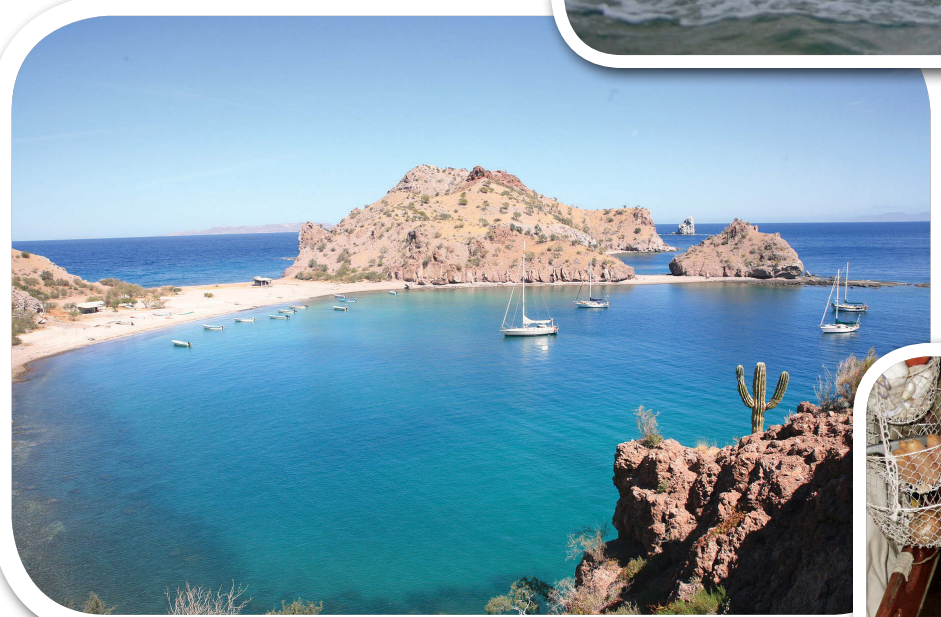
GOOD OLD BOAT™

Archive eXtractions

CRUISING PREPARATIONS

Advice from experienced cruisers to future cruisers . . . those who are contemplating life aboard as well as those who are already on the five-year plan to leave for an extended period of time. We're grateful to those who have shared their experiences and excited for those who will follow.



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Good Old Boat™

Cruising Preparations

There's a certain gleam in your eye. You're planning to go cruising . . . indefinitely. You'll say you're headed to the Bahamas or to Baja and then you'll see how it goes from there. But deep down inside you're hoping to cross an ocean or two, possibly circumnavigate. Why not? Others do it all the time: young couples with kids, middle-agers who plan to break out from the rat race for a while and come back later, and retirees who want to see the world at their own pace.

Many of those who have gone before you have offered advice in Good Old Boat. That advice is captured here. What sort of boat you need to go voyaging. What it costs to be out there. What equipment works and what equipment was a waste of the money to purchase and the time to install. What spares you'll need. Cruising with pets. How to equip your boat for cruising. How to make the move to life aboard. Thoughts about overcoming fear, uncertainty, and doubts. How to stay in touch. How to catch rain. How to live without ice. How to do the laundry.

Soon you'll be out there too. When you are, you may write your own articles about your new cruising lifestyle for those who will follow. We'll be happy to add them to our next collection of articles with advice from cruisers to cruisers. Bon voyage!

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Just in case

Things you need with you when you get away from it all

by Aussie Bray

Successful cruising is largely about independence — not in the sense of being indefinitely self-sufficient, but in that the boat and her crew can deal with most eventualities unaided, or at least put up with the consequences. Many things contribute to this independence, including properly maintaining the boat and her equipment while in port so problems during the cruise are less likely. Another important factor is avoiding complexity in vital systems. Perhaps most important is carrying sufficient spares, supplies, and tools to be able to deal with reasonably foreseeable situations. Things do go wrong.

No one can anticipate all eventualities, and few can afford the money, weight, or storage space to carry spares or backups for everything, so we all have to make our own decisions about what extra gear to load on board — just in case. Let's look at a few examples.

Navigation

Even in this GPS age, safe navigation close to land still largely depends on chart and compass. Since charts are relatively expensive, the temptation is to economize where possible, buying only those you expect to use and only relatively small-scale charts of coasts that you don't expect to approach closely. The best-laid plans, however, have a tendency to get altered, if not by whimsy then by adverse weather or other factors beyond the crew's control. It is only prudent to carry safe landfall and harbor charts for alternative destinations and large-scale charts and/or cruising guides for any coast you might find yourself looking for refuge along. On international voyages, your choice may be limited to official ports of entry, but additional charts should nonetheless be carried along.

A surprising number of yachts have only one compass suitable for steering the boat and only one suitable for taking bearings. Compasses are relatively delicate devices and are usually treated and protected as such, but accidents do happen. A front-reading compass, mounted below in a bracket, can serve routinely as a telltale, but is always available as a back-up steering or bearing compass or for dinghy navigation.

DC electricity

The critical components in most DC electrical systems are the alternator and the battery system. It's possible to carry spare brushes, bearings, and regulators for the alternator, but bearing replacement is fiddly and requires appropriate tools. Carrying a complete spare covers all eventualities, including broken mounting feet. Alternators that suit the more common mounting arrangements can usually be picked up from auto-wreckers for a moderate price.

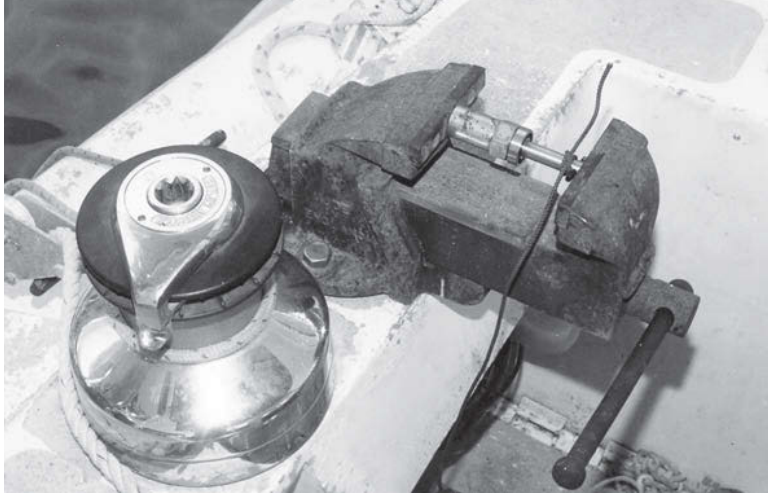
Keep an eye on battery electrolyte levels and density on a regular basis (monthly at least) — a hydrometer costs only a few dollars and can also be used to dole out squirts of distilled water. The hydrometer reveals a failing cell even when the overall voltage of the battery may seem OK. Having two permanently mounted alternators allows the starting battery and circuit to be completely separate from the domestic batteries, without the complication, inefficiencies, and opportunities for a flat starting battery associated with diodes, by-pass switches, and so on. Separate systems make it most unlikely that any single battery problem or electrical switching oversight will prevent the engine from starting.

Engines

Major engine troubles scupper many cruising plans. Most problems with engines relate to the cooling system or contaminated fuel. Rubber components such as hoses should be periodically replaced (and spares carried) because even a minor leak at sea may go unnoticed until the engine begins to cook. Cooling failures often result in head-gasket problems, so it's worth carrying a spare gasket, even if you would employ a mechanic to install it. In addition to instruments, a loud alarm for excessive head temperature and another sensing the temperature of the exhaust after it has supposedly been cooled by mixing with water, are well worth installing.

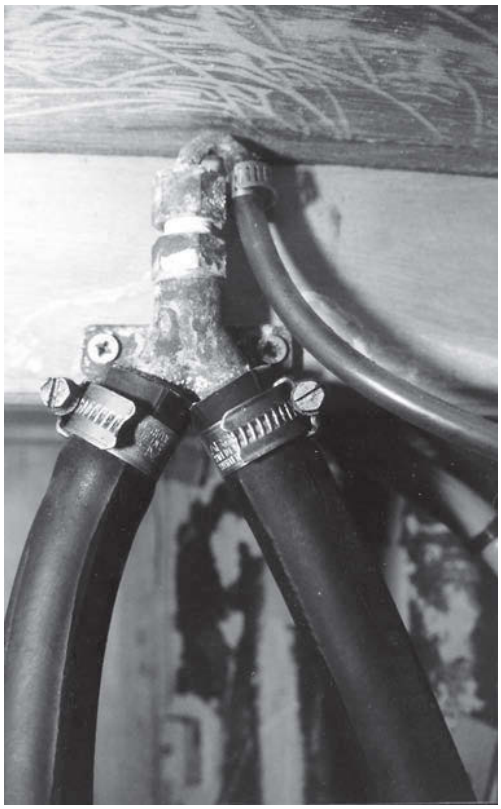
Daily checks of oil level will also alert you to water or fuel contamination of the sump, and checking the coolant level provides an early warning of leakage. Spares for the engine should definitely include several raw-water-pump impellers, and perhaps even a spare pump (store the spare with impeller removed and cover off). A complete spare for the engine coolant circulating pump is also a more reliable solution than trying to repair a leaking seal using a kit. The same applies to the fuel-lift pump. Obviously, spare drive belts, engine and gearbox oils, and a pump to remove oil from the pan should be carried. Given their cost, it's probably not worth carrying spares for the fuel-injection system unless the engine has had a hard life. Even then, problems are most likely to result from contaminated fuel, so good filtering and water-removal systems, and plenty of spare filters are the keys to avoiding trouble. Fuel bugs are so common these days that routine dosing of fuel, despite the cost, is probably a wise precaution.

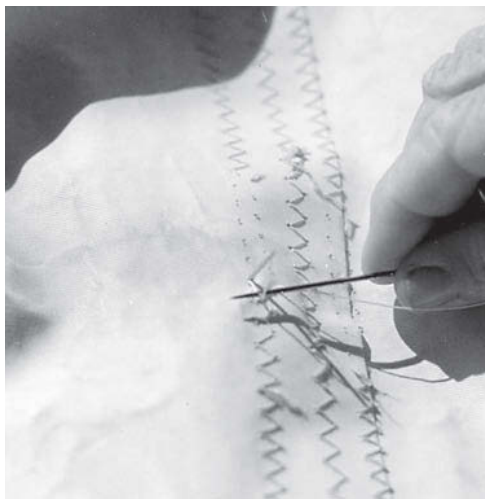
Another significant source of serious engine problems involves flooding one or more cylinders with cooling water via the exhaust system. Relatively few sailboats have the recommended high exhaust loop before the water injection point, so many are vulnerable to water entry under the wrong combination of heel, loading, and sea-state if the siphon-breaker in the water line sticks closed. The vents from siphon-breakers should be piped to the bilge or the cockpit to avoid accidentally spraying the engine electrics with hot salt water.



The other main area of engine vulnerability involves the starter motor. Poor contacts at battery or motor connections are common problems, but solenoids do sometimes stick, and old starters may develop commutator or brush problems. Flooded starters taken apart, rinsed in fresh water and dried in an oven will probably work, but the best insurance is a spare.

The freshwater part of the engine's cooling circuit should always contain the recommended concentration and brand of additive. As well as being an anti-boil/anti-freeze agent, these coolant additives inhibit corrosion, helping to avoid rust (which can eventually block parts of the circuit) and to prevent the thermostat from sticking. Spare additive, a thermostat, and a pressure cap are worth carrying, as are zincs for the engine — and of course zincs for the propeller shaft and hull.





A vice, at top above, has many uses aboard. Siphon breakers, at left, are the only thing preventing water from slowly flooding the engine. A sail repair kit, above, is a necessity.

Head

Plumbed marine toilets are not indispensable and were absent on many smaller cruising boats in years gone by. However, the alternatives of a bucket or the stern rail have such practical and social drawbacks that most sailors would rate a functioning head as very important — essential even. Legislation regarding holding tanks has complicated the plumbing itself, but there is still a great variation in the simplicity and maintainability of toilets. Depending on an electrical pumping system that doesn't have a mechanical backup is an obvious vulnerability but, with the exception of some cheap double-acting systems (that literally wear out), toilet mechanisms are repairable. It's just a matter of carrying the spares, suitable tools, and rubber gloves. Blockages in the discharge lines are often due to the slow buildup of mineral deposits, which also eventually prevent the proper functioning of one-way valves. Preventive maintenance every few months or so is preferable to being faced with a blocked head at 2 a.m. at sea. Rubber pump valves can be replaced on an exchange basis, with the used set being descaled by soaking a few days in a jar of vinegar.

Domestic water

Water is heavy and bulky but absolutely essential to life. In the past, when boats were generally smaller and slower, onboard showers were a luxury, and cruisers often had to strictly ration water, particularly on long passages. These days, problems with drinking water usually have to do with contamination by seawater or sediment stirred up at sea, tainting, failure of pumps, and sometimes with insufficient reserves.

Having at least two substantial tanks without any connection is a basic precaution, with plastic containers providing an emergency reserve. In-line strainers help to protect pumps, and active carbon filters can remove taint from the drinking outlet. Routine use of water-treatment chemicals may head off biological taint problems, and being able to deliberately sterilize may allow questionable sources such as river water to be used if necessary.

Spare seals and diaphragms should be carried for pumps, but for general convenience and to guard against motor failure, carrying a complete spare pump could be considered, too. The system should include at least one simple manual pump. Having salt water available in the galley can significantly reduce freshwater usage, and a system for collecting rainwater can greatly extend independent cruising duration.

Modern desalinators offer a very convenient source of copious fresh water, but they are sophisticated devices and are highly dependent on a power source — which on smaller yachts is usually electricity. User-maintainable items, such as membranes and chemicals, should be carried, but whether it is worth carrying spares for the high-pressure pump and so forth depends on the skills available on board, how remote the

cruising venue will be, and how dependent the boat is on the system.

Cooking

Most yachts using LPG stoves have two storage cylinders, so a problem with one, such as a leaking valve, doesn't necessarily leave them without fuel. However, on longer cruises one cylinder may already be empty, so carrying a third (perhaps smaller) cylinder as backup may be considered, especially if it also justifies its presence by being a portable supply for, say, a gas lamp or grill. The pressure regulator is a critical component and can fail, so a spare is worth carrying. Thermocouples powering flame-failure cut-outs should last a decade or more (and most stoves have at least two burners), but a spare is cheap insurance. A spare coil for stoves with spark-coil ignition is probably unwarranted because any automotive spark coil can be substituted.

Bilge pumps

A surprising number of boats suffer from serious flooding because they lack an automatic electric bilge pump or because complacency has led the crew to disable the automatic function. Minor leaks are far more common than major ones, but even a minor one can cause extensive damage if it remains undetected long enough to reach the electrics or the engine. Monocoque metal or GRP yachts should not leak (except perhaps a weep from the stuffing box when motoring) so the automatic operation should also trip an alarm, loud enough to be heard over the engine. Spare packing or replacement face seals should be carried for stuffing boxes.

Radio communications

Although their potential emergency role is never forgotten, radio transceivers are far more often used for routine purposes, particularly for communication between vessels. All cruisers should carry at least a fixed marine VHF. Barring electrical spikes or lightning pulses, these are generally very reliable units, but an additional handheld does provide a backup and allows for communication with the dinghy crew or even from a life raft. Conventional cell phones are no substitute for VHF, although they can sometimes provide an alternative.

Despite the trend toward additional satellite-based communications in larger craft, HF radio is still the least expensive and most widely used long-distance communications system for yachts. Marine and ham HF are pretty reliable, but their high-current power supplies, grounding systems, and large external antennas are all vulnerable to poor contacts and corrosion. Periodic inspection and cleaning of these and ensuring that full voltage reaches the transceiver during transmission will do much to prevent problems from developing.

Emergency packs

Most crews put together some sort of "grab bag" with the idea that in an emergency it might be all they have time to take with them into the life raft or dinghy. Plastic canisters with sealing screw lids make a lot of sense in this application, with lines attached for lashing. The canister may contain extra reserves of the things already in a life raft pack, such as flares, rations, flashlights, fishing gear, hats, knives, and so on. But they might include additional items such as reading glasses, vital prescription medicines, an EPIRB, strobe lights, a handheld VHF, a notepad, and so on.

Based on frustrating experiences with letting off flares in controlled situations, my own pack also includes a couple of butane-fueled cigarette lighters for reluctant starters and a pair of pliers for triggering rockets if the flimsy mechanism fails. Once packed, these contents should not be forgotten — batteries, foods, even fishhooks, will need replacing fairly regularly if they are to be relied on. If you've ever inspected the contents of a life raft you'll be aware how little drinking water they carry, so unless you wish to invest in a hand-powered desalinator, a few strategically stowed plastic jerry cans also make a lot of sense. A balance must be found between what might be useful, what things cost, and what you might have a reasonable chance of getting off the boat in time.

The front-reading compass, above left, visible from the author's bunk, could replace the steering compass. The quarterberth bunkboard has been removed, at left, to show emergency canisters stowed near the companionway steps. The jerry can of water is normally stowed in the cockpit.

Anchoring

In this department, the two most likely problem areas are a fouled anchor or an inoperable anchor winch. In many circumstances a trained person with scuba or hookah gear may be able to recover the anchor along with at least some of the anchor chain. However, darkness, currents, depth, water temperature, sharks, or lack of visibility may prevent a diver from being the solution. Buoying the crown of an anchor is a good precaution in some situations, but inadvisable in others. Especially when anchoring among other boats, a grapple can sometimes help extract an anchor that has fouled a cable.

Even if all this gear is carried, a cruising yacht may find herself without her main anchor and with shorter than usual chain. Few boats carry a spare main chain, but if the same calibration of chain is also used for generous leaders for stern and secondary anchors, they can be shackled together to restore most of the main scope. A spare main anchor should always be carried and on smaller boats may be light enough to also serve routinely as the stern anchor.

Electric anchor winches are affected by many problems in the boat's electrical system, and their motor or switching circuits are vulnerable to failure. Appropriate circuit breakers may protect against overloading, but there should be a backup on any boat where the crew cannot haul the whole weight of chain and anchor up from deep water unaided. The manual backups built into many electric winches are difficult and slow to use and might not generate sufficient pull to recover the gear from deep water. It's possible to improvise a hauling system using a sheet winch (via block-and-tackle reduction if necessary) attached to the chain via a rolling hitch with another line to take the strain while the tackle is opened out to take another bite. However, on a pitching deck on a dark and windy night you might appreciate a pair of proper chain hooks or claws to provide a quick and secure grip on the chain.

"Many things contribute to independence, including properly maintaining the boat and her equipment when in port so problems during the cruise are less likely."

Sails

With luck and a little stitch-in-time maintenance, Dacron cruising sails should last a decade, provided they are religiously protected from sharp objects and from the sun when not in use. Chafed seams are the most likely source of routine problems for which hand sewing is often the only practical remedy. A sewing machine is useful for repairs but a sewing-machine needle mounted into a handle allows two persons working on either side of the sail to mimic the results of a machine and is quicker and less damaging than the traditional triangular canvas sail needle and palm, although this definitely has its uses, too. Adhesive sail cloth is a useful way to limit temporarily the spread of a tear or to protect a seam from further chafe. UV-inhibited sail thread is cheaper when bought in bulk on a spindle and can be used for many other applications. Adhesives or double-sided sticky tape can be useful in holding sail cloth in place while it is being sewn. Spray sailtrack lubricant, spare nylon sail-track sliders, and suitable lashing material should always be carried.

The rig

Many modern rigs have little or no built-in redundancy — the failure of any one critical component can bring the lot down. There's no substitute for frequent careful visual inspection of the mast and rigging, but this simply won't happen unless there is a practical method of going aloft in port to look. If something is found to be failing, such as a shroud with fractured wires, proper cable clamps and lengths of flexible wire rope will allow a fairly strong jury repair to be made.

Tool kit

Tools are heavy, and some cruisers probably carry more tools than are likely to be needed, but nothing beats the right tool for the job. My own suggestion for a comprehensive cruising tool kit would be to include the following:

Hand tools: Locking tape measure, steel rule, square, hammers, small pry bar, bolt cutters (big enough to cut the rigging), oil can, screwdrivers, range of adjustable wrenches, Uni-Fit wrench, pipe wrenches, pliers, box and open-ended wrenches, a ratchet socket set, files, hacksaw and plenty of blades, stainless wire brush, center punch, drift, cold chisel, set of Allen wrenches, Easy-Outs, feeler gauges, pop-rivet gun, twist-drill bits, countersink bit, hand drill, brace, and a rechargeable drill. Most carpentry work can be tackled with items from the above kit, plus a cross-cut saw, a tenon saw (or Japanese fine draw-saw), a jack plane, a set of chisels, and a range of C-clamps.

Electrical tools: Multimeter, 30-watt 12-volt soldering iron, rosin-cored solder, non-corrosive flux, a reel of insulated tinned wire, spade and ring terminals, PVC and amalgamating-rubber insulating tape, cable ties, wire cutters and, of course, bulbs and fuses.

Power tools: Even if there is no AC-generation capacity on board, power is available at marinas and at least a sturdy ⅜-inch variable-speed drill should be carried. An orbital sander and, if the boat is metal, a 4-inch grinder, would also be high on my list.

Special tools: If you ever have to do serious work on the engine, such as replacing a head gasket, you'll need a torque wrench. A gear/wheel puller may prove essential for some jobs, including removing bearings from auxiliary equipment. A metal-working vice that can be mounted in the cockpit is often a boon. A set of taps and dies for making or restoring threads can be very useful. If needed for an anchor winch, engine, or stern bearing, there is no substitute for a grease gun. A magnet on a string and a remote claw grabber can be invaluable in recovering small components from holes or crevices.

Consumables: Loctite 242, epoxy, contact and PVA adhesives, Super Glue, silicone sealant, gasket sealant, Teflon thread tape, grease, WD-40, hose clamps, a range of stainless-steel threaded fasteners and self-tappers, pop rivets.

by Cheryl Fitzgerald

Bluewater Catalina

How a couple converted White Dove, *a 36-foot coastal cruiser, for offshore work*

Can a 1989 Catalina 36 be sufficiently modified to become a bluewater cruiser? After five years of grueling boat projects, we set sail in October 1998 to put *White Dove* to the test.

Jerry and I left California on *White Dove* in October, 1998, and sailed to Mexico, through the South Pacific islands including Tonga, and on to New Zealand. From there we visited Fiji and cruised up the east coast of Australia, then headed across the South Indian Ocean to South Africa with short stops in Mauritius and Reunion Islands. Our passage continued around the Cape of Good Hope, up the South Atlantic with a brief rest in St. Helena, and on to Trinidad. Then we island-hopped through the Caribbean and Bahamas. We completed our voyage in July, 2001, in Florida, where we lived aboard for another year.

To feel secure crossing oceans, we replaced wire lifelines with 1-inch stainless-steel tubing around the boat except for a short distance leading to the bow pulpit. We secured 33-inch-high double rails to tubing stanchion bases and ¼-inch stainless-steel plates. We incorporated a heavily reinforced radar arch made of 1½-inch tubing into this system to provide support for two solar panels, a permanent awning, and a wind generator. This arch has been worth every penny (and it took quite a few), since it provided us with the safety and security we needed, even during the roughest weather.

We added 8-inch bulwarks with a clearance of 1 inch off the deck, attached to custom stainless-steel brackets, some of which also served as rail-stanchion bases. Made from three layers of clear spruce and laminated together with resorcinol glue, these were coated with epoxy and two layers of glass, and then painted. They serve as an integral part of our rail system.

This was our most challenging modification, but the bulwarks prevented many items from being washed overboard and also created good attachment points for our web-

strap/snatch-block setup through which we could run the jib sheets.

Attachment point

We constructed a boom gallows over the companionway, which also served as the forward attachment point for our sail awning. We raised the cabin-top handrails 1 inch for an easier reach, and they also served as foot-holds. One more interesting addition: we welded a ladder-like structure to the boom. With a width of 23 inches, it provided good handholds, a nest for the mainsail to rest in, and additional strength for the boom.

One of the most important investments for a boat is a reliable, user-friendly anchoring system. Our horizontal Lighthouse anchor windlass is mounted on a pedestal far back on the foredeck. Overall it has served us well. Due to its easy operation, we don't hesitate to re-anchor if we're in doubt. The only complaint my husband, Jerry, has is that all horizontal windlasses have a tendency for the chain to jump off the gypsy under sudden, severe loads. For the price we paid, we could have bought two vertical windlasses.

We built a large chain locker by forfeiting a small portion of the V-berth and constructing two additional bulkheads. Anchor rode falls directly to the bilge, allowing a better balance for carrying 250 feet of chain and 400 feet of nylon rope, keeping the load lower down and aft. The real bonus is that the chain freefalls into the locker and neatly stacks itself.

We made several modifications to the rigging. We moved newly designed chainplates outboard and through-bolted them to the hull for better support of the mast, and we attached longer spreaders to accommodate the shrouds. A longer, 14-foot boom provides more sail area lower down. And by adding a 6-foot spruce bowsprit to move the headstay forward and installing an inner stay, we converted *White Dove* into a cutter. The variety of sail options available has enhanced our sail performance.

"One of our most ambitious alterations was glassing in the cabin sides, which came with stock, non-opening ports (except four) and installing 12 Lewmar Atlantic opening ports."

Two thoughts

All of these items have proved effective, but in retrospect two thoughts are worth mentioning: first, a metal wishbone bowsprit might be more practical for walking out to handle headsails, and second, twin headsails, one placed just ahead of the other, would be a useful addition for running two headstays. We've covered many miles of downwind sailing.

We added running backstays to increase mast support when beating with the staysail. These proved to be a hazard and a hassle. We wonder now whether permanent stays behind the lower aft stays would have been better.

Many people were puzzled when we removed the wheel and converted to a tiller (most folks do the opposite). But we wanted to reduce the amount of friction on the windvane. Besides, a tiller can use a simpler, less expensive, autopilot. This gave us the luxury of owning three (believe me, you'll use all of them). Most important, we had no steering cables to break.

However, we encountered a different type of steering disorder . . . our rudder sheared off! (See the July 2001 issue of *Sail* magazine for that story.) In New Zealand we fabricated a new rudder, using 2205L stainless steel for the shaft. This held up well for the remainder of our journey, but we also carried an emergency rudder that could be attached quickly. The best option for any spade-ruddered yacht is to install a Hydrovane or Autohelm windvane to act as a steering windvane and a second rudder. A compromise would be to convert the spade rudder to a half-skeg by creating a third attachment point.

Traveler changes

On deck, we moved the traveler aft to accommodate our hard dinghy and installed a Catalina 42 track and traveler car with a 6-to-1 purchase, placing both control lines to starboard. To secure the boom, preventer lines with a 4-to-1 purchase, port and starboard, run from a mid-boom attachment to

Cheryl and Jerry Fitzgerald's Catalina 36, *White Dove*, on facing page. A work in progress, at left below, White Dove has new rails, bulwarks, ports and boom gallows. At this stage of the renovation, the cockpit was filled with a full-size workbench. The outboard chainplates, bulwarks with integrated stainless rails, and a few of the new opening ports, at right below.

deck attachments behind the lower afts, out to the rails. The lines lead back to cabintop corners and are secured in large jamb cleats. This is convenient and effective for safely controlling the boom.

We constructed heavy teak doors for the companionway, retaining the dropboard slats. This was much more practical for going in and out, and it added strength and security in heavy weather.

One of our most ambitious alterations was glassing in the cabin sides, which came with stock, non-opening ports (except four) and installing 12 Lewmar Atlantic opening ports. We also replaced our small center hatch with a 24-inch-square hatch. These conversions have proved very valuable. Sufficient ventilation is a key factor to comfort in a tropical climate, but don't forget to add several fans, good for circulating the air during rain squalls and on windless days.

One last item of importance is refrigeration. We replaced the chart table with a new refrigerator/freezer and removed the unused nav seat. The new refrigerator top can still be used as a chart table. The original refrigeration locker gave us additional dry storage. Four inches of insulation surround the new box, and we installed a Technautics coldplate system. This worked flawlessly, even in the tropics, for three years, but went out on us during our longest crossing: up the South Atlantic from South Africa to Trinidad.

We ultimately discovered the problem to be the Aero-Quip line connectors. The valves became contaminated and restricted the flow of refrigerant. Nauti-Kol in Trinidad was able to fix our unit and recommends not using this type of valve.

". . . this ambitious venture worked for us and gave us a safe, comfortable bluewater cruising boat to enjoy while sailing the many oceans of the world."

Worth it?

Would we do it again? Should we have bought a boat (at twice the price) closer to our needs? No matter what the boat, Jerry still would have found an infinite number of projects to improve and restructure existing systems. Overall, our modifications greatly improved the functional effectiveness of our Catalina's performance as a bluewater cruiser.

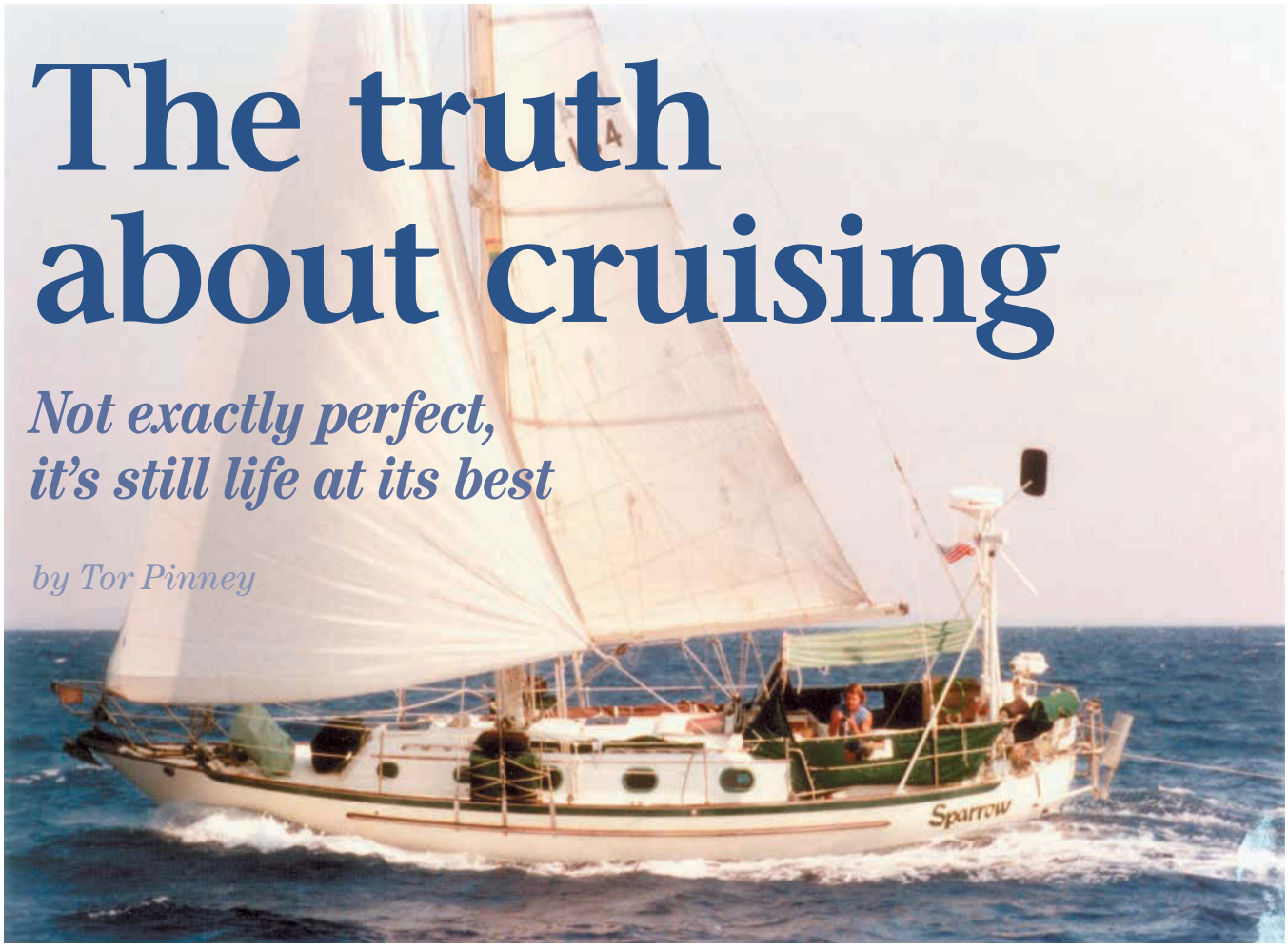
Taking on the many challenging projects to transform a Catalina 36 is not something most sailors are willing to do. But, this ambitious venture worked for us and gave us a safe, comfortable bluewater cruising boat to enjoy while sailing the many oceans of the world. We were rewarded with the enrichment and creation of magnificent memories and the fulfillment of a lifelong dream.

The preventer system, above left, with lines running to the cockpit. The running backstay is attached to the sidedeck when not in use. Above right, the companionway doors with the traveler system shown behind the dodger. At right, the finished navigation station which incorporates a refrigerator/freezer below the work table.

The truth about cruising

Not exactly perfect, it's still life at its best

by Tor Pinney



THERE ARE FEW HUMAN ENDEAVORS more rewarding than cruising under sail. The thrill of a fast reach across the trades, the peace of an idyllic harbor, the novelty of living aboard your floating home in new places — it's a lifestyle rich and varied in experience.

But at the same time, the cruising life presents some unique challenges. Cruising, especially long-term, isn't all blue skies and cocktails at sunset. Unless you're mentally prepared for the "other" side of cruising, the downside, you may find yourself unnecessarily disappointed. Let's take a look at some of the most common pitfalls cruisers face and what can be done about them.

One of the most daunting aspects of cruising, particularly offshore, is bad weather. No matter how many forecasts you tune in, heavy weather and head winds are an inevitable fact of the cruising life once you venture far from land. Three days into a gale at sea, under gray skies and wet decks, cruising doesn't seem quite so glamorous anymore. (I often find myself dreaming of a cozy log cabin in the woods!) The truth is, being cooped up on a boat during long spells of bad weather can be really depressing.

Then, just when things seem bad enough, the twin devils, fear and seasickness, clamber aboard to torture and dispirit even the most stalwart crew. Even if you're lucky enough to be in port when the weather deteriorates, cabin fever, concern for the boat and, sometimes, a rolly mooring can take much of the romance out of living aboard.

> *"Unless you're mentally prepared for the 'other' side of cruising, the downside, you may find yourself unnecessarily disappointed."*

However, there are ways to take some of the punch out of a bad day at sea. It's common sense to reduce sail at the first sign of deteriorating weather and to do everything you can to ensure that the boat rides safely. This alone alleviates some of the initial anxiety. But if the motion is still harsh, tuck in an extra reef to slow the boat down further. So what if you get to your distant destination a few hours or a few days later? Increased safety, comfort, and crew morale are more important aboard a cruising boat than an extra knot of speed. This is especially true if you're bashing to windward offshore. Ease off a bit on the sheets and the heading to reduce the pounding. If the weather is really nasty, heave to and wait it out. Be kind to your boat, your crew, and yourself; don't push harder than absolutely necessary in bad weather. And don't yell.

Preparing meals early

Cooking in a gale isn't much fun, either. Before encountering bad weather, prepare some meals that can be heated up quickly. A good, hot meal can make the wet world outside more tolerable. Afterward, clean up the dishes even if you don't really feel like it. And straighten up the cabin. A depression is less depressing if your living space is in order.

Once the boat is riding safely, the best thing to do in heavy weather is to go below and relax. Make some

tea, play some music, read a book, make love, take a nap — and keep reminding yourself that all storms do eventually end.

Being afraid at sea, especially in rough weather, is perfectly normal and much more common than many will admit. Fear of the unknown (How much worse is the weather going to get?) and fear of death (How much can this boat really take?) can turn a squall into a nightmare, especially for the uninitiated.

Weather forecasts, received via VHF, shortwave radio, or weatherfax, are reassuring — even when they're bad! They take the mystery out of a storm, giving you an idea of whether or not it is likely to get worse and, best of all, when it'll end. Fear of foundering usually comes from lack of confidence in the vessel, the captain, or both. Only time and experience build confidence. The second storm isn't quite as scary as the first, and the tenth, while still no fun, is almost routine.

Seasickness, that universal mariners' curse, has spoiled many a cruise. For those afflicted, it turns passage-making into a dreaded burden and adversely effects judgment at sea. Today there are many remedies available. Find one that works for you and use it before you get ill.

Leisure time

One of the most surprising truths about cruising is that you can become bored. I didn't say cruising is boring.

But boredom can and does creep aboard when the voyaging spans months or years, rather than brief holidays. You can only trim so many sails, comb so many beaches, read so many paperbacks, and toast so many sunsets before it all starts to seem, well, commonplace.

One common reason for this isn't so surprising when you think about it. Most people who manage to cast off

"Being afraid at sea, especially in rough weather, is perfectly normal and much more common than many will admit."

and go cruising today have worked long and hard to get there. Many are retired or taking a break from active, stimulating careers. Suddenly, they have an unaccustomed amount of leisure time on their hands. Oh, there's the sailing, the sightseeing, and the daily chores and boat maintenance — more than enough to fill the hours. But those of us who are products of a work-ethic society have a need to feel productive. I don't mean we have to "work" every day, but in order to feel good about ourselves, we need to feel like we're accomplishing something useful.

Too many people give up cruising, feeling depressed and dissatisfied, without realizing why they feel that way. This is particularly true of mates who have "gone along" with their spouse's cruising dream, but really aren't all that keen on it themselves. It's not the cruising that's boring. Cruising is, or can be, forever stimulating. It's the lack of feeling productive that gets some people down. Once you're aware of this potential threat, there's plenty you can do about it. But it takes a conscious effort on your part.

By being productive I don't necessarily mean earning money. Developing hobbies or interests such as writing, painting, or playing a musical instrument can give added meaning to life afloat. Continuing your studies, perhaps through university correspondence courses, may be especially rewarding. Consider jewelry design, woodcarving, or any of a score of other handicrafts.

Computer programming, shell collecting, canvas sewing — virtually anything that's portable enough to do aboard a boat is a positive, potential cure for boredom. Of course, working at a trade as you travel, even if it means stopping from time to time, has the added benefit of boosting the cruising kitty. Perhaps more importantly, the sheer contrast of "going to work" for periods of time will refresh your appreciation of the lazier life under sail.

Contrast is often the other key to successful, long-term cruising. For example, getting away from the boat every so often will keep your appreciation level high. Taking seasonal or annual sabbaticals from living aboard definitely cures cruising boredom. You'll soon discover that the best part of leaving your boat is coming back to her again.

A solitary life

The cruising life can be a very solitary existence. When living in remote and foreign places, cultural and language

differences may isolate you from the local population. Periodic feelings of isolation and loneliness are almost universal, especially among singlehanders, although cruising couples and even families are not immune. Everybody gets the cruising blues sometimes.

There are, however, some practical remedies. For some, a compromise cruising schedule is an ideal cure. Six (or four or eight) months spent sailing, alternated with similar periods of time staying put (either ashore or afloat) allows you to satisfy the gypsy itch, yet still provides plenty of time for nurturing valuable human relationships ashore. This can be especially important to the children of cruising families.

Alternatively, having friends and family come to visit you aboard is not only a way to share your unique lifestyle with them, but it breaks up the (dare I say it?) monotony of 24-hour-a-day, close-quarters living with your regular mate(s). So do brief vacation visits home with the boat stored safely in a marina or boatyard.

A pleasant way to combat cruising isolation is to sail in tandem with one or more other yachts. Whether you set off as a group or meet some compatible cruisers along the way and decide to continue on together, your social life will be multiplied tenfold by cruising in company. As a bonus, this arrangement provides an added safety margin for everyone.

Aboard as ashore, a pet is a great antidote for loneliness. So are regular phone calls home.

Lastly, there is a growing number of sailors' social clubs available on various radio nets. For local camaraderie, just ask other sailors you meet if there is a particular VHF frequency and time that area boaters get together. Licensed ham operators enjoy access to maritime mobile and land-based nets worldwide for communicating with kindred spirits. There are also many less formal, regional maritime nets on single-sideband frequencies that do not require a ham license to join in. Although the SSB nets may discuss weather forecasts and useful travel information, their primary function is usually social. It's a chance for cruising sailors to chat, schedule rendezvous, and keep in touch with each other.

"Whether you set off as a group or meet some compatible cruisers along the way and decide to continue on together, your social life will be multiplied tenfold by cruising in company."

Ongoing maintenance

Another unpublicized truth about the cruising life is the huge amount of work and attention a boat requires. Every cruising sailor is, in a sense, a slave to his vessel. Even if you start out with a brand-new boat and equipment, the list of maintenance and repair chores is never-ending. If the boat is old, the list is even longer. I don't know any cruiser who can honestly say, "I have absolutely nothing that I could be doing for the boat today."

Boat maintenance is necessary; it can even be gratifying. But be careful that it doesn't overwhelm you and spoil your trip. You'll do well to prioritize the jobs, dealing with essential maintenance and repairs right away, while scheduling time for less urgent tasks at regular intervals. I find it easier to stop periodically, settle into a pleasant port, and work full-time on the boat for a few days or weeks to catch up. Then, with many jobs accomplished and a clear conscience, I can relax and enjoy the leisure time I've created for sailing, exploring, and writing.

When chores seem to pile up, I occasionally hire a local to help with the simpler tasks, like scrubbing and oiling the teak or waxing the hull. Of course, when I'm sailing with crew aboard, everybody pitches in and the jobs get done more quickly.

Once in a while it's a relief to get away from boat chores entirely. With your vessel securely moored or drydocked, ideally with someone keeping an eye on her, you're free to leave for a while and devote your full attention to inland sightseeing and other interests. Remember: you own your boat; don't let her own you.

Clearing customs

Visiting foreign lands aboard our floating home is one of the prime reasons most of us go cruising. On the plus side is the thrill of discovering remarkable places, meeting different people, learning their customs, trying new foods, and experiencing it all from the comfortable base of your own floating home.

But there are aspects of travel peculiar to boating that can try your patience. Clearing in with the various government authorities often is an onerous, time-consuming project. Customs, immigration, the port captain, the National Guard, the police, the Coast Guard, and all the king's men may require separate visits, each with forms to be com-

pleted. Rarely are they all in the same building, or even in the same part of town. Orderly ship's paperwork and a patient, friendly attitude are your best defenses against bureaucratic tedium.

Receiving mail is another snag in paradise. It's not uncommon to go for months between successful mail drops while cruising abroad. Often a mail packet containing your precious, accumulated correspondence will arrive in the country only to be stalled at a customs warehouse somewhere, waiting — sometimes for months — to be inspected for contraband. Or the packet may never arrive at all.

In many larger ports you can take advantage of international courier services such as DHL and Federal Express to get the mail packets through. They're expensive but they usually work.

Homeward-bound mail posted from many Third World countries stands, maybe, a 50/50 chance of ever arriving. If you have a supply of your home country's postage stamps aboard, you can often find a tourist willing to carry your flat mail back to that country with him or her, to be posted there. That gives it a much better chance of reaching its destination.

Replacement parts

As a rule, when cruising abroad it's only in the largest cities that you'll find services for repairing things like electronics, sails, and machinery. Even then, locating replacement parts can be next to impossible, and if you have repair parts shipped to you from home they may be difficult to retrieve. It's true that a vessel in transit is almost universally exempt from paying import duty on equipment that is shipped in to be used on the boat. But it's often difficult, and sometimes impossible, to explain that to a customs official who doesn't speak your language or share your interpretation of international maritime law.

It's best to prepare for the inevitable breakdowns before leaving home waters. Stock up on complete spare parts, warranty cards, and service manuals (not just owner's manuals) for every essential device on the boat. Thus provisioned, you may then find even in some smaller towns a competent repairman who can help because you're able to provide the necessary manuals and materials.

The cruising life can be stimulating, peaceful, fun, and endlessly rewarding. It can be, and often is, everything you've dreamed and more. Still it is life, which by its very nature includes challenges and pitfalls. To set sail with the idea that you're leaving all your troubles behind is to blow a bubble that is destined to burst. Be aware, be prepared, and be realistic. Add to that a positive mental attitude, and you'll discover the real truth about the cruising life: while it is not always perfect, it just may be life at its best!

Lessons in onboard laundering

A long-term cruising sailor comes clean

by Connie McBride

On laundry day aboard *Eurisko*, the tools and supplies are easy to assemble.

When we made our escape from the house, careers, and land nine years ago, certain domestic chores followed us on board our Creekmore, *Eurisko*. We still had to feed, educate, clean up after, and clothe our three growing boys. Since we were cruising on a budget and working only a few months a year, we found inexpensive (though frequently time-consuming) ways to meet these basic needs: we bake our own bread, home-school the children, and avoid Laundromats by washing our clothes on board.

There are many methods of doing laundry on a boat. The most ridiculous one I have seen is a full-sized household washer on the deck of a 48-foot sailboat. This was not just a floating home; this couple regularly traveled a thousand miles a year in the Caribbean with their washing machine tied to the mast.

Only slightly more practical are combination washer/dryers designed for use in a boat or RV. Innovative Washing sells a variety of these machines, starting at around $1,000. They operate on 110 volts and require more than 10 gallons of water per load. The smallest one is 34 x 24 x 22 inches and takes 1 hour and 45 minutes to *wash* and 1 hour and 25 minutes to *dry* a 3½-pound load. (For reference, a full-sized washer load is 22 pounds.) Even if these appliances were free, we could not afford the space, electricity, or water to use one.

A more sensible option for sailors on our end of the spectrum is the Wonder Wash plastic hand-powered washer sold at Cleanairgardening.com for $50. We have a friend who uses his often

Connie measures a laundry load by filling the bucket with dry clothes, at left. She then adds detergent and dissolves it in water (pre-warmed, if needed, by the sun), center. The wash cycle then commences with the plunger, at right.

Connie uses an old-fashioned wringer, at left, to wring out the soapy water before rinsing, then again to remove the rinse water. To ensure the clothes can resist the trade winds, Connie uses their buttons and cords to back up the clothespins holding them on the lifelines, at right.

and with great results. It is an 11-inch diameter barrel on a 14 x 17-inch stand. Add detergent, 5 pounds of clothes, and 1½ gallons of warm water. Close the lid and use the handle to spin the barrel at a rate of 1 revolution per second for 2 minutes. The agitation and warm water create pressure which is said to help remove dirt. Drain, repeat with rinse water, drain, wring, and hang clothes to dry.

This method requires a bit of labor, but the washer is small, portable, requires no electricity and, with no metal parts, should last a lifetime.

"Small" and "portable" are relative. What was great for our singlehanding friend on a 50-foot catamaran was not practical for the five of us on a 34-foot monohull. We needed a different solution.

During our first few years of cruising, we endured the expense and hassle of lugging dry bags of laundry to shore, finding a coin laundry, getting correct change in the local currency, and wasting hours watching the clothes wash and dry. Then we remembered an elderly gentleman whom Dave befriended 15 years earlier. Over iced tea during one of their afternoon visits, Mr. Carney finished washing his laundry — with a bucket and a toilet plunger. From these memories, trial and error, and with improvements over the subsequent years, we reached our current laundry routine.

Wash and rinse

I start by filling our 3-gallon bucket with dry clothes. This determines a load. Seven T-shirts is an average-sized load. (The one pictured is three T-shirts, three tank tops, three pairs of shorts, and three swimsuits.)

After removing the clothes, I add water — including a teapot of boiling water if I want a hot-water wash. For a warm wash or rinse cycle in the tropics, I leave the water jugs or the bucket of soaking laundry in the sun.

Next I add detergent and bleach, if desired. A word of warning about detergent: add only enough to make the clothes feel a bit slippery. If you see suds or the water feels soapy, you have added too much and it will require more water to rinse them. Adding bleach seems to lessen the amount of detergent you need. When available, we use a powder detergent made specifically for hand washing clothes in cold water. We have only found this in Central America, but it may be available elsewhere.

I use the plunger to stir and dissolve the detergent, then add clothes and more water until the bucket is full. Be sure not to overload the bucket with clothes — leave room for the plunger and for the clothes to be agitated in the water.

I "plunge" the clothes while making sure the load gets adequate circulation — so the shirt on the bottom doesn't stay on the bottom, for example. The agitation and the suction of the plunger force dirt out of the clothes.

I have seen people wash clothes in a bucket using their hands instead of a plunger. Neither my back, from the bending, nor my hands, from being in soapy water for that long, would tolerate this method.

After five minutes of plunging, I inspect the clothes for remaining dirt and stains, using a laundry brush on the bigger messes (such as the boys' shorts) and a toothbrush on more delicate fabrics. After spot cleaning them, I plunge the clothes for an additional 5 minutes.

If there is room on the line for this load, I rinse it immediately. Otherwise, I have left clothes to soak for as long as overnight.

To remove rust stains, I make a paste of Bar Keepers Friend (oxalic acid), rub it on the stain, leave it overnight, and then wash as normal.

Wring, rinse, wring again

Until quite recently, our wringing method was hands-on. We wrapped the clothes around the tiller and twisted. While this did remove most of the water, it also occasionally distorted the shape of the clothes, and after a few loads it irritated an old injury in my finger.

In defiance of our "keep it simple rule," we bought an old-fashioned hand-cranked clothes wringer. (This act of rebellion was only made possible by the empty locker we have not yet filled since the older two boys went off to college.) Not only does the wringer not stretch out clothes, it also removes much more water (and, consequently, dirt as well). Our clothes are cleaner now and require half the time to dry.

Our first method of rinsing clothes was to return them to the bucket after wringing out the wash water, fill the bucket with rinse water, and plunge again. The water was cloudy with soap, the clothes were slippery, and

> **“After years of living in the trade winds, we have learned a few tricks for keeping clothes from blowing away.”**

they never fully dried. As a result, they often mildewed in the lockers. We now rinse each piece individually with only as much water as necessary, pouring out the water and using fresh water after each one. We have found that the clothes feel cleaner and dry completely and we actually use less water this way.

A note on water conservation: we have read and heard about a clothes-washing method touted as requiring less fresh water — washing in salt water, then rinsing in fresh. Some people use a bucket, others drag their clothes behind them as they sail. The first flaw with this idea is that detergent is not as effective in salt water. Secondly, rinsing all the salt out of clothes requires more fresh water than both washing and rinsing in fresh. We strongly discourage the use of this method.

Trade-wind dry

Once the clothes have been rinsed and wrung again, we hang them to dry. After years of living in the trade winds, we have learned a few tricks for keeping clothes from blowing away.

We attach small items to our lifelines using any tie or strap available (such as those on our boys' board shorts) as well as clothespins. Swimsuits and underwear we cow hitch around the lifeline (pull it through itself). I have sewn strings on the short edges of bath towels so we can tie them with a clove hitch in addition to using clothespins (see article in the September 2008 issue). For anything that hangs down very far (towels and shirts), I pin the front two edges together to prevent them from flipping up in the wind and possibly popping off the clothespins holding them to the lifelines. We secure shirts or shorts around the lifeline with any available buttons or snaps as added windproofing.

For drying sheets or more laundry than will fit on the lifelines, we tie a line from the mast to the cutter stay at eye level and use it as an additional clothesline. We have seen boaters string a similar line athwartships from shroud to shroud. At anchor, this gives the clothes the full power of the wind head on. Beware, though: if it is very windy, lots of clothes forward of the mast will cause the boat to yaw at anchor. When lying beam to the wind because of current or gusts, this added windage may even cause you to drag anchor, as we can attest.

Inclement weather or overzealous washing late in the afternoon occasionally leaves me with clothes that are not dry by sunset. I do not leave laundry on the line overnight: it gets wetter with the dew, it's noisy, it adds windage, and makes dealing with anchors during a midnight squall much more difficult. After one smelly incident, however, I no longer simply make a pile of damp clothes; they will sour overnight. Instead, I hang them under the awning or in the cabin below, draped or hanging anywhere that allows them to air out.

Tea and laundry

Like most of our money-saving efforts, bucket washing laundry is time-consuming. We choose a sunny, dry, breezy day when we would normally be lounging in the cockpit anyway. Over a cup of tea, while enjoying the scenery and each other's company, we plunge, wring, and hang. As our reward, our clothes are cleaner, smell better, and do not wear out as quickly as they would if they were subjected to washing machines and dryers. Best of all, we can do laundry wherever we may be without ever leaving home.

Connie McBride posts her news and views on her website, <www.simplysailingonline.com>.

Resources

Innovative Washing
www.washerdryercombo.com

Wonder Wash hand-powered washer
www.cleanairgardening.com

Hand wringers
www.dynajet.com
www.wringerhand.com

Essential items
- sail
- anchor and rode
- Coast Guard-approved safety gear
- flashlight
- bucket for bailing
- chart
- sharp pencil
- compass
- warm blanket
- food
- water

The feeling that money can't buy

Successful cruising means knowing what you don't *need*

by Dave Martin

Twenty years ago, fitting out a boat for cruising was less complicated because products such as solar panels, 12-volt refrigerators, inverters, navigational electronics, and communication systems were scarce — not to mention pricey, compared to the actual cost of the boat. When the era of electronics and electrical appliances was relatively young, it was easy to make do without these "newfangled items."

Nowadays, the glut of advertised goods can make us feel old-fashioned unless we load our hybrid boats with all the latest and greatest. It's human nature to want just a teensy bit more than we already have or can afford. This attitude is what the marketing gurus count on. Lately, it is also human nature to expect around-the-clock comfort and convenience. On a boat, catering to comfort is where it starts getting expensive. If the dream to go cruising is ripe but the budget is rotten, sacrifices are inevitable.

> *"If the dream to go cruising is ripe but the budget is rotten, sacrifices are inevitable."*

What saddens me is hearing tales of financial woe from folks who want to go cruising, but have given up on their dreams because they believe that fitting out a boat is too expensive. Well, fitting out a boat *can* get expensive — if you let it. The truth is, the magical cruising lifestyle is no different from a shore-based lifestyle; to ultimately succeed requires spending within your means and being happy about it. The hard part is having to suppress how you'd *prefer* to be doing things.

So what does one actually *need* for a successful cruise? That depends on the individual. Assuming the hull of my boat is sound — and by that I mean predictably watertight — here is a list of essential items needed to get *me* cruising:

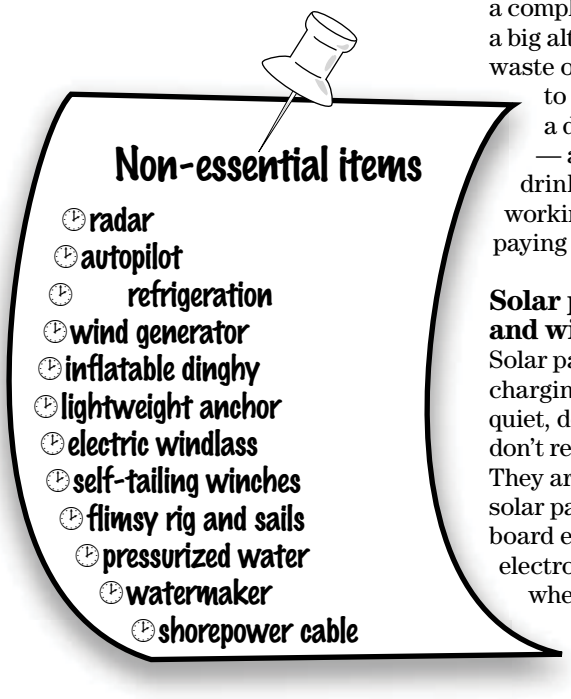
A sail, an anchor and rode, Coast Guard-approved safety gear, a flashlight, a bucket for bailing, a chart, a sharp pencil, a compass, a warm blanket, food, and water.

My boat is now ready for cruising. Everything else I might think of is not essential. Period. All right, this is a sparse list, but it's important to understand the bottom line.

Most of us will want a tad more

For 5 years Dave and Jaja Martin and family sailed and lived aboard their 33-foot sloop, *Driver*, in Newfoundland, Greenland, Iceland, and the Arctic waters of Norway and Spitsbergen.

POINT



gear than what is on this list. However, instead of wondering what gear should be added, ask this: What gear can be ignored? The following guide highlights some of the non-essential gear (expensive stuff you can live without) that is taken for granted on most cruising boats today.

Electronics

In this age of electronic overabundance, if there were just one 12-volt navigational system I was allowed to bring along, it would be a basic depth sounder. Knowing the depth at a glance is a valuable aid for piloting and safe anchoring. GPS would be my next choice. It not only gives an accurate position, it also renders the knotmeter obsolete. And if I have GPS, I really don't need radar. Radar is a luxury item. An autopilot is another luxury item that can be avoided if money is scarce. A VHF radio is handy for receiving weather bulletins and calling for information or assistance.

Refrigeration

This is one of the most expensive luxury items of cruising. A well-insulated refrigerator robs a boat interior of valuable storage space, and trying to keep up with the power demand can be expensive. A successful refrigerator power system usually requires high-amp-hour batteries with a complicated regulator sparked by a big alternator. There is no greater waste of an engine's horsepower than to use it to spin an alternator on a daily basis to charge batteries — all for the sake of cold food and drinks. And unless one has a good working knowledge of refrigeration, paying for repairs will be costly.

Solar panels and wind generators

Solar panels are my first choice for charging batteries because they are quiet, do not have moving parts, and don't require fossil fuels for operation. They are maintenance-free. Although solar panels are great for basic onboard energy demands (lights and electronics), they often fall short when trying to keep up with refrigeration.

Wind generators pack more amps, but they have moving parts and require maintenance. Some models are extremely loud. The last thing I want when I'm on my boat is to listen to superfluous noise. A paradox with wind generators is they need wind, but the definition of a good anchorage is one without wind.

Hard vs. inflatable dinghies

Inflatables are expensive. They have a relatively short lifespan in the tropics, and they are difficult to repair. It's not a good idea to drag them over barnacle-covered rocks and up coral-encrusted beaches or to tie them to splintery pilings. They don't tow well, and they are challenging — if not impossible — to row. More often than not they require an engine. Outboard engines are expensive to buy and operate, and they require a long list of spare parts for maintenance.

A hard dinghy, on the other hand, is relatively cheap (especially if home-built), and a good design can be easily rowed, towed, or sailed. A hard dinghy without an engine provides exercise. Getting around in a hard dinghy takes longer, compared to zooming around in an engine-driven inflatable, but what are you going to do with all that extra time? Repair something? An engineless hard dinghy is also less likely to be stolen.

Anchors

Most boats are pathetically under-anchored. This is somewhat understandable because the weather, for the most part, is relatively benign. But all it takes is one storm to send a boat dragging onto the beach or into another boat. As soon as your boat bumps into anything but water, a repair bill is the likely result. Think of a big anchor as cheap insurance.

Often I see advertisements for anchors that are relatively light, but tout the holding power of a heavier anchor. The advantage is they are easier to deploy and retrieve. Isn't that a contradiction? I want my anchor to be difficult to retrieve. That means it's doing its job. Regardless of what the manufacturers advise, you can't go wrong with a large heap of metal at the end of your rode. Here's a good rule of thumb for *all* anchor types: for light-displacement boats, one pound of anchor per foot of boat length; for heavy-displacement boats, one pound-and-a-half of anchor per foot of boat length. When people tell me that my anchor is too big, I know I am on the right track.

"Before purchasing a mechanical item I consider whether it will enhance my self-sufficiency or merely hinder it."

Anchor windlasses

Electric windlasses are convenient, but they require huge amounts of 12-volt power. If the boat loses power, the electric windlass is useless. Now that you have a big anchor, it will be heavy work to retrieve it. A manual windlass embodies self-sufficiency and reliability. I wouldn't install a windlass at all on a boat less than 28 feet in length.

Self-tailing winches

Ordinary winches cost less and work just as well. Dollar for dollar, I would rather buy a bigger winch than a smaller one that self-tails.

Dave and Jaja Martin, along with their three children, have been cruising parts of the world for more than a decade. Between 1989 and 1995, they made a tropical circumnavigation aboard their 25-footer, *Direction*.

Sails and rigging

Sails and rigging should follow the same worst-case psychology as anchors. Best to err on the stout side, especially if the cruising itinerary includes offshore sailing.

A flimsy, running backstay-dependent rig has no place on a cruising boat. A sailboat's gear should be capable of handling a 40-knot line squall under full sail. If a boat is caught out and the sails get blown to pieces before they can be doused or if the rigging snaps, the boat and the crew might be in grave jeopardy. Also, it is quite a job to replace a mast that has fallen down.

Cockpit cushions

I'm astounded at how much money can be spent on custom-made, closed-cell foam cockpit cushions. They look nice, but I can get equally comfortable results by going to a sporting-goods store, buying sleeping-bag pads or closed-cell pool floats, and cutting them into squares.

Upholstery

Cabin upholstery can also cost a fortune. Fortunately, sewing is not very complicated. A trick I use when making cushion covers is to use semi-lightweight fabrics that an ordinary sewing machine can cope with. I don't care if my friends think my cushions look homemade; it makes my boat more homey.

Deck canvas

I can usually find Sunbrella cloth at a well-stocked yardage store. Seconds-quality material is often thinner but it works well and is easier to sew — especially with an ordinary machine.

Pressurized freshwater systems

Foot or hand pumps work well, are less complicated, and don't require 12-volt electricity. Most importantly, however, manual pumps save water.

Watermakers

Reverse-osmosis desalinators are power-hungry luxury items right up there on the list with refrigeration. When cruising in regions where water is scarce or tainted, a sailor has to be water conscious. Even if fresh water costs 25 cents a gallon to buy, it is cheaper than buying a watermaker and coping with power demands and maintenance.

> *"I would rather have a few choice pieces of gear than a boatload of second-rate liabilities."*

Shorepower

Marine-quality shorepower cables and related fixtures can be expensive. I use an ordinary extension cord and snake it down the companionway. Cheap and effective. Actually, if I need shorepower on a regular basis, it means I am spending too much time in marinas.

To spend or not to spend?

When I do make a gear purchase for my boat, I would rather spend a little extra and buy a quality product. I know this contradicts my observation about the high cost of gear discouraging folks from going cruising, but I would rather have a few choice pieces of gear than a boatload of second-rate liabilities.

Purchasing cheaper stuff may allow me to start my cruise with more hard cash, but cheap stuff tends to wear out or break when it is least convenient to replace or fix it, or when I am least able to afford it. If I have to replace a cheap item, it means that I have actually bought the same piece of gear twice. Worse yet, if it fails during a storm or while I am maneuvering, my life might even be in jeopardy.

Marine gear is like any other type of equipment — you get what you pay for. Quality gear usually looks the part; it is pleasing to the eye. I get suspicious when something is out of proportion or painted a weird color. Why would a manufacturer invest in a product that's funny-looking? For the most part, I stick with dependable brand names.

Before purchasing a mechanical item I consider whether it will enhance my self-sufficiency or merely hinder it. If the piece of equipment has to be taken somewhere for repairs (everything that has moving parts eventually wears out), then I am no longer self-sufficient. Even if a product has a great warranty, it doesn't help me if the item breaks when I am mid-ocean, in a remote anchorage, or in transit on a foreign shore. I like gear that I can take apart and fix myself. Many products offer spares or rebuild kits and come with schematic instruction manuals. There is no worse feeling than relying on equipment that fails and then not being able to do anything about it.

For my wife, Jaja, and me, a boat and its gear are essentially a means to an end. The basic premise for our cruising is to feel free and to shed some of the material weight typical of shoreside living. Cruising is all about picking up the anchor and experiencing the thrill of being under way, meeting people, and sharing experiences. We have learned that onboard whistles and bells can enhance our cruising experience, but they don't automatically buy the feeling. In fact, the feeling is the thing money can't buy.

For further reading...

Read more about the Martin family's cruising experiences in *Into the Light: A Family's Epic Journey* (2002), available at <http://www.goodoldboat.com/bookshelf.html> or by calling 763-420-8923.

COUNTERPOINT

Cruising safely and in comfort

A liveaboard sailor makes her list of essential gear

by Cathy McIntire

Essential items
- GPS
- autopilot
- SSB
- VHF
- radar
- life preservers
- generator

Older boats usually come outfitted with a variety of gizmos, courtesy of the previous owner. It's one of the perks of buying a tried and proven vessel. Nevertheless, it is likely that you will want to add to, or update, the inventory to suit your own cruising needs. If your plan includes cruising on bigger waters, such as the Great Lakes, the coastal U.S., or beyond, you may find, as we did, that some of the items you viewed as non-essentials become critical for safety, comfort, or both.

We have lived and cruised aboard our 1982 Baba 30, *Kahlua*, since January 2001. Because we want to be able to cruise for years, we take safety seriously. The following is a discussion of the items we would not want to be without.

"An autopilot prevents the fatigue that comes of steering a boat hour after hour."

GPS

This one almost goes without saying, yet we have encountered boaters who got into trouble and were unable to tell the Coast Guard their position because they did not have GPS aboard. We carry a spare GPS as backup. Interfacing a GPS with other instruments aboard can provide the equivalent of crew to a cruising couple. Of course, the prudent cruiser will always navigate using multiple methods to ensure against errors — user or instrument error — or in case of sudden failure of all electronics. We always track our position, heading, and speed at least hourly on paper charts.

Autopilot

This is a highly valued crewmember. Used and monitored closely, an autopilot is a tremendous safety device, particularly for couples cruising without other crew. An autopilot prevents the fatigue that comes of steering a boat hour after hour. And fatigue has been found to be one of the most common causes of crisis on a cruising boat. Our autopilot is interfaced with our GPS to steer the boat and track a course, freeing us to change sails and to monitor water depth, other boat traffic, and our course.

The integration of GPS and autopilot is a wonderful convenience. The autopilot is able to correct for leeway and drift, keeping us on course. If the wind and seas are too rough for the autopilot to effectively steer, we place the autopilot on standby and steer by hand, using the cross-track error readout to help us steer the course. This is very helpful in the Bahamas when one of us is on the bow watching for coral heads and the other is steering around them. We still know precisely where our course is, thanks to the cross-track error readout.

Single-sideband (SSB) radio

We would not venture out into any bigger waters — whether crossing an ocean or coastal sailing — without an SSB radio or a ham radio. Period. VHF is wonderful and a must-have for communicating with other boats, marinas, bridge tenders, and so on. In fact, we prefer to have two VHFs, one a handheld. But when reception is poor or when you are out of range, such as when crossing the Gulf Stream to the Bahamas, there is a tremendous safety value in having SSB.

We left Rum Cay in the southern Ba-

Continued on Page 28

Cathy McIntire and her husband, Ken, who is shown with an additional crewmember, see cruising as a calculated risk. Their goal is to tip the odds in their favor.

So who's right? Nobody's wrong

by Jerry Powlas

After reading his book, *Into the Light: A Family's Epic Journey*, we asked Dave Martin to write an article about keeping cruising simple. Not long after it arrived, Cathy McIntire submitted her view of what's necessary for cruising. Neither has seen the other's opinion. We think the reader is well served by offering these opinions in their original form, rather than making this a debate.

In the two articles, you will find two moderate opinions about how to equip a boat for cruising. I say moderate because I can easily find opinions on the subject that are much more extreme in either direction …and also are not wrong. Lin and Larry Pardey prefer to cruise without an auxiliary engine and without GPS. They are also strongly opposed to the use of epoxy in boat construction, preferring the use of other glues in every case. At the other end of the spectrum, the Amel Yard offers a well-thought-out boat ready to sail away as soon as you add provisions. It is very well equipped. It is one of very few high-priced boats that I really admire for a variety of reasons, including the integration of an extensive list of equipment.

It would be easy for *Good Old Boat* magazine to choose the low-cost end of this spectrum, but it would not serve the reader as well. It would be easy to take the position that because Dave and Jaja Martin have more miles under their keel than Cathy and Ken McIntire do that Dave's opinion is the right one. But this reasoning does not serve the reader well either. Cathy and Ken have more than enough experience to justify their opinion.

The selection of a boat is a very individual thing. That's why there are so many different kinds of boats out there. The equipment list for a boat is also a very individual thing. That's why there is so much equipment out there. What is exactly right for you may not be exactly right for another sailor. Here are my thoughts:

- You have to be able to afford it.
- You have to be able to understand it, which means use, maintain, and repair it.
- You have to be able to do without it because everything fails.

For one reason or another or perhaps for several reasons, you can't have it all. Limits of cost, weight, and complexity will pertain. If you ignore these limits, they will no doubt get your attention at some point.

It is often said that good equipment will not compensate for good experience, and you will often see very experienced cruisers opting for simple setups. Why? One reason is that many of the sailors who have spent much of their lives cruising have needed to be frugal. These sailors may make a little money writing the books and articles we read, but most can't afford a lot of gear. If you are fortunate enough to be able to consider this lifestyle at a very young age, and if you are also fortunate enough to be free of the encumbrance of great wealth, the simple approach is the obvious choice.

If you have been a working stiff for most of your life, wading through — or even enjoying — the complexities and demands of family, career, and other shoreside obligations before getting the opportunity to go cruising, you will probably find yourself with an older body, a less interesting sailing résumé, and possibly more funds to commit to cruising. I don't think you need to sail around the world backward in high heels to join "the club." You may choose to equip your boat more lavishly. You will be told that a good, well-equipped boat is somehow bad, and you will be told that a good, well-equipped boat is the only way to go cruising.

The reality is that you start from where you are when you cast off the lines. You apply the resources and experience you have at the time, and you go. You are never really properly equipped, and you never really have enough experience. That is why you go.

hamas one afternoon bound for Mayaguana, 129 miles away. About 4 hours out, the winds picked up to 25 knots instead of the 10 to 15 knots that were predicted. The 5- to 7-foot swells grew substantially higher with waves on top of them, some breaking. We were closehauled and motorsailing.

Suddenly we were hit broadside by an errant wave and rolled more than 35 degrees while being simultaneously tossed in the air. The engine raw-water intake took a gulp of air. The engine lost its prime and became airlocked. The seas were so rough we were unable to get the sea water pumping through again.

We diverted under sail to Clarence Town, Long Island, in the middle of the night. While struggling to get the motor working, we both suffered from significant seasickness. During that time we were able to talk to our friends on *Windborne* via SSB at our regular nightly chat time. Already in Clarence Town when they heard of our troubles, they decided to monitor their SSB through the night in case we needed help. In the morning when we arrived, they arranged a tow into the marina for us. Their support and assistance were very welcome during that long, dark night. With SSB, we could have called for emergency help, if needed. Without SSB, it is unlikely anyone would have heard us on VHF, as we were more than 25 miles from land, and most of the islands there are sparsely populated.

"We would not venture out into any bigger waters … without an SSB radio or a ham radio. Period."

Other friends making the same trip 2 days later, but with only an SSB receiver and no way to transmit, were out in rough seas for 48 hours straight with no way to contact anyone in an emergency. After 8 hours, they lost VHF contact with their buddy boat. The buddy boat, meanwhile, developed an emergency, requiring one

individual aboard to be airlifted off. I simply wouldn't venture out without an SSB.

We also use our SSB to receive weatherfaxes and verbal weather reports in the U.S. and Bahamas and to listen to various cruisers' nets, which broadcast important information about weather, sea conditions, and so on. In the Bahamas, particularly the southern Bahamas, there are few sources of weather information, and often no information is available via VHF. This makes the SSB our only reliable way to obtain weather reports. Cruisers can also arrange for personalized weather forecasts via SSB. Without SSB, cruisers can be left with no way to monitor a developing weather system. Many people use ham radio, requiring a ham license, giving them an extended range of radio frequencies to use, but a SSB requires only a ship's station license and no individual testing or licensing. It is, therefore, easier to obtain.

Radar

Before moving aboard *Kahlua*, we purchased a new radar unit. The new systems are nothing short of remarkable. They are invaluable safety features to have aboard. Fog is only one of several circumstances when radar is useful. We use radar to monitor the seas for other vessels, particularly large, fast-moving commercial vessels, which often travel at 25 knots or more. Day or night, we find we are able to spot such vessels earlier using radar. We use the radar to determine the vessel's range and bearing to our boat, plotting it on a collision-avoidance plot chart every 3 minutes or so in order to determine the vessel's heading, which, contrary to what you might think, is not always obvious.

We have also used radar to monitor the development of squalls, which show up on the radar screen, allowing us to alter course or run for a protected anchorage until the storm has passed. While we can see an approaching squall without it, radar allows us to determine the extent of the storm and whether there are more developing behind it.

And radar is invaluable in fog. We were able to make our way safely up the New Jersey coast from Cape May to Atlantic City in a fog that developed after we were offshore. We could see nothing but a thick grayness all around us, but the radar gave us "eyes."

Life preservers

Ken and I each have a SOSpenders life preserver, which we wear whenever we are underway. These inflatable life jackets are so comfortable that we don't balk at wearing them routinely. Even when cruising in bathing suits, we wear our inflatables.

We decided before we moved aboard that we didn't want to debate about when the weather is rough enough to require life jackets. We agreed that the prudent thing is to make a habit of wearing them at all times when under way. Cruisers have been known to fall off or be knocked off the boat even in calm conditions. A human head floating in the water — about all you see when someone falls overboard — isn't much bigger than a coconut and quickly disappears from view in even a light chop.

Our life jackets have built-in harnesses, making it easy and convenient to attach ourselves to our jacklines in rough weather. And the easier it is to use a safety device, the more likely we are to have it in place it when we need it.

For cruising comfort

- wind generator
- watermaker
- raised-bow dinghy with large tubes
- macerator pump
- windscoop
- PocketMail

Generator

While we certainly can cruise without a generator, we found that when things go wrong at sea, the ability to maintain power to vital electronics (GPS, SSB, and VHF) can be critical. During our difficult night in the southern Bahamas, when we did not yet own a gas-powered generator, we were fortunate we did not end up out to sea for any longer than we did.

Ken and Cathy McIntire and their boat, a Baba 30 named *Kahlua*, were featured by *Good Old Boat* magazine in the March 1999 issue. Starting in 2001, they sailed and motored out of Minnesota via the Tennessee-Tombigbee Waterway, across the Gulf of Mexico, around the Florida Keys, and up and down the East Coast and back and forth to the Bahamas.

Once we turned and sailed downwind in order to reach a safe harbor, the power output from the wind generator was reduced and couldn't quite maintain our battery levels with the electronics we were using. The drain of the GPS, navigation lights, VHF, intermittent autopilot use, and SSB usage slowly depleted our batteries. This could have left us in an uncomfortable position if we had needed to cruise longer to reach a safe harbor.

Being able to call for help via SSB, which uses a substantial amount of power, could be critical. Being able to maintain power to the GPS or autopilot would also be desirable. A gas or diesel-powered generator is an excellent safety precaution and, in addition, offers the benefits of saving wear on the engine from running without load when charging batteries at anchor. It also allows us to use 110 volt-powered tools on the boat. We recently purchased one of the new, compact, ultra-quiet models, and folks moored next to us cannot hear it.

The above items are ones we consider beneficial for the safety and well-being of the crew. The next few items are ones we find greatly increase our cruising comfort.

Wind generator

A wind generator is wonderful for making power at anchor when the wind is blowing. If it is blowing at 15 knots or more, our wind generator keeps us in power — enough to run

our refrigeration without running our engine. But beyond the convenience for charging batteries at anchor, a wind generator can also be important in a crisis. In the episode of engine failure, we were able to use our wind generator to produce enough power to keep our GPS, SSB, and other systems working for hours.

Watermaker

The benefit of a watermaker is not just saving 25 cents or more per gallon of water. If that were the only benefit, I'm not sure we would have one. We find the water made by our watermaker tastes far better than most of the water we can buy. In some places we have found the water for sale to be barely drinkable. But the real benefit of having a watermaker is that it allows us to spend days at anchor without being forced to go into a marina or port. This can be a safety feature when the weather does the opposite of what was predicted, and we need to remain within the safety of a protected anchorage for longer than anticipated. On one occasion in the Exumas, the weather changed suddenly, and we were held up at an anchorage for a week waiting for good traveling conditions. We know of cruisers who have left an anchorage in inclement weather because they were out of fresh water and had no watermaker. Our Little Wonder unit makes between 5½ and 6 gallons an hour and allows us to sit happily at anchor for many days at a time.

Better dinghy

This is one item we are recommending that we don't yet have ourselves. Our next dinghy will definitely be one with a raised bow and large tubes. Our 9-foot dinghy with relatively small tubes fits well aboard our 30-foot boat and has served us well in many areas, but we have found it to be an uncomfortable and wet ride when we have to travel a mile or more in it, particularly in choppy seas. Despite our 8-horsepower outboard, our dinghy will only plane when the seas are flat, the wind is from behind, there are only two of us aboard, the moon is in the seventh house, and Jupiter is aligned with Mars. Any kind of chop, and we don't plane. From our observations and discussions with other cruisers, dinghies with a raised bow and large tubes give the most comfortable and driest ride.

Macerator pump

Marine heads are not the most delightful of subjects, but they are a reality of cruising. If you plan to cruise to the Bahamas, where there are no pump-out stations and it is quite legal and customary to pump waste overboard, you will be far more comfortable (and so will your anchored neighbors) if waste has been macerated before being pumped over. Brown liquid quickly dissipates in an outgoing tide and certainly beats the alternative. Enough said.

Windscoop

Windscoops are handy, inexpensive, lightweight, take almost no room, and can save relationships between crewmembers. When sitting at anchor in 80- to 90-degree heat with winds of 5 to 10 knots, it can be difficult to breathe, let alone sleep. Pop up the windscoop and without using any power at all, you suddenly have fresh air flowing through the boat. The difference is truly remarkable. Put it up with more wind, and you get a nice wind-tunnel effect.

PocketMail

No, it's not boat equipment, but we have found it so useful that I am including it in our list of recommendations. Wherever we go, whether in the U.S. or the Bahamas, we've been able to stay in touch with family, friends, and cruisers we've met via PocketMail. It is small, travels easily to shore and back, is reasonably priced, and has worked everywhere we have traveled. In the Bahamas, where phone calls to America cost $1 per minute and snail mail is truly snail, we are able to communicate more information with more people via PocketMail for much less than a 5-minute phone call to one person.

We find we rely on it even in the States because carrying the small device ashore prevents excessive wear and tear or water damage to the laptop we'd otherwise bring ashore. For $10 to $15 per month, cruisers are able to make an unlimited number of calls to send and receive email, and in the U.S., the calls are free. We recently upgraded to a new device, which works with any phone, including cell phones. We just aren't comfortable cruising if we can't stay in touch with family and friends.

Not necessary

So, are all these items necessary? No. You may talk to other cruisers whose priorities differ from ours. But we would not cruise without the first six items (or seven if we include the VHF). They could prevent an emergency or save our lives. Nobody plans to get into trouble out there, and most of the time we don't. However, every time we go out to sea, we are taking a risk that things might go wrong. We have listened to many emergency calls between the Coast Guard and cruising boats in trouble, and we have seen for ourselves how suddenly conditions can deteriorate.

Ken and I have come to see cruising as a calculated risk. We do not want it to be a crapshoot. Sure, many folks do just fine with very little fancy equipment. However, more often than not, their descriptions of close encounters with disaster suggest luck is a prominent reason for their survival. We have decided to do whatever we can to keep the odds tipped in our favor.

What the sea taught me

Ten lessons one woman singlehander learned during 20 years of offshore cruising

by Jill Knight

"A SINGULAR DISADVANTAGE OF THE sea lies in the fact that having successfully surmounted one wave, you discover that there is another behind it."

When he made that observation in *The Open Boat*, Stephen Crane meant to express humorous resignation. From another point of view he is illuminating one major reason we never tire of the sea: the lessons come one behind another. As in literature, our own voyages inevitably turn out to be journeys of exploration and discovery, almost always of spiritual as well as practical dimensions. The sea and our boats are tireless coaches.

My old gaff cutter, *Cooee*, has been coming up with new lessons for me for nearly 20 years now. For the first five of those years I sailed with her previous owner, Peter. Then he set her up for me to singlehand. Imagining yourself as a singlehander when setting up a cruising boat is not a bad idea even if you are certain you will never venture out to sea alone. Most cruising boats have only two people aboard, so sailing and maintenance jobs are usually done by one person anyway.

Both alone and as a part of a cruising couple, I learned many things from *Cooee* and the sea the hard way. My experience was gained from long-term, long-distance cruising, which creates a particular set of conditions, demands, and rewards. But most of what I learned applies to any sort of messing about in boats. Here are some of the most important lessons I've learned:

1. Simple is beautiful

Bernard Moitessier, writing of his 1968 round-the-world voyage, tells how he chose to carry his "old, quiet friend, the slingshot" rather than a radio; "so much better to shift for yourself, with the two hands God gave you and a pair of elastic bands." Readers of his book will recall how, with the three great capes behind him, he fired his legendary message onto the bridge of a ship anchored outside Cape Town: "I am continuing non-stop toward the Pacific Islands [instead of finishing the first singlehanded round-the-world race] because I am happy at sea and perhaps also to save my soul." Moitessier's choice of a slingshot may seem a little extreme in these days of relatively tiny and inexpensive radios, but the principle holds: part of what cruising is about is self-sufficiency, paring down, and simplifying.

Small is beautiful: a dinghy Jill can carry and an outboard motor she can easily lift.

The option of employing small sails in brisk or changeable conditions takes the work and stress out of sailing *Cooee*, above, on the Indian Ocean under jib and staysail and with a laced-on trysail replacing the mainsail.

There is a practical corollary to this. When you're cruising, you spend a lot less time sailing than you spend on maintenance. The year I crossed the Indian Ocean, I spent 10 weeks at sea and it felt as though I was always on the move — preparing, sailing, or arriving. The year I left the Virgin Islands in the Caribbean was the same year I arrived back in Australia — 11 weeks on passage, plus local daysailing — another big sailing year. The cruising life is, in reality, the life of boat maintenance, albeit in some spectacular settings.

Even though *Cooee* was and is very simple, with her laced-on mainsail, no halyard winches, no shower, a sink I empty over the side, no fridge, and few electronics, maintenance is a large part of life aboard when she and I are actively cruising. With little boat maintenance experience, this was initially a problem for me (see *Good Old Boat*, November 2002). First, I thought taking a lot of money with me would be a good solution. No matter how remote the port, I was usually



At left, Jill Knight raises *Cooee's* big gaff mainsail. Three-to-one purchase on both throat and peak halyards means this is not difficult even without winches. The headsails, center, are raised using belaying pins: easy and simple (See "Advanced swigging," Page 59). At right, even engines can be beautiful. *Cooee* has a lightweight Westerbeke 20B. Jill is adjusting the valve clearances with guidance from the manual.

able to find willing help. But it often turned out that no one knew much more than I did. And there were times when things broke at sea and I had to rely on myself anyhow.

My solution, which evolved over time, was to grow to love boat jobs. I even came to love intimidating bits of equipment. Two of my favorite things on this lovely old classic cutter are my engine and my anchor winch. After a while, they became less malignant, quite fun really. If you do not enjoy maintaining and repairing things, it is worth considering what you can do without.

2. Small is beautiful

For a singlehander, small is good. I have an inflatable dinghy I can carry, an outboard I can lift onto the boat, jerry cans and gas bottles I can handle when they are full, an inboard engine I can winch out on my own, using blocks and tackle and the boom. I haven't tried launching the life raft; I can lift it and trust in adrenaline for the rest.

Small is beautiful in heavy weather, as is practice. Once I had worked out how *Cooee* hove to under a manageable sail plan, I practiced this from time to time in order to have a rest or to manage severe weather. In winds approaching or passing storm force, *Cooee* sits nicely under just the storm trysail with the helm lashed down; I would not like to be playing with the gaff main on my own in that situation. In headwinds around gale force, she will jog along at a couple of knots under the trysail and staysail, both small sails. I would lash the helm down, though I could probably use the Aries windvane for the same effect. I haven't tried that.

This leads me to self-steering.

3. Self-steering is very beautiful

We take many of the great inventions for granted — the magnetic compass, the sextant, the chronometer, and electronic navigation aids. We are similarly blasé these days about the single most important development that allows us to sail singlehanded or shorthanded: self-steering.

> *"When I went cruising alone more — not less — of my time was spent socializing."*

This was my first and biggest problem as a singlehander and the one that took the longest to sort out. It may have taken so long because I set out to cross the Indian Ocean (not many chandleries there) before I understood fully how important it was not to be tied to the tiller. Carrying three Autohelm 2000s, I crossed to South Africa. *Cooee* is very heavy on the helm and, while the Autohelms were marvelous, they were not up to all conditions. Through necessity I became expert at repairing them — swapping motors, brushes, and control boxes, and improvising pins. In South Africa, I exchanged my bike for a secondhand Aries windvane and never looked back. The combination, including the ability to put the Autohelm on the Aries, means I never have to steer unless I want to.

4. Even engines can be beautiful

Cooee's engine stopped running almost immediately after I took over its care. She was exiting a reefy pass off Palawan in the western Philippines, a remote and sparsely populated area at that time undiscovered by cruising boats. The only thing I knew how to do on the engine was bleed the fuel system. I put more fuel in the tank and bled the lines. This made no difference. A faint breeze took us back into Bacuit Bay where I anchored on a shallow shelf of reef. Later I went to bed still trying to persuade myself that this was a sailing boat, and it did not really matter if the engine did not run.

That night *Cooee* was blown out of her anchorage, and I was forced to flee to better shelter in a bay lined with palm trees and a few bamboo houses above the beach. The radio said we were on the edge of Typhoon Nelson. I was a very inexperienced sailor in charge of a precious old boat. Having a reliable engine really did matter. For the first time ever, I opened the Bukh shop manual.

The manual was very detailed but difficult to follow because the terminology was foreign to me. Even where there were diagrams, I could rarely



At left, Jill loves her electric anchor winch with one foot switch for "up" and one for "down." She operates it from the foredeck since *Cooee* has complications of bowsprit rigging and a long uphill run between the winch and the bow roller. Center, Jill uses the same arrangement of blocks on the bosun's chair and on the mainsheet. She says hauling herself up the mast with this purchase is not difficult. At right, *Cooee* has two bronze winches for the jib sheets. Bronze Highfield levers simplify the running backstay work.

recognize the part described since I had never looked — really looked — at an engine before. I reminded myself that I was at least as smart as the *average* person and that a lot of average people were out there fixing diesel engines.

The fuel system seemed the most comprehensible part so I decided to concentrate on that. I found where the fuel left the tank, followed it through its ups and downs, ins and outs, until it reached the injector pump. Plenty of fuel was reaching the pump but almost none was coming out. Dismounting the pump sounded easy on paper, so I began. Then I lost my nerve, reconnected the pipes and reconsidered. What if I got it dismounted? Even if the problem was obvious, then what? Among these remote islands there was little to be done.

All were beaten

In time, I made the acquaintance of local people with a knowledge of engines. One man after another took up the challenge, but all went away greasy and beaten. The saga continued over about six weeks, complicated, after Typhoon Nelson, by threats from Odessa, Pat, Ruby, Skip, and Tess. The upside of the experience was that I went through an unavoidable crash course in diesel mechanics as, manual in hand, I lived through it all. Slowly, I came to understand that none of these men had seen an engine like mine before. They could not read English, so they got no help from the manual. They had undoubtedly fixed a lot of engines, but the main advantage they had over me, I decided, was one of attitude. They were not intimidated by the task. They began with the belief that the engine could be made to go and that it would take only time, commonsense and, in these isolated parts, some improvisation. Through no fault of Bukh, the engine never ran again, but I learned much of importance during those weeks.

I sailed for Borneo and further lessons in diesel mechanics and then for Singapore. There I replaced the engine with a new one and from then on did all the maintenance and repairs myself. I am grateful now for the fact that I was sailing mainly in third-world countries where I did not speak the language. Doing the work myself was the path of least resistance, and I came to find satisfaction and even pleasure in it. In different circumstances, with expert assistance a phone call away, I doubt that I would have learned a thing.

> *". . . it took me some time to understand that I preferred sailing slowly to going fast."*

I am still no engine mechanic, but even though I currently have access to experts, I make a point of doing the maintenance myself. It keeps my familiarity and confidence levels up. Given time to fiddle and find my way out of a few dead-ends, I can usually manage.

5. One is often easier than two

When people see I'm singlehanding, they ask, "Aren't you scared?" and "How do you manage in a storm?" Then they often add, "I couldn't do it — I'd be too lonely."

When I went cruising alone, more — not less — of my time was spent socializing. It is a very social activity. No matter where you sail, the occupants of the little group of anchored yachts comprise your tribe. You may never have seen any of them before, but welcome and friendship, however transient, can be assumed. Outside the self-sufficient capsule of coupledom lie almost unlimited social possibilities as long as one does not require continuity.

As for solitary time at sea, I can think of nothing more wonderful. One is very alone on the ocean; it is difficult to imagine anywhere else of equal solitude.

When I first sailed alone, I set all the sails as Peter and I had done — full main, topsail, hanked-on jib, and staysail. The mainsail throat and peak halyards had three-to-one purchases, so raising the main was easy even without winches (all of *Cooee*'s halyards run to a pinrail at the foot of the mast). The sail and gaff were contained within lazy-jacks for controlled reefing or dropping.

Speed was not something I presumed to have an opinion about when Peter was skipper, and it took me some time to understand that I preferred sailing slowly to going fast. At sea, under a billow of white cloth, I felt euphoric, but always on edge and alert for potential problems. More often than not when I arrived at a destination, I wondered why I had hurried. This feeling usually wore off as I explored the new place, but when I slowed the boat down I began to discover profound pleasure in our passages.

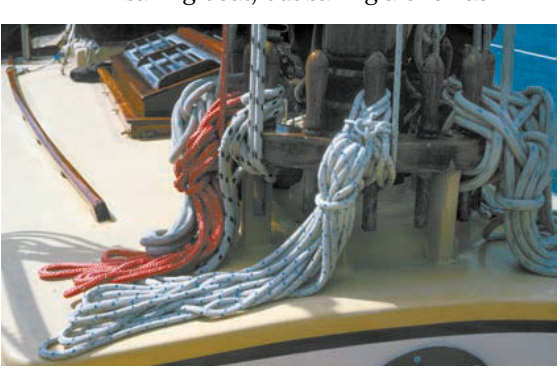
With two reefs in the main, the self-steering systems could manage, and the boat maintained a more comfortable angle of heel. *Cooee* is easily driven; she moves along with just a fraction of her canvas up. These days, when conditions are squally or when I am tired, a storm trysail replaces the main; I adjust the sail area with the headsails, which are easier to manage, especially now that I have a roller furler on the jib. The topsail, a small, easily managed, and effective sail, can still fly above the reefed main.

Up the mast solo

Apart from the sailing itself, most boat jobs can be tackled by one person. I pull myself up the mast with a block and tackle on a masthead halyard after hoisting the bosun's chair to the spreaders (up to which *Cooee* has ratlines); it is not at all difficult. The head of a bolt which is on deck can usually be jammed with Vise-Grips while the nut is tightened belowdecks. Aligning the engine takes longer, but there is only one person swearing.

Apart from two fine old bronze sheet winches for the jib, the only winch on *Cooee* is a beefy electric anchor winch.

Another advantage to being alone on a boat is that there is no one to impress or feel a fool for. Often I prepare to enter a pass through a reef, to approach a dock, or even to anchor, long before I need to. With someone else on board, however, I would like to appear more nonchalant. I am not unaware of the delights of two close people on a sailing boat, but sailing alone has



***Cooee* is sailing in light conditions in Thai waters, above, with two reefs in the main. Jill adds sail area using the small, easily handled topsail. At left below, *Cooee* has belaying pins instead of halyard winches. At right below, *Cooee* with the Thai courtesy flag flying. The mainsail is laced to the mast and double-reefed. This is pre-roller furler when the jib was hanked on to a circular halyard then taken to the end of the bowsprit using an outhaul.**

rewards I cannot imagine relinquishing. Without Fletcher, my cat, and the BBC World Service, however, I am sure I would feel just a little lonely.

6. The money is never enough

Regarding money, I learned that it does not matter whether you have very little or a lot. Whatever you have, it's always *almost* enough.

People often ask what it costs to live aboard and cruise. In summary, cruising takes what you have plus just a little more. Interestingly enough, the same seems to apply to boat accommodation space, and neither has much to do with satisfaction or pleasure.

7. Travel light

The year my mother moved from her home, Peter and I were boatbuilding in China. Everything I owned that was not aboard *Cooee* was stored in a room under her house: furniture, household appliances, business and evening clothes, leather briefcases. I flew home for Christmas and gave it all away. Flying back to China, I felt exquisitely light. By the time I returned to Australia again with *Cooee*, 10 years later, I felt even lighter: I had managed to spend all my money, too.

Recently I heard an author in a radio interview regretting the fact that while impotence was acceptable in the modern world, indigence was not. I know what he means, but I disagree. Acquisition is not all there is, but if you're reading *Good Old Boat*, you already know that.

8. Focus on the voyage itself

A voyage is a natural vehicle for reflection, and it is difficult to ignore it as a metaphor for life's journey. For many of us, the coastal aspect of cruising makes another nice metaphor for life on the fringes. The vastness of the ocean — and the image of our trustful selves and our little ships adrift in it — means that even the most resolutely practical among us engages in a certain amount of metaphysical brooding.

That goals and their timeframes no longer have control of our lives is an unavoidable conclusion. We sometimes take an hour, or even 24, to cover five miles. It doesn't matter. There are fish to be caught, flags to be sewn, worn lines to be turned into baggywrinkle. Arriving is not so much the goal as another step in the process.

9. Wood is beautiful

Wooden boats exude history and romance; they feel like boats, sound like boats, smell like boats. They are a joy to live and sail and work in. John Ruskin, in *The Harbours of England*, 1856, said:

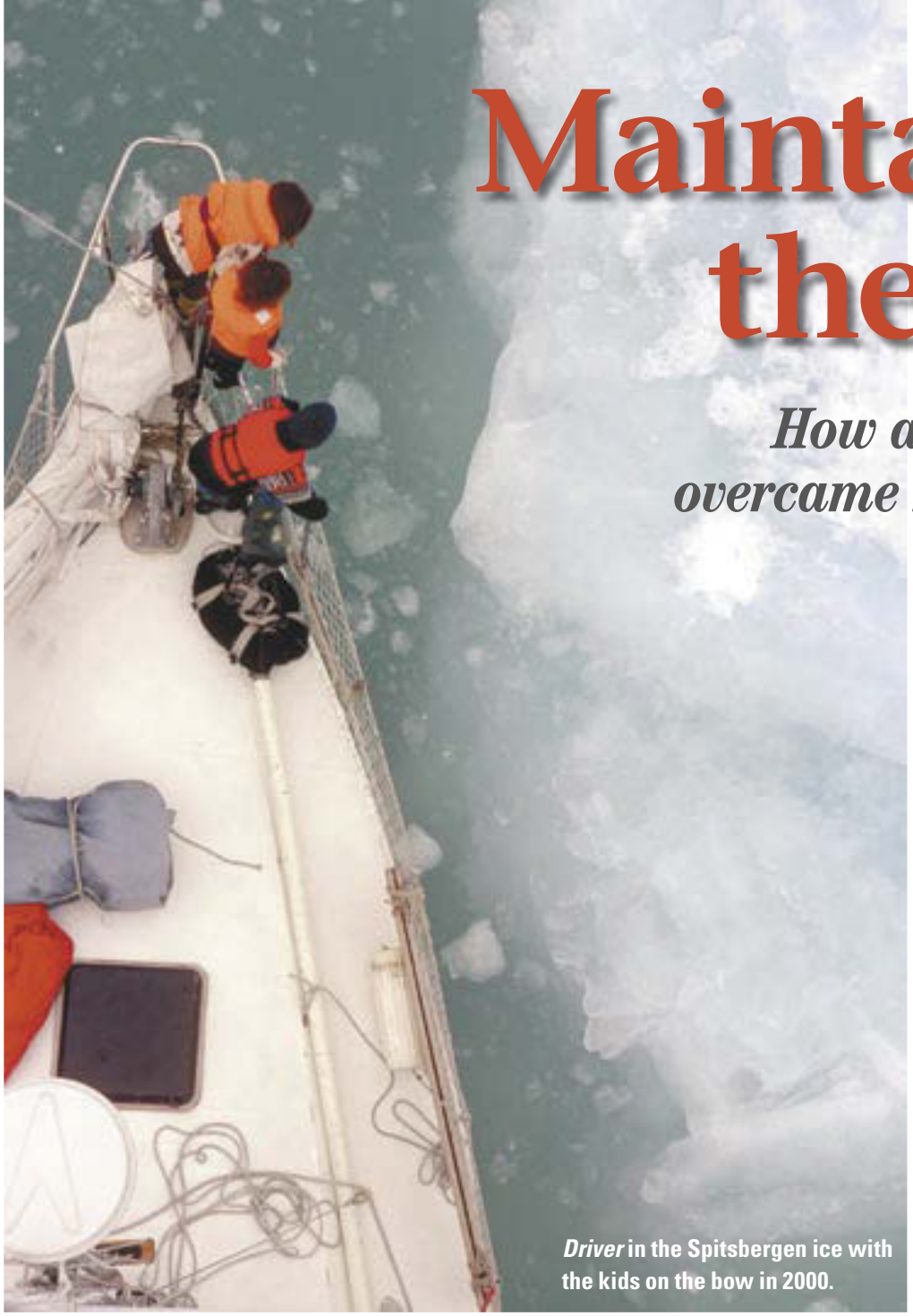
"The boat's bow is naively perfect: complete without an effort. The man who made it knew not that he was making anything beautiful, as he bent its planks into those mysterious, ever-changing curves. It grows under his hand into the image of a sea-shell; the seal, as it were, of the flowing of the great tides and streams of ocean stamped on its delicate rounding. He leaves it when all is done, without a boast. It is simple work, but it will keep out water. And every plank thenceforward is a Fate and has men's lives wreathed in the knots of it . . . "

Could a metal or plastic boat have inspired this kind of ecstasy? I hear you cry, "Of course it could!" and that leads me to my final point.

10. Lessons are personal things

Hearing about the experiences of others is a fine and useful thing. Learning one's own lessons, even if they are the same lessons, is an entirely different thing. That is what makes cruising (and life) worth doing.

The waves keep on coming, and we are grateful.



Driver in the Spitsbergen ice with the kids on the bow in 2000.

Maintaining the pulse

How a circumnavigator overcame his fear of sailing

by Dave Martin

WHETHER OUTFITTING FOR AN extended cruise or a sail on a protected bay, there is no piece of gear that can take the place of good seamanship. My childhood sailing heroes adhered to this principle too. When I was a young boy I became entranced by the stories of John Guzzwell and Robin Lee Graham. Back then, many of the electronic gadgets we consider standard now weren't even dreamed of. Those guys had no choice but to rely on sound boat-handling skills, confidence, and intuition.

When I think back to the voyages of *Trekka* and *Dove*, I realize how technology has changed cruising. These days, it seems that "confidence and intuition" are tightly interwoven with an array of electronics. Don't get me wrong, electronics definitely have their place in cruising, but if the electrical pulse is removed, the human pulse should not falter.

I began my sailing career in 1971, at the tender age of seven. Our Cal 25, *Martini*, was the epitome of simple: it sported cabin lights and an FM radio. I had endless amounts of fun on the boat while it was safely tied to the dock, but the moment we untied the lines the fun ended. I hated the actual sailing part. The mainsail would go up, sail slides chattering, boom swinging. Noise and commotion. Next came the genoa. As the sailcloth inched its way up the forestay, sheets flapping, I sat in the cockpit paralyzed with fear. I knew what was coming next; the genoa sheet would come in, and the boat would heel … farther, farther, farther. I'd cling to the windward gunwale and scream, "Daddy, Daddy! We're gonna die!"

Fortunately, during my fourth summer of sailing, my feelings of terror began to fade. My parents enrolled me in a sailing program that taught boat handling and theory. I learned how to sail from the keel up, step by step, nice and logical. Instead of panicking, I began to critically analyze "cause and effect." I realized that if I was going to lead a life of adventure, I had to get a grip.

"Whether it's crossing the bay or crossing an ocean, adventure is any experience that tests personal limits."

What's the difference?

That was the same summer I read about the feats of John Guzzwell and Robin Lee Graham. At first their experiences intimidated me. But then I thought, what made them different from me? If John could circumnavigate on a 20-footer and Robin on 24-footer, why couldn't I do something similar? By summer's end I knew that I would sail around the world.

The Martin gang on the beach in Greenland, at right: Jaja with Holly in front and Teiga in back, Chris, and Dave.

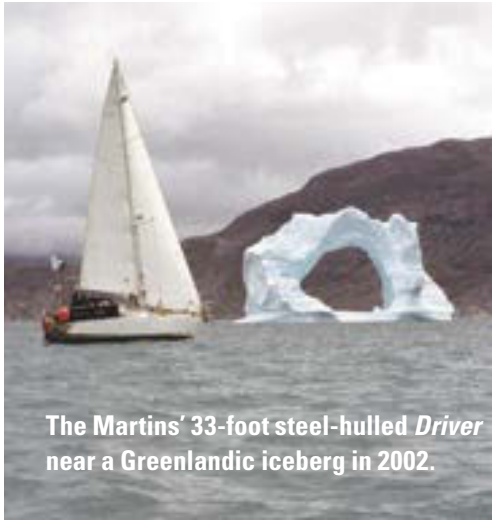
I didn't know how or when, I just knew it would happen. I didn't care what sacrifices or hazards I would have to endure to make ocean sailing a reality. Going was all that mattered. I think this is the same drive that each of my idols shared.

Now, with many years of offshore sailing behind me, I've realized that "adventure" is not just a word reserved for the things "other people" do. Whether it's crossing the bay or crossing an ocean, adventure is any experience that tests personal limits. Novice sailors are the lucky ones because they can get that "adventure sensation" close to home! But as the novice becomes more proficient, he or she will experience less adventure close to home and will have to travel farther afield for the same thrill. And so the cycle begins.

Although I have embraced GPS and a few other "advances of modern technology," I still have a fondness for a boat with simple systems. For me, sailing is all about "making do." If something breaks, I fix it. If I can't fix it, I do without it. Instead of thinking about what I can buy for my boat, I try to think about what my boat can buy for me: freedom.

"If I can't fix it, I do without it. Instead of thinking about what I can buy for my boat, I try to think about what my boat can buy for me: freedom."

I feel lucky that I began sailing when the world wasn't so controlled by electronic gadgets. I also have my sailing idols to thank — they were my real instructors. By showing me what was possible, they proved that confidence is all that's really required for seeking adventure. Let's face it, if it wasn't for them, I'd still be clinging to the rail, screaming.

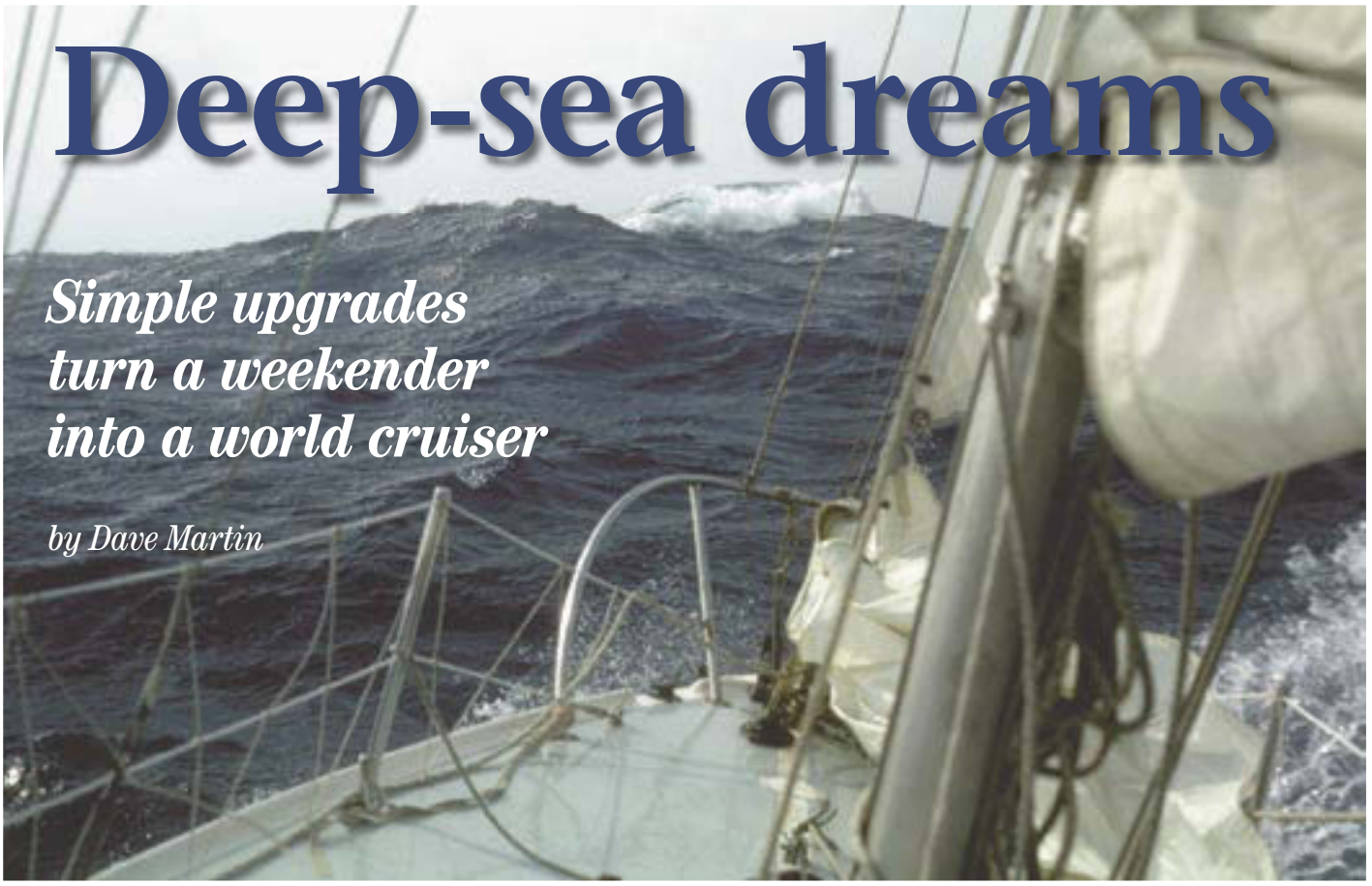


The Martins' 33-foot steel-hulled *Driver* near a Greenlandic iceberg in 2002.

For further reading ...

Both classic books by Dave Martin's heroes, John Guzzwell's *Trekka Round The World* (1999) and Robin Lee Graham's *Dove* (originally written in 1972), as well as Dave's book, *Into the Light* (2002), are available at <http://www.goodoldboat.com/bookshelf.html> or by calling 763-420-8923.

Deep-sea dreams



Simple upgrades turn a weekender into a world cruiser

by Dave Martin

THE SAILS ARE STOWED, DINNER IS COOKING, AND A DAY OF sailing has taken the edge off a hectic workweek. The heavens turn crimson, the water morphs into a sheet of liquid fire, and there you are in the cockpit sipping a sundowner. Thoughts turn to taking a leave of absence and going on an extended cruise. A winter in Mexico . . . a voyage to the Bahamas . . . a sojourn in Alaska. Sunsets every night. Well, almost every night. Everything would be perfect except for one thing — money.

How can anybody take time away from work to go cruising and still afford to make payments on a brand-new cruising boat? Let's see: work 10 more years, pay the boat off, save some cash . . . but wait. By then my new boat will be an old boat all over again.

The solution is simple: buy a boat that's already old, fix it up, and get going. The truth is, many of today's off-the-shelf production boats have the same problems as their predecessors and will need some serious attention. These problems include oversized cockpits, leaky companionways, vulnerable windows, and undersized rigging. Whether a boat is newish or oldish, after correcting some of these shortcomings, you will be ready to go great distances.

"The truth is, many of today's off-the-shelf production boats have the same problems as their predecessors and will need some serious attention."

The cockpit

A cockpit is a large water-catchment system with holes in it. These holes include the companionway, cockpit seat lockers, portholes, air vents, electrical fittings, and shifter controls. My experience has shown that a truly watertight boat can survive horrific seas. The key to survival is preventing water from flooding the cabin. Try to visualize what would happen if the cockpit became filled with water. This could happen due to a knockdown, a tide rip, or a serious storm. Where is all that water going to go?

The companionway is the most vulnerable inlet, due to the difficulty involved in sealing the removable door slats and sliding hatch. Care taken in this area will ultimately create a safer boat. Unfortunately, each boat is different, so there are no magic answers. But with a fair dose of creativity and ingenuity, it ought to be possible to keep the water at bay.

One method of sealing door slats is to put thin weatherstripping in the grooves where they seat: sides, top, and bottom. (This will increase their size so the slats may have to be cut down a little.) There should also be a system to lock the slats in place so they don't get washed overboard. This can be achieved with lanyards or barrel bolts. Some companionways have swinging doors. I like these because they can be closed at a moment's notice. They are also easier to seal and are less cumbersome than removable slats. If the doors or slats have louvers (or other types of vents) build special ones without openings for offshore sailing.

In cases where the bottom of the companionway is level with the cockpit floor or bridge deck, think about installing a door slat that is permanently sealed with silicone or epoxy. Make it as high as tolerable for stepping over. It might be a nuisance, but a sill is a great failsafe to help keep water out of the cabin.

I solved the leaky sliding hatch problem aboard *Direction* by removing it completely and building a fixed hard dodger. Note the swing doors and a hinging "sill board," all gasketed. It was a difficult companionway to maneuver, but it was very dry.

Easy leak test

A sliding hatch is an invitation for leaks. (An easy leak test can be performed with a hose. Aim the water directly on the seams. A few drips leaking in might be a nuisance, but large amounts of water getting in are a problem.) Short of completely rebuilding a leak-prone sliding hatch, a viable alternative for stopping water is to cover the hatch with tight-fitting canvas. A semi-permanent cover could even be built using plywood. Since it will be difficult to negotiate the companionway, these temporary hatch covers could be put in place during open water passages or when it looks like a storm is brewing.

Cockpit lockers are huge water magnets, but they are easier to seal off since access is generally not necessary during bad weather. Lockers must be well-gasketed and reliably secured so they don't open during a knockdown. Drip troughs under the lid might keep spray from infiltrating, but lockers need to be 100-percent watertight for ultimate safety.

Weatherstripping is one way to seal a locker. On my Cal 25, *Direction*, I solved the leaky-locker problem by permanently sealing the lids with screws and silicone. Fortunately, there was adequate access under the cockpit via the quarter berths. If the design of the boat allows it, another alternative is to turn the locker into its own watertight compartment. That way, if the lid leaks, water will not infiltrate the cabin.

Other potential cockpit leaks include 12-volt electrical plugs, remote windlass switches, shifter controls, speakers, instrument panels, coax cable ports, Dorade vents, and cowls. While most of these items are rainproof or splashproof, they may not be submergible. Think about installing plugs and switches in a recessed box that has a watertight cover. Most products today include foam gaskets for watertight installations, but I like to smear a thin film of silicone on either side of the gasket to ensure a good seal. For Dorade vents or cowls, have a reliable way to cap them off during rough, unsettled weather.

Lastly, the best-designed scuppers will drain through the transom, either through mouse holes or through a large 3- or 4-inch-diameter conduit. If the scuppers drain through the bottom of the boat, make sure that the drain hose is as large as possible and as vertical as possible without any bends. *(Footnote to getting pooped: when a cockpit gets filled to the brim, 50 percent or more of the water will slop out when the boat rolls or heels.)*

Hatches

Alloy deck hatches not only look good, they are also strong and seldom leak. Many older production boats, however, have molded fiberglass hatches. These are prone to leaks and many are attached with inadequate hinges and clamps. Be aware that when a boat is loaded for cruising, the bow is more prone to plunging. When this happens, water will course across the foredeck and slam into the hatch — sometimes with great force.

One way to test the strength of a molded hatch is to give it a solid thump with a large mallet. No kidding. Put a block of wood against the hatch to avoid scarring, then aim the blow laterally against all sides to challenge the hinges and

Tip: When installing polycarbonate or acrylic windows, put a 3⁄32- to 1⁄8-inch rubber spacer between the plastic and the hull to prevent the sealant from getting squeezed out. Always check with manufacturers for which sealant to use.

Tip: The simplest and most reliable way to secure locker doors and settee covers is with 1⁄8-inch Dacron line. Sliding barrel bolts might look nicer and be a tad easier to use, but buying a dozen or more of them can get expensive. They also chafe the cushion. I like to dead-end a piece of line inside the locker and then poke the bitter end through the finger hole. Either tie the end to something or tie something to it.

A simple way to secure settee lockers is with line.

Tip: Batteries should have a substantial brace over the top of them that is through-bolted. Often, water and fuel tanks sit in chocks that prevent lateral movement but not vertical lifting. A simple bolt and nut can prevent a stove from jumping the brackets.

It is important to have batteries securely bolted down.

Tip: Another way to beat the water-stowage dilemma is to use one-gallon plastic jugs (the ones with "handles" are best, such as apple-juice bottles). These can be stowed throughout the boat, below the waterline, in any spare corner. On our 25-footer, we managed to find room for 15 jugs. Having small jugs is also handy for transporting water from shore in the dinghy when a dock is not available.)

clamps. This may seem extreme, but it's better to discover the weak link at the dock instead of in a storm. After this, if the hatch survives the hose test, you're on your way.

Windows and portholes

Windows are a liability. They eventually leak, they sweat, and if they break at sea it's a huge problem. Still, we all want windows. I know I do. Many older boats have tempered safety glass windows set in aluminum frames. This style of window is a nightmare waiting to happen. If smacked by a wave and pulverized or hit by the butt of a spinnaker pole, the formerly rigid glass can now be pushed right into the cabin. I believe that putting anything on a boat that's made of glass is a bad idea. Imagine a wet cabin besprinkled with minute glass shards — not to mention being saturated with seawater.

Companionway door slats must be physically attached to the boat to prevent them from being washed overboard.

Glass windows can be made safer, however, by installing storm shutters over them. Any stiff material will make a good shutter. Plywood is the cheapest; aluminum is the stiffest.

In my opinion, the safest windows are made from polycarbonate (Lexan). Polycarbonate can be pricey but it's nearly unbreakable. Best of all, it's easy to shape with standard woodworking tools. If thick enough polycarbonate is used (⅜-inch for small windows, ½-inch for large), storm shutters should not be required. Acrylic plastic (Plexiglas) is much cheaper and less prone to scratching, but it is more of a challenge to work with and gets brittle with age. It is also prone to breaking when being removed for resealing. Always check with manufacturers for the best type of sealant to use.

If you're uncertain whether your boat's windows are strong enough, give them the large mallet test.

Weight distribution

The extra gear required for long-distance voyaging will add up not only in dollars, but in weight. Basics include extra sails, spare anchors and chain, larger batteries, water, fuels, tools, a life raft, books, clothes, shoes, toiletries, toys, games, spare parts, and food.

Strategic placement of gear will help maintain the boat's performance and also keep it stable. Overloading the bow and stern will accentuate pitching, or hobbyhorsing. This can hamper boat speed, especially when punching into a seaway. Worst of all, it can impair directional stability — particularly when sailing downwind in heavy seas. Overloading a boat above the waterline will raise its center of gravity; a top-heavy boat is more likely to be knocked down or even rolled.

So where does all that stuff go? Try to keep heavy items

The menace of drips

My focus has been on ways to prevent large volumes of water from flooding the cabin, but how about drips? Are they just a nuisance — part of life on a boat — or are they a threat also?

Drips can be just as crippling as a breaking wave. Granted, drips are not going to sink the boat, but drips have the ability to demoralize the crew. A demoralized crew can make bad decisions — decisions that might ultimately lead to loss of the boat or loss of life.

Morale is a tricky state of mind — especially when the sea is angry, the motion unruly, and the distance yet to sail longer than you care to think about. But give the crew a hot meal, dry clothes, and dry bunks — and most important, faith in the boat — and they will sleep better and awake feeling recharged. Rough-weather sailing has a beauty of its own that can lighten the spirits.

This beauty is easily missed when you feel rotten. Drip a tiny recurring bead of salt water onto a sleeping bag, dry clothes, or into a food storage locker, and the luster of conquering the elements tarnishes like an old brass lantern. One minute contentment saturates the crew, the next minute everyone is saturated with salt water and feeling miserable. Combine this with seasickness and fatigue, and you now have a discouraged and disillusioned crew. It's no wonder. Below, everything is sodden: food, clothes, and bedding. The stage is set for making poor judgment calls. The impetus for Mayday distress calls frequently is not because the boat is sinking; it's just to get off the miserable boat.

This is why it's important to locate and eradicate drips. Think "dry." Prioritize. If the budget is tight, forgo the installation of expensive electronics and install good-quality hatches and windows instead. Think about it. If the boat leaks, the electronics will stop working anyway. Build clothes lockers that are waterproof. If cushions come into contact with the hull, create baffles to prevent hull condensation from soaking them. Build drip catchers under windows. Install a reliable cabin heater to dry gloves and rain gear after bad weather.

Re-bed deck hardware every few years. Be aware that sealants can dry out in summer heat — especially around windows and chainplates. As the weather cools, the dried-out sealants contract, pulling away from surfaces. Drips will find their way into these places. It may not be obvious until the boat is being tossed around at sea, but by then it's too late. The boat suddenly leaks like a sieve. Crawling around on deck in big seas with a roll of paper towels and a tube of silicone is as fruitless as pumping the bilge with an eye dropper. Believe me. I speak from experience.

such as cans, books, anchors, tools, batteries, and liquids located amidships and below the waterline. Stowing heavy things low will help compensate for all the stuff that has to be stowed above the waterline. Let's face it, there is only so much optimum stowage space inside a sailboat hull. Stuff will have to be wedged into every nook and cranny. By exercising weight awareness, it will be possible to keep the boat in trim.

A common solution for extra water and fuel storage is to line the deck with jerry jugs. It's an easy and inexpensive alternative, but all those jugs will put concentrated loads in the worst possible place: outboard and up high. A few gallons are not going to cause problems, but I have seen as many as a dozen jugs lashed to the rail. That's nearly 500 pounds. It would be a lesser evil to add tankage under the V-berth or under the cockpit. Even though this increases pitching, a low center of gravity is maintained. Bonus: by adding extra tankage below, the deck will remain clear — allowing easier, and thus safer, crew movement.

Now that all the lockers are full, think about what might go flying if the cabin is tilted beyond 45 degrees by a sudden gust of wind or a big wave. Consider the following questions. Will the hinges and latches on locker doors resist the bombardment of shifting goods? Are the lift-up boards under the settee cushions locked in place? Are the tools secure? Are the water and fuel tanks properly installed? Do the batteries have adequate tiedowns? Does the galley stove have preventers to keep it from jumping out of the gimbal-brackets? Often, the most serious injuries on a boat are due to stuff flying across the cabin.

Mast and rigging

When a cruising boat is fully loaded with food, liquids, and spares for long-distance voyaging, its displacement is going to be radically increased. Boats under 30 feet take the biggest hit; their displacement might be increased by as much as 50 percent. What this means is the once snappy cruiser/racer is going to be stiffer, thereby putting increased loads on the mast and rigging.

It's important to recalculate the displacement and righting moment of a fully provisioned boat to ensure that all the rigging components can cope with increased loads. Although a mast section will usually be OK, things such as tangs and bolts, turnbuckles, and chainplates may have to be upped a size. (If the boat is more than 10 years old and has swaged terminal fittings, they should be replaced anyway.) Many racing sailboats have a rigging safety factor ratio as low as 1.5 to 1. A fully loaded cruising boat should have a ratio of at least 2.5 to 1 or higher.

Doing it yourself

Finding a boatyard to make these modifications is an option. However, one of the characteristics that successful cruisers share is having the confidence to build or fix anything on the boat. Self-reliance begins at the business end of a screwdriver. What better way to build confidence than by making the boat watertight? Most importantly, by personally working on your own boat, you'll understand the strengths, weaknesses, and limitations of the vessel.

The cost of a new production boat is appalling. The way I see it, a sailboat — any sailboat — is a platform from which adventure springs. Isn't that the real reason we take to the high seas — to seek adversity and then persevere in the face of peril? Aren't the best memories created when the rail is buried, the spray is flying, and a cozy anchorage is the destination? An older boat will take any of us to those cozy anchorages as easily as a brand-new boat.

Good rigging, above, might save your life. The Martin children, raised on a boat, have no qualms about going aloft. Fixing the boat yourself not only saves money, it builds confidence. Dave does his own work, at right.

Cruising with pets

How to make sailors of your four-legged furry friends

by Jill Knight

FOR BOATOWNERS CONTEMPLATING frequent getaways or The Big Cruise, the most emotionally fraught question is sometimes a surprising one: wait for Fido or Tabby to die or take him or her along?

If home is not home without a companion animal, what are the complications and drawbacks of cruising with one? If you have read this far, you will probably be aware of the rewards of living with a pet, so what follows will emphasize the difficulties. Depending upon one's preference in pets, these difficulties may be small or large. When cruising internationally, I came across a wonderful range of creatures aboard: a tortoise, a duck, dogs, cats, a pair of ferrets, a cockatoo, and a snake.

Most of these long-distance pets were small. In fact, most liveaboard pets were cats. On the Australian coast where *Cooee* and I are currently cruising, every second boat has a dog aboard, frequently a large dog and occasionally two or three of them. My own firsthand experience since living on a boat has been mainly with cats, but I have lived aboard with a bird, briefly, and with a monkey, *very* briefly.

Becoming converted

The first time I sailed with a pet was on a delivery trip across the Pacific, from Mexico to Australia. There were five of us on board, and before we left a friend pressed a pretty male kitten onto us. No one was keen on the idea, but the woman had been helpful to us and had too many cats already to care for another. We took Jack along, and it turned out to be a good decision. On long passages he provided a focus as he grew and changed and became a personality; he helped divert us from the small irritations that inevitably arise among people confined to a small space. There was little interest from officials; a cat raised no problems in the countries we visited on the way. But arrival in Australia was another story.

When we arrived we had to haul the boat and prepare her for sale. I had planned for Jack to stay on my brother's (Australian-registered) boat at a mid-water mooring. No way, officialdom declared, Australian vessels are Australian territory. We found a foreign boat willing to take him as a boarder, and quarantine officers supervised the transfer. Jack reached adolescence during his time boarded out. To their credit, his caretakers stuck to their agreement. There was a certain amount of grumbling in bars, however, and I once heard our pubescent darling described as "a thorn in the side of Australia." Quarantine officers were summoned again after relaunch to officiate when Jack was transferred back home and neutered on the galley counter; they then carried the offending parts ashore under tight security to be put to rest wherever such remains are laid.

Jack sailed out of Australia when the boat was sold to a new owner in the Philippines. He went overboard during that trip — at night, in bad weather — but had become such an important crewmember by then that the boat circled for an hour searching. He was finally spotted when the searchlight reflected off his eyes.

Cooee happened to be in the Philippines at the time and Jack became her ship's cat. I did not even like cats — I was a dog person — but Jack converted me. The Philippines was where I began singlehanding. My increasing

Fletcher, below, a brown Burmese from Cape Town, is *Cooee's* ship cat. She grazes on potted grass daily. Jill has made a special hatchboard with a cat hole cutout, below right, just for Fletcher.

appreciation of self-sufficiency may have been a factor in this conversion: I was becoming less inclined to wag my tail and pant and plead, "Love me, love me!" Although I savored my solitude, I found great pleasure in having a non-needy living creature aboard.

Jack was not keen on water, but I have heard of cruising cats who enjoyed swimming with their humans. I know the breed known as Turkish Vans are swimming cats; these may make good cruising companions, though they have rather a lot of fur. Whatever the breed, there is a nice tradition of cats on seagoing vessels.

Food and litter

Cats are easy to have aboard. The only truly important things in their lives are food and a litter tray. Food is simple: fresh fish when available, otherwise cheap canned fish which is found in every country, with or without tomato sauce. A diet of dry cat food and nothing else is appealing for its convenience and weight but is likely to make a cat sick in time, perhaps fatally. Fletcher, *Cooee's* cat, also has a potted patch of grass; she grazes on it daily so I guess that says she needs it for a healthy diet.

A cat's food presents no problems of acquisition and storage. However, litter presents difficulties in both. I have known cruising cats to be trained to use the toilet, but it must be difficult if not impossible for them in rough conditions. *Cooee* did not have a toilet when circumnavigating, and cat litter was unheard of in third-world countries where a lot of cruising and provisioning takes place. Jack and his successors improvised with this and that, including rice and dried beans in Brazil, before I developed the system Fletcher uses now which is simple, clean, cheap, and requires no storage space for litter. I bought a restaurant-style stainless-steel steaming pan consisting of a solid bottom tray and perforated upper tray, attached cords to the upper tray and half-filled it with small smooth pebbles as washable cat litter. Urine flows into the lower tray and can be washed out. Solids float off when the upper tray is dunked overboard on its cords; in places where this is undesirable they can be scooped off into the garbage. A dollop of cheap vinegar every couple of days prevents plaque and its subsequent smell from building on the trays; a dose of chlorine bleach also eliminates odor but will not prevent plaque. Recently I was asked by a magazine reader if I gimbaled the tray; the idea conjured hilarious images. Fortunately, my cat came gimbaled, though I do take her tray belowdecks to the saloon floor in rough conditions and give her a bit of support occasionally while she performs.

"Cats are easy to have aboard. The only truly important things in their lives are food and a litter tray."

Dogs are often larger and present proportionately larger problems with toilet arrangements and food acquisition and storage. Unless the dog eats fish, dog food that does not need refrigeration may be hard to find in some countries. Coastal dogs oblige their owners to take them ashore for walks and toilet rituals once or twice a day, which is not a bad thing except in national parks where domestic animals are usually banned, at least above the high-tide mark. For passagemaking, an American I met had a particular piece of fake grass carpet. Wherever he put it on the deck became the dog's toilet. It seemed satisfactory. Of course, one rarely meets an unhappy cruising pet owner; there are ways and means.

Alternative pets

On a recent delivery trip I did with crew, we picked up a parrot that was offered for sale in a Pacific Island village we visited. Again, he served magnificently in diverting us from

Jill has figured out how to make a cat's litter tray cheap, clean, and simple with the use of a double tray and smooth pebbles, above left. Reusable litter is a big plus. Myki, at right, became Jill's ship's cat for a brief period. He was unhappy and seasick afloat until she found him a better home ashore. When *Cooee* is at anchor, Fletcher is comfortable all over the boat including on the bowsprit, at left, but when *Cooee* is sailing, Fletcher doesn't leave the cockpit.

interpersonal irritations. He ate fruit and sweet potato, cooked and mashed. These were simple to provide, but his fallout was messy and a bit smelly. Admittedly, we were not really equipped to give him suitable accommodations which might have contained his flying food and excrement.

In the Philippines I had Zamboy, a monkey from Zamboanga, aboard briefly. I do not recommend monkeys as boat pets, although I have seen tiny females of more docile varieties kept successfully. Zamboy was mischievous to the point of evil: he snatched tools and raced with them to the top of the mast; he picked and chewed at sails; clothespins were there to be removed and tossed overboard; bottles had to be lifted like telescopes so he could squint at their contents which were by then pouring down his front. His cruising career was brief and ended when he was relocated to a village ashore.

Local or international

There is a need to differentiate between long-distance international and local cruising. Dogs frequently join their humans for coastal cruising. They are great company and are seen as a security measure; I have heard of two singlehanders who required their dogs to stand night watches after being trained and rewarded for spotting other vessels and raising the alarm. The downside with dogs is their pleasure in becoming wet and sandy, but dog lovers seem to see this as a minor inconvenience. While cruising internationally I came across dogs only occasionally and they were almost invariably small.

The quarantine aspects of cruising internationally with pets are generally overstated, I think. There are certainly difficulties entering Australia and New Zealand and perhaps some European countries — I have not sailed into Europe with pets — but they are not insurmountable. I have visited around 40 countries by boat, and in a couple of them I was asked to ensure that my cat remained aboard. In Fletcher's case, while she enjoys visiting other boats where she is welcome, the last thing she wants to do is step onto that unfamiliar vessel, terra firma. In New Caledonia, she was taken into quarantine unexpectedly for five days, but I suspect this had to do with the politics of the day; I have not heard of it happening to others. Bringing her into Australia to live long term required organization and money, and I would strongly advise early contact with quarantine authorities regarding regulations and costs when an animal is to be imported anywhere. A period in a rabies-free zone such as the Pacific, for example, may significantly cut the quarantine sentence on arrival. Fletcher did 30 days, the minimum.

When cruising internationally, a pet who prefers remaining aboard to roaming ashore clearly presents fewer hassles. On a small boat, a pet whose accessories are simple and take little space is also desirable.

Leaving the boat

From time to time, cruisers need to leave the boat at anchor or in a marina while spending time away. I have had no problem finding animal lovers to take my cat aboard their own boats or to tend to her needs on *Cooee* if my absence was to be short. I have an extra washboard with a cat hole cutout, so I can leave Fletch to fend for herself for a night or two without bothering anyone. Some marinas have a stated policy of no animals, but I have found this rarely means they are banned. The clause is in the rules but is enforced only if a pet inconveniences other guests.

Safety issues

Levels of common sense and flair for derring-do vary widely among animals. None of my pets has been lost at sea though Jack came close after leaping for a boom-roosting bird. Jack was catnapped in Singapore during a haulout and my next cat, Lucifer Longtail, died ashore in South Africa. Fletcher has spent all 10 years of her life aboard, but still never ventures beyond the cockpit coaming while we're sailing. People use life vests, harnesses, and lifeline netting. A particular pet may need such measures, but most cruising animals, in my experience, take care of themselves.

A final note: unlike us, not all animals want to go sailing. For brief cruises, arrangements for care will probably be easy to make and painless. The Big Trip, however, presents larger problems. With a new pet, a suitable home can probably be found. But if old faithful Fido or Tabby draws the line at life afloat, it is best to find out ahead of time. Spend time cruising together before any big long-term departure.

The mischievous Zamboy, above right. His cruising adventure was, thankfully, brief. Mike and Emma of *Moonraker* paddle ashore, at right. A boat dog provides motivation to explore the shore daily and makes meeting new people easy.

PHOTOS BY BILLY BLACK

Setting

You don't need a fortune

by Dave Martin

A QUESTION FREQUENTLY ASKED OF cruisers is, "What do you do for money?" This inquiry has always amused Jaja and me. It's an innocent-enough question, but it's difficult not to be sarcastic when a stranger crosses this line of etiquette.

What folks really want to know is, "How can you afford to go cruising?"

The answer is that it's all about priorities: it's not what you save while spending, it's what you avoid buying. Period.

I can understand the reason The Money Question is asked so often. Life ashore can become very expensive — if you let it. There are the ordinary expenses such as utilities, car insurance, property taxes, and bank loans. But these aren't the culprits. The killers are in the periphery: cell phones, satellite TV, designer clothes, designer haircuts, new cars, restaurants, Internet shopping, and credit-card interest, to name a few. If that kind of superfluous spending is brought into the cruising life, where you typically forgo a steady income, the question is natural. How *would* you afford to go cruising?

We usually had plenty of funds while cruising because we lived a bare-bones lifestyle and worked wherever we stopped. Even when children began to swing from the rigging, we eked out a living and kept the dream to cruise going forward. To save money, Jaja hand-washed all our clothes, towels, bedding, and the kid's cloth diapers. Laundromats are expensive … especially overseas. (Due to this drudgery, the kids were all potty trained by 15 months.) Jaja also nursed the kids until they were able to eat the baby food she made from scratch. No formula or Gerber food crossed their palettes. By living on a boat, we also avoided all those baby accessories, things like high chairs, cribs, and special changing tables.

Take any work

To generate income while cruising. I've built boats, re-glazed old windows, tiled bathrooms and kitchens, cleaned toilets, and painted houses. Together, Jaja and I have written magazine articles and a book. The trick with working ashore while cruising is to take any work you can get. You are trying to earn a buck, not start a career. Nine times out of 10, a menial chore will lead to something better. Always do your best, even if it's cleaning 70 toilets a week. The fellow who owned that business also owned a 39-foot sailboat hull. Before long I was working full-time on his boat, building the deck and interior.

I always had confidence a job would be there when I needed one. It's all about attitude. Even in foreign countries, where I did not speak the language at first, I found work. Impending starvation is a fantastic motivator to get off the boat and mingle with the real world. Working brought us into the lives of the locals. This proximity created some of our best experiences. One of the greatest illusions about the cruising life is that every day should be a vacation. How boring.

The reason we could survive as a family on a average budget of $6,500

Rich experiences needn't cost a bundle, as Dave and Jaja Martin discovered when they continued cruising as a family once Chris and Holly came along, above. Cramped quarters? You bet. But Dave says coping with a small space is a mental challenge, not a physical one. Dave and Jaja relax with a tune during a quiet moment between the demands of two busy toddlers, at left.

priorities

to live a rich cruising life

All those baby accessories are not necessary if you travel around in a gigantic playpen, below. Who needs high chairs, cribs, and special changing tables?

per year in the tropics (1988 to 1995) and $15,000 a year in the high latitudes (1998 to 2003) is that we did not have many superfluous expenses. We had no payments for a house, a car, or furniture. We had no credit-card bills, cell phone, cable, boat payments, boat insurance, health insurance, mortgage, or car insurance. Nor did we eat out much or go to pubs. We bought secondhand books and clothes. I made the kids' toys, and we avoided marinas like the plague. Everything we owned we carried with us.

Very simple

Our two boats, *Direction* and *Driver*, were as modest as our chosen lifestyle. At 25 feet, *Direction* was the epitome of simplicity: one battery, two solar panels, a Casio watch, and a plastic sextant. I worked navigation sights using a pencil and paper. We logged 45,000 miles on that boat and visited two dozen countries. At 33 feet, *Driver* was a simple boat mechanically. However, we budgeted for a radar, GPS, and a portable reverse-osmosis watermaker. None of these items was vital *per se*, but they removed some stress from our lives. Priorities.

Both boats were easy to maintain, and we performed all the work we could do ourselves. Our biggest expenses were going to the grocery store and buying diesel fuel for the heater in northern climes. *Direction* was "cruise ready" for $16,000 (1987). *Driver* weighed in at $60,000 (1997). Our boats were a tad cramped for crossing oceans and raising kids. So what? Coping with a small space is a mental challenge, not necessarily a physical one. Once you get used to it, life becomes "normal." Were we always comfortable? No. Did we see the world? Yes.

The average length of cruising boats has increased over the past 20 years. We've seen couples on 50-, 60-, even 70-foot boats. Not only that, but these couples usually maintain a shoreside home. It takes a sizable income or a nest of investments to buy and support that kind of comfort.

Although these enormous boats are for the well-to-do, they have inadvertently raised the bar of tolerance for what is deemed an "acceptable-sized cruising boat." It has become a cliché now: big, expensive boats are safe,

Gregarious Chris and Holly Martin grew up in a close family group, which would make many parents envious. They are photographed here in South Africa in 1994.

and small, simple boats are inadequate for anything other than weekends. Glossy sailing magazines are partly to blame for this changing attitude. It's all about advertising space and selling a dream.

Writing articles

Editorial preference also plays a key role in determining what type of message the reader receives and then tries to emulate. A successful boat broker observed that 20 years ago when folks came aboard his boats, they sighted the mast, twanged the shrouds, swung the tiller, and asked about hull speed. Nowadays, buyers head for the cabin, feel the upholstery, check out the woodwork, and ask about the systems.

Ironically, today's myriad onboard systems and gadgets — which are meant to enhance a cruise — are the one thing that can just as easily prevent a cruise from ever happening. Who hasn't sat down with a marine catalog and calculator, then added up all the "have to haves"? You stare off into space and reconcile the need to work for another 150 years to afford all the goodies.

Somehow the adventurous spirit of sailing has begun to give way to shoreside indulgence and instant gratification. Boats are becoming too much like cars, both in looks and in usage: push-button convenience and ergonomics with all risk seemingly taken care of by an array of microprocessors. All of this is fine, but it comes with a high price tag. It's unfortunate, but "money" and "cruising" are becoming interchangeable terms.

Would you like to go cruising? It is really not that big a deal to buy a cheap boat, sell the house and car, quit the job, and hit the high seas. An older, 30-foot production boat costs less than most new cars. Buy some used sails, replace the rigging, get a hand-held GPS, baby the engine, build a plywood dinghy, carve some oars, and you are cruise-ready. Figure on eating rice and potatoes, and your yearly expenses could be well under $8,000. Do like we did: work for six months, sail for six months. Balance pleasure with purpose.

Burning desire

I can already hear folks digging in their heels and shouting: "But, but, but, I can't do that! I need to buy… What about my job?… What about my stuff?…"

The only things you need are the burning desire to go and the attitude that everything will work out for the best. We have passed up many long-term jobs because our drive to explore is more developed than our drive to stay put. We have learned that "stuff" can be replaced and that there are plenty of jobs for motivated people.

Admittedly, lowering an acquired standard of living or forfeiting a familiar way of life might be the greatest challenge. Change is tough, even if it means following a dream. When Jaja and I moved ashore after cruising for many years, we took a big hit in our quality of life. Boat life is tranquil and spontaneous, and it keeps us close to nature. Living ashore is more comfortable at times, but we do not have the same freedom of movement or quality of togetherness. Everyone is always rushing off to do something. But we are enjoying the trade-offs. That's how life is. That's how cruising is too.

***Direction*, their Cal 25, left something to be desired in the livability/ergonomic department. Dave demonstrates the term "dishwasher back," invented by Jaja for obvious reasons.**

DAVE MARTIN

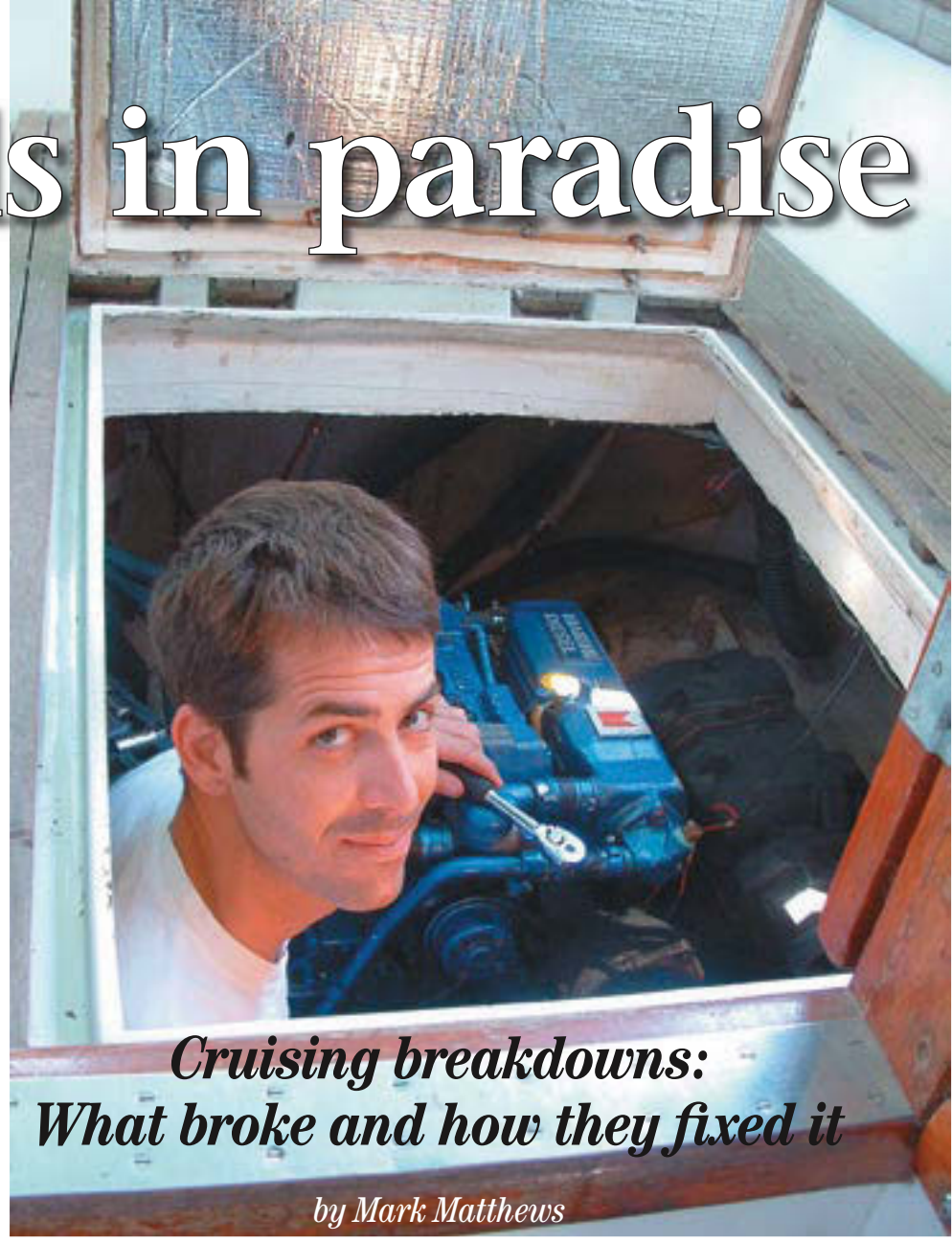
For Jaja and me, going sailing was our number one goal. All our available cash went into our boats, so they were paid for by the day of departure. We preferred to whittle back expenses to the barest minimum in anticipation of being underway. We thought of cruising as investing in our youth, in our good health, and in our lust for adventure. When we get old and feeble, we will never have to look back with regret and rue the fact that we spent the best years of our lives toiling away just to buy trendy stuff.

The cruising lifestyle has become too over-analyzed. Personally, the more I analyze something, the more I tend to follow in the footsteps of contemporary wisdom. It is at this juncture that I can fall prey to marketing gurus, and my "must-have list" runs on for pages.

The cruising lifestyle is similar to every other way of life. It takes a defined goal and the ability to ignore the way everyone else is doing it. Life is an Aladdin's lamp that you must learn to rub correctly. Riches await those who figure out how to make it work for them.

When they got older, the Martin children discovered the wonders of their sailboat above the deck level. Three young Martins — Chris, Teiga, Holly — observe life from a higher perch, above. Dave made many of the children's toys. Chris, a boat kid from the get-go, would naturally have an interest in boat toys, below.

Pitfalls in paradise



Cruising breakdowns: What broke and how they fixed it

by Mark Matthews

In the last six years of my life I've been fortunate enough to experience two cruises on two different 1960s-era boats. The first voyage was on a 1969 26-foot Westerly Centaur, traveling south along the coast of California, through Central America and the Canal, then north through the western Caribbean and up the East Coast.

After that it was time to go back to the grind for two years before upgrading to a 1964 35-foot Sparkman & Stephens-designed Chris-Craft for a cruise through the eastern Caribbean, Venezuela, back through the Canal, and the return to California.

"The whole engine, a Volvo MD2B, returned to its dormant state off the coast of southern Mexico. A series of sharp reports from the engine compartment brought the engine to a standstill, and sailorly curses filled the air."

While there's no disputing that older boats need love, attention, and know-how, both trips proved that, with a little elbow grease and sweat equity, most things can be fixed. There have been more than a few boat projects along the way. Some have taken place on beaches, many in the cockpit or the odd pier, and a few even in the rare luxury of a boatyard. Because there's no way to expect the unexpected, any trip over the horizon is bound to throw a couple of curve balls your way.

Engine woes

The biggest heartache on an older boat invariably rises from the piece of iron humming or clunking away in the recesses of the engine compartment. Part of this stems from the fact that sailors go sailing to be in tune with nature's elements, working with prevailing winds and currents to get from one point to the next.

Contorting over a hot engine with a mysterious problem in a bouncy sea is about as far away from this kind of freedom as you can get. I found out the hard way that I get seasick *only* when I'm upside-down working on a hot engine, periodically being sprayed with diesel fuel.

Our Westerly had a diesel engine that took a fair bit of tinkering to coax it back to life after we bought it. Replacing the 30-year-old diesel with a brand-new Yanmar would have been the optimal solution, but the engine alone would have been worth more than the price of the boat, and we'd probably still be at the dock paying for it.

While I'd cruised a fair bit before this trip, including a trip from New York to Greece across the Atlantic, I had somewhere along the way reacquired romantic notions of using the engine only for getting in and out of port. Suffice it to say that this engine was particularly hands-on. In Baja the regulator quit — this engine had a strange animal called a Dynastart, a combination starter motor and generator — and we could no longer use the starter button to turn the engine on.

But we could still hand-crank it, a feature not common on today's engines. A small solar panel kept the batteries up with the minimal energy demands of our Tillerpilot, tricolor light, and cabin lights.

Sharp reports

The whole engine, a Volvo MD2B, returned to its dormant state off the coast of southern Mexico. A series of sharp reports from the engine compartment brought the engine to a standstill, and sailorly curses filled the air. We'd blown a head gasket. We

sailed 150 miles to the next port — experiencing a calm en route that had us spinning in circles at times, completing one of the slowest mileage runs of our trip: 12 miles in 12 hours.

My mechanical skills at this point were fledgling at best, but with each new daunting boat project comes a new bit of knowledge that can be built upon. Rather than pay a local mechanic of dubious skill the inflated prices that usually accompany a breakdown in paradise, and then still not know how things on the boat work, it's nearly always better to do the work yourself. If you're really out of your league, you can hope to find another cruiser who knows more than you do.

One of the great things about cruising is the camaraderie — no one knows everything about the mysterious innards of engines, alternators, regulators, and the like, but get enough cruisers together, and anything can be fixed.

Soon we had made friends with a South African cruiser/mechanic who just happened to be ordering parts that day. With a new push rod, head gasket, and valve spring, we were back in business. There was also a field valve job, spinning the valve stem in a cordless drill with grinding paste to his careful specifications — a crude but effective fix that lasted the whole way back to the States and was still working the day we sold the Westerly.

I can still see the engine parts strewn across the galley and the Ziploc-bagged and labeled screws and bolts. An entire day was spent with denatured alcohol and a razor blade cleaning the old gaskets off engine surfaces and getting the engine parts clean again for reassembly. We made gaskets out of gasket paper and used RTV gasket maker for the exhaust manifold. Then out came the torque wrench with strict instructions to re-torque the head bolts after the next oil change. It was a happy day when the engine came back to life. We'd learned a lot by doing it ourselves, and down the road we ended up helping mechanically stricken cruisers who crossed our path with their own tales of mechanical woe.

Through-hull blues

In a calm and beautiful anchorage in Costa Rica I was cleaning the bottom of the boat. Merrily scraping away with a paint scraper, I watched barnacled carcasses float downward as brilliantly colored tropical fish gathered for a free lunch. That's when I noticed it — a perfect circle of blindingly white gelcoat. It took my brain several moments to comprehend what I was seeing: this white circle had previously been covered by the outer flange of a bronze through-hull, the *only* one I hadn't replaced before leaving. It had simply flaked off like a barnacle. If there ever was a time to panic, it was now.

"One of the great things about cruising is the camaraderie — no one knows everything about the mysterious innards of engines, alternators, regulators, and the like, but get enough cruisers together, and anything can be fixed."

After hopping quickly aboard, I learned that there was some good news. We weren't sinking. The through-hull and its backing plate were fiberglassed over and not likely to be going anywhere anytime soon — another thing you won't see on a modern production boat.

The bad news was that we'd just had a hard lesson in the dangers of electrolysis. We'd left the boat in a marina in northern Costa Rica for four months. The marina was one rickety dock whose structural integrity was created largely by the cruising boats Med moored to it. Electrical wires and shorepower cords ran along the dock and dangled in the water.

The zinc on the prop was gone — eroded to a nub over the four months we'd been gone. That should have been the first red flag. Fortunately, because our boat was a bilge-keeler, we were able to beach it to change out the through-hull. Finding a new through-hull was another matter. After some hot walks around town, we found out that we could have a bronze one machined nearby at an approximate cost of $100, or we could buy one in Panama City, several hundred miles away for about $50.

Then we noticed a neighboring French boat whose through-hulls were all nylon. With misgivings we changed the through-hull to nylon (I believe you should be able to hit a through-hull with a sledgehammer). To its credit, this one never gave us any problems for the rest of the trip back to the States, where it was replaced during our first haulout.

Rudder problems

Water has been called the universal solvent. If there's a chance for it to get into anything, it will. A boat's rudder is a prime spot for water ingress. The lateral forces on a rudder in a seaway

Wrench in hand, Mark Matthews attests that every cruiser will eventually find him- or herself wrapped around a dormant engine with a mysterious problem, facing page. A 35-foot Chris-Craft, at right, replaced the Westerly Centaur. The new boat was already equipped for cruising, but Mark and Laurie still had much to do to make it theirs.

Mark is neither the first nor the last to fix a rudder while cruising. He and Laurie learned some new Spanish words like *soldadura* (welder) and *inoxidable* (stainless, as in stainless steel).

can be immense. The weakness, especially on a boat 40 years old, is where the shaft enters the rudder.

And so it was on another dive that I noticed the top part of the rudder had begun to delaminate and water was making its way inside. My better half, Laurie, held the tiller in the cockpit. My worst fears were confirmed when I moved the rudder in the water, and it flexed back and forth. Fortunately, we had another rudder: our windvane had an external rudder with a trim tab, so we could still steer the boat should we need to.

The other plus was that we could pull the rudder out of the boat without hauling out or beaching the boat. One of the benefits of cruising on a smaller boat is that major repairs are a little bit more manageable … or so we told ourselves. Once the set-screw was removed and a little coaxing applied from the water, the rudder simply slipped out of the rudder tube. I had securely fastened the rudder to the boat, thinking it would sink under the weight of the stainless-steel shaft. But I was pleasantly surprised to find that the rudder floated.

Under a shady grove of palm trees, we began our island-style repair, using a chisel and mini sledgehammer to cut the rudder into two clamshell pieces. (See a similar *Good Old Boat* article about a rudder repair in Mexico in the May 2001 issue).

Corroded webbing

This revealed another problem. The stainless-steel webbing welded to the shaft inside the rudder had corroded away. The original design had long, skinny pieces of stainless steel fiberglassed to tapered teak blocks that were rotten and also going to need to be replaced.

There was some good news: the fishing community at this particular outpost of civilization used polyester resin to repair their own boats, so we'd be able to find additional supplies to add to what we had aboard.

Laurie and I walked around town with the shaft and the stainless-steel webbing, looking for a *soldadura*, or welder. Once we found one, the other key word was *inoxidable* for stainless steel. Incredibly, in only an hour the work was done — probably faster than if we had been in the States — and we began to put things back together. The other good news was that we had two-part expanding foam in our shipboard stores. If you've never had the chance to work with this stuff, it's pretty crazy; a little goes a long, long way.

We cut new blocks of wood, fiberglassed them to the inside of one half, then glassed the stainless-steel webbing over that before starting to put the rudder back together again. The idea was to fill the rudder completely with foam, drilling relief holes here and there to have a visual means of checking that foam had filled that part of the rudder. We seam-taped the two halves together using polyester resin, sheathed it, filled, faired, sanded, painted, and reinstalled the rudder to get back on our merry way. The other useful motto when cruising is "Where there's a will, there's a way."

A "new" boat

Our current vessel, which replaced the Centaur, is a 1964 35-foot Chris-Craft. We were ready for more storage and faster passages and bought the boat from friends with whom we had cruised in tandem from Panama to the East Coast. The difference between buying an older boat that had been previously cruised and getting an older boat ready to go is immense in terms of the amount of work, gear, and equipment to purchase. Not that there wasn't work to do. In the six months before we were ready to cruise again we replaced the standing rigging, the lifelines, and running rigging. We installed an inverter and an SSB radio and had the life raft repacked. But on the whole, a previously cruised boat has a lot of the glitches already ironed out.

Autopilot mysteries

Even if you switch boats, though, invariably the quirks and idiosyncrasies catch up with you. We'd left the world of the tiller slave behind and now had hydraulic steering, complete with a fancy autopilot that rivaled Hercules. But when the unit was activated, the wheel turned a little this way and a little that way. Then an alarm sounded and "Actuator Failure" flashed on the screen.

"Another little bit of idiosyncratic charm the new boat had was that every 15 or 20 times the key was turned, a faint click came from the starter solenoid, and that was that."

After flipping through the manual several times, we decided that it sounded serious enough to call the manufacturer. A knowledgeable and patient representative talked me through reprogramming the brain of the unit — a 20-minute production that revealed everything working as it should be. But when the autopilot was turned on again, the same error flashed. I began to steel myself for some serious squirming in the lazarette to remove the autopilot.

By chance, while traveling down mind-numbing section after mind-numbing section of the Intracoastal Waterway — prime territory for our autopilot — we happened to cross paths with our friend, the previous owner of our boat. When I told him about the problem with the autopilot, he looked at me quizzically and asked, "Do you have the wheel locked off?"

I had thought that the autopilot would make the wheel spin when it was working. It turns out that without the wheel stopped, the hydraulic pump was simply circulating hydraulic fluid through the hoses. With the wheel locked off, we went merrily on our way. My only consolation was that the tech-support guy overlooked the obvious as well. Whatever the case, I'll take looking silly for a simple fix any day.

Starter challenges

Another little bit of idiosyncratic charm the new boat had was that every 15 or 20 times the key was turned, a faint click came from the starter solenoid, and that was that. Ordinarily such a click would mean a low battery. But the voltage was fine. The previous owner had told me about this endearing little feature. His solution was to turn the flywheel a quarter turn and try again. For some reason that eluded both of us, this seemed to work. At least initially. But by and by, a curveball every 15 or 20 attempts became every 5 or 10. Out came the starter, in went a new solenoid . . . with the same results.

A mechanic was consulted. It was suggested that what could be happening was that the teeth on the flywheel were wearing off. The engine was stopping in the same place, and the teeth that the starter engaged in that area were being worn down.

He suggested taking the coupler apart, taking the transmission off, heating the gear on the flywheel with a torch, and flipping it . . . basically a mechanical nightmare.

Clearly, it was time for more sleuthing. The starter came out, went on the bench, and passed with flying colors. Although previous probing with the voltmeter revealed everything was getting the voltage it should, I began running new wires from the ignition to the solenoid. After replacing one yellow wire in particular I noticed that I had started the engine and stopped it and started it again some 15 times in a row. Another head of the hydra had been slain. (***Note:*** *Treat the circuit from the key switch to the solenoid as a 30-amp circuit. Use 12- or 10-gauge wire to prevent this problem.* ***–Ed.***)

Pop rivets and trade winds

Once you're out of the lee of the many Caribbean islands, 20- to 25-knot winds are pretty much the norm. Much of the trip south from Florida to St. Barts is close-hauled against it. On our trip through the eastern Caribbean, we took on fuel once in the British Virgin Islands and didn't take on any more until Panama. There is no shortage of wind.

But over time the wind can take its toll on sail-handling gear. As we approached Tortola for the first time, marveling at the gazillion sailboats tacking back and forth against the towering headlands and amazed that we had reached one of sailing's prime destinations, there came an innocuous-sounding "ping" from somewhere.

My first concern was that some critical fastener holding the mast had given way. Looking up, though, I couldn't find anything. A bit more sleuthing revealed that eight of 10 rivets holding our outhaul track down to the boom had given way, and the remaining two could go at any point. We reefed the sail and, at the end of the day's sail, riveted the piece back in place with larger rivets. These are still there and seem to be up for the task. They had quite a workout on the uphill climb off the coast of Baja as we made our way back to the States.

Bottom line

The sea, the wind, the salt, the sun . . . these are unstoppable forces guaranteed to break something on even the best-found vessels. You can either do the work at the dock and never leave or accept the fact that the cruising life is a hands-on affair rife with triumphs and pitfalls. For us, each new project helped gain insight into the workings of the physical world, and a sense of how to refine things. The more you can fix yourself, the better you'll know your boat, and the more self-sufficient you'll become. That's the real joy of cruising.

The author's wife, Marolyn McGowan, negotiates with a potential customer.

Low-cost outfitting

Learn the hard-won secrets of a frugal do-it-yourselfer

by Gerry McGowan

You make lists of things you want to repair or upgrade on your project boat. But when you visit your local chandlery, reality sets in: "*How* can I tell my spouse how much it will cost to fix up the boat?"

All is not lost. There are ways to significantly cut the cost of the things you have to do or want to do. I like to call it *low-cost* outfitting, rather than *cheap* outfitting. Cheap outfitting means substituting something cheap or shoddy for the real stuff; low-cost outfitting means finding the real stuff at a bargain. What follows are the secrets of a frugal boater who has done this on five boats over the past 16 years.

Do it yourself

The single most important secret is to do all, or at least almost all, the work yourself. Labor rates in my area hover around $60 an hour in boatyards and $25 an hour and up for independent contractors. I kept track of my labor time in a recent project (Replacing a cabin overhead, *Good Old Boat*, May 2005) and discovered that I saved between $3,000 and $5,000 in labor costs. Since the material costs were less than $500, the savings for the entire project were between 85 and 90 percent. Later in the year I replaced the engine in my boat, cutting an $11,000 project into one that cost $7,000. I had never done an engine replacement before, but I read up on it, listened closely to the dealer who sold me the engine, planned the job carefully, and worked slowly.

I didn't measure twice, cut once. I measured five times, mulled it over, measured again, and then cut. Consequently, I spent about 100 hours doing a job that the dealer estimated he would charge at 60 to 80 hours. But he was impressed with my clean, organized installation, freshly painted engine room, and the fact that I had mounted the engine in pre-drilled and tapped holes in the engine bed from my homemade alignment jig. It lined up with a few turns of the mount adjustments. All this was the result of careful measurement and planning, rather than a lot of skill or experience.

Learned by doing

I knew very little about working on boats when I started. I learned by doing and did the best job I could. I have a pet peeve about shoddy amateur projects and determined to make up for inexperience by thorough planning and careful work. If I didn't know how to do something, I learned.

When I wanted new upholstery and couldn't afford the $2,000 price tag, I learned to sew, and I recovered the cushions myself. Later I applied my new sewing skills to make dodgers, sails, sailcovers, sheet bags, a Bimini, and many other minor projects in addition to upholstering a gaggle of boats and motorcoaches. I purchased a sailmaker's sewing machine with my savings and have used it for 12 years now on four boats and two motorcoaches. I figure I've saved at least five times the cost of the very expensive sewing machine so far. Since tools are reusable, I would much rather buy the tools to do a job than pay for someone else's labor. Paid labor vanishes as soon as you sell the boat. Tools, on the other hand, are like the battery bunny: they just keep going and going.

The biggest obstacle to starting a large do-it-yourself project — whether an engine installation or re-upholstering your cushions — is fear. A project seems so overwhelming when contemplated as a whole. I find that every large project can be viewed as a series of more manageable sub-projects; I like to keep a list of these sub-projects and triumphantly cross each off as completed. You might even list the amount you saved at each step as a

morale booster. This is money you just put into your boating bank account.

Used marine stores

Used marine stores, also known as consignment stores, can save you money and are fun simply for wandering about. My first experience with one of these was when I found a new traveler car for an obsolete track at a cluttered little store in St. Clair, Michigan. The dealer's price was too high, but I hung around for a while shooting the bull, and he finally agreed to my lower offer. I ended up saving about half the cost of a new one. Half-price appears to be the typical price range.

I have purchased travelers, blocks, a muffler, a propane tank, a kerosene tank, a kerosene heater, pumps, and many other little items I've lost count of. My favorite was a brand-new Harken Magic Box for $10 that I used to make the neatest outhaul adjuster in town. My least favorite was the Taylor kerosene heater, mainly because it was missing an essential part. It took too much searching to discover why the heater kept flaring up and frightening the heck out of me. Then I discovered that I could substitute replacement parts from a Force 10 heater, since it used the same burner. I eventually saved about 75 percent of the cost of a new heater and learned all about kerosene burners in the process. This is the sort of education you don't get from a book.

The rule to heed when you go into one of these stores is that not everything is a bargain. Much of the merchandise is overpriced and/or worn out. The fun part is finding that which is truly worth the price. There seems to be little consistency in pricing in some cases, with expensive junk sitting next to a real bargain. Shop carefully!

The *Good Old Boat* website has a list of marine consignment stores at <http://www.goodoldboat.com/consignments.html>. It's frequently updated and pretty extensive. I have checked it out and find it very useful.

Marine swapmeets

My favorite way to spend a Saturday morning is at marine swapmeets. These can be a source of unbelievable savings. One time I purchased a $175 Danforth 18H anchor for $20 and a $1,000-plus (if new) Enkes 26 self-tailing winch for $75. With a coat of paint, the anchor lies safely under the V-berth as a spare. The winch — after disassembly, cleaning, and lubrication — adorns the starboard side of my cockpit. The port side has a used Harken 44 self-tailer purchased over the Internet at a marine consignment shop and refurbished with a Harken spring and a washer costing $7. I figure I added the pair of large self-tailers to my boat for $390 after subtracting the amount recouped from the sale of the old winches at another marine consignment store. This compares with $1,700 to $2,300 for the same winches if purchased new.

Swapmeets are also a great way to clean out the garage or boathouse. At the meet where I purchased the winch,

Resources for low-cost outfitters

Regional boating magazines

Look for these in chandleries and marinas. This is a representative (but not complete) list:

48° North
<http://www.48north.com>
Latitude 38
<http://www.latitude38.com>
Northwest Yachting
<http://www.nwyachting.com>
Northern Breezes
<http://www.sailingbreezes.com>
Southwinds
<http://www.southwindssailing.com>
Points East
<http://www.pointseast.com>
SpinSheet
<http://www.spinsheet.com>

Internet suppliers

I have used all of these sources and can recommend them. There are probably many similar ones I haven't used yet:

Bo'sun Supplies
screws and rigging hardware, great prices and selection
<http://www.bosunsupplies.com>
Defender Industries
everything you need, low prices, great catalog
<http://www.defender.com>
Garhauer
great hardware at great prices
<http://www.garhauermarine.com>
Jamestown Distributors
screws and many other items
<http://www.jamestowndistributors.com>
Layline
hardware and one-design hardware
<http://www.layline.com>
Performance Yacht Systems
all types of rigging, electronics, plumbing, and hardware
<http://www.pyacht.com>
Rigging Only
good prices on winches, furling gear, hardware, and rigging
<http://www.riggingonly.com>

Online used-sail brokers

Listing of online used-sail catalogs
<http://www.sailingtexas.com/csails.html>
Sail Exchange
<http://www.sailexchange.com>
Atlantic Sail Traders
<http://www.usedsails.com>
Minney's Yacht Surplus
<http://www.minneysyachtsurplus.com>
The Sail Warehouse
<http://www.thesailwarehouse.com>
National Sail Supply
<http://www.nationalsail.com>
Popeye's Marine Exchange
<popmar@gte.net>
Kelly Marine
<jibkelly@aol.com>
Pablos Crews
<pablocrews@juno.com>

Marine used-goods stores

These are ones I have dealt with:

Port Townsend Marine Exchange
2706 Washington St.
Port Townsend, WA 98368
360-385-4237
Minney's Yacht Surplus *(used sails and hardware in Costa Mesa, Calif.)*
949-548-4192
<http://www.minneysyachtsurplus.com>
Pacific Marine Exchange
700 W. Holly St.
Bellingham, WA 98225
360-738-8535
<http://www.pacificmarine.com>
For a much more extensive and up-to-date listing see the *Good Old Boat* website:
<http://www.goodoldboat.com/consignments.html >

The crowd at Swantown marine swap-meet in Olympia, Washington.

I sold a brass galley pump for $40. I had purchased it for $4 at an earlier swapmeet and polished it only to learn that it didn't fit in my galley. The buyer was ecstatic as the same pump sells for $120 at marine stores. I was ecstatic with the 900 percent profit for an hour's worth of polishing. My wife was ecstatic since I bought less than I sold and reduced a pile of obsolete boat equipment to cash, rather than paying the trash company to haul it away.

Beware at swapmeets; it's easy to buy something that doesn't fit or has problems. My latest purchase — a complete, brand-new, Autohelm 5000 underdeck autopilot for $100 — came close to falling into this category. I discovered several days later that Autohelm no longer supports this unit and could not even supply me with a schematic or pinout info. No one else could help either, so I was left to muddle through on my own.

The problem was that the Autohelm was for hydraulic steering and I have mechanical steering. Using a multimeter and jumper cables to the car battery, I figured I could connect the Autohelm hydraulic control amplifier directly to the existing Benmar drive-unit motor, bypassing the Benmar circuit board. It worked perfectly; a sea trial of the hybrid system went well. The Autohelm now resides in a little teak box on the steering pedestal and is far more convenient to use than our old Benmar unit, which required going below each time we wanted to change the course.

If I had been unsuccessful in getting the Autohelm to work, I would have boxed it up and taken it to a marine consignment store. Some purchaser with hydraulic steering would have gotten a good deal, and I would have made a modest, or perhaps substantial, profit.

Internet

You can find almost anything on the Internet, including lots of information on old boats, owners' associations, and some interesting companies selling sailing stuff. My favorite Internet company has got to be Garhauer, maker of the best bargain sailboat hardware anywhere. The quality of the stuff is equal to the best Harken or Schaefer has to offer, and the prices are much lower. For example, I outfitted my current boat with stainless, big-bearing single blocks for the princely sum of $18 each. The hardware is standard equipment on Catalina and other boats and is highly rated by *Practical Sailor*. You can only buy it directly from Garhauer and, after using their equipment for about 15 years, I can highly recommend it.

Used-sail brokers are a special category of Internet stores. Many carry an extensive listing of thousands of used sails that can be searched online. Some of the listed prices seem excessively high, but some are tempting. My only personal experience with one of these companies was negative; the sail was not that good, and I sent it back. I may try it again, however, if I can find a really good sail that doesn't need much work. If you can find just what you want, you might save a bundle. Just take into account the cost of any necessary modifications or repairs. Converting a used hanked-on sail to roller furling, for example, may cost 40 percent of the cost of a new sail purchased in the off-season. Unless the sail is in really good condition, it may not be worth purchasing and converting.

> **"My wife was ecstatic since I bought less than I sold and reduced a pile of obsolete boat equipment to cash."**

Commercial marine stores

Marine stores serving commercial fishermen and other professional boaters can be a real money saver compared to local marine chandleries specializing in pleasure boaters. When I can, I use the same products as sold by the local West Marine, but I purchase them from my local commercial marine store. I've spent so much time there over the years that they greet me by name when I enter the store and have granted me the commercial discount, about 40 percent off the shelf prices. Of course, I entered their store several times a day for several months and was a good customer by any standards.

I first discovered commercial marine stores many years ago when I found that I could buy a box of 100 stainless-steel screws by mail order from Jamestown Distributors for the price of 10 purchased at the local hardware store. I started purchasing boxes of screws and saving the leftover ones in fishing lure storage boxes from the local discount store. I still have them and replenish the supply as necessary.

Regional boating magazines

A regional boating magazine can be a source of larger used equipment and a good way to unload some of your bigger castoffs. I sold the old diesel engine I had removed from my boat for $1,200 using a single $20 ad in *48° North*, a Seattle-based sailing magazine. I could have sold a dozen engines. The calls kept coming for many months.

Home Depot and others

Although I don't find a lot of good marine stuff in the large lumberyards, I regularly use them for several items. Last year I bought several sheets of a Russian version of Baltic birch ½-inch plywood for $20 for a 5-foot-square sheet at Home Depot. This works great for interior boxes, covers, shelves, and so on, as the void-free all-birch edges can be attractively varnished. It did not pass the boil test (microwave a small piece in a cup of water). It quickly turned into a bunch of potato chip-like plies, so it is only usable inside. I varnished it well and put Formica on several surfaces, and it looks like new after a damp year in my boat.

I also generally buy Formica at the Home Depot; the selection is wonder-

ful on special orders, and the price is about 40 percent lower than at my local lumberyard. I'd prefer to use a Formica surplus store, but one can be hard to find in many areas; Home Depots (or similar stores) are not.

Surplus stores

I have found several items used in my boats in surplus stores at great prices. The first was Formica at a store that sold only laminate. I am not sure where it came from — I suspect overstocks and surplus — but the store had hundreds of colors and sizes, and the price was about 50 percent of normal lumberyard prices. I put a Formica headliner on my Ericson 46 and used about 400 square feet, saving at least $300 in the process.

The most common surplus item I have purchased is fabric. I have found end-of-rolls and seconds in fabric stores all over the country. It saves a lot to pay $6 to $10/yard, rather than the $25 to $40/yard commonly charged at upholstery stores. Always make sure that the store has enough for the project, and inspect the fabric as it is unrolled for cutting. You have little chance of locating more if you don't buy enough, and major flaws may make you re-think that fabric choice. I have never found more than a few flaws, which I simply avoid when laying out the pieces to be cut. I always buy a few yards more than necessary, just in case. Since the average job requires about 30 yards, the savings by buying surplus fabric can run $600 to $1,000.

Substitution

You don't always have to use the best. I made a cockpit grating of iroko, rather than teak, as it was $5 a board foot instead of $13. I figured that I am just going to walk on it, and Philippine mahogany had served well for the original grating for 20 years. Iroko's resistance to water and weathering are almost as good as teak's, and it is often considered the "poor man's teak."

Teak is also wasted on boat interiors since other woods costing less than half as much work very well. I like Honduran mahogany, jabota (Brazilian cherry), iroko, and American walnut for dark woods. I also see many other very attractive dark exotic woods at my local wood supplier for less than half the cost of teak. If you want light woods, then oak and ash work very well, as do birch and maple. (For other suggestions, see the article on teak mystique in *Good Old Boat*, January 2005.) Protected by varnish and kept dry, all of these will last forever down below.

Paint stores

I have painted a portion of a deck using automotive paint systems. They matched the desired color, I was able to brush/roll the products, and they wore like iron. Almost any town has an automotive paint supplier, which will match colors as desired. While not cheap, the paints were still half the cost of similar marine paints.

You can also take plugs or cutouts into a regular paint store and buy color-matched touchup paints for a very reasonable price. I purchased a quart of urethane-modified gloss enamel from the local Sherwin-Williams store for $10. Staff matched it to a plug cut out of my cabintop in about 2 minutes.

Your local marine specialist

I have had good luck stopping in at my local rigger or similar business and asking if it will meet the Internet price on some large item, such as a roller-furling system. Quite often the store will, and a long-term and profitable relationship can be formed for both parties. The staff knows that, while they may not make a big profit on that item, they will profit on all the things I will buy in the future. I have a first-name relationship with a local rigging company, which will get all my business in the future based on great service and competitive prices.

Price matching

The Internet is a great thing for saving money, as it encourages a local supplier to be competitive with everyone else in the country. When planning a major purchase, I shop all around the country for the best price. For many items (webpage printout or catalog in hand), I then go to my local West Marine and ask it to match the price. I have only been hassled once and have saved hundreds of dollars on the remaining items. The hassle was when I talked to a new clerk. The rest of the time, dealing with the same people again and again, they unflinchingly met the price. For most items, the sales tax just about matches the shipping costs I would have to pay. So I get the item locally with the advantage of good customer service and at the best Internet price. Since I spent several thousand dollars at West Marine during the past couple of years, the company is a little more profitable, and I have saved at least 10 percent of my cost, which makes me happy and the "hole in the water" not quite as deep.

The bottom line

Owning a boat is not cheap. Unless you are rich, it probably represents a major investment and a major ongoing expense in your life. Reducing the costs involved in maintenance and upgrading can cut the out-of-pocket cash flow significantly. Doing so has allowed me to sail considerably beyond my means. It turns out to be a lot of fun as well (although my attitude shifts somewhat when I'm up to my elbows in contact cement or fiberglass-sanding dust).

Trying to find bargains and adapting or fitting them to my boat are almost as much fun as sailing. As the quote from Kenneth Grahame's *The Wind in the Willows* goes, "Believe me, my young friend, there is nothing — absolutely nothing — half so much worth doing as simply messing about in boats … In or out of 'em, it doesn't matter. Nothing seems really to matter, that's the charm of it."

The author examines a potential purchase at a swapmeet.

Solo voyaging

How to equip your boat for the wild blue yonder

by Louk Wijsen

Like other sailors, singlehanders sleep better if their boat is equipped with heavy ground tackle, lots of chain, a dependable windlass, and a strong attachment point, such as this samson post.

Visit a marina, yacht club, or boat show, and you will meet or hear of sailors who are planning a long cruise or circumnavigation. Many own older boats whose movements are not restricted by banks and insurance companies. A surprising number intend to go solo or with only one other person, usually a spouse or significant other.

I have met these happy and self-reliant sailors in ports around the globe, and I know that every day brings them a new experience or achievement. Satisfactory voyaging depends to a great extent on mindset, but the second most vital ingredient is proper equipment. There must be the proper tools as well as an energetic interest to make a cruise possible. Here is my list of what equipment makes singlehanded and shorthanded sailing safer and less exhausting.

The proper vessel

It goes without saying that the solo skipper must have the proper vessel in addition to the skills to sail her alone. For most people what constitutes a proper vessel is based more on assets than convictions. It is a happy coincidence that older boats are frequently of better construction than newer ones and that, because they are older, they are cheaper. I will not try to define a proper vessel, other than to state some of my own prejudices and preferences.

To leave no doubt that I am subjective, I reject any vessel that is aesthetically challenged. If you intend to spend much time on board a boat, she must be attractive to you. Would you want a significant other of whom you apologetically say that at least he is good at bringing home the bacon or that she cooks gourmet dinners? Fortunately, sailboats to sailors resemble taxes to politicians — rarely do they look unattractive.

For me, the boat must be strongly constructed. I know about new materials and methods of construction, breaking strengths and such, but I seek old-fashioned strength. I want a thick, overbuilt hull, a long keel, oversize mast and rigging, massive chainplates, and the like. These would raise building costs so much today that the boats would become too expensive for most markets. Fortunately, scores of older boats meet these criteria.

For a variety of reasons, my preferred cruiser is of fairly high displacement. I also like double-enders. To offset the inevitably less-than-optimal sailing abilities of the heavy-displacement cruising vessel, she should have a high-aspect rig, as well as light-air sails. A cutter rig is most practical because it best allows adjusting the sail plan to the circumstances. A sloop will do. I reject gaff rigs and schooners and — for vessels under 40 feet — ketches and yawls. They are all pretty and a joy to see but not to sail.

The boat must be small enough to allow one person to handle all tasks but not so small that even daring sailors doubt your good judgment. Something between 27 and 37 feet in length makes sense to me. Her full or long keel encapsulates the ballast. Her rudder is strongly attached to skeg or keel. She must have a functional interior with sufficient headroom to stand up and comfortable places to sit and sleep.

> **“Satisfactory voyaging depends to a great extent on mindset, but the second most vital ingredient is proper equipment.”**

Some readers will be up in arms about my preferences. But every boat is a compromise, so subjectivity is

> **"We are discussing cruisers, not racers. No boat can excel at both."**

inevitable. For instance, is 27 to 37 feet really the right size boat for a particular skipper? It depends on many factors, such as the skipper's physique, the boat's design, and the planned voyages. Follow your own preferences and insights, but be aware that comfort and safety are increased if the boat tracks and heaves-to well and remains a stable platform in deteriorating conditions.

Fin-keel boats tend to be at a disadvantage in this regard but have attractive characteristics in other regards. Remember, though, that we are discussing cruisers, not racers. No boat can excel at both.

When all is said and done, the most decisive factor in making singlehanded voyaging safe and successful is the skipper. There's no better way to determine if he or she is up to the challenge than by setting sail and experiencing it.

Vital and desirable gear

I can speak of the days long gone when passagemaking inventories of navigation instruments consisted of compass, sextant, depth sounder, and perhaps an RDF. It's not that we were all Luddites in those days. For the smaller yacht there was simply not much else available. Power consumption, weight, and size ruled out most of the more advanced equipment that began to appear first on ships.

Today's modern yachts, even those used primarily for daysailing, frequently sport more electronics than a freighter of 35 years ago. In my opinion, the keep-it-simple principle remains valid but only to a degree. No one should depend on gadgetry, but certain equipment does make sailing safer and easier and overcomes some of the commonly encountered problems in solo sailing. This gear is equally useful on the fully crewed yacht. Even the low-budget sailor can now take some of the pain out of singlehanded sailing.

I will not dwell on those items whose need or desirability goes without saying: good sails for heavy weather and light air, adequate ground tackle, a functional galley.

The most immediate disadvantage in singlehanded sailing is that the sailor's two hands remain in close proximity to each other. Skilled as they may be, this one pair can never fully compensate for the lack of other hands when tasks must be performed simultaneously in different locations. Planning and equipment can largely alleviate the problem. For this reason, I regard 15 pieces of equipment as either crucial or highly desirable for solo cruising.

1 A self-steering device

Few pieces of gear compensate for the lack of crew, but a good self-steering system comes close. If that robot keeps the boat on course while the skipper handles other tasks or rests, it is indeed a substitute for a competent helmsman and is taciturn to boot. It is foolish to go without.

The subject of electromagnetic and wind-driven self-steering is vast. The former keeps a compass course and demands adequate battery power. The latter keeps a course relative to the apparent wind and uses wind power. As for which one to choose when both systems are practical for the particular boat and voyage is a matter of resources. If the budget permits, the optimal solution is to have both.

If the sailing will be mostly coastal, buy an electromagnetic autopilot. They are more capable of steering precise courses in coastal areas dotted with navigation hazards and plagued by changing winds. Purchase one rated for nearly twice your boat's LOA and displacement. If the planned voyages are primarily blue-water passages, buy a wind-driven system, preferably one that operates or could operate independently from the boat's rudder and thus serve as an emergency rudder.

Ultimately, your choice will be influenced by the kind of voyages you plan to undertake, your budget, the system's power consumption, complexity, and perhaps installment considerations. Unfortunately not all self-steering devices perform equally well on a given boat. Before you get out your checkbook, ask skippers who have experience with the particular model you're considering.

In some situations you'll find that either the electromagnetic or the wind-driven system clearly outperforms the other. That is not as important a criterion as which one is incapable of steering the boat in all but optimal conditions. Avoid purchasing an underpowered electromagnetic autopilot simply because you intend to use it only in calms. The system must be capable of controlling the boat in adverse conditions. There is probably nothing on the market that can handle all conditions and all situations. Find one that does not force you to hand-steer or heave-to as soon as the wind picks up or a sea builds.

A compromise may be to purchase a windvane autopilot and a small electromagnetic tiller autopilot. Although incapable of steering the boat by itself, the tiller pilot can be put to work in conjunction with the windvane system and give it the input commands that normally would come from the vane's responses to changes in apparent wind. This creates a form of energy-efficient power steering that is unaffected by wind changes or calms. A friend successfully used this system on his heavy-displacement 43-foot ketch during a three-year circumnavigation.

2 The roller-furling headsail

A hazardous task for anyone, particularly the solo sailor, is working on the foredeck in bad conditions. Lowering or changing a headsail on a slippery foredeck has little appeal, even when you do not have to balance on a "widowmaker bowsprit." Fortunately, the abundance of high-quality roller furlers available make most foredeck expeditions largely unnecessary. My formerly Luddite notion, that on a boat only toilet paper is rolled up, I have discarded as nonsensical.

I remain opposed to roller furlers for the staysail and mainsail. The reason for not having a furling staysail is to retain the option of hanking on a storm jib. (Of course, there are systems available that allow raising a storm jib over a rolled-up sail.) The reasons for not installing a mast- or boom-furling main is sail performance, cost, and simplicity.

3 Other sail control aids

Because the winds are often light on the open ocean, having at least a light-air headsail is a must when long-distance voyaging. It is raised independently from the headsail furler. Often these sails, so docile in light breezes, become tigers when the wind pipes up. The single-handed sailor must have a way to lower a light-air sail safely. Purchase a sock-like dowsing device that will ride above the head of the sail when sailing and gather it in when lowered.

Since sail changes can pose a challenge for the solo sailor, reefing and furling the mainsail becomes simpler and safer with lazy-jacks. These you can purchase or fabricate yourself with a length of line, nylon thimbles, pad-eyes, and two small blocks (see *Good Old Boat* article on making your own lazy-jacks, July 2001).

A storm trysail is not a must in my experience. I faithfully carried one for decades but never deployed it. Instead, I have triple-reefed the main. Have at least two reef points in the main. A proper storm jib — which is not just any small sail — is an important asset. Roller-furling headsails with a proper luff can be reduced by partial furling, but they quickly lose efficiency if rolled up more than 15 to 20 percent. Another problem of reducing a jib by partly rolling it up in bad weather is that it will sit too high above the deck. Better to hank on a storm jib, which on a cutter can be on the staysail stay. This keeps the storm-wind forces close to the mast and low.

4 The GPS chart plotter

One of the greatest dangers facing the solo sailor in coastal waters has always been the difficulty of plotting and navigating in rough conditions. In heavy weather on the coast I often found it impossible to perform essential navigation tasks, particularly when in traffic. The arrival of Loran and GPS brought a marked improvement. The GPS chart plotter resolved that problem altogether.

The plotter tells me everything I previously had to gather quickly and painfully on a rolling and pitching vessel while bent over charts and away from the helm. It tells me where I am and am headed, optimal and actual courses, bearings, speed, distances, and all the information that at times can be as crucial as world peace.

Install the GPS plotter so it can be read from the cockpit — perhaps by mounting it on a swinging arm — while remaining protected from rain and spray. Laptop computers are not my choice for this use. Even a fairly inexpensive black-and-white plotter will do just fine. Be aware that the cost of chart chips can be considerable.

5 Radar

Having radar is far less crucial than most sailors assume. Radar is a great navigation aid, although it takes second place to the GPS chart plotter. Where radar is of great importance is as a lookout, especially in dense fog, at night, and in other conditions of poor visibility. It can give the solo sailor a badly needed margin of safety while he is belowdecks or occupied with other tasks. Purchase a radar that gives an audio alarm when targets show up in a designated area. In combination with an alarm or collision avoidance device that alerts to incoming radar signals, much of the risk of not maintaining a proper 24/7 lookout can be eliminated. Unfortunately, on smaller vessels the radar and collision avoidance device cannot be operated simultaneously since the radar signal will be read by the detector as a very strong signal very close — so close that it seems to come from all directions. I have the CARD radar detector. It will not break down if I leave it on when using the radar, but it will only detect my own radar. When operating the radar, I generally leave it on with the audio alarm turned off.

Mount a radar monitor on a heavy-duty bracket that allows it to swing out into the companionway so it can be observed from inside the cabin as well as from the helm.

6 A remotely controlled VHF radio

Occasionally a sailor must communicate by VHF radio with vessels or harbors. A handheld VHF used in the cockpit may suffice, but it is far better if the main VHF with its masthead antenna and greater range can be operated from the cockpit. Installing the primary VHF in the cockpit invites damage and theft; running back and forth between the helm and a radio is impractical. Mount a VHF radio with remote access microphone (RAM) capability inside the cabin. Install the RAM in the cockpit. That allows control of all the functions of the radio from the cockpit while the RAM serves as a remote speaker.

7 A dodger

Fatigue from handling a multitude of tasks, lack of rest, or poor nutrition is a very real hazard and tends to become more of a threat as the solo sailor ages or is physically less fit. Being cold or exposed to the elements contributes heavily to fatigue. A dodger is a must for the solo sailor. Dressed in warm and dry clothes and comfortably sheltered by a dodger, the sailor will remain fitter and more alert.

A dodger also increases the useful space on a boat. It allows better use of the space near the companionway, protecting sensitive gear there, such as GPS plotters, laptops, and radars.

8 Self-tailing winches

Self-tailing winches are more than a mere convenience for the solo sailor, but if the boat does not have them, contrary to what some believe, the rubber Wincher Self-Tailers that fit over top of non-self-tailing winches will work well. They require that the line be wrapped around the drum a sufficient number of turns to get the needed friction, which is what many critics overlook. I have used them on sheet and halyard winches and found that, even in gale-force winds, they can hold a sheet until there is an opportunity to cleat it.

9 Sissy bars or mast pulpits

Often boats are advertised as equipped for singlehanded sailing, which usually means that halyards and other lines are led through blocks to rope clutches near the cockpit. Sometimes the arrangement works, but often when it's most needed it fails. A kinked line or similar problem will force the sailor out of the safety of the cockpit onto the deck.

I prefer not to lead halyards and reefing lines to the cockpit. Certain tasks remain best handled at the mast, but working there should be safe. A pair of mast pulpits and uncluttered space for safe footing will greatly increase safety.

10 Additional compasses

It is often important to keep a close eye on the course, even when down below or on a bunk. Installing a compass belowdecks at the chart table and another one above the bunk makes life easier and safer. In the cockpit you may wish to install an extra compass that can be observed from under the dodger without moving to the binnacle compass.

11 Night-vision lights

When sailing at night, it is important to have adequate red light that does not destroy night vision but permits reading charts, making coffee and other tasks. Small red LED lights can light up spaces belowdecks without affecting night vision. Because their power consumption is minimal, they can be left on all night. Because of their low purchase price, you may wish to install them throughout the boat. At a very minimum, you must have one red light in the cabin, even if it's only a red bulb in a light fixture.

12 Boarding ladder

The great fear of many singlehanded sailors is falling overboard and seeing the vessel disappear over the horizon. You can take all sorts of measures to prevent falling overboard, but the danger remains. Some who fell overboard have made it back to the boat. With crew, getting back on board is usually not that difficult in moderate conditions. For the solo sailor the crucial question is if there is any way at all of getting back on board. Try it at anchor sometime, and you will likely find it very difficult or impossible, even under ideal conditions.

Very recently an acquaintance slipped overboard within sight of his home port in San Francisco Bay. His efforts to get back on board with the help of a jib sheet and in other ways all failed. With hypothermia and exhaustion setting in, he abandoned his efforts and began to swim to the shore. He would have drowned if another sailboat had not spotted him. It is safe to say that if the solo sailor does not manage to get back on board quickly, he may never.

Some skippers install a rope ladder that can be reached from the water and pulled down, but these are difficult to climb in the best of circumstances. I resorted to permanently mounting a stainless steel folding ladder at the stern. It may look ungainly, but that is not as appalling as clinging to the boat without a means of getting back onboard.

13 Anchoring aids

A reliable anchoring system is an absolute must. Except on very small and light boats, heavy ground tackle is a necessity. The opportunity to get a good night's sleep in a less-than-optimal anchorage is priceless or at least demands as price a fairly heavy anchor and lots of chain. Defining what is a good anchor is like defining what is a good boat. The best way to arrive at your own preference is to try different anchors in poor conditions and with different types of bottom materials.

Not all anchors are equal. A Danforth-type anchor may work well with many bottom conditions but tends to kite over bottoms with lots of sea grass or weeds. This is particularly true for the lightweight Fortress. My preferred anchor is the Bruce, which has proved itself to me in many conditions and all kinds of bottoms: mud, sand, gravel, coral, and rocks. It sets quickly, can be broken out by positioning the boat above it, requires less scope than most, and has tremendous holding power. But if a rock of very specific dimensions lodges in the claw between the flukes, not even a Bruce can dig in. This never happened in the 25 years that I have relied on Bruce anchors.

The Delta and Spade are other fine anchors. When anchoring in soft mud, drop these hooks from a stopped boat and allow them to sink into the mud for a few moments prior to backing up or exerting much pull. The CQR plow anchor remains popular, but it has a design flaw that could prove disastrous in certain conditions. If a sudden wind change causes the boat's heading to change quickly, the anchor will break loose if the rode is jerked from an angle greater than an angle in which the shank can be turned. Then the rotating movement and the great weight of the joint between shank and crown can flip the anchor over and cause it to be pulled upside down over the bottom. This flaw very nearly cost a friend his boat at Smugglers Cove on Santa Cruz Island.

In selecting an anchor, be cautious with imitations. An anchor may look like a Bruce or CQR, but was it manufactured under the same high standards? Particularly with these latter two anchors, I have seen knockoffs that I would never buy. A fairly small savings in purchasing anchors may cost you dearly.

A heavy anchor and chain demand the use of a manual or electric windlass. My preference is for an electric windlass that permits manual operation. That is not essential since winches can substitute if the electrical windlass malfunctions.

If the windlass is electric, the solo sailor should be able to control it not just from the foredeck but also from behind the wheel. In a crowded or small anchorage it may be necessary to remain at the helm and engine controls when dropping or weighing anchor. One way to achieve that additional control is to connect a three-position toggle-switch with a three-wire extension cord to the switching terminals of the windlass motor.

14 Stern anchor rode

In minuscule or crowded anchorages or harbors where a stern anchor must sometimes be quickly set because of limited swinging room, it is a challenge for the solo sailor to do this while simultaneously setting the bow anchor or moving to a quay. The stern anchor will usually have a chain and nylon rode that must run out while the boat moves forward. It may kink or tangle at the most inconvenient moment possible, necessitating a series of dramatic maneuvers to avoid disaster and ridicule. To avoid that irritation, some skippers install a reel for the rode at the stern, but that tends to be bulky and inconvenient. I purchased a reel with 185 feet of webbing and mounted it to a stern stanchion. This Ankarolina product is made in Sweden and is sold in the United States (see <http://www.marinestore.com>). It comes in three versions: a 17-inch reel with 185 feet of webbing in breaking strengths of 5,500 and 8,000 pounds and a 19-inch reel with 230 feet of webbing at a breaking strength of 8,000 pounds.

Once I drop the stern anchor with its short length of chain from the stern, the webbing runs out smoothly from the reel. Webbing has less elasticity than a nylon rode but is strong and easier to handle. When weighing anchor, once the webbing is slack, it rolls up quickly and effortlessly on the reel, which has a detachable handle for that purpose.

15 Docking aids

Docking or tying up to a mooring buoy — when limited room, unfavorable currents or wind, and amused onlookers affect the operation — are to many singlehanded sailors the most feared challenges. At those times even an incompetent crewmember would be worth his weight in lead, if not gold. Fortunately, a number of gadgets are available that make these tasks simpler for the solo sailor. A Happy Hooker or similar device at the end of a long, preferably telescoping, pole will make it possible to get a line through an eye or shackle on a buoy without masterful helmsmanship. Similarly, a grappling hook and line thrown over a dock may get a line temporarily secured to the dock. In controlling docking and undocking maneuvers the availability of a midships-mounted cleat and the use of spring lines can remove the need for help of crew or bystanders.

The cost

Assuming that a boat has none of the above-discussed pieces of equipment, an investment of $12,000 to $18,000 will buy it all. That's a considerable expenditure, sometimes approaching the purchase price of an older boat, but it will pay off royally in safety and convenience.

If the budget is too tight and the choice lies between purchasing an older well-equipped boat with a good sail inventory or a newer, but minimally equipped vessel, safety considerations should steer the buyer toward the older well-equipped boat.

***Veleda IV*, Aubrey and Judy Millard's Ontario 32, cruises the Bosporus Strait on her way into the Black Sea. The Millards have been cruising since 1998.**

Systems that work

Eight years into a cruise, here's what's still operating well

by Aubrey Millard

I WROTE AN ARTICLE FOR *GOOD OLD BOAT* (January 2001) about the preparations we made for liveaboard bluewater cruising on *Veleda IV*, our 1978 Ontario 32. I talked about major upgrades we'd made, including a new Yanmar 3GM30 engine; a new dodger/Bimini with a full vinyl and mosquito netting enclosure; a new electrical system including a 100-amp alternator, smart regulator, echo charger, Link 10 battery monitor, 30-amp marine battery charger, wind generator, four 110-amp golf-cart batteries; and complete rewiring from domestic to marine-grade wiring. I also commented on our Dinghy-Tow system, mast steps, radio/tape deck/CD player, and a few other modifications and pieces of equipment we were using.

Time has moved on. Judy and I have been living aboard *Veleda* since July of 1998, when we left Toronto, Ontario, on our open-ended retirement journey. Since then we have sailed 27,000 nautical miles down the Mississippi, through the Bahamas, across the Atlantic, around the United Kingdom, through the rivers and canals of France, and the length of the Mediterranean and eastward to the Canary Islands. We have taken *Veleda* through 27 countries, including 9,305 nautical miles in the Mediterranean and 1,523 nautical miles around the Black Sea.

As I write this, we are in Porto Turistico di Roma, where the Tiber enters the Tyrrhenian Sea. Our plan is to exit the Mediterranean this summer (after cruising Elba, Corsica, and Sardinia), going through the Canal du Midi (instead of Gibraltar) from southern France up to the Bordeaux region on the Bay of Biscay. We will cruise down the Atlantic coasts of Spain and Portugal, over to Madeira, the Canaries, and the Cape Verde Islands before crossing the Atlantic to Barbados in December or January. We anticipate spending a few years in the Caribbean, then perhaps through the Panama Canal and into the Pacific. We trust our good old boat to take us anywhere in the world.

Here's a rundown of what has worked well for us.

Engine and electrical system

We are quite happy with our 1997 Yanmar 3GM30 diesel that replaced our original Yanmar 2QM15 and which now has over 4,250 engine hours on it. Our fuel tank has a capacity of only 28 gallons, and we keep another 30 gallons on deck in plastic jerry cans. We fill the tank only from the jerry cans, using a Baja filter, and we have two Racor fuel filters in line before the engine's own filter to ensure clean fuel in the engine. I use the dinghy to take empty jerry cans to fuel docks. When ashore, I go up the road to a local service station.

Our only problem has been with the water pump and with air getting into the water strainer. We have lowered the strainer below the waterline to ease the pressure and reduce air intake. A squeeze bulb in the fuel line leading from the tank makes it easier to pump fuel through when having to bleed air from the engine. We may have to replace the water pump eventually, as we have rebuilt it twice. Conscientious routine maintenance has kept the engine in good operating order.

We replaced our 100-amp alternator with another in Mallorca in 2001 and suspect the original one was out of alignment, causing wear on belts and bearings. However, we are very happy with the 100-amp heavy-duty alternator that replaced it. Its extra demand on the engine is hardly noticeable.

Efficient charging

Together with the smart regulator, our engine can fully charge our batteries in an hour or so of running once every two or three days at anchor. It is so efficient that I question the need for our wind generator. The 3 or 4 amps it puts out in wind over 10 knots are minimal to our requirements since we still have the Ontario 32's original refrigerator and freezer unit, installed in 1978.

We have it well insulated, but the thermostat seems defective and causes the refrigerator to run for 18 hours out of 24 if we leave it turned on. We have isolated our starting battery, so even if the house bank is drained we can start the engine and charge batteries rapidly. The combination of a 100-amp heavy-duty alternator with a smart regulator works extremely well.

We do not have room for (nor do we want) a generator. We do not have any heavy draw tools or appliances that require it. Instead, we have a 175-watt cigarette lighter plug-in inverter that does well powering the laptop computer and charging batteries for our battery-operated drill, toothbrushes, portable shortwave radio, blender, and handheld VHF.

Our four Trojan golf-cart batteries (combined as a single house bank for a capacity of 440 amp hours) have served us well and are still working with no problems after almost seven years of constant use. However, we have replaced the dedicated 12-volt engine-starting battery twice. The golf-cart batteries are small enough that I was able to build a shelf above the keelbolts. We strap them in on this shelf below the cabin sole. ***(Caution:*** *Putting batteries in the bilge of a boat is controversial. It is a fairly safe practice if sealed batteries like AGMs or gels are used. These batteries can be immersed in seawater without serious effects. Open vented cell designs, like the golf-cart batteries shown here, will go through more deep cycles than any of the sealed batteries, but if they are immersed in seawater a reaction will occur which will generate chlorine gas. This may be deadly in an enclosed space.* ***–Ed.)***

I really enjoy the Link 10 monitor LED readout about my batteries, indicating the amp hours used and remaining, the draw and charge rates from the engine, the 30-amp marine battery charger, or the wind generator. With this device, I can shut off all other current draws, turn on one piece of equipment, and immediately identify its battery draw.

The 1,500-watt industrial transformer we purchased in Horta in 1999 is still working well, delivering 110-volt power into *Veleda* from the 220-volt shore connections in Europe. Another advantage of the transformer is that we do not have to worry about the polarity of the connections.

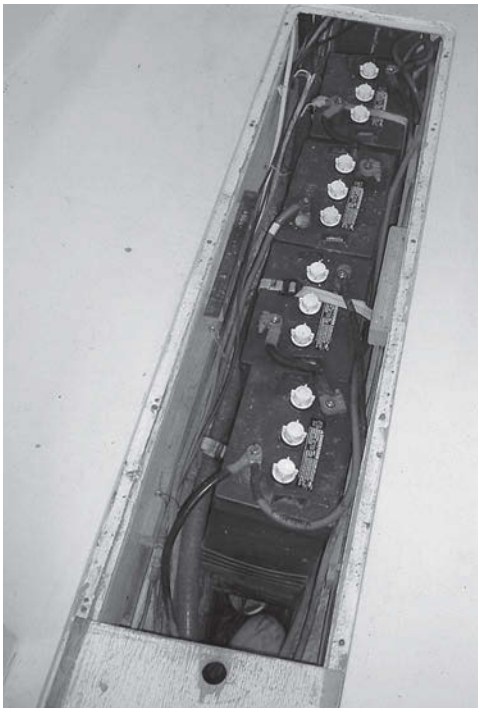
"We trust our good old boat to take us anywhere in the world. Here's a rundown of what has worked well for us."

Dodger/Bimini

The dodger/Bimini made for us in Toronto in 1998 is still working well, although we have replaced several vinyl windows and zippers over the years. We had the full dodger/Bimini with its side curtains up all the way across the Atlantic. I haven't used my foul weather gear for years, as Judy does the wet foredeck work and the cockpit is quite dry. The only other use of the side curtains has been in our winter moorings in London and in Porto Turistico di Roma, where they permitted the cockpit to be used as an additional room for winter marina living. We have rarely needed their mosquito screening. If planning again, given the money and opportunity, I would prefer a hard dodger and possibly a hard Bimini.

Dinghy

We bought a new Zodiac dinghy three years ago and immediately made a cover for the tubes to protect them from UV degradation. The fabric of



The Link 10 battery monitor, top, shows a reading of 12.40 volts. The four golf-cart batteries, above and center, which are combined to serve as a single house bank, are small enough to fit on a shelf above the keelbolts and below the cabin sole.

Aubrey and Judy like the dodger/Bimini combination, at left. Aubrey says he hasn't used his foul weather gear for years, since the cockpit stays dry and Judy does the foredeck work. The Dinghy-Tow, below, continues to get rave reviews from this twosome, who sung its praises in *Good Old Boat* in January 2001. The UV cover for the Zodiac dinghy has added years to the life of the dinghy. Aubrey and Judy also praise the Gale Sail and mast steps, shown on opposite page.

our previous dinghy had been badly deteriorated by UV. We use our dinghy as we would a car ashore, going long distances in it. It is an essential part of our cruising lifestyle. However, if I could have managed and afforded it, I would have purchased a rigid inflatable dinghy, as the fiberglass hulls of the RIBs take to sandy and rocky shores better than inflatable hulls.

We are still very happy with our Dinghy-Tow. Because of it, we can have a heavy powerful 10-hp outboard. If we had to manhandle the motor on and off the dinghy each time we anchored — well, we could never manage such a large engine. The two rigid arms mounted on our stern raise the aft end of the inflatable dinghy with just the bow trailing in the water, creating minimal drag. We leave the engine, fuel tank, life jackets, and so on in the dinghy, ready to go as soon as we lower it into the water.

This came in very handy when we lost our propeller shaft in the Danube River in Romania. We were able to deploy the dinghy in a couple of minutes and use it to take *Veleda* to a dock using a side tow. We carried the dinghy on deck for our Atlantic crossing, but have had it on the stern on the Dinghy-Tow for the past six years, including a stormy crossing of the North Sea and all around the Mediterranean and Black Seas. It is easy to hook up and provides anti-theft security at anchor. I am considering leaving the dinghy on the Dinghy-Tow for our Atlantic crossing when we return to the Caribbean next winter.

Other gear

We are happy with our triangular-shaped mast steps, which provide considerable stability and security, especially when going aloft at sea, as we have done several times. We tie light lines down the outer ends of them to reduce the tendency for the main halyard to catch. We riveted a double set of mast steps near the masthead so we have a firm two-foot platform on which to work at the top. When going aloft, we always wear a safety harness tied to the main or spinnaker halyards. We have a Davis metal radar reflector permanently mounted at the masthead.

We bought a small used PUR watermaker six years ago. It is still working well. It produces about 1½ gallons of fresh, virtually distilled, water per hour. It is used to supplement our shoreside water resources. In some cases shoreside water is accessible only from a water tap inland. Sometimes the shoreside water is brackish or not potable. Then we rely on the water left in our tanks or made by the watermaker. We turn on the watermaker any time we are at sea and have the engine running. We do not have any other filters in our system and have been drinking municipal water all over North America, Europe, Turkey, and the Middle East. A larger output watermaker would be of greater value.

Before we left Toronto we installed a used automobile AM/FM radio/CD/tapedeck which is still working well. It has been most enjoyable, especially since I have stereo speakers in the main cabin and also in the cockpit. I enjoy listening to classical music in the cockpit with the beauty of a golden sunset or a starry night in an isolated anchorage. The tape cassettes take up more space than do the CDs; I would like to be able to record them on CD. The system I have has a CD cartridge that will take 10 CDs at a time.

We do not have an SSB transmitter/receiver, but we do have a good shortwave radio for weather forecasts and BBC radio news.

Sails

We crossed the Atlantic in 1999 with the original 1978 Dacron main and genoa sails. Our 150-percent genoa had foam pads in the luff to keep the sail shape better when partially reefed. This sail was destroyed when our forestay broke in 2001, but we had a 130-percent used genoa to replace it. We are still using the original fully battened main, albeit with a few patches, a reinforced grommet at the tack, and much seam stitching. We like the fully battened main and the luff pads in the genoa. We frequently use the furled genoa as a storm sail. However, last year we bought a Gale Sail made by ATN. It is a storm sail with a reinforced sleeve on the luff which is done up with hanks so it can be hoisted over the furled genoa. We haven't had cause to use it yet, although we have checked its suitability to be hoisted.

The sails may be old, but it is usually the seams that give way as Dacron is a hard-wearing material. It may not

be good for high-tech racing, but it is very acceptable for economical cruising. We have a sail repair kit and can re-stitch seams, replace grommets, and do minor patching by hand.

We are still using the original 1978 spinnaker also. We did not have much experience flying a spinnaker using the spinnaker pole, so we bought an ATN Sails' Tacker, a plastic harness that fits around the furled genoa and permits us to fly the spinnaker as a drifter. ATN also made a snuffer for it, complete with blocks and hoisting lines. It is a very good downwind sail. In heavier weather downwind sailing, we use the genoa supported on one side by a heavy-duty whisker pole (we had a lighter one break on us) and the main out the other side secured with a preventer. Our old sails are still serving us well.

The Ontario 32

Our 1978 Ontario 32 is a well-built fiberglass sloop that either of us can singlehand if necessary. I like *Veleda's* stiffness with 45 percent of her 5-ton weight as lead in the three-quarters keel. She is a dry boat, with her bow riding over the waves and her contoured hull splitting the waves, rather than slapping them. Her stern rises up with overtaking waves. We have never yet had a wave break across our stern, and rarely has *Veleda* buried her bow. The 4½-foot draft was quite valuable in shallow waters of the Bahamas and allows us to travel many bays, canals, and rivers that deeper-draft vessels dare not explore.

I am a bit concerned because we have a spade rudder with no skeg. Even though it has a sturdy 1¾-inch rudder post and the bottom of the rudder is 1½ feet above the keel, it does not have the extra protection a skeg might provide. However, it is a very responsive helm and controls the boat well, even when going astern. The keel-stepped mast is a stable structure that withstood a broken forestay and a full genoa and roller furler flogging in a Force 8 gale while crossing from Barcelona to Mallorca. I fear a deck-stepped mast would have collapsed in similar conditions. We received a back-handed compliment from E&C Marine in Toronto when they had to drill another through-hull for our engine water intake. They complained that the fiberglass in the lower hull was so thick it was hard to drill through.

Dream list

Changes or additions I would make are few. I wish I had bought a Bugel clone anchor when in Turkey, as I have heard high praise for them. Our CQRs are only adequate. As mentioned, I would like a hard dodger and Bimini, a rigid inflatable dinghy, and a larger-output watermaker. A larger fuel tank would be valuable. A modern refrigerator might use less power. However, the main difficulty is simply one of space.

Any boat is a compromise, involving what one would like, what one can afford and manage, and the kind of sailing planned. Many sailboats, when upgraded, can serve well.

"…given the money and opportunity, I would prefer a hard dodger and possibly a hard Bimini."

Summary

We are happy with our planning and with *Veleda*, the upgrades made before we left and the few we have done since. We have not had to spend a great amount of time making or waiting for repairs (other than the roller furling which was destroyed crossing over to Mallorca and four days in Romania while a new propeller shaft was machined for us). We are glad we replaced our 2QM15 Yanmar with our new 3GM30 and 100-amp alternator. Our trouble-free golf-cart batteries, smart regulator, and electrical upgrades have proven most worthwhile.

We are happy with the Dinghy-Tow, mast steps, keel-stepped mast, and old sails that work well and don't owe us anything. We are also glad we replaced our manual windlass with an electric vertical-axis windlass (after deepening the anchor locker). The heavy construction of the modified C&C-design Ontario 32 as a racer/cruiser is very reliable, comfortable, and seaworthy. *Veleda IV* allows us to economically pursue our dream on nothing more than my retirement pension as a high-school teacher.

The evolution of

A veteran cruising couple tells what is working for them

by Bonnie Dahl

We left in the pre-dawn mist. As the bird song heralded the break of a new day, I looked back and saw the islands of western Lake Superior receding in the distance. My husband, Ron, and I had been planning this venture for more than 20 years, yet it was with mixed feelings that we now headed east and eventually south.

Would we be able to trade rocky shorelines and pristine forests of conifer green (see Pages 44 and 45) for white sand beaches and palm trees bending to the wind? Would we be able to meet the challenges of long-term cruising? What about rough weather? With an open-ended agenda, our destination was unknown. We knew only that we were headed south to places where water stays in its natural state all winter long. We didn't even know when we would return.

There were other uncertainties. As I looked over the boat, I couldn't help but wonder — had we made the right decisions and preparations? Would our boat hold up to the rigors of extended cruising? Would it withstand the harsh realities of salt water and the punishing ultraviolet light of the lower latitudes? Did we have enough spares and backup systems?

Initially we had planned to begin full-time cruising much sooner. But jobs and other commitments pushed our departure further into the future. Fortunately, we were able to use this time to enjoy local cruising and work toward our goal by better preparing our boat.

Now at last we were really leaving. Everywhere I looked I could see projects from years past, reminders of all our efforts to make our boat a long-term cruiser. There were also the memories — some of which went back almost a quarter century.

Sailing background

We began in the early 1970s; our first "big boat" was a Coronado 30 designed by Frank Butler, the founder and current president of Catalina Yachts. By the second season we were committed to a goal of long-term cruising. Although the Coronado sailed well, we knew we wanted a bigger boat, one that could take us to distant ports, so we began to search in earnest. As a part of our research we read a book by David Parker. As an alternative to building your own boat, he suggested that you buy the boat that comes closest to your needs and then modify it. This sounded utterly simplistic. Little did we know the implications of that innocuous statement. We have often thought back to those early years and our ignorance as we began to pursue our goal.

After a couple of years of searching the market, we settled on Alan Payne's Columbia 10.7, which we bought new in 1978. It was listed as a "wide-body cruiser" with an 11-foot 4-inch beam that was quite a lot in those days for a 35-foot boat. (Today it's common to see a 12-foot beam on a 35-foot boat.) We particularly liked the design and layout of the Columbia. The wide body provided interior space that, in those

days, was only dreamed of in 40-foot boats. The wineglass transom was pleasing to the eye and provided the shape of a double-ender at the waterline while still retaining seakindly buoyancy in a following sea.

We hoped the partially shortened keel and extended skeg would lead to easy tracking, which was important with whatever self-steering system we chose. Yet the cutaway forefoot and lack of a long keel would still give us maneuverability in tight quarters. With the beam carried well aft, the roomy hull provided additional storage room that was lost in the pinched-in sterns of many contemporary designs. The stern even came with two molded-in 20-pound vented propane lockers ready to go. Finally, the boat was designed to carry weight

***Dalfin II*, Bonnie and Ron Dahl's Columbia 10.7 (a 35-footer), enjoys a saltwater romp off Bequia, south of St. Vincent in the Grenadine Islands, on facing page. The Dahls, Great Lakes sailors for many years, took *Dalfin* (another view, above) out to the great salt pond and back to the fresh water of Lake Superior not once but twice. The Columbia 10.7 shows her wineglass transom, below.**

a cruising boat

PART ONE

— a characteristic that we appreciated over the years. The Columbia was everything we wanted. Yet right from the beginning — even in the first year — we began to make modifications.

We did our homework carefully, reading sailing books and periodicals. Early on we discovered that the requirements for a coastal cruiser and a long-distance passagemaker are quite different. We came to realize that, although we all face the same problems in equipping our boats, the solutions are as varied as the different kinds of boats and sailors out there. Articles abounded with different ways to reef the mainsail, what type of anchor to choose, the pros and cons of electrical vs. mechanical refrigeration, whether to use autopilots or windvanes for self-steering, and so forth.

Then, when we finally made a decision, there were no perfect solutions. In boating it seems that each decision is a compromise, often with a domino effect.

We realized there was a limited amount we could learn from reading. There comes a point where you really have to get out there and do it yourself to find out what works and what doesn't. Living aboard every summer for three months gave us the opportunity to test our decisions and new systems. We soon found that things we would put up with for a weekend — or even a two-week vacation — weren't tolerable over longer periods.

Over the years we've learned that outfitting a boat is an ongoing evolution. The words "trial and error" took on a new meaning for us. Often we'd try a particular idea only to discard it in favor of another, especially when a new product came along or the technology improved. When you have owned a boat as long as we have, you end up going through second and third generations of some systems. And there really *is* something in the adage, "If you wait until the boat is perfectly ready, you'll never go." Even though we started off with a boat in sail-away condition, the evolution continued as we fine-tuned systems, replaced parts of others, and installed completely new ones years after we left. On the following pages, we share some of the things we learned.

Cockpit

One of our first additions was a dodger. While this is a pretty common addition, there are options, depending on boat configuration and how and where you are going to use the dodger.

Many use a dodger as the basis for a full enclosure or add on a Bimini. This results in a dodger of very large proportions. But because we were sensitive to the aesthetics of our boat, we opted for a low-profile dodger that we thought enhanced the lines of the yacht. Three dodgers later, we have a design that we've kept over the years. We particularly like being able to look over the dodger for clear visibility, as opposed to the distortions one gets when looking through plastic, especially in rain. Even though our dodger is low, when it is combined with weathercloths, we feel we get adequate protection from the wind.

Cushions

Since we spend a lot of time in the cockpit, we added cushions for comfort. However we didn't want to take them below each time it rained or whenever we sailed in rough weather, so we had them made of closed-cell foam. The covers were made of Sunbrella that dries quickly.

Through trial and error, we designed a system to hold the cushions in place. We attach large pieces of plastic to the underside of the cushions. The plastic pieces fit into channel grooves screwed into the seats. Even in the roughest weather, the cushions are secure and don't slip and slide. In fact, once they are in place they usually stay put for the season. We remove them only for winter layup or for hurricane preparations. We've gone through four generations of cockpit cushions.

The cockpit cushions, at top, are fixed to the seats with a channel groove arrangement that allows the cushions to be installed in the spring and left for the entire season. The cockpit grate, above, disguises some of the sand and grit that are tracked aboard. The cockpit table enables cocktails for six or dinner for two; it is shown in use, lower left, and protected by a vinyl cover, lower right.

Cockpit table

To complete our comforts in the cockpit, we made a foldable table that is nice when we have guests for happy hour. Fully extended, it provides just enough space for dinner for two in a pleasant anchorage. We also made a three-part cockpit grate, which looks good and hides the dirt that comes aboard on our shoes.

Dinghy and davits

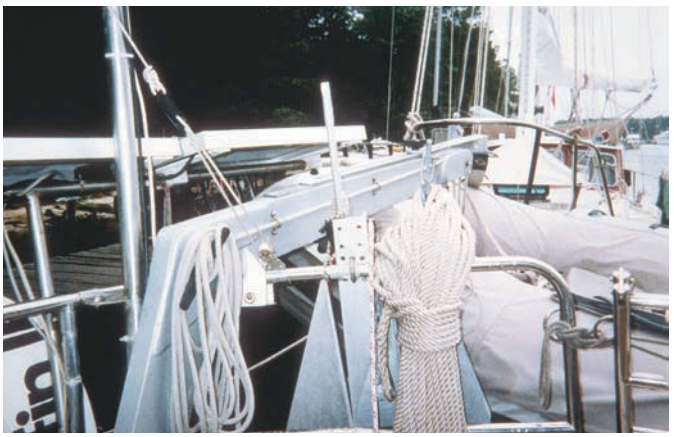
One of the problems we all have is what type of dinghy to choose and how to transport it. Over the years we went through a progression of dinghies from a small Avon Redcrest to a sportboat with an inflatable keel. We opted against the rigid inflatable boat (RIB) primarily because of weight.

In the end we opted for a dinghy/motor combination that could be pulled up on a beach easily. We also wanted a dinghy that could be deflated for storage when we left the boat for long periods. After a progression of motors we ended up with an 8-hp motor that enables us to cover large distances quickly. It not only gets us out of inclement weather faster, it is also able to punch through rough seas more easily.

What to do with a dinghy?

To transport a dinghy with the mother ship there are three options:

- Store it on the deck (fore or aft of the mast).



- Tow the dinghy behind the yacht.
- Hoist it on davits.

Even partially deflated, a dinghy stowed on deck is an obstacle to working the sails. So that was out for us. Towing a dinghy in rough weather was not an option. Thus, the addition of stern davits was another early modification on our traveling home.

Fortunately, the wide transom of the Columbia allows it to support a large dinghy. We designed davits that were beefed up with a lot of extra support, had them custom-made of aluminum, and tied them into the stern rail. The davits are mounted high enough so that even in large following seas we have never had problems with the dinghy filling with water. When we were in sustained 35-knot winds, it was nice not to have to worry about the dinghy, which was held firmly in place with additional underbody straps.

For coastal cruising and in the Caribbean, davits worked very well. We knew, however, that if our cruising turned to long-distance passagemaking, we would probably be looking for a new alternative . . . yet another phase of the evolution of our cruising boat.

Safety and security

We purchased a four-person Avon life raft with a double floor. This was mounted on the foredeck forward and starboard of the mast. We also added an overboard bag — with extra water, rations, and a hand-operated watermaker — that was stowed in the cockpit locker. We carried a parachute anchor and a drogue but used the drogue only a couple of times.

With the dinghy stowed on davits, we could no longer stow the man-overboard pole on the backstay. We moved the pole (with a connected strobe light) to the cockpit lifelines where we mounted it in a long horizontal tube with a quick-release mechanism. We

Davits and solar panels and a whole lot more are shown in top photos of *Dalfin's* stern. The foredeck, above, showing stainless-steel safety rails around coachroof, non-skid, downwind poles, and plastic side curtains attached to the Bimini. The outboard motor and motor lock on the transom, below, along with a close-up view of the motor lock.

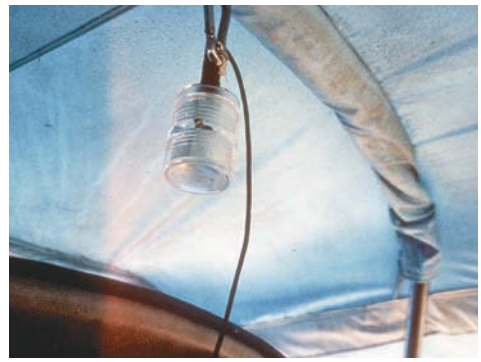
added a Lifesling, two horseshoe life preservers, and a heaving line to the stern pulpit. We put a radar reflector high on the mast. Within the companionway and throughout the boat, we added vertical handholds in strategic locations. We glued non-skid to the companionway steps.

To lift our 60-pound outboard motor to the stern pulpit, we designed a stainless-steel crane with a four-part tackle. Over the years the stern pulpit sprouted a few poles to support antennas and a stern light.

It's especially nice on a boat when you have a system that does double duty. In the interest of low maintenance, we removed the teak handrails on the coachroof and replaced them with stainless-steel tubing that goes around the entire roof. To this we added four stainless cars (two for each side) so we can attach our safety harness tethers for foredeck work. The cars are designed to slip easily over the supports of the tubing. We also added a number of stainless-steel pad-eyes in the cockpit as harness line attachment points.

In some areas, particularly in parts of the Caribbean, security is a problem. Dinghy theft in many areas is rampant, with the main prize being the outboard motor. For this reason, we raise the motor each night and secure it to the stern pulpit with a formidable stainless-steel motor lock. While no lock is completely theft-proof, this one is very difficult to remove even with large bolt cutters.

We also used the motor lock whenever the motor was mounted on the dinghy. To secure the dinghy when ashore, we had a couple of large plastic-covered cables with locks and even a 5/16-inch chain for extreme conditions. If we were anchored in an area known to be relatively safe, we would leave the dinghy overnight in the water cabled to the boat but without the



Safety seaboards (hatchboards on steroids!), on left, and the cockpit anchor light, on right, which probably did more to deter trespassing than any other piece of deck equipment.

motor. Otherwise we would raise it on the davits each night. Cruisers without davits often raised their dinghies "on the hip" with a halyard.

Another problem in some Caribbean areas is swim-aboards who may board your boat at night with the intention of robbing you. To keep these intruders out of the cabin, we made two substitute companionway hatchboards using a grill of ¼-inch stainless-steel bars that could be locked from the inside. Although we used these only rarely in areas known for theft, the lockable grill structures gave us a feeling of security when we were asleep down below. Probably the best deterrent for swim-aboards was a low-draw mega anchor light we hung in the cockpit each night that illuminated the whole aft end of the boat. We tried setting motion detectors in the cockpit, but they never worked that well for us.

Exterior modifications

To increase light and ventilation belowdecks, we added a number of exterior hatches and ports. We put one hatch in the head, another in the main cabin directly over a kerosene lamp we installed. We added two 3- x 10-inch opening ports in the aft part of the main cabin: one in the galley and one over the nav station. Not all of the original small ports opened; except for the four larger windows in the main cabin we changed all of them to opening ports with screens. After a few years, the larger ports began to leak. We removed them and designed new, more streamlined frames . We constructed them of aluminum angle stock, which, when installed on the coachroof sides, prevented further leaks.

We also added five deck prisms to bring more light into the cabin. We cannot say enough about these, as they bring in seven times the amount of light for the size of opening, while adding none of the heat you get in the south. Finally, we bug-proofed the entire boat. All hatches and every orifice leading into the boat were covered with fine-mesh screen. The companionway has a day screen that is easily moved and a night screen that is held firmly in place with Velcro. We found these efforts to be particularly worthwhile in areas with no-see-ums.

We read that mast steps were an important asset on a cruising boat. Not caring for the choices that were on the market, we designed our own and had them custom-made of ½-inch round aluminum stock. We quickly learned that a downside of mast steps is their ability to snag halyards. We solved this problem by running a thin line along the outside edge of the steps almost the entire height of the mast. For years we held these lines in place with vinyl tape. However, since tape comes off over time, we recently attached to the outside edge of each step small aluminum tubes through which the lines are strung.

It took only a couple of scrapes before we realized we needed hull protection. Initially we put on rubstrakes made of wood with a fiberglass covering. Over time, water worked in between the wood and fiberglass and produced bubbles and cracks. We made a second set of strakes of solid fiberglass, using the first as patterns. We through-bolted the new strakes to the hull and used a ¾-inch stainless-steel cap. These strakes have provided more strength for the hull and easy maintenance over the years.

Paint jobs

Eight years after we bought our boat, there was a lot of talk about blisters forming on boat bottoms under the waterline, particularly in salt water. Even though we had no blisters at the time, with our long-term goal in mind, we proceeded with an epoxy barrier job. We ground off all the old bottom paint down to the gelcoat and worked up to 4 inches above the waterline. (Like all cruising yachts, we raised the waterline a number of times.) We laid on five coats of epoxy and added the first coat of bottom paint before the last coat of epoxy was fully dry.

Probably the biggest project we ever took on was repainting the hull and deck with Awlgrip. Our decision was not just cosmetic. We wanted to provide extra ultraviolet protection for our aging gelcoat. While it's one thing to paint the hull, it's quite another to paint the deck. We did all the prep work. We removed almost every piece of deck gear and bagged and categorized each. Anything that was not removed was masked off. Although we had contracted to have the boat professionally sprayed, we did all the sanding for initial prep as well as in between the two primer coats and two coats of Awlgrip.

At this juncture we were faced with the domino effect. As long as all the deck gear was off, it seemed a perfect time to change the non-skid. After some research we settled on TBS, a product made in France. This is a composite non-skid material made of polyurethane resin and granules. Because it is made of a polymer, it is resistant to ultraviolet light and does not crack. TBS comes in sheets that can be cut to size and glued to the deck with industrial-grade contact cement. The TBS has served us well over the years. It is non-abrasive yet provides a grip that improves when wet.

All in all, the deck and hull painting and adding the non-skid were stupendous efforts. But when we were finished it was like having a new boat. With the new port, rubstrake, altered bootstripe, and whale strip, our boat seemed quite streamlined. Yet this was just one part of our preparations for long-term cruising.

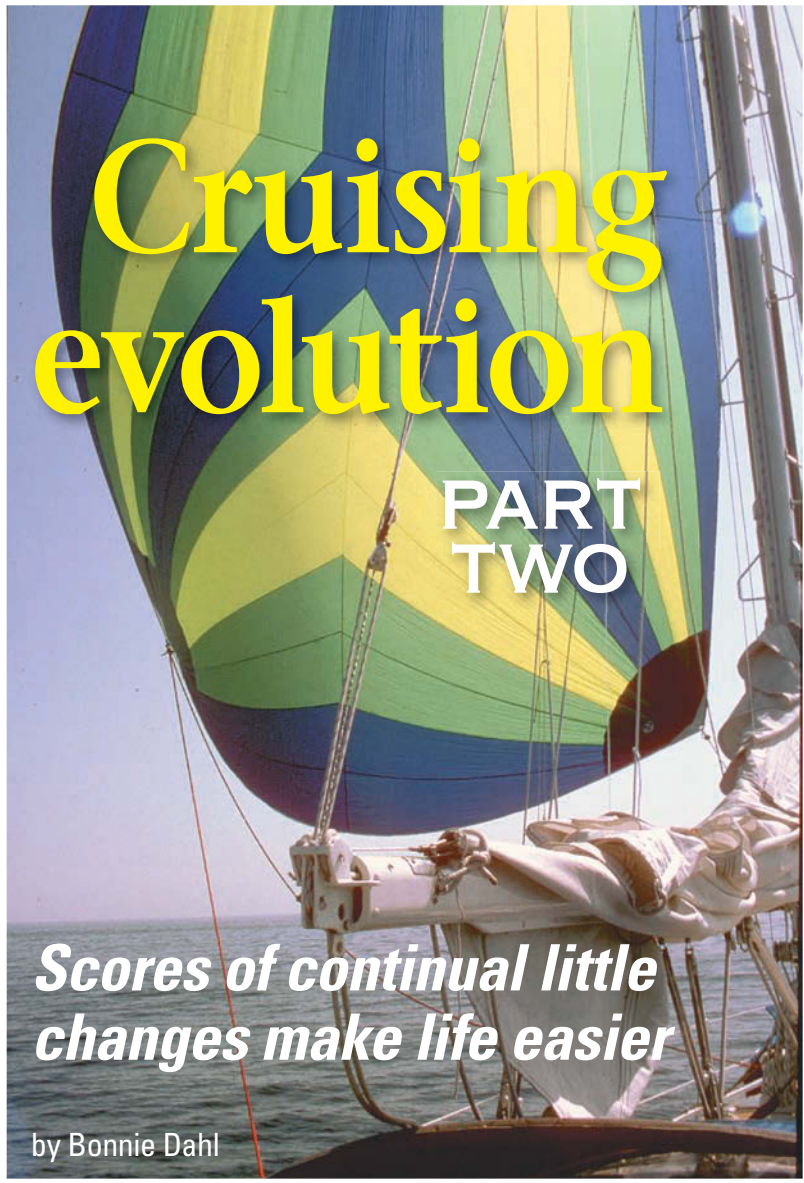
Part 2 of "The Evolution of a Cruising Boat" will appear in the September 2006 issue.

Cruising evolution

PART TWO

Scores of continual little changes make life easier

by Bonnie Dahl



Ron and Bonnie Dahl found that the trade winds of the Caribbean were too much for their cruising spinnaker, so they took it off the boat during their travels in these waters.

THE LONGER YOU LIVE WITH A BOAT, THE MORE YOU TRY TO make things easier for yourself. Certainly the goal is a well-functioning boat that is seaworthy and safe. But making it easier for the sailors who are aboard is why we also add self-tailing winches, roller furling, and electronic navigational aids. In addition to preparing our boat for long-term cruising, the concept of making things easier was another factor in many of the changes we made to our Columbia 10.7. By going through different phases, sometimes these changes occurred more as an evolution. No other system on board has seen this concept of evolution more than our management of sails.

Initially, the mainsail was sheeted on the aft end of the boom, with a traveler on the bridge, right in front of the companionway. One of the first things we did was to change to mid-boom sheeting with a custom-made traveler installed on the coachroof. The groove in the bridge was glassed in. We added an optional four-part tackle to be attached to the boom end to flatten the sail when needed.

We always felt the boom was undersized and early on had it reinforced with a large bar of aluminum on the underside. In hindsight, we probably should have replaced it with a stronger boom because it collapsed when we were caught in a squall on the Caicos Bank going into Providenciales. We were lucky to get it repaired there by having it cut in half and welding in an aluminum sleeve that has held ever since.

When it came time to buy a new mainsail, we decided to go with full battens and a roach that goes out to the backstay. As the current literature indicated, the increased roach did not make us heel over more but gave a much stronger draw on the sail. Our next mainsail will probably have an even larger roach. With the full battens, we tried a number of lazy-jack systems. These didn't work well for us because we had to point directly into the wind to raise or lower the mainsail, something we are prone to cheat on. We finally settled on the Dutchman, a system with two plastic lines strung through the main. When lowered, the main folds up like an accordion, never touching the deck, and we can raise and lower it moderately off the wind.

Sail inventory

Our mainsail has slab, or jiffy, reefing with three sets of reefing points. Fortunately, we have never had to use the third set. We also added a trysail with an extra track on the mast, but we never had to use it, as the main reefs were always sufficient. After many years we removed the topping lift and put in a Garhauer compression strut.

We also added two optional vangs with two-part tackles, one on each side. A snaphook attaches to an anchor on a pulpit stanchion. The other end of the tackle is permanently attached to the toerail with the tackle line running back to the cockpit. To use it, we detach the snaphook from the stanchion and hook it on to one of the boom bails. We use these vangs to control the boom in jibes or when sailing downwind wing-and-wing.

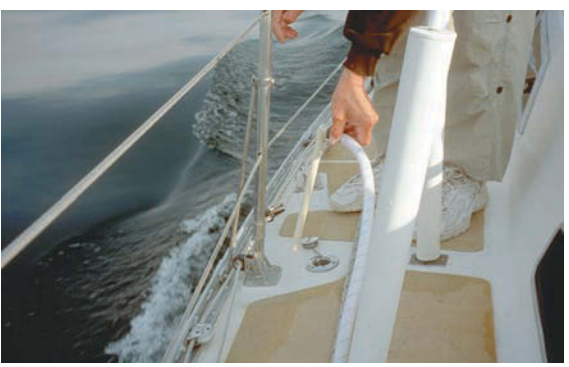
The headsail evolution aboard our boat was even more pronounced. Initially we had a custom-made double-forestay system with a 150-percent genoa on a roller furler to starboard. Our second jib was a 115-percent lapper hanked on the second forestay and stored to port in a deck bag. We had a set of reef points put in this sail but didn't use them all that often since we found it was easier to just reef the main. When the time came to replace the lapper, we chose a blade that has a smaller foot and carries the sail area more vertically.

For downwind sailing we had a ¾-ounce spinnaker that was also stored in a deck bag to starboard. A spinnaker sock was added to make it easier to set and lower the sail. Although this was a fun sail for those lazy days in the Great Lakes, we used it only once in the Caribbean. It seemed we were always hard on the wind in the strong Caribbean trade winds. When we were finally going downwind, the wind was just too strong to carry the spinnaker. We ended up taking it home when we went back one Christmas.

Moveable jackstay

For heavy-weather sailing we had a moveable jackstay that was stored against the mast. It could be moved forward when needed. A staysail was stored in the cockpit locker that was then brought forward and hanked on the jackstay. We also added running backstays that could be set when using the staysail. With a single- or double-reefed main, this sail combination was dynamite, especially when close-hauled.

When the old genoa wore out, we purchased a reefable sail with built-in luff pads. Unfortunately, this made it too easy to use the genoa in a variety of conditions so we left our other sails neatly stowed away. When we got to Grenada one of the first things we did (along with sailors on four



When it's aboard, the cruising spinnaker lives on deck in a bag, top photo. Headsails don't take up space in the cockpit locker or belowdecks. The washdown pump, in next two photos, has been a blessing. The cockpit is shown in the next photo with its Bimini, solar panels, and some of the safety gear. Even the hatches got sun covers of their own, bottom photo.

other boats) was to order a furler for the staysail. This addition was done mainly for sail management; we really don't sail the boat as a cutter because the headsails aren't clewed high enough. However, with the staysail in place ready to go, we find that we use the sail more often, especially when hard on the wind. This is because the sail track is mounted well inboard on the cabintop and the staysail can be sheeted very flat. The downside of this system is that when tacking the genoa in light air, we need to roll it up a bit to get it through the slot.

We still weren't using the blade as much as we liked, so a year later we added another furler for this sail. We were still able to use the side-by-side system for both furlers by staggering the drums so the blade-furler drum is positioned a little above the genoa-furler drum. They are far enough apart that one sail rarely binds on the furler of the other. With our three headsails all on furlers it is easy to change from one sail to another, an advantage we especially like on night passages.

Deck hardware

For years we had two telescoping downwind poles stored on the deck in chocks. Because they were unwieldy to handle, we moved them to the mast on tracks. Now they are fairly easy to set since the sliding end attached to the track bears much of the burden. With two headsails on furlers and the ease of setting the poles to each side, we have used them simultaneously when going downwind wing-and-wing. The furlers and poles make it easy to balance the rig as needed when wind conditions change.

To make it easier on ourselves, we also changed our primary winches to self-tailing winches. We added a number of winches as well: one on the cabintop for reefing the main, two winches under the dodger for controlling the staysail or mainsheet, and two additional cockpit winches for controlling the spinnaker tack or a second headsail. Custom-made turning blocks were built that could simultaneously deliver the sheets from two different headsails.

Originally the Columbia 10.7 came with a couple of different sizes of rigging. To standardize, we changed all rigging to 5/16-inch-diameter wire. We also changed all ends to Sta-Lok terminals. With all the rigging the same, we only need to carry spare wire for the longest stay in case we have to make a repair where rigging wire isn't available.

Anchoring gear

When it comes to anchoring, there is a lot of diversity. Our own system evolved over time. Initially we had one 35-pound CQR as our primary bow anchor. In a few years we added a second CQR and made a new stainless-steel anchor platform with two bow rollers. After a few more years we traded one of the CQRs for a 33-pound Bruce. Years later the second CQR was traded for a Delta plow. The Delta is similar to the CQR but comes with a non-moveable shank and is a very fast-setting anchor. Although we favored the Delta for many years, the Bruce gradually became our anchor of choice for most situations. When we left for extended cruising, we carried a spare CQR down below in case we lost one of our primaries.

There was also an evolution in the type of anchor rode we used. In our Great Lakes days we proudly boasted of 50 feet of chain and 200 feet of 5/8-inch nylon rode for each anchor. Both primary rodes were stowed in a divided anchor locker.

When we left to go south we increased the chain to 70 feet on each anchor, thinking that was more than enough. It only took riding out the remnants of a couple of hurricanes and dragging in the Chesapeake to convince us that we needed more chain. We quickly switched to 140 feet of 5/16-inch Hi-test chain and 150 feet of 5/8-inch nylon for each of our primaries. For most anchoring situations this means we are essentially anchoring on all-chain. It was a nice surprise to real-

ize that we didn't have to carry 300-feet of chain on each anchor to be "anchoring on all-chain." With all-chain, we could no longer tie off the rode on a cleat so we added a chain stopper to protect the windlass and a snubber to keep the chain from jerking with boat movement. When we were in Venezuela we had all the chain re-galvanized at an incredibly low cost. This added a number of years to the chain's life.

Electric windlass

For years we retrieved the primaries by hand. Then we tried a mechanical windlass with a 3-foot lever. However, it seemed to take forever to bring up anchor and rode. Thus, we changed to an electric Simpson-Lawrence vertical windlass with a chain gypsy. Our final addition to the chain locker was a washdown pump, another system that serves double duty. With different sizes of hoses, we can also wash down the whole boat. We even use this system with a hose equipped with filters for filling our water tanks when cruising in the crystal-clear waters of Lake Superior.

Our secondary anchors are stored on the stern pulpit. The first anchor we added was a 12-pound deep-set high-tensile Danforth with 6 feet of chain and 150 feet of ⅜-inch nylon. This anchor seems "to dive for China." Once it held a four-boat raft when the wind switched. The second anchor is an FX-37 Fortress with a detachable rode (12 feet of ⅜-inch chain and 150 feet of ⅝-inch nylon) stored in a bag in the cockpit locker. This anchor is particularly good for digging into sand and turtle grass and is dynamite when we bring it forward and put it on one of the 140-foot chain rodes.

To complete our anchoring arsenal, we carry a rode rider with two detachable weights: 15 and 25 pounds. These have been particularly useful in riding out the last vestiges of hurricanes on the East Coast. We also have a couple of floats with trip lines for use in areas known to have underwater debris. In addition to the cockpit anchor light, our masthead anchor light is connected to sensors so it will turn on and off automatically at dusk and dawn.

Cooking and refrigeration

In spite of having two large vented propane tanks in the stern, our boat came with an alcohol stove. Another early change was to install a propane stove. With a smallish U-shaped galley, we chose a two-burner stove. Rare is the time we need a third burner because we do a lot of cooking with a pressure cooker, which can be set aside. The two-burner stove has served us so well that when the time came to replace it, we installed another. The oven can hold a 9 x 12-inch cake pan and can even bake a small turkey. An added benefit of its smaller size is that we use less propane.

The two-burner stove is adequate for most meals, particularly when pressure cooking is involved, since the pressure cooker doesn't need to sit on a burner all the time, top photo. The cooling blast from a little Helo fan can be aimed into the galley or the main cabin, second photo. Galley stowage using Tupperware and plastic, next two photos. Chart storage underneath the settee backs, bottom photo. Shelves for canned goods are also situated behind the settee backs.

One of the most important additions that has influenced our cruising and given us the independence we like is the installation of engine-driven refrigeration, particularly a large (3-cubic-foot) freezer. Suspecting insufficient insulation in the original icebox, we completely removed the original box right to the hull. Because we wanted 80 percent freezer and 20 percent refrigerator, a new divided box was built that included 4 inches of closed-cell insulation backed with foil. We made our own holding plates (three) using stainless-steel hospital pans inserted with coiled copper tubing and then sealed off on the back with a welded stainless-steel plate. These were placed in the freezer with a spillover hole to the refrigerator.

We chose engine-driven refrigeration, rather than electric refrigeration, because we didn't want to be dependent on our ship's batteries at anchor and we are rarely in a marina for shorepower. This proved to be a good choice for us, particularly during the years we were in the Caribbean, as running the engine twice a day during those long periods of anchoring was also good for the diesel. In the tropics we saw many sailors with electric refrigerators who had to resort to large

The light blue Bimini lining reduces heat, top photo. The top photo also shows aft bows attached to the stern pulpit, the outboard motor lock, and other safety gear. Next photo shows the Bimini with side wings. The rain hood, in third photo, also made a big difference by allowing for ventilation during rainstorms at anchor. *Dahlfin* stays as cool as is possible in Grenada with all the suncovers employed, bottom photo.

solar panels and wind generators in addition to running their engines twice a day. By building our own refrigeration we have been able to service the system ourselves most of the time. The downside of engine-driven refrigeration is that we have had to empty the freezer during the few times we've been up on the hard or have left the boat in a marina to go traveling.

Electronics and power

One of our hardest decisions was whether to get a windvane, autopilot, or both. An important factor was having the dinghy on davits. This made installing a windvane difficult. Another was that we wanted a reliable self-steering system for all conditions — even in light air and when we were motoring. After much research we decided that a robust belowdecks autopilot was better suited to all our needs. Our system consists of three components: a control head, fluxgate compass, and upgraded ram that delivers increased power to the rudder. This system became so important to us that we bought another complete autopilot as backup with interchangeable parts.

> "It's hard to believe that when we first started sailing all we had was a compass and depth sounder."

It's hard to believe that when we first started sailing all we had was a compass and depth sounder. We can even remember when Loran-C first came on the market. Thus we went through yet another evolution of Loran-C, SatNav, and now a couple of generations of GPS. We also added radar, which we finally had to replace when we were in Isla Margarita, Venezuela. Before we went on our last trip to the Bahamas in 2003, we installed a 10-inch color electronic chart plotter. We cannot say enough about this new addition. With charts from Lake Superior to the Bahamas, we found the chart plotter especially helpful in the tight areas of the Intracoastal Waterway.

VHF radios are standard on most boats today. Yet, when we first started sailing, many considered them to be an unnecessary luxury. To complement our main radio we added two hand-held radios that were especially useful when traversing congested waterways. Just before we left on our first trip to the Bahamas and Caribbean, we installed a single-sideband radio for long-distance communication. We used 2-inch copper ribbon laid next to the hull for a ground plane. The backstay served as the antenna with the addition of two insulators.

Running power tools

We added a 1,000-watt inverter to provide power for a computer and printer. It is also very useful when we need to run power tools at anchor.

The power supply necessary to meet all our electrical needs also went through years of evolution. In the early years just running reading lights at night was enough to put a serious dent in our ship's power bank. After much trial and error, we ended up with a three-bank system: two banks of two house batteries each (105-amp flooded deep cycle) and a fifth separate battery dedicated to starting the engine.

We also mounted two solar panels on the outboard side of each davit. Our reasoning for going with two smaller panels was to reduce our loss if one got damaged. We have found over the years that this is not a problem and, with the newer, more efficient panels made today, we would probably go with one large one on each side if we were to do it over. We have to admit that running the engine twice a day to charge refrigeration is a decided advantage in keeping up our boat's power supply.

Our Columbia came with a Yanmar 2QM20 engine. With only 22.5 horsepower, we felt the boat was underpowered, especially as we continued to add weight to the boat. When it came time to purchase a new engine, we upgraded to the Yanmar 3GM30F, which has 27 horsepower. Years later, when a wet/dry compression test revealed that the rings had gone bad, we decided to get a third engine rather than have the Yanmar 3GM30F pulled and torn down — a very elaborate and costly repair. At

this time we considered an even larger engine, one of the Yanmar HM series with 36 horsepower.

Our experiences with tides and currents had shown us that a larger engine would be very helpful, but it wouldn't fit without extensive modifications. The domino effects of all the modifications we would have to make to put in a larger engine were too much, and we purchased another 27-hp Yanmar. Yes, there are times we would like to have more horsepower, yet we continue to enjoy the fuel frugality of the smaller engine.

Heat management

Cruising in the cold waters of Lake Superior, we needed heat, especially on night passages. This was another evolution. We ended up going through five cabin heaters before we settled on the Wallas, which is made in Sweden. This is a forced-air system that we installed in the forecabin and vented though the hanging locker to the main cabin. Even outside the Great Lakes, we used this heater when cruising in early spring and late fall.

On the other side of the coin, keeping cool provided us with one of our biggest challenges when we were in the south. We learned that the heat in the Bahamas and Eastern Caribbean is nothing compared to the heat in South America: Trinidad, mainland Venezuela, and the offshore islands. Not only were the heat and humidity debilitating, but also the ultraviolet light at those latitudes was quite destructive on plastics, fabrics, and people. Our Bimini became an essential piece of cruising gear.

We had read that keeping airflow through the boat was extremely important. With this in mind, we purposely built the Bimini to overlap the dodger and to be about 10 inches higher than the dodger to allow for airflow. With the idea of preventing heat absorption, we avoided dark fabrics and had ours made of Weblon, a white plastic fabric with a light blue underlining. Reading had told us that the light blue color would reduce the harsh glare reflected off the water. We were able to use shortened back bows by mounting them on the stern pulpit. The front bows were installed on a track so the Bimini could be collapsed and slid forward to be stowed in front of the dodger. This feature was particularly helpful in hurricane preparation.

Since the sun is directly overhead for just a short time, its pervasive rays would often stream in under the Bimini. At first we tried to solve this problem by hanging up large beach towels on the offending side. But the real solution came with canvas twist fasteners. With these, we were able to add wings that are held out to each side with struts and shock cord. This system worked so well that we had a set of clear plastic side curtains made for each side with bottoms that hook onto the toerail. These were particularly useful when we were hit by a cold beam wind or rain.

Deck cover

We had a large deck cover made for aft of the mast and overlapping the dodger. It was constructed with side flaps and set high enough to allow for airflow. But since it was quite an undertaking to hoist, we only used it for those times of long-term anchoring. We had another deck cover made for forward of the mast, but this one never worked all that well, and we gave it away. An adjustable rainhood over the forward hatch worked better for us, especially in the rainy season.

To protect the plastic hatches and winches, we had covers made of Sunbrella. Likewise, we protected the life raft with a Weblon cover. We ended up buying a new dinghy in Trinidad. To protect the dinghy fabric from ultraviolet deterioration, we also had a cover made of Sunbrella for it.

We tried a wind scoop for the forward hatch to get air down below. But that didn't work very well, and we gave it away as well. Instead, we resorted to Hella Turbo fans in the cabin: two in the forecabin and one each for the galley and nav station. These latter two have the advantage of double duty: they can be turned and directed into the main cabin. The fans draw little power (200 milliamps), and we almost always had one or two on when down below. They were so important that we carried two more as spares.

Never finished

It is interesting that in solving boat problems there are so many choices. It would be pretentious to suggest that ours are the only solutions. Through the years, by the process of trial and error and learning from our mistakes, our boat has evolved into one that is very comfortable for us and our type of cruising. Now, after 27 years and over 50,000 miles, we are still on the Columbia we bought in 1978. In addition to annual maintenance, we are still making improvements to *Dahlfin II*, our home on the water. Just this year alone we pulled the mast for repainting and changing hardware, upgraded our cabin heater to a new Wallas, and installed a new custom-made stainless-steel traveler. In spite of the joy we get from working on our boat, we are well aware that there comes a point when it's just time to "go cruising."

(Part 2 of a two-part series. Part 1 appeared in July 2006.)

The Dahls added louvered lockers in the forecabin to improve airflow inside stowage compartments, top photo. A view of the main cabin, center photo. *Dahlfin II* at haulout, bottom photo, showing the unique keel configuration of the Columbia 10.7. Ron and Bonnie say this elongated keel, not quite a fin keel, with a skeg provides excellent tracking.

Seasickness prevention

Tips from a world-cruising fellow sufferer

by Lin Pardey

It never fails. Every time we get into a discussion with a new or would-be cruising sailor, there comes a moment when a concerned look crosses his or her face and the question is blurted out, "Do you ever get seasick?"

I don't think any aspect of sailing causes more worry. Certainly nothing is more demoralizing than being seasick. I know; I'm one of the sufferers. There we were, finally on our way after three-and-a-half years of scheming, planning, and building. I'd sailed lots of times before, but when we set off from San Diego into a confused cross sea, I was so sick that I finally ended up lying on the cabin sole praying for land.

"All my dreams ruined," I said to myself. And even more morbid thoughts rushed through my head. Larry tried joking with me, holding me, teasing me, but nothing helped. To my amazement, on the second day out my seasickness began to fade away. By the end of the day, I was more than making up for my lack of interest in food. After three days, I had forgotten that I ever was seasick.

I still get uncomfortable occasionally, and every time it happens I am just as unhappy as the first time, but I have learned to minimize the problem. I don't include Larry in the problem because he is one of the outrageously fortunate 10 percent who don't know what seasickness is. Put him in a boat with bilges full of diesel, odiferous food on the counter, and a vicious sea running and he'll ask where the butter and jam are so he can make a sandwich. But about 90 percent of all people who go to sea do suffer at one time or another. So an active program of prevention is worth considering.

Psychological problem

I'm convinced that 30 to 50 percent of the problem is psychological, and other long-time sailors have supported me in this belief. Curiously, I never get seasick when we are working to deliver other boats, only when Larry and I are sailing alone on our own boat. When I am being paid to cook on a delivery I've got important responsibilities and don't want to let the crew down, so I guess I'm busier or trying harder.

On board *Taleisin*, I know Larry will take care of any problems, and he handles the boat easily by himself with the aid of our self-steering gear, so I can relax and it doesn't matter. Peter Phillips, who owns 50-foot *Voyager*, reports the same thing. When he is captain and has a crew on his own boat, he's never seasick. But daysailing as a guest on friends' boats is a different matter. I'm not in any way saying that our seasickness is any less real for being psychological. But by accepting the fact that sometimes it is caused by mental processes, we can more actively fight it.

Drug companies are forever coming up with new pills to fight the problem. Unfortunately, they often forget to put the most important instructions on the package. To work at all, any anti-motion-sickness pill must be taken one hour before the motion starts. Once you are leaving the marina, it's too late. It takes one hour for some pills to dissolve and spread through your body. If you vomit before then, you lose the medicine.

After 40 years of voyaging, I still have to deal with a day or two of seasickness every time we set off into a fresh wind with sloppy sea conditions. Even when I have been at sea awhile with gentle weather, I have encountered bouts of head-in-the bucket-seasickness when the weather turned stormy. I have tried drinking ginger

beer, using a wristband, and taking a mild tranquilizer. (Although other sailors found tranquilizers to be a solution, they only worked for me in some situations.)

> **"After 40 years of voyaging, I still have to deal with a day or two of seasickness every time we set off into a fresh wind with sloppy sea conditions."**

Children's tablet

After much experimentation I now use Stugeron, a children's motion-sickness tablet which has cinnarizine as an active ingredient. *(Note: Stugeron does not appear to be available in the U.S.–**Ed.**)* I take a child's dose one hour before leaving port with good results and very little of the feeling of lethargy associated with other remedies. Surprisingly, I have found this medication tends to work even when I am already feeling a bit off, as long as I take the tablet with a dry biscuit or two and a small glass of fruit juice, then lie down for an hour. This is especially helpful when a voyage starts out calmly and deteriorates after a few days.

Wristbands supplied by acupuncturists have been very successful for several friends, and so has "the patch" (transdermal Scopolamine 1.5 mg., available by prescription). But if you are allergic to the adhesive used on most bandages, as I am, you will have a skin reaction at the site of the patch. Some people have tried reducing the dosage from the patch by cutting it in half. This is definitely not recommended, as most people will get a rash where the cut edge of the medication-dispensing gauze touches the skin. Furthermore, the slow-release action of the patch will no longer function correctly.

Whatever medication you choose, consider the potential side effects carefully, especially if you plan to use the medication for more than a day or two. Some people, who depended on a patch for the whole length of a voyage, found they had hallucinations after a few weeks at sea. Even after removing the patch, this continued for a few days.

Dosage is another problem often overlooked with seasickness remedies. Over-dosage causes sleepiness and dry mouth and can impede urination. It tends to occur more often in women than in men because the average weight of adults used to determine medicinal dosage is 140 pounds. If you weigh 110 pounds or less, you should probably be taking a young person's dosage.

If you find a medication that works for you, take at least a year's supply along if you're heading out on a long cruise. It is often difficult to find an exact duplicate in the countries you'll visit. Furthermore, a medication that is available over the counter in one country might require a local doctor's prescription in another.

Other measures

Whether you want to use anti-motion-sickness pills, tranquilizers, or go without, there are other measures you can take to minimize seasickness. First, keep your boat very clean. Eliminate any odors you can. It's the odors that do the final trick. A person can be fine until he opens the ice chest and gets a whiff of blue cheese or sour milk. In fact, people get seasick less easily on a boat with no engine. There are fewer engine-related odors to become accustomed to in a non-auxiliary vessel. If you have an engine, don't overfill the tanks, be sure to check for leaks, and wipe excess oil off the engine.

Ventilate the boat well and remember that odors you live with day in and day out may not upset you, but they may do the trick for a guest. Don't allow anyone to smoke if you or one of your guests is prone to seasickness. If you are embarrassed to ask your friends to snub out their cigarettes, put up a sign, "Smoking allowed on deck forward of the mast."

Second, if you or your guests have a tendency to get queasy, try living on board at anchor for a few days before you head to sea. The slight motion afloat seems to help you get acclimated. People who live on board constantly suffer less when they head to sea.

Third, rest well before you set off. I know now that my first real bout of seasickness was brought on by too many farewell parties and an excitement-induced sleepless night before

Only a few fortunate souls are as immune to seasickness as is Larry Pardey, on facing page. Lin envied his ability to spend almost two hours re-stitching the head of their mainsail as they roared down 20-foot swells before 30-knot trade winds between Chile and the Marquesas. Lin's stomach could not handle the heavy-weather windward work off the coast of Australia, at right, but once they lay hove to, photo on Page 24, she felt good enough again to eat a welcome warm meal.

our departure. At sea, get all the rest you can. Your body can cope with weather changes better, and mentally you'll be less annoyed if some queasiness does occur.

Fourth, if you happen to be in charge of cooking, prepare enough meals for two or three days before you leave port or, if you are on a long passage, when it is calm. I usually make up a pot of stew or spaghetti and sauce or a really thick soup in an eight-quart pot. I mix sandwich fillings and bake fresh bread before each long passage. Then, once we set off I don't have to put up with the unsettling smells of cooking if it's rough. And if I do get seasick, I don't have to worry; Larry can turn a fire on under the pot of soup or stew and scoop a bowlful for himself. If you have prepared several meals beforehand and you don't get seasick, you end up with a bit of extra free time at sea to sunbathe or to read a good book.

Pronounced motion

Fifth, once you are under way in a rough sea, avoid going into either the forepeak or the engine room. The motion is more pronounced in these parts of the boat. Also, if possible, avoid using an enclosed toilet. Head areas are rarely ventilated well enough, and the odors multiply when you are in a seaway. Try a bucket if it's really rough.

Sixth, keep warm and active and stay out in the fresh air. Because seasickness is partially psychological in many cases, if you put on your foulweather gear, get out on deck, and join in the sailing of the boat, you won't have as much time to think about the motion. Very few people who sail dinghies get seasick; they are just too busy sailing.

Seventh, if you have a tendency toward seasickness, avoid hot, spicy food. Choose easily digested items such as bread, oatmeal, apple juice, and saltines, rather than citrus fruits, lasagna, and bacon.

Eighth, on very hot, still days, try to keep cool. It's amazing how many people become upset on glassy, calm days when the sails are slatting. Find some shade, pour sea water over yourself, or drink a cool glass of juice to prevent sickness.

Ninth, if you do become ill, try drinking some sweet fruit juice such as well-chilled apricot or peach nectar. This seems to settle well and provides almost all of the nutrition necessary to keep you from becoming weak or dehydrated.

Tenth, in really bad conditions, try changing the motion of the boat by easing the sheets a bit and reaching, running, or even heaving-to. We know one tough-looking six-footer who becomes as weak as a baby as soon as the sheets are hauled in hard. He lies in his bunk until the sheets are eased. Then he makes up for lost time and missed meals. He just can't take the motion of being hard on the wind in anything more than 12 knots or so. But he loves sailing and traveling so much that he's willing to put up with the inconvenience.

No discouragement

Finally, if you have a first-time sailor on board who becomes seasick, don't discourage him or her from sailing. One of our best friends spent years learning about boats and building beautiful dinghies, which he sold with an aim of someday having his own yacht. Then he was asked to crew on a 40-foot hot racing machine and accepted excitedly. In 20-knot winds he became helpless. The regular crew of the boat teased him, and he never went sailing again. He would have made a good sailor, but to him sailing wasn't worth the discomfort and ridicule.

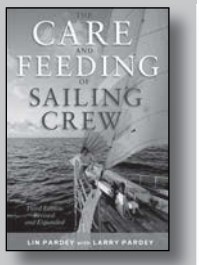
I think that is one of the big secrets: you have to want to sail and cruise so much that you'll put up with one or two days of discomfort for the reward of new ports and new people.

Normally, few people stay seasick for more than two or three days, except in the most extreme storm conditions. I did hear of one person who reported she was seasick the whole way across the Atlantic. But it turned out she was suffering not from seasickness but from a problem that can be caused by seasickness. I learned about this when I spoke to the port doctor in Gibraltar. He told me in the past two years he has had to assist in the delivery of nine unplanned babies conceived by cruising people who were using the pill.

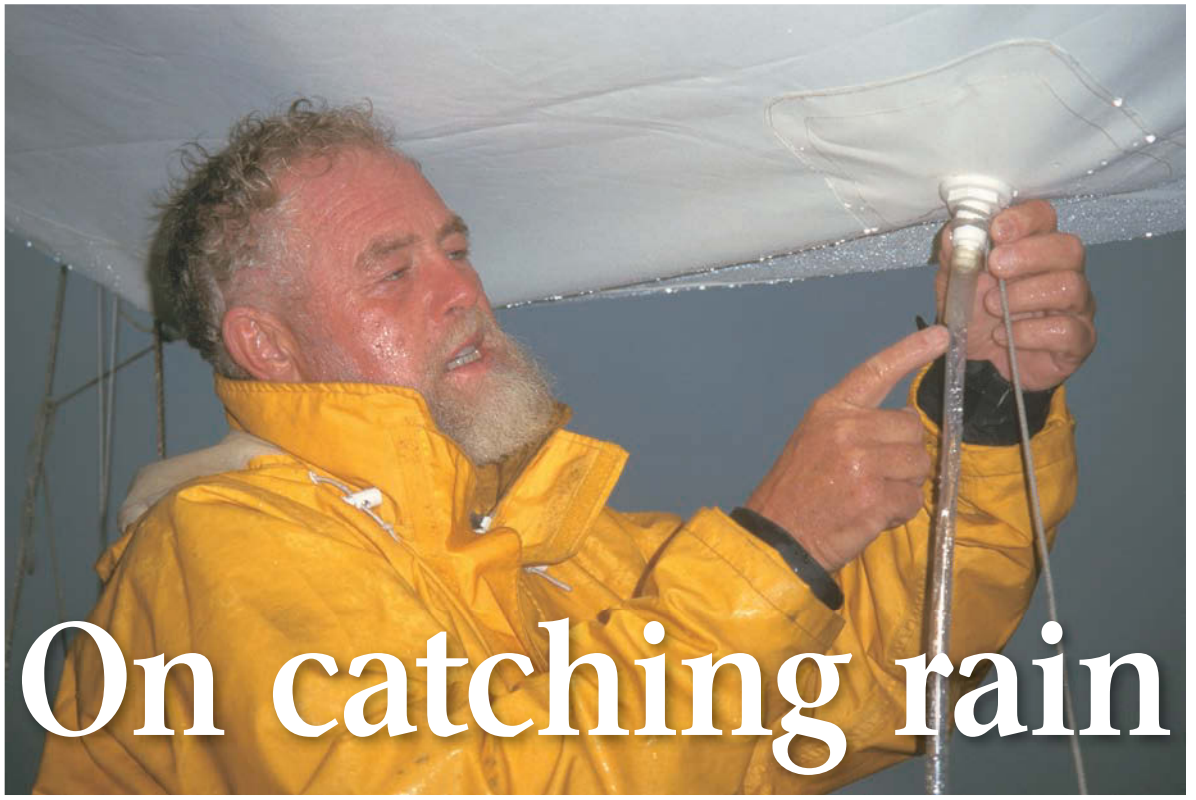
As he explained it, an oral contraceptive must stay in your stomach four to eight hours to spread into your bloodstream effectively. He advises that if you want to be sure of avoiding pregnancy, use other means of contraception such as condoms or abstinence if you have been seasick for more than a day. Pregnancy in its second and third month will cause almost the same symptoms as seasickness, and that was what our friend on her transatlantic voyage was suffering from.

No one enjoys being seasick. But for most of us it is an integral part of going to sea that might have one small bonus: it helps me shed some of the pounds I gained in the previous port. But far more important, the discomfort is quickly forgotten the minute you reach a new port or sail out of a storm into beautiful weather.

For further reading . . .



This article was excerpted from Lin Pardey's book, *The Care and Feeding of Sailing Crew*, which has just been updated and released as a third edition. It is available from the Good Old Bookshelf <http://www.goodoldboat.com/bookshelf.html> or by calling 763-420-8923.



Larry Pardey secures hoses to the small through-hull fittings he and Lin have inserted into the four low points of their sun cover. He leads these to their water tank fill ports. At sea, they invert their mainsail cover under the boom and use it to collect rainwater as it runs down the mainsail.

On catching rain

Fill your water tanks the natural way

by Lin Pardey

Larry woke me during the morning off-watch with a shout: "It's raining!" He struggled into his foulweather gear, and I soon heard the sounds of the raincatcher being tied in place. I looked out the companionway and saw only a slight drizzle. But when I awoke three hours later, Larry told me he'd caught 3 to 4 gallons of fresh water. Once again we laughed about the eight years we'd spent experimenting with all sorts of ideas for raincatchers, until the day Larry came up with the obvious solution.

He tied our mainsail boom cover under the main boom where it acted like a rain gutter, catching almost every drop that ran off the mainsail. Larry sewed a rope grommet into the part nearest the mast, and we insert a short hose into the grommet (see Figure 1 on Page 31). During a tropical squall lasting 15 minutes we've caught more than 35 gallons of water. The raincatcher is also handy because it can be left in place on any point of sail, as long as the winds don't surpass 25 or 30 knots.

It has been almost 26 years since I wrote the above paragraphs as we reached along between Japan and Canada on board 24-foot 4-inch *Serafyn*. I had spent many pleasant hours during that often-stormy passage keeping a log that eventually turned into the first edition of *The Care and Feeding of Sailing Crew*. The same raincatcher system now works for us on board 29-foot *Taleisin*. We've seen several others that could work for your boat.

During our cruising years we've seen and tried several different raincatchers and found they all fall into three categories: deck collection systems, sun-cover systems, and sail or mast systems. As you look over your boat for potential rain collection ideas, keep the following ideas in mind. First, a well-thought-out system can augment your regular tankage. If you have a watermaker, it can help conserve fuel and engine running time. It can cut down on the number of trips you need to take to the fuel dock for fresh water. It can let your crew shower more often, wash clothes on board, and generally be more relaxed about one of the irksome aspects of life afloat: control of water usage.

> "During a tropical squall lasting 15 minutes we've caught more than 35 gallons of water."

Since the system will only be used when there is a chance of rain, it should be unobtrusive, yet easy to set up quickly. At sea, an efficient raincatcher should work while the boat is heeling, tossing spray. If the sails can be incorporated into the at-sea system, even the condensation of fog or mist can add a bit to your water supply.

In port, any system you design should be workable in fresh winds. Rainsqualls around tropical islands are often preceded by Force 8 or 9 gusts. If you have to lower and reset your collection system for each squall, chances are you'll say, "The heck with it." So the best solution would be a catcher that can be set in place and left unattended for much of the time or a combination of systems which work in varying conditions.

Finally, only if I were on board and able to *taste* the water running out of the collection hoses, would I feel good about letting it drain directly into our main water tanks.

Cabintop collector

One of the simplest systems we've seen is a cabintop collector (see Figure 2 on Page 31). On some English

Water jugs afloat

It is difficult to imagine the importance that water jugs assume in a cruising life. If you have spent the majority of your sailing life along the coast of Europe or the United States, chances are you have rarely had to cart every gallon of water you use from shore to ship in a dinghy. But once you set off for long-distance exploring, there will be few dock hoses accessible to deep-draft vessels, and fuel docks where you can lie alongside for top-ups will be rare except for major charterboat areas. So a careful look at jugs before you set sail will have more beneficial effects than you'd first imagine.

For years we used clear hard plastic jugs; we secured them on deck near the shrouds when they were full and under the dinghy once they were empty. Full or empty, they always seemed to be underfoot, taking up far too much deck space, scratching the paintwork if they slid across it, stubbing toes at night, and breaking open if one of us accidentally dropped a full one against something hard.

All the solid jugs we tried, both the cheapest and most expensive varieties, began to crack and deteriorate after a year in the tropics, and no matter how securely we tied them, one always seemed to slip loose of its lashings during a rough beat to windward to bang against the bulwark and drag one of us forward into the leeward scuppers just when we didn't particularly want to be there.

Next we tried the clear soft plastic folding jugs we found in a fishing shop. These had definite advantages. We could carry half a dozen folded away in a locker until we needed them. Since they took up little space, we could leave two in the dinghy and grab a bit of water each time we went ashore instead of making a major foray of topping up our tanks.

Additional tankage

The soft jugs conformed to the shape of the bilges and so gave us instant additional internal water tankage separate from our main tanks for passagemaking.

Their ability to conform to different shapes meant we could fill and secure one inside the dinghy where it is stored at sea, so if ever we had to abandon ship in a hurry, we'd have an extra water supply to augment that provided by our reverse-osmosis, hand-pump watermaker. Though these soft jugs didn't burst or crack if they accidentally hit a cleat or metal fitting, they were susceptible to chafe and cuts where they lay against hose clamps or threaded bolt ends in the bilge. So we took care to store them clear of sharp objects. As with the solid jugs, the ultraviolet rays of the sun turned these jugs brittle if we left them on deck for more than two months in the tropics. But as they folded and stowed below, we could cut sun exposure to a minimum.

We finally found a way to improve on this aspect of jug performance after a chat with a plastics engineer. In his words, "Carbon black inhibits the transmission of UV rays into plastics and slows the breakdown of the plastic molecules." He recommended black plastic jugs such as those used by photochemical companies. We used hard, black plastic chemical jugs for water storage during our last three years of voyaging on *Seraffyn*. Not one broke down due to UV exposure.

Then, during a shopping trip to a camper-supply store in California, we found a fine compromise solution that has made our tussle with water jugs a far fairer one. Reliance Products Ltd., of Winnipeg, Canada, produces tough black plastic folding jugs, which they fit out to be used as solar showers for backpackers and campers. They are available in two sizes: 5 gallons and 2½ gallons. We carry both sizes on board. The smaller one is easy for a lightweight crewmember to carry, so we can both transport water. This smaller size also takes less space on deck, so we don't mind leaving one under a rain collection hose even if there is no immediate sign of rain. These jugs seem impervious to the sun and have lasted six years at a time, in spite of hard use both on deck and below as we cruised on *Taleisin*. And as a bonus, we find we often used them as they were originally intended, for on-deck solar-heated showers after a day of skin diving near the coral reefs of tropical cruising grounds.

cruising boats, the grabrails or cabin trim are modified to act as a rain gutter along the whole length of the cabin. At the lowest point on port and starboard sides, a hose is jammed or screwed tightly into the wood. At sea, a length of hose can then be led from either side to a plastic jug to collect water on calmer sailing days.

In port, hoses can be inserted in both sides and, once the water is tasted, it can be safely fed directly into your water tanks during heavier rainfalls. A few cruisers we've met propound what sounds like an even simpler system, blocking off the scuppers in the boats' toerails or bulwarks and letting the water that gathers on deck flow directly into the open deck fill plates. With this system, there is a real risk of contaminating your water supply with bacteria and dirt carried on board by guests and crew. The thought of the bacteria that cause athlete's foot, plus the shore dirt carried on by even bare feet, makes this system seem less than tasty.

Mast funnel

Another very simple, easy-to-construct system is a mast funnel (see Figure 3 on Page 31). As the funnel skirt can be unobtrusive and not affected by wind, it can be left in place whenever you wish. To collect the amazingly strong stream of water that runs down your mast once the rain sets in, you need only a semicircular skirt of stiff canvas and a piece of shock cord plus hose to reach either a jug or your water tanks. As a temporary or trial mast collector, you can wrap a short piece of half-inch-diameter line around the mast just above the gooseneck, secure it together lightly with a lashing of twine, and then let the end dangle into a funnel. The funnel will guide enough water into your waiting jug to encourage you to build a more efficient mast catchment system.

Sail-based systems

Sail-based water collection systems can be the most efficient choice at sea. But they only work in port if there is little wind or if the sail used is a riding sail. We've seen several different methods of catching the water that runs down a mainsail. Pete Sutter, a veteran San Francisco racer/sailmaker turned offshore cruiser, showed us the sim-

plest sail-based system we've seen, one he used on his Wylie 37, *Wild Spirit* (see Figure 4 below). He stitched a double layer of fabric along both sides of a mainsail seam, just above the first reef. The flap was tacked in place along the upper edge to produce a water trap that funneled rainwater forward to a small, half-inch inside-diameter, plastic, through-hull fitting. This system worked well even during fairly brisk sailing conditions as salt spray rarely reached the area above the first reef. For boats with high booms, it might be best to secure the flap below the reef points to take advantage of as much area of the sail as possible.

Sailcover works too

Only slightly less simple is the system Larry invented during our 49-day voyage from Japan to Canada on board *Seraffyn*. He turned our mainsail cover upside down and secured it to form a trough under the boom. His trough caught almost every bit of water that rolled down the sail and then funneled it forward to a reservoir area he created by lacing the head of the mainsail cover securely.

As we sailed closer to Canada, he added one simple modification that helped us arrive in port with full water tanks. He stitched a grommet to act as a hose holder at the low point of the reservoir (see Figure 5 on Page 32). What amazed us most was that during days when fog obscured the horizon, we caught up to 3 gallons of condensation during each 24-hour period. We liked this system and had the people who made our new mainsail cover for *Taleisin* sew a fabric udder into the head area. The udder folds out of sight inside the cover, except when we need it as part of the rain catchment system. Then a hose slips inside and is held by a lashing (see Figure 6 on Page 32).

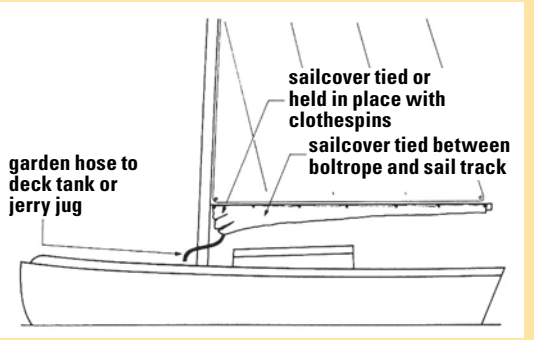
Andy Peterson, a Chicago sailmaker who is now cruising on his floating sail loft, a 57-foot ex-offshore racer, *Jakaranda*, originally showed us the cloth rain-funneling udders on his sun covers. We had him sew similar udders in four places near the edge of our sun cover, once we determined the best collection spots. We found they contributed to an excellent in-port rain collection system. But for any sun cover to be part of a collection system, it must be strong enough to hold up in winds of up to 25 knots. We had to reinforce our cover battens and batten pockets to make this workable. In stronger winds, the cover must be taken down and a smaller cover set in place.

For those with a soft-top Bimini, either udders or a cloth gutter similar to the one Pete sewed onto his mainsail can be secured along the outer edges of the top. This will work in port or at sea.

Spare jugs

Whatever rain collection system you try, it pays to have spare jugs to hold the water you catch. Even though the first runoff from a rain shower will

Figure 1. Passagemaking raincatcher



The Pardeys' "Unpatented Nearly Perfect Passagemaking Raincatcher," at left. Since it's unpatented, you're welcome to use Lin and Larry's big idea. In fact, that's what's so special about this cruising couple: they are always willing to share what they've learned during 40 years at sea.

Figure 2. Cabintop water collector

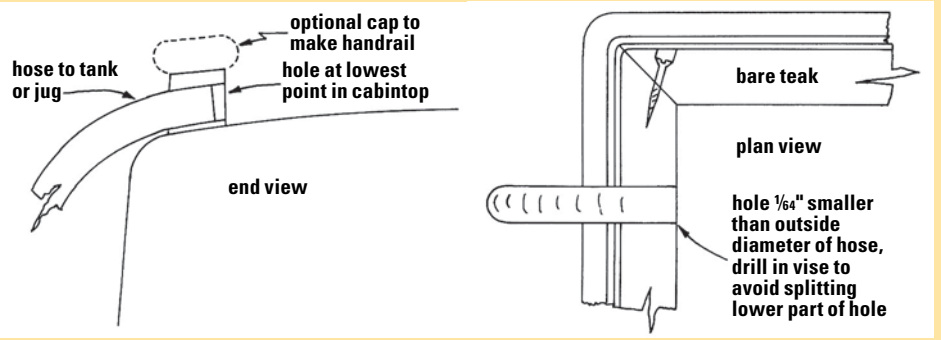


Figure 3. Mast funnel

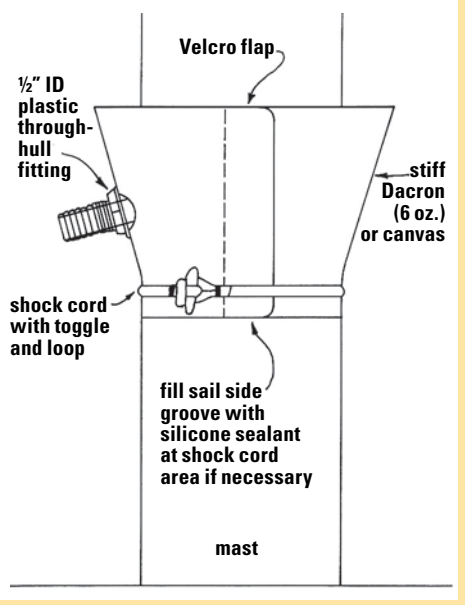


Figure 4. Pete Sutter's "Super Gutter"

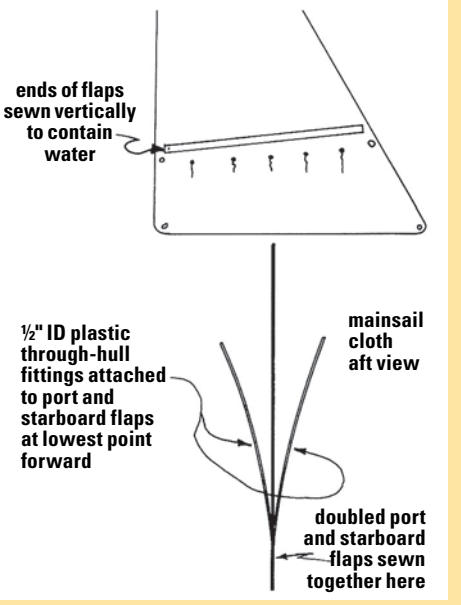


Figure 5. Larry's passagemaker's raincatcher

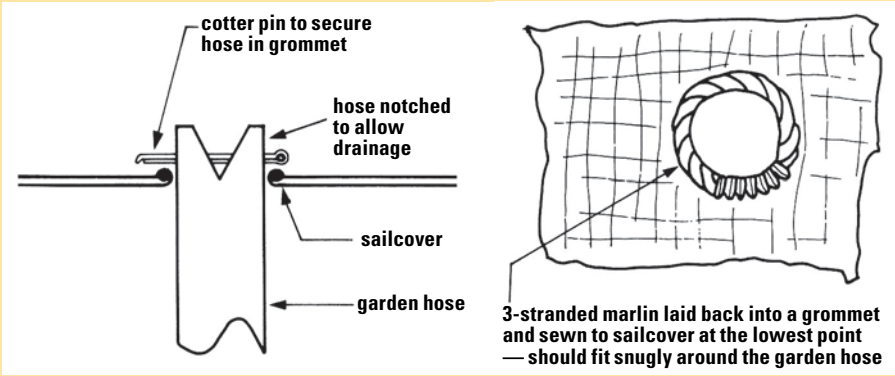
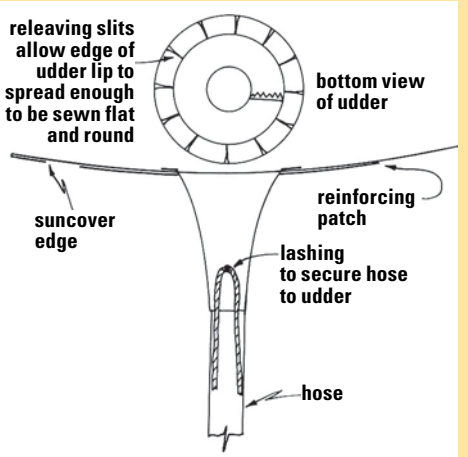


Figure 6. Rain-funneling udder



Details for Larry's passagemaker's raincatcher, above at left and center, and his "New Improved Super-Duper Rain-Funneling System with Udder," at right.

probably produce water that is slightly brackish as accumulated dust and salt is flushed off sails and rigging, in areas where rain is in short supply, this could still be useful for bathing and rinsing clothes. Without spare jugs you'd have to let it run off into the sea.

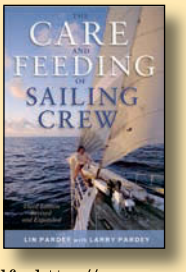
As you enjoy your first months of cruising, look around and consider these raincatcher ideas. Put on your foulweather gear and spend some time watching the rain flow off your boat the next time a shower or squall comes by. Follow the track of the heaviest flows and think of ways to form a dam or entrapment area. Try rigging a small cover to see how much extra water this will catch. We were amazed to find a 4- x 6-foot sun cover caught 5 gallons of rainwater for us during a 15-minute squall, so the catchment area need not cover your whole boat to be a helpful addition to your supply.

Some people will say, "Why not just add a mechanical watermaker?" But those on small budgets will find a water-augmenting system that works at almost no cost, uses no electricity, and requires little maintenance, means that your budget can be stretched to cover a few more months of cruising. Even those who do have watermakers on board should consider collecting the free rain that falls on board, especially in a tranquil harbor.

These simple devices could take the concern out of any electrical or mechanical failure that shuts down your watermaker. According to the Seven Seas Cruising Association equipment survey done in 2005, of the 156 sailors who had watermakers on board, 16 percent said they had required repairs during the preceding year.

Rainwater catchers could also give your generator a break. This will mean you are doing your small bit for the environment by using less fossil fuel and minimizing noise pollution.

For further reading . . .



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Expanding your range

Preparing for an extended coastal cruise

by Beth Leonard

KAREN LARSON

Tired of the same-old, same-old? Finding it hard to get enthusiastic about sailing territory that has, through long acquaintance, become familiar and mundane? Caught yourself fantasizing about some excitement, some spice, some challenge? An extended coastal cruise can re-ignite the entire family's passion for sailing by offering new challenges and the opportunity to build your skills while creating unforgettable memories.

If you have gained your sailing experience in protected coastal waters and have come to know your home cruising ground well enough to dispense with charts and instruments most of the time, the idea of an extended coastal cruise to unfamiliar waters can seem daunting. While you may dream of taking a three- to four-week excursion up or down the coast, you may worry about whether you have the proper boat, equipment, skills, and crew for such an undertaking.

In fact, most experienced weekend sailors underestimate their abilities and knowledge and overestimate the boat, equipment, and skills necessary for an extended coastal cruise. So take a close look at the essential ingredients — adequate time, a reliable and properly prepared boat, and a willing and enthusiastic crew — and figure out how you can put each in place for your next sailing season.

Adequate time

Adequate time is the ingredient in shortest supply for busy families. If you're planning an extended family adventure, don't skimp here. As a rule of thumb, you won't average more than what your boat can comfortably cover in a half day of sailing. Even this represents a moderate, not a relaxed, cruising pace. For 25- to 35-foot boats, that translates into something like 20 nautical miles a day or 140 to 150 miles per week. If your goal is to reach a new cruising ground, you'll want at least three weeks — a week each there and back and a week to cruise the area. A month will make the pace more manageable and allow some time to sit out bad weather or to spend an extra day in a favorite spot.

To be sure you have allowed enough time, agree on goals and priorities before setting off. This reduces the likelihood of conflict under way and prevents disappointments. Will everyone be happy if you just putter up the coast, or is there a specific place someone has his or her heart set on reaching? Do you want to sail every day or do you want to spend every few days ashore hiking or sightseeing? While you definitely don't want to end up constrained by a to-the-minute itinerary, agreeing on major priorities and understanding each person's preferences will help to ensure that everyone will return satisfied.

A month is a great deal of time for most families to commit, but the following suggestions can extend your range while maximizing the time cruising, as opposed to getting there.

- ***Take advantage of prevailing winds.*** Wherever possible, make miles downwind and plan short hops to windward. For example, if you're heading downwind to Maine from Long Island Sound, sail as quickly as you can to the farthest point you intend to reach on your trip, then turn around and cruise

slowly homeward, stopping at all the places you passed by on the way.

- ***Sail overnight to increase your range.*** Most boats can cover 100 miles in 24 hours of sailing, though the crew will then need a lay day to rest and recover. That increases a 25- to 35-foot boat's weekly range, bringing a more distant cruising ground within reach while increasing the skills of the entire crew.
- ***Use the engine to maximize your range.*** When cruising to a deadline, motoring in calm weather or motorsailing upwind will allow you to efficiently reach or return from a distant cruising ground, giving you more time to explore the new area.
- ***Make contingency plans.*** Locate marinas along your route where you could leave the boat if you run into bad weather, and figure out how to get home from those places. Having a friend or family member willing to pick you up somewhere will reduce the chance you'll try to keep going when you shouldn't.
- ***Don't depend on non-family members for crew.*** Too often, plans change and your vacation ends up the casualty. Invite crew along, especially experienced crew, and be glad if it all works out, but be ready in case it doesn't. Either be prepared to manage with your regular crew or know where you can leave the boat.
- ***Cruise over two seasons.*** Schedule your extended cruises for the end of one season and the beginning of the next to effectively double your range. It might be cheaper to leave the boat for the winter somewhere other than in your home waters.

"As a rule of thumb, you won't average more than what your boat can comfortably cover in a half day of sailing."

A properly prepared boat

Assuming you have a boat you know and trust — one whose basic comfort level suits you for weekend cruising, one capable of carrying and accommodating your regular crew overnight, one with a reliable engine, and one you and your crew have the confidence and skills to handle under sail and power — you have a boat that can take you for an extended coastal cruise. An engine need not be considered an essential requirement for those with flexible schedules who have sailed extensively without one. However, a reliable engine offers an added margin of safety in unfamiliar waters and allows you to cruise to a schedule, which most people will have to do when trying to fit an extended coastal cruise into limited vacation time.

If your weekend sailboat meets these basic requirements, what do you need to do to thoroughly prepare it for a successful three- to four-week coastal cruise?

- ***Make the boat watertight.*** Boats that spend most of their lives tied to a dock, or daysailing in protected waters, often seem perfectly dry until they get out in open water in a hard rain and moderate seas. The most positive and good-natured crew will find it difficult to enjoy a month spent among wet bedding, mildewed clothes, and moldy books. Find and fix any leaks before you go! Assume you have a leak wherever you see any sign of weathered or rotting wood, green corrosion, rust, or drip marks. Dirt leaching out from under portlight surrounds or rusty bolts on deck fittings almost always signal leaks. Spend time aboard during a severe downpour and look for even a single drop of water. Under way in a moderate sea with the hull flexing, that drip will become an annoying leak.
- ***Chafe-proof the boat.*** Almost all boats have areas prone to chafe, but these rarely cause problems when a boat is sailed for an hour or two at a time or anchored only occasionally. But sail for a day at a time or anchor every night for a couple of weeks and those chafe-prone areas can lead to a parted halyard or anchor rode. Go over every line

If you doubt that your boat is up to an extended offshore cruise, take a look at *Isa Lei*, a 30-foot, 30-year-old Pioneer Van de Stadt, which completed a nine-year circumnavigation.

If you don't already have one, a dodger is a worthy addition to your boat if you intend to make an extended solo or family coastal cruise an annual event.

Water damage to wood on a hatch surround, top, almost always means that the hatch is leaking and needs to be fixed. The peeling area where the overhead meets the bulkhead, the discolored wood, and the green color around the screw heads, center, all indicate a leak in the vicinity. This leak was caused by a deck fitting that had been removed without adequately sealing the resulting hole. Many coastal boats lack proper fairleads and have sharp toerails, which can easily lead to chafe, bottom.

on your boat — all running rigging, halyards, sheets, docklines, anchor rodes — and look for signs of chafe. Reinforced water hose prevents chafe on docklines. Fire hose stows better for use on anchor rodes or snubbers. Split hose fitted around shrouds will prevent sheet chafe. Creating a fairlead by changing the angle of entry or exit for a line, or by adding a turning block in a strategic location, will end chafe on running rigging. Simple fixes can eliminate most chafe on most boats, and the small investment of time and money before you head off will be rewarded with fewer dramas.

- ***Upgrade temperature control.*** If you've sailed your boat extensively on weekends, you already know if you have adequate ventilation aboard. Now's the time to install that fan in the galley or buy that windscoop for the forepeak. A dodger will protect you in wet weather, provide shade on hot summer days, and give you a "room with a view" for cocktail hour. If you're considering a month in Maine or British Columbia, a heater will change the experience from roughing it to cruising in comfort on a damp, cold day.

In addition to reviewing the basics, take a look at the equipment aboard. Quite likely your boat already carries most or all of this gear. Where you have gaps, you may be able to buy used or borrow. With the exception of a dinghy or an autopilot, none of these items costs more than a couple hundred dollars.

- ***Safety.*** On any well-found boat, the safety of its crew depends first and foremost on keeping them aboard. To ensure crew-overboard equipment and procedures never have to be used in earnest, every boat should be equipped with jacklines and with a preventer for the boom so an accidental jibe does not result in a crewmember going overboard. Jacklines and harnesses should be used by everyone when overnight sailing and at all times by kids, pets, or anyone with balance problems. Netting inside the lifelines will also help keep kids and pets aboard. An accidental jibe can happen anywhere, anytime, and crew lost during a jibe may end up injured or unconscious. A simple, safe, easy-to-use boom preventer offers the best insurance against both the jibe and its consequences. On boats up to 35 feet or so, a vang to the toerail is easy, effective, and simple enough that it will be used.
- ***Ground tackle.*** Many weekend boats spend most of their time tied to docks or moorings and don't carry ground tackle on the bow. But for an extended coastal cruise, marinas and moorings won't be options all of the time. From a safety perspective, the crew needs to be able to deploy an anchor quickly in case the engine dies while entering a harbor, or for use as a kedge if the boat goes aground. If the boat can carry the weight on the bow, the stemhead can often be retrofitted with a bow roller upon which an anchor can be mounted. Alternatively, lightweight Fortress or Danforth anchors stow almost anywhere; the stern pulpit or coachroof are two common choices. A 10- to 12-foot chain can be stowed in a bucket, 100 feet of nylon rode can be stowed in a mesh bag, and both can be carried in a cockpit locker. With the addition of a couple of shackles and a bit of practice, the whole arrangement can be put together and deployed in less than five minutes.
- ***Sail handling.*** Sail-handling arrangements must reflect the number of crew who will regularly sail the boat while coastal cruising. For most couples and families, that means setting the boat up for singlehanding in case one adult gets seasick or has to pay attention to the kids. Boats that have been set up for racing with a full crew will need to be modified to make sail handling safe and effective for one or two people. If you don't have one, consider investing in an autopilot. A simple lazy-jack solution for the mainsail will make dousing the main straightforward for one person with the boat on autopilot. Finally, proper-sized, self-tailing winches make shorthanded sailing safer and easier. Some non-self-tailing winches can be retrofitted with tailers purchased from marine stores, or a rope clutch can be used to control the line and effectively act as a self-tailer.

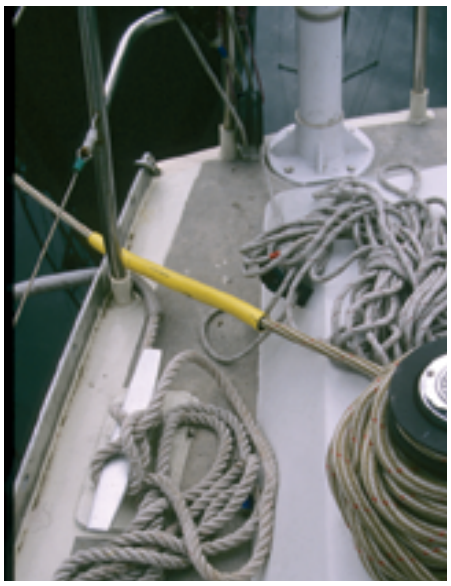
- ***Navigation.*** Most boats will already be equipped with a hand-bearing compass, binoculars, and a VHF. Crews without GPS should purchase an inexpensive hand-held model, as well as the relevant charts, tide tables, and cruising guides to the area they wish to cruise.
- ***Comforts and conveniences.*** The galley on most boats under 30 feet can best be described as Spartan. That doesn't mean you must subsist on sandwiches and canned soups for a month. A grill mounted on the stern can be used to cook meat, vegetables, and even pizza. A two-burner butane unit can double the stovetop capacity below. Insulated cooler bags stow more easily than rigid coolers for extending limited icebox capacity. Large thermoses keep water hot for use when washing up after the meal. With a little ingenuity and some split-second timing, the humblest of galleys can produce gourmet meals.
- ***Transportation.*** One other thing your weekend sailboat absolutely requires, which it may not already have, is transportation for taking the crew ashore. If your boat lacks a tender, the acquisition of something suitable need not be expensive if you can forego purchasing an outboard. Some yacht clubs allow members to borrow dinghies. Roto-molded hard dinghies can be purchased new for less than $500. Used inflatables can often be found for bargain prices. It must be possible to stow the dinghy aboard during those times when weather or waves make it dangerous to tow.

Willing, enthusiastic crew

When contemplating an extended coastal cruise, most people's thoughts turn first to the boat. In reality, whether cruising for a month or sailing around the world, the boat matters far less than the crew's interactions, expectations, and attitudes. Most deficiencies in the boat can be made up for with a smile, some laughter, and a dose of good cheer; but no boat or equipment can make up for a negative attitude aboard.

Whatever interactions and attitudes exist between crewmembers during a daysail or a weekend cruise, they'll be the same — but more so — on an extended cruise. Your first step in preparing for three or four weeks aboard consists of honestly evaluating those interactions and talking about them with your crew. The following rules ensure clear communication, which in turn facilitates good interactions (though Evans and I often find them easier to articulate than to implement).

- ***Use words well.*** Anyone with any sailing experience appreciates the need for proper terminology. Halyards, sheets, vangs, outhauls, downhauls, rodes, and docklines all have different names because we need to quickly and clearly distinguish between them. But using words well extends beyond using the proper terms for things aboard. When there are 25 white boats in the harbor, "We'll anchor behind the white boat" does nothing to clarify the situation. Words like "no" and "go" can be easily confused, with disastrous results. Evans and I both tend to say "OK" too frequently and in too many different situations. When coming into a harbor to anchor, an "OK?" that means "Is that fishing boat heading for the pier and, if so, are we OK or are we about to be run over?" sounds exactly like "OK, we're in the perfect spot; go ahead and drop the anchor."
- ***Develop a shared action plan.*** Before any maneuver, no matter how routine, take a few minutes to agree on a plan of action. This can be as simple as "We'll drop the anchor between the black ketch and the sloop with the blue sailcover and fall back into the gap behind them." In other situations, like entering an unfamiliar harbor with unmarked hazards, it may take 10 or 15 minutes to agree on a plan and some contingencies. Knowing which crewmember will drop the anchor if you can't find the church steeple that acts as a leading mark reduces the tension, increases your safety, and increases your self-confidence and enjoyment.
- ***Know when not to say anything.*** For some reason, boats seem to remove a certain inhibition that we naturally assume on land. Yet on a boat, one person's bad attitude quickly infects everyone. So a major part of clear communications aboard lies in not commenting on



Short sections of reinforced water hose, top, are easy to coil and store and can protect docklines from chafe. Fire hose, center, stows readily in chain lockers or bags and makes excellent chafe protection for snubbers and rodes as well as for docklines. Sanitation or water hose, bottom, can be split and then fitted around shrouds to prevent sheet and sail chafe.

These jacklines, consisting of a ¼-inch Spectra line threaded through the red webbing, are strong but won't roll underfoot.

This 34-foot boat has a robust bow roller capable of holding a large anchor. Bow rollers can be retrofitted on many boats.

the irrelevant, uncontrollable, or annoying — unless you can do so humorously. If you're wet and miserable, chances are everyone else is as well. If a crewmember overreacts to something, just let it go! If it still bothers you an hour or a day later, then sit down and go over it calmly and rationally and agree on how you will avoid similar situations in the future.

Finally, talk through everyone's expectations with respect to life aboard. Some people find it easier to "rough it" on a small, simple boat than others do. But rather than buying a new boat or not going at all, find ways to compromise by putting money into pampering yourself once in a while. If your galley is cramped and difficult to work in, plan on eating out several nights a week. If you don't have a shower aboard or the necessary water tankage, arrange to stay in a bed and breakfast once or twice during the cruise.

In addition to a positive attitude on board, you also need a complement of basic sailing skills. Your crew needs to have mastered sail handling (raising, reefing, and dousing); coastal navigation, using traditional aids to navigation (not just the GPS!); boat handling, including maneuvering under sail and power, anchoring, and docking; and crew-overboard procedures. Most weekend sailors don't realize the range and depth of skills they have acquired, but can easily identify where they lack experience. In those areas, take a bit of time to practice before you head off on your longer cruise. Anchor out instead of staying in the marina; sail in winds strong enough to require a reef; use the hand-bearing compass to locate your position on the chart during a daysail; and practice crew-overboard techniques. By the time you get ready to leave your home waters, your crew does not need to have mastered all of these skills, but all should know what's expected of them and be willing to do their best.

If you and your family enjoy sailing, but have found that you're using your boat less and less, planning and preparing for several weeks or a month aboard just may re-ignite your interest and remind you why you bought that lovely sailboat in the first place. The first step — leaving your home waters and mastering the skills necessary to enter strange harbors with confidence and handle new challenges like tides and currents — is the hardest one. From there, it's only another small step to six months or a year spent cruising down to Baja or out to the Bahamas.

Beth Leonard started out as a weekend sailor on the Great Lakes but her range now extends to the bottom of South America, where she and her husband, Evans Starzinger, spent the Southern Hemisphere winter of '07–'08 aboard Hawk, *their 47-foot Van De Stadt Samoa sloop. Read more about their adventures at <http://www.bethandevans.com>.*

Anchors like the Fortress and Danforth stow well in chocks on the coachroof or pulpit.

A block-and-tackle or vang strapped to the toerail makes an adequate and easy-to-use poor man's preventer.

Fridge-less cruising

No regrets with this lifestyle alternative

by Connie McBride

Connie shows how hatches in the cabin sole provide easy access to these cans for daily use.

At some point in everyone's life, it becomes necessary to stop and think. Consider for a moment: are you doing what you are doing today because it is what you *want* to do or because it is what you did yesterday?

The lifestyle Dave and I have chosen is not always easy. Our 34-foot sailboat is our home, our ticket to see the world, and the sum of all of our assets. So when the boat seems too small, the ocean too big and scary, or life in general just too hard, we ask ourselves, "Why do we do this?" The answer varies but always revolves around a simpler, slower, and easier way of life for us and our three sons.

Any system you have on a boat will break, creating stress. Since we are trying to eliminate stress from our lives, it is no surprise that when something quits working on *Eurisko* we do not run to the nearest chandlery to replace it. Instead, we consider if we really need it at all. For the last seven years, except when it concerned rigging, the answer has often been "no." Once we remove the broken piece of equipment, the boat is lighter and faster, we have more room aboard, and our lives are simpler.

We applied this philosophy to our refrigerator years ago when it died of old age. There was no need for a family meeting or discussion; Dave simply removed the entire system and gained another tool locker in the process. Cooling our perishables with ice was the logical solution until we realized that we now had to find civilization at least once a week. We tolerated the icebox alternative for a few months until it became an expensive hassle. In Georgetown, Bahamas, in 2004, an 8-pound bag of cubes cost $6.

This outrage led to the familiar question: "Why buy ice?" The answer was: "So our food does not spoil." Which led to another question: "But do we have to keep food cool . . . or are we doing it *only* because we always have done it this way?"

Like most boaters, we had heard — but did not quite believe — that chilled food is a luxury, not a necessity. We decided to try it for ourselves, and the results were better than we had hoped. We can keep most "refrigerate-after-opening foods" at room temperature for as long as it takes us to use them, even when the room is rarely cooler than 80 degrees. (I just checked the inside boat temperature: 95 degrees in October in Trinidad.) There are a few tricks to keeping perishables from perishing, though, so we have had to alter how we handle food. When compared with the bother and expense of refrigeration and ice, these changes seem minor.

Many cruisers have written about storing eggs for a maximum length of time. Lin Pardey, in *The Care and Feeding of Sailing Crew*, mentions coating the eggs with Vaseline or sodium silicate. She has kept eggs for as long as three months by turning them three times a week. "If they sit for a week without turning, they'll start to deteriorate after 25 days or so," she writes.

A different technique

Unlike Lin, I have never been on a passage longer than 14 days. I am rather forgetful and admittedly a bit lazy, so my technique is different. I buy the eggs, put them in the warm box that out of habit we still call "the fridge," and use them when I am ready. In other words, I do nothing special except that I crack them into a separate bowl, rather than into a pan or a bowl containing other ingredients, to check for freshness. Using this do-nothing method, I have kept eggs for as long as

Dave provisioning.

Son David's 23-pound record fish, soon to add variety to the McBride family menu.

three weeks and have lost fewer than a dozen in four years — less than the price of even one bag of ice.

In *Care and Feeding*, Lin also writes that you do not have to keep mayonnaise cold if you never put a dirty utensil back into the jar. From experience, I know that kids are forgetful and unlikely to make such a subtle distinction. For them, we needed a consistent rule: never put *any* utensil in the jar. Instead, we shake mayo into a cup and use it from there. Not only does our mayo last up to a month after opening, we have even eaten leftover potato salad the following day for lunch.

We buy plastic jars of mayonnaise when possible to make this easier, since you can squeeze the jar. Shaking mayo out does work with a glass jar, albeit more slowly. Since mayonnaise and jelly are now sold in squeeze containers, this is the best option when they're available. We have also bought single-use packages from a restaurant-supply store. When neither of these choices is available, we buy jelly in small jars. Since it is nearly impossible to shake jelly out of a jar, we use a spoon to remove it but a knife to spread it, thus making the dirty utensil easy to identify. Before we instituted this jelly rule, what remained in a jelly jar would mold within a week. With our new rule, we have learned that jelly will keep for at least three weeks. (These days the jar is empty before the jelly spoils.)

Keeping dairy products

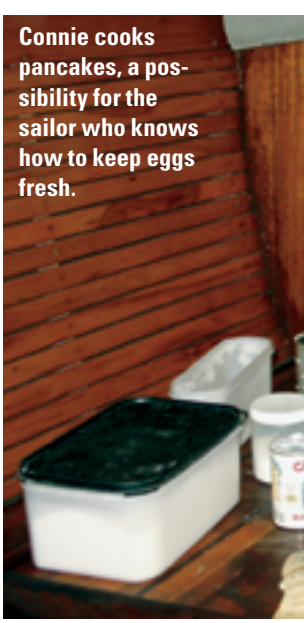
Mustard, ketchup, hot sauces, pickles, relish, hot peppers, and salad dressing have rarely spoiled in our "warm box." Butter and margarine, however, must be handled carefully. Sticks of margarine do not melt and will keep for up to a month. We store each pound in a clean plastic food-storage container, date it, and rotate our stock. We found that margarine in a tub generally melts at a lower temperature and the containers do not seal well enough to prevent disastrous accidents. Butter melts more easily than stick margarine too, but since I enjoy baking, we always have a pound or more that I use before it turns rancid. As an emergency backup, we store a pound of canned butter, something we have found only in the Bahamas and Dutch islands. Canned margarine is really just yellow shortening, and you can only use it as such without being disappointed.

Other dairy products, such as cheese and milk, required us to change our behavior when living without a cooler. We now buy cheese in small portions, store each one in a separate airtight container, and try to use it all within a few days once we open a package. Unopened, it does not mold for weeks, though it does get sharper. Hard cheeses, such as Parmesan and Romano, stay fresh much longer.

We used to buy UHT milk (Parmalat, for example) until a few of the unopened boxes spoiled. After opening, they lasted less than a day without refrigeration. Now we carry canned cream, evaporated milk, and condensed milk for cooking and baking. For everyday milk we use Nido or other brands of powdered whole milk and mix only what we need. We use this in cereal, coffee, and for cooking, and it tastes . . . like warm milk.

The problem with meat

Meat presents its own set of problems when you have no means of keeping it cool. In port, we often buy fresh meat only a few hours before we plan to cook it. We wrap frozen meat in layers of towels and are able to store it in an insulated cold/hot bag for up to 24 hours before cooking. On passages, in secluded anchorages, or on wet and windy days when we do not want to leave the boat, we



Connie cooks pancakes, a possibility for the sailor who knows how to keep eggs fresh.

choose from our other options.

Canned meat is the first solution most boaters consider, and we do eat a considerable amount of it. We store Spam, corned beef, canned hot dogs (found in Dutch islands and Trinidad), ham, tuna, salmon, meatballs, turkey, chicken, and roast beef. A special treat we discovered in Trinidad is canned tuna with potato salad, Mexican salad, or pasta salad — a complete meal in one can. In some places, certain canned meats are unavailable, and we try to stock up on these when we can. We have also ordered canned chicken, turkey, and beef from Werling and Sons, <http://www.werlingandsons.com>, 888-375-1998.

Chorizo and ham tidbits are sold warm in the States, and we have kept them for several weeks before using. Once opened, we treat them like fresh meat and cook them immediately. We buy cured hams when we find them and have taken up to a month to finish one. After opening it the first time, we wipe the ham down with vinegar. Anytime we use some, we wipe the newly exposed area with vinegar, as well. On French islands, we have found a hard, waxed sausage that we store at room temperature for weeks before opening and then use within 24 hours.

Since these meats are often expensive and high in sodium, we have found several alternatives. Soya chunks (textured vegetable protein) are available in a variety of sizes for different dishes. The smaller pieces are an acceptable replacement for meat in shepherd's pie, for example.

Beans and accompanying side dishes — one example of the healthy and filling meals that can be prepared with advance planning.

Dave McBride's Bean Burgers

In a medium mixing bowl combine:
- 2 cans black beans (drained)
- 4 cloves of minced garlic
- 2 teaspoons cumin
- ½ teaspoon thyme
- 1 tablespoon smoked paprika
- black pepper

Mash with a potato masher until most, but not all, of the beans are broken.

Stir in:
- 3 to 4 tablespoons dark soy sauce
- ½ cup flour

Let stand 20 minutes.

Fry over medium/high heat in olive oil. Drop into the skillet and form into patties with the edge of the masher.

Fry until patties are firm, with a nice crust, generally four minutes per side. Drain on paper towels and keep warm in oven until ready to serve.
Makes eight burgers.

Options:
Include soaked diced chipotle peppers. Substitute sage for thyme. Substitute wood smoke for smoked paprika. Form into sausage shapes, roll in bread crumbs, and fry.

By far, our favorite meat alternatives are beans. We carry dry lentils, split peas, garbanzo beans, red beans, pink beans, and black beans. For those occasions when even a pressure cooker is not going to be quick enough, we also have cans of garbanzo beans, pigeon peas, and black beans. Dave is becoming quite proficient at making tortillas and pita bread. We use the tortillas for bean and rice burritos and for chimichangas, and the pitas for hummus and dhal (lentils). Meatless chili, three-bean salad, curried chickpeas and vegetables, and lentil soup are some of our bean meals, but the family favorite is bean burgers. When the boys have friends over for dinner we generally do not even tell them the burgers are not real and they rarely ask. In color, texture, and flavor, bean burgers are nearly identical to ground beef burgers. The five of us actually prefer them, even when ground beef is readily available. Much of Dave's bean-cooking knowledge, and a few recipes, came from Janet Horsley's *Bean Cuisine*. He also uses *The Joy of Cooking* as a reference.

Fresh produce challenges

Keeping produce fresh without refrigeration is a challenge. We remove any plastic wrap or bags immediately and keep produce separated. Over the years as I have learned new techniques for storing produce, I have jotted them down. Reviewing my notes, I see that onions are best stored in the light and definitely not with potatoes, which should be stored in the dark, preferably with apples. Apples, on the other hand, should never be stored with citrus fruits. Unfortunately, we can never seem to remember any of that, so we store all of our produce in separate hanging baskets. Since so much of our food is canned, Dave cooks with a lot of garlic and onions to liven meals up a bit.

Our lifestyle requires that we stop traveling for a few months each year to earn money, so we occasionally get to put down roots. Literally. Our middle son enjoys gardening, and we enjoy the results. When we are stopped, he grows tomatoes, peppers, and herbs in small pots on deck. We are still eating dried jalapenos and cayenne peppers from his last garden six months ago.

Little is wasted

In the four years we have been without a fridge, we have thrown away a surprisingly small amount of food. One exception is leftovers. Until last year, there were few leftovers; we had three teenage boys. With two boys away at college now, things have changed. If we have enough food left for lunch the following day, we put it in a clean airtight container. We simply store one-pot meals, such as soups and casseroles,

Cooking eggplant parmesan.

covered in the pot. The next day, if whatever is in the pot still smells fine, we reheat the food for a minimum of 10 minutes before eating.

The sense of smell is a well-used tool when living without refrigeration. We give everything a test sniff before eating it: eggs, mayo, jelly, leftovers, and even canned food. We know some foods will mold overnight. For example, if Dave wants to include fresh tomatoes in a dish, he will put them on the side instead so they will not ruin any leftovers. Using our noses and common sense, none of us has ever suffered any ill effects from food prepared on board.

One concession to our warm-food lifestyle occurs when we go offshore. The boys fish sunrise to sunset and often catch tuna, dolphin, mackerel, and wahoo. Even five of us cannot eat an entire fish before it spoils. Therefore, before we leave we ask friends to freeze gallon jugs of water for us to keep in the fridge. We can enjoy each fish for several days this way, perhaps until we catch another one, if we're lucky. The ice lasts about 10 days, and since we only have a 42-gallon water tank, the five extra gallons of water after the ice melts is a nice bonus.

A friend cruising on a large boat with all of the latest gadgets states firmly, "Refrigeration is the root of all boat problems." If his statement and our techniques seem extreme to some boaters, perhaps a compromise is more appropriate. Less food to cool means a smaller space and therefore a smaller and cheaper refrigeration unit (or less ice) necessary to cool it. Before purchasing your next fridge or bag of ice, consider all of your options, and you, too, may decide to cruise without a fridge.

Connie McBride left Kent Island, Maryland, in June 2002 with her husband, Dave, and three sons. Aboard their 34-foot Creekmore, Eurisko, *they cruised the U.S. East Coast and are sailing onward to yet-to-be-determined destinations.*

Five-year-old apple pie

Keeping track of 600 cans sensibly

I baked a pie last year using a perfectly good can of apple pie filling that was five years old. Before I started making the crust, I knew it was my last can and I knew exactly where it was. Considering that we have as many as 600 cans aboard *Eurisko*, there is a trick to knowing what is where for so long.

When we return to the boat with our provisions, we label and date every can with a permanent marker. Then we remove the paper labels. Part of our can storage is under the dinette table and impossible to get to when we are offshore. Therefore, half of each food type is stored there as a backup while the rest of the cans are stored in the bilge. Dave installed hatch openings in the cabin sole to allow for easy access to these lockers for daily use.

Every storage area has a name, and we write down where we stow each can. Later, we transfer this information to the alphabetized list that tells us how many cans of what food are stored in which locker. We can label, stow, and record 600 cans in an afternoon. Considering how much time we would spend searching for the ingredients for dinner without such a system, it is time well-spent. When we remove a can, we write a hash mark in the margin so we always have an accurate record of the food remaining. We take this list with us the next time we provision to help us remember what we need to replace.

Many boaters coat their cans with varnish or vegetable oil before storing. Since we generally have a dry boat, we decided to line the lockers with Dri-Dek and see how long the cans lasted with no extra preparation. Once a year, before a large provisioning run, we remove all of the remaining cans (usually about 100) and move them to one locker so we know to use those first. At this time, we throw away any cans that appear to be bulging or are possibly rusted through . . . about two cans a year.

After one particularly wet passage (beating to windward for 1,500 miles), we discovered salt water in some of our can lockers. We removed all of the cans, rinsed them in fresh water, and set them in the sun to dry. Before returning them to the newly cleaned and dried locker, we wiped each can with a bit of vegetable oil. These cans have lasted as long as others that have never been wet.

When I decided to bake a pie, I looked up "pie filling — apple" on the 13-page list and saw that there was one left in "Aft 3." I lifted the lid to the bilge lockers, moved a few cans around, and saw one marked "apple pie filling 6/02." That is how, for dessert last year, we ate a five-year-old apple pie.

The first 10,000 miles

Lessons learned by a would-be circumnavigator

by Paul Denton

Choosing and equipping your voyaging boat is all about compromise. Among other considerations, you have to balance initial costs, operating costs, weight, storage, and function (both for the boat itself and for each of its systems). Over the last several years, we have rehabbed our boat, planned a circumnavigation, and set out on the voyage. After a year under way and 10,000 miles under the keel (a mere beginning in the world of bluewater voyaging), I have a few comments about how some of those decisions worked out.

Five years ago I met an adventurous and salty lady. We put together a partnership, which flowered into a marriage. Over a period of three years, we got my boat ready and simplified our land lives and finances. We set out around the world: Cape Cod to North Carolina, Bermuda, Panama (a non-stop straight shot), Galapagos, French Polynesia from the Marquesas to the Societies, Rarotonga in the Cook Islands, Niue (the Rock), the Kingdom of Tonga, Fiji, and, finally, the Bay of Islands in northern New Zealand. All this in one year.

What a ride! None of the things that keep would-be cruisers up at night happened: no pirates, no rogue waves, no hurricanes, no freighter collisions, no heart attacks or broken legs, no shark attacks, and nobody fell overboard. The sailing was fun and the destinations were fantastic — all as advertised. The boat and equipment have performed more or less as we hoped and expected. But we have learned a few lessons along the way.

First decision: the boat

When we decided to circumnavigate, I already had a Whitby 42 ketch. *Blue Stocking* was built in 1982 and was showing her age. We wondered whether we should fix her up and sell her and then buy something more ideally suited, or whether we should simply fix her up for the journey. All boats, new or old, have disadvantages and problems. We decided, given the constraints of time and money, to stay with the familiar disadvantages and problems rather than buy a new set.

We hauled *Blue Stocking* out and began a two-year rehab. This involved, among many other things, removing the engine and rig for rebuilding; building a temporary shelter (two winters); rebuilding the engine; stripping and painting the masts and replacing the rigging wire and fittings; body work and painting the topsides, house, and deck; installation of new equipment; and putting it all back together, launching, and shaking down.

I'm not that worried about appearance or resale value — at her age she is not worth that much (in dollars) and, as a result, I have not put as much time into interior cosmetics as many boatowners do in reconditioning a boat for a voyage. I kept the focus as much as possible on function. During the coldest part of the two New England winters we worked indoors, mainly on building four new sails and a Jordan series drogue.

Living with limitations

We did successfully correct most of *Blue Stocking*'s problems in the rehab but, of course, the disadvantages of a particular design are hard to eliminate. The Whitby was built for comfort and capacity so *BS* (my nickname for the old girl) is not especially weatherly, and that didn't change. She has a full keel with a cut-away forefoot and a

keel-hung rudder with an aperture prop. I would happily trade a foot of draft for a balanced skeg-hung rudder: *Blue Stocking* often needs a lot of steering force under sail and she is absurdly unpredictable in reverse under power. I avoid marinas anyway, but I just about need tugboats for docking and maneuvering close in. This can be frustrating and embarrassing.

The ketch rig, at least on this boat, has never impressed me, although it was a big selling point when I bought her. I'd much prefer a cutter. About the only time I use the mizzen is upwind or on a reach in a lot of wind (over 25 knots, say). Then, I drop the main entirely and sail on jib and jigger. In most other circumstances, the mizzen seems mostly to add weather helm and heeling moment but not much effective velocity.

The mizzen mast is useful for a lot of things: radome, wind generator if we had one, mizzen staysail if we had one. But the extra rigging is a bit of a pain; the shrouds make moving about on the after part of the boat tricky.

In general, I have found it difficult to set up the sailplan to minimize weather helm, especially once she starts to round up due to wave action. We use a block and tackle from the boom to the side rail as a vang/preventer downwind. The tail of the tackle runs to the cockpit so the preventer can be eased in a controlled way during an intentional jibe or if we are taken aback. This has worked pretty well.

The Dutchman boom brake we installed was way too fussy and we gave up on it.

Abundant benefits

Overall, *Blue Stocking*'s advantages — comfort, seakindliness, and capacity — have greatly outweighed her limitations and rehabbing her was a good choice. Most boats do fine in the long downwind tradewind passages. But *BS* really showed her stuff on the long upwind slog from Fiji to New Zealand. We did that 1,200-mile run in eight-and-a-half days, with apparent winds over 30 knots at least a third of the time.

Taking everything apart and putting it all back together during the rehab was invaluable, both for developing knowledge and confidence for future repairs and modifications as well as for predicting what tools and parts would be especially helpful to have on board during the voyage.

We started out with a pretty good under-deck autopilot and an antiquated windvane unit that someone had given us and I installed at the last minute. It was worth what we paid for it and we left it behind in North Carolina. The autopilot was amazingly effective; it got us almost all the way to Rarotonga. However, three of us had to hand-steer for the last three days or so of that passage when the electric drive arm bit the dust. (Eight hours a day of hand-steering for several days is not an overwhelming burden, but it's no walk in the park either.)

> **"You want the boat to handle routine steering on her own almost all of the time."**

Self-steering is key

Don't leave home without self-steering gear. You are going to want the boat to handle routine steering on her own almost all of the time. That is the overwhelming consensus among the voyagers I've talked to out here. An electronic autopilot is very nice to have, but these can and do break down. A functioning and effective windvane self-steering mechanism is a crucial ingredient in pleasant voyaging. I am speaking as one who has not yet achieved this ideal. When they work, windvanes are quiet, use no energy, and are easy to maintain and repair, compared with the black-box electronics of a modern autopilot.

The boat at the quay next to us in Rarotonga had a Hydrovane unit for sale. We bought it (on approval, fortunately) and were able to install it using the existing transom brackets (from another brand entirely) which I hadn't removed. You would think that with this set of happy coincidences, the darned thing would at least work, but it didn't. I met up with the seller in Tonga and gave it back with my thanks. With repairs and improvements, the autopilot has been working pretty well some of the time, but after the 1,200-mile bash

Snapshots mark highlights of the first 10,000 miles, facing page. This page: The Sailomat self-steering system, *Blue Stocking*'s third, would get its sea trial on the second 10,000 miles, at right.

The sewing machine used when making the sails also proved useful during the voyage.

to windward from Fiji to New Zealand, I didn't want to rely on it entirely.

In January 2008, I bought a used Sailomat in Opua, New Zealand. After a lot of adjustment I got it working pretty well, but always with much baby-sitting and always with a lot of yawing, even after I contrived a way to adjust the vane from the center cockpit.

I wish I had nailed this problem down before I set out. My sense is that most voyaging boats have both systems — autopilot and windvane. The autopilot works most of the time and is a lot more convenient unless it breaks down. The windvane hangs there as a backup system and when it is needed the crew may not have the experience to get it to function effectively. Of course, if the autopilot fails a long way from port, they will get a chance to figure it out.

Safety issues

Volumes have been written on the topic of safety, but I will make one observation about harnesses and jacklines. The conventional wisdom is to use flat webbing jacklines because they do not roll underfoot. Webbing, like all fabric, is vulnerable to UV breakdown and becomes gradually and unpredictably weaker as it lies in the sun month after month. We decided to use ordinary ½-inch double braid, reasoning that the inner core alone is adequate to the loads and that the outer core helps protect the inner core from UV breakdown. Regardless, jacklines, should be renewed on a regular basis and stowed between passages.

Maybe a sheathed material for flat jacklines is available, but I've never seen it. There are already lots of lines underfoot on *BS* so I couldn't see that one more made much of a difference. As much as possible, it's a good idea to keep the jacklines near the centerline and the tethers short so that being thrown over the side is less likely. The big problem with harnesses, of course, is that you ought to use them more or less all the time, and most of us don't want to do that. I use them (and encourage the crew to use them) all the time at night and most of the time when I am out of the cockpit. The more you use them, the easier they are to use. A short extra tether is handy for transfers from jackline to jackline (if your setup makes that necessary) in really hairy conditions.

New sails for the voyage

Blue Stocking is a ketch. She has five working sails, which when we started the refit were already 20 years old. That may be good enough for casual cruising, but we wanted to start with new sails for a circumnavigation. I had more time and energy than money, so I decided to build a sail from a Sailrite kit and see how it went. It was time-consuming, but I found the work pleasant and it saved about half the price of professionally built sails. Encouraged, I ended up building the working jib, the mainsail, the staysail, and the mizzen.

I built two sails in each of two winters, while it was too cold to do much else on the boat. They have stood up pretty well with no major failures. I made the main with full-length battens, which has been nice in many ways — a lot less flogging for one thing. But the battens hit the lower shrouds, even with the boom only halfway out. Naturally, there is chafe-through at these points. I haven't figured out the best way to deal with this. I tried sewing some hard plastic wear strips on the outside of the batten pockets but they tore off after a few hours. After consultation and reading, I decided to put chafe strips of 2-inch-wide Spectra webbing on both sides of the batten pockets where the chafe damage is obvious.

It has also been hard to keep the Dutchman track slides fastened to the sail, especially the upper ones which are in use whether the sail is reefed or not. They are fairly cheap, though, and easy to replace. The Dutchman track-and-slide system and the Dutchman sail-flaking system were, in general, excellent choices, although they do require some regular maintenance. It's very comforting to be able to pull the main down for reefing or dousing without having to round up into the wind, something that can be a hairy business in a seaway. A manufactured track-and-slide system (there are several out there) can make this possible, if not easy.

Making an entire suit of sails for a 40-footer is not going to be most people's choice for a winter activity. Still, I would encourage sailors to get a good machine and build a small sail or a

few canvas projects. This will give you the skills, tools, and confidence to do many sail and canvas repairs. It will also enable you to talk more intelligently and effectively with sailmakers. In remote places, you may know more than the sail repairer does. With tact, that can make for a good collaboration and a better end result for the repair.

Solving water worries

It was a last-minute decision, but I conjured up a homemade watermaker from generic parts following instructions from a *Good Old Boat* article (January 2003). It works great: 25 gallons an hour for less than $2,000. If you're thinking about buying and installing a commercial watermaker, consider making your own. Apart from a little desk time figuring out the right combination of parts to use for your boat, it's really pretty much the same work as installing a commercial one.

I set mine up in the garage and tested it part by part before installing it on *Blue Stocking*. That way, I was pretty sure it would work. The best thing about home-brewed is that, if it breaks down, all the parts are generic and available in any city in the world.

You can do without a watermaker, but it is nice not to have to pay for water of questionable quality and you don't burden the supplies of islands that have little to spare. We've met some cruisers who enjoy catching fresh water the way others enjoy catching fish, but I don't share their enthusiasm. It's nice not feeling compelled to hassle crewmembers about how much water they use. I thought I might be nuts when I took on this project, but it turned out to be an excellent decision.

Food matters

Another *Good Old Boat* article we used to our great benefit was the one on canning meat (July 2003 or January 2006). We canned about 90 pounds, and it was wonderful to have on board. You are not allowed to bring canned meat (homemade or otherwise) into New Zealand or Australia, so don't can too much if you're going there.

Components of *Blue Stocking*'s home-brewed watermaker occupy a locker under the chart table, near right. With the door closed, all that shows is the silver high-pressure gauge, far right.

"I conjured up a homemade watermaker from generic parts following instructions from a *Good Old Boat* article."

Generating electricity

We would have liked to have put on a wind generator and solar panels. I finally decided, though, that it made more economic sense to put a second alternator on the engine. *Blue Stocking* has four 6-volt batteries (Trojans) for 425 amp-hours, plus a separate small starting battery. The two alternators can bulk-charge at 150 amps without breaking a sweat, and I can even run the watermaker (which draws a hefty 65 amps to deliver its 25 gallons per hour . . . commercial ones are admittedly more efficient) and still be putting 100 amps or so into the batteries. I have had good success with ordinary (non-marine) high-capacity alternators. They are about one-third the price. (Gas engines require ignition-protected marine alternators. This is not an issue for diesels.)

Blue Stocking does not have a genset but has a 2,000-watt inverter, which seems to work fine for the microwave and even the toaster oven. I probably would *not* have put these appliances on a boat, but *BS* came with them, and they are handy. Even without them, I would have an inverter on board for power tools. As far as I can see, the only reason for a genset on a voyaging boat is if you want to use air conditioning away from the marina.

Battery health

The key to happy batteries and short charging times seems to be to start charging as soon as you get down to 50 percent and don't try to charge over 80 percent. This means having a large enough battery bank to meet your energy budget without dipping below 50 percent very often.

Whatever you decide to use for your energy needs, consider getting a modern battery monitor (mine is a Link 10) and learn what it can do. It will take most of the guesswork out of battery charging and increase the life and effectiveness of your charging system's components.

Clean fuel is essential to a diesel engine's reliability. A grit filter helps keep it clean and a vacuum gauge monitors the condition of the filter.

Living aboard at anchor, I need to run the engine about an hour a day if the refrigerator is running. At sea with the autopilot, the SSB, the radar, running lights, and that pesky computer all running much of the time, charge time can be two hours or even a little more. Often we have needed the engine for propulsion while under way and then the charging is essentially free. (Most voyagers seem to motor between 20 and 40 percent of their hours under way.)

I bought a used towable generator at a swap meet and couldn't wait to see if I could get some free amps while sailing. It didn't develop enough voltage under any conditions to charge the battery at all, perhaps because it was homemade.

Fuel and filters

I carry 200 gallons of fuel in three tanks (tankage is a great feature of the Whitby) and use just over half a gallon an hour for charging or motorsailing. It seems to me slightly unseamanlike to carry jerry jugs of diesel on deck, but it is definitely the current fashion. I'm glad I don't have to do it.

I installed a 100-micron cleanable grit filter in front of the usual Racor primary filters. This seems to have minimized filter clogs. I have lots of valves and filters and pumps to give me choices in moving fuel around, including the option of pre-filtering or polishing it as I transfer it from the storage tanks to the one I usually feed the engine with. Ideally, that tank never receives fuel directly from the outside, but I haven't always achieved the ideal and fuel, as delivered, often seems to have some grit or water in it. I have found that the Racor's vacuum gauge is among the most important instruments on the boat. I check it regularly when under way, especially at the beginning of voyages, when there has been a lot of pitching, and before a tricky maneuver, like going through a reef pass.

If you keep an eye on that gauge, you are less likely to be surprised by a filter clog and the engine croaking when you need it the most. As you know, almost all diesel-engine problems are fuel problems. Get clean fuel, free of air, to the injector pump and all will be well. For my next boat, or next refit, I will put in a small (say, 15-gallon) day tank with a drainable sump and nice big cleaning ports. I will feed it daily from the main tanks through the polishing system. Then I can be certain that the fuel to the engine will be clean, clean, clean.

Communications

I just love my Pactor, a system for sending email through the SSB radio. I have a ham general license. (Since the FCC got rid of the code requirement in 2007 there's no excuse not to have one now. The theory test is pretty basic — you ought to know this stuff anyway even if you have a marine SSB.)

With a general license, you can use Winlink, which is free and has shore stations all over the world. It seemed to me at first that the coverage in the Pacific was pretty thin, but the stations are outstanding — the two in New Zealand particularly so — and I always was able to connect from Cape Cod to New Zealand, although a few times it took some persistence.

If you are not a ham, you can use Sailmail, which is not free but pretty cheap. Sailmail uses the same hardware and software as Winlink but with different shore stations. People who have it seem to like it. It takes a little while to get your SSB — ham or marine — tuned up, but if you use it regularly you'll get the knack. We were often part of the informal SSB nets that voyagers use while on passage. The harder the passage is, it seems, the more you appreciate the net. A key element in the success of your SSB radio is the antenna tuner. *Blue Stocking* came with a separate automatic tuner made by SGC and it seems to work flawlessly. Satphones are great if you have the budget. Iridium seems to be the choice for ordinary mom-and-pop boats.

In port, more and more places have WiFi. I'm a half mile from town at anchor as I write this and have 24-hour Internet service on the boat for about $25 a month. This requires an external WiFi card and antenna, but they were pretty cheap. In population centers where there's no WiFi, you can usually find Internet cafes. Security is a big issue, however, when using these. I can use Skype, which is almost free, to call all over the world from the boat when I have WiFi, but sometimes the calls are a little comical: "Can you hear me now?"

The essential computer

As on most other voyaging boats, the laptop is essential equipment on *Blue Stocking* for communications, Internet, and charting . . . not to mention writing articles like this. Mine is a 5-year-old Toshiba. I have all the critical files

backed up in several forms, but it's going to be a serious setback when (not if) the hard drive crashes. When that time comes, I'll try to find a model that can boot from an external hard drive, something this one cannot do.

So far, I've managed to keep the computer dry, but this is a matter of concern and constant vigilance. I know from experience that a few drops on the keyboard can be fatal. Some cruisers keep a fully-loaded backup laptop in a vacuum-packed bag. Without that, I am prepared to be knocked back into the 19th century for a few weeks (or months, depending on the state of the kitty). Some supposedly waterproof laptops do exist, but you have to wonder if they really are entirely waterproof. Besides, they cost more than twice the minimum cost of the entry-level laptop (a basic laptop is all most cruisers need for ordinary voyaging).

I consumed an inordinate amount of time on problems with connections between accessories like the GPS and the Pactor modem and the computer. The current generation of laptops tends not to have serial inputs, so you need to use serial/USB converters. Several of these have failed on *BS*. If you need to use one of these, have a spare or two on board since they are hard to find "in the field." As with all marine electronics, the plug connections to the laptop are a constant source of problems. Spray-on TV contact cleaner seems to be helpful for resolving some of these issues.

Anchoring gear

We put a lot of money and energy into *Blue Stocking*'s ground tackle . . . and even more would have been justified. We installed a new electric anchor windlass and bought 260 feet (a half barrel) of new chain. We bought a Spade anchor for use as a primary and carry the old CQR (in our experience the Spade has been better, even though it is lighter) and two Fortress anchors, one of which is really large and is stored disassembled.

A laptop computer has almost become essential equipment today for navigation, communications, and, for Paul, writing.

I recommend Wichard HD shackles for the anchor chain. They are the only ones I have found with pins small enough to shackle on to the middle of the chain while having a tensile strength greater than the chain. I installed a Wichard U-bolt on the outside of the hull so I can have a snubber shackled to the boat and to the chain, with no possibility of chafe.

One big skill and set of equipment that I think is nearly essential for cruising in the tropics is scuba. Even though they're careful, most cruisers eventually get their chain and/or anchor caught among the coral heads. Sometimes the gear can be extricated by persistence from the surface or by free-diving, but sometimes scuba will be the only real solution.

I don't have scuba gear or recent certification (this is on my wish list), but I do have a Sea-Breathe 12-volt electric hookah. It has been invaluable for bottom scrubbing (which I do about every other month) and for underwater repairs and inspections. It is only good down to 20 feet, though, and many anchorages in the Pacific are a lot deeper than that.

Crew fitness

One final note about preparation for voyaging. Physical strength is your best asset at sea. Just about anyone at any age can double his or her physical strength in a few weeks with a simple weight-training program. This is not to be confused with body-building — just toning. Do it. You won't regret it. The less strength you have to begin with, the more important this suggestion is for you. With increased toning, and with the judicious use of sailing gloves, you'll be amazed at how much more you can do on the boat — with or without tools.

With luck, *Blue Stocking* will continue from New Zealand and, if the fates allow, we will cross her wake somewhere near Bermuda in the next few years to complete our first circumnavigation. The best thing about the voyaging life (aside from the amazing people you meet) are the things you learn . . . about sailing and about yourself.

Paul Denton is a life coach, freelance writer, and full-time voyager. We last reached him in Simons Town, South Africa, from where Blue Stocking *was about to leave on her homeward journey.*

To eliminate chafe, Paul shackles one end of the anchor-chain snubber to the chain, using a high-tensile stainless-steel shackle, and the other to a U-bolt on the bow.

Cost-effective

Ten things you could take off

In today's economic climate, many of us are looking for ways to scale back our budgets without giving up our dreams. For anyone who has been planning an extended family cruise — whether for two weeks or four months — leaving off as much of the "must-have, can't-leave-without" equipment as possible can make the difference between a family sailing experience to be cherished and a might-have-been that will always be regretted. Many articles have been written about the minimum requirements for equipping a boat for an extended coastal voyage but very few help you figure out what you can leave behind without compromising your voyaging lifestyle.

My husband, Evans Starzinger, and I have spent the last decade cruising aboard our 47-foot aluminum Van de Stadt Samoa, *Hawk*, and before that, on our Shannon 37, *Silk*. When we fitted out *Hawk* after completing a circumnavigation aboard *Silk*, we chose to keep the boat simple to minimize maintenance when cruising in the high latitudes, where boatyards and chandleries are few and far between and where we must be able to fix anything that breaks. If we had put aboard all the things we "couldn't leave without" before setting sail, we'd have spent another two years ashore earning the money to buy the equipment, and at least twice as much of our time on maintenance once we left. We weren't willing to make those trade-offs.

For 15 years, and more than 100,000 nautical miles, we lived without many of the things others consider to be necessities. We have gained first-hand experience with the real trade-offs inherent in outfitting a boat.

If we were to fit out a coastal boat on a very limited budget for cruising for several months at a time in the Great Lakes, between the Northeast and the Caribbean, or between the Pacific Northwest and Mexico, our choices would be quite different. Those choices and the reasoning behind them may help you avoid unnecessary expenditures so you can realize your cruising dreams. What follows are 10 things we would leave off when fitting out a coastal-cruising boat on a minimal budget.

1 Refrigerator/freezer

Of the equipment we left off *Hawk*, refrigeration comes as the biggest surprise to most people. But refrigeration costs a great deal to install and then requires more energy to run than just about anything else aboard. Having it aboard means running the engine for several hours a day in the tropics or totally reconfiguring the electrical system. We have gotten along very well for more than a decade without refrigeration and have learned many alternative ways to preserve everything from fresh produce to meat.

If we planned to cruise north to Maine, the Great Lakes, or Puget Sound, we would definitely not install refrigeration; we know from experience that we would never miss it. If heading south to the Caribbean or to Mexico, we would carry several large, insulated freezer bags. We have used these on *Hawk* to keep things cold between the store and the boat. With a block of ice, these work well to keep meat, milk, yogurt, and a few other foodstuffs cool for two to three days at a time.

2 Watermaker

Silk carried 100 gallons of water, and we were never down by more than 50 gallons. We often caught rainwater between dockside refills. On *Hawk*, we preferred the simplicity of extra tankage to the cost, complexity, and energy requirements of a watermaker. *Hawk* carries 200 gallons of water in two tanks, and we have gone two months between refills without making any real effort to conserve water. On strict passage rations, we have gone three months without refilling the tanks. We have always been able to catch rainwater before our tanks got too low except in a few places like the Sea of Cortez in Mexico, where water was readily available in marinas.

We would definitely not install a watermaker as long as we could find a way to carry at least 25 gallons of fresh water for each regular crewmember and we could set the boat up to catch rainwater efficiently.

3 Hot water/pressure water

On *Silk*, we had pressure water and a water heater that worked off 110-volt power or the engine heat, but we rarely used either. We installed foot pumps in the galley and head and used those so we could control our water usage. We still had to maintain the pressure-water system, however, and we spent more time rebuilding the pumps and looking for leaks than we did using it. Aboard *Hawk*, we did not install pressure water or a water heater; instead we put foot pumps in the head and galley. Those have met most of our needs more than adequately.

While we never miss hot-water showers while cruising the tropics or

coastal cruising

the "must-have" list

by Beth Leonard

When *Hawk* was in Chile, refrigeration wasn't much of an issue. Beth and Evans were sailing in areas where they could get ice off the bow of the boat with an ice pick, far left. With the skills they learned for preserving food over the years, Beth and Evans had little problem getting along without refrigeration, even in the desert climate of Baja, Mexico, at left.

when summer cruising in temperate latitudes, we have occasionally wished for that luxury when cruising in cold climates where there were no facilities ashore. But for coastal cruising, we would buy a solar shower for use when the sun's out and a large teakettle for when it isn't — and make use of the shower facilities ashore at yacht clubs or marinas when we felt the need for a "real" shower.

4 SSB/ham radio

An SSB or ham short-wave radio keeps most cruisers in touch with the mobile cruising community and provides social life on passage. With a Pactor modem, it can also serve to send and receive email. We did not have a high-frequency radio for most of our circumnavigation on *Silk* and, when we installed one near the end of our voyage, found we didn't like being tied to "scheds" and having people panic if we couldn't come up at the appointed time. On *Hawk*, we have relied on an Iridium satellite phone for voice and email communications and for weather.

But since we left on *Hawk* in 1999, communications have undergone a total revolution, and the options available to cruisers have increased dramatically. Cell-phone coverage has improved, WiFi has become common, and Skype has brought low-cost international calling to anyone with a computer. As a result, if we expected to limit our cruising to U.S. waters, we would not install an SSB or rely on the Iridium phone. Instead, we would buy a cell phone with a country-wide plan and we would use WiFi wherever it was available (most marinas, some larger harbors, and ashore at coffee shops or restaurants). We would use Skype to make most of our long-distance phone calls and use the cell phone sparingly.

For cruising Canada and Mexico, we would purchase one of the North America plans for the cell phone that extends coverage to these other countries. If cruising in the Caribbean, we would buy an unlocked GSM phone and purchase a new SIM card for each group of islands. We would make do without modern communications for the few weeks we might be cruising in places without cell-phone coverage or WiFi, such as the west coast of the Baja Peninsula or the unpopulated areas along the north coast of Newfoundland.

5 EPIRB

We have carried a 406-MHz Emergency Position-Indicating Radio Beacon (EPIRB) on both of our boats, but we would not buy one if we were fitting out a coastal boat, even if we planned to make short offshore hops of from one to three days. The U.S. Coast Guard reports that 94 percent of EPIRB signals are false, so it is reluctant to launch a search-and-rescue mission without confirmation that the vessel involved is in an emergency situation.

The high percentage of false signals has forced long-distance offshore race organizers to require two emergency signals from the same vessel before they will launch a search-and-rescue attempt. Today, making contact with the Coast Guard through the VHF radio or a cell phone is far likelier to result in a rescue than setting off an EPIRB. Rather than spend the money on a 406-MHz EPIRB, we would invest in a high-quality VHF radio with Digital Selective Calling (DSC) that provides coverage up to 20 miles offshore, and we would use that in an emergency.

6 Radar

We carried radar on both boats but have used it in earnest only about a dozen times in 15 years of cruising. Since the accuracy of GPS has increased to the point where you can pinpoint your position to within a few feet anywhere in the United States, Canada, or the Caribbean, the GPS has supplanted the radar in its primary use — locating the boat in conditions of poor visibility. The second use of radar — avoiding collisions with other traffic in poor visibility — is necessary only where there is heavy fog. In areas like Maine and British Columbia, the fog tends to burn off by midday, so sailing in the afternoon instead of the morning all but eliminates the need for radar.

In areas with heavy shipping traffic, such as the Strait of Juan de Fuca or the entrance to Chesapeake Bay, an Automated Information System (AIS) receiver plugged in to our chart plotter

“. . . for coastal cruising, we would fit a Windex to the top of the mast and install a fishfinder that worked through our chart plotter . . .”

would provide us with the location, course, and speed of any shipping in our vicinity and give us an added margin of safety. As long as we were not trying to cruise to a fixed schedule in an area known for heavy fog, we would not spend the money on radar.

7 Integrated instruments

A full set of instruments — anemometer, depth sounder, and knotmeter — costs a great deal to purchase and install and even more to fix. We have sailed with integrated instrument systems on both boats, and we have had to replace some component of them about every six months. The only piece of information the instruments provide that is absolutely critical is depth. Today, high-end chart plotters have a feed for a fishfinder that can be used to determine depth.

The GPS also provides speed over the ground, eliminating the need for a knotmeter. Though the GPS cannot provide speed through the water when in areas with strong currents, it can tell you how much the current is affecting your course, which is what is really important. Many people have circumnavigated without wind instruments and tend to be better sailors for it, knowing exactly where the wind is and how strong it is at all times.

When equipping a boat for coastal cruising, we would fit a Windex to the top of the mast and install a fishfinder that worked through our chart plotter, rather than invest in a full system of integrated instruments.

8 Diesel heating

For anyone planning to cruise in cooler climates, a reliable heater means the difference between cold-weather camping and civilized comfort. We were very disappointed with the reliability of the Webasto forced-air system on *Silk*, and most people we know with forced-air heaters have had trouble with them unless they were in use regularly. Aboard *Hawk*, we installed a drip diesel heater that kept us warm in temperatures below 50°F but is overkill otherwise.

If we were outfitting a coastal boat for summer cruising in Maine, Nova Scotia, Newfoundland, the Great Lakes, or British Columbia, we would install a marinized bus heater that uses the engine hot water to heat the boat. If we turned this on when we were approaching an anchorage and getting the anchor down, the boat should be toasty warm when we went below. A kerosene lantern would then keep the chill off overnight.

9 Mainsail furling

Good sail control means one crewmember taking no more than a few minutes to reduce canvas from full sail to reefed or furled. For headsails, roller furling offers a solution tested over hundreds of thousands of offshore miles aboard racing and cruising boats. Mainsail furling systems have so far not proven to be nearly as robust. But handling the 750-square-foot mainsail is the most formidable task we face reguarly aboard *Hawk*.

We eventually followed the lead of the singlehanded ocean racers and installed full battens and lazy-jacks. For reefing, we use a two-line, slab-reefing system led back to the cockpit with separate lines for the tack and clew at each reef point. We have had only one failure in 75,000 nautical miles and consider the system to be just about bulletproof.

However, we often dream of being able to handle the mainsail as easily as we handle the jib, so we continue to follow advances in mainsail furling, stack packs, and other mainsail-handling systems. So far, we haven't found any solution as reliable as the full battens and lazy-jacks. If we were fitting out a boat for coastal cruising, we would install a lazy-jack system with the existing mainsail and try to find a way to retrofit a two-line reefing system led back to the cockpit.

10 Generator

We hate running the engine but have no desire to substitute a separate diesel generator as the way to recharge our batteries. The choices we made above for coastal cruising add up to an energy-efficient boat with minimal electrical demand. However, laptop computers today draw much more than they did when we got our first one in New Zealand in 1993. At that time, the black-and-white (well, green-and-gray) screen and the simple programs meant that the computer drew less than 1 amp and hardly changed our electrical balance.

Today's laptops with their big color screens and behemoth programs draw 4 to 5 amps. Because

Resources

Beth Leonard and Evans Starzinger describe many of their techniques for keeping cruising simple in articles posted on their website: <http://www.bethandevans.com>.

they're doing digital photography and surfing the Internet, cruisers spend much more time on the computer today than a decade ago. For those who choose to have a laptop aboard, the peak electrical demand when on the computer all day will be 50 amp hours and, with two computers aboard, it can be twice as much. Our single 75-watt solar panel can almost keep up with one computer in tropical sunshine, but not two.

If we were outfitting a coastal boat, we would install as many solar panels as possible without compromising the boat's sailing performance. That, in conjunction with motoring into and out of anchorages, would probably take care of our electrical demands. But if we had a big gap between what we were using and what we were generating, we would turn to the solution that has worked well aboard *Hawk* to provide power for our increasingly energy-hungry computers.

On this boat, we have supplemented the solar panel with a 4-stroke, gasoline-driven, "super quiet" Honda generator that produces 900 watts and weighs only 29 pounds. If we put it on our swim platform when it's running, we don't hear it at all from inside the boat. It uses approximately a tenth of a gallon of gasoline per hour and generates a steady 40 amps at 12 volts. In conjunction with our single 75-watt solar panel, we need to run it about an hour a day on the few occasions when we're using both of our computers all day at anchor.

Everything ties together

The decisions about what we would leave off a coastal boat tie in to one another — if, for example, we decided to add refrigeration, we would have to revisit the electrical generation question. The members of every boat's crew have to find their own balance between comfort, convenience, maintenance, money, time, and electrical consumption that best meets their particular cruising needs.

We're not purists, nor are we Luddites. We don't have any deep philosophical opposition to the majority of the items on this list, but we have found that we most enjoy our comforts when we can have them for a minimum of cash, care, and complexity. By not equipping our boat with the equipment listed above, we would save at least $20,000, which for us would be enough money for a year to a year-and-a-half of coastal cruising. We would also spend a lot less time worrying about getting things fixed and a lot more time enjoying the places we visited. We'd save dollars and reduce stress, and that makes sense.

Beth Leonard and Evans Starzinger circumnavigated in Silk *from 1992 to 1995. They spent three years rebuilding their cruising kitty and building a boat capable of sailing in higher latitudes. In May 1998 they left aboard* Hawk. *Their itinerary consists simply of a list of places they'd like to visit.*

What we wouldn't leave without

Given the list of things we would leave off a coastal cruiser, what equipment wouldn't we leave without? Beyond the basic boat — which includes mast and sails — the following are items we would consider the bare essentials for a three- to four-month coastal cruise.

Oversized ground tackle

We would opt for an oversized anchor and at least 75 feet of chain. In order to sleep well at night, we prefer to have an anchor one size larger than the manufacturer recommends. Anchoring instead of staying in marinas is the best way to minimize expenditures when cruising.

Autopilot

We almost always sail short-handed, so having aboard a third "person" to take the helm while we're managing things on deck is critical to our safety. On most coastal boats, a wheel-mounted autopilot is sufficient, but we would want to make sure that the autopilot was capable of handling the boat even in strong winds and big waves offshore.

High-end chart plotter

A chart plotter minimizes the mistakes inherent in moving from chart to GPS. It also offers fishfinding and AIS capabilities. We prefer the waterproof, marinized chart plotters with a fixed installation to the possibility of having our laptop computer tossed across the boat or doused by a wave.

Depth sounder or fishfinder

The only instrument we absolutely must have aboard is a way to determine depth. A lead line works, but we don't have the patience or the skill to use it quickly enough in an emergency situation.

Dinghy

Anything from an inflatable kayak to a sailing dinghy will do, but we need some way to travel between the boat and the shore when at anchor.

VHF with DSC

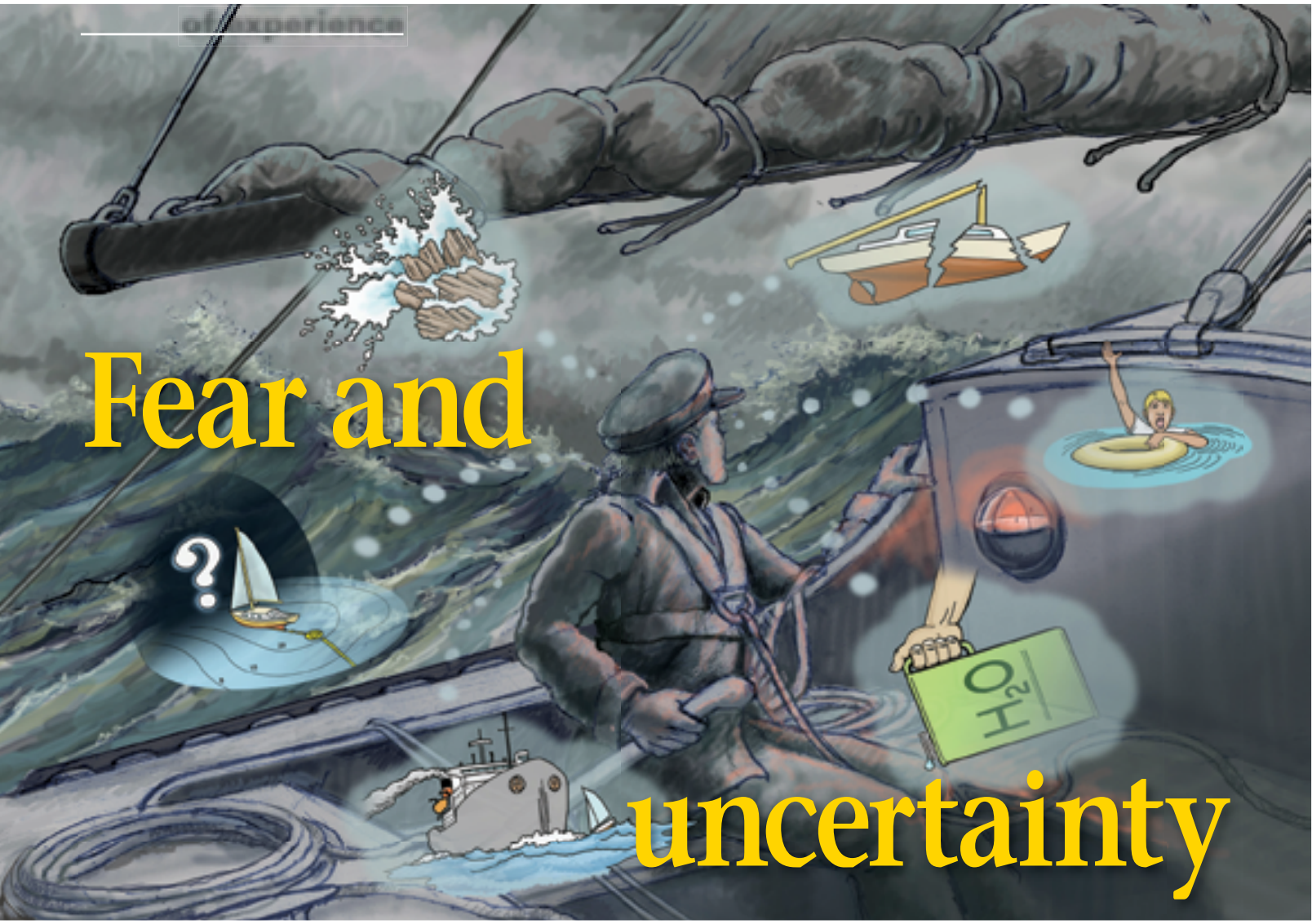
While a handheld is cheaper, a fixed-mount VHF transceiver with an antenna at the top of the mast offers much better reception and provides much greater range. A VHF is necessary for everything from talking to harbormasters and arranging slips in marinas to calling for help in an emergency. DSC gives you emergency coverage a minimum of 20 miles offshore.

Compass

We would carry a binnacle-mounted compass and a handheld compass or a compass in a binocular. When coastal cruising, you depend upon being able to take bearings on landmarks to plot your position on a chart. Having the tools and the skills to do this is essential to safety in coastal waters, even with accurate charting and GPS.

Laptop computer

We are at the point where we can't do many of the things that are most important to us without a laptop: weather information, email, photography, and calling home. We would choose to cruise with at least one computer aboard. We would also choose to have a cell phone because it has become very difficult to arrange anything, from a rendezvous with friends to an appointment with a mechanic, without one. But we do not consider a cell phone a necessity, especially given that we do most of our long-distance calling using Skype over the Internet.



Fear and uncertainty

Advice from one of America's best-known cruising authors

by Hal Roth

When I'm way out on the water in a small boat and a storm swoops down and the yacht starts hopping around, all sorts of crazy things flash through my mind. Will the hull crack open? Will the bulkheads give way? Will the mast come down? And what about the rudder? Oh dear, there are so many things that could go wrong.

Yet in my heart of hearts, I know the hull is strong, the bulkheads are firmly in place, and the mast and rigging are in good order. I'm aware that the boat was properly designed and built, and I've tried hard to keep her in good condition. Certainly the boat has come through lots of storms during her career. No doubt there will be more. She won't sink. The crew won't be lost.

Yet sometimes I have funny little feelings . . .

My dictionary defines fear as a state of agitation and anxiety caused by the presence of danger. Everybody knows that when you're far out at sea and a fierce storm is raging, it's a nervous time. It's the moment when you hope the yacht will survive and that you've taken the best and most sensible measures against the wind and seas.

We all know that the worst time for a new sailor is when he (or she) faces the first storm. The shiny world suddenly becomes dark and gray. The boat makes novel and unexpected sounds and motions. Our new sailor soon discovers that he has to hang on when he moves around the boat and that his steps must be small and cautious. Because of this, a degree of uncertainty and a measure of slowness creep into everything.

Experience is key

For the people on board, experience is everything. After dealing with a dozen Force 8 to 10 problems at sea, the skipper simply accepts storms as part of the game. He uses the most suitable storm tactics, knows about ample sea room, keeps a safe distance from shipping lanes, and shows a bright light at night. Some sailors use illegal strobe lights because a high-intensity flashing light is more easily seen. Dinghies and loose gear on deck are doubly tied down to keep them quiet.

If the yacht is in reasonable order below, the first thing is to rest and be quiet. If the boat is essentially stopped, or running off before the storm, there's certainly no need for everyone to stay awake. Or to be bleating over the radio about the perilous state of affairs.

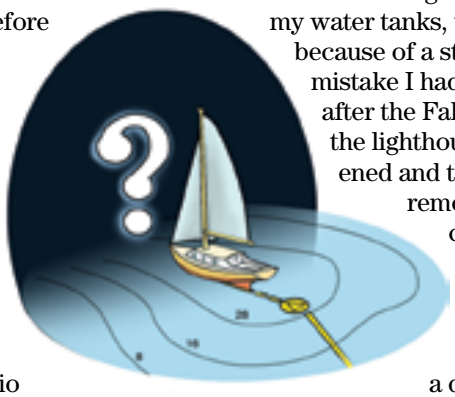
A storm may last for three days. On the first you may think you're going to

die. On the second, you realize that the yacht hasn't yet capsized and the bilge is dry. The mast is still up and maybe the boat will make it. On the third, you're standing at the stove trying to concoct something good to eat. On the fourth day, the easy winds are back, you're on course, sunning yourself in the cockpit, and thinking about the sailing life and how good it is.

A tale of two cruises

A few years back, Margaret and I were at the Kettenberg boatyard on Shelter Island in San Diego preparing for a Pacific trip. While a welder was repairing our stern pulpit, we were putting on stores, checking that we had the right charts, and dealing with a dozen small jobs.

We met a number of boatowners who were headed to Mexico and points south. In fact, two sailboats were leaving the next day. Both were 38-footers with couples as crew, and both were headed to the Marquesas Islands in French Polynesia, almost 3,000 miles to the southwest. On the afternoon before they left, we all had a little party at the boatyard, and we hoisted signal flags that spelled out, "I wish you a pleasant voyage."



The two boats set off next morning, in light winds. Someone in the yard kept in radio contact and told us that on the second day the two yachts still had trifling winds. After three days, one boat had logged only 190 miles, the other 235.

The 190-mile couple was feeling the blues, and their radio messages were filled with gloom and doom. "We're so discouraged," they said, "We'll never get there." The next day it was, "Little wind and a big swell." Then the slower boat said, "At this rate we may run out of food." Apparently they were not pushing their boat very hard. Meanwhile, the faster boat had picked up the northeast trade wind and was zipping along at 140 miles per day. Soon their radio signals began to get faint and crackly.

After eight days at sea, the couple on the slower boat still had not found the trade wind. The two sailors lost their nerve. They returned to San Diego, avoided their sailing friends, and quietly put their boat up for sale.

The second boat arrived in French Polynesia after a 28-day voyage and sent back a series of glorious postcards.

What was the difference between the two boats? The crew of the slower boat was simply scared. The couple had lost all their self-confidence. It was fear and uncertainty on every side.

"The wind will never come," they said. "Nobody's around to help us. What if one of us gets sick?" The intrepid sailors that we had met two weeks earlier had become pathetic whiners. The gray world of fear had triumphed.

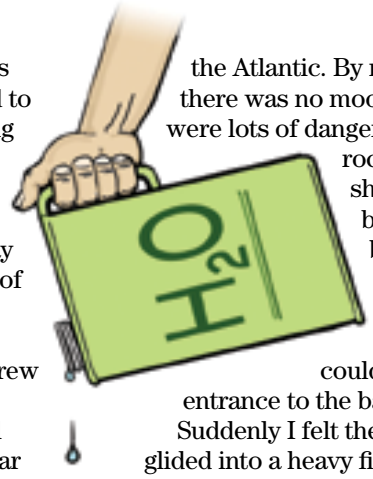
Self-imposed danger

I like to think myself a hero, but I've had my moments. During one of my east-about solo trips round the world, I stopped at East Falkland Island off the coast of Argentina. I wanted to fill my water tanks, which were empty because of a stupid plumbing mistake I had made. It was just after the Falklands War when all the lighthouses had been darkened and the navigational buoys removed. I went into a complicated little bay on the north side of Choiseul Sound on the east coast where the British Army had a dock and a small base.

The military people kindly filled my water tanks and gave me a paper sack with three or four loaves of fresh bread.

It was already late in the day and I began to worry about sailing before dark. There was a trifling northwest wind, so I put up the mainsail and cast off. I had sailed half a mile or so when a launch with four or five men came alongside. I stopped my boat by heading into the wind and letting the mainsheet run out and asked for instructions for making my way out to sea. The officer in charge talked on and on. Finally we traded salutes and the launch sped away.

I sailed south from the bay into Choiseul Sound and turned east toward the Atlantic. By now it was dark; there was no moon. I knew there were lots of dangerous, kelp-covered rocks in the area. I should have gone back to the army base and anchored until morning, but when I looked behind me I could no longer see the entrance to the bay.



Suddenly I felt the yacht slow as we glided into a heavy field of kelp that swished along the sides of the hull. I knew that kelp will grow upward from rocks 60 feet deep or as little as 3 feet. My keel needed a little over 8 feet.

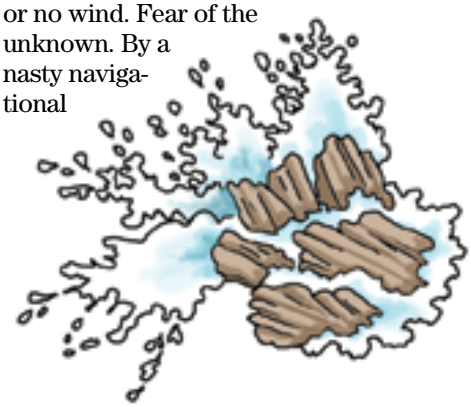
Though the weather was cold and I was wearing a heavy three-layer Musto outfit, I could feel sweat running down my back. I was scared — terrified — that I had turned east too soon and that I would pile up on rocks I couldn't see. I eased a little south from the compass course I had laid out. I was absolutely scared to death and afraid that, by my bumbling, I had jeopardized the entire voyage and maybe my life.

The bottom was too rocky and uneven to anchor so I kept going slowly with just the mainsail up. Never was I so relieved when an hour later, the depth sounder moved from 4 fathoms to depths off the scale. The land was behind me. I was safe at sea.

Why had I been scared? Why was I a victim of fear? By my stupidity and lack of sensible action, I had allowed myself to become locked into a quicksand of darkness and danger, a situation I should have predicted and avoided.

Reasons for fear

Fear can be brought on by a fierce storm or by more quiet and subtle things. Desperation because of too little or no wind. Fear of the unknown. By a nasty navigational



ILLUSTRATIONS BY FRITZ SEEGERS

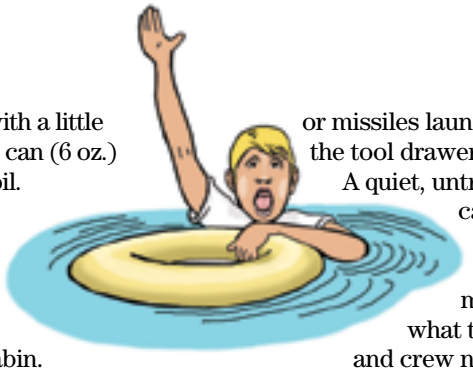
problem. By sickness or an accident on board. Something wrong with the boat. A crewman who has become irrational. A dozen reasons.

When you feel the pain of fear, what can you do? Each of us is different, of course, and it depends on the problem and your reactions. Maybe the weather is stormy and you've decided to stop the boat. After a careful look in all directions, at the sails and their furling, a check of the water depth, and wind and sea conditions, you go below, leaving a lookout if necessary. As soon as you're in the cabin, you or someone in the crew notes the ship's position on the chart and the time and conditions in the logbook. By now your oilskins are partially or fully off and you may think about a light feeding. The thought of food may be revolting. Yet you know you should eat and drink a little something to keep up your strength.

My favorite is dry crackers with a little chicken or tuna from a small can (6 oz.) packed in spring water, not oil.

Safety lies below

During severe weather, the best place for everyone except the lookout or helmsman is below in the cabin. During the days before leaving the harbor, you, one of the crew, or yard workers, presumably screwed down all the floorboards. There are restraints (fiddles or strings) on all the shelves, and the pots and pans and loose things in the galley are tucked away after each meal. Each drawer should have a generous toggle or strong hardware to keep it closed, and under-seat lockers should have their toggles in place. Even the chart table lid should have a positive closing latch of some kind. In a storm, the motion can be severe, and it's not the time to upset the crew with flying books, a toppled potful of hot soup, or missiles launched from the tool drawer.



A quiet, untroubled cabin can mean peace of mind — just what the captain and crew need when they're upset and a bit nervous from the antics of a violent storm.

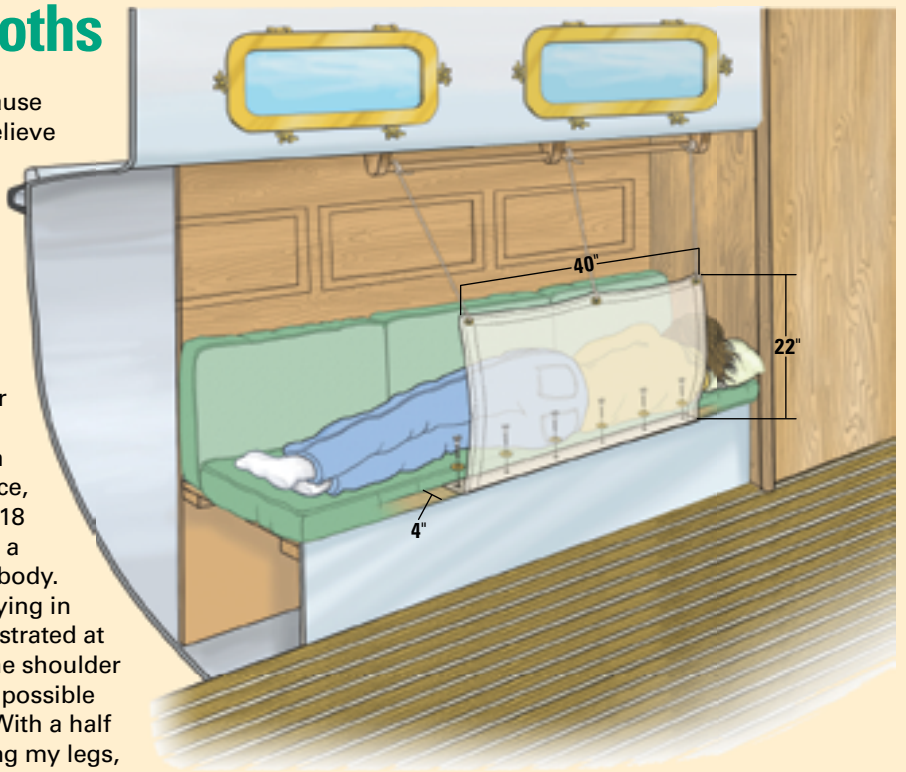
Except for perhaps a lookout on deck, I've learned that during a severe storm the best place for everyone is in his bunk — safe and dry — behind a strong leecloth. Speaking for myself, I try to relax in a narrow world that seems secure and less noisy, a private place where I can rest and collect my thoughts. I find that if my hair is on fire with worry, it's a good time to sort things out. When I'm relaxed and at ease, fear and tension tend to disappear. If I can doze or sleep a little, all the better. If I'm slept out, I read a thriller (*The Day of the Jackal*) or try an easy crossword puzzle.

A survival state of mind

Let's talk about the mental aspects of fear. Naval experts have long known that a sailor's state of mind in a survival situation is vital. During the early days of World War II, German submarines sank hundreds of British ships in the North Atlantic. The crews had to take to the lifeboats, often in appalling conditions. It was amazing how some sailors died almost at once while others resolutely clung to life for weeks and were rescued. Survival wasn't tied to body size or age, because many big, husky young men died the first or second day. Survival seemed more related to pluck, spirit, stoutheartedness, determination, and the will not to give up.

In other words, fight fear with resolve and determination. As Don Whilldin writes: "Enforce a positive attitude, avoid despair like the plague, and don't allow doubt and resignation to set into your crew. Not even for one second."

The case for leecloths



I have strong feelings about berths because sailors spend a lot of time in them. I believe that each person should have his own bunk and it should be comfortable and snug but not overly restrictive. Ideally it should have a little shelf with a fiddle or a drawer for a few personal items, a reading light, and — depending on the weather — a suitable sheet and maybe a blanket or two.

The best berth in my current 35-footer doubles as a cabin settee and is adjustable in width with bolt-type locks at each end. For use as a comfortable sitting place, the seats are 12 inches wide; as a berth, 18 inches wide. Sometimes it helps to have a couple of extra pillows to fit around my body.

We've had comfort and good luck staying in berths with simple leecloths like that illustrated at right. Note that the leecloths run from the shoulder to the thigh. If a leecloth is longer, it's impossible to climb in and out of the berth quickly. With a half or three-quarter length, I can sit up, swing my legs, and put my feet on the cabin sole.

I urge sailors to use leecloths every time you turn in — even in dead calms — because you never know when the boat will roll and throw you out. Also, you can relax and sleep better when you know you're secure in your berth, not half hanging on. Depending on its height, a leecloth can help protect you from flying objects — books, galley pots, and the contents of a drawer or locker that has somehow opened.

Simple and secure

Each berth should have a leecloth that will keep the occupant in place no matter what the boat does. My leecloths measure 40 inches by 26 inches, with the long dimension reaching from my shoulder to my thigh. I fasten the bottom 4 inches of the long dimension of the leecloth to the wooden frame underneath the berth cushion with six long screws set through fender washers. This means that the cloth extends roughly 20 inches above the cushion, depending on its thickness.

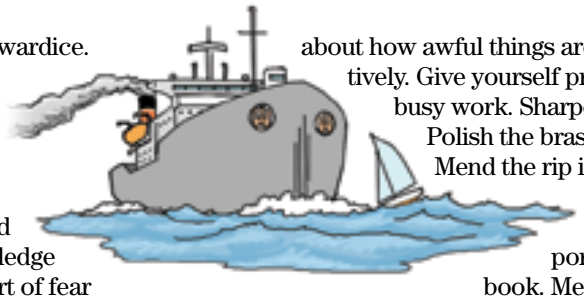
The dimensions of a leecloth and the way it's secured in place are not important, just so it keeps the occupant firmly in place when the yacht rolls to leeward. Choose a higher cloth rather than a lower one.

The leecloth has a 5/16-inch diameter rope sewn around the edges, and three grommets spaced along the top (at each corner and in the middle). Short 3/16-inch-diameter lines extend upward from the grommets to a strong grabrail along the sides of the cabin. I pull the leecloth sharply upward and clove-hitch the lines in place. When I don't want the leecloths, I tuck them under the cushions; however they can be pulled out and tied up quickly. A canvas expert can make two or three of these cloths in a few hours.

On other yachts, I've slept against leeboards made of 5/16-inch or 3/8-inch plywood, but they were unsatisfactory because the wood was too hard, too low, too splintery, and too hot in the tropics. The boards were hinged and fitted under the cushions, but they made the seats lumpy.

I despair of writing about leecloths and apologize for beating this subject to death, but I've read dozens of accounts — some by extremely experienced small-boat sailors — of people who have been thrown out of their berths in rough weather and suffered terrible injuries — a broken nose, a smashed arm, a fractured leg. Such injuries are doubly serious at sea because medical care is usually not available and is certainly not convenient.

I don't understand why all sailors don't make something similar to what I've described and use leecloths for all sleeping areas as a matter of course.



Fear is not cowardice. Fear has more to do with uncertainty and irresoluteness, which are based on unknowns and the lack of knowledge of a situation. Part of fear is anxiety and being afraid. The remedy for the sickness caused by these close-knit words is to find out what you're afraid of and try to remedy it.

Is the boat going to sink? No, I trust her. Are you going to be run down by a giant merchant ship? Stick your head out of the main hatch and look around. If you see no ships, you can cross that one off for the moment. Is the vessel going to be swamped by big seas? Not if you've selected the best storm plan. Are you going to run into rocks? No, because your position shows that you're 112 miles from land. And so on.

Stay busy, stay positive

I believe if you knew that the storm was going to last for 14 more hours, that you would have to go out on deck twice during that time to deal with a loose sail, and that tomorrow the wind and seas would be down, you could go to sleep without worry. I'm convinced that if you know all sides of a situation, you can handle it.

So when you're at sea and nervous about the weather and other problems, pull yourself together. Try not to think about how awful things are. Think positively. Give yourself projects and busy work. Sharpen your knife. Polish the brass barometer. Mend the rip in your shirt. Read about your next port in the pilot book. Measure the length of each piece of spare running rigging and label the coils . . .

If you have a crewman who is terrified of standing watch at night, don't mock him or tell him how cowardly he is. This will only further embarrass and isolate him from you and the others in the crew. Put him on watch during the day or ask him to peel the potatoes for dinner.

> **"The cure for fear is to shine a clear, bright light across the cobwebs in your head."**

Remember that, if you weren't worried before, you shouldn't be worried now. According to statistics from the U.K. Department of Transport, it's 10 times safer to travel by sea than to cross the road.

A rational view

When I was a boy of 10 or 11 in our house in Cleveland, my grandfather would sometimes send me down to the basement on cold winter nights. I was told to turn down the gas flame under the hot-water tank and to put a few shovelfuls of small lumps of coal ("slack") on the fire and reduce the draft to bank the furnace for the night.

I did as I was told but I was terrified by the darkness of the dimly-lit basement, particularly the coal bin, which I was certain was full of hidden horrors. I was so scared I felt sure my bones were rattling.

I told my grandfather about this, so he took my hand and together we went down the steps to the basement. There he turned a powerful flashlight into all the dark corners, including the coal bin. Under the clear, bright light, all I saw were concrete walls, the laundry tubs, and the workbench.

"Have you seen anything bad or spooky?" asked my grandfather.

"No, nothing at all."

"Do you feel safe now?"

"Yes, grandfather."

"Will you be able to handle these jobs at night on your own?"

"Yes, grandfather."

Together we turned down the flame under the water heater and banked the furnace. My grandfather had taught me that the cure for dread and fear is to shine a clear, bright light across the cobwebs in your head. I was never scared to do my little jobs in the basement again.

Postscript

In four decades of sailing, Hal Roth cruised around the world with his wife, Margaret, twice raced around it in the singlehanded BOC Challenge, and wrote several books about their adventures. The material in this article was extracted with permission from his final book: *Handling Storms at Sea: The Five Secrets of Heavy Weather Sailing*, published earlier this year by International Marine. *Good Old Boat* ran a profile of Hal and Margaret Roth, an extraordinary cruising couple, in May 2005. Hal lost his battle with lung cancer in October 2008. We all miss him.

Preparing to cruise

A personal checklist from a 7-year liveaboard

by Dan Ahart

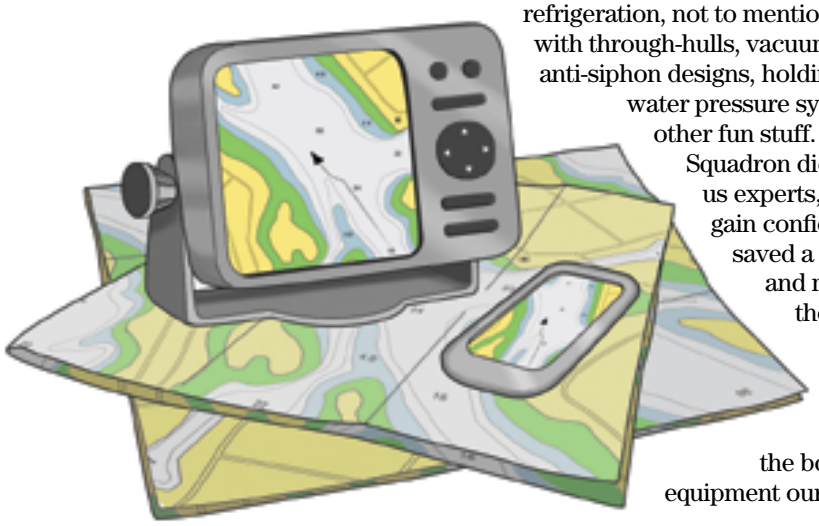
When my wife, Jan, and I decided we wanted to live aboard a sailboat and cruise the East Coast, the Bahamas, and the Caribbean for several years, we started reading all we could about the lifestyle, the kind of boat needed, the kind of equipment needed, and how we should prepare ourselves. We also talked to everyone we could find who had done it. We then bought a 1983 12-meter (41-foot) Catalac catamaran in December 1998 and moved aboard a year later.

We lived aboard *Sojourner* for more than seven years before reluctantly moving ashore not long ago. We cruised up and down the East Coast twice, spent many months in the Bahamas and Turks and Caicos, and enjoyed nearly five years in the Caribbean. Here are some ideas, based on our experience, that you might find useful if you're planning to live aboard and cruise on an older boat.

Preparing ourselves

Hundreds, if not thousands, of books and magazines contain articles about living aboard and the cruising lifestyle. We read a lot and kept talking to people who had done it. I had been trained on electronics in the Air Force and had fooled around with car engines since before I could drive. And, like most homeowners, I had repaired a lot of plumbing and done other household projects. Jan had experience working with wood, fiberglass, and paints. But we felt totally inadequate when it came to reading weather charts, navigating offshore, operating a diesel engine, handling large sails, and facing much of what is involved in caring for a boat complex enough to live aboard and cruise for several years.

A friend recommended that we join the local U.S. Power Squadron and take some courses. This was some of the best advice we were ever given. Even new boats have their share of equipment problems, but older boats are bound to have more. Besides, any bluewater cruising boat can be very complex, with AC and DC electrical systems, diesel engines, gasoline outboard engines, lots of batteries, refrigeration, not to mention plumbing with through-hulls, vacuum breakers, anti-siphon designs, holding tanks, water pressure systems, and other fun stuff. The Power Squadron didn't make us experts, but we did gain confidence and saved a lot of time and money over the years by either supervising repairs to the boat or fixing equipment ourselves. We also learned from other Power Squadron members the importance of inter-crew communication while anchoring, mooring, arriving at or departing from a pier, and handling sails.



Selecting the boat

We had owned a couple of lake- and coastal-sized monohulls before deciding to live aboard and cruise for several years. We naturally figured we'd get a larger mono to cruise in, but some of our Power Squadron friends pointed out that, if we were going to cruise the Intracoastal Waterway and the Bahamas, we should consider a shallow-draft boat. They pointed out that many areas of the ICW are very shallow. The Bahamas and the Turks and Caicos have thousands of square miles of water less than 20 feet deep and limitless coves and islets where the water is less than 10 feet deep. A deep-draft monohull would not be comfortable in those areas but a catamaran would be ideal.

We chartered a catamaran for a weekend and found it to be easy to handle, very stable, and very roomy. It also rolled little at anchor and, since we were guessing that we would spend a lot of time at anchor, this feature appealed to us. As it turned out, a lot of anchorages in the Caribbean can be rolly, but we never felt uncomfortable or spilled a drink due to *Sojourner* rolling at anchor.

We looked at dozens of catamarans, including many new ones. It was quickly apparent that an older boat offered several advantages, such as

ILLUSTRATIONS BY FRITZ SEEGERS

a lower purchase cost and lots of installed cruising equipment. In the case of the 12-meter Catalac, the bonuses included inside and outside helm stations, an enormous cockpit, and cavernous stowage.

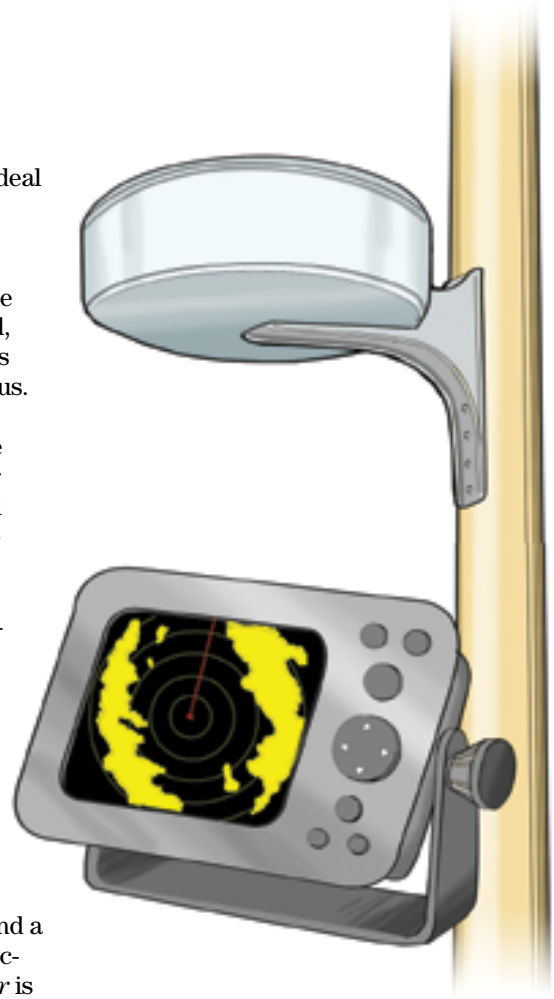
The main disadvantage of an older boat is that much of its equipment will be worn and will eventually have to be replaced. During the first two years with *Sojourner*, we replaced both engines and transmissions, the mainsail, all the radios, the GPS, autopilot, standing and running rigging, and the dinghy and outboard. We also overhauled the watermaker, re-bedded all the windows, and did a lot of varnishing. The result was a boat we were comfortable on and equipment we had confidence in.

It was important too that the top of her mast was less than 50 feet off the water, so we'd be able to get under all the fixed bridges on the ICW. At her widest, she's 17.5 feet, so she can be hauled by an 18-foot travel lift. This proved to be an asset whenever we hauled out for bottom painting; wider lifts are not always available.

Equipment and safety

This is a subjective topic. What one person feels is absolutely essential, another may not care about. Here's what we found to be essential for us.

Tools and repair supplies – We carried all the tools we needed for routine maintenance and essential repairs. These included adjustable wrenches, open-ended and box wrenches, socket wrenches, Allen wrenches, screwdrivers, a battery-powered electric drill, drill bits, a hammer, hacksaw, wood saw, a few pieces of scrap wood to protect the boat finish from damage when working on some equipment, oil-filter wrench, a volt/ohm meter, and a small clamp-on vise. We also carried some extra wire of various sizes, spade terminals, a wire stripper, and a crimping tool for reconnecting electrical fittings. And, since *Sojourner* is fiberglass, we carried epoxy, hardener, and some fiberglass cloth. Although we never had occasion to use them, we also had aboard several sizes of wooden plugs in case a through-hull failed.



> **"We recommend having radar. We found it to be essential when sailing at night through busy shipping lanes."**

Getting her cruise-ready

Sails – We carried two mains, two jibs, and two spinnakers. We never had a blown-out sail, but we consider ourselves chicken sailors. We always studied the weather closely before making a crossing, so we never sailed in adverse weather. But the tropical sun is very hard on sails and stitching, so we carried spares.

Mast steps and bosun's chair – *Sojourner* came with folding mast steps and two bosun's chairs. These came in handy for changing light bulbs and checking rigging. When I climbed the mast, I also used a safety line tied to a halyard with a Prusik hitch that slides until pressure is put on it and then locks in place. This was easy to tie and to remove and added a great deal of security.

Spare parts – We carried a sail repair kit with appropriate patch material and thread, hose clamps of various sizes, extra hoses for all applications, bulbs for all lights, engine oil and filters, fuel filters, stainless-steel nuts, bolts, and screws, and shackles of various sizes. We had electrical tape, duct tape, caulking, sealant, and insulating material (such as Fluid Film) for electrical connections. We also carried spare bilge pumps, fuel pumps, and pressure-water pumps. These items can be found in the Caribbean but at much higher prices than in the States. When we were forced to order something from home, we usually had to pay an import tax and experience delays in receiving it. We also carried books on diesel and electrical repairs.

Radios and inverters – We never sailed offshore without a working single-sideband or ham radio. We felt we needed the long-distance transceiving capability for safety and weather information. In short order, we purchased a modem that allowed us to connect our laptop to the SSB so we could download weather charts and send and receive email at sea. We also installed a NOAA-registered EPIRB. The laptop needed 120-volt AC to charge its battery, so we installed a 1,500-watt inverter.

Radar – We recommend having radar. Many cruisers we met were not so equipped, but we found it to be essential, especially when sailing at night through busy shipping lanes. It was also extremely helpful while cruising eastward at night along the north coast of the Dominican Republic and the north coast of Venezuela.

“The Coast Guard Auxiliary and Power Squadron offer safety inspections. We took advantage of them more than once.”

Easting along these coasts is best done at night because of the beneficial effect of adiabatic winds off the mountains, which tend to neutralize the trade winds. Since there are numerous fishermen in small boats in the same areas, radar helps identify and avoid them and their nets. We did most of our passagemaking between islands in the Caribbean at night also, as we felt it desirable to arrive at our new destination in the morning, giving us the day ahead to find a good anchorage or marina. The distances between most islands allow for an easy overnight sail. We also installed a radar reflector to help others see us.

Navigation – We carried paper charts for backup but we primarily used GPS. We had a mounted Garmin color moving-map display and two hand-held backups.

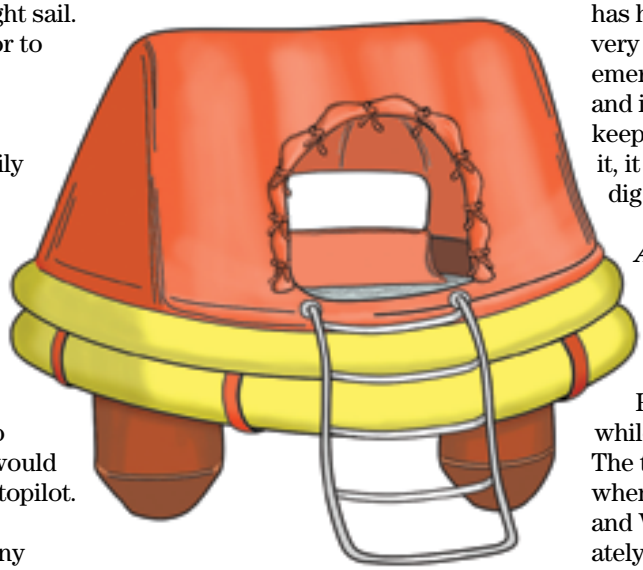
Autopilot – Sailing a boat is fun but can become tiresome. The longest nonstop voyage we took was from Puerto Rico to Marathon, Florida: 7 days. This would have been a chore without an autopilot.

Life raft – Although we met many cruisers who did not have one, we felt that a life raft was essential. We carried a six-person enclosed type. We were convinced, after attending a Seven Seas Cruising Association seminar on life rafts, that a six-person raft would be minimally comfortable for two.

Ditch bag – We never used it, but we kept a waterproof bag handy that could be thrown in the life raft if we had to abandon ship. The ditch bag contained a hand-held GPS, a hand-held VHF, a strobe and flashlight, extra batteries, copies of our passports and other documents, first-aid supplies, and extra water and food. All certified life rafts have some of these supplies aboard, but it never hurts to pack your own and carry extra water.

Life jackets – We carried six Coast Guard-approved offshore PFDs. We had two Sospender inflatables, which are not uncomfortable to wear, and four vest types. Many states require PFDs even for short trips in a dinghy.

Jacklines, lifelines, and toerails – Some newer boats do not have toerails or adequate lifelines or an easy way to connect a jackline. Toerails may not seem to be a major issue, but ours have saved many a tool from going overboard. Lifelines should be strong



enough to live up to their name. A jackline is a must if you do any serious sailing, especially at night. We have often discussed which would be the worse scenario: falling overboard and your partner doesn't know it or waking up to find you're alone on the boat.

Fire extinguishers – Small extinguishers are readily available at any marine-supply store. They're cheap and easy to install. We kept seven aboard.

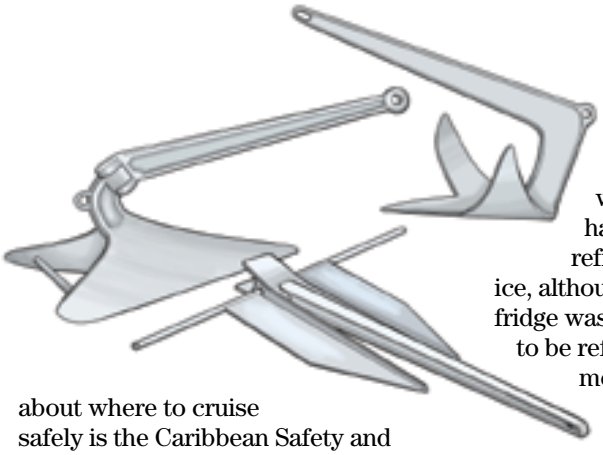
Bilge alarms – One of our bilge pumps came on one night and we didn't hear it. Although it probably pumped only a small amount of water overboard, its float switch stuck and the motor burned out. We did smell the motor. After that experience, we installed an 8-light alarm that would identify an activated pump with visual and aural alarms. We never had a sticking float switch after that, of course, but the monitor gave us peace of mind. This is a good place to mention hand pumps. We kept a manual bilge pump aboard with a long hose on it just in case.

Safety inspections – The Coast Guard Auxiliary and Power Squadron offer safety inspections. We took advantage of them more than once. We didn't want to take a chance on overlooking something that was unsafe or something required by a local law enforcement agency or the Coast Guard.

Emergency steering – *Sojourner* has hydraulic steering, which is very dependable, but we also had an emergency tiller. We practiced using it and it worked well, but that taught us to keep it handy, as the first time we tried it, it took us 10 minutes to locate it and dig it out of a locker.

About pirates – No discussion of safety would be complete without a mention of pirates. We never had a problem with pirates, but we met a few cruisers who did. Problems ranged from boardings while offshore to break-ins at anchor. The trouble spots in the Caribbean when we were there were St. Vincent and Venezuela. There are many desperately poor people in those countries and the governments are so inept or uninterested that very little is done to protect cruisers.

We stopped only once in St. Vincent, even though we sailed past the island several times. When in Venezuela, we kept to safe areas — those where lots of cruisers could be found — as much as possible. If we had to traverse a troubled area, we sailed with at least one other boat. We did not carry firearms, as most Caribbean countries have strict laws prohibiting them. We also learned never to leave a dinghy in the water overnight, especially one with an outboard on it, and we carried a chain and padlock to lock our dinghy to a pier when going ashore. We also had a padlock on the outboard. The best source of information



about where to cruise safely is the Caribbean Safety and Security Net, discussed below.

Watermaker – Many cruisers did not have watermakers; we provided a great deal of fresh water to several of them. If you plan never to be more than a day or so away from a marina, you may not need a watermaker, but if you plan to anchor off an idyllic island for a few days, you'll wish you had one. We once spent six weeks anchored off Isla La Blanquilla, about 100 miles off the north coast of Venezuela. We loved every minute of it and could not have done it without a watermaker. Be sure to carry spare filters for the watermaker.

Anchors – We learned how to properly set an anchor through the Power Squadron. We also learned to carry at least three types: Danforth, Bruce, and Brittany (similar to the Danforth, but stockless). Different anchors are necessary for different bottoms. Plus, there were times when we deployed two or more anchors. In narrow anchorages with minimal swinging room, or those where the tide reversed the direction of the current, we used fore-and-aft anchors in a Bahamian-style deployment. If the winds were particularly strong, we used two anchors for safety.

Electric windlass – *Sojourner*'s anchors are heavy. Pulling in a 65-pound anchor plus another 200 pounds of chain by hand is no fun. We carried 230 feet of chain rode and needed it all on occasion. There are some lovely, but deep, anchorages in the Caribbean.

Refrigeration – Refrigerators, freezers, and icemakers come in all sizes and types from engine-driven to electric to propane. We have met many cruisers who would not fool with any kind of refrigeration. We also met cruisers who would not leave a marina without a functioning icemaker. We landed somewhere in the middle. *Sojourner* has a top-loading 12-volt refrigerator capable of making ice, although we rarely needed ice. The fridge was adequate for items that had to be refrigerated: cheese and fresh meat or fish. We never refrigerated eggs, vegetables, or fruit.

Generators – The more electric stuff on board — such as refrigerators, freezers, and watermakers — the more need for a way to charge batteries or generate 120-volt AC. We met cruisers who installed a 120-volt AC generator on the engine, but we had a separate diesel-powered 4-kilowatt Onan that could run our air conditioner and watermaker while charging our batteries at the same time. We never used solar panels or wind generators.

> **"We had the opportunity to get certified for scuba. What a wonderful experience."**

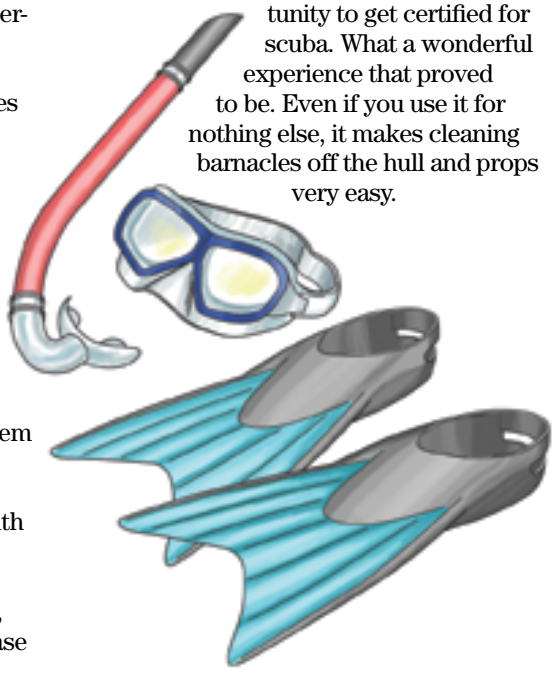
Air conditioning – At anchor, we rarely ran our air conditioner because we had nice trade-wind breezes, but in marinas, we really enjoyed it. The heat can get stifling if a marina is tucked behind hills or buildings that block the breeze. Ours was a 16,000-Btu water-cooled Mermaid.

Propane – Almost everyone carries propane to fuel a water heater or stove and range. We carried three 20-pound tanks because we liked to stay at anchor for extended periods. Only one tank could be connected at a time, and we installed a safety shut-off switch for the propane supply. We sure didn't want a leak to go undetected. A propane detector is a good idea. We never had any problem getting tanks refilled.

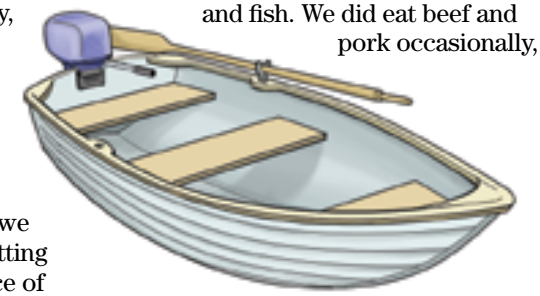
Clothing – We started cruising with all kinds of extra clothing until we realized that all we needed was a couple of pairs of pants and shirts, skirts and blouses, and shoes in case we had to fly back to the States. Other than that, it was bathing suits, cargo shorts, T-shirts, and sandals. Because the tropical sun is hard on clothes and our clothes were frequently ruined by oil, caulk, or grease, we were always on the lookout for cheap replacements. Finding replacement T-shirts, shorts, and sandals was not a problem.

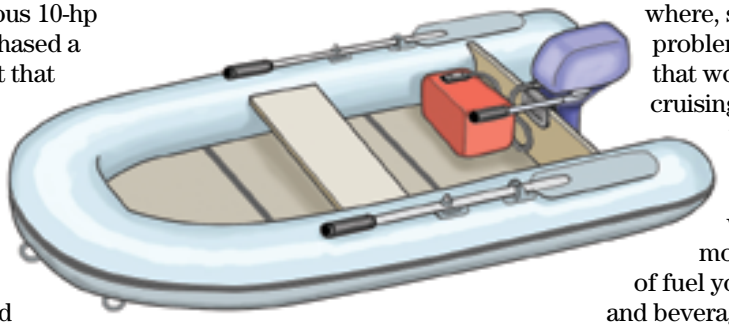
Sunshades – A sunshade covering for the entire boat is important in the Caribbean. The tropical sun can be brutal, but a shade can make an otherwise sweaty day very enjoyable. We carried a sewing machine, and Jan made our sunshade and roll-up side panels out of a material called Griffolyn. It's tough as nails, half the weight of Sunbrella, and waterproof. We chose white after trying blue and green. The darker colors looked nice but got very hot and cut down on the light inside the boat. The sunshades enabled the air conditioner to do a more effective job. Reef Industries makes Griffolyn (see Resources, page 41).

Snorkel and scuba – We got along fine with snorkels for the first three years in the Caribbean. Then we had the opportunity to get certified for scuba. What a wonderful experience that proved to be. Even if you use it for nothing else, it makes cleaning barnacles off the hull and props very easy.



Dinghy and outboard – Our first dinghy was a 10-foot Avon inflatable. The advantage of an inflatable is that it can be deflated for storage. We never deflated ours intentionally, although it deflated itself at some inopportune times. We eventually purchased a 10-foot Livingston fiberglass dinghy. It had the same overall dimensions as the Avon and weighed the same. It never deflated and we didn't have to worry about it getting torn by a barnacle or sharp piece of coral. We also had a cantankerous 10-hp Evinrude outboard, so we purchased a new Yamaha 15-hp replacement that ran like a dream. A dependable dinghy and outboard are absolutely essential for getting to shore or the marina when you're anchored out.





Food – When we started cruising, we carried lots of dried and canned food. This was unnecessary. Food can be purchased everywhere. We started eating like the natives do with lots of local fruit, vegetables, chicken, and fish. We did eat beef and pork occasionally, but outside the United States no one seems to age beef, so it doesn't taste the way we expect it to.

Finances – ATMs are everywhere, so we didn't carry lots of cash or traveler's checks. However, we had to pay a conversion fee for the local currency and a bank fee each time we used one, so each time we used an ATM, we drew as much as we felt safe carrying. We also kept about $1,000 in cash hidden aboard for use in an emergency. U.S. dollars and euros are accepted everywhere, so spending money is not a problem. We developed a budget that worked for us. When we were cruising (from 1999 through 2007), we met cruisers who were spending as little as $1,000 a month and others who were spending $5,000 a month. Obviously, the amount of fuel you require, the type of food and beverages and entertainment you

prefer, and the maintenance costs for your boat will have a great influence on your budget. We found that talking with other cruisers was the best way to find out about current prices in various locations.

The Caribbean Safety and Security Net – We always monitored this wonderful net on our SSB radio in order to learn what was going on in the Caribbean. It was also a great source of information on where to get services.

Herb Hilgenberg and South Bound II – We had not heard of Herb Hilgenberg and his call sign, South Bound II, before we started cruising. Herb has been broadcasting Atlantic weather and helping cruisers for more than 20 years. He specializes in advising transatlantic cruisers about weather in the Atlantic, but he will also help Bahamas-bound cruisers. He draws the line at the Caribbean because of the many other nets and aids in that area. Herb is one of the cruising community's greatest assets.

Our experience

We felt the cruising lifestyle was very healthful, and provided us with plenty of exercise and fresh air. We found the cruising community to be made up of lovely people who were always willing to assist whether we needed advice or a helping hand with a project, and we still correspond with dozens of them.

We had a wonderful time and will always treasure the memories of our cruising days.

> **"We found the cruising community to be made up of lovely people and we still correspond with dozens of them."**

Cruising was nothing like living ashore. Even with a watermaker, we took Navy showers or we bathed in the ocean and rinsed with fresh water. We also learned to conserve battery power. We snorkeled and went scuba diving. We read and swapped dozens of books, DVDs, and computer games with other cruisers. We played hours and hours of dominoes and worked hundreds of crossword puzzles.

We learned about the history and culture of the countries we visited and took many tours inland. We made an effort to learn a little Spanish and French. And even though our accents and grammar were terrible, we had fun at least trying to communicate with the locals. We know our efforts were appreciated. We found an excellent book, titled *Spanish for Cruisers*, by Kathy Parsons, that covers all the Spanish words and phrases we needed in order to obtain parts or repairs for our boat. (***Note:*** *Kathy has published a French version also.* ***–Eds.***) We learned that a smile is understood in any language and paid big dividends when dealing with officials in the various countries we visited.

We tried to use common sense, be safe and, more than anything else, we really enjoyed being on Island Time.

Dan Ahart, and his wife, Jan, found they had a common interest in boating when they were dating, about 42 years ago. They later owned a 17-foot O'Day and a MacGregor 26. When retirement loomed, they became interested in ocean sailing and bought Sojourner.

Resources

Reef Industries
Manufacturer of Griffolyn
www.reefindustries.com

The Caribbean Safety and Security Net
www.safetyandsecuritynet.com

Herb Hilgenburg
www3.sympatico.ca/hehilgen/vax498.htm

Managing seasickness

Ways to cope with motion unease

by Vern Hobbs

Call it *mal de mer*, Neptune's revenge, or the breakwater flu … chances are, if you venture very far offshore, you will become acquainted with the most unwelcome of on-board guests: seasickness. This malady spares few sailors and usually amounts to nothing worse than passing discomfort, but because seasickness may become life-threatening in some cases, it should be understood, planned for, and taken seriously.

Despite what some might say, seasickness is not "all in your head." Medically speaking, it is an acute condition, meaning it isn't permanent or long-term. It's the result of a sensory conflict caused by exposure to passive motion. If this sounds uncomfortably familiar, you're not alone. Clinical studies reveal that 25 percent of those people exposed to moderate passive-motion situations experience motion sickness. NASA admits that 75 percent of its astronauts are afflicted. In short, although tolerance levels differ among individuals, most everyone is susceptible. While total immunity may be out of reach, effective prevention and treatment is not.

Many popular home remedies for motion sickness might already be stored in the galley.

Preventive measures

The surest way to prevent seasickness is to determine your level of tolerance to motion and to set appropriate limits. If 4-foot seas make you nauseous, keeping to protected waters the first few days or limiting early passages to those that can be completed in 24 hours may prove wise. Establishing a limit of 3-foot seas whenever possible for offshore sailing might be a good idea, but bear in mind that individual tolerances improve with exposure; you may soon overcome that 3-foot limit.

Since mental and physical activity lessen the likelihood of seasickness, steering the boat, coiling lines, performing simple on-deck maintenance chores, or just engaging in conversation often stave off motion-induced nausea. Physical posture, location on the boat, and visual orientation also significantly affect a person's reaction to motion. Sitting upright or standing near midships, where relative motion is less exaggerated, frequently brings relief. Focusing on the horizon may alleviate the sensory conflict that produces seasickness. Conversely, close-focused tasks such as reading, using binoculars, or prolonged periods belowdecks may invite the onset of seasickness and worsen its symptoms.

Nutrition and hydration are key factors in the prevention of seasickness. Some things are obvious. A greasy jalapeno-and-sausage omelet probably isn't the best breakfast choice ahead of a day of heavy-weather sailing, but neither is abstention. A strong, well-nourished body withstands the rigors of motion far better than a weak and hungry one. Choose easily digested, energy-packed foods, such as boiled eggs or oatmeal, for that pre-sail breakfast. Menu planning for a cruise should follow the same logic: hearty but relatively bland fare for passages, saving the exotic, spicy dishes for quiet anchorages.

Fluid intake is also vitally important as a preventive measure and as treatment if seasickness does occur. Pre-hydration is a common practice among athletes preparing for competition. Ensure your body is thoroughly hydrated prior to leaving the dock to fortify it against the onset of motion sickness. Then continue to drink adequate quantities of water once under way. Non-acidic fruit juices and mild teas offer variety with the added bonus of vitamins and nutrients, but they are not a substitute for water. Consume

Resources

Websites

www.scuba-doc.com
www.biobands.com
www.fishinkona.com
www.drugs.com
www.mayoclinic.com
www.ncbi.nlm.nih.gov/pubmedhealth

Books

Take Care of Yourself by Donald M. Vickery, M.D., and James F. Fries, M.D.
The Care and Feeding of Sailing Crew by Lin and Larry Pardey

these liquids in addition to, not in lieu of, good old H_2O. Avoid caffeine and alcohol. Both substances tend to deplete and dehydrate the body. What's more, the latter may serve to block the secretion of another essential element, common sense.

Physical well-being affects tolerance to motion. Minor maladies, such as a cold or simple fatigue, may invite the onset of seasickness in conditions that would otherwise appear benign. Consider the crew's general state of health before beginning a passage. Lin and Larry Pardey's excellent book, *The Care and Feeding of Sailing Crew*, offers sound advice about health maintenance and nutrition for cruisers.

Home remedies

Ginger has long been used to treat seasickness; its effectiveness is not mere folklore. Ginger is a carminative herb, proven to increase bile secretion and stimulate digestion. A double-blind study demonstrated that one gram of ginger, taken 12 hours prior to exposure to passive motion, is effective in reducing nausea. Ginger is readily available at most grocery stores in root or powder form and is also found in processed food products such as ginger cookies and ginger ale. This spice doesn't have to be consumed raw to have an effect on seasickness. It is not altered by cooking, so processed food products such as ginger cookies, ginger ale, and even ginger candies, such as Preggie Pops, Queasy Pops, and Queasy Drops, will produce the same soothing effect as the raw herb while adding a few carbohydrate-based calories. Another source of ginger is ginger teas. These are available in a wide variety on most grocery-store shelves and in profusion in any health-food store.

Saltine crackers will sometimes ease the symptoms of seasickness, especially in its early stage. Saltines are easily digested and induce secretion of natural sugars that help calm the stomach. These crackers are also useful for treating prolonged seasickness, as they provide a digestible medium for replacing salt, an essential mineral needed to replenish depleted electrolytes.

Honey and cinnamon, taken together or separately, are remedies many seasoned mariners swear by. Cinnamon produces gastric benefits similar to those of ginger but is found by many to have a more pleasing flavor. Honey provides an impressive degree of nutritional value, is soothing to the stomach, and can often be held down even in severe cases of seasickness.

Herbal teas and lozenges are readily available, above, and non-prescription drugs for combating motion sickness abound on drugstore shelves.

Non-prescription remedies

A recent visit to a local pharmacy revealed seven non-prescription drugs advertised as preventing or treating seasickness. Many of these products were variations promising enhanced effectiveness through "extra strength" or offered in a "non-drowsy formula." There were also a number of products intended specifically for children. All formulas, however, contained one of four FDA-approved active ingredients. A fifth is not yet available in the U.S.

1. Dimenhydrinate, under the brand name Dramamine, may be the best-known and most widely used over-the-counter motion sickness treatment in the U.S.
2. Diphenhydramine, another common product, is marketed under the trade names Benadryl, Banophen, and Hydramine.
3. Meclizine is contained in Antivert, and the popular medication Bonine.
4. Cyclisine is the active ingredient in Marezine.
5. Cinnarizine, sold under the brand names Stugeron and Stunarone, has become an increasingly popular non-prescription treatment within the global cruising community. However, this product lacks FDA approval and is not available in the U.S. or Canada.

Independent studies have found that all these products effectively relieve or prevent motion sickness in approximately 50 percent of the people tested.

The labels on these products warn of a host of possible side effects (drowsiness being the most common), some of them quite severe if the product is not used properly. Caution and perhaps the counsel of a physician is advisable, especially when contemplating frequent or prolonged use of these medications.

Wrist bands, sold under brand names such as Sea Band or Bio Bands, have recently found wide acceptance in the prevention of seasickness. Employing the ancient principle of acupressure, the bands work by applying a light, steady pressure to the Nei Kuan, or P-6 pulse points located in the wrist. A more advanced version delivers a mild electrical shock to the same points. Many sailors report that acupressure bands are effective, adding that the bands produce no side effects and have the further advantage of being reusable.

Prescription remedies

If common preventive measures and non-prescription medications fail to prevent or effectively reduce the symptoms of seasickness, a physician may prescribe more powerful drugs. Cruising sailor Fred Bagley, M.D., points out that many doctors lack extensive experience treating motion sickness. He wisely counsels, "Educated patients who make their problems clear to their doctors are very important."

Your doctor may prescribe Scopolamine, often administered via the popular Transderm-Scop patch or sold in tablet form under the name Scopace. Following its initial release, Scopolamine was recalled amid fears it contributed to birth defects. It was later reintroduced in a modified form and has a reputation for effective and consistent results. NASA considers Scopolamine the most effective motion-sickness medicine, reporting 75 percent effectiveness in clinical testing. However, some users have reported visual distortion while on the patch. Scopolamine should *not* be used if you have glaucoma, and it is not presently available for children.

Phenergan, compazine, ephedrine, promethazine, and emetrol are also sometimes prescribed to control seasickness and may even be available outside the U.S. without a prescription. However, these are powerful drugs that may produce significant side effects. Don't experiment; consult a doctor before taking new and unfamiliar medications.

> **"With the passage of time, the symptoms of seasickness will usually lessen, become sporadic, and subside."**

First aid

With the passage of time, the symptoms of seasickness will usually lessen, become sporadic, and subside. Seasickness that persists unabated beyond 24 hours and involves frequent vomiting, however, will result in dehydration and must be treated as a medical emergency.

Divert to a safe port, if possible. Continue to employ the preventive techniques discussed and administer any appropriate remedies and medications available, while being mindful of known allergies and cautionary labeling. Encourage the afflicted crewmember to sip water. Provide saltine crackers, honey, applesauce, and salty broths in small amounts but at frequent intervals. Consult all available first-aid or medical publications. Consistently monitor the person's condition. Should it worsen, consider transmitting a distress message requesting medical assistance or possibly evacuation.

Conclusion

As your sailing horizons broaden, seasickness, pardon the pun, is bound to come up. When it does, don't ignore it or treat it as a joke, but don't consider it to be a cruise-ending calamity. Employ the preventive measures and remedies outlined, remembering that what works for one person may not work for another. Keep experimenting, within the bounds of safety, until you discover which methods work best for you and members of your crew. Address seasickness as you would any other disruptive event — equipment breakdowns or unexpected bad weather — with knowledge, teamwork, and sound judgment.

Vern Hobbs and his wife, Sally, sail a Bristol 35 from their home port of Cape Canaveral, Florida. Check out Vern's new novel, Flying Fish, *as well as his maritime art at www.flying-fish-creative.com.*

Ginger cookies

Fred and Jennifer Bagley make sure they have ginger cookies on hand before each passage. They figure a cookie or two each day may just keep seasickness at bay. Even if this recipe doesn't cure *mal de mer*, these cookies are mouthwatering good.

–Editors

Directions

In a large bowl, combine ¾ cup shortening, 1 cup sugar, ¼ cup molasses, and one egg.

In another container, combine 2 cups flour, 2 teaspoons baking soda, 1 teaspoon cinnamon, 1 teaspoon ginger, and ½ teaspoon ground cloves.

Blend flour mixture into the sugar batch. Chill the mixture for an hour or so.

To bake, take a small spoonful, roll the batter in your hands into a round ball, dip it in sugar, and place on cookie sheet.

Cook in moderate oven (approximately 350 F). Cookies will have a cracked surface. Take them out after 10 to 12 minutes, depending on whether you want them crispy (cook a bit longer) or chewy (remove from the oven a bit sooner).

Moving aboard

A family of four dreams big, goes small

by Serena Li

On a cold November night in 2010, my husband and I attended a liveaboard brunch at a nearby marina. There the seed of an old dream germinated. Years ago, we'd had the desire to live on a sailboat and cruise, but the momentum of land life swept it aside. A house and two children later, we decided to go for it.

Life, we decided, was too short to wait until we were retired. Tig and I also believed that living simply and within arm's reach of our young children was the greatest gift we could give them in their early years.

As the tides of our will reversed, we found ourselves on a five-year plan to move aboard a boat, and the search began for my husband's new mistress . . . er, boat.

We pored through reviews in books and magazines together. Tig searched for boats online during every spare moment. He checked while our 3-month-old baby napped in his arms. He checked late in the evening. He checked at every pause in our conversations. I was busy researching yacht brokers, marine surveyors, and how to perform boat inspections. I posted questions on forums and tried to digest all the information that was coming at us as if from a fire hose.

After making a rather naïve initial statement of requirements, we went on a whirlwind tour of nine boats in four days during the holidays. With a toddler and baby in tow, it was not fun nor easy, but we fumbled our way through it.

Narrowing the field

After several months spent doing more research and making more boat visits, we found that we were attracted to boats of the European persuasion and of 1980s vintage. In particular, Tig liked the northern European builders, who have good reputations for constructing the sturdy boats needed to stand up to the sailing conditions in the North Sea. Their boats also tended to have more suitable accommodations for our family when compared with other boats of similar length and vintage. Unfortunately, the hard part was finding these boats at prices within our budget.

One day, Tig casually said, "Well, there's a 32-foot Contest in Connecticut."

"Absolutely not," I replied.

In the beginning, we had arbitrarily picked 38 to 42 feet as the ideal size of boat for our family of four. One book we read advised cruising families to get the largest and most comfortable boat they could reasonably afford. In looking at many liveaboard and cruising blogs, we noted that families do tend to have boats starting in the 40-foot range. Other authors pointed out that an extra 10 feet nearly doubles the annual cost of a boat in higher docking fees and haulout costs, insurance, parts, and more.

Both arguments have their points. As we had no experience with either side, we found ourselves getting tangled up with intellectual pros and cons. We pulled the plug on the noise and decided to make the decisions by looking within ourselves.

Our lack of sailing experience and our budget pushed us toward a smaller boat. It was important that we both felt comfortable handling our chosen sailboat. As we stood on the decks of candidates, we listened for a quiet inner voice to say, "This boat is too big. This boat is too small. This boat is just right." With that in mind, we settled on 34 to 36 feet as the size requirement. Squeezing our family into a 32-foot boat seemed improbable.

Small is suitable

Tig ended up convincing me to at least look at the Contest 32, a Dutch-built center-cockpit ketch. One cold February morning, we drove to Stonington, Connecticut. The boat was stashed all the way in the back of the boatyard near the train tracks. She was uncovered and had several inches of snow

Although at 32 feet *Wildest Dream*, facing page, is smaller than they imagined their dream boat would be, Serena, at left, wearing the baby backpack, and Tig, below, showing their 3-year-old the ropes, have found her to be everything they need right now.

on the deck. Ice floated in the bilge and condensation dripped from the overhead. But the deck looked manageable, the interior was well-crafted, her systems were simple, and her electronics minimal. Even better was the aft-cabin arrangement with its two separate berths that would be ideal for our children. We did not experience the love at first sight many boat owners describe. Instead, it was a slow recognition as something clicked. We thought, "This could work."

Since Contest 32s are not common on this side of the pond, we had to look into Dutch and German reviews with lots of help from Google Translate. We put in an offer, negotiated back and forth a little, and went into a purchase and sale agreement. We had her surveyed, ran a sea trial, and went for a test sail. Our surveyor concluded that she was "a simple little boat" . . . exactly what we were looking for. Aside from a loose Cutless bearing, the engine ran well and the rigging looked good. The test sail went smoothly. One fine day, we drove to Connecticut and climbed aboard as new owners. Only after we closed did we pay attention to her name. Since it seemed fitting for our journey, we kept her name: *Wildest Dream*.

Tig was antsy to get our good old boat up to Boston as soon as possible, so we put out a call for experienced sailors. Luck smiled on us as a sailor wrote to say he had sailed the run from eastern Connecticut many times and offered to be the acting skipper. Momentum gathered and we soon had a full crew.

The crew expressed interest in delivering the boat as quickly as possible. That meant that our kids — at the time, 2 years old and 8 months — and I shouldn't come on this trip. We wanted their first sailing experience to be a leisurely and positive one. This was not the right introductory voyage for them. The weeks leading up to the trip were abuzz with preparations and last-minute repairs.

In late April, the crew set off. Two days later, *Wildest Dream* was safely docked at our summer marina in Charlestown, Massachusetts. One of the crew described Tig as "a new owner who was the quickest study I've ever sailed with."

Making the transition

Summer sailing season was soon upon us, so the race was on to move aboard. We started a project list with some "must have" items before moving aboard: a propane line that didn't leak, a working stove, hot water, bilge alarms, and mattresses that didn't stink of mildew and diesel. Tig ripped out the entire propane line and I set to work cutting new foam cushions and sewing covers for them. We worked around the clock on weekends and after the kids went to sleep.

As we approached the deadline, our list got shorter. We crossed off a few important items and discarded the rest one by one. No hot water? No problem, we thought, we'll fix it this winter. As we were moving aboard, Tig promised to install the propane stove that night. Seven months after we attended that fateful marina brunch, we became liveaboards.

Once we moved aboard, we had to tackle another problem: my only sailing experience was through dinghy

lessons 10 years before, where I learned the true meaning of "swear like a sailor." Tig liked to joke that a cloud of obscenity still hangs over San Francisco Bay. He had only a bit more experience than I did.

All through the summer, learning to sail was the top priority. We prioritized boat projects based on whether they were necessary to achieve our goal safely. The only major work we did was to upgrade our 6-gallon holding tank so we could handle overnights more comfortably.

Each trip out was a new lesson and brought with it new frustrations. In the beginning, we brought along experienced sailors to teach us. I learned to dock and back into our slip with a baby strapped onto my back. Tig and I tested different configurations of sails in gusty conditions. We learned to anchor under sail and to sail off the anchor. Starting with day sails, we built up to overnights and then weekends. We made sure not to limit our sailing experiences to perfect conditions only.

We made many novice mistakes. We got caught in two squalls and left the genoa on too long as dark skies gathered. In Nahant, we didn't tie things on deck tightly enough at anchor, causing us hours of lost sleep as *Wildest Dream* was tossed around like a beer can on a windy night. We also experienced embarrassing docking fiascos. The ramifications of having two small children aboard amplified my fears and caution.

But there were wonderful moments too. The adrenaline rush of the first time we went sailing by ourselves. Watching the sun set behind Calf Island, my daughter's arm encircling my neck as I told her about the sun putting on its red pajamas and snuggling underneath a Technicolor blanket. Our family serenading a velvet night sky splashed with glitter.

I tuck these tender snapshots into the corners of my mind whenever things get hard, to remind me that we have one wild and precious life in which to chase the stars.

Serena Li lives with her husband, Tig, and their two young children on their Contest 32CS ketch, Wildest Dream. *They spent their first summer aboard sailing around the Boston Harbor Islands. This past summer, they began cruising south along the U.S. East Coast on their way toward the Bahamas.*

The adventures of Tig and Serena

Read more about how Tig and Serena are living out (and aboard) their *Wildest Dream* at <www.tigandserena.com>.

Their reports about delivering *Wildest Dream* from Connecticut to Boston are at <www.tigandserena.com/2011/04/28/go-team-w> and <www.tigandserena.com/2011/05/02/we-made-it-to-boston>.

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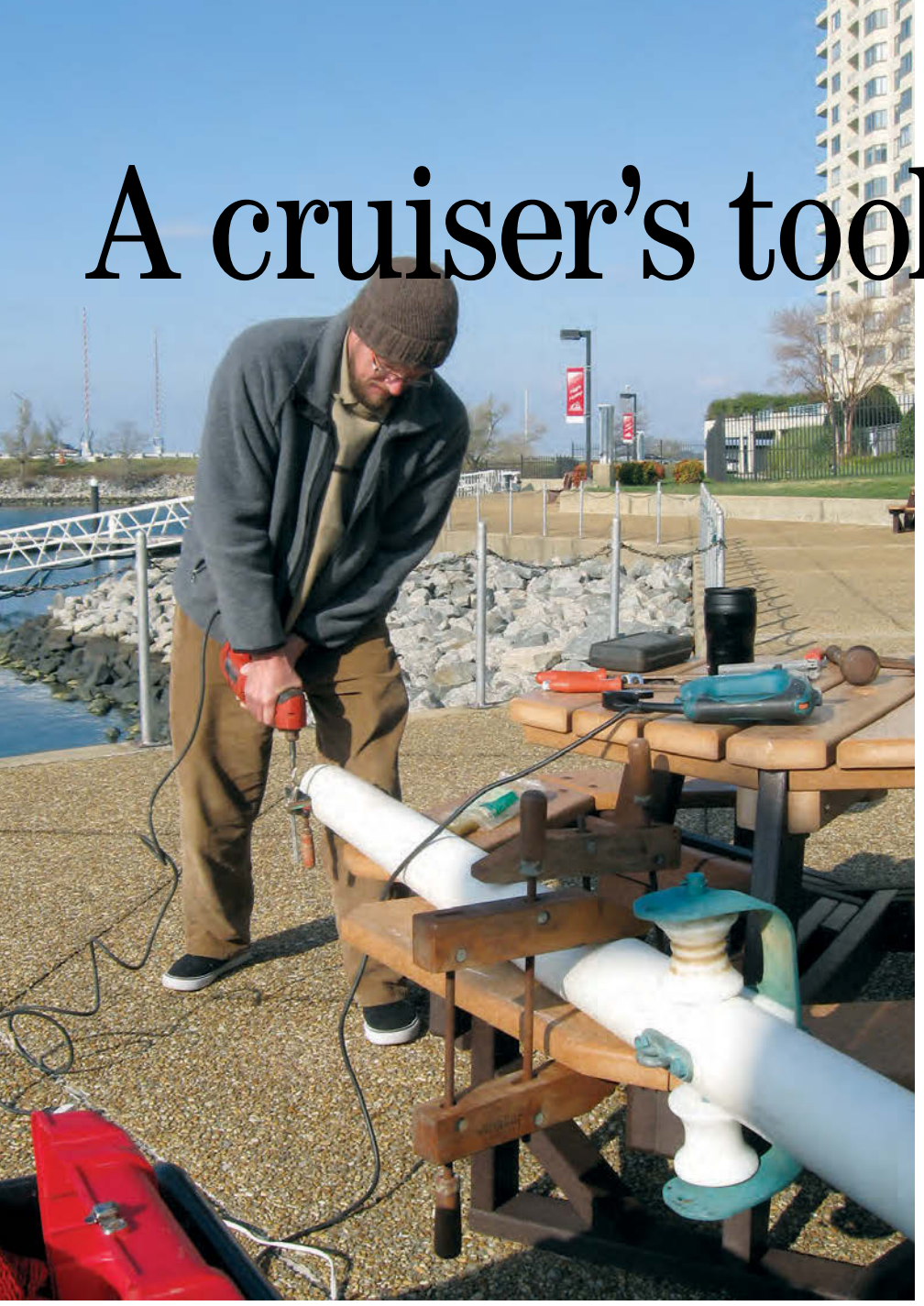
A cruiser's toolbox



With the big wooden clamp holding *Ganymede's* bowsprit firmly in place, at left, Ben modifies the cranse iron. Antigone helps her father drive a screw with his ratcheting hand-brace, below, one of the most useful items in the cruiser's box of tools that don't need electricity.

You can't take all of them with you …

BY BEN ZARTMAN

One of the things I knew I'd miss most, once we cast off the docklines and went cruising on the 31-foot Cape George cutter I'd built from a kit hull, was my power tools. For the three years it had taken to put *Ganymede* together, I had practically lived in my dirt-floored pipe-framed tarp shop, spending every minute I could spare from family or work among my table saw, drill press, planer, and router. When it came time to sell them — an essential part of padding the cruising kitty — it was a lot harder than I had expected. To store them against some future need was impossible. We wanted to sail away and return only for visits, so the only things to leave behind were those we couldn't dispose of with ease. Another hard decision to make was which tools to bring along on the boat. With three small children and all the clothes and toys and diapers they required, we had to maximize every inch of space, bringing only the barest essentials.

That, of course, ruled out the drill press, which I had briefly hoped might *somehow* be made to fit in the sail locker. And reason told me that my treasured mini-lathe, so handy for turning belaying pins and toggles, would only get ruined in the damp under the foredeck. What I did bring, in the end, was still too much, but after a 7,000-mile, seven-country cruise, I have a pretty good notion of what I really need.

Minimal electrics

Ganymede doesn't have an electrical system, so we carry only two corded power tools, a Milwaukee 45-degree drill and a Makita saber saw. These are not useful for repairs at sea or at anchor, but come in very handy for projects that can be unshipped and taken ashore and for times in the boatyard. They're stored in double heavy-duty Ziplocs at the back of the tool locker and are worth their weight in gold when an outlet on shore is handy.

Ben fitted a woodworking vise and a drill-press vise to his portable workbench, at left. The two wooden feet underneath fit securely into *Ganymede*'s foc's'le hatch coamings when Ben has a project he can work on when on board. Ben sharpens a long drill bit on his hand-powered grinder, at right. This one is made by the Prairie Tool company and costs about $15. It attaches to the table with a screw clamp. A big wooden clamp holds the boom jaws to the fiberglass boom, below, until they can be glassed firmly in place.

For those times when power is not available, I have a secret weapon: an old-fashioned ratcheting hand brace. It was one of the tools I used most in the construction of the boat. I drove hundreds of screws and lag bolts with it and I've come to prefer it over an electric drill for that purpose. After all, it never runs out of batteries, weighs a fraction of what an electric one does, and the slower speed is less likely to strip a screwhead. At anchor, I've used it to drill weep holes in *Ganymede*'s aluminum spars and through fiberglass, as well as for boring countless holes in wood.

A versatile workbench

Another vital element of my shipboard "shop" is a portable workbench. Since the brace takes two hands to operate, being able to hold things still is vital. For this, I screwed two strips of wood to the underside of a yard-long 2 x 6 Douglas fir plank. This allows it to sit on the forehatch coaming without slipping around. I mounted two low-profile but powerful vises to this plank — one a woodworker's bench vise and the other a drill-press vise. When not in use (that is, most of the time) the bench sits in the back of the sail locker out of the way, but is easy to pull out and take anywhere.

A couple of big wooden clamps are the next essential pieces of gear. Mine are about a foot long and open to 8 inches. Not only are they useful for holding workpieces still, they also can clamp the workbench to a marina picnic table without causing damage.

I have mixed feelings about my last unconventional tool — the debate about whether I use it enough to justify its storage continues within — but it's such a moneysaver in the long run I suspect I'll not be able to part with it. It's a small hand-cranked grindstone with a clamp that allows it to mount handily to the edge of my workbench. During *Ganymede*'s construction I used it to sharpen drill bits dulled by repeatedly chewing through the solid fiberglass hull, thus restoring them time and again to usefulness. The slow rpm means the bits don't heat up too much as they're ground and it's still far faster than a file and whetstone. It also serves well for de-burring sawed-off bits of rod stock, sharpening scratch awls, and grinding notches out of chisels and planer edges.

Eliminating the unused

As for the rest of my tool collection, swap meet by swap meet I am slowly, divesting it of surplus items. What cruiser needs three sets of box-end wrenches or four dozen 5-inch wood clamps? But whatever compromise between storage space and usefulness I'm forced to make in the end, these four bastions of my onboard shop have proved indispensable enough to secure their future. And someday, I fondly think, when the children have sailed from the nest, perhaps there will be room for a mini-lathe. I'm already eyeing one of their bunks for size.

Ben Zartman lives with his wife, Danielle, and three young daughters aboard Ganymede, *the 30-foot Cape George Cutter he built from a kit hull. They spent last winter in Newport, Rhode Island, contemplating an Atlantic crossing. Follow them on their blog at www.zartmancruising.com.*

Sail plans for cruising

Variety is the spice of the sailing life

BY TODD DUFF

One of the greatest aspects of offshore and coastal cruising is meeting other like-minded souls out there who are sailing the world's oceans, dealing with the same logistics and difficulties, and reaping many of the same rewards as we are. There's no question that mixing with the local people, blending in with the cultures of the various countries we visit, learning what we can, and sharing what we have with others is largely what cruising is about . . . but it is also about meeting other cruising sailors.

In port, we often socialize with cruisers from many different backgrounds, countries, and ways of life. Yet, as we all find ourselves in the same places doing the same sorts of things, bonds are formed. At any cruiser bar or beachside potluck, sooner or later the conversation will drift to boats, rigs, and systems.

In the many years we've been sailing schooners and ketches, one of the questions we have been asked most frequently is, "Why do you sail a ketch (or schooner)?" The answer we give is the result of analyzing many factors. Having sailed most of our lives, we have accumulated experience with many different rigs.

Rigs have changed

Thanks to modern sailmaking materials and sail-handling equipment, we are seeing bigger and bigger boats being handled by smaller and smaller crews. It is not uncommon to come across 50- or 60-year-old couples sailing 50- or 60-foot yachts relying entirely on electric or hydraulic furling and anchoring systems.

When we began cruising, I remember clearly thinking, "I'll never have a roller-furling jib. They always fail!" In the early days of roller furling, it was often jokingly referred to as "roller failing." As this equipment has improved, due to a proliferation of manufacturers competing to build the best and most reliable systems, things have sure changed and for the better. We now believe that roller-furling jibs are probably the single most important safety system developed for sailboats during the 20th century. Roller furling keeps the crew off the bowsprit and, when combined with in-mast mainsail furling, keeps the crew in the cockpit for all sail handling, something that can be a real safety factor in high winds and big seas.

Conventional wisdom maintains that a sloop is the most efficient cruising rig for upwind work. Cutters — so popular in the days before reliable roller furling became commonplace — are becoming extinct as they are being replaced by roller-headsail sloops and rigs referred to as double-headsail sloops that have two, and sometimes more, roller-furling sails near the stem ready to be used in different conditions.

Few ketches, so popular in the 1970s and early '80s, are built anymore. When they are, they are rarely smaller than 50 feet. Most people elect to have a single stick in an effort to create the most efficient and simple rig for upwind

All the sails except the fisherman on the Farrington 52 staysail schooner, *Kai Kanani,* were on roller furling. When Todd owned this boat, his 12-year-old son Alex could sail her using the electric winches and furling gear.

PHOTOS BY GAYLE SUHICH; PHOTO OF *Joli y mon* , FACING PAGE, BY GARY FELTON

Todd's fiancée, Gayle Suhich, owned the S&S-designed Hughes Northstar 48 yawl, *Jolly Mon*, above, and ran her as a day-charter vessel in the Caribbean for 17 years. Todd once owned the brigantine, *One World*, below, seen here entering Ensenada Honda in Culebra, Puerto Rico, at the end of a four-day passage from Curaçao.

work. That most long-distance cruising is (don't we hope?) accomplished on a reach or downwind, and that these modern designs often rely on very sophisticated, expensive, and complicated sail-handling gear, is considered by most to be "normal" these days. As a result, little thought is given to some of the more traditional rigs that graced anchorages and sailed offshore and coastal waters in years gone by.

Having owned quite a few sloops, several cutters and ketches, two schooners, and a brigantine over the years, my fiancée, Gayle Suhich, and I usually have a different view from most about the best rig for cruising when this topic comes up at the beachside discussions.

Sloops

Sloops, as we all know, are simple. If you can sail at all, you can probably make a sloop perform reasonably well, and if your goal is to have the simplest rig, a sloop is a good choice. For many people, sail handling and trimming is a bother. Many who race sloops would say that having two sails for going upwind and a spinnaker for downwind work is quite enough of a challenge. Just getting the most out of those two or three sails is satisfying and fun for many, and that's OK.

Cutters

It's generally accepted that cutters were developed as a way of offering easier sail handling and greater flexibility in balance than a traditional sloop rig could offer. With the cutter, a smaller jib could be bent on and a staysail could create the extra sail area needed to provide good drive, but each sail was smaller and therefore easier to handle. In the days before roller furling became commonplace, this was a good alternative to dealing with large jibs that had to be dropped in a hurry in squally or rapidly building conditions. The concept of the cutter is brilliant in that, as the sails are reefed and dropped, the sail plan comes

> “Reaching is a ketch’s strong point, and we all hope our cruises will provide a lot of reaching.”

well inboard. The mast is also more adequately stayed than it typically is with a sloop rig. The downside, of course, is that the rig has more windage, an inner forestay that gets in the way of easy tacking, and it’s more complicated, making it a more expensive rig to maintain.

Ketches and yawls

Ketches, and to a lesser extent yawls, share some of the simplicity of the sloop rig while offering the ability to have much greater control over the center of effort of the sail plan. A split rig provides a lot more flexibility in terms of how the sails are set or which sails are set in an effort to achieve a good balance between upwind and downwind performance.This flexibility offers the potential for self-steering, even without an autopilot or windvane.

Within normal crew limitations, a properly sailed ketch can carry more sail longer in a rising wind than a sloop of similar size. Reaching is a ketch’s strong point, and we all hope our cruises will provide a lot of reaching. If built with a relatively long jib luff, a ketch can do quite well upwind and, because each sail on a ketch is typically slightly smaller than one on a similar-sized sloop, the stress on the rig and gear are less. The crew has an easier time sailing the boat as well, despite having to deal with the extra sail.

Cutter ketches, or staysail ketches as they are often called, are quite common and offer tremendous flexibility in a rising wind. On one very squally passage up the Yucatan coast aboard one of my ketches many years back, we put a double reef in the mainsail and left the full mizzen up and the jib fully out. When the heavy squalls came through, we dropped the mizzen right in the cockpit and rolled in the jib. We were nearly instantly reduced to a heavy staysail and double-reefed main, a sail plan that worked well in the stronger 40-knot winds. When the squalls moved off, we simply rolled the jib back out and raised the mizzen. The double-reefed main was a little under-powered in the lighter winds between squalls, but we hardly noticed it.

Sailing upwind in heavier air, many sailors use just the mizzen, jib, and staysail. We have done that on occasion, but if conditions are squally and

***Varua*, at left, is a 1974 Westsail 42 cutter owned by friends of Todd’s who were cruising the Bahamas as he was writing this article. To Todd’s knowledge, this boat has been around the world at least once. Todd owned the Corbin “staysail ketch,” *Seafari V*, at right, many years ago. The boat is now in Quebec.**

***Jadie* is a steel gaff-rigged cutter built by Martin and Leslie Klein in Namibia. She has sailed Caribbean waters since the late 1990s. She has no roller furling and sets a variety of small sails, all easily handled by even the smallest crewmembers.**

variable, reefing or dropping and raising a main four or five times in a watch to keep the boat moving well is a lot more work than just dropping or rolling in a headsail.

Schooners

Schooners offer even more flexibility when balancing the boat on various points of sail and, in most instances, each sail on a schooner is a bit smaller than you might find on a similar-sized ketch. While luff lengths are usually shorter on a schooner, limiting their upwind capabilities, few boats can catch a properly sailed schooner off the wind or running. A schooner rigged with a yardarm and a square sail will sail downwind better and with less effort on the part of the crew than any other rig.

In the days before self-steering and autopilots, the schooner rig offered the best solution to the dilemma of short-handed sailing. With a schooner, you can undertrim the main a bit so that when the boat falls off, the main will fill properly and pull the boat back on course. When the boat sails too high, the main loses power and the center of effort moves forward again. Then the foresail and jib (or jibs) pull her back on course.

It is an interesting tidbit of nautical history that the schooner *America*, which sailed across the Atlantic in 1851, managed to beat every racing yacht she was matched against in Europe. Largely because of the success of the *America*, racing schooners were still being regularly built up to World War II and campaigned for many years after that.

Catboats and their cousins

A number of catboat-type rigs have been introduced over the years for cruising. The attraction, or marketing ploy often put forth, was that the rig was simple, easy to handle, and rugged. With the introduction of roller-furling mainsails and in-boom furling, many people who might have chosen a catboat or cat ketch/schooner may choose the simplicity of these modern furling rigs and for good reason: they are better upwind performers and typically better balanced off the wind than a catboat-type rig. That said, as long as one does not mind dealing with a large mainsail and a long boom, the cats and cat ketches can be a lot of fun to sail and are great reaching rigs.

Gaffers

The gaff rig has been largely forgotten in the last 40 years and I don't know of a single modern design sporting this well-proven and successful innovation. For centuries, the gaff rig was employed as the most suitable way to handle a boomed mainsail. The gaff, when used in conjunction with lazy-jacks, makes dropping or raising sail possible on a reach or even downwind and, if a squall comes along, just dropping the peak of the gaff can scandalize the sail, dumping much of the sail's power. Reefing with a gaff rig is very easy and, once lowered into the cradle of the lazy-jacks, a gaff holds the sail down until gaskets (sail ties) can be lashed in place.

The choice is yours

Go into any major cruising port and you'll see a broad cross-section of what people consider the best rigs and designs for long-distance cruising. One thing we have learned is that there is no right answer for the best rig to take, and we always enjoy seeing a boat with an unusual rig, well handled by a short-handed crew, entering harbor or on passage. It can also be argued that emotions can play a large part in the decision process when choosing the right rig for cruising. We know it would be easier to sail a modern sloop and in many cases it would be perfectly adequate, but over the years we have gravitated toward more unusual designs and rigs as a way of keeping ourselves entertained. We admit that when entering a new port we are never compelled to say, "Oh, look at that beautiful white sloop" when there is a schooner, brigantine, or gaff cutter or ketch sitting gracefully in the harbor, drawing our attention and eclipsing all the other craft with her beauty.

Some of the more complicated and esoteric rigs of yesteryear are not for everybody, and yet we hope that as time goes on we'll continue to see some of these excellent rigs and traditional designs sailing the oceans and taking their enthusiastic owners to the far-flung ports of the world.

Todd Duff has owned 50 sailboats over his sailing career and is a writer, photographer, marine surveyor, and former yachtbroker. Todd and his fiancée, photographer and professional captain Gayle Suhich, have accumulated approximately 150,000 sailing miles on sloops, cutters, ketches, yawls, schooners, and a brigantine. They are full-time cruisers and are now in Hawaii aboard their latest boat, the 50-foot Flying Dutchman cutter, Small World II.

On watch in all weather

Conduct ocean passages from the Maestro seat

BY ED ZACKO

In the mid-1960s, Bernard Moitessier was in Tahiti preparing his 40-foot steel ketch, *Joshua*, for a "fast return to France" by way of Cape Horn. In a burst of inspiration, he bought a round steel washbasin, cut holes in the sides, covered the holes with acrylic "portlights," then bolted the basin upside down on top of his main hatch, creating what amounted to a ball turret. This turret would give him a 360-degree view from inside the main cabin, keeping him dry and safe from the huge seas of the Southern Ocean. His voyage, which he described in his book *Cape Horn, the Logical Route*, made him an instant hero with ocean sailors the world over. Since then, the washbasin concept has evolved into a full acrylic bubble turret and, to this day, no self-respecting French cruising yacht puts to sea without one.

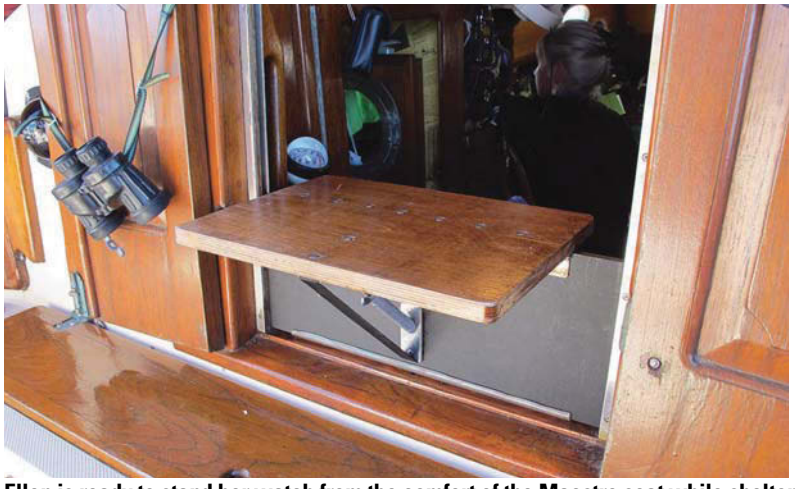
The first time we saw a boat so equipped, we laughed, saying it looked more like a spacecraft than a proper sailboat. But our first trans-Atlantic crossing (3,000 miles entirely to windward) caused us to reconsider the idea. We now understood the turret's appeal. Devising a way to sit a watch high up where we could see everything, while staying warm and dry out of the wind and weather, became a quest.

Unfortunately, there seemed no practical way to add a turret to *Entr'acte*, our Nor'Sea 27, without destroying her classic look and compromising our dinghy storage. The idea went to the back burner. During our 2003 winter in Seville, Spain, however, we met the French yacht *Maestro*, which was equipped with a full bubble turret. Her owner, Michele, suggested I "try it on for size." His version employed a simple plywood seat hinged to the companionway sill and supported by two lengths of chain connected to eyebolts on either side of the hatchway — simple and effective. I sat on the seat, looked around, and knew we had to have this.

For days we brainstormed . . . until the light came on.

An extemporized solution

Because of our companionway configuration, *Maestro*'s simple seat would not



Ellen is ready to stand her watch from the comfort of the Maestro seat while sheltered under the dodger, top of page. On *Entr'acte*, the supporting hatchboard is StarBoard and the seat is plywood, at left. Proper foot support is essential for the watchstander's long-term comfort, at right.

Ed hinged the seat off-center to leave room forward of it for standing on the ladder, top left. To ensure the seat was smooth, Ed countersunk all the nuts and cut the bolts flush with the nuts, left center. The support-rod assembly is made up of a threaded rod, compression tube, stopper nut, and a tensioning wingnut, bottom left. With the support rod in place and the limiting strap taut, the seat is ready for use, top right.

work for us . . . but what if we made a seat that slid down into the hatchboard tracks and allowed us to sit upright under the dodger? The seat would have to be secure enough to support an adult body while withstanding the strains it would encounter on a passage. It would also need to be compact and easy to stow when not in use.

The next day, I threw one together with materials I had lying around. It was Jazz! I made it up as I went along. It was easy to construct and turned out far better than I dreamed. The Maestro seat was born! The original version — made from two pieces of plywood — served us for thousands of miles and we came to rely heavily upon it.

The seat is simply two pieces of plywood hinged together. The main support piece is cut to the width of the hatchboard tracks and slides inside the tracks to sit securely on top of the companionway sill. This piece will support Ellen's or my entire body weight. The seat itself is mostly on the cockpit side of the support piece and hinged to it for easy stowage. The support slides easily down the hatch tracks and the seat is ready for use in seconds. The challenge was to make the seat solid and safe.

To make the seat one rigid, stable unit, I employed a "support rod" combined with a "limiter strap." This is the heart of the system and its only complexity. It consists of a piece of ⅜-inch stainless-steel threaded rod with a Nylock nut screwed to one end to serve as a stopper, a short piece of aluminum tubing with one end cut at a 45-degree angle to serve as a "compression tube," a washer, and a wingnut. The support rod slides through the compression tube and fits into two openings, one in the support piece and the other in the seat. The rod sets the seat into a comfortable position and prevents it from collapsing aft.

The limiter strap prevents the seat from folding forward and losing the support rod. This strap is a length of ¾-inch nylon webbing. One end is attached to the seat and the other end to the support piece. Both ends are through-bolted. Once the rod is in place, screwing the wingnut against the compression tube pushes the seat into position and puts tension on the limiter strap, which is set to become taut just as the seat reaches the perpendicular. The strap has to be tight when the seat is in use, so I made it a little short to allow for stretch.

To use the seat, I install the rod and screw the wingnut against the compression tube until the strap is tight, making the seat one rigid unit. I then slide it into the hatch tracks.

To stow the seat, I simply unscrew the wingnut and remove the rod. The seat will fall flat and remain out of the way in the hatchboard tracks, or I can slide it out and stow it as a handy backrest in the cockpit.

I constructed the supporting hatchboard from ½-inch scrap plywood and the seat from 1-inch mahogany plywood and connected them with a stainless-steel piano hinge. The original plywood support eventually delaminated. We replaced it with ½-inch StarBoard, but retained the 1-inch plywood for the seat.

Design for comfort

Make the seat wide enough athwartships that you can sit on it comfortably for long periods of time. At the same time, you don't want the finished seat to interfere with your use of the companionway ladder. You will also want to stand on the ladder periodically and stretch. If the seat extends too far over the ladder it will be in the way.

With the support strut released, the seat folds down for quick stowage, at left. Grinding the groove in the support rod takes patience, center, and safety glasses are essential. A Dremel tool and sanding drums can be used instead of a router to trim the edges of the hatchboard, at right.

So the seat stows conveniently when not in use, you will want to assemble it so it folds flat. I accomplished that by joining the seat to the support with a piano hinge, and I found the right position for the hinge from trial and error with a mock-up by "sitting" on it, placing my feet on the top step of the ladder, and standing up or stepping down as if to go below. In my case, the best position for the seat was with one fourth of it extending forward of the supporting hatchboard.

For quick-release stowage, the fore-and-aft measurement of the seat and the height of the supporting hatchboard should be such that, when you remove the support rod, the seat folds down perfectly flat against the hatchboard.

Construction

When determining the thickness of the supporting hatchboard, bear in mind that the seat will be subjected to a surprising amount of torque as your body moves around in a seaway, so your personal body weight and the width of the hatchboard are factors along with the size of your hatchboard track. At a minimum, the support board should be ½ inch thick, but thicker is better. A close fit in the hatchboard channel is desirable so the board will slip easily into it without binding but not be a sloppy fit — if the seat wobbles, you'll become exhausted trying to sit still. If you use a board that's thicker than the hatchboard channel, shave the edges to the proper thickness with a router or Dremel tool.

If you make the seat of 1-inch-thick material, that will allow you fasten the hinge with through-bolts, which I recommend, and to countersink and recess the nuts.

Make a cardboard mock-up of the seat and its supporting hatchboard. Check that it meets your requirements before you cut any wood.

Before attaching the seat to the supporting hatchboard, think about which side the hinge should be so your weight on the seat is in the direction of closing the hinge and not opening it more. Center the piano hinge on the hatchboard support and through-bolt it in place.

Attach the hinge to the seat with through-bolts and countersink the seat to recess the nuts. I cannot overstate the importance of through-bolting everything. This seat will endure a surprising amount of torque when under way. Screws will pull out in a very short time and that could lead to a nasty fall.

With the Dremel tool and a cutoff wheel, remove any bolt threads that extend from the nuts. You want the entire seat to be as smooth as possible with no protrusions to compromise

Resources

Jamestown Distributors
www.jamestowndistributors.com

MSC Industrial Supply
www.mscdirect.com

McMaster-Carr
www.mcmaster.com

The cushion makes standing (sitting?) a watch so much more comfortable, at left, and the watchkeepers's essentials are close at hand, at right.

your comfort or safety or to interfere with ease of stowage.

I was tempted to use acorn nuts because they would look nice and finished, but the Nylocks are more permanent.

Support system

The support system consists of a support rod, compression tube, limiter strap, and two strike plates. They perform as a unit.

The support rod makes the seat rigid and supports your weight as the boat moves around in a seaway. The limiter strap prevents the rod from falling out as your weight shifts. A wingnut against the compression tube maintains tension on the limiter strap. The strike plates provide a solid metal-to-metal surface against the compression tube at one end and a stopper nut at the other. They also serve as chafe protection where the compression tube and support rod come in contact with the seat and hatchboard.

I made the compression tube "captive" so it would not fall off the rod and get lost every time it was stowed. I used a Dremel tool with cutoff wheels to grind a 2½-inch-long channel into the rod. I then drilled and tapped a small hole in the compression tube and installed a 10 x 24 stainless-steel Allen setscrew with a dab of red Loctite for security. The Allen screw slides inside the channel and stops when it reaches either end of the channel, thus preventing the tube from falling off the rod. The rod, tube, wingnut, washer, and stopper nut become one permanent unit — I have only one piece to find when I want to use the seat.

For strength, I made the the support rod from ⅜-inch stainless-steel threaded rod. Any metal tubing will do for the compression tube as long as it fits over the ⅜-inch rod, but a thicker-wall tube will better accept the setscrew that holds the tube captive.

The most difficult part of this entire project is machining the groove for the compression tube setscrew. With the aid of a small vice, a steady hand, and a little patience, I achieved an acceptable result with the Dremel tool. Safety glasses are a must for this operation.

Strike plates

My original strike plates were simply stainless-steel fender washers drilled out on an angle to accept each end of the rod and screwed permanently in place. I replaced them with 1½-inch lengths of 1 x ⅛-inch stainless-steel bar stock. Mortising out the support and seat to receive the strike plates will prevent the plates from drifting under your weight. I also recommend through-bolting the strikeplates.

For maximum strength and efficiency, position the strike plates so the support rod meets both the seat and hatchboard at a 45-degree angle. Drill the holes in the strikeplates that receive the support rod at a 45-degree angle and a bit over-sized to allow for easy assembly. The hole in the seat should not go all the way through the seat. The hole in the support piece must be

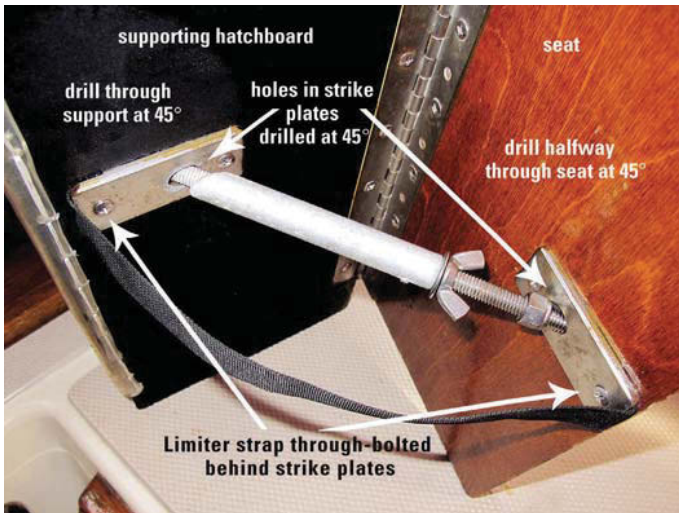
Materials and tools

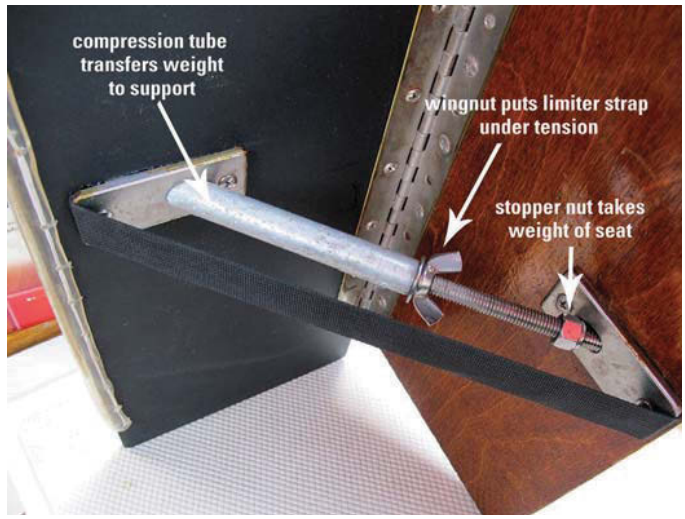
Materials

- Plywood: two pieces, one for the hatchboard (at least ½ inch) and one for the seat (¾ to 1 inch) (StarBoard, a plastic composite that's easy to work with and very strong is a good alternative material.)
- Stainless-steel piano hinge (length determined by width of seat)
- 10 x 24 stainless-steel oval head machine screws, Nylock nuts, washers
- Length of ⅜-inch stainless-steel threaded rod (1 foot), one ⅜-inch Nylock nut, one large wingnut
- Length of ⅜-inch-ID stainless-steel or aluminum tubing
- One 10 x 24 Allen setscrew
- Loctite, red
- Two pieces of brass or stainless-steel bar stock 1½ x 1 x ⅛ inch
- ½-inch nylon webbing (about 1 foot) for limiter strap
- Short length of soft plastic hose for anti-chafe at bottom
- Sail twine and needle to attach anti-chafe hose

Tools

- Saber saw
- Drill, ½-inch countersink
- Dremel tool with cutoff wheels and sanding drums
- Router with ½-inch mortise bit (or use Dremel)
- Hacksaw
- 10 x 24 tap





The Maestro seat is easy to set up: insert the support rod into the holes in the striker plates, at left, and spin up the wingnut against the compression tube until the limiting strap is taut, at right. Fit the seat support into the hatchboard track, below, and get ready to sit your watch.

drilled all the way through to facilitate mounting the support rod.

Limiter strap

Without the limiter strap, the support rod will fall out every time you shift your weight. Worse, the seat will move beyond the limits of its attachments and something will break in short order. The limiter must always be under tension to perform properly, so set the strap to come up short just before the seat reaches 90 degrees. Allow for some stretch in the webbing as the wingnut pushes the compression tube along the rod. You might have to experiment a bit to get the length just right.

Secure the ends of the strap under the strike plates and through-bolt them into place along with the plates.

Final touches

Slice a length of soft clear-plastic water hose and mount it to the bottom of the supporting hatchboard to protect the wood and silence any squeaks. To secure the hose, drill a few small holes through the hose and the board and fasten the hose in place with a needle and waxed sail twine. Slide the seat into the channel and cut off any excess support rod that protrudes inside the cabin.

As a finishing touch, since you'll spend a lot of time on this seat, make it more comfortable by adding a cushion made of closed-cell foam with a laced-on cover. A really cheap source of closed-cell foam is a garden kneeler you can find in almost any hardware store.

Once you have everything assembled, insert the rod, spin out the wingnut and slide the seat into the tracks. Grab some coffee and cookies and enjoy your watch. Don't forget the MP3 player!

Ahead of the game

There is an old adage about hatchboards: when the first reef goes in, so does the first hatchboard. Most of us tend to neglect that until we take the first bucketful of water below. Normally, the hatchboard is in the way, but with this system we're ahead of the game. The first hatchboard is always in the right place at the right time and in a much more useable way.

This has saved us on many occasions. We might not be able to fit an acrylic bubble, but we now have what amounts to the same thing, and perhaps better. It is a favorite piece of our offshore cruising equipment, second only to the windvane steering gear. Ellen recently remarked that of all my additions to *Entr'acte* over the years, the Maestro seat has been the most useful. The watch enjoys a 360-degree view and remains warm and dry in any winds from a beat to a beam reach. Rain? Who cares?

What happens when the wind goes astern? That is the next step. We do have a solution for that eventuality that we call our Bubble of Comfort.

Ed Zacko the drummer met violinist Ellen while playing in the orchestra of a Broadway musical. They built their Nor'Sea 27, Entr'acte, *from a bare hull and since 1980 have sailed thousands of miles on both sides of the Atlantic and in the Pacific. After shipping* Entr'acte *from Noumea to France, they are in Seville. Follow their voyage at www.enezacko.com.*

Shakedown

Five ideas that flunked;

In the years since we launched her, our home-finished 31-foot Cape George cutter has been subjected to perhaps the most rigorous form of testing: being cruised and lived aboard by a family of five. That three of those five are very young children has probably placed more strain on everything than if they were adults — at least, it has placed more strain on those of us who are.

Building the boat with limited funds had required some inventiveness and we put to sea not knowing whether some of our improvised systems would work or not. Some proved patently useless and didn't survive the shakedown. Others did pretty well initially but lacked durability or required too much maintenance. A golden few, however, with maybe some judicious adjustment, have proved their usefulness again and again on *Ganymede*'s cruise from California to the East Coast. All of them taught us lessons that we can apply to great ideas we might have in the future.

The losers

Five ideas seemed good at first, but were tossed outright or are on the replacement list.

1

Homemade self-steering windvane
Even though I sweated through Bill Belcher's and John Letcher's books on windvane construction, the engineering details were too fine for me. The trim tab I made not only proved too powerful — a finger touch on the trim tab's mini-tiller could put the rudder hard over — it created too much drag, making hand-steering an awful chore. And although the lower support strut was a stiff piece of solid ¾- x 3-inch aluminum bar, it vibrated most disturbingly when we put the helm over.

Since I built it mostly with material left over from other projects, it wasn't a huge waste of money, but its demise condemned us to hand-steering nearly every mile of our cruise. We have on the wish list a servo-pendulum style windvane with a blade that can be pulled out of the water when not in use so it doesn't grow weeds and cause drag.

2

Self-adhesive LED button lights
These inexpensive little lights work great for a while and don't use much power — a set of three AAA batteries can last over a week of nightly use. The trouble is, they suffered the curse of most low-voltage LEDs: they're not made to last. Often, a switch would go bad and need to be whacked pretty

Damaris, just 10 months old, admires the shiny white mooring bitts in Baja California, near the beginning of *Ganymede's* cruise, top of page. One corner is already weeping rust. Ben adjusts the linkage to his ill-fated self-steering vane, at left. The spoked wheel was once part of a baby stroller. AAA-powered LED button lights from a home-improvement store, center, worked only for a short while. The Energizer LED headlamp worn by Emily, at right, proved more reliable.

shakeout

five that made the grade

BY BEN ZARTMAN

hard to make it work; usually, one of the bulbs in the array would become corrupt, making things pretty dim, and the least little bit of corrosion on the battery contacts is enough to interrupt the feeble flow of current.

They were wonderful for the first couple of months, but became altogether unreliable as time went by and we've now replaced them entirely with our favorite LED headlamps, made by Energizer and sold for $12 at Walmart. Their only drawback is that the elastic head strap wears out long before the lamp part does.

3

Mild-steel fittings

Unable to afford having things fabricated from stainless steel or aluminum by a welder, I torch-welded my own mooring bitt and boom-gallows stanchions using mild steel. Properly primed and painted, they lasted a good while, but after two years of heavy use in the tropics, *Ganymede* had rust streaks all along the decks and down the hull below the scuppers.

I had expected to be able to paint the fittings from time to time, but keeping three children fed and clean and entertained didn't leave much time for other things. In fact, I painted the stanchions only once during our cruise. Unshipping them and replacing them with stainless-steel and aluminum fittings was part of this winter's project.

Along the same lines were the galvanized turnbuckles and shackles for the rigging. Though I went to some lengths to secure only domestic galvanized hardware for the shrouds (the foreign-made stuff I saw was poorly made and indifferently galvanized) and though coated liberally with LanoCote, by the time we arrived at the Chesapeake Bay for a refit some were all but immovable.

At least one shackle — mounted near the water on a bronze chainplate — had to be hacksawed off. All the steel parts worked very well at first, but their propensity to rust, especially in tropical heat and humidity, makes them too maintenance-intensive for my taste.

4

Homemade propane locker

Perhaps the most frustrating failure was the most expensive. Wanting to maximize our propane supply for long-distance cruising, I built a fuel/propane locker tailored around two 20-pound Worthington horizontal aluminum LPG cylinders. They cost upward of $300 each and it would have been money well spent if they had worked consistently.

But horizontally oriented tanks have a separate, bigger fill port (a "forklift fill") requiring a different fill adapter than regular vertical tanks. The "out" valve, to which a standard LPG fitting connects, is fitted with a check-valve so the tank cannot be filled through there. All that might have been fine, provided I could have been on hand to explain to the filling attendant which valve would allow gas *in* and to take it slowly lest the finicky Overfill Protection Device (OPD) put an untimely end to the process. But propane runs in other countries are often arranged by marinas where tanks are dropped off empty and returned full. Time and again, my tanks came back mostly empty with the

By the time *Ganymede* arrived in Virginia for a refit, the mooring bitts were weeping rust everywhere, at left. New bitts were high on the winter refit list, top right. *Ganymede*'s galvanized turnbuckles were almost immovable, and shackles in contact with bronze chainplates were rusted fast shut, middle right. In Huatulco, Mexico, Ben modified his propane tank so the Mexican filling nozzle would fit, bottom right.

marina staff swearing that the tank had acted as if it were full. Sometimes, no gas went in at all, but I was charged for the run nonetheless.

Eventually, I had a Mexican propane company remove the offending fill valve from one tank and install a sensible, working valve . . . with the result that on our return to U.S. waters all propane fillers refused to touch it. But the other tank, with the original fill valve and hair-trigger OPD, often takes only about a quarter load, so it's impossible to have all 40 pounds of our propane potential. Another refit project is to secure three 10-pound tanks with the standard fills that everybody can deal with.

One of four spice racks Ben installed is visible above Damaris' head (that's Emily behind her). The racks worked, but the bulk spices were a bad idea.

The Zartmans store water in plastic bottles and containers and mark the dates they are filled.

Danielle gives Antigone a piano lesson under the big kerosene lamp. It was later sold as the light from four smaller bulkhead lamps was sufficient.

5

Bulk-sized spices

It seems a little thing, but this actually led to a good deal of waste and frustration since cooking aboard is a daily event. It didn't help that I'd built lovely spice racks just the right size for the large spice containers, all shaped alike, from a discount outlet. The trouble was, a lifetime supply of dill should not be carried to sea in one canister. Not only can the damp get in and make it clump up and grow mold, but it loses flavor over time in an opened container. Likewise with most of the green herbs. Anything with sugar or salt (think seasoning salt, Old Bay, bouillon powder, or drink mixes) becomes a hopeless lump in very short order. I had laughed, at the outset of our cruise, at the single-use packets of drink mix, bouillon, and spices we found in every tiny store from Baja to Panama, but I was laughing less when I had to throw out several cupfuls of all our favorite flavorings that had grown moldy or clumpy in the rainy season.

We still have our spice containers, but they are now filled with those tiny single-use sealed packets that could be stored more tidily in a kitchen drawer . . . except that I have to use those spice racks for something.

The winners

So much for what didn't work. We also have a happier list of things we were initially unsure of that have proved useful beyond all expectations.

1

Reusing plastic juice bottles

Though they're not the majority, we've met plenty of cruisers whose tank water is so bad it is useful only for washing and cooking. Unless it is filled exclusively by a watermaker, it's only a matter of time before some slightly funky water supply will contaminate the whole tank.

Ganymede doesn't have enough room to carry washing-only water, so we chose not to install tanks or water lines at all and instead carry 120 gallons in carefully saved 2-, 3-, and 4-quart juice jugs. The water in them can be visually inspected for floaters or bad color before use and, better yet, getting a bad batch in some containers doesn't contaminate the entire water supply. Once every six months or so my wife, Danielle, will scrub them all out thoroughly with a bottle brush.

Another advantage is that they can be filled a dinghy-load at a time without the expense of tying *Ganymede* to a pier. Labeling each bottle with a Sharpie (usually the last fill location) aids in rotating the supply and helps to identify water from questionable sources.

2

Gimbaled oil lamps

Ganymede isn't fitted with 12-volt electric. All her appliances — GPS, shortwave receiver, and handheld VHF — run on AA batteries. But cabin lighting requires something more than small batteries can provide. We had saved three gimbaled oil lamps from our last boat and, with two more bought to match, *Ganymede*'s cabin is filled with the coziest of glows. We started out with yet another lamp — a ceiling-hung trawler lamp that really put out some light, but it was too big for the cabin and we sold it at the first swap meet.

During winter, when we use the lamps most, they consume about a gallon of kerosene a month. Best of all, they serve a dual purpose. Not only do they provide a homey nautical look to the cabin, the heat they give off keeps things nice and dry inside.

On the downside, the wicks and chimneys the maker sells (Den Haan, distributed in the U.S. by Weems & Plath), are frightfully expensive. With care, however, the chimneys only break occasionally and cheaper wicks can be found at most hardware stores.

3

Fiberglass spars

I made our boom and bowsprit by wrapping multiple layers of fiberglass in polyester resin around a length of 3-inch ABS pipe. The layup is ½-inch all around.

While it flexes a little, the 17-foot boom has proved strong enough to carry 300 square feet of loose-footed mainsail and to be steady enough to

Ben fits whisker stays to *Ganymede's* fiberglass bowsprit shortly after he'd installed it, at left. *Ganymede's* 8-horsepower Yamaha outboard engine and its bracket were still looking good in Cartagena, Colombia, after 5,000 miles of exposure, abuse, and a passage through the Panama Canal, at right.

walk on while under way if something at the boom end requires attention while sailing downwind. The bowsprit has the advantage of being lighter than wood and 100 percent maintenance-free.

Attaching hardware is a breeze, since the fiberglass is thick enough to tap threads into or pass through-bolts through without worrying about water intrusion and rot.

Outboard engine

4

I had never intended to fit *Ganymede* with an inboard diesel engine — it was too much expense and bother. Besides, I needed the space for a children's cabin. Instead, I made a very sturdy transom bracket out of structural aluminum angle and hung a Yamaha 8-horsepower, four-stroke, high-thrust, long-shaft outboard engine on it. The gasoline it burns is easier to come by than diesel in some of the nooks and crannies of the world where we've poked *Ganymede*'s bowsprit and the engine can be easily unshipped and taken ashore for service.

I had worried that such a small engine would be suitable only for getting in and out of harbors (and very slowly at that), but it can push the boat along at 5 knots in quiet water and was sufficient to effect a Panama Canal transit. In choppy seas, the prop tends to come out of the water somewhat, making an awful noise, but getting way on and maybe altering course a little can mitigate that.

Being a four-stroke, it's susceptible to dirty or ethanol-laced gas and parts are impossible to find in Central America. But it has proved to be very reliable nonetheless, and once I got the hang of taking the carburetor apart I could clean and reassemble it in less than 20 minutes. When we sail in foreign waters again, I'll lay in several full sets of seals and gaskets, half-a-dozen spare spark plugs, and rig a water-separating fuel filter.

Another advantage of the motor is that it tilts out of the water when not in use, eliminating electrolysis and drag. Without a prop to tow through the water, and with the cutout where an inboard's prop would normally be glassed in solid during construction, *Ganymede* performs astonishingly better in light air than we'd dared to hope.

Gaff rig

5

While on the topic of sailing performance, the biggest gamble we took on construction is the one we're most happy with: a gaff-headed sailing rig. Since the full-keel heavy-displacement hull and the gaff rig were being perfected at the same time in history and kind of grew up together, it seemed a shame to put a more modern rig on a hull whose lines so closely match the quay punts and pilot cutters of the glory days of gaffers. Another weighty consideration was that I could more easily design and build that kind of rig at home than a Bermudan rig that would have cost more than double what I ultimately spent.

But financial considerations aside, the gaff rig has many advantages over its more modern counterparts. The shorter mast means less windage and weight aloft. The lower-aspect-ratio sail area means less heel, so *Ganymede* can carry sail into higher winds before needing to reef. There are no halyard winches to deal with and even the jib- and staysail-sheet winches are used without a handle (which I suspect is at the bottom of the Pacific somewhere — I haven't seen it in at least a year). Best of all, by using aluminum for gaff and mast and synthetic rope (Vectran) for shrouds, I all but eliminated three of the biggest drawbacks of gaffers: weight, spar maintenance, and chafe.

Ganymede isn't perfect — as long as we have her, there will be an endless list of upgrades and changes to make — but the important thing is to keep on testing, improving, and replacing as funds and time allow, knowing that every refinement will increase her worth and make her that much more pleasant to cruise. And as I look at my endless "to do" list, I can take comfort in the knowledge that before me is a project that will last a lifetime.

Ben Zartman lives with his wife, Danielle, and their three young daughters aboard Ganymede, *the 30-foot Cape George Cutter he built from a bare hull. They spent last winter in Newport, Rhode Island, preparing* Ganymede *for an Atlantic crossing that was imminent as this issue went to press. Follow them on their blog at www.zartmancruising.com.*

Fitting *Ganymede* with a gaff mainsail proved to be one of the best decisions Ben and Danielle made.

Entr'acte's

Where the on-watch crew stays warm and dry

BY ED ZACKO

Our Maestro seat proved successful on all counts. From a beat to a beam reach, the watchkeeper remained sheltered, warm, and dry behind the dodger. Once the wind went aft of the beam, however, the shelter of the dodger disappeared and night watches once again became a rather cold experience. Returning to the bubble-turret concept, I came up with a nifty addition that I fashioned from Sunbrella scraps left over from our new sailcover and old plastic from the time Ellen redid our cockpit enclosure.

I dubbed my creation the Bubble of Comfort. It's essentially a see-through curtain that zips onto the aft edge of the dodger and attaches to the sides of the dodger flaps with Velcro strips. The result looks like a giant turret. Inside the Bubble, the watch sits comfortably on the Maestro seat (see January 2014) and enjoys a 360-degree view, but is sheltered from wind, seas, and rain.

Part of our pre-departure preparation is to zip the Bubble onto the dodger and roll it up out of the way until we want it. When we need it, we drop it down, use two lines to secure it aft into the cockpit, and Velcro the sides into place. Everything we need to operate our Nor'Sea 27, *Entr'acte*, is accessible from inside the Bubble: engine controls, autopilot remote, VHF radio, and chart plotter. During long periods of rain, we have even led the Aries steering lines inside the Bubble. No need to go out into the bad weather unless you absolutely have to!

Besides keeping the night watch warm and dry in following winds, the Bubble also prevents cold damp wind and fog from entering the main cabin. Before we had the Bubble, sailing downwind in damp conditions proved to be just as cold and damp below as topside, but no longer. These days, the off watch and cabin also remain warm and dry.

Shelter and security

To exit the Bubble, a simple slice of the hand parts the Velcro and we have instant access to the cockpit. It's an iron-clad rule that our safety harness tethers are snapped on before we exit the Bubble.

A word on the safety harness: between the Maestro seat and the Bubble of Comfort, the watch can become so comfortable that complacency sets in and it's easy to forget where we are. If we must attend to some ship's business in a hurry, it is best to be prepared.

Our harness system consists of two full-length Spectra jacklines, port and starboard, each with its own tether permanently attached. The harness ends of both tethers reside on hooks inside the main companionway. Our harness rule is simple: no one sits alone on the Maestro seat unless he or she is clipped to the windward tether. If we are both awake, we relax that rule a bit but, at night, or whenever one of us is asleep, the one sitting in the Maestro seat snaps on. Period! If we must leave that seat or exit the Bubble for any reason, we are already clipped on. We know we're the most vulnerable at the moment when we exit the main hatchway, especially when we're

Ellen pops out of *Entr'acte's* Bubble of Comfort to find the sun is shining, top of page. When closed (1), the Bubble protects the watchstander, sitting on the Maestro seat, from weather from aft. A swipe of the hand opens the side for a peep outside (2). The Bubble zips onto the dodger (3).

Bubble of Comfort

half-asleep and in a hurry. The old sages always caution us to "clip on before exiting the companionway." Light conditions are more deadly than heavy weather. It is amazing what can happen in less than a second!

Materials

If you do much canvaswork, you might have some of the materials already. Sailrite can supply everything listed.

Sunbrella or similar fabric – The quantity of fabric will depend on your boat's size. We used less than a yard of what would have been scraps.

Plastic window material – We used 2 yards. Lighter gauge is better for ease of stowage.

Velcro strips – We prefer a 2-inch width of the woolly or soft side on the dodger flaps. The Bubble uses one-inch widths of the sticky or hook side. This makes for easier attachment when the wind's blowing.

Stainless-steel sailcover hooks – Two are needed for the lines going aft into the cockpit.

Zipper – A nylon separating zipper sized to the curve of the dodger.

Edging – The finished edges can be turned over and sewn or covered with edging for a better look.

Construction

The Bubble is constructed in three pieces. The center piece is a rectangle that is mostly clear plastic. Each side is roughly triangular in shape to give the finished Bubble a somewhat circular shape when zipped and Velcroed into place.

The center section has a small grommet on each side at the bottom with a small line attached. The lines attach to hooks set into the sides of the cockpit to pull the Bubble into its circular shape, stabilize it against wind and spray, and add to the amount of usable space inside.

Installation considerations

Entr'acte's sun awning is independent of the dodger, so attaching the Bubble was as easy as adding a zipper to the flap on the aft edge of the dodger. If you have a sun awning that zips onto your dodger, you have two choices. You can unzip the sun top and stow it whenever you want to use the Bubble. (If you need the Bubble, you probably don't need the sun awning.) However, this approach might become a nuisance. Another solution might be to install a small flap with its own zipper just below and inboard of the point where the sun awning attaches to the metal dodger frame.

Stowing the Bubble

Our normal stowage procedure is to roll up the Bubble and lay it on top of the dodger where it becomes sandwiched between the top of the dodger and the sun awning. If our sun awning has been rolled up, we flip the Bubble over the top of the dodger and tie the corners to the handholds until we need it.

Other storage options would be to add grommets to the flaps where the dodger zips onto its frame and install ties to these grommets. Alternatively, you could unzip the Bubble and stow it. The problem with this approach is that you won't be ready when a sudden squall comes up.

Since we have begun using the Bubble offshore, we have been warm and dry when the wind is astern. The cold night air doesn't bother us. It is indeed a Bubble of Comfort.

Ed Zacko is a Good Old Boat *contributing editor. He and Ellen met while playing in the orchestra of a Broadway musical. They built their Nor'Sea 27,* Entr'acte, *from a bare hull and since 1980 have sailed thousands of miles on both sides of the Atlantic and in the Pacific. After shipping* Entr'acte *from Noumea to France, they are in Seville. Follow them at www.enezacko.com.*

Resources

Sailrite
www.sailrite.com

The sides of the Bubble close with Velcro (4). When erected, the Bubble is almost round (5), held in shape by strings that tie the bottom skirt to hooks in the cockpit (6). To stow the Bubble, Ed and Ellen roll it up and stuff it between the dodger and the sunshade (7).