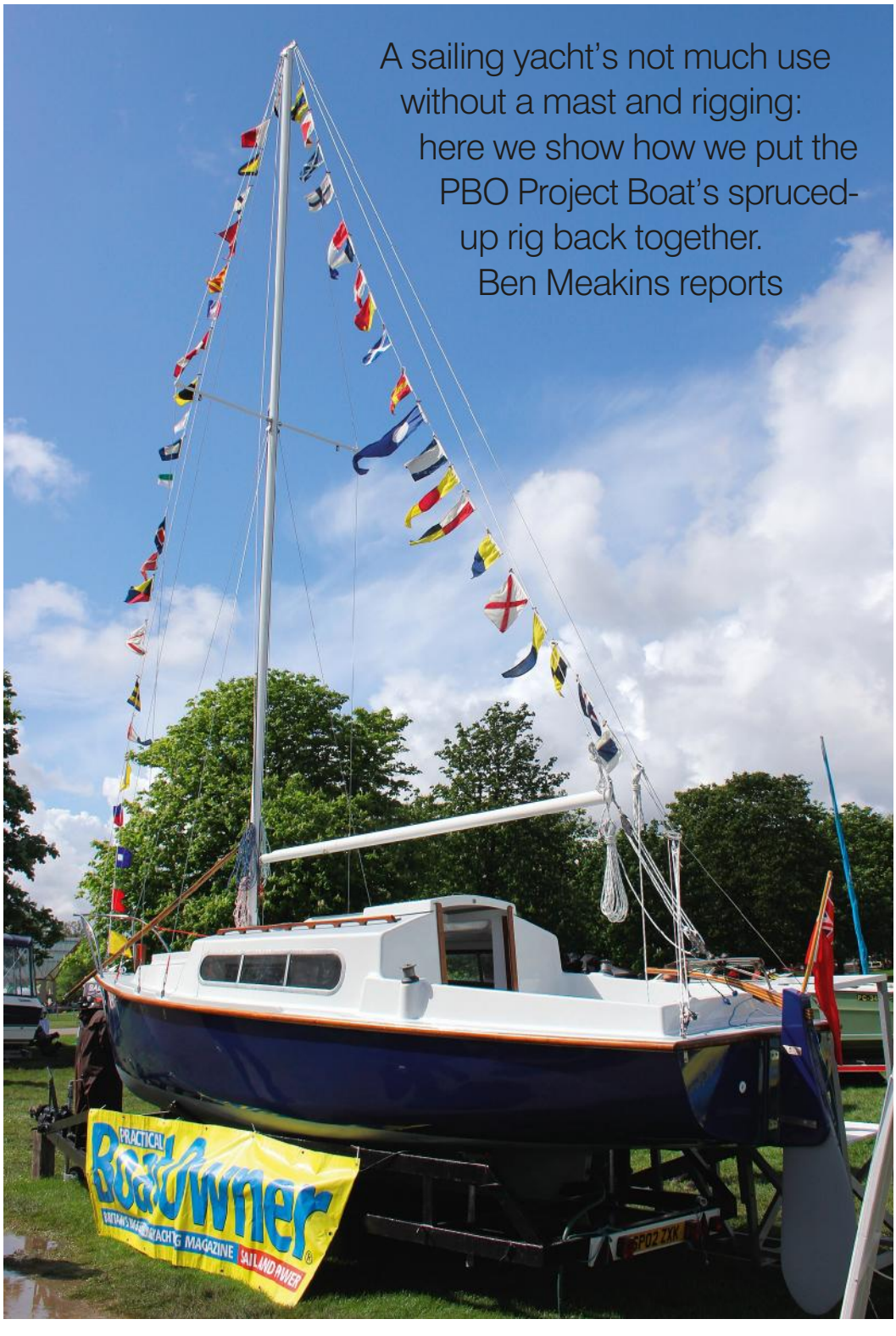
PBO PROJECT BOAT

This is *Hantu Biru*, the PBO Project Boat. She's a Snapdragon 23, bought for £510 from eBay: *Hantu Biru* is Malay for 'Blue Ghost'. Having spent 20-odd years languishing on a fish farm in Dorset, she is now being transformed by the PBO team.

■ In this issue we rebuild *Hantu Biru*'s bare mast and boom, reinstalling fittings before attaching new standing and running rigging. We reused as much of the old stuff as was safe, otherwise we made or bought new components.

How to rig and restep a mast



A sailing yacht's not much use without a mast and rigging: here we show how we put the PBO Project Boat's spruced-up rig back together. Ben Meakins reports

Regular PBO readers may remember that, back in December last year, we stripped the mast of its fittings, removed its flaky paint finish back to bare aluminium and re-coated it. In April, with the Beaulieu Boatjumble looming and a likely relaunch getting ever closer, it was time to get the rig back up. We did this in time for the Boatjumble where *Hantu Biru* was displayed in all her glory, mast, boom and all, dressed overall and with halyards, sheets and fittings in situ. She's looking like a real sailing boat at last!

The old rigging wire was of indeterminate age and strength

Redesigning the masthead crane

The setup we inherited wasn't ideal. The jib and spinnaker halyards ran through a double block located inside and below the forestay fitting. Despite the uneven loading on the block, this was not too bad for the jib: however, for the spinnaker it was unacceptable. A spinnaker halyard really needs to exit the mast forward of the forestay to let the sail set properly and to avoid chafe.

The masthead crane design had no room for any fittings forward of the forestay, so we made our own, which would utilise the same holes as the previous stainless plate that took the forestay pin. We ordered a sheet of 1.2mm stainless steel from eBay (£16), and cut two identical pieces that fitted the shape of the crane and could be riveted on. As they come off the front of the mast, they are bent inwards so that they meet and can be riveted together to form a tang. The spinnaker block is connected to these with a shackle. This has resulted in a lightweight yet strong and secure fitting – we tried to bend it by hanging on the halyard, and it showed no sign of any movement.

BEFORE: The spinnaker and jib halyards were led through a double block inside the forestay

There is no provision for an adjustable topping lift – the previous owner had shackled a static line to the inside of the backstay's Talurit splice.

We settled on a similar but modified idea, drilling out a shackle to fit either side of the backstay's clevis pin, to which a static line can be attached. At the lower end we fitted a simple purchase so we can easily adjust the height of the boom end.

AFTER: The new setup, with a crane to project the spinnaker halyard forward of the forestay

We attached a topping lift to a shackle on the backstay pin, with a tackle at the boom end (inset)

MAST FITTINGS

We removed all the fittings from the mast before it was stripped and repainted. We could now clean them up and reinstall them. Modern rigs use T-terminals which locate in a hole in the mast wall, but our mast – dating from the 1960s – did things a little differently.

The masthead shroud terminals are basically stainless steel plates, riveted onto the masthead at either side. There are two shaped plates on each side, with a clevis pin passing between them to secure the wire's terminal. We used a Lazy Tong riveter to pull home new Monel pop-rivets. There is also a 6mm bolt which passes through each terminal and the mast itself and which takes much of the load.

We used a Lazy Tong riveter to pull home new Monel pop-rivets

The spreader roots incorporate lower shroud attachments

The shrouds are seized into grooves in the spreader ends

SPREADER FITTINGS

The spreader sockets were, like the masthead shroud terminals, riveted to the mast with 5mm Monel rivets, which we installed with a dab of Duralac jointing paste. At the lower end of the spreader fitting is the attachment point for the lowers, which are bolted through the mast. This allows the lower shroud plates to rotate and self-align as required. The bolt was in good condition so we reused it, using a centre-punch to secure each nut to ensure they don't undo themselves on the water.

The spreaders are held in their sockets by split pins. At the outer ends there is a slot to retain the cap shroud, which is secured with good old-fashioned seizing wire.

These Plastimo spreader boots will stop chafe and sail damage

We bought a pair of Plastimo spreader boots to fit over the shrouds and spreader ends to stop sails and halyards catching and chafing – these are secured with a few wraps of insulation tape.

HALYARD BLOCKS

The fitting for the jib halyard block comprised two stainless steel straps, riveted to the mast with 6mm rivets. The jib halyard block is then shackled to this tang. There is also a fitting for the pole uphaul block, halfway up the mast, and the downhaul block, at the base of the mast.

The tang for the jib halyard block comprises two stainless fittings

The spinnaker pole uphaul fitting is riveted onto the mast

GOOSENECK AND SLIDING TRACKS

The gooseneck is a sliding fitting, secured with a thumbscrew. This allows you to adjust the mainsail's luff tension, much like a rudimentary Cunningham. The track, made of Tufnol, was attached with 5mm countersunk machine screws, tapped into the mast wall. The gooseneck, which allows the boom and its roller reefing to rotate with a crank handle, is secured with a single nut.

The spinnaker pole track on the front of the mast was attached with twenty 4mm rivets. Its end caps were attached with self-tappers and a healthy dab of Duralac, of course. The sliding lug was a tight fit, and its welded ring broke off as we tried to fit it. We bought a pack of new stainless rings from the local chandlery and got a local stainless fabricator, the very helpful Dave at Midas Manufacturing in Poole, to weld the new ring onto the lug, which he did for a small fee.

ABOVE The gooseneck sits on a Tufnol sliding track LEFT There is a sliding spinnaker pole track on the front of the mast

SPINNAKER POLE FITTINGS

The boat previously had a pair of traditional Clamcleats to take the pole uphaul and downhaul – but these were worn and ineffective, so we decided to use something more modern. For the downhaul, we simply attached a Barton single block with cam cleat, so that the pole downhaul can be easily adjusted from either side. For the uphaul, we bought a Spinlock PXR cleat, which has the advantage over a traditional cam cleat that its holes are arranged longitudinally. With this screwed to the mast the uphaul can be easily adjusted, but not accidentally released.

ABOVE Our new pole downhaul arrangement, which uses a Barton size 2 block with cam cleat

LEFT We chose a Spinlock PXR cleat for the spinnaker pole uphaul fitting

Making new standing rigging

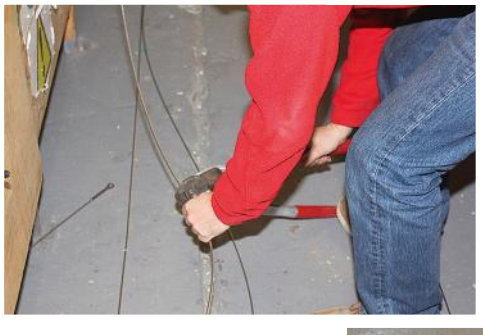
The old standing rigging didn't have much in its favour. Of unknown age, with twists and missing strands, and with corroded Talurit splices at each end of the wires and bent and missing bottlescrews, it would have been risky to attempt to reuse it.

We made a trip to Plymouth to rigging specialists Allspars, where Andy Postle was waiting with a coil of wire and a handful of swage terminals. He made up new rigging with 4mm stainless steel 7x19 wire and swageless studs.

The re-rigging job wasn't cheap, but it was necessary. If you're lucky you might be able to reuse bottlescrews, which would reduce the cost. The price for the job was £543.22 – which eagle-eyed readers might notice is more than we paid for the boat in the first place. The restoration is getting to the expensive stage!

Measuring up

As the rig comprises three matching sets of wires (forward lowers, aft lowers and caps), Andy measured and cut each pair to the same length – assuming the boat is symmetrical, the rig should therefore be even. He measured the distance from eye to eye on the old Talurit splices, before offering them up to the new bottlescrews. He measured and cut, in pairs, our cap shrouds, aft lowers and forward lowers, before heading to the swaging bench.



Fitting new swage terminals

With the wires cut to length, Andy could begin to swage on the new terminals. These are stainless

Andy measures our old shrouds in pairs before cutting them to length (inset)

RUNNING RIGGING

As with many boats of *Hantu Biru*'s 1960s vintage, there are no internal halyards. The main halyard runs over two sheaves within the mast crane, exiting at the front, while the jib and spinnaker halyards and the pole uphaul run through blocks fixed to the front of the mast.

The old halyards were rotting three-strand, and needed replacing. We used the old Dyneema jib halyard from my boat, which had chafed and was too short for its original use but perfect as a jib halyard for *Hantu Biru*. The other two needed some money spending, so we bought two new halyards in 6mm polyester.

We were able to reuse the old snapshackles which, despite their elderly design, were perfectly functional. We bought a new one for the pole uphaul.

SHEETS

For the mainsheet we chose Barton blocks, in particular a Size 3 fiddle block with cam cleat and becket for the lower end and a matching fiddle block with snapshackle for the boom end. Twelve metres of 8mm polyester completed the mainsheet. To keep the lower fiddle from dropping and tangling around the traveller, we taped around the shackle to prevent the block from slipping down the shackle and encourage it to stand up.

CLEATS

The three original halyard cleats are of Tufnol, with a hole to take the halyard's tail. These were in good order, so we simply cleaned them and refitted them to the mast. They used two ¼in UNC machine screws, tapped into the mast wall, so we refitted these with Duralac jointing compound to avoid corrosion.

The kicker slots into the boom with a Laser-style key

KICKER

We used the same type of blocks as the mainsheet, but in size 2, for the kicking strap. As our boom rotates for roller reefing, the top of the kicker locates via a lug (as used on Laser dinghies) in a keyhole-shaped fitting in the boom.

A hydraulic swaging machine attaches the shroud ends

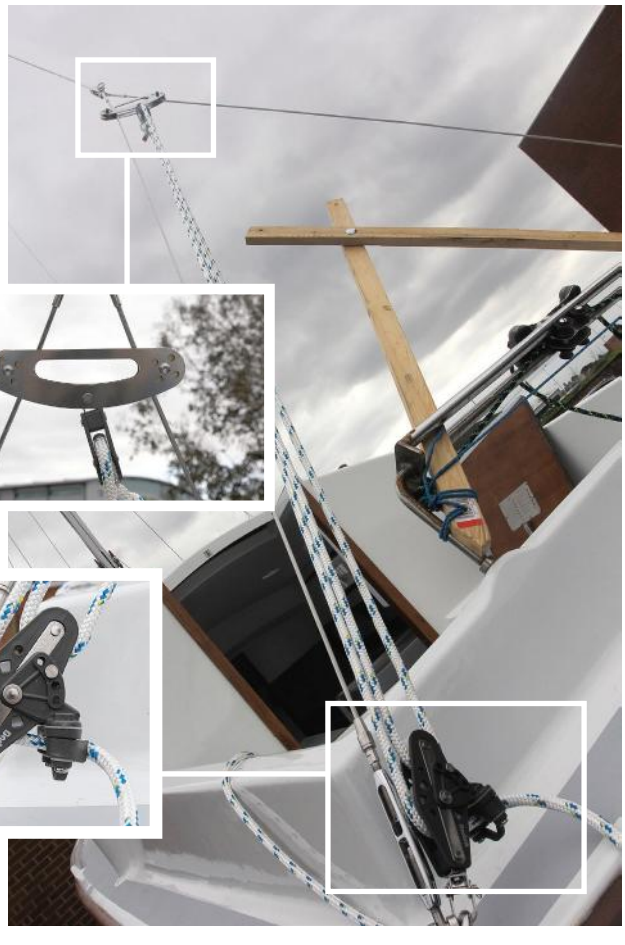
steel, and slide over the end of the wire before being subjected to a large force courtesy of a hydraulic swaging machine. This applies huge pressure along the length of the swage, compressing it and forcing the metal to 'flow' around the wire.

Forestay and backstay

Without seeing the rig up, there was no way of knowing whether the old forestay and backstay were the right length for a new set of bottlescrews, so Andy left us to tackle that part of the job ourselves back at the boat. He swaged a new terminal to the top of the forestay and backstay, but left the lower end overlong, providing us with Navtec Norseman Gibb swageless terminals so that we could set the correct length and make the swage at our leisure and once the mast was up. For the forestay, he supplied us with a 5/16 rigging link, which will allow the forestay some movement as the jib flaps around without damaging the swage or the wire itself. We hoisted the rig and marked the required length of the two stays, before lowering the mast again and fitting the swageless terminals.

Backstay tensioner

We used a Barton backstay tensioner system, which comprises a double wire sheave box and a size 2 set of tensioning blocks (a fiddle block with cam and a single block with becket). It's very simple – as you pull down on the tensioner, the split backstay is squeezed together, increasing the tension. We mounted the tackle using a shackle that replaced one of the backstay's clevis pins.

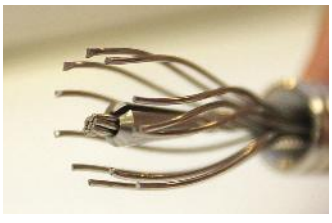


How to connect up a swageless terminal

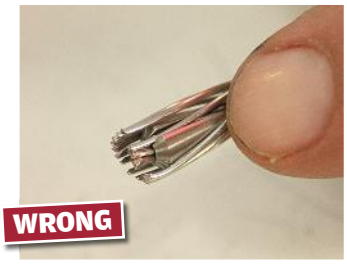
1 Having carefully measured and cut the wire, make sure the cut end is as square and neat as possible.

2 Slide the terminal head onto the wire first.

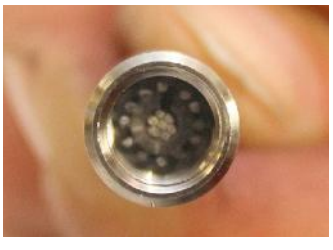
3 Using your thumb and forefinger, gently unwind the wire by rotating against the lay. Keep a grip lower down the wire to stop it unravelling further than you want it to.



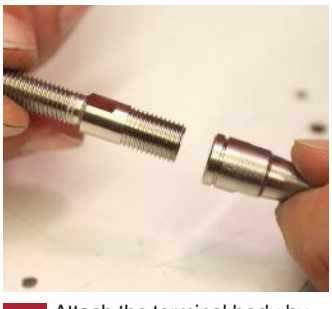
4 Slide the slotted cone over the centre core, narrow end first, until there is 1.5x the wire's diameter (6mm in our case) protruding from the end of the cone.



5 Now twist the wires so that they lay back over the cone. Take great care to ensure you don't trap any wires in the slot in the side of the cone which will prevent it clamping up properly.

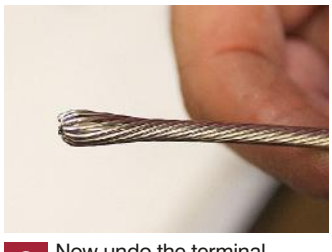


6 Slide the terminal head over the cone. Look down it to check the wires are evenly spaced and not in the slot.



7 Attach the terminal body by screwing it into the head.

8 Using either two spanners, or a vice and a spanner, carefully tighten up the terminal until it becomes easy to move.



9 Now undo the terminal you've just tightened and check that no wires have fallen into the cone's slot.

10 Fill the recess in the terminal body with a Sikaflex-type sealant – don't use silicone products as the acetic acid in them can damage the fitting – and tighten the fitting back up. Do not use all your strength to overtighten, as this can damage the cone and the wire inside: just nip it up until it feels secure.

Stepping the mast

We used the same method to step the mast as we had for a test run a few months back, using the spinnaker pole clipped to the base of the mast as a gin pole, guyed to the cap shroud chainplates and with a line led to a helper on the ground, while two strong people hoisted the rig. We attached the aft lowers, backstay and cap shrouds before the mast went up, quickly connecting the forestay and forward lowers to secure it.

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The evolution of rigs

From spritsail, lugsail and square sail rigs to gaff, Bermudan and gunter, Peter K Poland traces the differing configurations of spars and sails up to the present day

Cornish luggers sailing out of Mevagissey in the days when fishing fleets were all sail

I once asked a well-known yacht designer if we could meet up to discuss the evolution of modern rigs and the continuing popularity of some older ones. However, I didn't fancy driving all the way from the South Coast to his distant base near the Broads (and back) in one day: a double dose of M25 and A12 mayhem did not appeal. 'No problem,' he replied. 'I'll see you at Goodwood.'

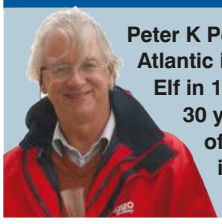
Luckily, designer Andrew Wolstenholme and I share an interest in vintage cars, the ones that emerge from their cotton wool and actually race – flat out – around the old Goodwood circuit. So there we were, relishing the roar of elderly engines, sniffing the exotic aroma of Castrol R and marvelling at millions of pounds worth of Ferrari GTOs, Shelby Cobras, ERAs, Bugattis, Astons et al as they hurtled – often three abreast and sideways – around Woodcote Corner. Then, when the racket subsided between races, we talked about boats in general and gaff rigs in particular, of which Andrew is an aficionado.

'The gaff', Andrew said, 'still has much to recommend it. With stiffer yet lighter carbon fibre spars, it can offer bigger benefits than it ever did in the past.' Andrew's latest sailing design illustrates his point – but more on that later.

It is generally accepted that the gaff evolved from the spritsail rig, which in turn is related to the lugsail and square sail rigs. The lugsail, which held sway for centuries and can still be seen in areas like Brittany where retired fishing luggers take tourists on trips round the bay, attaches to a spar that is hoisted at an angle, with some of the spar and sail protruding ahead of the mast. As a result it has a defined leading edge that enables the boat to sail to windward.

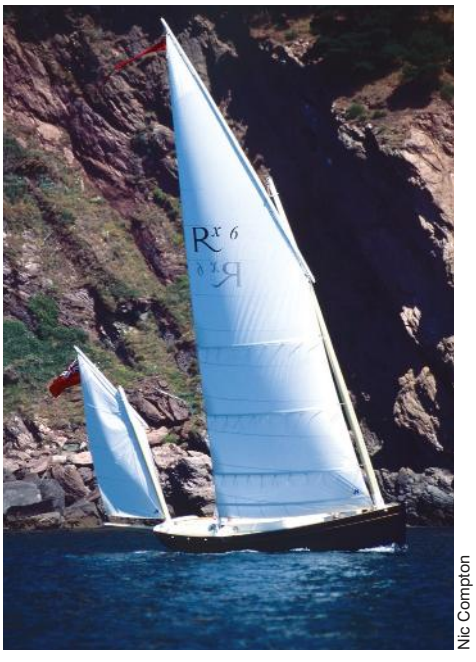
The evolution of the lugsail probably started when someone worked out that by setting a square sail at an angle – with one end of the yard pointing down towards the deck – the sail could set closer to the wind. Then, with the halyard attachment moved from the centre of the yard to a point closer to one end and with the sail's

ABOUT THE AUTHOR



Peter K Poland crossed the Atlantic in a 7.6m (25ft) Wind Elf in 1968 and later spent 30 years as co-owner of Hunter Boats. He is now a freelance journalist.

David Harding



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ABOVE the Nigel Irens-designed Roxane is a yawl-rigged lugger

MAIN PHOTO Assorted rigs of various shapes and sizes

LEFT The Lymington scow is one of the smaller boats on which you'll find a lugsail

luff and leech lengthened, most of its area sets aft of the mast. It can therefore be sheeted flatter when the wind's ahead of the beam. Some say it was called a 'lug' because it looks a bit like an ear (or lug!), which is backed up by the French term 'voile aurique' (ear-like sail).

Roxanes, Romillys and scows

If the lugger appeals, you can still find modern interpretations of this classic rig. British designer Nigel Irens is most famous for his multihulls such as Dame Ellen MacArthur's record-breaking and globe-girdling trimaran, but he also has an eye for the attractive and the unusual: and in the 1990s he came up with a couple of crackers. His first was the **Roxane**, an 8.8m (29ft) yawl-rigged lugger loosely inspired by an old Shetland Islands fishing boat – but her unstayed carbon fibre spars and yards are pure modern technology. He followed this with the smaller 6.7m (22ft) **Romilly**, again a yawl-rigged lugger and ideal for trailer-sailing. Both models can be bought new from CoCoBe in the Netherlands (www.romilly.nl).

While researching the Roxane I came across sailmakers McKillop, whose handiwork adorns many fine and unusual yachts. They put me in touch with Sir Richard Stilgoe: musician, poet, composer and comedian extraordinaire, and a leading light in the charities Orpheus Centre, MERU and YouthMusic. Sir Richard owns a Roxane, and told me: 'I first sailed a Roxane at Southampton Boat Show in 1995 when Nigel introduced her, and was immediately beguiled. Almost all sailors have a sense of history, and boats whose design is obviously part of that history have instant and visceral appeal.

'Sailors also like fiddling about with things to try making them better and easier, so the combination of proven shapes made of modern materials is attractive. The proven shape thing is, I think, important; a hull shape that owes its genes to whales and fish is going to feel at home in the water better than one that owes its shape to a Formula One car or a skateboard, and this is certainly the case with Roxanes and Romillys – they quite simply feel comfortable and safe at sea, which for me is important. They are also pretty, which means that when you arrive anywhere the blokes on the dock say "that's a pretty boat" and help you with your lines, whereas when you arrive in a gin palace you either get ignored or stared at with grumpy resentment.

'As to the rig, the lightness of the carbon spars aloft undoubtedly makes a difference to stability, and the lack of standing rigging makes for exciting moments when you instinctively reach out to grab a nonexistent shroud. The rig works and sails really nicely, but I have to admit that I and another owner are working with Nigel to investigate a conversion to two Bermudan masts – still unstayed – with fathead sails [more on these later]. The aim, from my point of view, is purely one of convenience. I don't expect to go faster, but I do hope to be able to raise and lower the sails more quickly and easily.'

If you prefer to try a very small lugsail boat, give the ubiquitous scow a go. It's widely sailed in the UK and the best known is probably the **Lymington scow** (first built in the early 1900s). There are also fleets on the Isle of Wight, in Chichester Harbour, at Christchurch and elsewhere around our coast. Originally built in clinker, scows are now also moulded in GRP by companies such as John Claridge Boats. As an active racing class boat that doubles up as a tender, general potterer and floating classroom for grandchildren, the humble little 3.4m (11ft 4in) scow has a lot to offer.

Spritsail craft

The spritsail is another rig evolution. It appeared on small Greek craft in the Aegean Sea way back in the 2nd century BC. The Romans followed suit with spritsail-rigged merchant ships. Over the centuries, the rig became more sophisticated. The luff of the sail sat behind the mast while the sprit went from the base of the mast to the peak of the sail, so the luff was long and straight and the boat could sail closer to the wind – especially with leeboards to reduce sideways drift and a foresail to increase the sail area up front (both said to be Dutch innovations).

Perhaps the most famous spritsail-rigged workhorses were the Thames sailing barges. Famously crewed by a man, a boy and a dog, these large flat-bottomed craft crisscrossed our estuaries, slid across sandbanks and travelled our coastline carrying cargo.

They often had to lower their masts to 'shoot' bridges before unloading,

and the mind boggles at the skill required.

There aren't many spritsail craft around these days, although of course almost every small child to take up sailing starts off in a mini spritsail dinghy – the **Optimist**. This shoebox of a boat was designed in 1947 by an American, Clarke Mills, to offer low-cost sailing for young people. He drew a simple pram that could be built from three sheets of plywood, then the design was slightly modified and introduced to Europe by Axel Damsgaard.

The Optimist is now sailed in around 120 countries by more than 160,000 youngsters. At the 2012 Olympics, nearly 80% of skippers were former Optimist dinghy sailors: so the humble spritsail is still at the very heart of the sport of sailing.

The gaff rig

The gaff rig – so extensively used on workboats of all sorts before the infernal combustion engine relegated sails to the leisure industry – was a logical progression. The sprit was replaced by a spar that slid up and down the mast, so now two sides of the mainsail were permanently attached to solid spars.

The later addition of a boom improved performance but made lowering and raising the rig to shoot bridges trickier. An effective solution was found by fitting the boom's gooseneck to the top of a tall tabernacle in which the mast hinged instead of bolting it to the mast. This way the mast, gaff and sail could stack neatly on top of the boom.

The gaff rig definitely improved the versatility of workboats, and the increased ability to make to windward diluted the sailor's deep dread of a lee shore. Andrew Wolstenholme summed up the situation: 'Boatbuilders developed craft to meet the needs of the local fishermen – men who may have travelled no more than 10 miles up and down the coast in their lifetime… While the ongoing development of today's rigs is driven by sales to the leisure sailor, the early gaff rigs were developed for commercial purposes and had to meet the utilitarian needs of impecunious fishermen.'

Boatbuilders developed craft to meet the needs of local fishermen

The gaff rig then held sway on small to medium-sized working craft, as well as on growing numbers of leisure yachts, until the Bermudan rig gained ascendancy.

Rise of the Bermudan

Originally developed in Bermuda for smaller vessels then adapted to the larger oceangoing Bermuda sloop, this rig features a triangular mainsail hoisted to the top of the mast. The traditional design featured tall raked masts and booms, long bowsprits and clouds of sail. Then Marconi's idea of using wire rigging to hold up tall and spindly radio masts spread to sailboats. The more performance-oriented yacht designers soon stole his idea and hoisted large three-sided 'leg of mutton' mainsails on tall and well-supported masts. As a result, the mainsail now had a long and straight leading edge, producing a quantum leap in windward performance.

Predictably, yacht racing encouraged the proliferation of these 'Marconi' rigs. Metre boats and ocean racers in the early 20th century were quick to forsake their gaffs and go for large mainsails and smallish headsails set on tall masts. But as sporting sailors moved over to the Bermudan rig, working boats such as fishing smacks, Bristol Pilot Cutters, Itchen ferries and Falmouth oyster dredgers stuck to their four-sided mainsails held aloft by gaffs, as did several leisure yachts. Why? What are the advantages of the four-sided mainsails that still grace our shorelines with their beautiful silhouettes?

While most gaff rig addicts concede that its close-windedness is inferior to that of the Bermudan rig, they maintain that it's a clear winner in the cruising stakes. They point out that even though a gaffer's mast is relatively short, more sail can be set because the gaff puts more area at the top of a mainsail than you get beneath the diminutive headboard on a Bermudan 'leg of mutton' triangle. On a reach or a run, this provides plenty of power.

Design expert CA Marchaj says a low aspect ratio mainsail is more efficient than a high aspect ratio equivalent when sailing off the wind. And if you want to lengthen the luff and pile on more horsepower in light airs, the gap above the gaff can be filled with a topsail. You can even experiment with one of the new-fangled topsails that are actually an integral part of the mainsail, with a stiff tubular batten replacing the gaff.

All done with Mirrors

Even now – in the 21st century – modern gaffers are popular. Thousands of novices enjoy sailing in a ubiquitous and simple little boat with a gaff: the Mirror dinghy. The Mirror's gaff slides up parallel to its short stumpy mast rather than sticking out at an angle, so it's 'gunter-rigged' – and it offers many benefits. The mast and gaff are each much shorter than a one-piece Bermudan rig mast, so they are easy to handle and transport when the boat is on a roof rack or road trailer. Yet windward performance is good, thanks to the straight luff that continues from the tack to the head at the top of the 'gunter gaff'. The original Mirror rig is a well-proven success, so it's mystifying that the class has now introduced a Bermudan rig.

Andrew Wolstenholme attributes much

Dean Barnes

ABOVE The Optimist dinghy is one of the few boats you'll see using a spritsail nowadays

LEFT Tony Smith explores shallows and swatchways in his gaff cutter-rigged *Shoal Waters*. Read more from page 86

Covey Island Boatworks

David Harding

P Kilgour

ABOVE ***Alice III*** **features light carbon spars and her gaff rig makes her easy to sail and maintain**

ABOVE LEFT **The schooner-rigged** ***Maggie B*** **looks traditional but is actually a modern interpretation of a gaffer**

LEFT **Roger Dongray's Cornish Crabber is probably the archetypal modern gaffer**

of the credit for the popularity of the gaff rig in contemporary cruising yachts to Cornish Crabbers. True, some pink-trousered traditionalists might say 'there's nothing naffer than a plastic gaffer', but these boats have sold in large numbers. Designer Roger Dongray drew the original and attractive **Cornish Crabber**, and beneath a near-flush deck there's a surprising amount of accommodation. Although her windward performance never sets the pulse racing, she offers safe sailing for short-handed cruisers and a topsail for the purists.

Then her smaller sister, the 5.8m (19ft) Cornish Shrimper, hit the jackpot. She looks good and sports a nicely balanced gaff rig with a sizeable roller genoa tacked to a bowsprit. More than 1,000 have been sold and she's still in production to this day, with an inboard diesel or outboard in a well. Subsequent 22, 24 and 30ft Dongray-drawn Crabbers also sold well, and now David Thomas has designed a new 26 that lifts Crabber performance (and space down below) to new heights.

After the Shrimper's rise to popularity, Andrew Wolstenholme designed the Norfolk Gypsy for Charlie Ward's East Coast firm. She is small enough to trail and easy to launch and rig, thanks to the short mast, yet she's tough enough to stand up to a bit of weather. And the attention to detail and quality of finish that Ward lavished on these little yachts make them objects of beauty. You get what you pay for – especially with gaffers – and the Gypsy remains in demand.

Exotic 'new' gaffers

Boat buyers considering a gaff can contact the 1,500-strong Old Gaffers Association, whose Peter Farrer says: 'The OGA was formed in 1963 with the aim of encouraging interest in traditional gaff rig seamanship and comradeship. Although by the very nature of the rig many members have old boats, and there is an interlinked interest in any old boats, there are many newer – and plastic – boats in the membership. The newly formed trailer section probably has a majority of plastic boats amongst its members: Kittiwake, Memory, Winkle Brig, Shrimper etc. As a "rig association" the OGA welcomes development of the rig: indeed, the Solent and East Coast areas have one or two exotic gaffers sailing.'

One of these exotic 'new' gaffers is called ***Alice III***, designed by Simon Rogers. Chris Spencer-Chapman, whose company McKillop Classic Sails was involved in the rig and sail plan, says: 'The combination of the light [carbon] rig and deep fin and bulb keel allows an enormous sail area which would not be possible with a conventional hull and spars. She is interesting and exciting in light conditions, but the windage can be an issue to windward in heavier conditions.

'Off the wind she is always very fast… For easy cruising the Bermudan rig will win, but there will always be the aficionado who likes the features of traditional rigs. Unless you are a real purist, why not take advantage of modern materials?'

A low aspect ratio mainsail is more efficient than a high aspect ratio sail off the wind

Stephen Akester, who co-owns *Alice III*, told me she is 'light displacement at 7.5 tonnes. In light airs and no sea she readily outperforms "normal" Bermudan rigs but to windward in a blow she loses out due to windage and not being as close-winded. She has much less weight aloft and a very different motion to a classic gaff-rigged heavy displacement vessel. We opted for a gaff rig for the fun of it… there are no fancy fittings involved, it is not highly stressed and we can maintain all the parts without a boatyard or extra help.

'Further refinements using modern materials mean we can set up the rig for single-handed sailing with headsails and topsail on rollers and boom bags to catch main and mizzen.'

Another dramatic 'modern gaffer' was the Nigel Irens-designed ***Maggie B***. At 63ft (19.2m) she's beyond most sailors' means, but she's full of fascinating innovations. The designer, the builder (Covey Island Boatworks) and the owner (Frank Barr) called her a 'fusion' yacht – meaning she fused modern materials with traditional ideas. Her schooner rig features short, high-peaked gaffs and sits happily on the sweeping sheer that Irens gave to the slippery and almost plumb-stemmed shoal-draught hull beneath.

But appearances deceive: this is no throwback boat. The spars are carbon and held up by Vectran fibre shrouds tensioned by special deadeyes. Not dissimilar, in fact, to the materials used for the rigs on state-of-the-art IMOCA 60 racers. Vectran costs more than wire, but the weight reduction is huge – as is the cost saving on fabrications to attach wires to the mast and on rigging screws to tension them. The weight reduction aloft meant that 600kg worth of ballast was saved down below. Imagine the effect this had on performance and righting moments, then add an efficiently shaped pivoting centreplate that lives inside *Maggie B*'s elegant long keel and you have a modern cruiser that is as bewitching as she is beautiful.

Sadly, this amazing yacht was

damaged by fire having completed a circumnavigation, but has been succeeded by ***Farfarer*** – another Irens-designed and Covey Island Boatworks-built masterpiece that features an unstayed rig with 'fathead' mainsails, where a stiff top batten does the job of a mini gaff and adds to overall sail area.

Kite and BayRaider

Andrew Wolstenholme's 6.4m (21ft) **Kite** is another modern gaffer to take full advantage of new materials. He says: 'My aim is to keep her light and simple... the sail plan is generous and set on lightweight carbon fibre spars. I want her to sail really well in light and moderate winds – not just in a blow. I want to tow her behind a normal 1.8-litre saloon, not some gas-guzzling 4x4.'

The Kite is now being built in GRP by Demon Yachts, and I reckon there will be a queue of buyers. Andrew told me that at the OGA's 50th anniversary event at Cowes there was a constant stream of people showing an interest in her… Being overall winner of the big race on the Saturday didn't do any harm either. The little boat flew in Force 5-6 wind over tide in the western Solent.

Matt Newlands of Swallow Boats is another designer to bring gaffs into the modern age, then go further. He says: 'The gunter rig was what we did, and still do, for customers who prefer it, because having shorter spars makes trailer-sailing easier for two reasons – less length to trailer, and it's easier to physically raise the mast.

'But in my opinion, it has been made almost obsolete by two developments. One is carbon fibre masts, and the other is fathead mainsails. Carbon masts on trailer-sailer-sized boats are so light that it is easy for even elderly gents to raise a full-length mast, if the bottom is in a tabernacle. The mast length problem is cured by using a so-called 'fathead' mainsail, which reduces mast length – by as much as 1m on our boats – while maintaining the same sail area and improving lift/drag ratio: in crude terms, more like a Spitfire wing.

'On our **BayRaider 20** this results in a mast that is only 1m longer than the boat, so only half a metre sticks out each end… This new rig has many advantages over the gunter, but chief among them is ease of reefing… I love quirky rigs, and we have had much fun experimenting with a lot of them. But it is hard to beat the Bermudan mainsail setup.' Especially with a fathead main on a carbon mast.

It is interesting that Cornish Crabbers came to the same conclusion and now offer a faintly 'fathead' mainsail Bermudan rig on the new Adventure range. Not as pretty as varnished 'gaffer' spars of course, but more efficient.

Quirks and character

All of which brings us to the 'bread and butter' Bermudan rigs on today's production cruisers. Most have moved on from the RORC-inspired masthead sail plan. I asked rigging expert Nigel Theadon of Rig Magic whether he preferred masthead or fractional, and he replied: 'I don't think that it matters much to a cruising yacht provided the boat is designed well to balance with whichever rig; and provided the rig is well constructed, maintained and properly stayed and tuned.

'Generally speaking, modern swept-back spreaders provide a "safer" rig without the need for a babystay or forward lowers to stabilise the mast's middle sections, particularly when deep-reefed. Forestays are now higher up the mast than in years gone by, so the modern fractional rig is closer to a masthead than it once was.

'When buying a new boat, talk about what you really want from the rig. Discuss options with an experienced rigger or yachtsman. What comes as standard may be better being upgraded from new. When buying a used boat, get a rigger to carry out a mast inspection, because the hull surveyor rarely looks above eye height.'

Whether you opt for a gaff- or Bermudan-rigged boat, this seems sound advice. Nigel sails a fractionally-rigged X332 fast cruiser, which offers the best of most worlds: its well-balanced ultra-modern rig works as well for a small cruising crew as it does for keen racers. But don't let this put you off a modern gaffer if you enjoy its quirks and character. Our coastline would be a boring place if we all sailed the same sorts of boats.

Tim Wright

David Harding

ABOVE *Farfarer* features an unstayed rig and 'fathead' mainsails

ABOVE RIGHT Dehler 36 sports a modern fractional Bermudan rig with aft-swept spreaders

RIGHT The gaff-rigged trailable Kite is built of modern materials

BELOW Swallow Boats' Bay Raider is another trailer-sailer using either traditional (gunter) or ultra modern ('Fathead') rigs

Peter Chesworth

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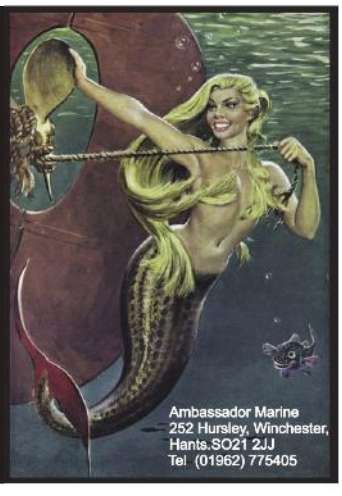

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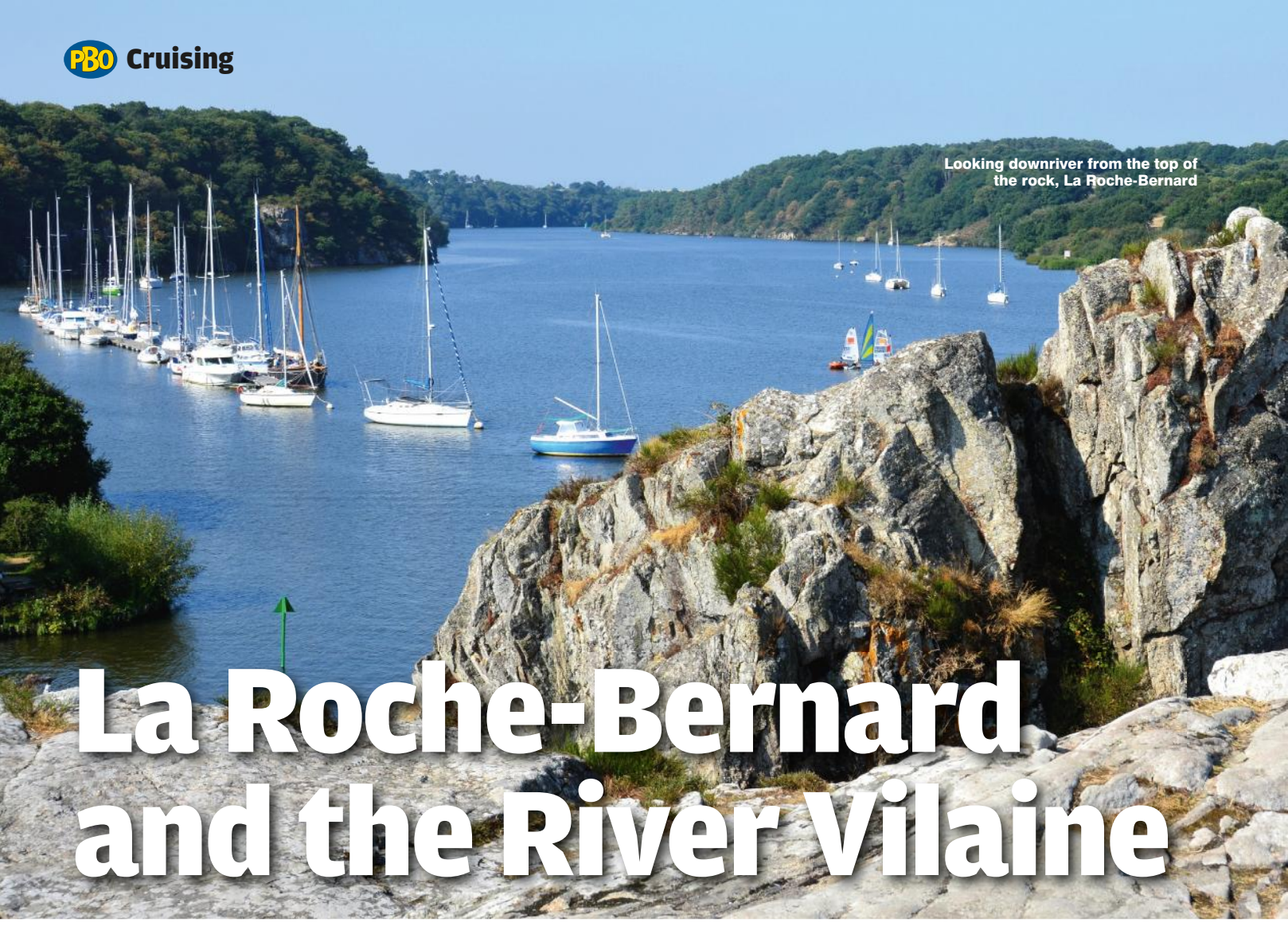


Looking downriver from the top of the rock, La Roche-Bernard

La Roche-Bernard and the River Vilaine

Sarah Norbury explains why Brittany's River Vilaine and its attractive town of La Roche-Bernard are such a popular cruising destination for British sailors

In the very south of Brittany, at the eastern corner of the Bay of Quiberon, lies the entrance to the River Vilaine. Ten miles upriver you'll find the charming medieval town of La Roche-Bernard, one of France's petites cités de caractère (little cities of character), perched on a hilltop, while down on the water there's plenty of room for visiting yachts in two marinas and lots of sheltered spots in which to drop the hook.

La Roche-Bernard has a nickname, 'Little England', because over the years visitors from across the Channel have liked the place so much that they've stayed all winter for much less cost than a berth on England's South Coast, decided they're onto a good thing and eventually found themselves at the top of the waiting list for a prized permanent contract. The total number of boats from the UK and Eire currently based in La Roche-Bernard is more than 100! My family's boat is one of them, and after five years we still haven't tired of the Bay of Quiberon, exploring Belle Île, the Gulf of Morbihan, La Trinité-sur-Mer, Quiberon and the magical islands of Houat and Hoedic.

Many boat owners make the Vilaine their base for summer-long cruises to Northern Spain, breaking the journey at Les Sables d'Olonne, La Rochelle and other popular ports.

Apart from its ideal location from which to discover the French Atlantic coast, one of the things that makes the Vilaine special is that for most of its length it's non-tidal due to a barrage five miles inland at Arzal. Once you've locked through, it's like being in a lake rather than a river. Woods and meadows come

Stay in the dredged channel: there are shallow patches on both sides

All photos Sarah Norbury

The Arzal-Camoël barrage. The lock is on the northern end

ABOUT THE AUTHOR

Former PBO editor Sarah Norbury is now a contributing editor and a freelance writer. She cruises extensively in Brittany on a Starlight 39 as well as racing sportsboats at home on the Solent.

First sight of La Roche-Bernard from downriver

You can sail as far up as the barrage if the wind is fair

right down to the water's edge, you can anchor and go to sleep at night with no fear of the tide turning and uprooting your hook, and there's no anxiety about running aground on a falling tide.

Entering the Vilaine

To arrive in this rural idyll requires a fair degree of planning. Looking at the wide approaches from seaward is deceptive. On the chart you'll see that at chart datum the approaches are too shallow for most yachts, and at the river mouth there's only 0.8m. You also need to check the lock-opening times (for details, see the panel on page 39). Once you're over the shallowest point, the channel is dredged to 4m. The harbour master at La Roche-Bernard advises that there is plenty of water for yachts all the way up to Redon, where depth reduces to 2.5m.

The best time to arrive and leave is near the top of the rising tide. On the ebb, the approaches are likely to be choppy. Fortunately the prevailing wind is from the west or south-west, the same direction as the flood tide, so sailing into the Vilaine is often an enjoyable broad reach or run on a fairly flat sea. The harbour master says that even in a south-westerly gale when the sea will be very lumpy in the shallow approaches, near the top of the tide a cruising yacht will have enough water in the wave troughs to get in safely.

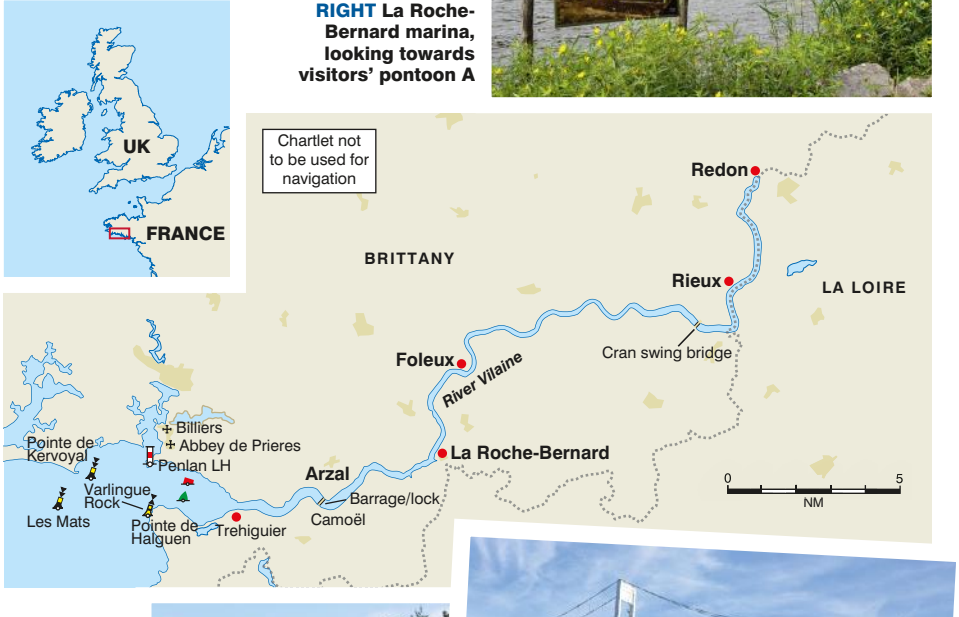
Coming from the Gulf of Morbihan, La Trinité or Quiberon you need to stay offshore well beyond the time you're tempted to head up for the entrance, as the shallows and rocks of the Plateau des Mats extend about two miles offshore. From the south, beware of La Varlingue rock just off the corner before you turn into the river.

Directions for entering at night or in rough weather can be found in the Atlantic France pilot book. In daylight and good conditions the approach is straightforward. Head towards the village of Penlan with its red and white striped lighthouse until you see the river entrance, then turn sharply to starboard and head for the marked channel. It takes an hour or so to reach the road bridge and locks that make up the Arzal barrage. In a following breeze it's fun to keep sailing all the way, but do stay in the channel as there are large areas of silting on both sides, and err towards the outside of the bends. The lower reaches are typical of a working Breton estuary, with oyster beds, mussel-harvesting boats and the occasional boatyard.

Arriving at the barrage, if the traffic lights are green you can go straight into the lock: if red, you'll have to wait. That will give you time to attach plenty of fenders on both sides and long warps bow and stern: if you have a midships cleat, rig a warp in the middle, which can come in useful. Also have a boathook ready, both to grab the lock's vertical chains and fend the boat off the lock sides and other boats. Boats are marshalled by an experienced and assertive lock-keeper who speaks English and will instruct you as to exactly what to do. It's amazing how many boats he squeezes in, but on high-summer afternoons you may have to hang around for the next opening.

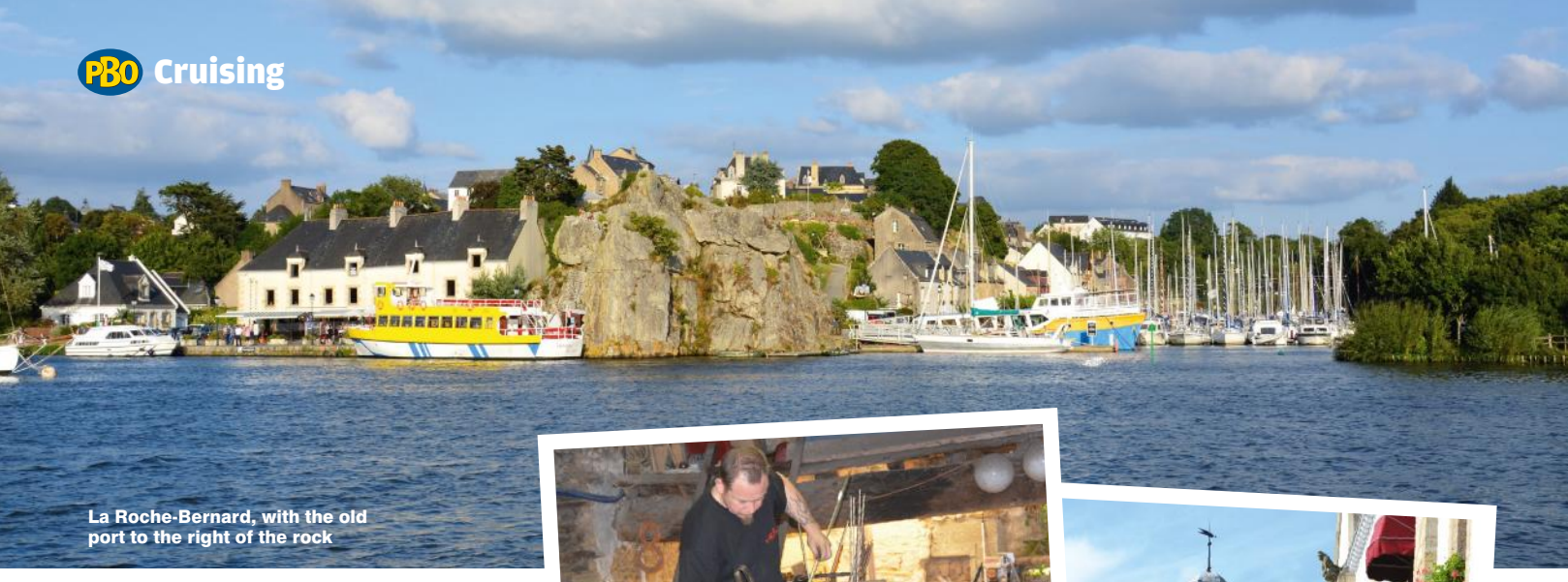
Once you're through the lock you'll see the 1,000-berth Arzal-Camoël marina with pontoons on both sides of the river. From here the Vilaine is a pastoral delight, with gentle meadows giving way to tree-topped cliffs then opening out into fields again. You'll usually see a herd of Charentais cows. All along the banks, fishermen try their luck with large square nets.

RIGHT La Roche-Bernard marina, looking towards visitors' pontoon A



RIGHT The lighthouse at Trehiguier, upstream from the start of the marked channel

ABOVE The magnificent road suspension bridge and the remains of the old bridge, looking upriver from La Roche-Bernard



La Roche-Bernard, with the old port to the right of the rock

La Roche-Bernard

Around a bend, La Roche-Bernard suddenly comes into view. Call the capitainerie on VHF Ch09 to be directed to a visitors' berth, normally on pontoon A. If it's after office hours you can moor to one of the midstream waiting pontoons (no electricity or water) and they'll find you a berth the next day. You can also anchor wherever you like outside the dredged channel at no charge.

There are two marinas with a total of 563 berths, of which 56 are for visitors. The smaller one in the picturesque old port is where the harbour master likes to put old gaffers and classic craft, making it a photographer's delight. Most visitors are directed to the newer marina which, although enormous, seems to blend easily into the riverscape; perhaps because all the pontoons lead off a pretty, tree-lined footpath and the riverbank has been left in its rustic state.

An exploration of the town from the marina will normally start with a short stroll along the path, leading you to the harbour wall and an ancient building from which spill two restaurants and our favourite cafe with a waterside deck and free WiFi. Around the corner you come to the old port and capitainerie. Walk past a couple of bars and up to the left of the atmospheric Sarah B's bar/restaurant/music venue and start the steep climb to the winding, medieval streets of the town centre, taking a break to find the top of the 'roche' that gives the town its name. The view of the river from the mighty rock is spectacular.

ABOVE A glass-blowing artisan at work

RIGHT Bureau du Port sign, La Roche-Bernard

Don't miss the maritime museum, nor the artists' quarter where you can watch glass-blowers, wood-turners and jewellers at work. In the town square it's tempting to sit down for a drink or lunch (Le Vieux Quartier is our favourite of many good restaurants) and watch the world go by. There are plenty of places here and in the high street to choose from for dinner, or for eating aboard there's a good fishmonger, butcher, greengrocer and boulangerie/patisserie, a typical French country market on Thursday mornings and a supermarket that's not too much of a walk once you're up in the town. The good thing is, it's downhill all the way back to the boat.

La Roche-Bernard is a practical place for family and friends to join you on holiday. Our boat has been the centre of some great times, with family arriving by car and camping on the perfectly situated site next to the boat. There's a lot for children to do – a playpark and dinghies and kayaks for hire. Forays up and down the river are ideal for those who don't want the hustle and bustle of going out to sea. We love to anchor for the night in a quiet spot, go exploring reedy creeks in the dinghy and cook up a feast onboard in the evening.

La Roche-Bernard's pretty town square is at the top of the hill

My favourite part of those times is waking up in the early morning to the gentle sound of fish jumping, then sitting on deck all alone with the dew in the misty silence, gradually warming as the sky turns blue and another beautiful day in France begins.

Looking across the river from La Roche-Bernard

The British on the Vilaine

There are many reasons why La Roche-Bernard is such an attractive base. The first influx of Brits, around 20 years ago, were lured by much lower marina prices than in the UK. They found the Vilaine to be an excellent refuge from which to explore the Bay of Quiberon and beyond. Many of the British boats double as French holiday homes, their owners visiting La Roche-Bernard several times a year, mostly by Brittany Ferries to Saint-Malo or Roscoff, benefiting from their Club Voyage scheme for reduced fares and onboard discounts. There's free parking at the marina for unlimited stays.

There is also a proportionately high number of British boats at the peaceful hamlet of Foleux, slightly cheaper than La Roche-Bernard, and yet more at the

enormous marina at Arzal just inside the barrage, which doesn't have much atmosphere but is perfect for those wanting quicker access to the sea.

Passeport Escales

Berth-holders in any of the 80-plus member marinas in the Passeport Escales scheme are entitled to free nights in all the other marinas. Last year we cruised the Bay of Quiberon, staying at Belle Île, La Trinité, Quiberon and Île-aux-Moines in the Gulf of Morbihan without paying a penny in marina fees. It was all the sweeter when the visitors' prices in these places are outrageously high. (While I was presenting my passeport in one harbour office a visitor was complaining bitterly about his bill, and in another I spotted 'les prix sont exorbitants!' in the comments book.) British marina operator MDL has recently joined the scheme – a great incentive for even more UK boats to discover south Brittany.

Long-term stay options

The waiting list for a permanent annual berth is hundreds long but many boats, ours included, have been there for years on a rolling six-month contract.

Demand is so high that the marinas at La Roche-Bernard, Foleux and Arzal offer a dry-sailing option by which your boat is kept on land and you get a number of lift-ins per year. Dry-berth holders in those three places also get a passeport and its bounty of free marina nights up and down the coast.

Exploring upriver

From La Roche-Bernard you can meander through unspoilt countryside all the 20 miles or so to Redon (and all the way to St Malo and the English Channel via the Brittany canals, mast down and draught permitting).

We love the peace and quiet of the upper reaches and sometimes anchor overnight in complete solitude. Others, prepared with a stake and a mallet, nose into the reedy banks and take a line ashore.

Not far upstream at Foleux you can explore a delightful creek in the tender and have lunch in the marina restaurant.

After Foleux the landscape flattens out into open countryside and if the wind's not far ahead of the beam you can meander under sail up to the swing bridge at Cran. For opening times see the info box (right).

Once past the bridge a favourite place for an overnight stop is the pontoon at tiny Rieux, barely a hamlet, where there's just a restaurant on the waterfront and a nearby campsite that allows yachtsmen to use the loos and showers.

An hour or so's motoring upriver from here is Redon, a lively town with a marina, an interesting museum, historic buildings, a covered market and shops galore. You may be lucky and be there on a festival day when there's dancing in traditional Breton costume and stalls with tempting local food and cider.

The picturesque old port at La Roche-Bernard

Leaving the Vilaine

On high-summer weekends you need to give yourself plenty of time to get back out through the barrage. In the mornings there may be long waits. If you want to catch an early tide it's a good idea to get down through the lock on the previous evening and moor in the river before heading out to sea in the morning.

Taking your time

To properly enjoy a visit to La Roche-Bernard from another Bay of Quiberon marina or anchorage it's a good idea to allow at least three days: one to get there, one to explore and enjoy the town, and another to get back out through the barrage and to your next overnight stop. You might find one day isn't enough; that sitting on your boat on the visitors' pontoon watching the world go by is quite relaxing and entertaining, and there's that little restaurant you didn't have time to try... This is how it started for the berth-holders who now keep their boats there full-time. I wonder how many more visitors will fall under the spell of this lovely location this season?

There's lots for children to do in La Roche-Bernard, including dinghies for hire

USEFUL INFORMATION

Harbour office/capitainerie
VHF Ch09, Tel: +33 (0)299 906217, email: roche-bernard@compagnie desportsdumorbihan.fr
www.roche-bernard.com

Visitors' fees per night
Sample prices in July and August (cheaper outside these months): 7m (23ft) boat, €19; 12m (40ft) boat, €35.

Harbour facilities
Marina 563 berths total: 56 for visitors, 200 additional 'dry-berths'. Toilets, showers 24/7 access. Electricity and water at all berths. Diesel: nearest at Arzal. Free WiFi. Launderette.

Other mooring options
Marinas at Arzal-Camoël, Foleux, Redon. Anchoring is permitted everywhere outside the dredged channel.

Barrage and swing bridge
Barrage opening times vary according to the tide: visit www.sagemor.com/meteo-maree-arzal-camoel.html and click on 'Écluses' to find a downloadable list. Cran swing bridge opening times (1 April to 30 Sept, less often out of season): 0930, 1030, 1130, 1400, 1600, 1800, 1900.

Brittany Ferries discounts
Frequent travellers to France and Spain can join Brittany Ferries' Club Voyage scheme for benefits including up to 30% discount on fares. Routes convenient for ports on the Vilaine include Portsmouth to Saint-Malo and Plymouth to Roscoff.

Charts and pilots

Approaches: *Admiralty Chart 2823 Quiberon to Croisic.*

River entrance to La Roche-Bernard
SHOM 7144L Embouchure de la Vilaine de Damgan à la Roche-Bernard.

There's a map of the entire river in *Atlantic France, North Biscay to the Spanish Border* by Jeremy Parkinson, published by Imray.

West France Cruising Companion by Neville Featherstone, published by Fernhurst Books.

PBO Ask the experts

Got a question? Email pbo@ipcmedia.com

Here's just a selection of the latest questions from PBO readers. Email or write to the address on page 5 and our experts will answer your queries

ENGINES

Apparently clean fuel – but still a clogged filter

Q I recently had an engine problem which I eventually traced to a blocked filter in the CAV 296 fuel/water separator, the kind seen fitted on many boats with a filter at the top and a glass bowl beneath it.

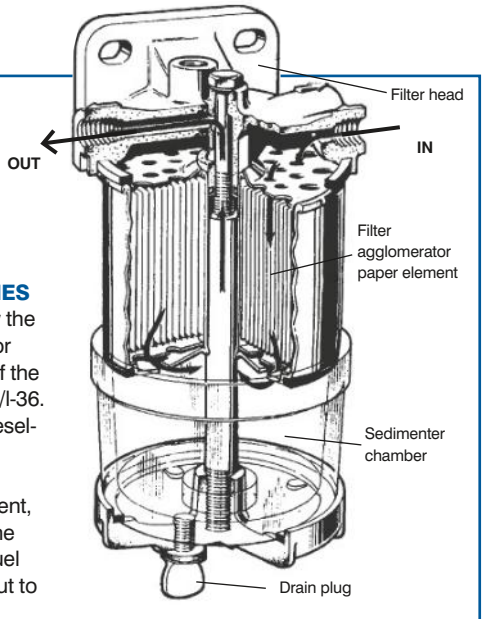
Believing that the diesel came from the tank into the bowl, where the water separated out then the diesel went through the filter to the engine, I could see the diesel in the bowl was perfect, with no water or dirt, and therefore assumed the filter was OK.

However, when I eventually dismantled the unit I found the design is such that the diesel and water both go through the filter before reaching the bowl, and the filter was choked with diesel bug.

I read on the internet that a fuel/water separator forces tiny water drops to coalesce on the outside of the filter medium and form large drops which then fall into the bowl. None of this agrees with the actual design of the unit or the filter fitted to it. Also, if the bowl fills with water this could then be sucked into the engine.

Does anyone know how this thing is supposed to work, because I'm totally confused?

Robert Hunter
By email



PAT MANLEY REPLIES

An explanation of how the CAV filter/agglomerator works is on page 13 of the manual found at http://l-36.com/manuals/CAV-Diesel-Fuel-Filter.pdf

The fuel flows down through the filter element, water drops out into the bowl and the 'clean' fuel then passes up and out to the engine.

Alternative filters such as the Racor series collect the water and heavy debris first before passing the fuel through the filter element. Racor filter elements do not allow water to pass through them, so no water enters the fuel line downstream of the filter.

On any boat I have owned, I have removed the CAV-type filter and replaced it with a Racor one (albeit more expensive) – but this is purely a personal preference.

ELECTRONICS

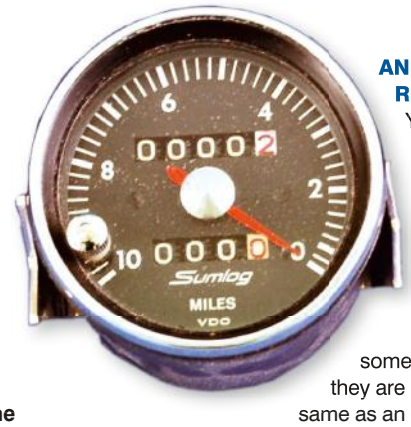
Log not logging

Q I have a VDO Sumlog (1-10 knots) that is more than 30 years old. It has a propeller on the bottom of the boat driven by a cable with a square end to it that fits into the propeller and a crimp-on fitting that fits into the instrument.

I have been trying to obtain a new cable without success. I did acquire one when it needed replacement some years ago, but am informed they are no longer made.

If I can't get a new cable I'll have to replace the instrument with a paddle wheel type or have a hole in the bottom!

Mike Charles
S/Y Cinnabar of Solent



ANDY HAINES REPLIES:

You're correct, these 'mechanical' rotating (or Bowden) cables are no longer available from the original supplier, and haven't been for some years. However, they are exactly the same as an old-style car speedometer (admittedly not those in modern cars as these are all now electronic), and there are still spares for older car speedos available. An internet search will find several suppliers of Bowden cables, one being Clarik Engineering Supplies (www.clarik.co.uk) which offers DIY Bowden cable kits.

Being mechanical, that old VDO log is virtually bulletproof: generally the only thing that breaks is the Bowden cable, usually after about 20 years or more! The only electrical item there is to fail is the bulb for backlighting – which is easily replaced.

■ Andy Haines works for marine electronics firm Greenham Regis

THE PBO EXPERTS

To ask a question email pbo@ipcmedia.com and include your address. Pictures are helpful

SEA SAFETY
Will Stephens is Staff Officer Operations (Coastal Safety) at the RNLI

INSURANCE
Joe Field is a former consultant to the marine insurers Navigators & General

CRUISING
Stuart Carruthers is the RYA Cruising Manager and has sailed extensively

SAILS
Ian Brown of the International OneSails loft group is an expert on sails

MASTS & RIGS
Mike Coates worked in the spar and rigging business for many years

SURVEY AND CORROSION
Colin Brown runs a marine survey and consultancy company, CB Marine Services

ELECTRICS
Paul Holland is chairman of the BMEA and MD of Energy Solutions (UK)

ENGINES
Pat Manley is a diesel engine course instructor and marine author

TOILETS AND PLUMBING

Gauging which hose to use

Q I have a Moody 346 with two glassfibre water tanks, one under each saloon berth. I have removed them so I can get to the keel bolts and thought I'd renew the hoses and add a level gauge before putting them back. The sight gauge will be two right-angle skin fittings with a piece of clear tubing mounted vertically between them.

The tanks are joined with a length of 1in hose so they both fill and empty at the same time.

The chandlery sold me clear reinforced hose to replace the 22-year-old opaque hose currently used, but a friend has questioned whether the sight gauge and hose will allow in light and create algal and bacterial problems even though they are under the bunks and usually therefore in the dark.

Should I forget about having a sight gauge and change the connecting hose to an opaque one instead?

Graham Collins
Crowthorne, Berks

Food-grade hose should be used for domestic water on a boat

GARY SUTCLIFFE REPLIES:

Clear tubing is a good idea for checking water levels, but I'd suggest not the best solution for drinking water as there will inevitably be an amount of algae build-up in the hose over the coming years regardless of the fact that it is housed under bunks. There will be a certain amount of light even if it is only when the gauge is exposed to read the level. It's worth noting that all hoses used in fresh water lines should be food grade.

There are many level gauges on the market that are retrofit items and will give great accuracy. If the problem is gaining access to the contents then a unit manufactured by Gobius may be the solution: this simply has pads that are stuck on the side of the tank and will monitor the level using ultrasonic technology.

SURVEY AND CORROSION

Specifications for through-hull fittings

Q I have a Hunter 310 sailing yacht, built in the USA in 1998, and cruised in the south of Portugal and Spain for the last 12 years.

All through-hull fittings (seven in total) have the same inscription: 600WOG. What does this mean?

Can I be sure of the corrosion resistance adequacy of these fittings?

Raul Machado
Portugal

This old bronze through-hull fitting removed from the PBO Project Boat *Hantu Biru* proved to be in remarkably sound condition – but you need to be sure of your sources when buying new fittings

COLIN BROWN REPLIES:

WOG stands for Water, Oil, Gas and the 600 is the maximum pressure capability of the valve in pounds per square inch. These numbers don't relate to the construction material of the valve.

An internet search found suppliers in the USA selling 600WOG valves in both brass and bronze so without seeing the valves on your boat it's impossible to say if they will be reliable.

It's important to check all underwater fittings at least annually. A scraper, a hammer and a hand should be applied to all of them when the boat is out of the water. A badly dezincified fitting will come apart in your hands. Any pink colouration revealed by scraping indicates a loss of zinc and any affected valves and skin fittings should be changed.

It can be very hard to know what you are buying when it comes to skin fittings and valves. In the UK the minimum quality to look for is DZR (dezincification resistant) brass and such fittings may be marked 'CR' for corrosion resistant. Bronze is better but harder to find and expensive.

Unfortunately there is no international standard for marking valves and fittings to show their construction. All you can do is try to find a reliable parts supplier and check your fittings regularly.

PAINT AND ANTIFOULING

Splits in the varnishwork

Q The interior woodwork in my 1998 boat is in good condition except where it has received a lot of sun through the hatches. In those places the varnish-like finish has split along the grain so that the underlying wood is exposed in very small patches running in line with the grain of the veneer. I am not sure if it was a true varnish or some other finish originally used.

I now want to improve the appearance in these patches, and also along the capping of fittings where constant traffic has worn it to bare wood.

I'm considering a light sanding, cleaning and using Epifanes Rapid Clear UV varnish, but a test piece following this regime shows the split marks still.

I don't want to go to the length of sanding down to bare wood if I can avoid it – not only would it be time-consuming, but it would then be different from the rest of the undamaged finish, which is the majority.

Could I apply a clear filler before varnishing and, if so, what? Or should I rest content with applying several coats so that the split grain fills and builds up?

Nigel Chilcott
by email

RICHARD JERRAM REPLIES:

With the existing varnish having split and broken down from exposure to UV light, you now have hard edges due to the thickness of the varnish.

To get rid of these hard edges and leave a flat surface you will need to sand back to bare wood using a 280/320-grade abrasive so that you finish

➔

50 of the most frequently asked boating questions are answered by our experts on the PBO website. Visit www.pbo.co.uk

GAS FITTINGS
Peter Spreadborough, of Southampton Calor Gas Centre, has 20 years in the industry

PAINT AND ANTIFOULING
Richard Jerram is former UK technical manager of International Paint

YACHT DESIGN
Andrew Blyth is a naval architect with interest in stability and buoyancy

TOILETS AND PLUMBING
Gary Sutcliffe of Lee Sanitation knows about holding tanks, toilets and plumbing

TRAILER-SAILING
Colin Haines is a design engineer who has trailer-sailed for 25 years

ELECTRONICS
Chris Ellery of Greenham-Regis Electronics is a former Merchant Navy officer

BOATBUILDING
Tony Davies has been building and repairing wooden, GRP and steel boats for 40 years

WOOD
Richard Hare is a wood technologist and long-time wooden-boat owner

With varnish this damaged the only cure is to sand back to bare wood

with a matt appearance – there's no way to avoid this if you want a good finish, I'm afraid. Take care to only sand off the varnish, however: you don't want to abrade through the surface of the thin veneer.

Having finished sanding wipe the surfaces down with a clean, lint-free cloth and white spirit to remove all sanding debris.

Once the surface is dry and clean you will need to apply five to six coats of the Epifanes Rapid Clear using a good quality varnishing brush, preferably with soft-ended bristles.

Alternatively the varnish can be applied with a brush but then tipped off with a foam brush to assist in removal of brush marks.

ELECTRICS

Getting connected

Q I'm new to boating and would like some advice on updating 1950s cabin wiring to a more modern system. I have a PBO subscription and really learn a lot from it, but have some specific questions on rewiring. Among the things I need to know are:

- **How to change from one large tractor battery to two batteries and all the isolation switches needed.**
- **I want to fit a simple electrical control panel to control nav lights, steamer light, cockpit lights and nav kit. Should I spend £50 on an American one or £10 on one from China?**
- **And when doing the electrical work, what gauge wire should I use? I understand there may be a formula for working out what thickness of wire I'll need to go from the switch to the mast tip.**
- **Is it OK to use household twin and earth solid copper flex? I have heard that this will cause problems with the compass and the anode.**

Richard James
King Lynn, Norfolk

PAUL HOLLAND REPLIES:

There are a number of really excellent books for boat electrics and I suggest that getting one of these will be your best starting point. They cover things such as cable selection, cable terminations, circuit breakers and fuses.

In particular you should not use domestic twin and earth cable for any wiring on a boat. These cables use solid conductors which can fracture with vibration over time. When this happens a local hot spot can occur and pose a fire hazard. Always use finely-stranded cables for marine installations as a fracture in one strand won't cause the heat problems you'd get in a solid cable.

Also be aware that cheap control panels sometimes don't use tinned contacts in the switches which can result in corrosion.

Books you might consider include the *RYA Electrics Handbook* by Andrew Simpson, John Myatt's *Simple Boat Electrics* or Nigel Calder's *Boatowner's Mechanical and Electrical Manual*.

MASTS AND RIGS

Alloy mast on a steel boat

Q I'm thinking of attempting to separate the base of my aluminium mast from my boat's steel deck to avoid possible electrolysis problems.

This is a brand new construction and the mast has not as yet been stepped onto the deck, so it would be a simple matter of fitting some kind of plastic interface to separate the two metals.

Is this a little superfluous or a prudent idea, do you think?

With so many different types of plastic on the market (ertalon, nylatron, polyethylene, tufnol, PVC, to mention a few) I hesitate to make an informed decision on the matter.

The material would obviously have to be incompressible, be drillable and able to withstand getting wet.

Stelios Odantzis
Gloucester

Tufnol is non-absorbent and won't compress under load

MIKE COATES REPLIES:

This is a tricky one. To insulate the mast step itself would be quite easy – I'd suggest using Tufnol, Whale Brand being the one suitable for marine use which is relatively easy to obtain from a number of plastics suppliers. It is non-absorbent, takes compressive loads and is easy to work (it can be sawn, routed etc). This would prevent corrosion between the dissimilar metals of the step and the deck.

However, there could then still be a corrosion problem around the mounting bolts where they pass through the step and the deck unless they are bushed.

And don't forget, even if you do all that the mast will still be connected to the hull via the standing rigging. Eliminating all electrical contact between dissimilar metals would then be very difficult.

GAS FITTINGS

How long for rubber hose?

Q My insurance company has requested a survey on my steel-hulled 1990 Maurice Griffiths Levanter 33.

During build we installed a gas cooker and in the heads a water heater, both supplied with approved rubber gas hose from a vented gas locker, a total distance of approximately 9m (30ft). This hose was run through a plastic conduit pipe for protection.

I've replaced the hose every five years as recommended, and have also fitted gas and carbon monoxide alarms in both main cabin and forward areas.

Is the rubber gas hose still acceptable for the gas regulations, or will I need to change to copper gas piping and fittings throughout?

Tony Hewson
By email

PETER SPREADBOROUGH REPLIES:

There are a couple of aspects of this installation that would cause me concern and will undoubtedly be picked up by your survey.

For a start, flexible gas hose should be kept to a minimum. Running long lengths of flexible hosing is not acceptable under current codes of practice: it should only be used in short lengths, not exceeding 1m, to connect gimballed cookers and gas cylinders in the rest of the installation. Flexible hose should be made to BS3212 type 2 or equivalent.

I'd also advise that a regulator made to EN 12864:2001, Annex M, is fitted.

I suggest you replace your long runs of rubber hose with solid copper pipe: once fitted you won't have to renew the long run every five years.

Under current codes of practice, water heaters should have a sealed combustion system, so all the air for combustion should be drawn directly from the outside of the vessel and the exhaust gases flued directly to the outside. So check that your water heater has this sealed combustion system: if it doesn't, I'd advise you to disconnect it.

If you employ a professional marine gas engineer, you can be sure that the installation will meet all current standards and they will also issue a gas safety certificate for your (and your insurance company's) peace of mind. PBO

A wife on the ocean wave

Peter Kewish's wife was adamantly opposed to the idea of buying a yacht: but following Peter's purchase of a project Jeanneau, she has caught the sailing bug

My wife's exact words when she found me drooling over some boats for sale online in July 2011 were: 'You are not having a yacht! You've already got a dinghy and a caravan and a house you haven't finished!

'And we certainly can't afford any of those,' she continued, indicating the boats on the screen. 'If you really want one you'd better find some money!'

Not being in the habit of 'finding' money, I decided to skirt round the problem and locate a project. I therefore continued my search for a suitable candidate, and sure enough eBay came up with the answer a few weeks later. A sad-looking 1989 Jeanneau Sunway 21 had been abandoned by its owner nine years previously and left in the hands of an inland sailing club two miles short of the Scottish border.

Peter's Jeanneau Sunway 21 *Jenn-Oh* has scrubbed up rather persuasively

Not one to be beaten, I took the risk and presented my findings to my wife. 'Two grand and not a penny more!' were her instructions as she dashed off to work. The auction was due to end at 8:31am, so I ignored her instructions completely and entered a highest bid of £2,211.01 before setting off to work myself. On my return home that evening, I had some considerable explaining to do.

'So just how do you plan to pay for that and get it home?' my wife asked.

'Easy', I replied. 'We leave early next Saturday, drive up there, check it out, stay in a B&B, hitch up the boat and pop back on the Sunday.'

With that, I photographed my Mirror dinghy and caravan and put them on eBay, then searched online for romantic B&Bs near Kielder in Northumberland that might just calm the marital waters. Only a 720-mile round trip, I thought.

Green but intact

We arrived at lunchtime the following Saturday to see our new purchase: she was full of rainwater and very green on the outside, but otherwise intact.

The sails, mast and rigging were all fine, and the trailer was great apart from perished tyres. So, new tyres were fitted and the water drained out, and I appeased my wife with a memorable night out. So far so good: the boat looked OK, and my wife was smiling and hadn't hit me yet.

On the Sunday morning, we hitched up the rig to the back of the car and set off: three miles later, there was smoke billowing off the trailer brakes and the damper in the hitch had stopped working. Now, I always say that one should choose wisely where one breaks down: in this case, it was a lovely little village pub with beautiful hanging baskets. 'That will do,' I said as the clutch on my car gave a huge sigh of relief. After a quick call to the AA we were heading home without the boat.

She turned up three days later, having been relayed down to our home in Dorset. The following weekend we set to work cleaning her up and working out what was salvageable and what was not.

My eBay account took a hammering that winter, and my new-found second passion – boat jumbles – sourced all we needed within the nonexistent budget. Including the purchase price, new headlining and cushions (I have a good friend who is an upholsterer), electrics, instruments, nav lights, running rigging, Coppercoat, VHF etc, I haven't spent a penny over £4,000.

'A bigger boat'

We proudly put her in the water the following Easter at Ridge Wharf near Wareham, and quickly learned how not to do things. A few weekends later we had developed the knack of sailing her and made a few visits to the Isle of Wight or round to Weymouth. Now, a year on, I entered the Round the Island Race with a few chums, and we came a respectable 650th out of roughly 1,400 entrants.

Recently I found my wife sitting in front of the computer, staring at a rather sorry-looking Beneteau 321. 'We need a bigger boat,' she said. 'Do you think you could work your magic on this one?' So there's another one who's caught the bug! PBO

ABOUT THE AUTHOR

Peter Kewish first took to the water at the age of eight, sailing Mirror dinghies up and down the Thames. Now in his 40s, Peter lives near the Dorset coast with his family, and wants to teach them to sail and share his passion.

Using a cruising chute

SAIL CLINIC

For non-racing sailors, a cruising chute is often the downwind sail of choice: it's nothing to be afraid of, but how do you use it to best advantage? David Harding offers some guidance

Hoisting the chute: no handling aids

Relatively few cruising chutes are used with no handling aids – snuffers, furlers and the like – but how easy is it?

1 At the helm, Jim bears away to allow the chute to be hoisted in the lee of the mainsail. The mast crew is jumping the halyard, as racing sailors do, but it's being tailed from the cockpit. Nobody would have to be on deck for the hoist.

2 Sailing the boat at the correct angle is what matters during the hoist. The chute is nearly up but still hanging limply in the mainsail's lee.

3 Now it's fully hoisted and the cockpit crew can start to tension the sheet.

4 Jim brings the boat up a few degrees towards the wind. No longer blanketed by the mainsail, the chute fills. That's it!

Last summer I was doing a photo shoot with a cruising couple aboard a 32-footer. Upwind sailing produced the best angles for the shots, so we covered a fair distance to the west.

As we then faced the prospect of a slow and potentially rather tedious run home, I asked whether any downwind sails were lurking in the cockpit locker. They had a cruising chute, I was told – but it had only been up once, with the help of a more experienced friend. None of them had been convinced that it was the right size for the boat and, lacking confidence in how to use it, the owners had left it in its bag ever since.

As we eased the sheets and pointed the bow eastwards, I could hear the chute crying out from the bottom of the locker. Here we were, about seven miles directly upwind or our destination on an absolutely glorious summer's day with a flat sea and a steady 12 knots of wind. We just had to take pity on the poor sail, so we dragged it on deck, rigged it up and hoisted it. It worked perfectly, bringing the boat to life, getting us home faster and making life a lot more fun into the bargain. We experimented with hardening up and bearing away to cover all the angles, and threw in a few gybes to show how easy they could be. We were three on board, but everything could have been managed easily with two – especially given the engagement of the autopilot. I headed for home that evening with the owners promising to make more use of the chute in the future.

Use and enjoy

It's hard not to wonder how many other cruising chutes are confined to lives of darkness in the depths of a locker. The biggest problem with sails like this is that they can be used with a much more limited range of wind angles than spinnakers that are projected from a pole or a bowsprit (see 'Spinnaker or cruising chute?', PBO November 2010). Nonetheless, confidence in setting, handling and, importantly, dousing has a major part to play, so that's what we'll be looking at in this feature.

For our testing we headed out on a Saare 41 with Steve Bruce of Saare Yachts and a crew of offshore racing sailors who, between them, had covered hundreds of thousands of miles and amassed an impressive collection of silverware at a pretty high level. We didn't think we would be needing quite this much expertise or muscle power, but everyone on board that day had come along for a reason – including top racing skipper Jim MacGregor, Chris Davison of Ullman Sails, who brought along the cruising chute, snuffer and top-down furler, and Doug Innes of StormForce Coaching, who also provided the RIB and a driver. By the time we had repeated each hoist, set, gybe and douse about three times for the filming and photographs we had done more in three hours than most cruising sailors would in a month – and it was also blowing over 20 knots much of the time – so as it turned out it was no bad thing to have been slightly over-crewed.

For our testing we headed out on a Saare 41 with a crew of highly experienced offshore racing sailors

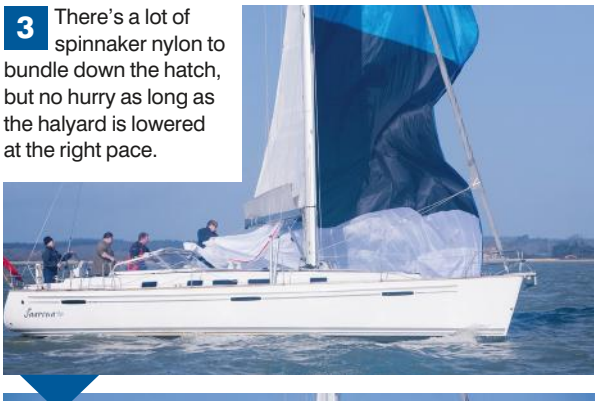
Dousing the chute: no handling aids

This is the bit that tends to worry people – so what's it really like with no snuffer or furling system?

1 As when hoisting, the first job is to steer the boat deep downwind so the chute is in the lee of the mainsail.

2 Now it's totally blanketed. The halyard is being lowered from the cockpit and the sheet is used to pull the chute inboard under the boom. No one is on the foredeck.

3 There's a lot of spinnaker nylon to bundle down the hatch, but no hurry as long as the halyard is lowered at the right pace.



4 Nearly all safely below decks and ready to be packed back in the bag ready for the next hoist.

Hoisting the chute: snuffer

Using a snuffer is still the most popular way to handle a cruising chute, especially on smaller boats

1 A snuffer has to be operated from the foredeck. The chute in its snuffer is hoisted in the mainsail's lee, then the mast crew uses the snuffer's internal halyard to haul it up over the chute.

2 Again, Jim points up a few degrees. The idea with a snuffer is that the wind starts filling the chute as soon as the crew is ready, helping slide the snuffer up and over the sail.

3 With the wind now doing the work, the mast crew simply has to tail the uphaul line.

4 Chute filling, Jim bears away again and the chute is trimmed to the course.

Hoisting the chute: top-down furler

Various types of furler for downwind sails have been developed in recent years and are becoming increasingly popular on larger boats. The top-down variety is one that lends itself to use with cruising chutes

1 The furled sail is hoisted in a thin sausage. On deck, Chris uses the continuous furling line (it can be led aft) to release the locking mechanism on the furler that stops the sail flying open if the sheet is pulled prematurely.

2 In the cockpit, Doug tensions the sheet to start unfurling the sail. Note how it opens from the middle first.

3 Once started, it unfurls quickly. The top is last.

4 A few seconds later, it's all unrolled and filling nicely.

Dousing the chute: snuffer

In theory, snuffing is easy – but here we had over 20 knots of wind…

1 Again, the first job is to bear away and collapse the chute in the lee of the mainsail. A crewman is ready by the mast.

2 With the chute collapsed, the mast crew starts pulling the snuffer down over the chute.

3 With a blanketed chute and a well-designed snuffer, this shouldn't be hard work but it might take a while.

4 The halyard can now be lowered to bring the snuffed chute back down on deck.

Dousing: top-down furler

This should be the quickest and easiest way with a sail of this size in this amount of breeze…

1 It's the usual start: bear away and collapse the sail. Don't make life hard for yourself. Chris is on deck starting to furl.

2 This is 15 seconds later. The head of the sail is wrapped around the torsion rope first – hence the 'top-down' designation.

3 All furled. It's a tight sausage that can, if necessary, be left hoisted on upwind legs, unlike a chute in a snuffer.

Conclusion

With the crew we had on board, it proved quicker and more straightforward to hoist and douse the chute without handling aids. This is how racing crews handle spinnakers all the time.

You don't need lots of hands for this – a cruising couple can manage perfectly well, and life can be easier still with the help of an autopilot. The biggest chore might be repacking a chute that, after being bundled down the hatch, will be occupying most of the saloon!

Chris Davison is of the opinion that, on cruising boats over 12m (40ft) or so, a top-down furler is the way to go. A snuffer can be more of a challenge when you have to stand on a heaving foredeck.

Whichever method you use, one critical factor is to have a helmsman (or an autopilot) capable of steering the boat at the right angle to keep the chute in the lee of the mainsail for hoisting and dropping.

NEXT MONTH Trimming a chute for reaching and running – and how to gybe PBO

Your quick-reference guide to safety and seamanship

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Understanding signals from tugs

Dick Everitt explains the day shapes, light and sound signals displayed by working tugs

Out at sea and in good visibility it should be quite straightforward to work out what tugs are up to. However, one tug skipper told me he sometimes towed oil rigs on 1,000m cables, and had to stay in depths of over 100m to stop the catenary of the wire scraping on the seabed – so look well astern!

Nearer to land, and at night, things can get even trickier: so as skipper, or in RYA exams, you'll need to know all their day marks, lights and sound signals. The illustrations show these, and I've included a few tips to help you remember them.

A diamond is the day mark for towing – I remember this by picturing pirates in my mind towing away heaps of diamonds! The tug doesn't need to show a day mark if the tow is under 200m, but if the towed object is low in the water and hard to see, it should have a diamond at the back end. For tows over 200m both the tug and the towed object must show a diamond, and if the towed object is hard to see it should have diamonds rigged both fore and aft. The tug might also show a 'can't manoeuvre easily' day mark (ball, diamond, ball), which I picture as the balls skewered on the points of the diamond, so they can't move! Tugs pushing or towing alongside in daylight don't usually show diamonds.

Light signals

At night, tugs should show two white masthead lights, and for tows over 200m they should have three. I remember this by picturing the tug as having borrowed the towed vessel's white steaming light, or two vessels' white lights for a long tow. They also have a yellow towing light over their stern light. The towed vessel should also show side and stern lights but often all we get is a white light at the back. A long tow can be marked with white lights fore and aft, and if it's over 25m wide it should have white lights on either side.

If being pushed, or lashed alongside, the towed vessel should show side lights, and a stern light if it's alongside.

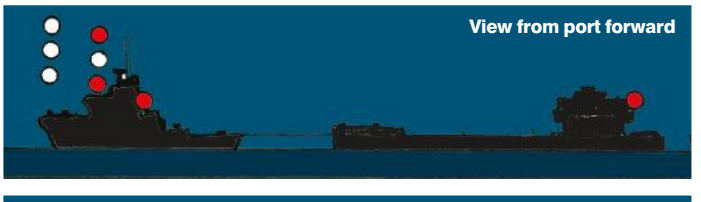
But take care, especially in less regulated parts of the world, where tugs might display all sorts of coloured lights and tow huge chains of unlit barges.

Mind you, it's also easy to get confused nearer to home. Once, crossing Southampton Water, I saw among the shore lights the double white lights of a tug and the sidelights of its alongside tow. Fine, time to nip across ahead of her. But to my surprise, what I thought was the 'alongside tow' speeded up and overtook the tug! My 'alongside tow' was in fact a ship following the tug, and I had lost her white masthead lights in the background of shore lights.

Also, after a tiring trip across the Channel I've mistaken a push tow for a submarine in Cherbourg's outer harbour – she looked the right shape and there was even a yellow flashing light, which was probably a car's indicator in the background!

In fog, a tug should sound 'a long and two shorts' – just like the signal for a sailing yacht, or a fishing boat. And the towed vessel should sound 'a long and three shorts' but I've never heard this signal, although I was questioned about it during my Yachtmaster exam, because I think there had been a recent fatality when someone hit the towing wire.

A diamond day mark can be hard to spot among the clutter on a tug's mast, but the three white vertical lights should be clearer

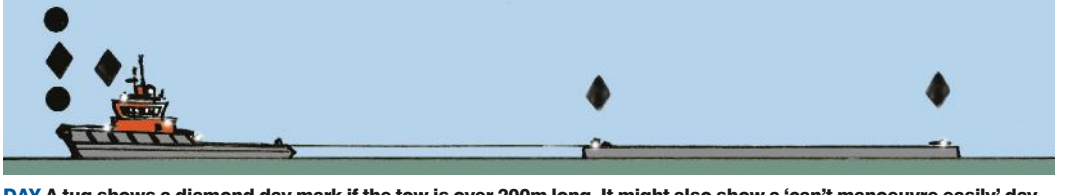


NIGHT TOW At night, tugs should show two white masthead lights, and for tows over 200m in length they should have three. The tug might also show a 'can't manoeuvre easily' signal (red, white, red). They also have a yellow towing light over their stern light. The towed vessel should also show side and stern lights.

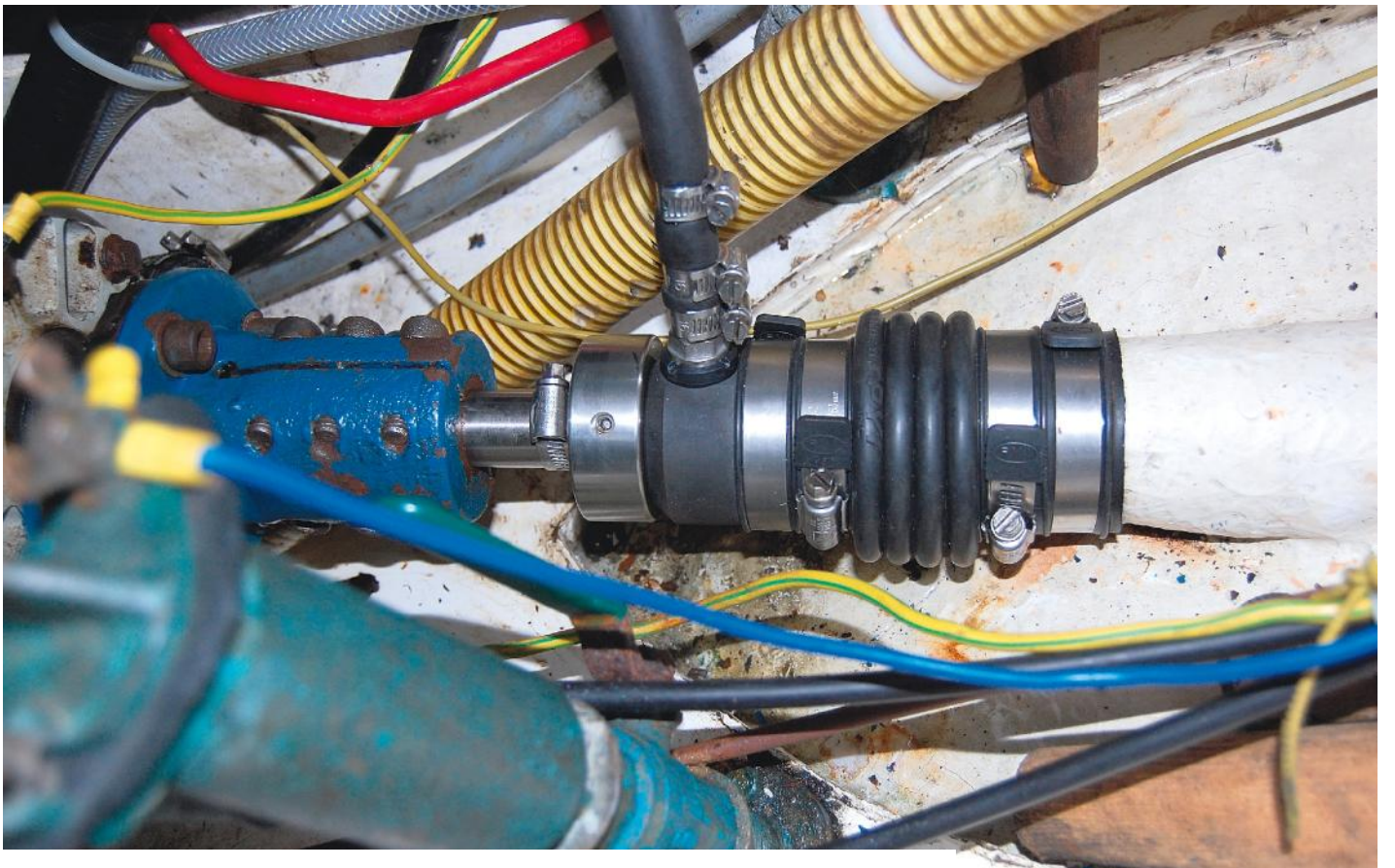
PUSH If being pushed, the towed vessel should show side lights.

LONG, WIDE TOW The towed object might have a white light fore and aft and, if it's over 25m wide, white lights on either side.

ALONGSIDE If lashed alongside, the towed vessel should show side lights and a stern light.



DAY A tug shows a diamond day mark if the tow is over 200m long. It might also show a 'can't manoeuvre easily' day mark. If the towed object is hard to see, it should have a diamond at the back end (and one forward if over 200m).



PBO buyers' guide to shaft seals

Traditional stuffing box-type stern glands will always leak slightly by their very nature – but there are alternative shaft seals for a leak-free propeller shaft. Ben Meakins checks out what's available

The once-ubiquitous stuffing-box stern gland still has much in its favour – it's simple, tried-and-tested and easy to repair and service. But even a well-adjusted stuffing box should drip into the bilge around once per minute.

That was fine back in the day when boats were built with deep bilges and tended to leak at the seams anyway – but modern, leak-free boats with shallow bilges are different. Many boat owners want their bilge to be as dry as the rest of the boat.

Nowadays there's a much wider choice when it comes to stopping the water coming in via the stern tube. There are five main makes available in Britain – Tides Marine, Volvo, PSS, ManeCraft/Deep Sea Seals and Vetus – offering what are known as 'dripless' shaft seals, claimed to be completely waterproof for leisure craft. Other types and makes can be found in use – some, like the Halyard oil-filled seal, are no longer manufactured but are still giving sterling service.

Types of seal

Seals can be divided into two main groups – face seals and lip seals. Both types use an articulated rubber sleeve to keep the water out, but face seals use a collar, clamped to the shaft, that bears upon a surface on the end of the articulated hose.

Lip seals are similar in appearance but seal via a lip, or sometimes two, which bear upon the shaft itself.

Most require a pressurised water feed to keep the seal lubricated and cool.

Some seals must be ordered for your exact shaft size and stern tube size, while others have some adjustment and fit a range of sizes.

Sizing your seal

Before you order a new dripless stern gland, you'll need to know the following:

- **PROPSHAFT DIAMETER** A vernier gauge is useful here. Don't make simple inch/millimetre conversions – 25mm is not exactly the same as 1in.
- **OUTSIDE DIAMETER OF YOUR STERN TUBE** You'll need this in order to determine the size of hose and seal you'll need.
- **SPACE AVAILABLE** Check the distance between the stern tube and the coupling, and that there will be enough space available. Exploded and detailed diagrams are available on the manufacturers' websites.
- **DAMAGE** Check the shaft for scoring, nicks and other damage as this may affect your decision on which seal to go for.
- **SPEED RANGE** This is unlikely to be a problem on a sailing boat, but faster boats may not be suitable for some shaft seals or they may need extra water lubrication. Check the manufacturer's specifications.
- **BEARINGS** Most shaft seals are not designed to act as a bearing, so check that the propshaft's alignment is correct.

Lip-type seals

Tides Marine seriesOne

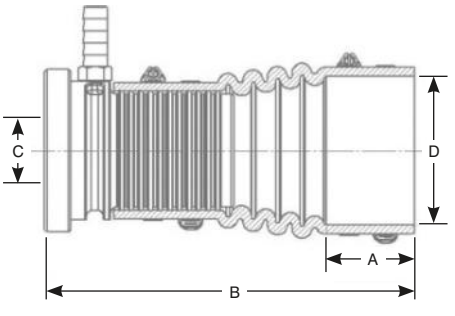
PRICE FROM £170.40

www.tidesmarine.co.uk

The seriesOne is Tides Marine's lower-cost seal designed for smaller boats and small engines. It has no serviceable parts and is designed to be replaced at the end of its life.

Models are available to fit shafts from ¾in to 1¼in Imperial and 22mm to 30mm metric. It comprises an articulated rubber hose and a moulded lip seal housing, to which a pressurised water supply must be fed.

The seriesOne comes with a one-year/1,250-engine hour warranty.



(A) Hose cuff length: 48mm
(B) Overall length: 156mm
(C) Shaft sizes: 22mm, 25mm, 30mm, ¾in, ⅞in, 1in 1⅛in, 1¼in
(D) Stern tube sizes: 38mm, 41mm, 45mm, 51mm, 57mm, 63mm, 70mm, 76mm, 1½in, 1⅝in, 1¾in, 2in, 2¼in, 2½in, 2¾in, 3in

Volvo Rubber Stuffing Box

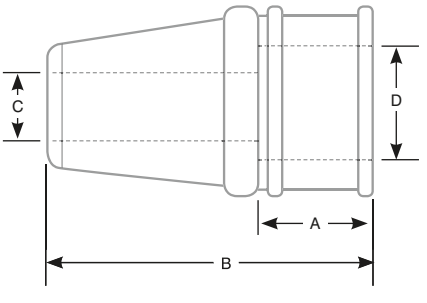
PRICE FROM £79.60 (1in shaft)

www.rkmarine.co.uk and Volvo dealers

Volvo Penta's solution is what they call a 'rubber stuffing box'. It's simpler than its competitors, combining the rubber hose with a lip seal in one assembly, with no moving parts. It has an internal, water-lubricated bearing and lip seals which must be greased every 200 hours/once a year. It comes with a single, wide hose clip, secured with machine screws, to clamp on to the stern tube.

After launch it must be 'burped' to remove air, as it does not have a pressurised water feed. Volvo Penta recommend it is not used for installations where flexible couplings are used.

(A) Hose cuff length: 36mm
(B) Overall length: 102mm (25mm shaft)
(C) Shaft diameters: 25mm, 30mm, 35mm, 40mm, 45mm, 50mm, 1in, 1¼in, 1½in, 1¾in, 2in
(D) Sleeve diameter: 42mm, 48mm, 54mm, 60mm, 64mm, 70mm, 1¾in, 2in, 2¼in, 2½in, 2¾in (all +0.5/-0.3)



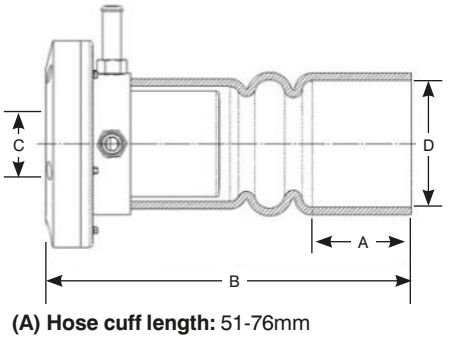
Tides Marine SureSeal

PRICE FROM £345.60

www.tidesmarine.co.uk

Manufactured for shaft diameters of 1⅜in to 8in (35mm to 200mm) and suitable for a wide range of shaft speeds and ambient operating temperatures, Tides Marine's SureSeal is made from non-corrosive materials and there are no moving parts. A pressurised cooling water supply is required to lubricate the lip seal and alignment bearing in the seal head.

The Sureseal comes with a two-year/2,500 engine hours warranty, and spares kits are available so that its lip seal can be replaced with the boat afloat.



(A) Hose cuff length: 51-76mm
(B) Overall length: 200-258mm
(C) Shaft sizes: 35mm, 40mm, 45mm, 50mm, 55mm, 60mm, 65mm, 70mm, 75mm, 80mm, 85mm, 90mm (1⅜in, 1½in, 1⅝in, 1¾in, 2in, 2½in, 2¾in, 3in, 3¼in, 3½in, 4in)
(D) Stern tube sizes: 51mm, 54mm, 57mm, 60mm, 64mm, 67mm, 70mm, 76mm, 79mm, 83mm, 89mm, 102mm, 108mm, 114mm, 127mm, 140mm, 152mm, 2in, 2⅛in, 2¼in, 2⅜in, 2½in, 2⅝in, 2¾in, 3in, 3⅛in, 3¼in, 3½in, 4in, 4¼in, 4½in, 5in, 5½in, 6in

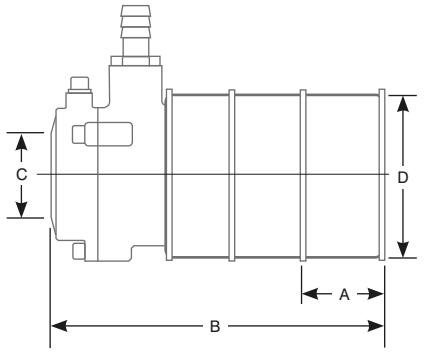
Vetus ZWB Dual Lip Shaft Seal

PRICE FROM £172

www.vetus-shop.com

Vetus makes a dual lip shaft seal, designed for use with its bronze, GRP or steel stern tubes. Each shaft size is only available for a stern tube that matches Vetus' corresponding stern tube size.

A flexible hose is connected to a bronze housing, containing the sealing lips. The front seal chamber is packed with silicone grease, while raw water from either a dedicated water scoop or a branch supply from the engine exhaust cooling circuit is supplied via the water inlet fitting on the top of the seal.



(A) Cuff length: 36mm
(B) Total length: 165mm
(C) Shaft sizes: 25mm, 30mm, 35mm, 40mm, 45mm, 50mm, 60mm
(D) Stern tube sizes: 51mm, 54mm, 60mm, 63.5mm, 70mm, 76.1mm

Face-type seals

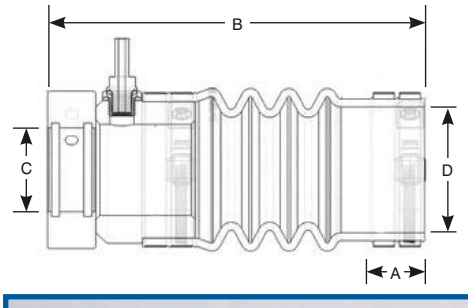
PSS Seal

PRICE FROM £180.36

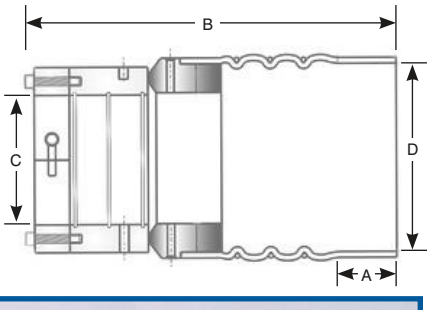
www.shaftseal.com

The PSS (Packless Sealing System) shaft seal is a mechanical face seal, which uses the seal created between the flat surfaces of the rotating stainless steel rotor and the stationary carbon flange. The carbon flange is attached to the stern tube via an articulated rubber bellows. The carbon flange contacts a stainless steel rotor that fits snugly around the shaft, is secured with grub screws and seals via two O-rings recessed into its bore. The bellows is installed on the stern tube and is then compressed a set distance by the stainless collar, which ensures a good and even seal between the carbon flange and the stainless rotor. Two models are available – Type 1, for shafts up from 20-95mm (¾in to 3¾in), and Type 2, for shafts 100-150mm (4in to 6in). Rudder seals, working on the same principle, are also available.

TYPE 1
(A) Cuff length: 38mm
(B) Total length (compressed) 158mm
(C) Shaft diameters: ¾in, ⅞in, 1in, 1⅛in, 1¼in, 1⅜in, 1½in, 1¾in, 2in, 2¼in, 2½in, 2¾in, 3in, 3¼in, 3½in, 3⅝in, 3¾in
(D) Stern tube diameters: 32mm-35mm, 38mm-41mm, 45mm-48mm, 50mm, 57mm-60mm, 64-67mm, 70-73mm, 76mm, 83-86mm, 89-92mm, 95-98mm, 102mm, 108-111mm, 114/117mm, 120-124mm, 127mm



TYPE 2:
(A) Cuff length: 63mm
(B) Total length (compressed) 349mm to 372mm
(C) Shaft diameters: 100mm, 110mm, 115mm, 120mm, 130mm, 140mm, 150mm, 4in, 4¼in, 4½in, 4¾in, 5in, 5½in, 6in
(D) Stern tube diameters: 140-143mm, 146-149mm, 152mm, 158-162mm, 165-168mm, 171-175mm, 178mm, 184-187mm, 190-194mm, 196-200mm, 203mm, 220mm



Traditional stuffing box

Traditional stuffing boxes are still available from suppliers like T Norris Ltd, (www.tnorrismarine.co.uk) and can often be manufactured or supplied to order.

Deep Sea Seal

PRICE: FROM £170 (small), £380 (large)

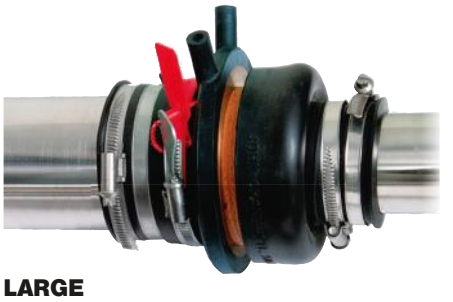
www.deepseaseals.com

Made in the UK by ManeCraft, the Deep Sea Seal comprises two components: a stationary 'seat' fits onto the inner end of the stern tube and a rotating seal attaches to the propeller shaft. The rotating seal runs against the stationary seat to give a watertight 'drip-free' seal. Both are moulded from chloroprene.

The Deep Sea Seal, with a life expectancy of five years, requires water lubrication from the pressure side of the engine's exhaust. There is an emergency sealing clip, fitted with an anti-tamper marker, which when tightened will constrict the seal and stop water ingress in case of failure of the seal.

Two models are available, and the design allows some adjustment for stern tube sizes.

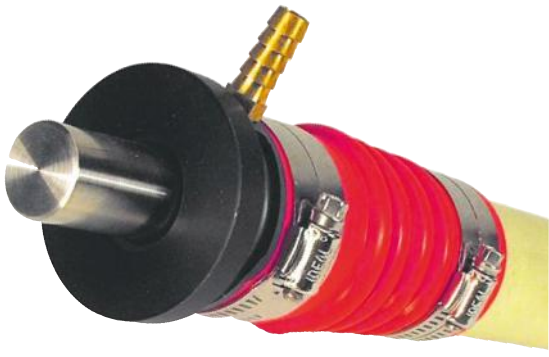
SMALL
Cuff length: 32mm (min)
Total length: 131mm
Shaft sizes: 25-30mm, 30-35mm, 35-41mm, 43-36mm, 46-51mm
Stern tube sizes: 35-43mm, 43-51mm, 51-60mm, 60-70mm, 70-80mm



LARGE
Cuff length: 32mm (min)
Total length: 137.5mm
Shaft sizes: 55mm, 60mm, 65mm, 2¼in, 2½in, 2¾in.
Stern tube sizes: 70-80mm, 80-90mm, 90-100mm, 3½in, 4in

■ Turn to page 54 to see how PBO's Ben Meakins fitted a Tides Marine seriesOne seal to his yacht *Polly*

Replacing a stern gland shaft seal



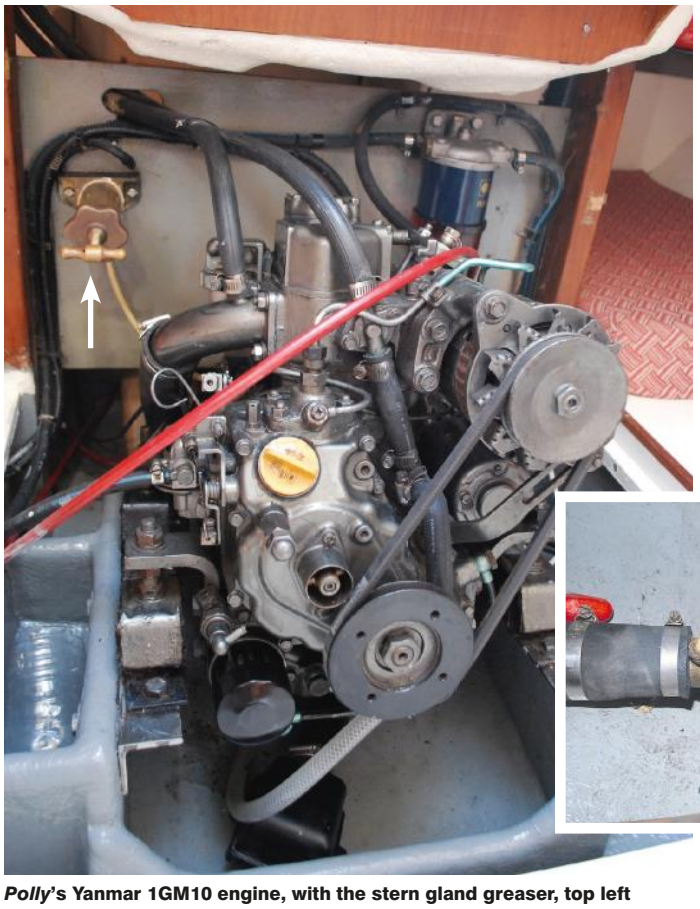
A leaking stuffing box and a worn propshaft led Ben Meakins to install a new-style shaft seal on his boat. Here he shows how it's done

There's nothing wrong with the traditional stuffing box as a stern gland – failures are very rare and it's a tried and trusted technology that's worked for donkey's years.

But things have moved on since boats had deep bilges where the steady one drip per minute of a well-adjusted stuffing box could pass unnoticed.

My boat *Polly*, an Impala 28, has a shallow bilge, and the stuffing box drips ended up in the reservoir beneath the engine. On long, windless passages under engine, this equated to a fairly large amount of water. Equally, even a small amount of water kept the engine bay damp – not a great idea with an engine that was getting on in years.

The other problem was that over the years the stuffing box's packing had worn grooves in the stainless steel propshaft, which meant obtaining a good seal was now almost impossible. A new shaft would be expensive: maybe a cheaper option would be one of the new-type seals that would fit to the shaft and give me dry bilges to boot?



***Polly*'s Yanmar 1GM10 engine, with the stern gland greaser, top left**

The grooves in the shaft meant that a PSS-type gland, which relies upon a smooth area of shaft for the collar to clamp to, was not going to work in my case.

However, careful measurement showed that a Tides Marine seriesOne seal, which relies upon a lip for its seal, could be made to fit a clean, undamaged area of shaft.

When ordering, you need to specify two things: the shaft diameter (in my case 1in) and the stern tube diameter (1⅝in).

■ For more information on alternative types of shaft seal see our buyer's guide on page 50

The existing stuffing box stern gland (with greaser tube) had worn grooves in the propshaft

REPLACING A SHAFT SEAL STEP BY STEP

1 The first step was to remove the propshaft from the coupling on the back of the engine by backing off the clamping bolts and removing the grubscrew which acts as a key.

2 Now I could disassemble and remove the existing old stuffing box and its armoured rubber hose from the stern tube. It's important to clean out all old grease from the tube so the new seal can water-lubricate properly.

3 Draw the shaft back up against the coupling. This will expose that portion of the shaft that was located under the old hose and sealing assembly.

4 Now we can assemble the shaft seal by inserting the black moulded end of the seriesOne into the articulating hose as far as it will go.

5 Next, I positioned the hose next to the stern tube to determine approximately where the lip seal will make contact with the propshaft: my measurements were correct – the area was clean and free of damage. You need to clean up the shaft by polishing it using 300-grit wet and dry sandpaper or emery cloth. Work around the shaft and not fore-and-aft, which could put flats or grooves in the shaft.

6 A red 'hat' is supplied to protect the lip seal as you install the shaft. This is installed at this stage by pushing it into the end of the seal so that covers the 'lip' portion of the seal.

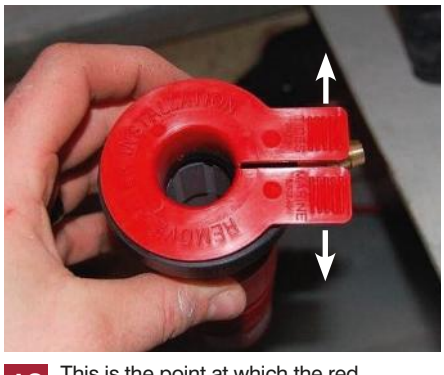
7 Back the shaft away from the coupling to provide enough room to install the assembly. Carefully slide the assembly (hose-end first) onto the shaft.

8 On *Polly*, space is tight and I could only fit the assembly by pushing the shaft through the seal, rather than sliding it down the shaft as recommended. This displaced the red hat – ideally it should be left in position at this stage.

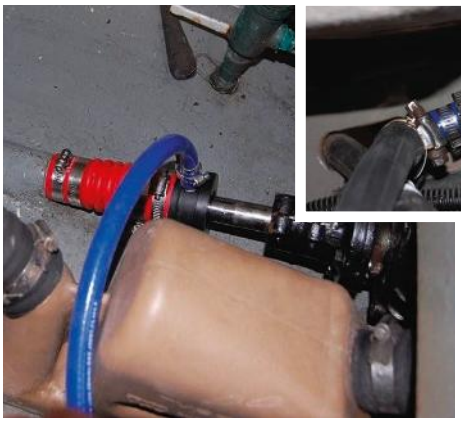
9 You can slide the whole installation up or down so that its lip bears upon a clean area of shaft, providing you allow enough hose to get two clamps onto the shaft tube.

10 Reconnect the shaft to the coupling. Make certain the coupling is firmly secured to the transmission.

11 Space the two hose clamps evenly over the stern tube and tighten. The clamps should be on opposite sides of the hose to distribute pressure evenly. There should also be two clamps on the seal end of the tube.



12 This is the point at which the red installation hat should be removed. Separate the tabs to break it and remove it from the shaft.



13 The seriesOne requires a pressurised water feed to lubricate the lip seal correctly. This comes via a T-connector in the engine's exhaust feed, on the pressure side of the anti-syphon loop, which then runs to the connector on the stern gland's moulded fitting. The manufacturers recommend that at idle speed water should be flowing at around 1 gallon (4.5 litres) per minute. You can check the rate by timing the flow into an empty container with the engine idling. My engine, a Yanmar 1GM10, has a small water pump, but has performed well since I installed the new seal a year ago.

PBO verdict

So far, so good

One year on, the bilges are dry (apart from one small puddle which proved to be a dripping water pump!). Diverting some water to the lip seal has meant a reduction in cooling water flowing out of the exhaust on the transom, but careful monitoring has showed sufficient flow to keep the exhaust and water trap cool. The shaft has no signs of any new scoring and I'm very pleased with the result.

Replace leaky windows

Liveaboard sailor Ian Bray shows how he removed the frames and replaced the acrylic windows in his yacht for less than £30

WHOLE JOB COST LESS THAN £30

Crazed and cloudy Perspex obscures the view out and probably lacks strength

View through the new clear acrylic shows an obvious improvement

Captain Tolley's Creeping Crack Cure had been staving off the inevitable for three years but the leaks around the saloon windows kept recurring, so their removal and refitting had eventually made its way onto the winter maintenance list.

The somewhat 'crazy' view of the outside world also indicated that if the windows were going to be taken out it would be as well to replace the Perspex/acrylic at the same time. Not only were they more translucent than transparent, but we'd heard tales of badly crazed acrylic shattering under the impact of waves.

I did consider reglazing with laminated glass but there was no source in our locale (Finike, Turkey). However, it did prove possible to purchase some smoked acrylic. It was 1mm thinner than the original and so would not be as strong as the original when new but, I suspected, would be better than the badly crazed version. I couldn't find any information on how to re-glaze the 18-year-old split-frame Lewmar windows, so I decided to deal with one window at a time on an exploratory footing.

ABOUT THE AUTHOR

Ian Bray has been sailing for many years, racing dinghies and cruisers as well as cruising. Since retiring he has been living with his partner Melanie aboard their Moody 38CC.

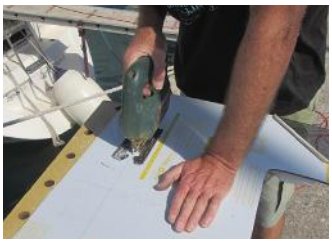
STRIPPING THE WINDOWS AND FRAMES

1 The windows are secured with an internal frame that is fixed with several machine screws. Removal of the windows is straightforward – or it would be if some of the screws had not seized and had to have their heads drilled off. The stumps could then be removed with mole grips after the window was removed. This occurred at the ends of some of the windows where water had been leaking in and had slightly corroded the aluminium frame where the stainless machine screws were in contact with it.

2 On removal it was apparent that the upper and lower parts of the frame were held together with a plastic connector that was fixed by means of dimples punched into the aluminium frame. I therefore drilled out the dimples on one side of the frame using a 5.5mm drill, taking care not to drill right through the other, front side of the frame.

3 The halves of the frame still showed no inclination to part so I improvised a simple mechanism. Small pieces of angle aluminium were screwed either side of the joint using the existing threaded bolt holes. A 6mm bolt was then inserted into the angle pieces such that the frame halves could be screwed apart. I also found it necessary to put a wooden clamp around the frame at each end to prevent it bending as the pressure was applied.

REASSEMBLY



1 I started by using the old Perspex as a template for cutting the new. This proved easy, cutting slowly with a fairly coarse blade in a jigsaw. The edges were trimmed smooth using a plane and some abrasive paper. The acrylic has a protective film on each side, and I removed a strip around the edge by lightly scoring it and stripping it away. This allowed the frames to be reassembled while still protecting the surfaces from scratches and excess sealant.

2 Next, I injected a bead of clear silicone sealant into the groove in the gasket and then fitted this around the acrylic. A further bead of silicone was gunned into the groove in each half of the frame. There are a couple of small joint seals that fit between the frame ends and these were located with more sealant before the halves of the frame were pushed together.

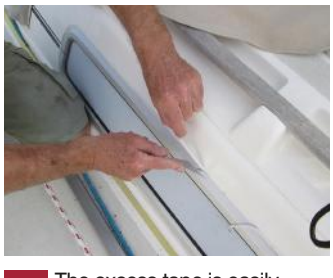
3 As with the disassembly, a fair bit of pressure is required to mate the halves of the frame and so the same mechanism (angle aluminium pieces and 6mm bolt) was used in reverse to force the pieces together.

4 Most of the excess sealant was cleaned off and the frame was left to set. Three of the four frames showed no inclination to spring apart when the clamping devices were slackened, but the last one did. I therefore put a few drops of epoxy resin in the drilled out dimple holes and left the clamps in place until that had set.

5 While the sealant in the new windows was setting, I carefully scraped away the old sealant from around the window apertures and polished up the GRP.

6 Butyl tape (15mm x 3mm) was applied to the outer flange of the window frame which was then held in place while the inner frame was screwed on.

7 While at it I greased all the machine screws to hopefully prevent any further seizures if they have to be removed again. The screws were progressively tightened around the frame.



8 The excess tape is easily trimmed by running a blunt knife around the edge of the frame and pulling it away. Actually, the tape continues to squidge out for a week or two, so a second trimming is required. The last job is to clip on the interior trim.

9 The next day we applied an artificial rainstorm courtesy of a hose. The result: no more leaks!

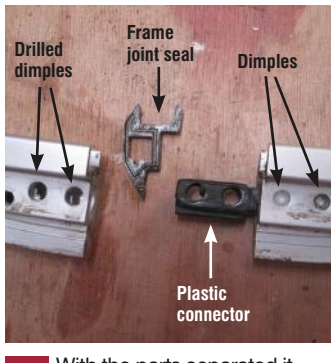
WHAT IT COST

Materials for all four windows:

Acrylic sheet	£19.20
Butyl tape	£5
Silicone sealant (2 tubes)	£2.47
TOTAL	**£26.67**

I allowed a day to remove and replace each of the four windows as I wanted to make sure there would be no gaping holes left overnight in case of unexpected downpours.

4 As the frame was pulled apart I eased the rubber/neoprene gasket out of the frame to prevent damaging it.

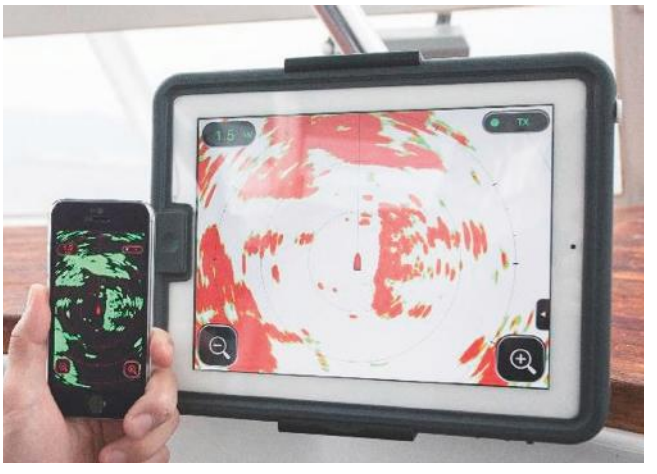


5 With the parts separated it was then a case of cleaning off all the old sealant from the frame and the gasket which, luckily, was found to be in good condition as I am sure that a replacement is not available around here. On one window, one of the plastic connectors broke and the stump had to be drilled out. A replacement was fashioned out of part of a nylon pipe clip found in the spare parts store. Also, on another window, one of the gaskets came unglued at its joint but was soon fixed with a few drops of superglue.

PBO New Gear

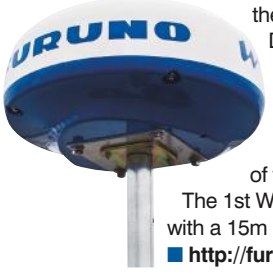
Laura Kitching reports on the latest products

Furuno 1st Watch Wireless Radar



The 1st Watch Wireless Radar from Furuno enables sailors to turn their iPad or iPhone into a radar screen.

It's claimed to be simple to install, set up and use: mount the radar unit, plug in the power cord and download the free app from the Apple App Store and you're ready to go. It enables users to operate up to two iOS devices simultaneously.



The 4kW radar has a range up to 24NM and is claimed to be the world's first wireless radar. It is powered by a 12-24V DC, 2.1/1.0A power supply and features a 15in-long patch array antenna encased in a dome.

The radar unit itself is 48cm (19in) in diameter and weighs 6.5kg. For increased visibility in use you can choose between day and night mode, and the colour of the radar echoes can also be changed.

The 1st Watch Wireless Radar costs £1,220 and comes supplied with a 15m power cable. A PBO test is planned.

■ **http://furuno.com/special/en/wireless/radar/**

Mid-weight sailing jackets

Quba & Co has launched two mid-weight sailing jackets: the X600 for men and X200 for women. Both feature a waterproof nylon outer, fully taped seams and lighter-weight lining, a roll-away hood, a double front zip and a storm placket.

Designed specifically for women, the X200 is shaped for a flattering fit. The double front zip is covered by a Velcro tab, and all seams are taped to ensure the jacket is waterproof throughout. Lycra hand gaiters and hand-warmer pockets keep wrists and hands cosy, while drawcords at the hem, waist and hood can be adjusted for comfort.

Both jackets have printed sail-style numbers on the front and back, and a small printed and embroidered chest logo. The men's jacket comes in navy or kelp, while the women's version is available in teal or navy. Both jackets cost £199.

■ **www.quba.com**

Firefly Pro Series Rescue Strobe Lights

ACR Electronics' newest rescue strobe lights, the Firefly Pro SOLAS and Firefly Pro Waterbug, have been engineered to exceed Safety of Life at Sea (SOLAS) and United States Coast Guard (USCG) standards for brightness and operational life.

With three activation functions, the compact Fireflies visually alert rescue services of your location by using the standard strobe or SOS modes for position alerting at long distances. For up-close recovery operations, the strobes have a bright steady-on feature which prevents disorienting rescue service personnel. The Waterbug version includes two water sensors: when placed in the armed mode, the Firefly Waterbug automatically activates once it comes in contact with water.

The new wide-light emission LEDs produce a 360° beam of light that is more than 41 candelas, allowing for visibility of greater than 3.5 miles. These lights will operate continuously for over 56 hours in strobe mode on a set of AA alkaline batteries – 48 hours longer than SOLAS regulations require. The Firefly PRO SOLAS costs $88.99 (£52.41), while the Firefly PRO Waterbug costs $99.99 (£58.89). ■ **www.acrartex.com**

PBO TESTED

A reticular monocular

Ships' binoculars – or 'Rummels', as some people like to call them – have traditionally been 7x50s for good reason: greater magnification can make them hard to use on a heaving deck, while a smaller lens diameter admits less light, meaning potentially duller images.

It's no surprise, therefore, that Minox's snappily-named MD 7X42C is – as its name suggests – a 7x42. Although the lens is slightly smaller than the traditional standard, the view remains exceptionally clear and bright in all conditions.

Another feature of the Minox is the reticle (horizontal and vertical scale) to let you work out your distance from an object if you know its height or, if you're seeing it square-on, its length. Or you can work out its height/length if you know the distance. An illuminated compass bearing is incorporated as well. ■ **www.minox.com**

The verdict

Given that quality optics don't come cheap, the Minox looks good value at £119. Waterproof to a depth of 3.3ft (1m), it has an aluminium housing with rubber protection and a secure wrist-strap so it fits the hand snugly. It looks and feels soundly engineered and would be a welcome addition on board.

David Harding

OverBoard Ultra-Light waterproof bags

OverBoard has launched an Ultra-Light collection of 'tough yet feather-light' waterproof bags. They are available in a variety of colours, sizes and styles, including 30lt and 50lt duffels, dry bags and backpacks, and feature OverBoard's Fold Seal System, said to offer protection from any potential water, snow, dirt or sand damage. The Ultra-Light bags are made from environmentally-friendly TPU lightweight materials, so don't add much to the weight you're carrying. OverBoard's waterproof multipack dry bags can also be used to organise any travel bag. Prices start from £14.99 for Multipack Dry bags (buys 4x 1lt bags); the 30lt Dry Tube bag costs £44.99; the 50lt Waterproof duffels cost £89.99 and the 50lt Waterproof backpacks cost £124.99. Watch this space for a PBO review of the 50lt duffel bag. ■ **www.over-board.co.uk**

SPOT Trace anti-theft tracker

SPOT Trace is a new gadget from satcoms provider Globalstar that lets you keep tabs on your yacht and other valuable gear anytime, anywhere. The anti-theft tracking device uses satellite technology to trace your yacht in locations where the mobile phone signal is unreliable. You instantly receive texts/emails when SPOT Trace's vibration sensor detects your asset is moving. You can track its GPS coordinates in near real time on Google Maps.

SPOT Trace is small (5 x 7 x 2cm), durable, can be mounted practically anywhere, and the battery lasts up to 18 months. RRP is €125 (£102), and plans are in the pipeline for a PBO review. ■ **www.findmespot.eu/en//**

Gill Championship long finger gloves

These gloves utilise cutting-edge Dura-Grip fabric on the palm, which is said to provide grip without any compromise in flexibility and durability. The pre-shaped construction fits your natural hand shape, and stretch fabric is used on the backs for comfort. Seamless wraparound Dura-Grip reinforcement on the fingers provides improved abrasion resistance and grip, and there is an inside-facing wrist closure to prevent the accidental starting of a watch. The black and grey gloves cost £24.99. ■ **www.surfdome.com**

Sea-Things Tablet Dry-Bags

Sea-Things has launched the DryAtab series for sailors who rely on tablet devices for communication, navigation and entertainment. Two models – 7in mini and 10in standard – are available to keep all types of tablet devices dry and dust-free. They come with an adjustable carrying lanyard, a triple waterproof seal, foam backing and a clear front cover that enables touch-screen usage. Other features include an audio 'mini jack' socket for connecting earphones, a manual inflation valve to assist flotation if the device could be dropped overboard and SOLAS-grade reflective strip corners for night visibility.

The 10in model costs £8.50, while the 7in version for the iPad Mini costs £6.95. ■ **www.amazon.co.uk**

PBO TESTED

Mouillère overshoe

The Mouillere overshoe from Boatique is designed to be easily slipped on to your shoes to protect the base and tops from getting muddy or wet. The unique elasticity of the TPR rubber is said to enable the Mouillère to fit perfectly onto all types of shoes, male or female. The overshoe costs £45 and is available in a range of colours. ■ **www.boatique.co.uk**

Verdict

Although the overshoes are marked 'L' for large, they are rather a slim fit and there was no way I could get them to pull over my everyday size 9 shoes. The thermoplastic rubber construction of the Mouillères gives them excellent grip on a shiny surface – and there's a good tread to keep your footing when the surface is wet – but that 'grippiness' is their downfall when attempting to put them on: they grip the toe of your shoes so well they're the devil of a job to slide backwards over the heel. I could at least get them on over narrower deck shoes – but it was still a struggle.

There's a tab at the back to help pull them on, but tugging hard merely squeezes the opening to a narrower gap, making it even harder to pull over your foot. A shoehorn was the answer, but that's not very convenient when you want to slip them on in a hurry. When you do finally get them on they also tend to look just a little bit ridiculous.

If you don't know your left from right they could be right up your street, though: they're not handed so either shoe can be used for either foot.

Julian Peckham

PBO CLASSIC KIT

Celebrate YOUR Classic Kit! What has served you well? Email pbo@ipcmedia.com

Honda EX500 generator

This generator could not be simpler: the on/off lever operates the fuel switch, run speed and engine kill switch. There is a bimetallic-operated choke, so there's nothing to do other than pull hard on the start cord handle. If the engine has low oil, the warning light comes on.

In the low-rev quiet and economy mode at 50Hz it is said to give 330VA, 400VA max, or at the noisier 60Hz it gives 400VA, 500VA max: this is also the 'lamp' mode to reduce the 25Hz four-stroke flicker.

It also has 12V 100W charging output – which is 20V on no load – and 6-8A typical unregulated charge current. The EX500 can be economical if you do not need high power.

John Thompson recommended this Classic Kit contender via PBO's Facebook page. He said: 'I have a lovely 1984 Honda EX500 generator in my 1984 Scand Atlantic 32 motor-cruiser. It's 1dB quieter than the latest Honda EU series, will power up my 520W dehumidifier – just – and measures less than a 12in cube!'

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Domestic water pump repair

When his boat's domestic water pump started playing up, Richard Hare was relieved to find he wasn't in for a whole pump replacement

Eighteen months on the hardstanding in Suffolk, and perhaps more to the point 12 years of use, had taken its toll on the domestic water pump aboard *Keppel*, my Golden Hind 31.

The pump had developed an ominous hunt/grunt every 5 to 10 minutes. More alarmingly, when it had been switched off overnight it grumbled for a disproportionately long time before it re-pressurised the system.

The obvious fault that sprang to mind was a hose leak downstream of the pump, or a dripping tap. Close examination with a torch – it'll pick up even the tiniest weep by twinkling back at us – revealed this not to be the case. The bilge was bone-dry.

Reluctantly I resigned myself to the fact that the pump was knackered. More expense! But first I decided to call Whale Pump's customer service department and had the good fortune to speak to the knowledgeable Aiden Devlin, who put me at ease immediately by saying it was unlikely I'd need a whole pump replacement, but that the pump head assembly might need renewing. This is the bit at the head of the main pump that houses the inflow and outflow nozzles and the pump diaphragm. The most likely cause of the problem, he said, was that I was suffering from 'leak back'. Leak back is something that comes with age: with pump valves a little worse for wear, and pump sensors confused as result, senile grunting was to be expected. It was a simple job to replace the pump head, and all for the reasonable cost of about £38 – a complete new pump would cost at least £75.

PUMP REFURB SAVED AROUND £40

1 With water drained from the tank and calorifier, it's safe to disconnect the inflow and outflow connections from the pump head assembly. Isolator taps either side of the pump would have avoided the need to drain the system.

2 Before anything is done to electrical connections the main power switch is turned off, after which...

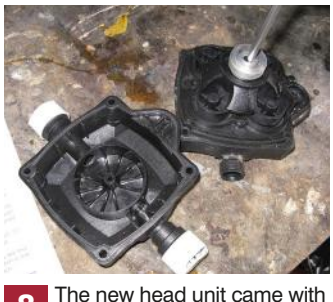
3 ... the insulating tape was removed from the connector block and the motor wires disconnected.

4 Four screws securing the feet are removed and the pump is lifted from its base board.

5 Remove four holding screws to separate the pump head (foreground) from the pump motor. Shown here is the replacement pump head. At the top of the photo is the white switch cap, which...

6 ... must be in the correct position above the small red pressure switch (obscured in this photo) before the new unit is fitted.

7 Here's the old pump head showing definite signs of wear. Note the D-shaped hole of the eccentric spigot.



8 The new head unit came with push-on connector end caps. To retain my screw connector fittings I swapped casings, removing the head unit by undoing a screw accessed via the central spigot.

9 The pump draws water from the inlet to a first chamber and then drives it through four one-way valves to a second chamber. From here it is pumped through the large single diaphragm into a small inner chamber and thereon to the ship's pipework.

10 With the D-shaped centre hole of the eccentric pump aligned with the D-shaped shaft of the motor drive pin, the head assembly can be pushed together and the mounting screws refitted and tightened.

Cleaned, polished and with rejuvenated brightwork, *Skylark* is sitting pretty on her trailer

The forecabin after renovation

Restoring a trailer-sailer

In search of a restoration project, David Tordoff found a neglected Noelex 22 trailer-sailer, moved her into his New Zealand woolshed and started work

ABOUT THE AUTHOR

David Tordoff, from Bingley, West Yorkshire, moved with his family to Dunedin in New Zealand's South Island in 1999. The family were previously members of Coniston Sailing Club where they sailed a Hurley 24 and a Mirror dinghy. They are now members of Broad Bay Boating Club.

Our home overlooks Otago Harbour on the South Island of New Zealand. From our sun deck we see all that is going on at the local sailing club but, frustratingly, full-time work, running a lifestyle farm and family life didn't allow much time for sailing.

However, we had the space to build a boat and after looking at building from scratch – I even obtained the plans for an Oughtred-designed Caledonia Yawl – we decided renovating a trailer-sailer might be a more achievable option. While Otago Harbour is big – just under 20 square miles – it has substantial areas of shallows and, once leaving the harbour, it is a long way to go to the next shelter.

The choice of boats available locally was a consideration since the next large city, Christchurch, is a five-hour drive away. Local enquiries brought to light a couple of Noelex 22s: as I come from the UK this was not a boat I had heard of, but they seemed to have a good reputation here.

Skylark was parked at a local sailing club and had not been used for several years. On first inspection she seemed reasonable for NZ$1,500 (around £750) which included a double-axle trailer, an outboard and two sets of sails. The GRP hull was sound, as were most of the decks. I guessed the hull was watertight by the amount of rainwater in the cabin, but obviously it was getting in somewhere.

A deal was struck and *Skylark* arrived in our woolshed, a perfect fit with plenty of room to strip her out, repair and repaint.

ABOVE ***Skylark*** **in the Otago Yacht Club car park**
BELOW A new hatch gives access to the petrol tank

ABOVE David glassed over the spinnaker chute hole
BELOW ***Skylark*****'s port bunk before restoration**

The spinnaker chute cover was just a piece of ply

Strip-down and strip-out

The first job was to sort out what could be repaired, what needed replacing and what improvements could be made. The interior was a mess. Years of stagnant water had ruined the bench squabs and left a nice layer of mould. The hull covering had similarly suffered, while most of the timber trim had rot and needed replacing.

The main reason for the hull being turned into a water tank was the set-up for the spinnaker. A canvas chute ran the length of the cabin to a large opening on the foredeck: this was 'plugged' by a piece of ply.

In reality the whole thing acted like a funnel, channelling water into the cabin. This was compounded by the cockpit not draining, allowing water into the bilges through a hatch. A complete strip-down and strip-out was required – a long, tedious and dirty job. However, this presented an opportunity to make some alterations to the layout and install electrics.

The Noelex 22 was designed as a family day-sailer with four berths and a cockpit claimed to seat six: I can only assume that people were much smaller in the 1970s. Whatever the case, the sales blurb was a tad optimistic. To make more effective use of the space, one of the coffins – sorry, berths – would become a locker accessible from the cockpit and an internal storage space for a stove and other paraphernalia.

Cutting the cockpit bench necessitated taking a deep breath and many chunterings and skinned knuckles before the locker was completed, but it has been a great success. Two stern lockers were accessible from the outboard well. The port-side locker houses the petrol tank, but access was very poor. A hole was cut in the stern deck and a locker lid fitted, making ingress much easier. I should have done the same to the starboard locker but didn't, which was probably a mistake.

The spinnaker chute was removed to reveal a large hole and less rot than I anticipated. The hole was filled in with marine ply (the decks are glass-covered ply) and faired with epoxy. A chain pipe was fitted at the same time, and the area under the Samson post reinforced.

ABOUT THE BOAT

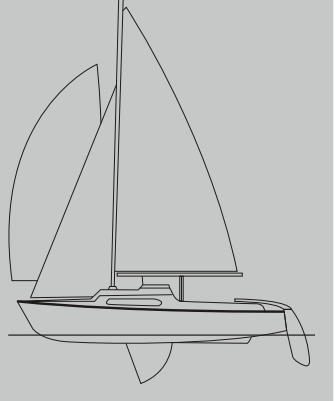
History of the Noelex 22 trailer yacht

The Noelex 22 trailer yacht was jointly designed and developed in 1968 by Dr Noel Honey and Alex Trethewey – hence the name 'Noelex'.

A notable early success was recorded at New Zealand's 1974 National Trailer Yachting Championships, when a Noelex 22 took the open title against a number of established stock designs. By the time of the following year's championships the Noelex 22 class constituted the largest fleet of any single design. The fleet sailed for its own national championship and handicap trophies, the former donated by co-designer Alex Trethewey and won by his original Noelex 22.

The 22 rapidly established itself as New Zealand's most popular trailer-sailer, and its popularity persists to the present day: more than 450 Noelex 22s are registered with the national sports body Yachting New Zealand.

The Noelex 22 Trailer Yacht Association looks after the administration of the class through the sale of plans, registration of boats and the careful drafting of class rules and restrictions.



■ www.noelex22.org

ABOVE All taped off and ready for painting
BELOW The interior is now considerably brighter

ABOVE *Skylark* has a new hardwood rubbing strake
BELOW An electrical system was fitted and wired in

Rudder, tiller and hull

Most of the brightwork was beyond repair, including the rudder blade. Surprisingly, good quality timber can be difficult to source here and tends to be expensive. Softwoods grow very quickly and native species are in limited supply, while exotics are either hard to find or imported. At one point I was offered some recently-felled elm, but only after it had been cut up for firewood!

I bit the bullet and ordered some white oak. Remaking the rudder was a simple exercise in basic woodwork as was replacing the stock, which was reconfigured in ply. The tiller was reasonable, so a few coats of Sikkens took care of that – at least for the time being.

Stripping the hull

All fittings were stripped off the hull and decks, which were then rubbed down in preparation for a repaint.

I think I have managed to blot out of my memory the hours of tediousness spent with varying grades of wet and dry: even the dog decided he would prefer to stay indoors rather than keep me company at this stage. Eventually the point arrived where the repaint could begin, but what to choose? I wasn't sure what paint had been used previously so I plumped for International Brightside. I would be doing the job by brush rather than spray and the boat is kept on its trailer, so the blurb said this was the one for me. Non-slip areas would be tackled with Interdeck non-slip.

At this stage, it's easy to feel you're making progress. You are taping everything ready to paint, so there's just the painting to do then refitting everything, and the job's a good 'un. Don't be fooled.

Electrics and rigging

Having the luxury of a large shed was wonderful, but with a few drawbacks. It was cold in winter – corrugated iron isn't known for its insulation qualities – it was very dusty (my fault for having my workshop in there), and the local wildlife was very good at dropping things from the rafters, usually not the sort of things you want in your coffee or paint. Oh, and we needed to shear the sheep occasionally. All of the small fittings were painted in the cleaned-out shearing shed, but for the boat a cheap plastic tent was very effective.

With the boat stripped out and repainted, an electrical system was fitted as the boat previously had no electrics. Navigation lights were fitted along with LED interior lights.

A NASA Clipper Duet log/depth sounder looked a good option, but they weren't available here at that time: an online purchase, delivered to my brother-in-law in Scotland to

The old rudder blade and stock was beyond repair, so a new one was made: this is the new stock

bring the next time he visited me, solved that one: substantial savings on postage and buying locally – how can a Yorkshireman grumble at that?

All running rigging was renewed and the Murray winches stripped and cleaned. The winch for the centreplate had seized, so that was also dismantled and cleaned. Throughout the whole process I took pictures of everything and uploaded them to an old laptop in the shed so I could see what went where when putting things back: it certainly made things easier.

Skylark had a pulpit but no other guard rails. Trade Me, an online auction site, provided me with a set of stanchions, wires and a decent-sized anchor. Stern rails had to be fabricated locally, but I managed to get these done for the cost of the materials through a local training institution. To get the correct fit I made a full-sized replica out of plastic piping, which was then copied in stainless steel: it was a relief when it fitted.

A new rubbing strake was made from a hardwood decking timber, fitted and painted with Sikkens. The washboards were rotten so they were replaced with new ply ones. The hatch trim was replaced with oak, as was the step into the cabin (which also houses the centreplate winch).

Into the water – and out again

Once the stanchions and wiring were fitted I could sort the interior. Repainting with Brightside improved things considerably, and the cabin sides were recovered. Light ply trim was fitted to brighten things up. The bunk/seat cushions were all beyond repair and covered in mould: the ply bases were used as a template and a local firm made a complete new set. This was one of the most expensive parts of the refit, costing more than NZ$1,000, but they made a far better job of it than I would have done.

The engine is a 9.9hp Johnson of 1970s vintage and, not being a mechanic, I had it serviced locally. Apart from a blocked cooling system, it worked fine.

Over Christmas (it's summer here then, remember) we wanted to take *Skylark* on holiday to Akoroa, a superb enclosed harbour near Christchurch. Trailers in NZ have to have a warrant of fitness, like an MoT, every six months, and are registered separately to the tow vehicle. The local garage took one look and wondered why it had not fallen apart on its way to the test: it was in far worse condition than I had thought. Getting a replacement trailer in the weeks before Christmas proved a challenge. Locally they are made to order and there was no time for that, so I ended up getting one from the other end of the country – a major expense I hadn't anticipated.

***Skylark* under sail with David at the helm on the water in Otago Harbour**

Poor weather prior to Christmas along with the trailer fiasco meant we didn't get a test sail before setting off, so it was no surprise that things didn't quite go according to plan. Trailing the boat behind the Range Rover was a dream: no problems there. We were booked into a motel within yards of the rented mooring so we launched *Skylark* on Christmas Eve with the intention of leaving her there while we visited our daughter in Christchurch.

On the way to the mooring, I noticed bubbles coming up the centre case. The problem was at the centreboard pivot – the one thing I had not taken out and replaced. Unfortunately the leak was sufficient to make us take *Skylark* out of the water rather than risk just seeing her masthead sticking out of the water when we returned in a few days.

Back in action

Once we were home in Dunedin the leak was sorted and we were back in action. Since then we have had a few cruises on the harbour and went back to Akaroa in early 2013. This time we had plenty of good sails with few problems. The Noelex is a capable day-sailer, but is cramped inside. Locally they are an active racing class, the rig being based on the Flying Dutchman.

Was the restoration worth it? Yes, it was challenging at times and I made a few mistakes – eg not taking out the centreboard and resealing everything – but I learnt a lot from it. There are changes to make: that extra locker lid, for instance, and a better configuration for the outboard well, which at the moment acts like a water brake. The paint job looks good, although there has been a bit of flaking where there was standing water in the cockpit. The tiller has now been replaced and the stock fitting beefed up with stainless bolts rather than screws.

Would I do it all again? Probably, when I have had a good look at the plans for Iain Oughtred's Tirrik and worked out how to fit it in my new, much smaller, workshop.

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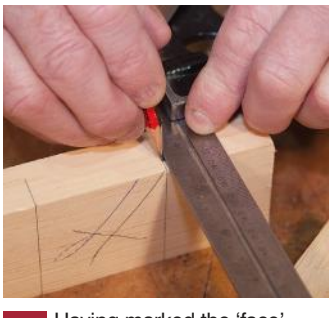
WOODWORKING SKILLS

How to make a Cross halving joint

Halving joints are used for framing and are made from two pieces of wood of equal thickness. Richard Johnstone-Bryden shows how it's done

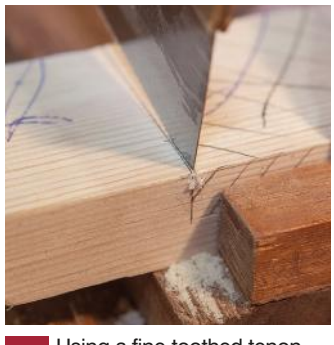
The finished cross halving joint should be a firm fit

There are several derivatives of halving joints including cross halving, tee halving, mitred halving and dovetail halving joints. A cross halving joint consists of two identical halves. In use the vertical half is known as the divider while the horizontal piece is called the rail. In terms of strength it makes no difference which way the two pieces run, although the boatbuilding convention is that the divider should appear to run through the rail.



1 Having marked the 'face' side of the two pieces to be joined, mark out the shoulder lines on the first half of the joint using a set square.

2 Use a marking gauge from the 'face' side of the wood to mark the depth of the recess. To ensure the exact midpoint, check the marking gauge from the other face as well and adjust for any small discrepancy.



3 Using a fine-toothed tenon saw, cut the first shoulder line slightly to the waste side of the pencil mark.

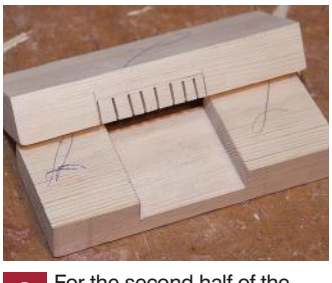
4 To make it easier to remove the bulk of the waste with a chisel, cut a number of relief lines – known as saw kerf – into the waste wood to create several small slices.

5 Remove the bulk of the waste with a chisel, cutting upwards at an angle towards the middle. Repeat the process from the other side before cleaning up the ridge left in the centre.

6 Work inwards from the scribed line left by the marking gauge to remove the final thin layers of waste wood.

7 Check that the bottom face of the recess is true with the side of a chisel or set square.

8 Using the piece you've cut, mark out the second half of the joint before ensuring the line is absolutely square.



9 For the second half of the joint, follow the same procedure for marking, cutting and chiselling as you did for the first.

10 With the second joint cut, check the fit between the two halves: ease the divider into position over the rail.

11 Having established that the recess in each half has been trimmed to the right width, press the two halves together: they should be a firm, not sloppy, fit.

12 As a final check, use a set square as a straight edge across the joint to ensure that both halves are completely level in relation to each other.

Description of techniques and demonstration by Ian Cook, joinery instructor at the Suffolk-based International Boatbuilding Training College (IBTC). ■ www.ibtc.co.uk

Great ideas and tips from PBO readers

Email your projects and tips to pbo@ipcmedia.com or write to us at the address at the top of page 5. We pay at least £30 for each one published

Bob's original hatch cover was looking tatty after 35 years

PBO PROJECT OF THE MONTH

Hatch lid refurbishment

COST AROUND £20

Finished job looks much smarter

Bob Tuffnell repairs and veneers a shabby hatch lid for that 'just varnished' look

Does your wooden main hatch look rather tatty? After 35 years on *Dauphin Blanc*, my Macwester 27 Series II, it was time to do something more than just try some magic varnish.

The easy way out would have been to fill it and paint it white, but I wanted to keep the varnished wood look.

Asking around, I found a pal who has a chum in the timber industry, and was able to get me some offcuts of the 4mm stuff used to manufacture plywood. I'm not quite sure what the botanical name for it would be, but it is a nice colour, has good straight grain and is free from knots.

It's also thin enough that once added to the hatch it would still slide under its garage without fouling. And all it cost me was a very good bottle of Bordeaux!

I got down to work, first to manufacture a temporary 'flat hatch' to keep the boat shut during the refurbishment. This also meant making a matching washboard, without the curved top: in fact, it will not be so temporary after all as it can be used every winter, so that the varnished wood hatch can stay warm and dry in the workshop at home during the bad weather.

Once I got started I soon found that the situation was more serious than I'd thought: the rot had got in under the veneer in two areas, so it was out with the chisel to scarf in a marine ply patch, glued in with epoxy.

Now it was time for the serious bit: mixing up epoxy glue to the right consistency, like treacle, and finding enough clamps and weights to hold the new veneer firmly in place while it cured. This was made trickier because I was using offcuts and needed three pieces butted together to cover the hatch.

Trimmed back to sound wood ready for a new piece of ply to be scarfed in

A bag of sand and divers' weights hold veneer down while the epoxy cures

The glued veneer in place before trimming

Scraping off the excess glue from the joins

Fortunately I do a bit of scuba-diving, and at our club we have a good stock of leads. I borrowed all I could get my hands on, but still also needed a 35kg bag of builders' sand.

I first applied a coating of glue to the hatch, without letting it cure entirely, about 15 minutes before coating the underside of the veneer, and then clamping and weighting it in place.

Finishing off after carefully trimming the excess consisted of impregnating the new surface with two-pot (very thin) wood sealer, and lots of sanding before and between coats of two-pot varnish.

■ This article was first published in the autumn 2011 issue of The Macwester Journal, the magazine of the Macwester Owner's Association, **www.macwester.org**

Tub -tastic

PBO Reader Tip

Seeing the tip by Peter Bevan on the use of a plastic garden tub for locker storage in the April issue of PBO prompts me to pass on a further use for these tough, flexible containers.

With a number of drain holes drilled in the bottom of the tub I have found it ideal for holding anchor warp and chain in the bow anchor locker of my Jeanneau. It keeps everything clear of the locker drain hole, moulds itself to the shape of the locker and the handles make it easy to lift out.

And of course they come in a variety of sizes. How many more uses can we find for these things aboard a boat?

COST FROM £2

Dick Wright

Staying buoyant

PBO Reader Tip

Bottle it

In PBO March I read with interest a reader's query about foam filling of his dinghy's buoyancy tanks. Part of the expert's reply was that he could put blocks of polystyrene inside via the inspection hatches, but over time they would be liable to soak up water and crumble apart.

My solution to this problem, when I sailed a Wayfarer, was to fill any space in buoyancy tanks with empty plastic 1- or 2-litre water, soda, tonic or coke bottles. They can't soak up water, and being cylindrical won't lie flat against the wood to create damp areas that can't dry out.

As an added bonus, you could always fill one up with water, wine or whisky depending on personal preference as a treat to end a good sailing day!

David Finch

Ping-pong floats

Regarding Martin Lloyd's query about filling voids (Ask the experts, PBO March), fill voids with ping-pong balls in a nylon fishnet bag. They can be removed easily, washed and used again.

Roger Burrows

Popular outboard brackets

PBO Reader Tip

I quite often sail single-handed, when towing by tender would be rather tricky (PBO April 2014).

Several years ago I built a plywood outboard bracket to fit my boarding ladder – very similar to that made by Les Cowan in last month's PBO. The photo shows its very simple construction and how it is easily lashed into place.

COST: ONLY A FEW £s

I have only had cause to use it once – when I motored from Scilly's eastern isles back to St Mary's on a calm day.

Also just visible in the picture is the 2x1 timber that I fix all around the top of the guardrails to protect the winter cover from stanchion damage in the wind. One arris needs radiusing. The extended life of the cover has paid for the wood several times over.

Roger Howell

Filling holes for bolts

PBO Reader Tip

Need to fill, resin or glassfibre an enlarged bolt hole?

COST FREE

Wrap sticky tape round the bolt with the sticky side out and fill round the tape. When the filler has set, remove the bolt and then the tape. The size of the clearance can be adjusted by using different tapes or the number of layers of tape.

Greg Manning

ABOVE Wrapping a bolt with tape before filling the enlarged hole stops the filler sticking to the bolt

Spice racks fill a gap in the galley

PBO Reader Tip

To ensure we could still cook and eat as we do at home on our round-Britain cruise in our Jeanneau 42DS, we wanted to take plenty of herbs and spices with us.

Of course all those jars take up storage space and can fall all over the place even in a locker. I noticed that there was a rather deep ledge behind the drop-down doors of two of the cupboards in the galley. Having checked the depth it seemed this would be the ideal spot for the jars.

My husband found some oddments of teak left over from another of his boat projects and acquired some Perspex strips.

To prevent cracking he pre-drilled some holes into either end of the Perspex strips and allowed for the screws to be countersunk, then screwed a piece of teak to either end of the strip and used some small angle brackets he had knocking around in the shed to attach each rack to the inside of the cupboard doors, ensuring the screws did not emerge through the front of the cupboard.

We have spices in one cupboard and herbs in the other.

We used teak scraps and the Perspex came free, so the only cost was for a few screws.

Shauna Peacock

COST AROUND £1

Keeping tabs on battery health

Monitoring battery temperature is a great early warning system for preventing costly damage, says Colin Haines

Colin's NASA BM1 battery monitor alerted him to a developing problem before it became critical

A few years ago we set off on a summer cruise, heading towards Gothenburg and a trip through the Göta Canal to Stockholm. All went well at first, but as we made our way up the Swedish coast I began to notice that the voltage of the boat's domestic battery bank was going down faster than could be accounted for by the amount of power we were using.

The boat has three batteries, each inside its own battery box secured to the cockpit locker bases. Getting at them requires the lockers to be emptied, so finding out where the power was vanishing was a job best done in a calm marina with a shorepower supply.

The cause of the loss was obvious as soon as I felt one of the batteries: it was pleasantly warm to the touch on a cold day. Clearly it had some form of internal short, and was drawing power out of the other two batteries. Isolating the warm battery was a temporary cure, sufficient to get us to Gothenburg without any problems. Replacing the failing battery once we got there was very expensive, adding to my motivation to avoid any repeat of inconvenient battery failure.

Useful information

It was my boat's NASA BM1 battery monitor that alerted me to the developing problem before it became critical. These devices record how much power is taken out of a battery and how much power is recharged into a battery or bank of batteries. This is all good and useful information, but there is another matter to think about – how good are the boat's batteries at doing their job?

When a battery begins to fail, there are generally two reasons. One is because the lead oxide paste on the walls of the lead plates falls off and accumulates in the bottom of the battery. When enough builds up to reach the lower edges of the plates, it allows a current to pass though it, and if enough accumulates there it can cause the battery to suddenly die. The other reason is due to the lead oxide on the plates turning into lead sulphate, preventing the battery from functioning.

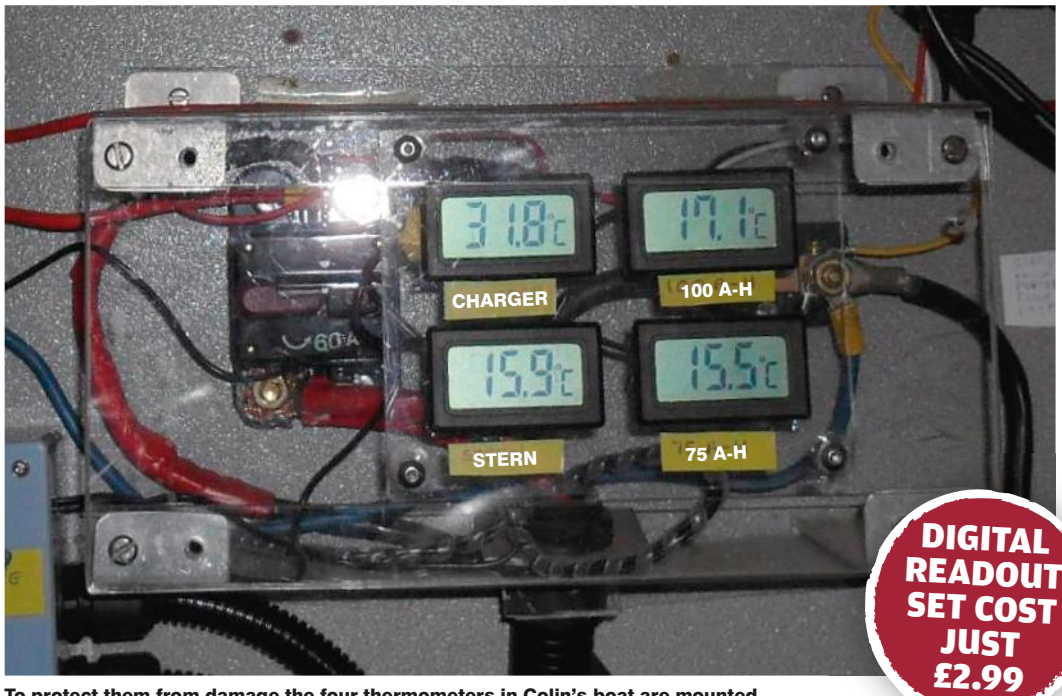
In both cases electricity will flow through the battery, but the resistance is higher provided the battery is not totally 'dead'. This means that when a current is forced though the battery it will get warm, just as it will also warm up if a small internal short is acting like a heater, drawing power from the other batteries in the system. How warm it gets depends on the current and how badly damaged it is. Therefore, to get an early warning of the first signs of failure, monitoring the battery temperature is a good guide.

My boat has a bank of three batteries, none of them the same. There is a 100Ah 'sealed' battery in the stern, a 100Ah 'wet' battery and an 85Ah 'wet' battery. All of them will have slightly different resistances to a current flowing though them.

I can only measure the specific gravity of the two 'wet' batteries to see what charge they are taking, but they are at the bottom of a locker where access is very inconvenient.

Another solution to finding out if any battery is starting to fail is to simply touch it with one's hand and find out if it feels warm. But hands are not calibrated, and batteries should be stowed inside battery-boxes secured in a low position to the boat, rendering them difficult to get at just to find out if they feel warm.

The answer is to use dedicated thermometers to monitor each battery. The installation on my boat has a strong Perspex guard over the junction between the battery bank and the 60A overload trip that protects all the domestic circuits, regardless of their own protections. The shunt for the battery bank's BM1 monitor is also behind this cover. Why transparent Perspex? It means that all protected items are easily visible.



To protect them from damage the four thermometers in Colin's boat are mounted on a piece of thin transparent Perspex fixed to the main fuse connections cover

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Fully protected

The four thermometers are mounted on a piece of thin transparent Perspex bolted to the inside of the main cover, and are thus fully protected from accidental damage. Each thermometer has its own pair of button cell batteries that cannot be turned off, so changing them does mean that their mounting plate has to be extracted from behind the main cover. Four years on they're still running however, so it's not a job that has to be done very often.

The thermometers come with a small shiny metal sensor on the end of a thin cable about 1m long

Colin's nav station with three primary sources of information clustered together: 'Where am I?' GPS; 'What's the weather doing? Navtex and barometer; 'How much power is left?' battery monitor positioned where it can easily have an eye kept on it

which gives the temperature signal back to the thermometers. A metre of the thin two-core cable isn't long enough to reach the batteries in my installation, but this is not a problem. The resistance of the sensor is 7,000 Ohms, so cutting the cable and adding in some extra cable with a resistance measured in fractions of an Ohm won't make any significant difference to the reading. It only needs care to be taken that the connections can't get corroded by a marine environment and produce false readings.

Clearly the small metal sensor needs to be in direct contact with the battery, and remain there regardless of the boat's motion. If it is bonded to the battery, it will be ruined when the battery is removed for any reason. The hi-tech answer to this difficulty is to use a small lump of Blu Tack over the top of the sensor, which sticks nicely onto a clean battery case and ensures the sensor has a good thermal contact.

Consistent readings

A search round the internet will soon show there are plenty of suppliers offering suitable thermometers at a reasonable price. I paid £2.99 for all four thermometers plus postage. I have no idea if any of them tell the truth: it is a bit much to expect precision from a digital thermometer that cost 75p complete with batteries.

In this application, precision is not important. All that is needed is for the instrument to be consistent about the temperature it claims to be reading, even if it is not telling the truth. When this rises without a reasonable explanation such as increased ambient temperatures, then it is an indication that the battery might be starting to fail.

Searching on the internet for 'digital thermometers' will bring up a host of thermometers for measuring anything from the temperature inside your ear to that of a distant object.

Searching for 'aquarium thermometers' or 'fridge freezer thermometers' is more productive. These devices have the sensor on the end of a cable that can be lengthened, instead of being hidden inside a fancy plastic housing.

Battery hell

The observant person will notice that there are four thermometers for the three domestic batteries on my boat. The fourth thermometer reports its opinion about the temperature of the Stirling battery charger, allowing me to check that it is not overheating for some reason.

I did consider monitoring the engine's starter battery temperature, but decided that it was pointless due to heat from the engine warming it up. Besides which, starter batteries tend to live in battery heaven as they are fully recharged as soon as the engine starts, and thus have a very long life. Domestic batteries live in battery hell, constantly at risk of being discharged to the point of being permanently damaged, and therefore have an unpredictable usable life.

■ PBO tested 7 battery monitors in the July 2013 issue. You can buy the article online from www.pbo.co.uk by clicking 'Find PBO articles', or call the Copy Service on 01202 440832.

Walloped by a waterspout

John Tylor's winter sail off New South Wales turned nightmarish when thunderstorms hit and his Duncanson 35 was knocked down after ploughing into a waterspout

The east coast of Australia is a fascinating place to sail. During the winter an intense low-pressure cell can form, termed an east coast low. These storms bring high winds with an accompanying rough sea and torrential rain. Fortunately these can generally be predicted with some confidence, so we tentatively set out on our big trip.

We were sailing from Sydney to the Whitsunday Islands about 1,000 nautical miles north. We were a few weeks into our (very slow) winter trip along the mid-north coast of New South Wales when we heard the forecast for a southerly wind up to 25 knots, 2-3m seas, a few showers and the possibility of a thunderstorm. Not too bad: we had experienced worse, and with the forecast southerly we expected a quick trip to our destination of Coffs Harbour.

However, not everything went as we anticipated. We had little wind for the morning, but the forecast of rain was right. By noon, a few storm cells were forming way down to the south-west and the rain increased. An hour later, not only had several storm cells developed but they were moving fast and heading directly towards us: even more rain, this time very heavy. Now there were many heavy black squalls, and their angle of approach made it impractical and unsafe to head further inshore in the hope of avoiding the line that by now stretched across the whole southern sky.

My 35-year-old GRP Duncanson 35 is a solid sea boat. With a furled jib and reefed main we were handling the conditions well, but then the storm cells grew larger and started moving faster right over us.

During my Coastal Skippers' course, I remember the meteorology teacher mentioning that if the clouds look dark purple or green and frightening, the picnic is over: this described our clouds precisely.

He also described in detail the thunderstorm-related phenomenon of a waterspout or tornado on the water. The damage these cause is not due so much to the circulating winds, which can be severe enough, but to the intense low pressure in the column. The sudden change in pressure has ripped the decks off hapless yachts that have been hit by these whirling storms.

Anything but boring...

So when I looked out to sea and saw a dark funnel forming below an ugly purple cloud, I knew this trip would be anything but boring. By the time the funnel touched the water surface it was close enough that we could see the sea boiling around it: we had a real-life waterspout. I started the engine, removed all remaining sail and steered away from the centre of the increasing number of funnels: by now my heart rate was matching the engine revs.

Coffs Harbour, the nearest safe port, was

ABOUT THE AUTHOR

Retired electrical engineer John Tylor has been sailing for 35 years. He and his wife Patsy explore the east coast of Australia when they can, and have cruised from Tasmania in the south to the Whitsunday Islands in the north.

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still about 15 miles north-west of us so we radioed the conditions and our position to their marine rescue station: although if we were forced to abandon ship in these conditions I did not fancy our chances of surviving, even with our liferaft.

Donning lifejackets and harnesses, and checking that the deck gear was still secure and the washboards were in, we completed our preparation. We had four on board so one person was on the wheel, two of us were spotting for spouts and one was below so we had space in the cockpit.

All went relatively well: we avoided five spouts before seeing a rapidly circulating patch of water about 2m high that had suddenly formed directly ahead. We turned to avoid it, and as we came off a wave we ploughed straight into another we hadn't seen in the now 3-4m waves.

We were suddenly hit by more than 60 knots of wind that seemed to come from all directions at once. The boat was on its side for about 30 seconds, then as the wind passed on it came upright again and continued on its way as if this was normal. It all happened so fast we could do little more than hang on. Despite being securely tied down everything on deck flapped, the dinghy danced up and down and the solar panel vibrated violently – we had plenty to talk about for the next hour as we watched the storm move on out to sea.

A measure of luck

There are few things as worrying as being hit by a severe weather event. If we'd had a choice we would not have been out there at the time, but our overnight anchorage at Trial Bay was exposed and we needed to get to Coffs Harbour for shelter in any case. Our preparation was good and we had a good boat, but I think we also had a measure of luck – the forces and effects could have been much stronger.

In all, we counted more than 15 spouts. We arrived at Coffs Harbour three hours later, just on dusk. The talk around the marina was all about the waterspouts: 'Did you know that some people had been caught out in them'? We just smiled and replied that we had seen them too. PBO

What is a waterspout?

The Australian Bureau of Meteorology defines a tornado as 'a rapidly rotating column of air between 5m and 1,000m in diameter... attached to the base of a cumulonimbus or large cumulus cloud and capable of producing damage at the earth's surface. Tornadoes may form waterspouts when they occur over water'.

Waterspouts can move across the sea surface at speeds ranging from two to 80 knots. They have a five-part life cycle: formation of a dark spot on the water surface, a spiral pattern on the water surface, formation of a spray ring, development of the visible condensation funnel and finally decay. At any stage the funnel can become difficult to see, particularly at the decay (also called rope) stage. Waterspouts do not suck up much water: the funnel is actually condensed water vapour formed by the intense low pressure inside the vortex.

The Fujita-Pearson scale quantifies the damage possible by various wind speeds within the tornado column: Force 0 is the minimum-strength wind and begins at about Beaufort scale 11 (56-63 knots). It goes to Force 5, with 261-318 knots of wind. Waterspouts almost always form in thunderstorms, with super cells (which contain stronger updraughts) generating the most energetic ones.

There are two types of waterspouts. The first forms over water: these are called fair weather waterspouts and are generally not quite as energetic as the second type, tornadic waterspouts, which form over land before moving out over the water. However, both types are dangerous and yachtsmen and people who live near the sea and big lakes should take waterspout warnings seriously.

During the 2001 Sydney-Hobart Yacht Race, the yacht *Nicorette* was struck by a severe waterspout that had formed within a super cell thunderstorm off the south coast of New South Wales. The spout passed very close to the yacht, which was severely damaged. They completed the race, but *Nicorette* recorded wind speeds close to 100 knots and was struck by hail the size of golf balls.

There was no forecast of waterspouts or tornados when we set out, but they're difficult to predict. The atmosphere, especially near storms, is unstable so it is almost impossible for computer models to work out if the conditions will form such a severe weather event. Sometimes there is a communication delay issuing warnings to coastguard stations so it is up to us to make an assessment.

*Send us your boating experience story and if it's published you'll receive the original Dick Everitt-signed watercolour which is printed with the article. You'll find PBO's contact details on page 5.

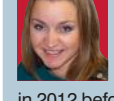
6 electric cool boxes

PBO TESTED

There's apparently no need for frozen ice packs if you have an electric-powered cool box: just plug it in and it stays cold! But is that true and at what cost? Laura Kitching and a PBO test team report

THE PBO TEST TEAM

PBO editor David Pugh originally trained as a scientist. He jointly owns and sails a Contessa 26 out of Poole harbour.



PBO news editor Laura Kitching was the Dorset Echo's Olympic sailing correspondent in 2012 before joining PBO. She has crewing experience along with RYA qualifications in windsurfing and powerboating.

Alan Watson trained and served as a Merchant Navy Electronics Officer and holds a Board of Trade Certificate for the maintenance of radar. He now runs UK Radar and Navigation training courses for Raymarine.

A picnic always tastes great at sea, and for boats without a built-in fridge a portable unit or an electric cool box would seem to offer an obvious solution for keeping food and drinks cold on a hot day or over a weekend.

But are these portable mini fridges as cool as they look, and are they really that much better than an insulated chilly bin kept cold by freezer blocks?

With summer fast approaching, a PBO test team trialled four electric cool boxes and two portable fridges to see if the power consumption required to keep them working would bring sailors out in a sweat.

Prices for the units tested ranged from a best online price of £45.99 to a whopping £750.

How we tested them

Aboard Alan Watson's Nelson 42 motorboat *Trinity Star* in Hythe Marina we powered the units in batches using stabilised power supplies delivering 13.8V. We checked current draw with a digital multimeter.

To monitor the cooling, we inserted a thermocouple into the centre of each cool box so that it hung in free space. The temperature could then be read from dedicated digital displays outside the boxes. To check the calibration of the sensors we held the probes in a glass of ice cubes; both probes measured -0.5°C, suggesting that they were telling the truth. During the test the air temperature inside the boat was 24°C.

For the two portable fridges, both of which have thermostatic controls, we timed how long it took each unit to lower the inside temperature to 4°C and then measured the performance at maintaining this temperature. The lids were kept closed throughout the tests.

For the cool boxes without controls we timed how long it took them to reach their lowest temperature and noted what that temperature was.

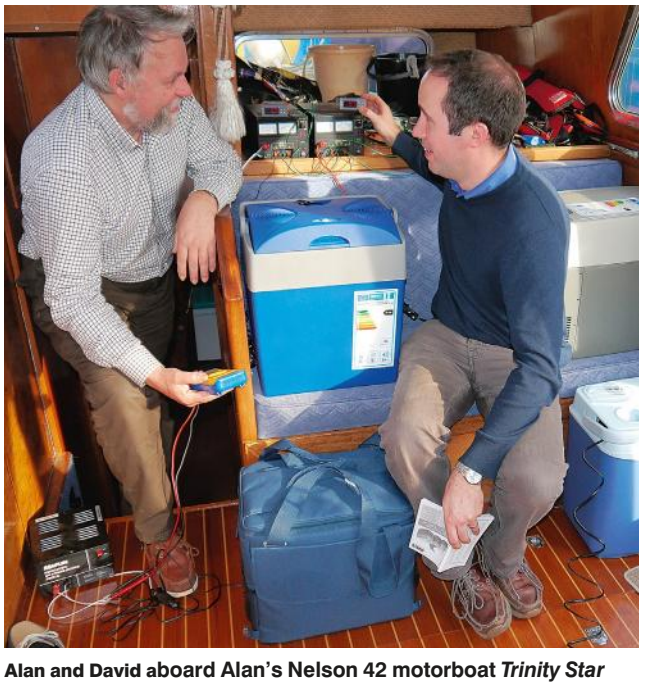
We then switched off the power supply and timed how long it took each unit to warm up by 5°C, which gives an indication of each cool box's insulation properties.

We used cubes of ice to confirm the accuracy of our temperature gauges

We measured the noise level of the cool boxes using a Studio Six Digital app.

With the onboard test complete we set up a longer-running test in the PBO office to see how each electric cool box performed after being powered up for more than 24 hours.

As a guideline, a domestic fridge should maintain a core temperature of between 3°C and 5°C – ideal for food storage. After being left on full power for more than 24 hours we felt that each cool box ought to be as close to these figures as it was likely to get. The units were competing against an ambient temperature of 24.7°C.



Alan and David aboard Alan's Nelson 42 motorboat *Trinity Star* testing the current draw of the cool boxes

Peltier cool boxes

Peltier coolers use electricity to 'pump' heat across a junction of dissimilar materials. Cool boxes of this type can typically drop the ambient temperature a maximum of 20°C.

Campingaz Powerbox 24L Classic

PRICE: £69.99 (from £43.99 online)

Contact: www.campingaz.com/uk

Power: 12V · Volume: 24lt · Weight: 3.5kg

Dimensions: 29.5cm x 39.5cm x 44.5cm

Very light and portable: the lid locks by closing the handle on one side, although the lid is a little shaky and lacks a proper rubber seal, which surprised us. No space is taken up by the workings inside the box, however – all the mechanics are in the lid. Our testers found it was fiddly to extract the power lead from its storage in the lid.

The Campingaz model drew 4.8A while getting down to temperature and then settled on 4.44A to maintain it. This is in line with the 4.5A draw claimed by the manufacturer's literature.

There was no temperature adjustment possible – the unit settled on 9°C on board *Trinity Star*, but got colder during the 24-hour test. We measured a noise level of 53dB.

INSULATION Once the power was switched off the unit took 16 minutes to gain 5°C in temperature.

24-HOUR TEST The Campingaz Powerbox achieved a lowest maintainable temperature of 5.6°C.

Waeco Mobicool U32

PRICE: £69.99 (available online for £64.99)

Contact: www.marine.dometicgroup.com/en

Power: 12V/230V • Volume: 29lt • Weight: 4kg

Dimensions: 30cm x 39cm x 44.5cm

This cool box is at the cheaper end of the Waeco Mobicool range. It was fiddly to get the power lead out, although there was a neat sliding lid covering the cable pocket. The unit has a seal around the lid to assist with insulation, and the lid has a clever option of being able to be propped open using the handle – a neat piece of design. It was slightly heavier than the similarly-priced Campingaz cool box, but tester Alan was happy to put up with the extra weight. 'It's worth it for the features and it's easy to carry.'

When running, the Mobicool U32 seemed noisy: we recorded a 'penetrating, grumbly' 55dB noise level (the packaging says the unit should only produce 39dB).

There's no temperature gauge, but a dial on the front of the unit allows you to turn the temperature up or down. When set to maximum cooling it settled on 8.7°C on board the boat, drawing 4.53A.

INSULATION Once switched off the Mobicool U32 took 11 minutes to rise in temperature by 5°C – quicker than the Campingaz model with its unsealed lid.

24-HOUR TEST Lowest maintained temperature was 7°C.

Compressor fridges

Just like a domestic fridge, these cool boxes use a motor-driven compressor to compress and cool refrigerant gas

Waeco TropiCool TC21

PRICE: £180 (available online for £168.99)

Contact: www.marine.dometicgroup.com/en

Power: 12/24V DC or 230V AC • Volume: 21lt • Weight: 6kg

Dimensions: 30.5cm x 42cm x 45cm

This has a nice wide handle which tucks away tidily, although from its folded-down position it's tricky to lift it back up again. Once open, it provided an easy-to-carry bit of kit. The unit was fairly bulky but not as heavy as some of its counterparts. The lid is secure and did not fly open even when tipped over. A magnetic switch deactivates the fan when the lid is opened so all that cold air is not blown away.

This cool box is the only one to exploit the ability of Peltier heat pumps to heat as well as cool, and claims the ability to reach a temperature of 65°C. We didn't test this feature, and couldn't think of a convincing use for it on board.

Buttons on the front panel switch between heating and cooling mode, and allow you to adjust the cooling level. We set the cooler to maximum throughout the test.

For noise levels we recorded 54dB – a bit higher than the 41dB stated on the pack and noisier than the compressor fridges.

During initial cooling the TC21 drew 4.41A. It eventually settled on a temperature of 9.5°C and drew 4A to maintain that temperature.

INSULATION Once switched off the TC21 took a commendably long 23 minutes before the temperature had risen by 5°C.

24-HOUR TEST Best temperature achieved was 5.6°C after it had been running on maximum cooling for 24 hours.

Mobicool S32 Electric Cool Bag

PRICE: £69.99 (available online for £49.95)

Contact: www.marine.dometicgroup.com/en

Power: 12V • Volume: 32lt • Weight: 2.9kg

Dimensions: 19cm x 40cm x 46.5cm

First impressions were great. The design has a lot going for it for small-boat use as it folds flat when not in use and has poppers to keep it folded. A small round lid inset into the main lid saves losing valuable cold air when you're reaching for the milk. Boasting lots of pockets, it also has the biggest capacity on test – though not all that capacity is inside the chilled compartment.

It was by far the easiest of the test products to carry. The downside to its soft-bag portability and fold-up usefulness is that cooling capacity is not as good as the other products tested.

There is no temperature adjustment and the cool bag eventually settled on 13°C – but took a long time getting there. It drew 3.5A at first before settling down to 3.2A to maintain temperature. The fan noise registered at 51dB –the quietest Peltier device tested.

Alan observed: 'It would have been worthwhile for the designers to have put a bit more insulation in it and it wouldn't have added much to the weight or lost much of the volume. Perhaps giving it a head start with some ice blocks from home would be a good way to preserve your food for longer.'

INSULATION The Mobicool S32 Electric Cool Bag took just 9 minutes to lose 5°C of chill – warming up at a rate of more than half a degree a minute.

24-HOUR TEST The S32 Electric Cool Bag struggled to combat the 24.7°C ambient temperature of the PBO office – the coolest it could achieve was 13.8 °C.

Waeco CoolFreeze CDF 16

PRICE: £430

Contact: www.marine.dometicgroup.com/en

Power: 12/24V • Volume: 15lt • Weight: 11.5kg

Dimensions: 26cm x 37cm x 55cm

This was quite awkward to carry, being a long, thin shape with side grips rather than a handle. Tester Alan said: 'It feels like a rock climbing expedition – holding on with just your fingertips, and you have to rotate it to get through any door.' The lid hinges at the same end as the control panel – an odd arrangement which means the display will be at the back in normal use. The lid is long, so you'll need height above the fridge to open it.

There is a lock on the lid and a light inside.

There's an 'emergency override button' in case the electronic controls fail. When activated, it switches the compressor on permanently and will eventually freeze the food or drink inside.

We set the thermostat to 4°C: the CoolFreeze then ran until the display read 2°C before switching off. It them allowed the reading to rise to 6°C before switching on again, thus averaging 4°C. Current draw with the compressor running was 3.3A – among the lowest on test.

The fridge took about 90 minutes for the internal temperature to stabilise, after which the displayed temperatures were within 10% of our measured values.

In our test conditions the fridge ran for 10 minutes from the switch-on point to the switch-off point, taking a further 22 minutes before switching on again. This gives a duty cycle of just over 30%, and an average current consumption of around 1A. The noise level was recorded at 42dB – the quietest on test.

INSULATION From switch-off it took 35 minutes before the temperature inside rose by 5°C, which was equal best on test.

24-HOUR TEST The Waeco CoolFreeze was maintaining 4°C, although it would fluctuate a few degrees either side of that.

Vitrifrigo C29D

PRICE: £750

Contact: www.penguinfrigo.co.uk

Power: 12/24V as standard, but upgradeable to multivoltage

Volume: 29lt • Weight: 15kg

Dimensions: 34.5cm x 39cm x 53cm

This hefty bit of kit is not something you'd want to carry far – even when empty. Our testers could only get three fingers in each of the handles, making it tricky to get a really good lifting purchase. 'Transportable, not portable' is how Alan described it.

Features included a good lock on the lid, a drinks holder on top and a light inside. The unit features controls on the side with an LED digital thermostat and it also boasts a USB connector, with power out.

There is provision to secure the fridge as a permanent fixture, but if you place the unit where it's convenient to open the lid, the control panel ends up awkwardly located at the back.

This Vitrifrigo portable compressor fridge/freezer is said to run from +10°C to -15°C, and has a thermostat.

Like the CoolFreeze, the Vitrifrigo took about 90 minutes for the internal temperature to stabilise. However, our measured readings remained consistently around 3° higher than the unit's own display claimed.

To compensate for this and make the comparison fair, we turned the unit down 3°C to a set point of 1°C. This then gave us an average reading of 4°C on our temperature probe. The Vitrifrigo had a 2°C spread around the set temperature, turning off at an indicated -1°C and on again at an indicated 3°C. In our test conditions cooling took around six minutes, after which the compressor would remain off for approximately 15 minutes, giving a duty cycle just under 30%.

The Vitrifrigo had a current draw of 2.4A with the compressor running, which averaged over the duty cycle gives a consumption of about 0.7A. The noise level when running was a fairly quiet 45dB.

INSULATION On switching off, it took 35 minutes before the temperature inside the Vitrifrigo rose by 5°C – equal best insulation result of the test.

24-HOUR TEST We started the test with the fridge thermostat set to 1°C, as we had found necessary on board. This proved fairly accurate – after 24 hours the temperature averaged around 3.5°C, so a set point of 1°C to 2°C would be appropriate.

If buying this or any other fridge, these results suggest that a fridge thermometer would be a good investment.

Making connections

Connection to the 12V supply is via an IEC in-line plug – the reverse of a standard kettle lead connector. Our testers found this to be an odd choice, as the pins are live and possible to short when the lead is plugged into 12V. Also, the lead could potentially be connected to the mains if plugged into a kettle lead.

A spokesman for Penguin Marine Refrigeration defended the Vitrifrigo's plug design. He said: 'Your engineering expert is correct that the pins would be live if the socket was plugged to the DC power supply and not the fridge, but the metal pins are recessed in the cover of the plug and cannot easily be bridged.

'Vitrifrigo use this plug because it provides a very good connection which avoids voltage drop when the compressor is trying to start – very important in a DC compressor fridge.'

PBO verdict

Although the Peltier coolboxes were good at initially reducing the temperature inside the box, the fact that the technology becomes less efficient as the temperature differential increases left them lagging behind the compressor fridges.

Even after 24 hours, none of them were able to achieve the 4°C necessary for keeping food fresh, although the Waeco TropiCool came close at 5.6°C.

The other inescapable conclusion from the test is that compressor fridges are much more efficient to run than Peltier-cooled devices. The lowest current consumption achieved by a Peltier cooler was 3.2A. As these units run continuously, this compares poorly with the 1A average consumption of the most current-thirsty compressor unit.

Get more performance by kick-starting the cooling process using ice blocks

We started this test looking for a viable, portable means of keeping food fresh on small boats without other means of refrigeration. The problem is that small boats are often short of power, so current consumption is very important. Based on this, the best unit in this test for a small boat is probably the Waeco CoolFreeze: it's quiet, has a relatively low current consumption, is practical to carry, if a bit awkward, and will keep your food at 4°C. It isn't perfect by any means – we didn't like the way the lid hinges, and a more comfortable handle would be an asset. However, it narrowly beats the Vitrifrigo owing to easier portability and more accurate temperature control, and although half the size is considerably cheaper.

The Peltier coolboxes could be useful if you are transporting food from home in the car, where their lighter weight would be an asset and the car's electrics won't be bothered by a 4A current draw. Our advice would be to kick-start the cooling process with ice blocks and choose one with the best insulation possible – the Waeco TropiCool performed best here. Good insulation then means that when you are on board, especially when the engine isn't running, you can turn it off without damaging the food too much.

With all these caveats though, you might be best spending your money on a really well-insulated, standard cool box. PBO

Skippers of modern, light-displacement cruising yachts like this Bénéteau Océanis 40 may be better off heaving to rather than lying ahull in very rough weather

Heave to or lie ahull?

Experienced ocean sailor Tim Cassidy advocates lying to the wind with no sail set in heavy weather, but stresses the importance of hull shape

I prefer lying ahull over heaving to. My sailing life was concentrated in the latter half of the last century, which influenced an evolution in hull design for offshore racing. In 1972 I crewed on *Kintama*, a 40ft GRP Sparkman & Stephens design built in Taiwan, under skipper Rob George. The race was the 308-mile Brisbane to Gladstone ocean yacht race off the south Queensland coast. Meteorology was nowhere near as accurate back then, and after an uneventful start we settled down for a quiet first night at sea.

Radio skeds (prearranged contacts) were compulsory in offshore racing, but due to error we had missed a crucial sked at 1800 on the Friday night: it was crucial because the weather authorities had recorded cyclone Emily near Noumea taking a sharp turn towards the Queensland coast. They indicated the cyclone crossing the coast at Gladstone early on the Sunday morning, coinciding with our arrival.

Because of the missed radio sked we didn't know of the changed forecast. There did seem to be a problem at dawn on the Saturday when the sea presented itself innocent of sails. Where was the fleet? Once notified of the danger on the Friday night, the fleet had in fact taken refuge in Mooloolaba, a port roughly 50 miles into the race. *Kintama* and a pair of other yachts, *MakareTu* and *Pilgrim*, were now 50 miles north of the harbour with a pale sky and increasing south-easterly conditions negating any chance of beating back to this refuge.

We were now offshore from Fraser Island, a sand island approximately 90 miles long. At the northern end is a lighthouse, the last glimpse of land, but continuing as a mix of coral, broken coral and sandy shallows. This area, the Breaksea Spit, terminates in a lightship marking deep water and the ability to head westward once more to the Australian coast. This is the point marked on both Captain Cook and Matthew Flinders' charts where they also turned to make the coast.

The wind had been building all day and was now in the vicinity of 60-70 knots. We were down to a double-reefed main and a No3 headsail, reaching hard. Our one sighting of the day was the 45ft steel yacht *MakareTu* passing us alongside Breaksea Spit. The sea was building and thick foam lay in parallel streaks.

Navigation in those days without the aid of satellites was far more primitive, and it came as a shock in the conditions to see the heaving form of the red lightship appear as if by magic right on the bow – visibility now being down to about 50ft.

There was no discussion on board: we were all desperate to get into shelter of any kind whatever the risk. *Pilgrim*, the former Admiral's Cupper in the vicinity, did the seamanlike thing, turning its back on the

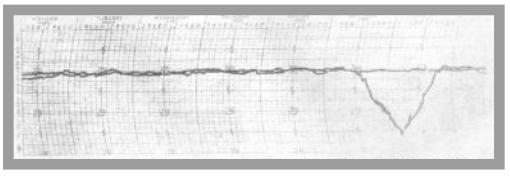
ABOUT THE AUTHOR

Tim Cassidy's sailing experiences include four Sydney to Hobart and 18 Brisbane to Gladstone ocean yacht races, 10 of them as a skipper. He currently owns *Tamboo*, an Olin Stephens-designed 36ft Sparkman & Stephens *Hestia* class in wood.

possibility of shelter and heading eastwards to deep water to ride out the cyclone.

As we were heading west our next drama, and under storm jib only, was to miss the rocks off Bustard Head lighthouse by a boat length and surf down its shoulder. A trimaran racing in a separate event was not so lucky, grounding on the rocky headland with all hands lost.

At least we knew where we were after this encounter and set a downwind course to Gladstone Harbour. What we didn't know was that the Australian navy had already made an attempt to leave harbour but could not due to heavy breaking seas blocking the entrance.



Barograph reading taken aboard *Onya* during the 1972 Brisbane to Gladstone ocean yacht race. The graph dips steadily from 30in (1016mb) to below 28.5 (965mb) between noon Saturday and 4pm on the Sunday, when it returned to 30in.

The wind speed now was well in excess of 100 knots: the wind speed gear at Bustard Head lighthouse gave its last reading at 120 knots when it blew away. Our last sailing activity was to douse the storm jib. Sheer wind strength was keeping the seas down, but they still contained breaking crests over what resembled a foam bath. *Kintama* steadied with the windage on the spar and lashed main causing her to edge up to weather then retreat to beam on after breaking crests knocked the bow off.

Screaming wind

The crew were absolutely exhausted going below. Everyone had the same aim – to get below decks and escape the screaming wind. It was night now as we lay listlessly on the bunks, calculating our chances of survival. Hours later, in the early morning, there seemed to be a change of motion and noise, causing me to remove a storm board and get on deck. *Kintama* was enveloped in an eerie calm: so calm you could have lit a candle.

***Klinger*, Tim's Farr half-tonner, finishing the 1978 Sydney-Hobart Race. She had capsized the previous day but survived intact**

Johnny Green, the Sydney for'ard hand, joined me on deck and looking skywards we saw a tunnel of miles-thick cloud surmounted by a patch of bright blue sky – we were in the eye of the cyclone. 'It's all over,' he yelled. 'Bullshit,' I replied: 'It's going to come back the other way now and blow just as hard.' It did back 90° to the north-east, but nowhere near its former strength.

A discussion followed as to where we were. We had drifted to the north of our course and now had to reach back to the entrance of Gladstone Harbour. The wind strength was around 40 knots by feel. Our masthead gear had blown away the night before. Near the harbour entrance, a sail was seen – *MakareTu* – and all thoughts of the cyclone were forgotten as reefs were shaken out for the harbour leg to the finish. *Kintama* had won line honours.

Capsize and recovery

Since the 1972 race I have owned three S&S-designed yachts of the era: a *Finisterre* class centreboarder, a GRP S&S 34 and my present craft, the *Hestia* class *Tamboo* – a wooden S&S design. All of them lie easily ahull as *Kintama* had done, and I put it down to the lines drawn by the nonpareil Olin Stephens.

Following the '72 race I bought the Farr half-tonner *Klinger* in '77. She was fast and liked plenty of breeze – from any direction. In '78 we started her (at 26ft 7in overall) in the Sydney to Hobart with a crew of four. It was a light weather race with the obligatory blow for the tail-enders, of which we were one.

***Tassie III* racing in Brisbane in the 1950s**

Tim's present boat *Tamboo*, an S&S 36-footer: note the classic lines – ideal for lying ahull in heavy conditions

We were almost in Storm Bay when the weather closed in. We had no chance of placing, only wishing to finish. We were going to weather in 30-40 knots when the decision was made to lie ahull and get some rest. Then *Klinger* capsized, and I was dumped from deep sleep onto the cabin roof. My initial reaction was distinctly peevish as Rex Neale started to dig me off the sail bags and other cabin detritus. My comment – 'What the ****'s going on?' – caused Rex to reply: 'We're upside down, that's what the ****'s going on'. The rest of the conversation was curtailed by the next crest hitting the fin keel and putting us upright again. The cabin was messy as one storm board was out for ventilation, and we collected 50 or so gallons. Well-built and strong, the hull and rig received no damage. We finished the following day under spinnaker and were escorted into Constitution Dock.

Conclusion

The conclusion I have come to is that the wineglass-shaped hulls of the earlier RORC IOR era present far less target to breaking seas in the knockdown position and consequently allow the yacht to recover. Newer yachts with dinghy-like flat sections aft present a far bigger target for the breaking crests to continue the process of inverting the craft.

I had a similar experience to the *Klinger* capsize when crossing the Wide Bay Bar (southern Fraser Island) in *Tassie III*, a 21ft waterline restricted yacht class. She had flat planing sections aft and capsized when hit by a cross sea: all four of us were in lifejackets for the crossing and all hatches secured. She righted herself but one crew member was in the water for 40 minutes before we could get him back on board.

The IOR yachts of these bygone eras were certainly a handful downwind under big spinnakers, but transformed themselves into safe and comfortable cruising yachts when not pushed to extremes.

Things to think about

Hull shape is important for lying ahull in heavy conditions.

Keep storm boards in and secured.

Crew abilities and the shape they are in are important in considering your offshore options.

Cruising in a small boat

With sailing, less can be more: you don't need a big, flash yacht to enjoy yourself, says Tony Smith. Here he shares his minimalist sailing philosophy

'Less is more' is a term sometimes mentioned in small-boat cruising circles, and I understand this to mean you get more enjoyment from cruising in a small boat than you would in a big boat.

The reality of this cannot be true, as the man or woman who owns a 200ft yacht, fully crewed, and cruises the world's remote tropical islands is sure to be enjoying him or herself.

Therefore 'more' must mean something other than a material gain in cabin size, square foot of sail or length of waterline.

Exactly what 'more' is will vary with each individual boat owner, but if we put aside any financial restraints stopping us from owning that 200-footer, why do many of us enjoy owning a small cruiser?

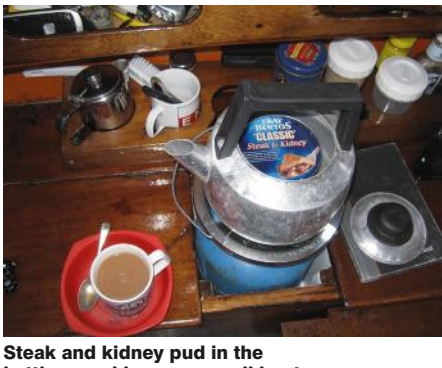
Cost is certainly a factor for most people when buying a boat, but this is only one reason people buy small, as I know of very wealthy people who choose to own a small boat.

For the purpose of this article I'll refer to a small boat as being an open boat or cabin cruiser of around 20ft or less that has restricted headroom and cabin space.

If we accept there is only one potential negative of owning a small boat – its limited space inside – we quickly move on to take a look at some of the many pluses of ownership:

- Ease of handling when sailing
- Often easy lowering and raising of the mast
- The ability to sail single-handed or the enjoyment of being on a big sea in such a small craft
- Ability to reach the most awkward of tight places and waterways
- Trailability
- Cosiness of the cabin
- Less time spent maintaining the boat and less equipment needed to be replaced.

The fun to be had with a small boat is just the same in a £1,000 GRP production boat as a £25,000 hand-built wooden classic.



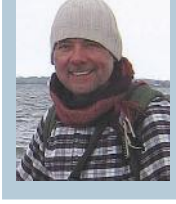
Steak and kidney pud in the kettle... cooking on a small boat presents a challenge that can also be a pleasure

Other more meaningful reasons to own a small boat may be to limit your carbon footprint, or even to cleanse your spirit with minimalist delight. It is only after trying something for a period of time that we realise how we can do without many things in life we have come to rely upon, and how refreshing this can be. Of course, this can work both ways.

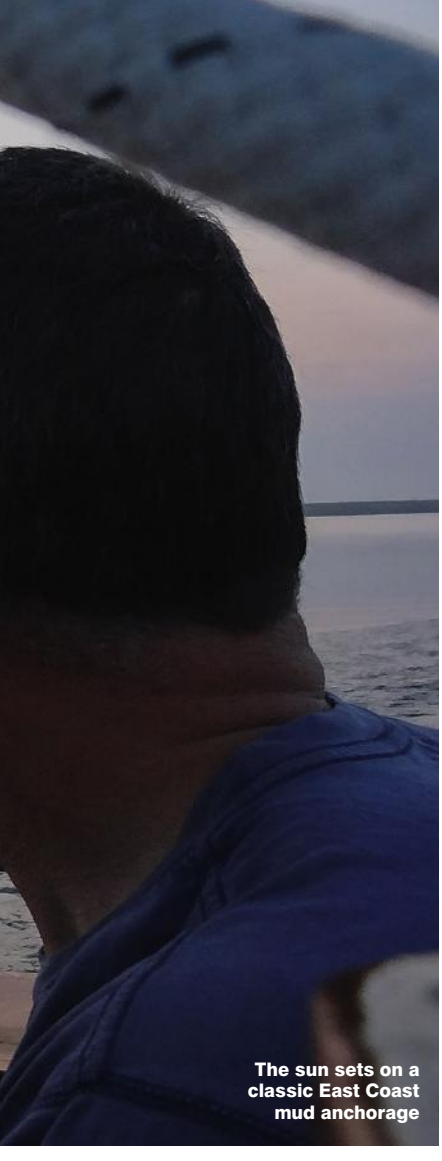
Cooking on a small boat presents a challenge that can be a pain or a pleasure, and is one area that makes a big impact on the comfort level felt by the small-boat skipper.

To arrange a small boat's galley to some kind of order

ABOUT THE AUTHOR



Tony Smith sails *Shoal Waters*, a 16ft 6in (5.03m) wooden hot-moulded Fairey Falcon dinghy fitted with a cabin and a gaff cutter rig by her previous owner, the late East Coast sailor and author Charles Stock. Tony runs a sailing blog, creeksailor.blogspot.co.uk, dedicated to small-boat cruising.


The sun sets on a classic East Coast mud anchorage

could well involve taking ideas from that 30ft yacht, or the kitchen at home.

There is another attraction to the small boat rarely mentioned: it has similarities to the garden shed. Every man or woman who has a little shed at the bottom of the garden uses them for a million and one things, but one of them is escaping to a small world where everything seems to be manageable and in its place. The basic 6x4 wooden shed has to be the ultimate in minimalist sheds, but I've even seen net curtains screening tiny shed windows, and heavy duty electric cables disguised under cabbage and runner bean leaves, fed to wired-in lights and electric kettles.

Freedom to roam

For some, this shed connection is felt in the small boat but with the freedom to roam the waves of an estuary or river, or length of coastline, before pulling the boat up a peaceful beach and camping out under the stars. This is a tonic hard to beat and is another major draw for the small-boat cruiser.

I've yet to enter a marina in *Shoal Waters* while cruising: in fact, the closest we came to doing something similar was mooring alongside the pontoons in Brightlingsea Creek for an Old Gaffers rally. It's not that I object to the idea of paying for an overnight berth – rather that *Shoal Waters* is a creature of the marshes and with her flat bottom lives happily on a drying mud anchorage, usually a quiet backwater where a sound sleep is more than likely too.

Most of the creeks I like to visit are pretty remote so I try to be as self-sufficient as possible and always carry spare gas, a sack of tea bags, and a selection of tinned food and powdered milk which doesn't go off.

Small-boat specification

Shoal Waters' minimalist cabin space has full crouching headroom (while seated) and dressing or changing of clothes is done while lying down. The galley is to port with kitchen utensils and tins of food stored in a milk crate which has a plywood top doubling up as a table.

The centreboard case is curved, allowing the plate to be lowered when sailing, but while at anchor this is replaced by a flat piece of wood which creates a more usable surface.

The bread larder is on the port side, as are the stove and full tea-making facilities which are ready to hand from the cockpit, making brewing up while under way an easy procedure.


Cosy cabin has full crouching headroom – albeit while seated

There are three non-spill open lockers above on both sides for placing odds and ends like keys and torches, and there is an open bookshelf on the port side just forward of these and an open shelf on the starboard side used for storing charts and pilotage notes.

The small boat has similarities to the garden shed – a world where everything is in its place

All surfaces are wash-clean varnish and the luxury sleeping arrangements are to starboard: these are made of 4in-thick foam as is the red-cushioned lounge area.

The small cabin caters for single-handing quite comfortably, but an extra berth is formed in the forward port side if the starboard berth is slid aft two feet. Spare tools used for close-quarter creek-sailing such as paddles and sounding canes are stored forward.

While under sail the wooden boom crutch is folded away and stored under the starboard cockpit seat which is accessed from the cabin. The folding slats for the cockpit tent are stored here too, along with a satchel of spare ropes and anything else not needed to hand that I tend to stuff under there out of the way.

Water is dispensed from four 10lt plastic containers that sit on the starboard side under the bridge deck.

Cooking is done on the single gas stove and pots and pans are stored under the hinged wooden worktops. I carry two kettles on board: I use one for cooking steak and kidney pies in, continuing the boat's long tradition.

Carrying all this cruising


Sitting flat and dried out for a comfortable night up a creek

Exploring Thames barge 'hulks' at Awl Creek Northey Island

Jammers for the headsail sheets

equipment means she is not as quick as she perhaps could be – but then this is not at the top of my list of what makes a decent cruiser.

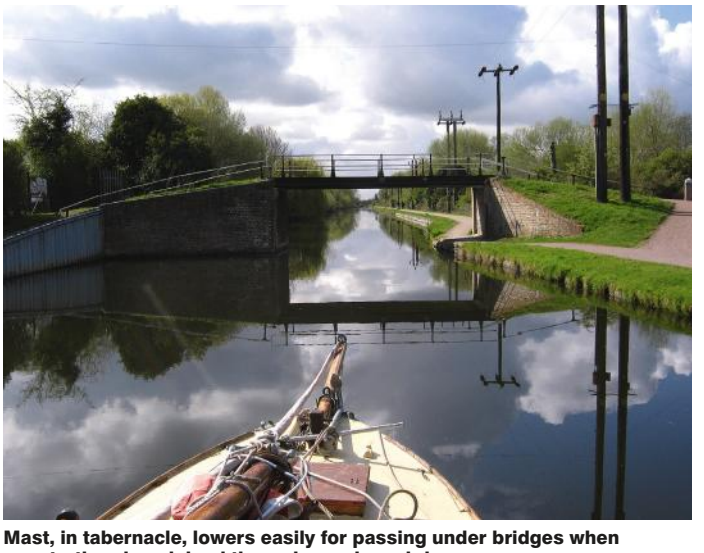
What she does have is character by the bucketload and she is without a doubt a joy to sail, making an average of three knots with her gaff cutter rig.

Her blade of a jib sits on the end of her bowsprit and her small staysail is fixed to a stemhead gammon iron: both sails are furled on Wykeham Martin gear. The loose-footed mainsail has two reefing points and is attached at the luff by five mast hoops and controlled by a centre mainsheet, which I prefer.

The mast sits in a tabernacle so it can be lowered for bridges when penetrating deep inland. To give a measure of *Shoal Waters*' performance I entered a club cruiser race last summer which involved two events sailed against three Bermudan rig Leisure 17s, a Hunter Sonata and a Cornish Shrimper. Fully laden with cruising gear my boat never came last over the line, so the club gave her the handicap of the Leisure 17 which meant she came second and third respectively out of the two races. What has surprised me is how she manages to sail in the lightest of airs. One example of this was sailing up the River Deben in Suffolk with hardly any breeze at all, though I did have the magic carpet of a fair tide.

Methodically I plodded on while another craft I was creeping up on suddenly downed sails and fired up the outboard, disappearing out of sight. I couldn't give up as I had no engine. Instead I played my trump card and set the small topsail – a simple matter of lowering the gaff and bending it on as it is left permanently attached and rolled around its bamboo yard and stored in the cabin. With topsail hauled we kept moving at barely a knot, two at most, with just enough way to steer us through the moored craft at Felixstowe Ferry and Ramsholt that are rather densely packed in some parts.

***Shoal Waters'* topsail set**



Mast, in tabernacle, lowers easily for passing under bridges when penetrating deep inland through canals and rivers

A few hours later I sailed past the same chap who by now was sitting on a buoy at Waldringfield, about six miles upriver. As I passed he called over 'She sails well'. She sails well enough, I thought, but I like to think it was more of a case of determination of the skipper and not giving in at the first sign of being becalmed.

Essential sailing kit

Other than the boat itself, the sounding cane and binoculars, I find the most important piece of kit I carry is the 17lb fisherman-style anchor which sits in readiness permanently on the bow. This is used many times during a day's creek sailing as I am always stopping by one old farm wharf or

Centre mainsheet cleat on bridgedeck, and tiny cabin

another at the quiet head of a tranquil backwater. The anchor has also saved me from the suck and pull of the tide while cruising around the sandbanks and swatchways out in the Thames Estuary.

For navigation I use the ship's Second World War landing craft compass into which I have rigged a red night light, as well as a handheld Sestrel compass for taking bearings. For the most part I use small Admiralty charts for passage planning, but most of my cruising is near land where pilotage, the ship's barometer and one's senses of eye and feel rule.

I love the liberation that sailing with only the bare essentials can give, but I have allowed a couple of modern gadgets on board: one is a basic handheld GPS which I carry (if I remember to pack it) when heading out of the Blackwater in the hope that if I were to get lost in fog I could get a position. In fact, I find it is far more useful as a log for working out arrival times for a particular point on route.

The other gadget is a handheld VHF radio, a vital safety aid today for anyone putting to sea, especially if you sail alone. It's great for planning your next move after receiving the local area three-hourly weather broadcasts by the coastguard.

Shoal Waters **in the putty at the final resting place of Darwin's ship, the *Beagle*, at Beagle Dock, Paglesham, on the River Roach**

ABOUT THE BOAT

Cruising essentials

Here's a list of vital small-boat cruising statistics, some made by Tony and some by the boat's original owner Charles Stock

- 12V leisure battery to power navigation lights and cabin lighting
- 10W, 12V solar panel fitted to cabin top port-side of hatch for battery top-up
- Lowering mast to proceed above bridges
- Double topping lift acts as lazy jacks – leads aft to cockpit
- Slab reefing
- Bowsprit can be run in
- Two paddles and a quant pole carried
- Soundings taken by using centreplate as audible echo sounder/instant draught reducer – or with an 8ft cane used as a walking stick. Also lead line attached to five fathoms of line
- 17lb fisherman's anchor on 15 fathoms of 3/16in chain stowed on foredeck with arms over bow and chain in bucket below the foredeck ahead of Samson post
- Four 10lt plastic cans carried for dispensing water

- Two large fenders carried
- Cooking by gas stove with direct burner in port-side galley
- 7x50 Zeiss binoculars carried in rack on port side of cabin bulkhead
- Radio for weather forecasts and entertainment
- Brass anchor light with a plastic battery filler for paraffin
- Adapted 12V car inspection lamp carried as reserve riding light
- Full canvas cockpit tent fitted over boom has stern and starboard doorways that zip closed
- Duck canvas cockpit cover doubles as bridgesail – the topsail doubles up as a bridgesail too

Cockpit tent erected for a night on Osea beach, Osea Island, Essex

We pay for your published cruising stories and harbour updates. Email pbo@ipcmedia.com or write to the address at the top of page 5

Atheni Bay, to the east of Vathi on Meganisi

Magnificent Meganisi

Phil Johnson finds beautiful bays and idyllic swimming conditions at the popular Ionian island

Ten years ago on a warm June afternoon I first sailed into Vathi, known as Little Vathi, the main port on Meganisi. My wife and I, along with two friends, had just sailed from Aegina in five days in our first boat for the first time ever in Greek waters. It was a stunning experience.

Meganisi sits in a sheltered position in the so-called 'inland sea' of the south Ionian, largely protected by the mainland and the bigger island of Lefkas.

It's a firm favourite with flotillas and charterers with three large protected bays offering fairly easy mooring and free swinging. There are also two very inviting ports, each with their own character.

Coming from the north, from the Lefkas Canal or Lefkas Marina, Meganisi is south of Skorpios, the former Onassis Island, which is now said to have been bought by a Russian businessman as a birthday present for his daughter.

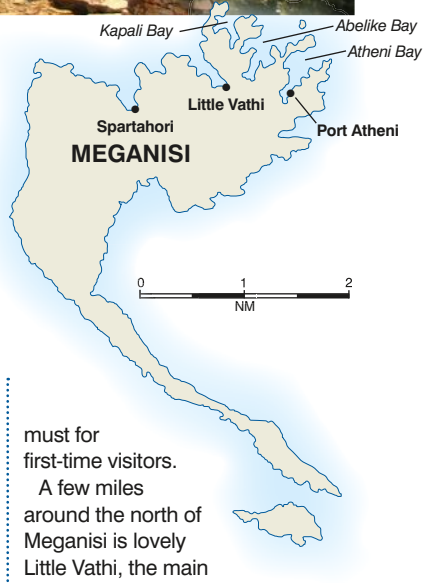
It's between Skorpios and Meganisi that you'll need to be aware of the infamous Heiromiti Shoal. That lies on a line between the south-east of Skorpios and the north-east headland of Vathi Bay. It's easy to underestimate its size and is best given a wide berth.

Great stopover

On the north-west coast of Meganisi, and great for a first night stopover, is Spartahori. It's open to the north, but unless there's a real blow you're pretty safe. There are two places to moor: on the west side as you enter is a large taverna with pontoons and lazy lines, water and showers. Just before that is also a quay heading, as well as a ferry quay.

On the southern end of the bay is another taverna with a long quay. This also has lazy lines so there's no need to anchor. A self-styled harbour master, one of the three brothers who run the taverna, will direct you where to moor and will help you tie up.

There is water and electricity here too for a charge, plus a washing machine and showers. Both of these tavernas are helpful and worth a visit, but it is expected that if you moor here, you eat here.



The village is a steep walk up the hill and a flight of stone steps. There are benches en route on which you can sit and catch your breath, but the walk is worth it. The village is a delightful maze of small streets and flowers. There's a lovely bar with spectacular views across Skorpios and the inland sea – it's a must for first-time visitors.

A few miles around the north of Meganisi is lovely Little Vathi, the main port. It's grown a lot in 10 years and there are now marina moorings on the southern side behind an outer mole. Straight ahead as you enter the bay at the south-eastern end is the town quay, which is free but gets crowded in high season. Depths on the quay range from

LEFT A typical Greek fishing boat moored up in Atheni Bay

ABOUT THE AUTHOR

Phil Johnson is a former ITV and BBC reporter and producer. He is the author of the children's book *The Little Blue Boat and the Secret of the Broads!* and spends three months of the year cruising the Ionian with his wife Fiona in their HR34, *Panacea*.

Looking down on Spartahori Quay, the island of Skorpios in the distance

around 2-3m. There's water and electricity here for a fee.

There are a host of tavernas and cafes in Little Vathi. The Rose Garden in the square is one of the oldest and has showers and WiFi. It also stays open out of season so it is a good bet for early and late boating trips.

On the north-eastern side of the bay, almost opposite the inner mole, you can see a submerged, crashed light aircraft. From Vathi you can walk to the old town on the hill, or the fabulous bays a mile or so behind. Just follow your nose and climb the steps.

Sailing on further to the north-east you come to the first of the big bays, Kapali Bay, which offers spots in which you can moor stern to the rocks and shoreline, or simply free moor and swing where depths allow.

Each of the three main bays has their fans and regulars. Ours is the next one, Abelike Bay. As you come around the headland towards Abelike, beware: depths drop away remarkably quickly, so stay in the centre of the channel.

Picturesque setting for a restaurant in Little Vathi

There are three main parts to Abelike, the western side has a small beach and a nice walk to Little Vathi. It's very popular and often has large superyachts at its entrance, and the little beach attracts flotillas for barbecues. The water is lovely for swimming and the holding is good. We've seen people moored up here for weeks on end, only moving to empty their holding tanks out at sea and then return.

Next of the three smaller parts of Abelike Bay is what is becoming known as 'Pirate Bay', after the recently established, upmarket restaurant and bar at the southern end. It has a great atmosphere and really nice showers. Pirate Bar also has its own wooden jetty which is attractive but in shallow water, so approach with caution.

There's also a free tap on the edge of the jetty at the back, so take a few cans if you go ashore and tie your dinghy up here.

From here, as with the other main bays on the island, you can walk the coastal road. When we first came here 10 years ago it was mostly just a path: it has now been widened, but thankfully there's hardly any traffic.

Pirate Bay is good for swinging in the centre with depths of 10m or so. There are spaces for shore lining but some of it is buoyed off for swimmers in high season.

Give reef a wide berth

As you leave Abelike Bay and head east make sure you go around the outside of the small islet. There's a reef between it and the rest of the island. Give it a wide berth.

Atheni Bay and Port Atheni are very popular too and with good reason: they are beautiful!

To the north-west there's a long stretch ideal as a shore lining destination. To the south-east there are a few small bays in which you can shore line as well.

The first bay on the south-east side has a bar, which has music and attracts watersports enthusiasts in high season. The only real danger here is a reef that comes out from the small beach at the end of the north-western side. It is marked on charts and in the pilot books, but almost every year we've seen yachts go aground.

Further into the bay is a quay heading with metal rings for you to moor, stern- or bows-to. There's a bar which has showers, a supermarket, a washing machine and free WiFi. Further along there's also a traditional taverna with its own jetty, popular with flotillas. You can easily free moor and swing in the bay, and again the walks around either side of the bay are really worth doing.

There are a couple of other boltholes on Meganisi, but the three big bays and the two main ports are by far the most popular and attractive. The island narrows to a 'tail' as you head south.

Word is this tail has been bought by... name any celebrity, pop star, billionaire or oligarch. We've heard so many we've given up trying to keep track. Let's hope any development is low-rise and hidden to protect the stunning views and scenery.

At the very tip of this tail are a couple of small coves. They are exposed, but if the weather's calm (and it often is) you can swing here and see absolutely no sign of humanity, no lights or other boats.

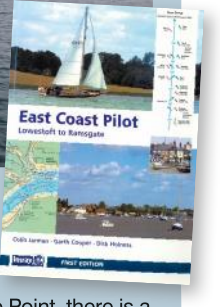
The lack of artificial light means the stars here are stunning and the atmosphere amazing.

Free parking!

Stangate Creek, River Medway, Kent

Stangate Creek runs due south on the River Medway, 1.6 miles from the Spit buoy, and is a popular and peaceful anchorage. The *East Coast Pilot*, compiled by Colin Jarman, Garth Cooper and Dick Holness, advises that the bottom is mud and clay, and holding is generally excellent.

www.thecrusoes.wordpress.com



Half a mile into the creek, past an unlit starboard-hand buoy (SHB) and a wreck still showing a mast, the entrance to Sharfleet turns off to the west and then north-west into a horseshoe curve. This creek is another popular anchorage, although you need to choose your spot so as not to take the ground at low water and to avoid blocking the channel. Most of Sharfleet has more than 2m at low water springs.

Stangate Creek continues southwards from the wreck to Slaughterhouse Point, where it splits into two, Twinney Creek to the west and The Shade to the east. Both of these shortly peter out and dry, with The Shade terminating in an area known as Bedlams Bottom. To starboard at the bottom of Stangate, immediately south of Slaughterhouse Point, there is a pool affording better shelter in a northerly wind.

Do you have a favourite free anchorage? Send it in! Email pbo@ipcmedia.com

Dealing with a recovered MOB

In response to an email, Gilbert Park describes some potential scenarios and procedures once a man overboard has been recovered from the water

email received: 1 May 2014 16:35 United Kingdom Time

Subject: Cold Shock
Date: 1 May 2014 16:35 United Kingdom Time
From: Willem Bijl, Essex

Dear PBO

Although very informative, the article 'Surviving immersion' (PBO 571 March 2014 p35), mainly tells us the physiology of how we will drown! Gilbert Park, consultant anaesthetist, tells us all the details, but I can see that he has gathered his information mainly from his clinical experience. If we are to survive, what should we do?

What comes to my mind is the yearly pictures of quite large numbers of people on New Year's Day who go for a 'dip' in the sea. Don't they all get a 'cold shock'? Why don't they all drown?

I feel the important answer is: training. I must concede that I am not one who would join them. However, as I am a keen sailor I constantly face the water where I could fall in during the better months of the year. Training in a swimming pool does not help at temperatures of 23° or more. So how can we be prepared for a fall into the cold?

I think the answer is to use our daily (hopefully) shower as a training opportunity. During the first four months of the year, at the end of my shower, I gradually turn the temperature down. No problem until it is about room temperature, then a little further until I say: enough. By the 1st of May I can stand the cold water and can turn the temperature down quickly. I am sure I am better prepared to withstand the first real 'cold shock'.

Dr. Willem Bijl, Essex

Dear Dr. Bijl

You are absolutely right: training is part of the answer. Cold showers have indeed been shown to reduce the impact of cold shock. However, preparedness of mind is also relevant. To take your example, the swimmers on New Year's Day know they are going into the cold water, unlike the sailor who trips and falls.

Preparation will not eliminate cold shock – when I go diving, for the first two minutes or so underwater I still breathe quickly. Nevertheless, cold showers help, and I hope you continue with your shower regimen until the seawater temperature is well above the 'at risk' temperature (15°C) and also get your crew to indulge in cold showers: I don't think mine will even consider it.

If the worst does happen, however, it's essential to know how you will deal with it. Forewarned is forearmed: a good idea would be to sit in the cockpit of your boat and discuss with your crew the problems you would face if one of your number should fall overboard. Write down an action plan specific for your boat and crew that will work even in the worst weather conditions you might encounter.

Having devised your plan you

Helping a casualty aboard, or better still recovering them in a horizontal position and laying them down, can be tricky in good weather – and very difficult if it's rough

should rehearse it, preferably using something more than a bucket and fender: a person in the water may well weigh 120kg or more. Remember, if you sail with different crews you need to tell each one what the action plan is. It's also worth bearing in mind that it is just as likely to be the skipper who goes overboard!

Recovering an MOB

The first thing you should do in any MOB situation is to get help. If the water temperature is low or the sea is rough you will almost certainly need it, and as the person in the water is in grave and imminent danger (see 'Surviving immersion', PBO March 2014) you should send a Mayday. Not only will this alert the rescue services, it will also alert boats near you who may be able to assist. The Mayday can always be cancelled, and sending one is a better course of action than calling for help too late.

If the casualty is at risk of drowning because they are unconscious or semiconscious, or because there are large waves submerging them and/or they have no sprayhood, then the priority is to remove them from the water and prevent further injury. If they are not at imminent risk of drowning a slightly slower recovery may be better, keeping them horizontal.

Almost a fifth of survivors collapse after getting back on the boat: this is probably because of changes in the heart and blood vessels. Some survivors even collapse during the actual process of climbing up the ladder or when being hauled up, during the period when they change from being horizontal in the water to being upright with the attendant physical effort. Helping them aboard, or better still recovering them in a horizontal position and laying them down, provides a means of countering this. Although staying in contact with the water risks the loss of body heat 20 times faster than being surrounded by air, a rushed recovery in moving the casualty to a vertical position may risk a state of collapse.

There are many methods to retrieve an MOB, and which one suits you best will vary according to your boat's freeboard and availability or otherwise of a boarding ladder, and also on the number and strength of the crew. It may be that recovery only as far as the dinghy is possible, but this is better than leaving the casualty in the sea. Several commercial products are available to help – see PBO October 2013 for a test of MOB recovery equipment.

During the recovery it is important that no other members of the crew are injured either by lifting excessive loads or by falling in themselves. Lifting a casualty will place backs, shoulders and arms at risk. Safety lines and lifejackets must be worn by the crew.

Dealing with the casualty

Once the casualty is on board they must be protected from further hypothermia: if they are conscious and able to move with assistance, get them below. Once below, put them into a bunk with another person next to them – sharing of body heat is the best way of warming a casualty (buddy rewarming). Hot drinks may also be useful in this regard.

Only remove wet clothing once they are sheltered, with the rewarming process already under way and if they are not feeling unwell. Clothing next to the skin will be warm, and removal in cold conditions can risk additional exposure and cooling.

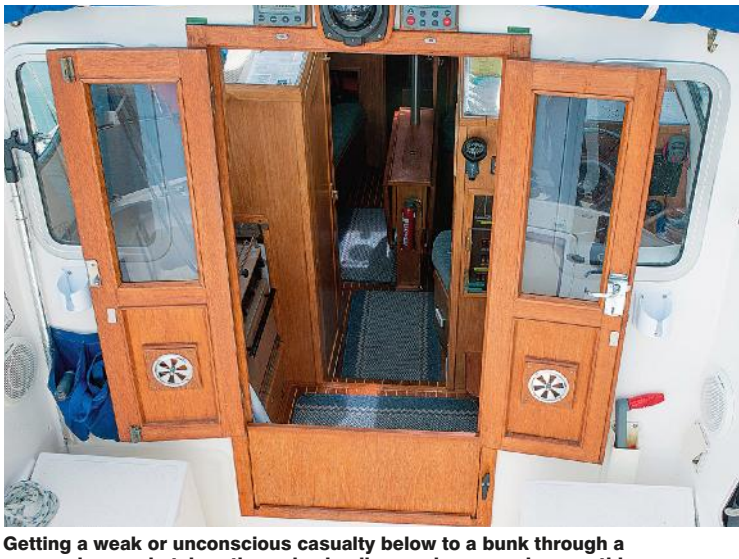
In addition to the risk of hypothermia, there may be injuries involved that will require appropriate treatment, including basic life support. Casualties may have broken one or more limbs and possibly sustained an internal injury if they have fallen or swung and been bashed against the hull. Standard first aid measures may need to be applied including splinting of injuries, etc. It is not possible to cover all aspects of first aid in one article: books which should be read and kept on board include the latest edition of the *First Aid Manual* (Dorling Kindersley) and *First Aid at Sea* (Adlard Coles Nautical).

Almost a fifth of survivors collapse after getting back on the boat

In any crew at least two members should be trained in first aid so that there is always one left on board: suitable courses are run by the RYA, British Red Cross, St John Ambulance and St Andrew's First Aid. It is probably better not to include the skipper in this count (although they may still have the training) as once the casualty is back on board the skipper needs to take charge of the boat and plan the rescue. Another crew member may be delegated responsibility for communicating the casualty's condition to the rescue services and skipper, leaving another to treat the casualty.

When dealing with conscious casualties, a point worthy of note is that hypothermia also produces an increase in urine production. Use of the heads may be a problem because of the need for the casualty to move into an upright position – deploying an empty plastic bottle is a better solution.

If the casualty is unconscious, the situation becomes more difficult and the risk increases significantly. They may be unconscious because of hypothermia or trauma: with a head injury the two may occur together, delaying recovery from the water.



Getting a weak or unconscious casualty below to a bunk through a companionway hatch or through wheelhouse doors, such as on this Scanyacht 290, is extremely difficult

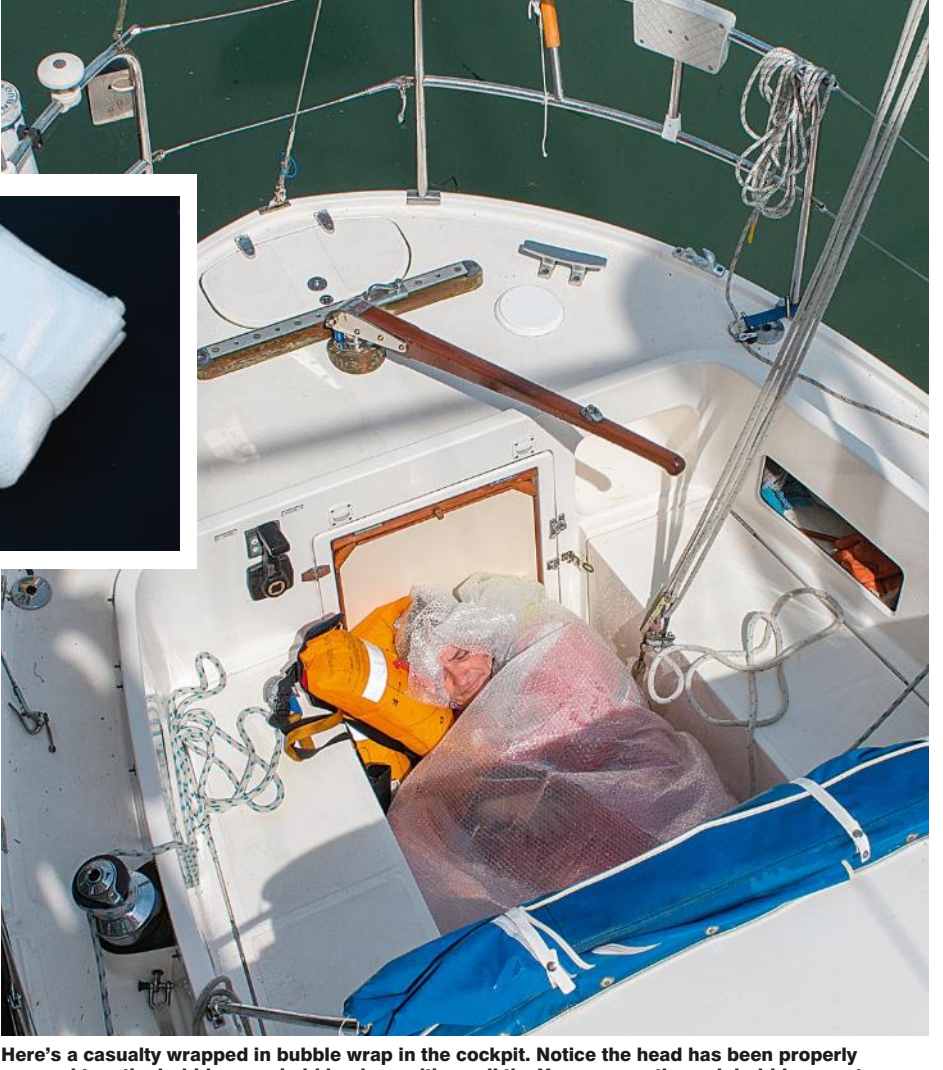
Small cell bubble wrap and an orange-coloured double survival bag – both are cheap to buy and easy to stow on board

Once recovered, assume that the casualty is cold and possibly hypothermic and act accordingly. Keep them horizontal and carry out any movements with extreme care to avoid dangerous changes in their probably already low blood pressure.

An unconscious person on a pitching boat will probably require at least six people to move them safely, so if you have a large boat with sliding patio doors and a sizeable crew then carrying the casualty into a heated cabin may be possible. On most boats, especially sailing boats which tend to have narrow, steep companionways, it may be best not to move the casualty from the cockpit if they are unconscious. The decision will very much depend on how soon rescue is expected – if help is on its way it may be more traumatic to have to move the casualty twice.

Keeping a casualty warm in the cockpit is a problem, as whatever method is used will need to reduce heat loss and prevent cold water getting onto them. There are specific casualty bags available, but these are expensive and bulky and can be difficult to use unless you are experienced with them. Blankets, duvets and the like will get wet and rapidly become useless, while foil blankets are of very limited value as they rely on preserving reflected heat: MOB casualties have a conductive heat loss.

A polythene sheet or exposure bag (a large polythene bag, usually bright orange, costing £2-3 and available from camping shops) is effective and allows a second person into the bag next to the casualty. Another alternative, used by the Norwegian rescue services, is bubble wrap. On a leisure boat the large, thick rolls would be difficult to store, but thinner bubble wrap is available that will store easily: I bought 3m of small bubble wrap for 80p per metre from a garden shop. It has the advantage of being waterproof, and the little air pockets will insulate the casualty very well. You can also see the casualty inside if there is an injury.



Here's a casualty wrapped in bubble wrap in the cockpit. Notice the head has been properly covered too, the bubble wrap held in place with a sail tie. You can see through bubble wrap to check the casualty's body for any obvious injuries

Remember to cover the head as more than 50% of body heat can be lost from this area, but don't forget to leave a gap for them to breathe through. Bubble wrap is easily torn into smaller parts and can be secured to the person with a bungee, rope or tape.

Don't remove clothing, with the exception of bulky items such as the

How to make observations

Make observations every 15 minutes, or 30 minutes for a stable casualty. Where a time to take a particular reading is suggested, time it using a watch – do not guess. One minute is surprisingly long in such conditions: try timing 30 seconds on your watch. Ideally, if the sea is smooth and the weather is warm, take all readings over one minute. However, if the sea is rough then count for 30 seconds and double it: if it is very rough and/or cold, count for 15 seconds and multiply by four. The longer the time period you count for, the more accurate you will be. If it means unwrapping the casualty, go for the shorter period so they don't get cold.

OBSERVATION	HOW TO MAKE IT	CAUTIONS
Respiratory rate	Look for chest movements or put your ear next to the mouth.	Make sure the airway is clear before and during this observation if the casualty is unconscious.
Pulse rate	Feel at the wrist for at least one minute. Once you have established a pulse is present, count the number of beats.	The pulse may feel weak and feeble so you need to spend time establishing its presence or absence. Do not feel for the carotid pulse in the neck – doing so may slow or stop the heart. It is not advisable to undress the casualty to feel for the pulse in the groin as they will get cold.
Conscious level	Shout at the casualty – do they respond? If so, do they respond appropriately or not?	Shaking the casualty or inflicting pain to see if they respond is not recommended.
Pupils	Look at the pupils in the eyes. Are they normal-sized, large or pinpoint? If they are normal, shine a torch at them: do they become smaller?	The two sides may respond differently. If it is bright and sunny the pupils should be small and not react.

lifejacket and perhaps, when they have some protection from the elements, the outer layer of cold, wet clothing. Stripping a casualty in a cockpit with water running over them and a wind blowing will result in substantial additional cooling.

Rubbing the skin as a method of rewarming is not recommended as this may cause blood to be diverted to the wrong parts of the body. Likewise, alcohol should not be given to the casualty as it can cause blood to be diverted to the skin. Nor should the crew consume alcohol: they will have to help the rescuers, bring the boat back and possibly drive to the hospital.

Immersion Casualty Documentation

Name of Casualty	Address	Home Telephone Number
Known Medical Conditions	Known regular Prescription drugs	Know Allergies
Date/Time of Immersion	Date/Time removed from water	Estimated Water temperature (depthfinder)
Condition when first returned on board		
Injuries		
Describe any treatment or drugs given to the casualty		
Next of Kin	Contact Telephone Number	Are they aware of what has happened? YES NO
Boat Name	International Call sign	Skipper Name / Telephone Number

Observations

Observations should be made at 15 minute intervals if possible. If the casualty is stable this can be extended to 30 minute intervals

Time GMT/BST/Other										
Breathing rate/min										
Heart rate/min										
Responds to shouting										
Responds to shouting purposefully										
Pupil Left large, normal, small										
Pupil Left responds to light										
Pupil Right large, normal, small										
Pupil Right responds to light										

Pack in a small, preferably waterproof bag, this chart, any drugs they have on board, passport (if out of the UK), credit card, currency (notes only), mobile phone, European Health Insurance Card and/or Travel Insurance Document and attach this to the casualty (in a bum bag or the like)

Download this form from www.pbo.co.uk/casualtydoc

Ongoing care

Once the casualty is secure, immediate lifesaving treatment has been given and an examination performed to exclude injuries it is time to start measuring and recording vital signs. The frequency will vary on the severity of the casualty: the more ill they are, the more recordings are needed. It is important to write these down. There is an observation sheet in some almanacs for this purpose, or you can download a copy of the one on this page from www.pbo.co.uk/casualtydoc. It should be given to the rescue services as it may subsequently prove invaluable to doctors in understanding what has happened. Any drugs the casualty may have been taking should also be given to the rescue services and written on the observation chart.

Breathing difficulties

Breathing may become difficult if the casualty has inhaled water into their lungs. If they are conscious, sitting them up, loosening any tight clothing and if possible minimising any movement of the boat is about the most that can be done. If recovery does occur then they should be carefully watched for 24-48 hours in case breathing difficulty reappears.

If the casualty is unconscious and breathing, and physical injury is a possibility, protect the neck from being damaged with a collar. This can simply be made out of a folded newspaper or even a chart secured with a piece of cord. Put the casualty into the recovery position to prevent vomit entering the lungs and keep the airway clear.

If they are unconscious and not breathing, the airway needs to be cleared. If this doesn't restore breathing you need to breathe for them (rescue breathing). The same applies if breathing stops in a hypothermic casualty: it is important to start basic life support and continue administering it.

If it appears that the heart has stopped, opinions differ on what course of action to pursue. Some authorities say that chest compressions shouldn't be initiated because the heart may be beating very slowly and with a low blood pressure: inexperienced first-aiders may miss the signs of a heartbeat and chest compression may irritate a slowly beating heart, resulting in cardiac arrest.

My advice is that it all depends on how long rescue to a medical facility will take: if it is nearby then wait, but if it is a long way off then there may be little to lose by starting chest compressions. It is important to note that the cold protects the body and the brain from damage for a long time, and full recovery can be possible from prolonged hypothermia and even cardiac arrest.

You can make a neck collar using any stiff paper like a map or a chart and a piece of cord. If you do use one of these, ensure that the airway remains clear

In conclusion

Finally, when the casualty has gone to hospital and the boat is safely back in port it is important to remember the effect the whole experience may have had on the crew. If the casualty has suffered only minor hypothermia and/or injury and is getting out of hospital in a day or two, a debriefing session may be all that is needed. During this, it is as important to focus on the aspects of the plan that worked efficiently as it is to highlight any problem areas, so as to ensure useful learning. If, unfortunately, the casualty is more seriously ill or dies, the whole crew may need some form of professional counselling and support. In this event, being reminded of the planning and rehearsal stages (as outlined at the beginning of this article) may provide comfort that all that could have been done was done.

ABOUT THE AUTHOR

Gilbert Park, a consultant in anaesthesia and intensive care at Addenbrooke's Hospital in Cambridge, has been sailing for more than 40 years. He now owns a Seaward 25 motor cruiser and enjoys the tinkering and maintenance that goes with owning any sort of boat.

Rally to the cause!

Welcome party on the pontoon with original builder Paul Boot at right

When David Lewin towed his boat to the West Country for the 2013 Red Fox Rally he found idyllic cruising grounds and made many new friends

We've owned our Red Fox 200 trailer-sailer *Red Magic* for six years now, having traded down from a 12.8m (42ft) ketch so we can trail to cruising grounds slightly further afield without the hassle of arranging delivery trips and crew.

ABOUT THE AUTHOR

David Lewin has been involved in boating and the boating industry since the early 1970s. He is a member of the RYA council and lives with his wife Melanie aboard a houseboat in Burnham-on-Crouch, Essex.

Since buying her we've visited the Fal and Helford rivers, the Golfe du Morbihan and Belle Île, the Scottish west coast and islands, the inland waterways of Friesland and the Frisian Islands, and in 2012 the Calanques de Cassis and Marseille in the South of France. During that time we have also been members of the Red Fox Owners Association (RFOA) and regularly contributed to its newsletters – but have never been able to take part in their annual Red Fox Rally as it has clashed with our other cruises. However, we almost bit off more than we could chew with one cruise and I became very ill for a while, so it seemed a good idea to stay a little closer to home, restore some confidence and join the rally!

The mate (my wife Melanie) and I are fairly outgoing people, but not necessarily very 'clubby'. We don't spend hours in the bar every Friday and Saturday night and we don't often race One Design dinghies or keelboats on Sundays, but here we were about to join six or more other boats of the same type and their various owners and crew. Just because they had all eventually selected and bought a version of this quirky but fairly revolutionary boat, would they be people we could get on with? Would we like them, or would it be a complete 'anorak-fest' of picking over the minutiae of who had the best mods on their boat?

We needn't have worried. After an easy day-and-a-half's trail staying overnight with friends in Devon we arrived at Plymouth's Mayflower Marina, who gave us a package deal for berthing and trailer storage. Next to appear as we were rigging the boat in the yard was Andy, the rally organiser. He and Sue had sailed west from Poole earlier in their totally rebuilt Iroquois catamaran *Habicat* to make sure all venues were ready for us. This is also where we learnt that once you have owned a Red Fox you are always a member of the RFOA, as Andy had been a previous owner but was now trying something different. That also went for Brian, who had sailed round from Woolverstone on the East Coast short-handed in his Mirage 270 *Gemini*!

Red Fox Rally boats off Cawsand in Cornwall

Waiting for the right tide to enter the Yealm

David and Melanie on the water in their Red Fox 200 trailer-sailer, ***Red Magic***

Such was our welcome that Sarah, the current RFOA chairman, even offered to get her feet wet helping us launch *Red Magic*: but being muddy East Coasters we know better and have developed a way of launching and recovering using docking arms on the trailer, so our feet stay dry!

Peculiarly, we were told, everyone had turned up early for the rally this year, so they were well into the prosecco on the pontoon by the time we were launched and tied up alongside. Never mind, here we were, glass in hand, meeting all these new people for the first time, to be continued into the evening at Jolly Jacks bar and restaurant in the marina entrance. Somehow it just reminded me of *The Canterbury Tales*, all of us from different parts of the country, different backgrounds, ages and circumstances, all setting off on a 'pilgrimage' to celebrate our special little boats.

It also became apparent the following morning that there were early birds who were off the dock precisely as planned, and those with a more leisurely approach: but we all arrived off Cawsand beach for lunch while we waited for the right tide to enter the Yealm. We'd agreed to take one of *Foxale*'s crew with us for the day as there was not much room for him along with the rest of their copious crew (there were five of them, all told), so we gave him the tiller as we put up the spinnaker for a spirited reach across to the Mewstone at close to 8 knots. Friendships were being forged!

The rest of the day and the next morning were pure Mr Toad – just messing about in boats, towing each other in dinghies up to the Ship at Noss Mayo for dinner and the AGM, as only some had small outboards and the tide runs so strongly. Such is the dedicated following for the Red Fox and its Association that we had over 40 people for dinner that evening including the original builder, Paul Boot, who had flown over from California for the event.

We put up the spinnaker for a spirited reach across to the Mewstone

Although the 2013 Red Fox Rally was only organised as a two-day meeting between Mayflower Marina and the Ship Inn in Noss Mayo, the nice weather and good company (plus it's a long way to go to launch and rig a boat for two days) meant that we were always destined to cruise further. So once the 'organised' part of the rally was over we could see who wanted to do what. It had been a bit lumpy coming out of the Yealm with the wind on the nose, but with a reef down and the sprayhood up we settled down to a good beat back, really enjoying the sail within Plymouth Harbour and inside Drake Island.

I'd planned on sailing west to Looe and Polperro before reaching Fowey on this trip, but there really is no fun in beating into a choppy Force 4 – and we could always travel back overland to collect the trailer, meaning we could sail downhill all the way! So eastwards it would be.

Salcombe would be a fine next port of call, it being Regatta Week with lots going on. The two Red Foxes first away decided that a visit to Bigbury Bay and Burgh Island was feasible as a lunch stop, but as everyone knows when two boats sail alongside each other it's always a race – so out came the spinnakers! Two hours at over 7 knots (7.8 knots max recorded) in a 20-footer loaded with full cruising gear and towing a Tinker Tramp is quite exhilarating. As a result of the stiff westerly breeze the anchorage behind Burgh Island was a little uncomfortable, even though we anchored as far as we could up the beach, and by the time the tide had dropped to under a metre we thought it time to leave. If we'd had more time and the tide had been near the bottom we would have simply run up the beach, dried out and got off for a walk on the sands.

Plenty going on

There was certainly plenty going on in Salcombe as we dodged our way up the channel between pretty Salcombe Yawls, Enterprises, Lasers et al as the very efficient harbour master put us all on a large mooring together in the centre of it all.

On the last leg of the journey we had wondered why Sarah and Peter on *Red Dwarf* had dropped back a bit but they later came charging up to inform us that they had caught six mackerel using feathers and a paravane. This gave us the idea that if each boat could produce some food we could hold a 'safari supper' on the wide decks of the catamaran with a beautiful evening and 'boating entertainment' all around.

Next day, armed with large pasties for lunch, we set off for Dartmouth, making sure we got the tide right for Start Point and a cracking reach across Start Bay, all finally taking up visitor moorings in the absolute tranquillity of Dittisham, up the River Dart. As there were lots of us to feed and the Ferry Boat Inn looked a little full we climbed up to the Red Lion at the top of the hill. We had a large table outside with the most magnificent view of the river and surroundings, good company and good wholesome food. Surely this is what cruising is all about!

After a very damp morning in Dartmouth (notoriously difficult for finding a short-stay visitor's berth) and a crab sandwich and chips, we fought our way out of the

Dart with the tide under us but with the rising wind in our face. This made for a great run down to Berry Head and a reach into Brixham in the afternoon sun. We found Bistro 46 on Middle Street and had an excellent meal and a good night's sleep.

The slipway in Brixham next to the marina is wide but also very steep and a bit uneven in places, with no services such as a waiting pontoon or water for washing off: and quite frankly we didn't fancy our chances of pulling over a ton of boat up that slope, so someone had the bright idea of sailing over to Torquay. It may not have been far – line of sight, in fact – but we had a Force 4/5 beam wind in moderately flat water and the sun came out and sparkled, making for a great last sail. Sharing a taxi back to Plymouth for the cars and trailers meant it only cost us £22 each, so by that evening everything was in place. The Torquay slipway is run by the harbour master's office and cost us £11.60 each plus £5 for storing the trailer and overnight municipal car parking was £2. Even better, it is in extremely good condition, capable of

There's nothing like starting them young!

being used at almost any state of tide, is not too steep, has a holding pontoon to keep the boat near while you back your trailer down the ramp and a water tap (no hose) at the top. We were all on the road back to our respective home ports at around noon.

Great way to sail

If the success of a cruise is defined by good sailing, good weather and good company, then we had it all. We didn't visit any exotic locations or traverse new frontiers – we just revisited all those well-known places that are still so beautiful and make the West Country what it is. And apart from one damp morning in Dartmouth, the sun shone and the sea glinted all week – as did the company.

Interestingly, those of us with Red Foxes owned them because we wanted a small boat: most of us chartered in foreign climes if we wanted something larger, but enjoyed the lower cost and greater flexibility at home offered by a trailer-sailer. How else could we have had boats from Ullswater, Essex and Bristol at the rally without it taking weeks out of our busy lives?

Being in a 'flotilla' spurred us on to things we might not have otherwise done as a couple on a lone boat and of course the shared experience relived later with a glass in hand was even better.

RED FOX MODIFICATIONS

Fettling the Fox

Red Fox owners reveal the various tweaks and improvements they have carried out on their boats

The great thing about a gathering of any One Design product is that you can compare and contrast how others have been using what was once the identical product to yours.

The Red Fox 200 has now been in production in various guises since the early 1990s, being called the Hunter 20 when built by Select Yachts and now the Hunter 20 Mini C built by British Hunter Yachts, so there has been plenty of time for owners to iron out the foibles of the design or simply to bring them up to the current level of comfort and performance required.

It has always surprised me that this David Thomas design has not been more popular, but that may be because people have not understood the twin-leeboard configuration (all the boats on the rally were of this type, although a lifting fin and fixed twin keels are also an option). We were all convinced that it is the leeboards that make this design special: a shallow draught of 20cm, a flat bottom able to take the ground upright, no internal centreboard case and all the internal ballast always to windward of the lateral resistance all make for a surprisingly stiff little boat. The asymmetric leeboards 'toe-in', so the boat actively climbs to windward, even when sailed 'full and by'. Conversely, when running downwind the 'windward' board can be lowered to 'crab' to leeward so you don't sail 'by the lee', or retracted to reduce friction.

Although 6.15m LOA (and I think 6.10 on the waterline), she has a beam of 2.5m which is carried right down to a chine close to the water. This gives her lots of form stability and also plenty of space down below. The interior is also unusual in that there is no bilge space – you step down directly onto the ballast (punchings encapsulated in resin) – and it is wide and unencumbered, There is also space for four berths and a separate loo compartment with a proper sea toilet.

It is often the little things that owners take it upon themselves to improve

However, it is often the little things that we as owners take upon ourselves to improve. The standard bunk cushions were perfectly good by the standard of the day but really pretty hard to sleep on so John, rather than spend vast sums on a bespoke mattress and duvet, simply bought some memory foam online, cut it to the shape of his V-berth and slipped it inside a duvet cover as a bottom sheet. We use a mattress topper from IKEA and a fitted bottom sheet, and just let the front corners ride up the insides of the bow….

Lazyjack-retaining shock-cord

Easier sail handling

Most of the boats are fitted with lazy-jacks and 'stack-packs' to make sail handling easy but we also occasionally use a boom tent when the weather is particularly foul in port, so we need to pull the lazy-jacks forward to the mast, requiring extra length of line which again has to be stowed somewhere when sailing. We overcame this by passing the spare line through the reefing line opening on the stack-pack and hooking it to a length of shock cord that runs round the front of the mainsail to the other side. Also when fitting the boom to the gooseneck, the reefing horns tend to fall over so we hold them in position by two short lengths of shock cord with loops on their ends attached to the spinnaker pole ring. These also serve to hold the reef cringle onto the 'horn' until the main halyard has been taken up whilst reefing.

All Red Foxes/Hunter 20s have swept back spreaders and no backstays, like the Bergstrom rig. While this works well on most points of sail it worried me stiff while running with the spinnaker in over 20 knots of wind – watching the forestay being able to dance about and thinking of the loadings on the shrouds and chainplates. So once we'd all moored up that evening it naturally became the hot topic of conversation. Should we fit running backstays or fixed backstays and 'flickers', and if so how? And then, with stunning simplicity, Rob told us he simply clipped his topping lift to a rope bridle from the two stern cleats. You live and learn.

Another observation was that most of the other boats had a 20cm strop on the mainsheet between the cockpit eye and the jam cleat, thus obviating the desperate and embarrassing dive into the bottom of the cockpit to release the mainsheet when overpressed. Needless to say we had a makeshift strop arrangement by the next morning!

Reducing draught in a hurry

Because Red Foxes only draw 20cm in shallow mode, we tend to take a few risks and enjoy sailing over the green parts of the chart, so it is essential that we can raise the boards and rudder blade at very short notice but at the same time hold them firmly in place while sailing to windward. Raising the leeboards means simply pulling on the relevant string: however, by holding the head of the rudder down into the stock with a Velcro strap across the top, it can be quickly released and the rudder will float up halfway on its own.

While towing our boat we have always stowed the leeboards on the saloon berths (exactly the right size) but this means you can't use the boat as a caravan, as an overnighter on a long trail, so Peter proudly showed off his 'board-jacks' to hold the boards in place once the supporting rigging has been removed. This means he doesn't need to strain himself lifting them in and out and can spend a night aboard on the trailer.

Peter proudly showed off his 'board-jacks' to hold the boards in place once the supporting rigging has been removed

Tweaks in pictures

Practical and ergonomic adaptations to cockpit and saloon

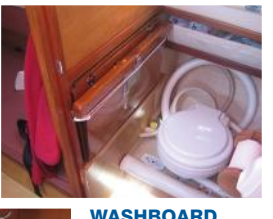
GALLEY SHELF Note the ever-ready spoon-on-a-string – always there when you need it!

GALLEY TABLE Simply folds down to produce adequate work space for cooking. Also protects the settees from wayward galley produce when folded up

PLASTIC PIPE Fixed with cable ties it creates a mounting for fishing rods or sun umbrellas

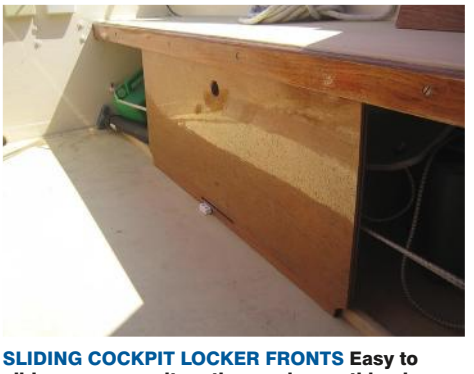
SALOON/COCKPIT TABLE Uses the same brackets and support for the table in the cockpit as in the saloon. Table stows beneath the foredeck

COMMUNICATION CENTRE iPhone holder made from a wooden blind glued to a 'Poppit' ball and socket mount so it can swivel or tilt. The folding arm is held in place with shock cord. Everything from music to Navionics charts right in front of you!



WASHBOARD STOWAGE Neatly stowed on a ledge in the heads

CAVE LOCKER FRONTS To stop everything falling out yet have complete access, simple PVC mesh panels have shock cord through the top hem and a piece of old wooden venetian blind spar along the bottom



SLIDING COCKPIT LOCKER FRONTS Easy to slide or remove altogether, and everything is easily accessible. No leakage through cockpit seats either

FOLDING WASH STAND With no room for a fixed basin, a washing-up bowl let into a plywood panel more than suffices. Water is from the tank via a manual lift pump and pours away down the heads

Etap 24i

The boat that will do whatever you want

Small enough to trail, big enough to cruise for a fortnight and fast enough to win races, the Etap 24i is as versatile as they come, says David Harding

PBO USED BOAT TEST

Back in 2000, I headed across to Holland to sail a new boat from neighbouring Belgium. This was the Etap 24i, and she was well worth going to see. Introduced as a big sister to the popular 21i, she shared the same twin rudders, backstayless rig, unmistakable Etap styling and, of course, the double-skinned, foam-filled construction that makes all Etaps unsinkable.

A twist to this test session for Europe's yachting journalists was that Etap had two boats on the water – one with a deep fin and one with a shoal-draught tandem keel developed by the designer, Marc-Oliver von Ahlen, in conjunction with Berlin University. We were not told which keel was on which boat: it was the testers' job to work it out.

Since this sail, Etap has ceased production. After building more than 5,000 boats in 38 years, the company was bought by Dehler in 2008. Then it all came to an end a few months later. Although the rights and the moulds have been bought by another Belgian company, signs of the long-talked-of reincarnation are still awaited. In the meantime, if you want an Etap it will have to be second-hand.

The good news is that Etaps tend to last pretty well. When I was sailing the 24i, the company claimed to have known about just five cases of osmosis – that's 0.1% of the production. By all accounts the hulls are pretty stiff and, importantly, the foam injected between the skins means they will stay on the surface if the worst happens. On more than one occasion it has. Etaps (and their crews) have lived to tell the tale following rather-too-close encounters with ferries and reefs among other hazards of the ocean.

Refreshingly different

While unsinkability has been an influence for some buyers of Etaps, for most it's incidental. The boats wouldn't have sold as well as they did had they not offered a good deal more than the ability to stay afloat if holed.

The tubular aluminium toerail and contrasting non-slip pattern were among Etap's trademark features on deck. There's even a ventilator

Take the 24i as an example. Here's a boat that looks good for a start. Builders of cruisers in this size range have often tended to err on the side of volume, believing that compromising the accommodation as it would need to be compromised to achieve attractive lines would limit the appeal. Etap took a refreshingly different approach, setting out to make the boat sporty – not racy, just sporty – and well proportioned. Never mind standing headroom; the 24i was meant to be fast, fun, attractive, durable and, of course, unsinkable.

It's a formula that appealed to Gary Warr when he was looking for a boat about eight years ago. The Etap seemed to do everything he wanted, so he found a nice-looking fin-keeled example at Hamble and trailed it back to Weymouth behind his VW camper van.

Trailable though the Etap is, that hasn't stopped Gary and his wife,

Tech spec

ETAP 24i

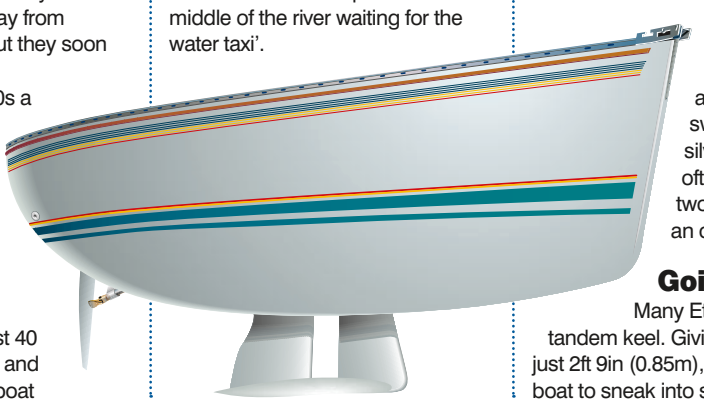
PRICE FROM: £20,000

Length including rudders and bowsprit	8.02m (26ft 4in)
Hull length	7.30m (24ft 0in)
LWL	6.71m (22ft 0in)
Beam	2.50m (8ft 2½in)
Draft (fin keel)	1.49m (4ft 11in)
(tandem keel)	0.85m (2ft 9½in)
Displacement (fin/tandem)	1,800/1,820kg (3,968lb/4,012lb)
Ballast (fin/tandem)	500/520kg (1,102lb/1,146lb)
Sail area (main & 100% foretriangle)	29.82sq m (321sq ft)
Engine	6-10hp outboard or 9hp diesel inboard
Headroom	1.67m (5ft 7½in)
RCD Category (fin/tandem)	B/C
Designer	Marc-Oliver von Ahlen/ETAP
Builder	ETAP, Belgium

Morag, from treating her as a fully-fledged cruising yacht. They have done all sorts of things with *Echo* that many people would never dream of doing with a 24-footer, including crossing the channel most years to Brittany and, at various times, most of the Channel Islands as well, spending up to two weeks aboard at a time.

Initially they were surprised to find people on larger yachts raising an eyebrow and asking if they had really sailed 'all the way from England on that?!', but they soon got used to it.

In the 1960s and '70s a 24-footer was a typical size for a cruising boat and it was by no means uncommon to find one accommodating a family of four. While expectations have changed over the past 40 years – many owners and crews considering a boat unacceptable if it doesn't have full standing headroom and a shower at the very least – the practicality of sailing a smaller boat remains the same. 'It's so useful to have a boat that's small enough to trail yet big enough for proper cruising,' says Gary. 'We can tuck into corners of marinas where most other boats won't fit, and on occasions that has meant being right next to the shower block while other people have been stuck on pontoons in the middle of the river waiting for the water taxi'.



The early years with *Echo* were a steep learning curve. Gary recalls a trip to Dartmouth in what turned out to be a south-easterly Force 8. 'Even with our limited skill levels at the time we reckoned it was safer to keep going than to turn back. Some of the seas were higher than the boat was long, but she looked after us!'

As well as cruising extensively, Gary and Morag have made *Echo* a name to be feared in their local racing from Weymouth, last year managing a near clean sweep of the silverware despite often sailing two-handed or with an occasional third.

Going deep

Many Etap 24is have the tandem keel. Giving a draught of just 2ft 9in (0.85m), it allows the boat to sneak into shallow water and also to sit lower on the trailer than with the substantially deeper fin. It's also pretty efficient for such a shallow appendage, with the benefits of being both cheaper and simpler than the lifting keel that Etap had offered on their smaller models until the introduction of the 21i. Extra cabin space is a bonus.

As has been demonstrated time and time again, however, there's no substitute for draught, so I was pleased to hear that *Echo* is a fin-keeler. The tip of the fin's lead bulb plunges to just under 5ft (1.5m) below the waterline. It was a sensible decision for Etap: having given buyers a shallow alternative, why compromise with the fin?

Despite the secrecy surrounding the keel profiles of the two boats in Holland all those years ago, it soon became abundantly clear which was which. A few yards of sailing and a couple of tacks was all it took to give the game away. Read the report in PBO August 2000 for the full story.

Footing rather than pointing is the way to sail the Etap upwind

ABOVE **Hinging up the cockpit sole gives access to the Yanmar diesel 1GM inboard. With the outboard version, the under-sole space is used for stowage**

BELOW **The cockpit layout works well and allows the boat to be sailed efficiently two-handed**

That's not to say that the tandem keel doesn't work well for its draught; just that a deep fin is better for stiffness, righting moment, speed, acceleration and manoeuvrability. Gary and Morag have proved that it works, as did I during a pleasant early-season (pre-season for most people) sail from Weymouth. Portland Marina had lifted the boat for a scrub only a few days earlier, so she had a clean bottom despite having otherwise remained afloat since the beginning of 2013. Combined with the folding prop on the leg of the Yanmar 9hp 1GM saildrive (Etap offered an outboard as an alternative) it gave her no excuses.

Thankfully she didn't need any, reminding me that she's a fun, fast and responsive boat to sail. Gary says that she comes into her own when the breeze reaches 15 knots. He has a good deal of experience in fresh conditions, including having planed (not surfed, but planed) at 12 knots down the entire leg of a race a few years ago under spinnaker. 'It was fine until we approached the leeward mark and had to take the kite down', he remembers. 'That's when it all started to get a bit messy!'

She looks sedate enough here, but the 24i can easily reach double-figure speeds downwind

We had gentler conditions for our sail, having to make do with between 8 and 12 knots of wind. It was noticeable how much more positive *Echo* became at the upper end of this range. In 12 knots she felt alive and responsive, clocking up to 5.3 knots on the breeze and feeling fully powered up. A marginal lull was all it took for us to lose half a knot of boat-speed. She came upright and needed a substantial change of gear – crew position and sail trim – to stop her sticking to the water. Many boats have these transitions at various wind-speeds; the Etap's just happens to be more pronounced.

Learning how best to tickle her along is all part of the challenge for a racing crew. At one stage we were ambling upwind happily enough in 10-12 knots with all three of us in the cockpit – one to leeward – and the log showing 4.7-4.8 knots. Moving two crew up to the weather rail and the helmsman to the forward end of the cockpit brought immediate results, the speed increasing to 5.1-5.2 knots.

Crew weight affects any boat, and the smaller and lighter the boat the greater its effect, so this came as no surprise. Harder to assess without another boat to sail against is the optimum pointing angle upwind. Sailing as I was initially, we tacked through around 80°. Gary has found he does better by sailing a little deeper, the extra speed more than compensating for the increased tacking angle. I was in no position to argue, as *Echo's* results suggests that whatever he has been doing has worked.

Easy ways

Lest all this talk of tweaking should give the impression that the Etap is an overly sensitive creature, I should make it clear that she's not in the least. She's an easy and forgiving boat to sail; just one that's agreeably responsive, and that makes her fun to be aboard.

After beating out through the breakwater and a little way into Weymouth Bay, we turned around, popped the kite up and made our way back downwind at 6.5 knots. Reaching up as shy as we could, we brought the apparent wind to around 70° and the log to 6.9 knots. The helm loaded up at that point but the twin rudders continued to grip tenaciously.

In normal sailing mode the helm remains comfortably light. If there's any slop in the rudder bearings, it's time for new bushes. Gary replaces them every year – it's a simple enough job.

The helming position on the coamings is pretty good. If you find

Beech laminate is used in the practical and cleverly designed interior. Headroom in the saloon is 5ft 7in (1.67m)

it a bit too close to the guardwire for comfort, the answer is to dip your torso underneath.

The standard boat-testing 'circuits-and-bumps' routine showed up no surprises. Trimmed normally and left to her own devices on the wind, *Echo* rounded up, tacked, tacked back, rounded up, tacked again and continued this routine until we interrupted her to carry on sailing. Hove to, she sat almost dead in the water but could still be gybed round with the main pinned in to resume her original course. Making upwind under either just the main or the headsail on its own presented no challenges. She could even be put into the 'hove one' position, as I call it – heaving to without the jib.

Control of the mainsail is helped by the full-width traveller, which can quickly and easily be removed if you want to open up the cockpit for picnics or socialising. There's no backstay, however, so you have to use alternative approaches to flatten and depower the well-roached mainsail.

Hardware throughout is up to spec and from well-known names such as Lewmar and Seldén. Most of the aluminium extrusions apart from the spars came from Etap's own factory.

Accommodation

Etap were clever in the way they managed to incorporate enough foam to keep the boat afloat, habitable and able to sail if flooded without restricting interior space or stowage to an appreciable extent. In fact the stowage is remarkably good, which is one of the reasons why Gary and Morag were struggling when they eventually started to look for a bigger boat. The question they most often found themselves asking was 'where are we going to put everything?'

Etap's trick was to hide the bulk of the foam in the ends, using space that would otherwise be mostly wasted. Side effects of the double-skinning and foam injection are the smooth, wipe-clean insides to the lockers, and good thermal and acoustic insulation. Etap's use of resin-transfer techniques means that every moulded surface is smooth gelcoat.

Accommodation is good for a spirited 24-footer. There's no double aft cabin. Instead you have plenty of cockpit locker space each side and, below decks, generous settee berths in the saloon whose backrests can be removed and clipped alongside to extend their width for sleeping. Also multi-tasking is the door to the hanging locker to starboard, forward of the main bulkhead. It doubles as a table in the saloon or the cockpit.

The galley is split either side, abaft the bulkhead. Moving forward you find the heads to port and then a V-berth in the bow. Compression loads from the rig are taken by an aluminium arch moulded into the deck and by the bulkhead beneath.

On *Echo*, the woodwork, finished in beech laminate, has worn well – as has the whole interior. It's still clean, fresh and showing no signs of having been lived in extensively.

PBO's verdict

If you're seriously interested in buying an Etap 24i it would be worth reading the original report as well. I haven't repeated everything in this feature that I wrote there; the objective was to see how the boat stacks up 14 year later. My conclusion is that she was out of the ordinary then and still is now, offering a combination of qualities that simply can't be found in any other boat, old or new.

She offers a sporty yet easy-going nature combined with unsinkability, a choice of keels and an interior that, while less roomy than some, is appealing, comfortable and eminently practical. Although a boat of this size can't be considered a trailer-sailer, her beam and weight make her trailable behind a suitably robust tow-vehicle.

The 24i confirms that Etap's reputation for producing cleverly designed, attractive and soundly engineered performance cruisers with a difference is well deserved. PBO

Other boats to look at

Jeanneau Sun 2500

PRICE: £20,000-£30,000

This bigger but less successful version of the popular Sun 2000 has a centreplate that retracts into a ballast stub, plus twin rudders and a diesel inboard. More subdued in feel than the Etap.

Hunter Ranger 245

PRICE: FROM £19,000

One of the later generation of chunky Hunters, she's still available new today, with fin or twin keels and an inboard/outboard arrangement. Stiff, tough, roomy, well balanced and far from slow.

Jaguar 24

PRICE: £7,000-£9,000

Relatively few of this design by Tony Castro were built, but that's no reflection on the boat – she looks good and sails nicely. Fin or twin keels. Castro was also responsible for the Jaguar 265.

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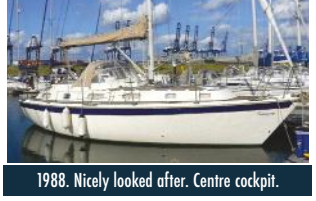

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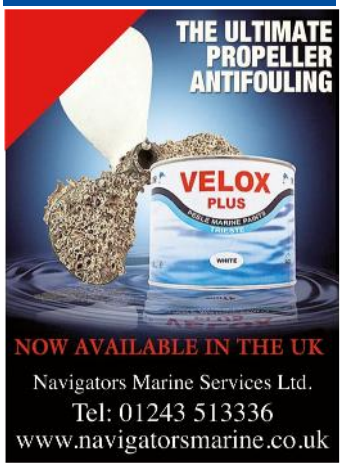

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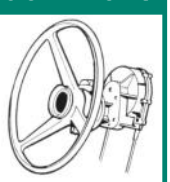

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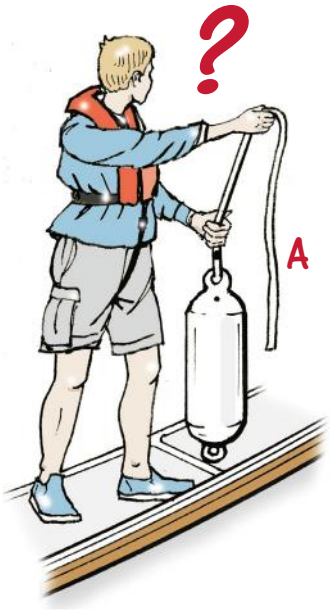
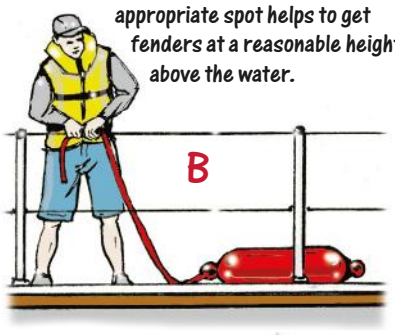


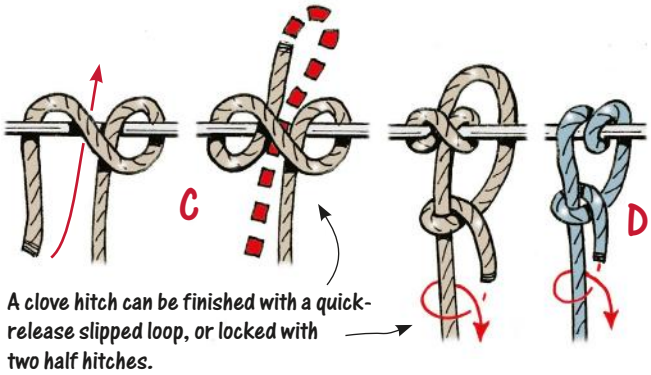
A. Crew should always ask the skipper how he wants the fenders rigged.

B. It's a good idea if big fenders are tied on before putting them over the side: that way they won't be lost if dropped when proving heavier than expected. Marking the line at an appropriate spot helps to get fenders at a reasonable height above the water.

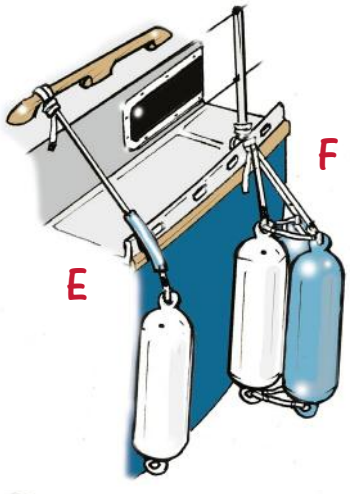


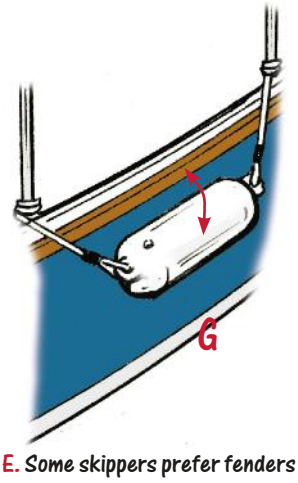
C. Some skippers want fenders secured with a clove hitch around the guardwire, so they can be quickly adjusted up-and-down and fore-and-aft.

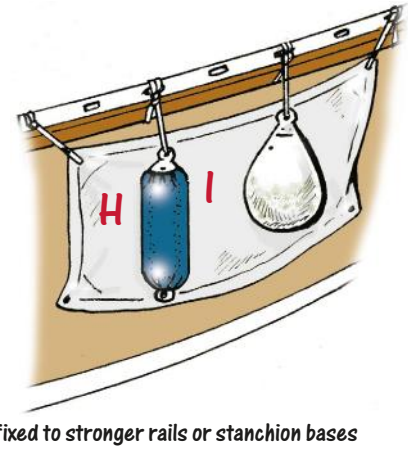
D. Others only want a 'round turn and two half hitches' used.

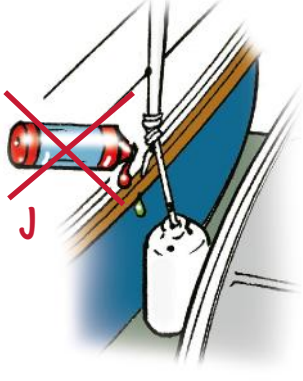


A clove hitch can be finished with a quick-release slipped loop, or locked with two half hitches.





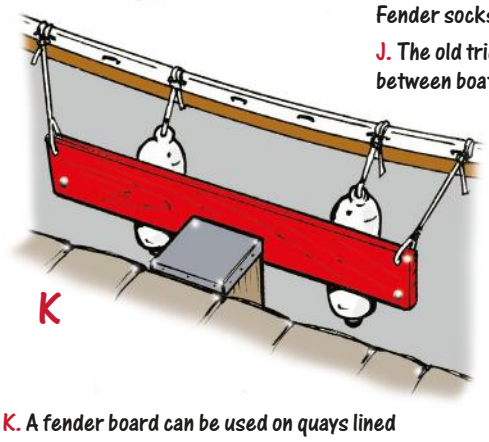




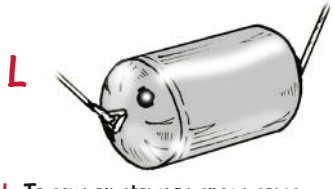
E. Some skippers prefer fenders fixed to stronger rails or stanchion bases rather than guardwires.

If you expect choppy weather, fenders can be bunched together (F) or rigged horizontally (G) as they seem to stay in place better between bouncing boats. Fender socks (H) and aprons (I) protect the topsides.

J. The old trick of using some washing-up liquid to silence squeaky fenders between boats might discolour or even dissolve some topside paints!



K. A fender board can be used on quays lined with piles or on rough, uneven surfaces.



L. To save on stowage space some people carry a few inflatable fenders.

M. Flat foam fenders can double up as cockpit cushions. The very thin fenders often used on inland boats take up very little space.

N. A crew member ready with a roving fender makes sure nobody risks their arms and legs by trying to fend off.

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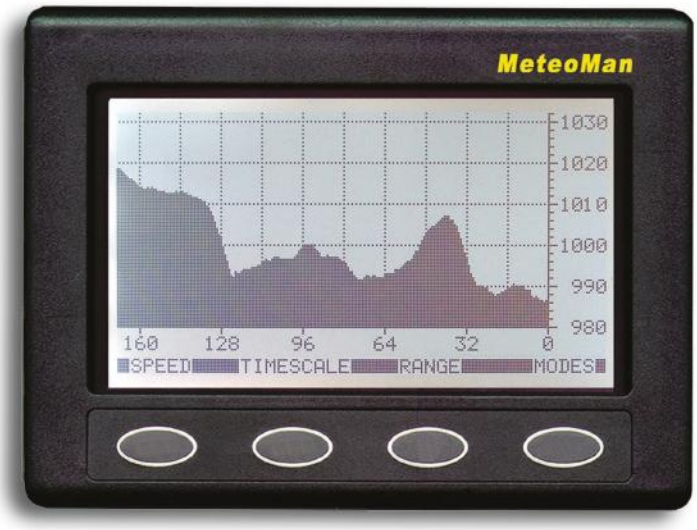

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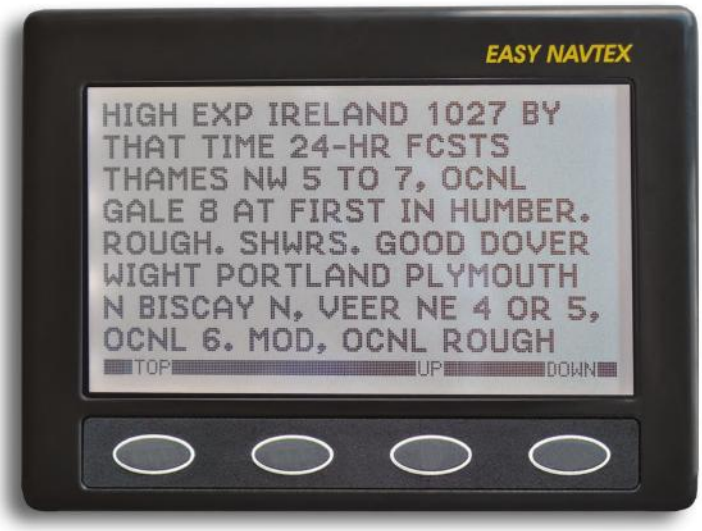

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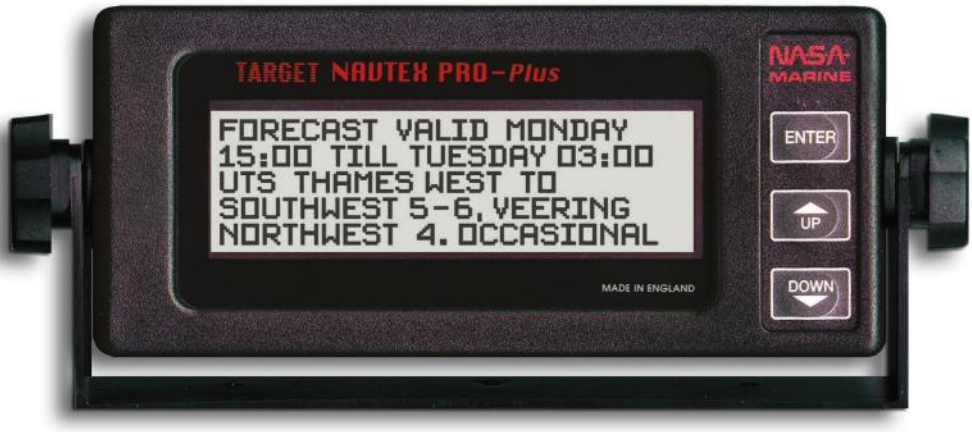

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