How to Maintain An F-Boat

Notes taken from the F-Boat Listserver

David Paule
Editor

August, 2004

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Introduction

Most of this has been taken from the F-Boat Listserver forum.

Initially, where the writer was a dealer, the designer or someone whose advice I especially respect, I included their name. Otherwise I didn't. That was a mistake that I regret. More recently I've included their names regardless, if they were in the original posting.

In some cases, I've rewritten the text of the email to change style, eliminate excess verbiage, correct grammar or spelling, or for other editorial reasons. Unfortunately, in some cases, I then deleted the original source documents. That makes many of these untraceable, and that was another mistake.

This was initially intended to apply to the F-27 with its fixed mast and engine in a well. Except for those idiosyncrasies, it should be generally applicable to all the F-Boats. Comments often are identified as to boat model, and in many cases I've included comments that specifically relate to the other F-Boats and not the F-27. After all, many F-27 owners move up to F-31s, and some F-24 sailors eventually get F-28s or F-31s. Plus, there are a number of people building their own F-Boats (Ian Farrier sells plans...) and this will be useful to them, too.

These postings are from 1999 to 2004. During that time numerous things have evolved. Some examples are synthetic rigging, all-rope halyards, free-flying roller-furling headsails, outboards, anchors and Code Zero sails. In most cases the old and new are intermixed, although they are generally (not always) in chronological order, within alphabetical categories. It's likely that some other changes might evolve after this is published. You're on your own there!

Caveat and Warning

You should be aware that sailing is a potentially hazardous activity. The advice contained in this book may or may not be helpful. It may or may not be dangerous. It probably doesn't have the warnings it should, and your use of this information is entirely up to you. There is no liability assumed by the people who posted to the F-Boat Listserver or by David Paule, who edited all this (and who's a different person than Dale Paul - David's the one with the beard.) You are responsible for your own actions - no one else.

Also, the opinions expressed here are those of the various people who posted them, except that I might have mangled them in my editing. But in any case these are not necessarily the opinions of me, Ian Farrier, Corsair Marine, or even the person who posted it in the first place, depending on my editing - and they might not work for you the way they worked for the person who posted them. Not only that, they might be based upon the experience someone had with a different kind of boat altogether, and be less applicable to your situation than the person who posted it ever thought possible. What's more, in some cases I included comments much more for their entertainment value than for their technical merits, which often are nonexistent. That's right, I put in postings from the Listserver, that were intended to be jokes, where they would be topical mixed right on in with the valid stuff.

So be careful out there, okay?

A note on the organization of this book.....

The book is in four parts -

- Operation
- Maintenance
- Discussions
- Home Built Boats

It is possible - heck, it's likely, to have information in all four sections. In general, I put the historical information and information which might be fun, but which is not immediately useful to the owner, like Ian Farrrier's discussions about float buoyancy, in the Discussions section. Information that might come in handy out on the water or on the road is in Operation. Most everything else is in the Maintenance section, except those issues which might only be needed by a builder.

In many cases, people would include or allude to other topics in the particular comment that's included here. Where these seemed significant, I broke it out and put it where it belonged. Otherwise I just left it in place. This means that a thorough reading will elicit more information than merely checking a topic. However, just checking the topic should give you the meat of the subject.

Through the end of 2000, all F-Boats built by Corsair Marine were built to Ian Farrier's specifications. Afterwards, in 2001 and later, they might have been too, but Corsair wasn't required to. Sometime in 2001 or 2002, I think, Corsair started referring to their trimarans as "Corsair-24s, Corsair-28s, and Corsair-31s." This might have been to provide a common marketing identification with the new Corsair-36, which wasn't designed by Mr. Farrier. Regardless of that, in this book, these boats are called F-24s, F-28s and F-31s. The Corsair F-27 is called an F-27, and the Corsair-36 is called a Corsair-36, to differentiate it from the F-36, designed by Mr. Farrier. But keep in mind that when you are discussing an "F-31," for example, you might be discussing it with someone who understands "Corsair-31" and doesn't know what boat you're referring to. Or vice-versa. And it might not be with a -31, it might be with any of the boats. Matter of fact, with the F-31s, the situation got more complicated. OSTAC built a number of them, and the homebuilt F-9 is quite similar.

And the F-25Cs were built by a small factory that sold them in kit form. They are not Corsair boats - any of them. The F-25As and the F-82s are the homebuilt equivalent.

Is it clear now?

Thanks....

To so many folks that I honestly can't begin to mention everyone. As a community, the F-Boat crowd is wonderful.

Still, I do want to particularly mention some people and companies that have made my sailing easier and answered some questions I had along the way:

Jon Alvord
Ivan Andrade
Big Hammer
Lou Castle
Greg Cole
Corsair Marine and Pat Linn of Corsair Marine
Jesse Deupree
Geoff Deutschmann
Ailish Eklof
Ian Farrier
Mike Leneman
Roger and Nancy Loving
Lyra Mayfield
Alan Miller
Dave and Meghan Pietila
Paula Smyth
Sigi Stiemer
Barry Warburton
Don Wigston
Mark Zaranski
Mike Zotsky

David Paule
Editor
F-27 Second Chance, hull #80

A word of warning!

My trailerable folding designs were not designed for, nor were they ever intended for long ocean crossings. They are trailer sailers and intended for bay, coastal work, or the occasional short open sea crossings, but only those that can be completed within one to two days at most, and in good weather periods.

While it is nice to know they are seaworthy and strong enough for long offshore voyages (as demonstrated by Mike Horn's F-28 circumnavigation) they are still too small, and their load carrying capacity is limited for such voyages (likely to be overloaded when setting out). The risk factor is thus higher than it should be.

A folding boat is also more complex, and with a greater chance of something going wrong on long voyages. What could be a small problem inshore could become major when 1,000 miles out to sea.

My only designs large enough and suitable for ocean crossing are the F-33, F-36 and F-41. So if you want to cross an ocean in an F-24 to F-31 then it is definitely at your own risk.

Ian Farrier

Brief Description of Major Differences

F-24 Mk I or F-24-1 - Only Corsair F-Boat with a centerboard. Fixed aluminum mast. Aft cockpit. Originally had underslung rudder. Some modified with Mk II transom-mounted rudder. Made by Corsair.

F-24 Mk II or F-24-2 - Daggerboard, rotating aluminum mast, aft cockpit. Transom-mounted rudder. Made by Corsair.

F-25A - Homebuilt. Transom-hung rudder or underslung rudder. Daggerboard or centerboard. Homebuilt. Foam or cedar core, glass or carbon skin. Aft cockpit, rotating carbon mast, but at least one has a fixed aluminum mast, per the plans.

F-25C - Homebuilt from kit by NPG Marine or Colorado Composites for the later boats. Balsa core, carbon skin, baked cure. Aft cockpit, most with rotating carbon mast, a few with rotating aluminum mast. Daggerboard except a few with the optional centerboard. Around 50 made.

F-82 - Upgraded design of F-25C for homebuilders. Daggerboard or centerboard. Foam or cedar core, glass or carbon skin. Aft cockpit or aft cabin, rotating carbon mast or fixed aluminum mast.

F-27 - Daggerboard, fixed aluminum mast, center cockpit (that is, aft cabin). Cruising interior. Made by Corsair.

F-28 - Aft cockpit, aluminum mast boat with daggerboard. Made by Corsair

F-28R - One-Design racing boat. Carbon rotating mast, aft cockpit. Daggerboard. Made by Corsair.

F-28 CC - Aft cabin (that is, center cockpit). Rotating mast, aluminum or carbon. Daggerboard. Made by Corsair.

F-31 - Available in several variants. Aft cabin, aft cockpit. Early boats had fixed 40' masts. Later boats had 42.5' rotating masts. Masts are aluminum (recent ones, since '99, are designed by Mike Leneman) or carbon. Made by Corsair. Might have any of a variety of interiors from minimal to full.

F-9 - Homebuilt version of the F-31 with even more variants. Core might be wood or foam. Carbon or glass skin. Fixed or rotating mast, carbon or aluminum. Standard width or a foot wider (F-9X). Standard cabin height or higher. Standard floats or (2003 and on) floats with increased floatation. Homebuilt or built by custom builder.

F-33 - Semi-custom built by Farrier Marine. Wider than normal towing width, needs special permits. Newest (2003) F-Boat. Daggerboard, rotating aluminum or carbon mast.

F-36 - Homebuilt or custom built. Many options. Wider than normal towing width, needs special permits.

Corsair-36 - Aft cabin, rotating mast. Introduced in 2003. Lines initially by Ian Farrier as a 35 footer, but boat designed by others. Wider than normal towing width, needs special permits. Built by Corsair.

Command Ten – An earlier F-Boat, ocean capable. Few built, but occasionally one is available.

Book 2 - Options, Hardware, and Maintenance

5200 and Similar Products
1. Bedding something in this and then trying to remove it can peel off the non-skid.

2. Loosening:
Acetone, followed by using a wire like a cheese-cutter.
Goof-Off, painted around the edge, and encouraged to migrate inward by cutting the edge with a razor.

3. I spoke to a technical guy at 3M who told me:

a. 4200 is more suited to making a gasket-type seal than 5200. It isn't nearly as tenacious as an adhesive.

b. Both 5200 and 4200 come in fast cure versions - 24 hours compared to 7 days for the standard version. I asked him what was the trade-off for the faster curing product. He said there's very little, a 5 or 10% reduction in strength at most. He said he would only use the slow cure version if he had a particular application that needed slow curing -- but he couldn't think of one.

c. He also provided this tip: Don't put the screw cap back on the small tubes of 5200 because you'll never get them off again. The best thing to do is squeeze out a shaped blob so it hangs off the end of the nozzle and let it cure. When you want to use it again, you can pull on this blob and it usually brings all the cured stuff out of the nozzle.

d. Ordinary turpentine paint thinner is as good as anything else (and much cheaper) for cleaning up.
Steve Townsend, F-9A Phoenix, Lake Macquarie, Australia

Anchor Locker Hinge Fasteners

1. > On F-27 hull #305 the anchor locker hinge rivets are into the foam core. That is why they worked loose. After visualizing the anchor locker on my boat under its winter cover, there is no reason the hinge could not be through bolted as the underside is in the anchor locker. This is, of course, after the voids are filled with epoxy.

High density inserts should be in any foam core at the anchor hinges, and, if missing, a hard insert should be formed to prevent crushing, and the rivets replaced with bolts (#8 x 3/4" flat heads were originally specified).

You can form the insert by drilling the holes oversize (say 1/4" to 3/8") depending on how well the hatch hinges cover the holes. Then close off hole on bottom side with some masking tape, and fill holes with an epoxy resin - best with a high density filler (such as West 403 or 404), but probably okay without. The foam can also be dug out further around the sides of the hole if wished, but not really necessary.

When well cured, drill through for hatch hinge bolts, and you should be left with a lined hole, and the epoxy tube so formed will prevent any foam from being crushed, or the hole opening out again. The hinge should then cover over the hole on the outside, so that the epoxy repair/tube will not be seen. Use the largest washers that will fit on the inside.

The plug will not pull out due to the nut and washer on the inside, bearing against the inner laminate (the washer must be bigger than the plug). The plug is there to prevent the foam being crushed by the bolt, and to help spread the sideways load into the laminate and core. Digging out the foam around the hole, to under cut laminate, would increase strength, but not by much.

Also, in this particular area there is extra laminate both sides of the foam as part of the inner structure for inner forestay loads, so the laminate skins are quite thick, meaning the epoxy plug will have a very strong bond to these, far more in fact than it can achieve to the foam core.
Ian Farrier, http://www.f-boat.com

Anodized Aluminum Parts

1. These fade. One sailor suggested powder coating them, white so they don't get so hot. If you do this, check out clearances and abrasion.

2. Anodize is an electrical process (the aluminum is the "anode") that sort of "plates" the aluminum with varying levels of a hard coating. It requires dipping the part in a bath of nasty solution and applying electrical current. This creates a layer of Aluminum Oxide of varying hardness, thickness and color and is very effective. Hard anodize is the most extreme and is usually reserved for areas where there is sliding or rolling contact between parts.

Alodine etches the aluminum and also creates a somewhat thinner, hard corrosion resistant coat (I believe Al Oxide, but not sure) and can be accomplished by brush-on application for smaller areas. Usually Alodine followed with primer and/or paint is a finishing/touch up process for painted aluminum parts, but it may be suitable on its own for something like a bowsprit. I bet Alodine plus a clear coat would make a real pretty long lasting sprit with a sort of golden patina. You can get Alodine at West for around 25 bucks.

I should think any aluminum mast extrusion has been anodized during manufacture (don't know that for a fact) and thus doesn't require paint (you can if you want, but its more to maintain). Aluminum bowsprits on the other hand may not have been anodized, depending on

what they are fabricated from. So, Alodine followed by some sort of clear coat makes good sense there.

Of course, you can always go with Carbon too.....

Barry W, whose professional life is spent telling folks how to saw, trim, sand, cut, beat, bend, rivet, and bolt various aluminum parts together - usually to repair corrosion. Fly right.

Anodized Aluminum Parts – Removing Old Anodizing

1. It is really easy to do, really common, and it is sure to work.

Although, beware that it remove some thickness (really not good for the play of mechanical part) unless those surface are masked.

The aluminum oxide film that is anodic coating (Al2 O3) is removed by dipping in an heated NaOH Sodium Hydroxide solution, it removes the film but if it is done too long (a matter of a minute) it removes the metal too.

I could speak about it, cause one of the course I teach is process of finishing and assembly at our mechanical engineering faculty.

If done well it is a great way to make faded part look like new.

I bought a year ago a set of four big faded and used Lewmar (but really light) aluminum winches for almost nothing I changed the worn parts inside the winch and with a new black anodized drum they are like new and look great.
Erik Precourt
F-9RX Rafale

Antennas
HF

1. On the advice of a technically proficient friend, I used both cap shrouds as the antenna, using well-insulated wire to connect one to the antenna post on the tuner and the other to the ground post. No need for anything else. Worked OK but did not have chance to test it thoroughly; indications are it is a simple and efficient solution.
Lynn Hall, F-31 Arriba

2. I considered using the cap shrouds, but it put the base of the antenna to far from the radio or antenna tuner. So I ran mine to a point 2 feet from the cockpit/salon bulkhead in the salon side wall. This was close to my nav station and does not interfere with the boom because it never goes out very far. The top was attached to the masthead with 3 feet of stretchy bungee cord to accommodate the mainsail twist (pin head). Two problems I had was people grabbing

hold of the wire to steady themselves only to have it give (bungee cord). And two, the place where the top was attached to the bungee had little SS wires sticking out which tore up the main. For antenna wire I used the smallest diameter vinyl covered SS wire.
Renzo

Antennas
VHF

1. We have had better luck and reliability and range with a transom mounted antenna (Powerboat antenna, by the way) than the masthead antenna. Yes, I know it's "line-of-site", but I'm talking about the real world and real connectors and real corrosion, AND the fact that the most likely serious problem the boat is going to have other than capsize, is a mast failure. Couple this with the "one less thing to deal with" simplicity of a transom mounted antenna when lowering the mast and trailering and.....I think I know which one wins. A better rule would be one which states that the VHF radio must be heard over a set distance, and then let the owner of the boat determine how best to achieve this. We have no such "masthead" rule for our offshore races.

We mount all of our antennas on the aft cabin or aft rail (for aft-cockpit boats). We mount the antennas on the side of the aft-cabin w/ a fold down mount and the co-ax cable is just long enough to be continuous to the radio, therefore no connectors. Of course, we use our custom stern rail when one is mounted. It works well and we've never had a complaint or failure. I'd rather have a more limited range and greater reliability. Also, I hate worrying about one more thing to disconnect when lowering the mast. Now we have NO wires running inside the mast or connections on the deck. KISS
Mike Leneman, Multi Marine

Anti-Seize

1. > Any problem with threading a stainless steel bolt into an aluminum part?

This is only a problem if an insulating compound is not used on the threads. Otherwise the stainless steel fastener will eventually freeze in, and will become weaker to where it can fail without warning.

Anyone who has ever experienced a beam bolt seize in the pads can confirm this - it freezes solid and you have to unbolt the pad or cutoff the bolt to solve the problem. Fortunately it only happens rarely, but still keep an anti-seize compound or at least some grease on those beam bolt threads as advised in your Sailing Manual.

I've seen it happen a couple of times, once being at a boat show, which made it interesting for a while trying to avoid having to fold up one side. Some judicious hacksawing after hours and a bolt pad change soon put it right however.

Also with stainless steel threading into aluminum, there are a number of commercial insulating compounds for preventing any corrosion, but if necessary even a sealer like silicon or 5200 will do the trick - certainly better than nothing.
Ian Farrier

2. > After putting the double spreaders on my F-27 I wanted to take the mast base off to clean out all the aluminum from cutting the spreader base slot and the rigging slots. The screws were solidly married with the mast itself, with white stuff growing out past the heads of the screws.

An insulating compound has always been specified for all dissimilar metal contact on F-boats, but a close eye had to be kept on this as it would frequently be overlooked.

It is thus a good idea to check any mast, new or used, for evidence of an insulating compound between stainless fittings and the mast, including all machine screws. Plain old silicon will do the job, or there are a number of proprietary compounds intended specifically for this, such as Duralac

http://www.bamar.it/prodotti_e/e_duralac.htm

Then, if removing such things as the mast step, be sure to remember to use fresh bedding compound on the machine screw threads when refitting. Otherwise they are guaranteed to seize solid later. In fact it can be a good idea to regularly remove/check all stainless steel screws that are tapped into aluminum and re-bed, as part of regular maintenance.
Ian Farrier

3. "Duralac" is the stuff to use... Here in Townsville it costs $A24 for a toothpaste-sized tube, but it's the best I know of.
John Reddell, F-24 MkII, Australia

4. A rigger once suggested and I use Pure Anhydrous Lanolin, kinda like a bees wax. Get it at the local pharmacy very cheap. It works great and lasts all season long. Costs about $4 for a large jar. Really the stuff does work great - keeps the rigging screws corrosion free.
Steve Schulzy, F-27 Serafin

4. I'll second the lanolin recommendation. We use it on Joint Venture to good effect. We only sail in salt water. We use Lanocote brand.

The other stuff that I have not tried is Tefjel or Tefjell. It is a Teflon-based bedding compound designed for just your purpose. Rather high tech and expensive.

But the lanolin is a *lot* cheaper and does work.

Don't forget to use nylon washers and other plastic inserts to physically separate the Al. and stainless steel where you can.
Randy Devol, F/C-31, #213, Joint Venture

Art Work

1. Vinyl art work can be removed by heating it with a hair dryer. The older the art is the harder it is to remove.

If you are going to use a single-edge razor blade to remove old vinyl markings or decals or something from the hull, first scrape the blade backwards on concrete or something to leave a small bur on one side.

Then use the concrete side against the hull - that way it won't scratch the gel coat.
Alan Miller

2. Heating the letters with a blow dryer will loosen up the goo and let you peel them off. Then use plain old mayonnaise to remove the sticky stuff.
Dale Paul

3. Since I fold my boat to fit into a wet slip some of the time, I applied Boat Armor "Easy On Bottom Coating" to the outside of the amas a few months ago. The bow numbers peeled right off without leaving any residue. It sure beats all that toxic stuff.
Paul Horton, Tribology, UC-31 #215

Attachments to the Hulls

1. > Does anyone know the thickness of the inside layer of fiberglass "sandwich" in the forward cabin of an F-27? I'm thinking of installing mounting brackets for my Porta-Potti and want to know how deep I can drill.

The inner fiberglass laminate is less than 1/32" thick and will thus not hold much of anything. Behind this is 1/2" foam which also has very little screw holding power.

If there is no other option, some mounting brackets can be installed by bonding them to the hull laminate with a polyurethane adhesive such as 3M 5200 or Sikaflex, using small screws to hold them in place until the adhesive cures. Alternatively, bond a screwing pad (1/8" thick laminate or 1/4" ply) in place and then screw to that. The main object is to spread the load over a wide area of hull laminate - size depending on the load.
Ian Farrier, http://www.farriermarine.com

Autopilot
Autohelm 1000

1. I installed a Autohelm ST-1000 on my F-28 about 2 yrs ago. It works great in most conditions. When the seas over two feet and the winds light , it can see-saw a bit since the

boat doesn't naturally track as well. In more wind the boat tracks better and the helm is steadier, but it can be a wet ride. Many recommend making a sleeve to keep the autopilot from getting drenched.

The other supplies you will need are: Breaker for the panel, about 10 feet of cable for the power, twist connectors for splicing , glue or clamps/screws to secure wire , about one sq ft plywood and epoxy cement to reinforce the fiberglass under the starboard deck/seat. I put mine on the starboard side so that I could sit to port and operate the motor. You don't need any adapters. I ran the plug inside the starboard aft storage compartment under the seat. It stays relatively dry there.
Brian Flanagan, F-28, Miami YC

2. We put in a Autohelm 1000 last year on Sato and have had no problem. We got all the equipment/fixtures from Finish Line (except the extra wire for the remote connection). With the remote, that has the plug just under the starboard inside storage shelf we can sit in the front nets and be far from the noise of the engine if we are motoring or just keep an eye on the heading with the compass on the remote. I installed the hull mounting stand just behind the engine opening (near the port cleat) so it's not cluttering up the rear deck. The wires are just run along the seam of the rear cabin so it's out of sight. So far no problems
Dick Anderson dickand@dreamscape.com, SATO F-27 #296

3. We agree that the Raytheon St 1000 tiller pilots are jam up. They also have ability to take input from GPS. If you have a moving map type GPS (Garmin 180,230,235) you can move the cross hair on the map and command the auto pilot to take you there.
Dogpound

Autopilot
Autohelm 2000

1. For the past two years, I have had good luck downwind with a spinnaker using an Autohelm 2000+ . I have taken advantage of its relatively high power and speed, combined with the light tiller loads of an F-Boat: I have established a second "speed" position for the autopilot - this one three inches closer to the hinge. It increases both the speed and the throw distance, at the cost of reduced power (probably reduced by half). Downwind, the 2000+ usually "thinks" and responds quickly enough to stay ahead of the death wallow (or whatever you call it when an autopilot is endlessly chasing its tail out there).

I think a lot of it is the increased tiller throw - another 5 or 10 degrees in both directions. That seems to provide the added grunt to get the butt end back in line before the boat scoots off on a new heading in the swells.

Still, I have been pooped a few times by a combination of events - gust+swell+trough+crossing boat wake, etc. - so I never get too far away from the helm when running below about 80 degrees in any kind of wind. And in heavy weather, I restore it to the factory positions, trading speed and throw distance for power. (I call it heavy weather when I

cannot keep the cockpit dry nor the leeward ama riding high, regardless of wind or water state). Of course, by then I have bagged the spinnaker as well, probably reverting to the screacher. Neither the jib nor the screacher (nor both nor main only) have ever foxed the 2000+ in either the "normal" or "speed" mounting position. That says as much about these wonderful boats as it does about the autopilot.

Finally, I have only made this change since my 2000+ underwent a rebuild out of warranty. It appears to be standing up well, but there are certainly extra stresses on the unit, and I doubt Autohelm would wish to repair a worn out unit for free.
Fred Cox, Reno, NV F-242 #76 - "Preshusss"

Autopilot
Autohelm 4000

1. Autopilots for F-boats don't need to be particularly powerful but they need do be very fast. Look at the hard-over time in the pilot specs. The self contained units seem to be more reliable but have a hard-over time of 8 seconds which I think is too slow. The Autohelm ST4000+ pilot is much faster and has a hard-over time of 4 seconds and is pretty much in a class of its own. It consists of a separate fluxgate compass, control head and ram and costs about $1000. It has been very unreliable though and I have had to replace the control head a few times, however Autohelm's warrantee and customer service is excellent.

When it works its great and can steer to boat downwind in waves up to about 6' and winds to about 30 knots which is the test of any pilot. For my money its the way to go with the F-31 aft cabin and when combined with a custom remote tiller release from Neil Calvert of AllMarine Electronics in Alameda Ca makes for a great solution.
Tim Cahill-O'Brien

2. OK, here's how I set up the autopilot to disengage when the jack line is shock loaded:

First, the boat is an F-31 aft cabin with a short traveler and an Autohelm 4000 pilot. The ram is mounted to the cabin top behind the traveler and engages a pin on the tiller just where it angles over the cabin. The pin is <0.5", so the ram only needs to be raised ~1"

To lift the ram I had fabricated a tapered aluminum channel 14" long with a backing plate which fits into the I-beam section of the traveler horse and is through bolted. The channel piece extends over the ram and is used to guide 2 lines from a cam cleat on top, around the ram in 2 loops, back up to the channel, back to the traveler and then one line to each jack line port and starboard.

The jack lines (flat webbing - WM) are rigged from the bow cleat to each stern cleat. In this configuration the jack lines run next to the traveler horse's side plates where they bolt to the cabin sides. Each of these side plates hosts a convenient hole to which I've attached a large twisted D-ring shackle. A small loop of jack line is pulled through each shackle and the tripline attached to the loop. The loop is held in place with a small sacrificial dowel and a

rubber band. The slack in the triplines are taken up at the cam cleat on top of the channel section.

When the jack line is shock loaded, the loop is pulled through the shackle with ~5-6" of tripline. Because the line is doubled around the ram, this lifts the ram only a few inches. Sufficient to disengage the ram and clear the tiller, but not rip it off the deck. If I want to disengage the easy way I just pull one of the triplines through the cam cleat on top of the channel without disturbing the jack line "trigger".

You can adjust the trigger by playing with the dowel and rubber bands. While I haven't tested it by MOB, I can disengage the autopilot from anywhere on the boat with a sharp tug on the jack line.

I hope that makes sense. I can try to get some pictures if anyone's interested, or you can come on out to Summer Splash and see it yourself.
Colin

Autopilots
General

1. For a waterproof plug without the water problem, I used one of the Aqua Signal 5 pin plugs (like used on the mast mounted deck and running lights. Simply remove 3 of the five pins, and use the remaining 2. Since the plug turns 90 degrees, and the deck in the stern of the boat is slightly sloped, it makes it impossible for water to pool on the contacts.

It is important to turn off the power to your autopilot when you leave the boat.... The factory installations came with a switch mounted by the garbage can. With the power off any moisture in the plug is virtually harmless and will not corrode.
Eric Bowden

2. What do you do to secure the AP other than laying it on the aft cabin top?

Secure a loop of shock cord somewhere close to the spot you want the autopilot to be when you quick disconnect. The fastened end should actually be towards the base end of your instrument. Then, simply stretch the cord to loop it over the piston end of your autopilot to prevent it from sliding around.
Dave Pellegrini

3. I worked with my Marine electronics guy, Neil Calvert, who designed, commissioned and installed the autopilot quick release for my aft cabin F-31. The quick release consists of a 'sub-tiller' to which the autopilot ram is attached. When free the latch allows the main tiller to move without moving the sub-tiller and autopilot ram. A remote control cable allows you to lock the sub-tiller to the main tiller so that they both move together. In this way you can remotely lock or unlock the autopilot ram to the tiller to engage or disengage the pilot. Its a pretty slick setup and I’m very happy with mine. Neil sells a 'kit' which allows anyone to install this themselves on their F-31. A number of F-31s in the SF Bay area have them.

Anyone who is interested can contact Neil at AllMarine electronics at (510) 523-6011 in Alameda CA.
I have no connection to Neil beyond being one of his
satisfied customers.
Tim

3. My own advice is to learn all the response settings of the unit and set these via trial and error to achieve suitable response. Most Autohelms and Tillerpilots have a variety of automatic "dead band", "gain", "setpoint" and "phase" adjustments built-in. These alterations of its response to a course deviation determine how soon and how strongly it responds to any upset in course and how well it compensates for the amount of weather helm.

Almost all microprocessor based units set these adjustments by a learning process which tries to customize the pilot's response decisions appropriate to the boat's helm response, the sea state and amount of weather helm. Most autopilots dial-in pretty well going upwind in settled conditions but get badly misadjusted reaching or running in a multi.

Basically, the multis are too quick for most pilots built in assumptions and the problem is compounded by major changes in weather helm as sails load and unload with surfing. For example, the pilot thinks the boat has lee helm and slowly puts in a bit of rudder angle offset. Two seconds later the boat accelerates, the headsail stops being aerodynamic and there is massive weather helm. The automatically adjusted-in rudder offset is inappropriate and the boat rounds up excessively.

Downwind in waves I try to set up a pilot to eliminate as many of the auto "learned" responses as it allows and then set them to fixed ones at "as fast as possible" and find this usually gives the best result. While it is true the pilot cannot anticipate wave strikes or surfing, it can respond to what its compass senses as soon as possible and as strongly as possible. Being ready to intervene is important in any case.

Slowing the boat down also gives the pilot a chance to keep up.
Tom

Awnings

1. We cruised for about six week last year on our F-31 in the steamy Chesapeake Bay. For the sun we use a Dacron awning purchased from Don Wigston. It covers both tramps, is easy to set up and light. The shape funnels air into the boat. For rain we use a small blue tarp that covers the cockpit. Neither of these solutions can be used while underway.
-- Claude

Backing Plates

The white plastic backing plates all over the boats are made of UHMW polyethylene, which is tough, and works fine for backing plates when thick enough.
Ian Farrier

Barbeques

1. Caution about using self-cleaning ovens: They tend to discolor the stainless racks contained within. The racks turn various shades of blue-yellow in a rainbow effect, like a motorcycle exhaust pipe.

You might try a product such as Easy-Off oven cleaner, followed by a good stainless polish. That will take care of the carbon, but it still won't do away with heat discoloration. There are also cleaners for motorcycle exhaust pipes that specifically target the heat discoloration issue...you might want to check with a local motorcycle dealer or try a web search for motorcycle exhaust pipe cleaner.
Larry, DF-920 1st Tri

Barber Haulers

Barnacles

If all that is left is the "whitish" calcium residue from the barnacle or worms, I have used a grocery store product called (I think) "Lime Away" or something similar. It's used to remove calcium deposits and works well. Be sure to wear gloves, and rewax after using.
J.E.B. Pickett

Beam Bolts

1. > The bolts on the lower folding strut on the beam side are not fully turned on. It is also impossible to loosen them. They turn around (not easy). The problem is the same on both sides.

There is no play in it. Does anybody has experienced the same and is this a problem?

Yes, had the same problem on my F-27 hull 167. It is a defect and must be repaired. Lucky for me I am near the factory. They cut open the beam on the forward side and made the repair to the nuts on the inside, then patched the hole. All under warranty. Hope there is a dealer to do the same for you.
Mark Darius

Beam Core

1. >Today was a Sunny day so I decided to replace my compression pads. When I was removing the old pads one of the screws sheared off inside the aka so I decided to fill the hole with the broken screw and drill another next to it for the new pad.
>
>As soon as the very small bit I used for my pilot hole penetrated the gelcoat, I noticed water bubbling up out of the hole. This water continued to bubble out for perhaps 30 seconds. There is obviously water trapped in the laminate at the inboard end of the aka where the compression pad goes. The sun on the aka was probably putting the water under pressure and causing it to bubble UP out of the hole. Should I be worried about this?

No, it is not a structural threat. I suspect there is probably a void in the foam at the top end of the beam, and a leak/entry point, probably inside the beam bolt hole. This was then able to fill the void, and upon drilling the new hole you penetrated the void allowing the water to leak out. Any pressure would probably be due to a small head of water above the drilled hole.

The foam fill is a closed cell foam, and foam filling is done from the bottom up. This ensures an even fill (provided beam is filled vertically) but there is a chance voids could be present at the very top inner end of the beam due to trapped air. Such voids are not a structural problem in this area. You will see the foam fill/vent hole in the end of the beam, which will usually be solid foam. Digging into this may reveal a void which can then be filled.

Otherwise cure is to find the leak/entry point which could be the join seam or inside the beam bolt hole. Injecting water under pressure into the hole you just drilled may force its way up and out through the leak point which would show its location. Another solution is to just leave a small drain hole to allow any water getting in to drain out. F-28 beams (which are hollow) have such a drain built in at the outer end inside the float. Older F-27s used to have a drain/inspection plug on the bottom lower corner of the beam
Ian Farrier, http://www.farriermarine.com

Beam Cracks

1. >Sooo, If I find new cracks that look like crazing on the aka inboard where it bolts to the hull (F-24 MK II), how much do I need to worry?

Very little, if at all, and this has not been a problem area. If it is not on the list in the Beam Care Bulletin, then it is usually just cosmetic. These cracks may be the type caused when pulling beam top from mold, of flex from a float collision at some stage. Just keep an eye on them.

Such cracks can also occur on the F-31 beam collars (float to beam join) and are also usually nothing to be concerned about. However, in the case of the F-31, further checks may be needed, if cause was a heavy collision, as per the Beam Care Bulletin.
Ian Farrier, http://www.farriermarine.com

2. If you actually find a crack in the beam, the repair is to usually just dig out the crack, pry apart slightly and refill with a good epoxy glue. If a very fine crack, and not able to be pried open, it may just be a surface one from temperature expansion and contraction. In this case just monitor. If any doubts exist, open up the crack area, using a fine cutting wheel (creating a small slot), and then fill with a good epoxy glue.

Another precaution, if an external flange, is to put an extra through bolt in.
Ian Farrier

3. > Do these same cracks develop in the F-27 as well?

No, it is an F-24 issue only.

> Mark II only, or both I and II? Restricted to certain production years?

Only early Mark IIs prior to 1998. Odd thing was Mk I and Mk II are identical in this area and Mark I never had a problem as far as I'm aware. It was hard to find the cause for a while, but on the boats I have inspected the compression pad had been fitted too high up on the corner radius, creating a point load. I also suspect there could be some beam alignment factors as well which requires regular supervision and good controls to prevent.

I requested Corsair to thicken the beam sides at the problem area in August 1998 to prevent such cracks developing, even with misfitted compression pads or bad alignment. Thus later boats should not develop this problem, and I would be interested in hearing from anyone who has. Corsair has been silent on this issue.
Ian Farrier

4. F-27s that could have beam cracking problems range from around hull nos. 300 to 420. The problem was the internal foam fill not expanding properly, causing voids under the beam top surface. However, I believe most instances have been located and fixed by now, but it is still wise to check.

If significant voids are present, then the top surface (which can be highly loaded in compression) may not be properly supported and oil canning or dimpling can result, with failure of the top surface by buckling then being possible. The first sign that this may be happening are softness underfoot, or cracks or chips in the top aft corners of the beams, near the beam center athwartships from flex. You may also be able to observe oil canning or rippling of the top beam surface while sailing. I have also seen such foam voids in one F-24 Mk I beam (where it is less serious as the curved beam top is reasonably stable on its own).

Beams can be checked for voids by tapping lightly, and the sound created should be of a constant note. If it changes significantly in any particular area, then this should be checked for any movement or softness. Repair in most cases is not hard.

Cause was a mystery for some time, but was eventually traced to an incorrect foam filling procedure. For this to work properly, beams have to stand perfectly vertical, so that the foam mix expands evenly upwards from the bottom, without voids. I had special beam holding jigs for this purpose made while at Corsair, but, after I left in 1991, it appears some beams were being filled while angled or laying against anything convenient. With this situation, the foam can expand unevenly along the beam, resulting in 'road blocks' being formed between top and bottom, leaving the offending voids.

Warranty and problem resolution can sure be quite a can of worms, but to me, the real solution has always been to just build the boats right in the first place.
Ian Farrier

Beam Hardware

1. >At the end of a day sail, the beam bolts on my boat are always loose indicating that the beams were probably not unfolded fully to begin with. Does it hurt the boat to sail it with the beams 1/4" or less from the fully unfolded position?

Sounds like your compression pads may be binding a bit. A quick solution would be to tighten the bolts up some more after sailing for a while, or just shave some more off the pads.

> I'm making new compression pads for the inboard end of the akas. How much clearance should they have?

None is ideal, but in the real world up to 1/32" or 1 mm will be okay when the beam is first folded down.

Ian Farrier

2. A while back the "aka noise" issue was discussed. We seem to have found an ideal solution, without affecting spacing tolerances.

McMaster-Carr sells Teflon coated fiberglass fabric tape 2" wide by 0.005 thick @ 78 cents per foot, item #8876K73. The stuff is very slick and very strong and you'll need 8 pieces at three inches each. Loosen the aka bolt a little, shove two pieces into the gap (one left, one right), re-tighten the bolt, do the remaining three and all the squeaks are ABSOLUTELY gone. Checking the pad space with a feeler gauge, there is no noticeable difference.
Felix Kagi, F-31 "Espresso"

3. Fellow f-27 owners: As these boats are now "old" it's important to inspect the plastic bushings on your folding mechanism. I live in desert and the sun plays havoc on plastic parts. Just happened to look into the depths of the struts and noticed the bushings a dark brown color. They are brittle and fell apart. I'm going to order 16 sets (there are two sizes on each end of the pins) and replace all of them.
Bill Sherrill

4. >The bolts on the lower folding strut on the beam side (4 #) are not fully >turned on. It is also impossible to loosen them. They turn around (not easy). The problem is the same on both sides.

>There is no play in it. If it is a problem how can I fix it? Drilling a hole on the opposite side? >Does anybody have a drawing how the nuts are placed on the inside of the beam?

One should always leave these bolts on the beams alone, other than to check tightness, but with fingers only. Never try to tighten them or take them out - it is virtually impossible. They and the brackets have to be fully epoxy glued in place (due to the carbon fiber present) and the nuts are captive inside in the epoxy. One could loosen them by swinging on them hard with a wrench, but this is not a good idea. No great harm, unless they can be turned relatively easily, and vertical slop can be felt, and then they should be fixed. However this is not easy as the beam has to be cut open on one side.
Ian Farrier, http://www.farriermarine.com

5. >Yesterday, while rebedding some other fittings, I noticed that one of these >fittings was pulled away from the beam. It must have been this way for a long time. I tried to rebed it, but the bolts seem to have nothing to grab on to. They don't even feel stripped. They go all the way in and turn freely.

The fitting is the retaining bracket for holding the beams in the folded position. The bolts should be tapped into a metal plate inside and not be loose. Best to see your dealer to get it fixed.
Ian Farrier, http://www.farriermarine.com

6. If there is any movement in and out possible between beam and hull, then you will get noise. The solution is to adjust or shim out compression pads until movement is stopped, and associated noises will then also stop.

But don't forget other areas of the boat can also create noise, including mast step, traveler, rudder, daggerboard, and sometimes a creak/noise free boat can be hard to achieve.
Ian Farrier, http://www.farriermarine.com

7. Both F-24 and F-31 pins have to be a special high strength alloy (Type 316 stainless steel is not strong enough). F-27 or F-28 pins can be 316.

Bolts and Nyloc nuts were used for years on the F-27 but were bulky and heavy. Circlips were then tried because of the simplicity, compactness, and weight saving, but proved to be troublesome. Groove width is critical to avoid crevice corrosion (there has to be some slop to let air in) and if fitted or removed incorrectly they can fail without warning.

Circlips thus must be checked regularly, as per the Maintenance Checklist in the Sailing Manual (also at http://www.farriermarine.com/owners/index.html). But, even if one lower strut pin falls out the remaining pins on the other strut leg would still strong enough on their

own in most circumstances. However, if one of these also falls out you would then be in deep trouble. So do check.

Corsair is now using Clevis and cotter pins, which while not quite as clean looking, are very reliable.
Ian Farrier, http://www.farriermarine.com

8. Corsair is now (October, 2000) having shims made up. These are 4" wide and 1/32" thick and are intended to be used each side of the compression pad so as any misalignment can also be corrected. If any 'in and out' movement exists at inner beam ends it is simply a case of adding shims until it disappears.

The original material is actually UHMW polyethylene, but I now favor a fiberglass or aluminum strip. The UHMW is somewhat formable under high pressure, which also helps make up for any misalignment. But plastic is also slippery which is not a good feature for these pads in a fore and aft collision, as they then tend to allow slippage upwards at the beam inner end which can transmit a large impact load to the beam bolts which may then damage beam bolt pads.
Ian Farrier, http://www.farriermarine.com

9. >What about Teflon for the compression pads?

Too slippery - the ideal would be for the compression pad to grip onto the hull pad making a virtually a fixed connection. *(Note - also creeps too much. - Editor)*

UHMW was always a convenient, strong and economical material for this purpose, but it is also slippery, and now having observed what happens with fore and aft float bow collisions, particularly on the F-31, a slippery material can tend to increase damage to beam bolt area from such collisions. I have thus changed my preference to a high coefficient of friction material. Nothing wrong with Teflon or UHMW with normal sailing. it's just that time has shown they represent a possible weakness in collision situations.

Fiberglass or aluminum compression pads, along with shims for adjustment, were recommended to Corsair some time ago, and it appears they are now implementing these recommendations.
Ian Farrier, http://www.farriermarine.com

Another option is to actually mold compression pads in place from a high density epoxy putty mixture, bonding to the beam, with a releasable film on the hull pads first. This has been an option for F-9A builders and the pad can then fit perfectly, the problem being to make it look good - the edges of the putty tend to mush out when one lowers the beam into position to start the mold/cure process. Finished pad thus looks a little rough around the edges, but it does work great.

10. Another option is to temporarily tape a fiberglass or aluminum compression pad across the hull pads in the correct position, build up a high density epoxy putty on the outer side, and

lower the beams into position, the putty filling up any gap between the pad and beam end, and compensating for an misalignment.

Setting up for such molding in place, the rig should only have moderate tension, the ideal is with the beam in its neutral mid 'in and out' position. That being not in the outermost position, which is the case if the float is left to just hang in mid air, but not forced in hard either by a tightly tensioned rig.

Probably easier to try the new style pads first, with different shims each end to compensate for any misalignment. It's fiddly I know, but the boat really appreciates a well adjusted set of compression pads, and shims make this easier. If you feel any in and out movement when sailing, just add one or two more shims until the movement stops, or the pads bind too much when folding.
Ian Farrier, http://www.farriermarine.com

11. A incident with an F-31 was just reported January 2001) where the beam bolts were longer than they should be, and extending too far through the bolt pads in the deck. They could then drive down into the gelcoat/deck under the bolt pads, which has the same effect as a screw jack, levering up the bolt pad with the potential to damage/crack the laminate in this area, while also preventing the beam inner ends from being properly clamped down.

I have not heard of this happening before, so this could be just a 'one off' incident, but F-31 and F-24 owners should check this anyway - the cure is easy, just add a washer under the beam bolt head. Could happen to F-27/F-28s also, but in this case it will not damage anything.

As previously discussed, compression pads and their maintenance are very important, and their purpose and adjustment is covered in a bulletin on my owners page at http://www.farriermarine.com/owners/index.html

Existing plastic pads can deteriorate over time, and can also be difficult to adjust correctly. However, I managed to get stronger and easier to adjust compression pads implemented before I left Corsair, and these should now be available from Corsair.

The new pads are made from a tough fiberglass rectangular bar, with separate packing shims each end. The pads are simply screwed to the end of the beam with countersunk-head self tapping screws (be sure the heads are flush). There's also no problem in drilling extra screw holes into the beam in this area (the laminate here is very thick and strong). Overall thickness can then be adjusted by simply adding or subtracting shims as required, plus any misalignment of the beam at the compression pad area can be corrected by packing one side more than the other.

Final adjustment can be checked by just feeling the beam while sailing. If any in and out movement is felt (more than 1/32") then just add another layer of shims next time you fold. You will know when you have gone too far by the beam being hard to lower the last bit into position. It may be difficult to totally eliminate all 'in and out' movement while sailing, just make sure it is less than 1/32" (1mm).

Ian Farrier

12. You can order new bushings for the folding system from me, but there's usually no need to replace these. There are numerous boats over 10 years old out there, and in tropical areas, that have never replaced these bushes. They can be subject to UV deterioration around the flange edges, but around the pivot bolt where they are needed, the sun can't get to them. They are also not that structurally critical, being there just to keep the stainless and aluminum apart and insulated. Take them all out and the boat would still hold together, just rattle and creak a bit.
Ian Farrier

12. > Looking for some advice. I think my F-24 Mk-2 is "out of tune." The first float that I unfold (regardless of side) goes down very easy and seems to have a perfect beam/joint fit. When I go to unfold the other float (again, regardless of side) I really have to lean hard on > it and stand on top of the beam in order to put the bolt in. If I take my foot off the beam, the float will want to come back up. Is my rig too tight? Are my nets rigged too tight?

Could be tight nets, or slop in your upper folding struts on that side, which could be caused by overload from incorrectly fitted compression pads. You need to check the UFS pivot mount points when folding to see if there is any movement visible. Just a little can make folding difficult just as you describe.

Also, there is a bulletin on Compression pads, their purpose, and fitting, on my Owner's Web Page at: http://www.f-boat.com/owners/
Ian Farrier

13. Owners should not forget to regularly inspect all beams (F-24 to F-31) for any cracks in the glue joins along both sides of the beams in the join between the beam tops and bottoms. This should be a regular check as per the Maintenance Checklist in the back of the Sailing Manual. This is also covered with more detail in my Beam Maintenance Bulletin at: http://www.f-boat.com/owners/
Any cracks in these joins should always be repaired promptly, as they can become a safety issue.
Ian Farrier

14. > My shims show some gaps. I was wondering about casting a shim in place when the boat was on the water. I'd use weather stripping to contain a dam of epoxy and filler then I'd cast the spacer to fill the gap.

A recommended procedure with F-9s and used successfully by many. Covered in my Beam Compression Pad Bulletin at http://www.f-boat.com/owners/. Only downside is that 'molded in place' pads can look ugly if not done right.
Ian Farrier

15. If the boat is built with beams aligned properly and compression pads fitted correctly, then there will not be a problem with any F-24, early or late.

One can determine if a problem is likely by inspecting compression pads to see where bearing area is (wear marks). If on top edge of compression pad Only, then cracks are likely to develop. Prevention is easy, just adjust compression pads to bear evenly, and lower down. Move the complete compression pad down if necessary, and also taper if required.

Overall, these particular cracks are mostly a cosmetic problem and are not a serious structural issue. However, if the cause is not remedied, they could become more obvious and ugly, and eventually a structural problem.

It would be nice if Corsair would include general maintenance or warning advisories such as above in their Newsletter, or at least email or mail a copy to each owner.
Ian Farrier

16. > Recently, the dealer replaced the compression plates on my 1992 F-27 with new pads from the factory. The plates that were replaced were probably the original ones and were nylon and badly deteriorated by UV. The new plates are much thicker and made of a fiber glass material. The first time we used the boat we had no problem spreading it, but upon closing it the port stern ama jammed against the pad. Not wanting to force anything we re-extended the starboard side and got the port side to fold. However, we tore out a large hunk of gel-coat from the ama where it comes in contact with the pad.

> Inspection of the other amas show stress cracks in the areas that come in contact with the compression pads. These cracks were not there before the installation of the new pads.

> Anyone had similar problems or any suggestions?

Firstly, compression pads are not essential on an F-27 or F-28, being only there to reduce flex and keep a tighter rig, so they are even less important on the F-28 with its rotating rig where the rig can be slack.

However, it should be noted that this is NOT THE CASE with the F-24 and F-31 where compression pads are structurally necessary, and enable the folding system to be simpler.

If F-27 or F-28 compression pads are replaced, then use a plastic material not the smaller hard fiberglass pads as now used on the F-24 and F-31. These were never intended for use on the F-27 and F-28, and Corsair or any dealer should not be supplying such pads as replacements for the F-27 or F-28. Suitable plastics include UHMW Polyethylene (very low cost) Acetal (Delrin) or Nylon.

Also showing up again is the confusion that exists between the terms 'ama' and 'aka'. 'Ama' means float, 'aka' means beam. Because of this frequent confusion I intend to continue using the terms 'float' and 'beam' so that everyone knows exactly what is meant.

In regards to flex cracks on the end of the beam, that bears against the compression pad, or even in the beam recess end itself. These are not unusual, but are rarely anything to get

concerned about. Could be most common in early boats that did not have compression pads, but had them fitted later. They may also appear quickly in instances where F-27 or F-28 plastic pads are incorrectly replaced by F-24 or F-31 fiberglass pads, due to the greater point loads then generated.
Ian Farrier

17. > Can the folding system bushings be replaced in the water in the folded position. I.e., are the upper folding struts strong enough to temporary hold the float in to place and is the folding geometry suitable.

No, this may be risky and you could damage the upper folding struts. Any water movement at all could be a problem, plus it is hard to access lower folding struts in this position. Best way is to put the boat on the hard, unfolded, and with main hull and floats evenly supported to take any loads off the lower struts (tightening the shrouds can help here). They can then be disconnected and swung down where the bushes can be easily replaced. Doing it on a beach may even be possible, though maybe somewhat awkward.

> Could the pins be replaced with SS bolts with Nylon locknuts?

Yes, though there will be slightly more play as bolts are slightly undersize compared to pins. Also be sure there is no thread in the bearing area - may also be cheaper to get the latest pins (with cotter pins instead of circlips) from Corsair.

A note on these circlips - they can corrode very fast if the groove in the pin is undersize, as this can exclude oxygen around the circlip, whereupon stainless steel can corrode very quickly. So if you have a pin where the circlips frequently seem to dissolve then this is likely the problem.

Thus the circlips should be slightly loose in the groove, and they should not be tightened up by hammering closed. They seem to like this even less than a tight groove, and I have seen them break and fall out at the factory yard on a brand new boat from a hammer being mistakenly used during assembly.
Ian Farrier, http://www.f-boat.com

18. It is acceptable as a last resort to file or drill out the locking pin hole to allow the pin to fit if necessary - there is nothing critical about these, they are there to hold the folded float in position only.

19. Usually locking pin hole positions stay very consistent, and if yours is moving back and forth half an inch then something else may be wrong. Check that the lower folding strut cross bar welds are still okay, and also the beam bulkhead to hull taping. Have someone watch the lower folding strut anchorage points on beam and hull while folding to see if there is any movement.
Ian Farrier, http://www.f-boat.com

20. The compression pads are of very little importance on the F-27, as all the compression loads can be absorbed and taken into the hull by the Upper Folding Struts alone, which are designed to take this load. The load is then transferred across the hull by the beam bulkhead. All my early designs were like this, but it is a more expensive and heavier way to do it, and hence it was simplified with later designs.

The only reason compression pads were fitted to later F-27s was to help eliminate any flex that can be there and thus keep the rig tighter. They are actually not necessary structurally. Fitting them to earlier boats can also cause problems as the laminate in the bearing areas is not strong enough to take the loads then created.

Compression pads are covered in more detail on my owner's page at: http://www.f-boat.com/owners/index.html

The newer systems are less complex, lighter, and less costly. The downside has been the need for the compression pads to be the right size, and the need for adjustment, which is rather awkward to do. My latest F-33 design has improved this, with very easy to fit and adjust compression pads (you can easily see them with beams in place). All the beam attachments are now also outside the hull where they are easily accessible. The major benefits are no intrusion inside the cabin, and even shorter beams for a lower trailering height, plus less weight.
Ian Farrier

21. > After speaking with bill Adams about pads or absence of pads on my F-25C. The boat has no space between the surfaces that I can find by inserting a feeler gauge. Any suggestions???

If there is no space and no movement then it does not need beam pads. You actually have the ideal situation.

Compression pads are only needed because of production tolerances, to where it is very difficult to have a constant gap between the beam and hull.
Ian Farrier

22. > With the mast down however each one of the beams appears to have a gap of some where around 0.5 to 1.0 mm with the hull. Question, should I add shims now or should I wait until the mast is up again and recheck the gap then?

Wait until mast is up - best position for fitting pads is when the float weight is supported, making the beams neutrally loaded. If okay before, then they are probably still okay now, with no adjustment needed.
Ian Farrier

23. > When switching from circlips to cotter pins, do the old pins need to be replaced, or can they be redrilled for the cotter pins? If the old pins can be drilled out for cotters, where should

the holes be drilled in relation to the old grooves, i.e.; do you drill at the groove or slightly outboard of the groove, to allow for a washer, etc.?

If the pins are long enough, then a cotter pin could be used in the old pins, but I don't think there is enough room if built to specifications, particularly if washers are used as well.
Ian Farrier

24. Circlips - the correct part number for these is 3100-75 (3/4" shaft) for the F-31/F-27, and 3100-62 (5/8" shaft) for the F-24 originally from Industrial Retaining Rings, New Jersey (now http://www.truarc.com/). May now be renamed as the 5100 series. Be sure to specify stainless steel. Any corrosion problems with these is usually due to the circlip groove having too little clearance as per my previous posting. Do not hammer closed, or over expand when fitting, as they will then fail quickly.
Ian Farrier

25. > On my F-27 most of the SS Bolts in the folding mechanism have nylon washers. However, those that bolt into the aluminum blocks on the underside of the beams do not. They have been attached with some silicon sealant to inhibit corrosion. I am assuming that the nylon washers were not used here because of the compression loads at these points would possibly squeeze these washers out.

> So at these attachment points under the beams I am getting some aluminum corrosion that I would like to stop. What do you guys use at these places where the SS Bolts go through the aluminum blocks?

Any corrosion here would be of only a surface nature, and not a significant concern. These bolts and brackets are actually fully bedded in epoxy, to properly transfer the loads into the carbon, and to insulate the carbon from the stainless bolts. Thus these brackets are not removable, and one should never attempt to remove or turn these bolts, as you could break the bond between epoxy and bolt, and maybe let water in, to where it could cause a problem.

If no washers are present, and some corrosion is appearing around the join between bolt head and bracket, then clean well and then run a small fillet of either a polyurethane or silicon sealant around this join to keep any water away and help insulate the two metals from each other. If you have turned these bolts, then this should definitely be done.
Ian Farrier

26. All eyes on the fwd. beam fronts are permanently bolted in place before the beam is closed, and are not intended to be removed. The nuts are supposed to be locked on the inside, and any attempt to remove these saddle eyes fasteners may loosen the nuts, but it will still be impossible to remove machine screw. Only the eyes on the aft side of the beam (on join seam) are removable, as these go into a tapped plate inside. Once loose, the only way to remove machine screw is to grind head off, and push it back inside into beam foam fill.

One way to seal or reattach such saddle eyes would be to use a bent nail in a drill, to open up foam inside beam just adjacent to hole, so one forms a recess in foam just inside hole. Should

be at least 1/2" in dia. (the bigger the better), and at least 1" deep or longer into foam. Then fill with epoxy (the tricky part as boat is orientated the wrong way for filling and hard to stand on its end). However using a syringe (available from WEST) will fill the cavity, provided hole is blocked off immediately syringe is removed to prevent epoxy escaping. Another trick is a small hole just above the hole one is closing, which is covered up, while being filled from above. Use a reinforced high density epoxy mix (with mini-fibers). You may also have to drill a small vent hole for any air to escape.

Once resin has set, holes are then cosmetically repaired, and saddle eye can be replaced by tapping into the cured resin plug inside.

Another option is to cut out the section of beam at the saddle eye, inserting a preformed plate on the inside, and then rebuilding the outside, but this is not for the amateur.
Ian Farrier

Beer Holders

1. When in the cockpit, a full roll of grey duct tape works perfect. It's a little sticky on its side so it does not slip off the non-skid when boat heals over some. The hole in the middle is perfect for a 12 ounce can. Obviously it can be move anywhere in the cockpit.

2. I just remove the winch handles from the beer bottle holders and place the beer bottles in there. Works great - except for not having a place for those darn handles.

3. One not so obvious place on the F-27 is the metal portion of the tiller. It is an I-beam set on its side and a can or bottle of your favorite beverage will fit nicely between the vertical legs.

4. Try West Marine's 2001 Catalog, page 804, item "i". It's a rubber holder for a can of beverage with a suction cup on the bottom. The suction cup is kind'a poor but it makes the can much more stable and you can plunk it on any relatively flat surface. I've used mine for years on my Diet Pepsi but it would probably work on your beer cans too.

5. Here is a link to a great Winch top table. I use them on the coming winches. This will work until you haul out the Screacher or hang the Spinnaker. At that point most everyone on the boat needs both hands and all of their sense working for the boat!

http://www.windintherigging.com/catalogs/windintherigging/thumbnails/T10.htm
Jim Bourgoin

6. I give anyone who comes aboard a foam can cooler. What is great about the F-Boat, the heal and bounce is not enough to tip over the can in the cooler. You can set it on the high side or the cabin top and it will stay there. The only spilt cans we have are the ones we knock over when we move about without looking first.

Binoculars

1. I went completely over the top and bought the Canon 15X50 Image Stabilized pair sight unseen prior to last summer (for not too much more than you are being offered the 10X30 for- on eBay, there are reputable sellers offering new stuff at great prices there if you do your homework and play the game for a while). I have the technology in my camera lenses and Practical Sailor liked them, so I took a chance.

I've been very pleased. Up against a top of the line pair of Steiner 7X50s, the Canon's consistently read boat names and buoy numbers when the Steiners are out of range. They do not have quite the light transmission of the Steiners. They also are not grab and look binoculars. To use them properly you need to focus them carefully and then hit the button for maximum stability. When you first hit the button the image sharpens and holds dramatically, giving you time to see the detail you need.

Remember that the rest of the time these are a little different from regular binoculars. It is harder to find things as you move up in magnification. Even though the image is stabile, they are "jumpy"- this is also a function of the power. They are also more fragile and not the kind of thing to let slide around the cockpit. As well, Canon only makes two models that are water resistant and I don't think the 10X30's are.

All in all, everyone that has tried them has wanted them.
Jesse Deupree, F-27 ION, Portland Maine

2. I have had these (Image stabilized binoculars) for two years. They are amazing and I would recommend them highly.
David Shneider, High Priority 2, F-31R

Birds

Having a 27 by 19 bird platform can be bad. Very bad. Last year the launch driver said to me "Have you seen your boat yet?" It's the first time I've had a boat that I could smell from the launch.

What we did, and it worked since then, is I went to a flag store and bought a 100 foot string of plastic pennants, such as is used for gas stations, etc. I tied this around the boat in various ways, along the boom, around the cap shrouds, forestay, topping lift, etc. I also had a plastic snake in the cockpit, and a few other twirling things as well. It all seemed to work. I had a plastic owl but he flew away in a storm (although I had him tied down).

The flags make the boat very festive, and they are cheap and only take a few minutes to set up. Another thing I've been told, but have never tried, is to string fishing line around in the same way. The noise is supposed to keep the birds off, I guess.
Good luck, Dennis Foley, F-27 #100

Blisters

There are few F-boats with blisters. I've heard of two.

One is a 1995 F-27, and the blisters were localized on the starboard float. This boat was kept in the water.

The other was a 1999 F-24 Mk II kept in salt water for seven or eight months a year. It had been protected by Micron CSC and Micron Extra bottom paints (which aren't intended to provide protection against blistering). The blisters were at the port float aft areas. This boat was under warranty and was taken care of by a dealer.

It has not shown up as a general problem at all. Corsair Marine builds good boats.
- Editor

1. Hulls.....I thought that Corsair used vinyl-ester for the "barrier coat" on the outside of the hull and polyester for the rest.....that's what I remember on the old flyers.

Over the years we've seen very little real blistering problems, though some surface blistering has occurred in boats that stayed in the water all the time. No serious, internal, blistering delamination like the monohulls have had problems with .....that I know of.

Certainly service has, and is, going to be a problem with Corsair. They don't have many dealers left. Compared to last year (17 locations and 15 dealers) they now (July, 2003) have 8 dealer and 8 locations at best (this includes the factory as a dealership).....that's half the number to the best of my knowledge.

In my opinion any boat should be checked out completely.....whether it's a factory built or home-built boat. Some are put together well and some are not, even within the same manufacturer.
Cheers, Mike Leneman, Multi Marine

Boom Height

1. It is quite feasible and structurally okay to re-drill new through holes for the boom roller furling shaft higher up the mast, to lift the boom as required. Luff rope entry point (and feeders) may also need moving up, as these need to be a reasonable height above boom to work well. Mainsail can then be recut, or a couple of new tack and clew eyes added to suit new height, with excess being rolled around boom when higher furling point is being used. This would then allow reverting to the full original mainsail when racing. Take care when

establishing height of the new eyes that bottom 'excess' part of main is snug around boom and not loose or too tight.
Ian Farrier

Bottom Paint

1. I have used E Paint's No Foul bottom paint, which is a white paint based on Zinc Oxide rather than copper. The nice thing about this paint is that the active ingredient is white so that the finish stays white. That it is friendlier to the environment and to me when I sand it than copper (zinc oxide is the stuff you put on your face in the sun- it degrades in water without poison and works by creating a layer of hydrogen peroxide near the hull that resists growth but also degrades chemically without harm or pollution, according to the maker)

2. For trailering, the ablative paints seem to wear through pretty fast. Most trailer folks seem to not use bottom paint. Sailkote appears to make the boat slide around on the trailer, as well as increase its speed in the water.

3. > Ok, so how did you remove the bottom paint without messing up the gel coat?

VERY CAREFULLY!! I paid to have it done. I believe the primary tool was a slightly dull paint scraper. It was then sanded out (400 grit) and buffed. It looks VERY good. There's one or 2 little spots where I can tell it's been worked on. Those could be filled and rebuffed if we deem it necessary.

I also waited until the paint had really started to come off on it's own, about 3 years. It was a copper ablative paint of some kind, very soft and very rough.

My glass repair guy asked that I not mention his name, as he wasn't anxious to repeat this procedure.

After the cleaning and buffing, I coated it with Sailkote. That's when I discovered it now slides around in the trailer bunks. We also won the next 2 of 3 races (in fresh water).

The boat is now sitting in Yaquina bay (Pacific Ocean) with nothing but some bottom wax from Wet Marine. I plan on leaving it in a month and then pulling it for a look see.

4. Bottom painting should run $16-$18/foot including materials--about the same as an equivalent length monohull (Summer 2000). Despite the 3 hulls, the surface area on the F-boat is actually less due to shallower draft but there's more boat handling involved.

> Does it slow the boat significantly?

Yes, but not nearly as much as slime or barnacles.

5. An anti-foul wax from West Marine worked. I'd scrub the scum off the exposed parts (the boat was docked folded) each time I went sailing, and monthly, give it a serious scrub and rewaxing.

6. Another solution to bottom paint on the floats is to camouflage them. Leave the boat in the slip folded for a few days to form a scum line so you will know how far up you have to paint. Have an artist outline a design like a big bow wave, etc. Use bright colors like red and blue.

If you use a high quality ablative paint like Micron CSC Extra, it can stay out of the water indefinitely with out killing the anti-fouling qualities. Read the specs in West Marine catalog.

7. Bottom paint: Hard Vinyl with at least one coat of epoxy primer first. Sand bottom with 100 grit or so, tape, roller on recommended epoxy primer then top coat with paint before the epoxy is completely dry. Put a second coat near the waterline. Lightly wet sand the paint after a few days if you want it smoother.

Bottom paint removal.....Well, that's a tough question. You can try paint removers which will soften the paint and then you scrape it off with a putty knife. Remember this paint is toxic so you don't want to swim in it. Dispose of it properly. Then the remaining stuff can be wet sanded off. You wet sand for two reasons....one, the paint is naturally soft and will clog up the sandpaper otherwise and two, you don't want to breath any of the dust.
Mike Multi Marine (ex: paint wholesaler)

8. With ablative paints, the carrier wears off at the same rate as the copper, and you wind up with almost nothing on the boat (after 2 or more years). According to the paint manufacturers themselves, these are the only ones that can be hauled and re-splashed.

9. I get a couple of years out of my Baltoplate. I just 3M abrasive scrubber
to cut to the fresh paint underneath. Seems to work

Bottom paint - Prep Work

1. You can do an F-27 without ever reaching up. Sitting on a stool of the right height and using one of the 11" boards you just reach under and sand without looking. The board guides where you are cutting and its just back and forth, back and forth, back and..... I'm 6' tall, arms normal length and it was doable- just barely but doable. Playtex gloves are all you need, and a little spinach.

I hate dust (ex housepainter) and am not good enough with an orbital sander to get a fair surface- for me its a lot more than "here and there". With the board you are sure to keep the hull fair- in fact you will fair the hull if it needs it (although my 1989 hull was perfect- thanks Ian). If you do the whole thing over plastic you can mop up the water and settle the paint out.
Jesse Deupree, F-27 ION, Portland Maine
Just wishing I had an automotive compressed air long board

3. I agree, best way to get a waterline is to put the boat in the water for a week. Remember that the water splashes up and the bottom paint should be at least 3" above the waterline. Mike Leneman, Multimarine

4. Be sure to cover transducers then paint them with a special transducer paint (barnacles have a way of finding your Achilles heel wherever it is). If using an ablative paint, use an extra coat on the bows and rudder to take into account the extra wear in those areas. At the end of the season, pressure wash as soon as the boat comes out of the water--it takes the residual slime less than a day to harden. Also, expect the water line to be a little higher than when you dry sail the boat--given the sad but inevitable tendency to treat a moored boat as a storage locker (not to mention the fact that the paint itself can add up 50 lbs.).

Bottom paint - Awlgrip Gold Label

1. I use an ablative bottom paint (Awlgrip Gold label) with my boat on a mooring (unfolded). I have had to touch up the paint in high wear areas but with an ablative that is very easy. A scum and some easily removed grass can get attached after 4+ weeks. I have had staining above the waterline (removed it with ON/OFF). This year I am trying Aurora Marine's Bottom wax on the amas and main hull above the waterline and below the rub rail to try to prevent the staining. Time will tell.
David Beretta

2. I use an ablative bottom paint (Awlgrip Gold label) with my boat on a mooring (unfolded). I have had to touch up the paint in high wear areas but with an ablative that is very easy.

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Bottom paint - Bottom Wax

1. We keep our boat on the trailer and don't want to paint. I swear by Aurora Bottom Wax. Seems to be so slippery that anything which doesn't get washed off by sailing is easy to remove with a sponge. Even barnacles seem to flick right off. It's no harder to apply than other waxes. It's a little hard to find, but the company put me in touch with a mail order dealer via e-mail.

Here's the info on the wax: Aurora High Performance Bottom Wax from Monroeville Marine, Monroeville Ohio (419)465-2558. They provided prompt mail-order service. It cost $36.40 with tax and shipping.

This is the second bottle I've purchased, have applied it bottom only to well above the water line on main hull (x3) and amas (x2)with one 16 oz. bottle. Two coats are better, and last well

enough with our use (1-2 cruises a year; otherwise stored on the trailer) that I do it just once/yr.
Sue Abendroth

Bottom paint - Copper Epoxy

1. I coated the bottom of my F-9AX with 5 coats of West Epoxy, alternately loaded with copper powder and bronze powder. The boat is kept afloat in salt water, and is in its 4th season. I clean it with a Scotchbright pad about every two weeks, by swimming with a suction pad to give some leverage. The boat stays as smooth as you know what, and there is no sign of any wear as yet.
Richard.

2. I put it on my F-9A in 95. The biggest problem I had was the application- very hard to get smooth. I redid it in 2000 to try and get it smoother. I was able to apply it a little smoother but it is still not a racing bottom. Both times I was reluctant to sand it smooth as I was afraid of getting it too thin in places and at the price it cost it seemed like really expensive dust. I have trailer sailed up until this summer when I left the boat in the water for 3 month. I just pulled the boat and cleaned the bottom today. There was some grass growing on the copper epoxy but it came off easy. No Barnacles (there were some where there was no copper epoxy). All of the copper epoxy had a greenish tint until I scrubbed it and then in some spots I scrubbed down to the original copper. This means that some of the copper is coming off but I don't know how much. My guess is that it is very little. If I were to do my boat bottom again I will use it again and I would try to get a much smoother bottom and put on 4 coats (thinner) instead of the two I used. I think it is great for a trailered boat and okay for an in the water boat.
Rod T, F-9A, Strider

3. For short time immersions (one month or so) a combination of epoxy , copper powder, and graphite powder do a good job of making "permanent" scrubable bottom paint.
Mike Leneman, Multi Marine

Bottom paint - EP 2000

1a. I'll chime in on the bottom paint question as I've been on this trail
for a while. Check out http://www.epaint.net/ They make a white bottom paint that is white naturally (Titanium Dioxide is the active ingredient). I've used it for three years- worked well as an antifouling (assuming you don't mind an occasional scrub) but yellowed one year after exposure to brackish tainted water. Their current recommendation is the EP2000, which is water based- another plus (but needs an epoxy barrier coat).

These guys are a little bleeding edge looking for a paint that is environmentally friendly, but the paint is white naturally, appropriate for trailerable boats, and I'll probably give it another shot.

The problem with any copper based white paint is the contradiction between active ingredient and color- the paints look grey to begin with and turn green over time.
Jesse Deupree, F-27 ION, Portland Maine

b. I used to think I was their biggest customer- because I feel like their only customer, but a friend is sure he is really their largest customer, sending their paint to Holland, which unilaterally banned almost all bottom paint.

I've used their oil version "racing white" for a few years. The first two years it was perfectly white- the third it yellowed when exposed to brackish flood runoff. Whatever caused that got in the paint and yellowed the following year. The paint was hard and trailered well and only needed scrubbing about as often as my boat was hauled (4 weeks).

So I'm going to take the plunge and paint with EP 2000 this year. The good news is it is latex. The bad news is it is incompatible with my old paint so I have to sand it all off. They have assured me the new formula will not yellow. I do have to put a barrier coat on.

I'll have more in July. You can tell I love white (I have the old amas with no horizontal joint and I love the solid white look).
Jesse Deupree, F-27 ION, Portland Maine

c. I used this paint this summer as well and so far I am thrilled. It has remained a beautiful white (better than my topsides which stain at the waterline no matter what I do). No growth after a solid month in the water. It is very smooth- I rolled and tipped with a brush, then wet sanded. The manufacturer says you can keep on wet sanding and buffing till it is glossy if you are inclined.

The downside is it was a lot of work this first year. Old paint sanded off, epoxy primer (Awlgrip 545 in white) which had to be sanded as well, then three coats of EP2000. The paint is quite thin in color so needs a white primer.

Did I mention this stuff is latex. I'm an ex-housepainter, and this was one of the best paints I have ever worked with of any kind. No sagging and a wonderful long lap time. I've seen a spray finish that looked like topside paint almost.

The only question in my mind is how much sanding will I need to do to keep from any buildup. I'm planning on one coat next year.
Jesse Deupree, F-27 ION, Portland Maine

d. As the resident epaint fan, I'll take up the cause once again.

Epaint 2000 (http://www.epaint.net/) is based on zinc oxide, which is non-toxic (sunscreen). The paint reacts with water to produce hydrogen peroxide which inhibits growth.

Good news- paint stays white beautifully and needs only a little scrubbing (Scotchbright) on occasion (I do it in shallow water, no cloud of paint or anything nasty- the bottom keeps getting smoother). The paint actually has a little gloss and can be wet sanded and buffed to whatever smoothness you are willing. The paint is latex based and incredibly easy to apply- I rolled and tipped and then 220 wet sanded.

Bad news. The paint is not compatible with any other and company recommends epoxy barrier coat. You have to get all your old paint off, and use a white barrier coat (I used Awlgrip 545). This barrier coat is a major pain in the neck, put it on then sand most of it off to leave a perfect smooth white surface. I'd be sorely tempted to sand the bottom thoroughly with 80 grit and skip the epoxy- if it worked fine, if not it would flake off and you could start again with epoxy.

Note- this is all based on last summer's experience. The previous solvent based white yellowed on exposure to river outflow with some mineral in it. Company is great to deal with- they treat me like I'm their only customer and I worry that that is true- I know they do a lot of business in Holland which outlawed most other paints, and I am under the impression they paint the EPA's watercraft.
Jesse Deupree, F-27 ION, Portland Maine

e. Practical Sailor included an older Epaint in their antifouling tests until the raft with that sample was destroyed. They liked it, though noted that it does not match the high content copper paints in scum or growth resistance.

I'd certainly say that this comment is true- if I let my boat go two months without scrubbing scum and some grass/weed would appear especially on the waterline and rudder- never seen a barnacle. I expect to scrub my boat several times a summer- I expect growth on my topsides just above the waterline and especially on the inner topsides of my amas just above the waterline where the water seems to splash up. Below the waterline the rudder and vertical areas near the waterline will show scum/grass. The bottom below 8" or so and below the turn of the bilge stay completely clean. Even here in Maine there are smooth flats where at high tide in the afternoon the water will get nice and warm and it is easy to anchor in three feet of water and scrub- no paint clouds the water and whatever does scrub off will be non-toxic quickly. If it is hot and windless that day so much the better.

The reason why there is interest in this paint I expect is mostly due to the white color rather than its environmental claims- it looks great on the amas and I like the look on the main hull as well- no boot top for me. The real problem I have is keeping my topsides near the waterline as white as the bottom. My boat is older, and I believe was not waxed by its first owner, so the glass is porous. I've tried wax and had no luck- in a month my waterline is yellow. I've had better luck with poliglow, but that product shows fisheyes and streaks and less gloss than wax. Next year will try poliglow for a foot above the waterline and wax above.
Jesse Deupree, F-27 ION, Portland Maine
I like white- powdercoated my rudder top white and like it, replaced the cabin glass with less tint and like it, will do the spars someday and like it, etc etc

f. On Thursday, August 22, 2002, at 12:41 PM, Thom Merrill wrote:
>
> I called the Epaint number posted this morning and spoke to someone about putting the EP2000 over my Awlgrip paint on my F-25C that has 545 as a primer under VC117. I was told I had to remove all paint down to the carbon before applying EP2000. According to the rep that's what is required for the paint to work properly. I was clear that the 545 was there. She sent me to their web site to look at their other paints...
>
> I think dry sailing for me maybe the best solution.
>
My experiences when talking with Chris there have been that she will not deviate from the company program, probably it is part of her job description. I can't imagine any reason why sanding your bottom paint off and leaving the 545 primer would not work, but they haven't tried it, so they won't say to do it, lest they expose themselves to a liability. In this vein. I'm not sure what the 545 brings to the party; were I doing it again I'd consider just sanding the bottom completely and putting the EP2000 on. I understand it is not a vapor barrier but I've never heard of a Corsair with blister problems.

Maybe someone else will be the guinea pig.

I'll mention here again that I've had good luck wet sanding my boat with an 11" automotive sanding board and 3M or Norton (no place for cheap paper in wet sanding IMHO) sanding screen. I know it's hand sanding, but there is no dust and you are fairing the hull instead of causing waves, as you will do with an orbital unless you are skilled. On our boats, you can sit on a stool and keep your arms pointing down so dripping is not bad, and once you get the hang of it, you can do the horizontal underneath part by feel mostly.

I'll also mention here that my local glass man borrowed a little EP2000 and sprayed a white waterline on a powerboat he was repairing (the type with a big engine where the waterline doesn't follow the waterline). The paint actually took a gloss. This would be worth considering if you were drysailing- I like the sound of their new formulation that is designed for wet sanding as well, though the idea of putting the paint on then sanding most of it off doesn't appeal- having worked with the 545 and the epaint doing rolling and tipping, this is really a place for spraying if you know how.
Jesse Deupree, F-27 ION, Portland Maine

2a. So far I am happy with EP2000 from http://www.epaint.net Application was quite smooth with a roller and it is really white. You also don't feel like you are taking your life in your hands due to VOCs.
Jay Spalding, F-25C #26 Blue Moon

b. Still white as Jesse says. My boat took about 1/2 gallon.
Jay Spalding

3. I contacted epaint this week and here is what I have got from them (very quick reply):

"In order for you to use EP2000 you would need to obtain your paint in the US. EP2000 is a high-performance single component, waterborne antifouling paint that contains a booster biocide. The added biocide is non-persistent in the environment and boosts the effectiveness of our paints in high fouling conditions. EP2000 is not compatible with other antifouling paints.

"EP22 is a two-part waterborne, hard, mar-resistant, racing paint that does not contain the added biocide. All E Paints are photoactive. Thus, they all create peroxides on the surface of the paint when exposed to water and sunlight. Without the booster biocide you will need to maintenance scrub regularly in high fouling conditions. EP22 is compatible with most existing bottom systems.

"I hope that this assists you with your decision."

4a. I will also throw in a good word for EP 2000. Very white (very slightly grey compared to white gelcoat) Held off all growth for 5 1/2 months in my marina which is generally considered a "very rich" environment. Just a bit of light brown slime stain around the water line. Unique chemistry (releases peroxide when wet) well suited to trailerable boats.
Peter Lucas, F/C 31 UC #225 "Flexible Flyer"

b. A warning to other unsuspecting consumers; I had several coats of EP 2000 bottom paint applied to my brand new boat (over two coats of Interlux/Interprotect barrier paint) in June of 2002. The boat was in the water for about 4.5 months, then out of the water for the winter, then back in the water for about 3 months (that is a total of 7.5 months in the water), at which point the EP 2000 began to peel off of the boat in large sheets.

Sadly, the EP 2000 performed perfectly to prevent anything from attaching itself to the bottom of my boat. But it would have been better if the paint itself remained attached to the boat.
Peter Lucas F/C 31 UC #225 "Flexible Flyer," Escondido, California

c. The big local boat yard near me has suggested Interlux Ultra-Kote. This paint's claim to fame is that it is 67% copper. I decided that this was a situation where local knowledge (San Diego) was probably worth a lot, so the job is done (just). White color was not available, of course. I decided that the most inconspicuous of the color choices was black. I haven't seen the boat yet. By the way, the folks at the yard said that the Interlux Interprotect epoxy barrier paint was perfectly intact. All of the peeling was poor adhesion of the EP 2000 to the Interlux epoxy.
Peter Lucas, F/C 31 UC #225 "Flexible Flyer"

5. I had my boat painted in January with EP-2000. My decision was based on the following. I wanted white, I liked the environmentally friendly attributes, Good feedback from others on this list.

I went to my local boatyard who have been painting boats for 20+ years. My white bottom turned out a light shade of gray because of the dark epoxy base but it matched the nets so I liked it. They used 1.5 gallons on my F-28r. One extra coat at the water line. Based on what others have used it seemed adequate. After only 4 months the paint was coming off at the water line. Then the entire bow.

When I called Epaint I was told that for my boat, I should have used 3.5 gallons on the boat.(Estimate) That is what prompted my earlier post asking how much paint others have used. They also recommended I go to another local yard that has EP-2000 experience because "it's not the same as other bottom paints". Both sounded a little suspicious.

I don't know why the paint is coming off. Based on my last 2 races it can't be from sailing too fast.:-) Could be the application. I wasn't there to see it so half of my paint may have been sprayed on the ground. Could be a bad batch of paint. It has a one year shelf life but no date on the can. Hmmm? Maybe that's why I got such a great deal on the paint...

In the end, The yard is going to sand the bottom and spray on more paint. No Charge. (This time I want to be there to check the wet mill thickness as per the instructions.)

Epaint shipped me 2 more gallons of paint, no cost. They're definitely
standing behind there product!

As far as how it works? I love it!!! Six months in the marina(Ventura CA), Zero growth of any kind. It works as advertised. Now if I can only get it to stay on.
Good Luck, Brian

Bottom paint - Interlux Micron 66

1. FWIW, I recently switched to Micron 66 by Interlux. It is a "self-polishing" ablative copolymer bottom paint with biocide and formulated for high speed boats. I sometimes work with copolymer-based sustained release systems for therapeutic drugs and I just couldn't resist that product description.

While I've only had the paint in the water ~3 months, it has already far surpassed the Proline (1088?) that I have under it. The boat is faster by at least 0.5 knot under power and comes in from each sail with a squeaky clean bottom. Supposedly, this paint can be hauled and relaunched, but does not work in fresh water. Runs ~$250/gal and must be purchased by a boatyard. However, it's a 1-pot paint and can easily be applied by roller. Since it's self-polishing, you don't need to burnish or even be especially neat; just sail the boat a few times and it'll be nice and smooth. So far, I like it a lot. Now if it will only last for 2 seasons as advertised.
Colin

Bottom paint - VC-17

1. Pressure washers of 1000 lbs will remove ablative VC-17. The stuff is copper and Teflon and does not sand well, continuously clogging sandpaper or fine screens. Be careful not to impact the hull or floats with the direct pressure, you could compress the core, leaving dents...

2. I used a West Marine product called Off to take the brown scum line off the boat. It just took the VC17 right off!!!! Use with care.

3. I had a lot of trouble leaving my boat folded in the slip. One year, I left one ama folded and one extended. Then alternated every week or so, this was because I couldn't get a slip wide enough to keep folded out. I now have an end tie and have tried 2 different bottom paints. First was ablative, it was OK. Now I have VC-17 and it works very well. I have had my boat in the water year round for over 3 years and it's doing great + unfolded gets you on the water quicker!
Kelly Ragsdale, Tri-oomph, F-27 #411

4. I had a F-27 that had VC-17 and it lasted 2+ years as I trailer a bit and also left it in our lake (somewhat clean and fresh). IT SUCKS taking off, pay someone else its worth the money!
Jon Alvord

5. I have used VC-17 on boats kept in Lake Champlain and Sagandaga Lake in upstate NY (May to Oct). These boats were also sailed for 1 - 2 weeks per year in salt water in mid coastal Maine. The VC-17 worked well. It would stand up for 2-3 years before requiring touch-up, longer before complete repaint. Trailering does not seem to effect it. I have always barrier coated with VC-Tar. When roller applied per instructions, the VC-Tar is not perfectly smooth and requires longboarding and wet sanding before the VC-17. The VC-17 can be burnished with bronze wool to a nice finish.

Our Super Tramp is kept at a dock with the amas folded. The amas are coated with "Easy On Bottom Coating", which is a soft wax. We brush down the amas about every other week to remove or redistribute the scum. It works, but not well. Any suggestions?

Always looking for the lazy way out.
Dave Clayman, Super Tramp Trime

6. I have had very good luck with VC-17 in fresh water. Don’t know about salt water. VC-17 can be applied directly on top of the gelcoat, but not on top of unfinished fiberglass. It’s very easy to apply. It can be sprayed, (air or airless) or rolled. It dries very quickly so by the time you finish at the stern you can start the second coat at the bow. It does not lose it’s effectiveness out of the water and is very hard so it isn’t bothered by trailering.

7. I had a F-27 that had VC-17 (maybe not the same stuff) and it lasted 2+ years as I trailer a bit and also left it in our lake (somewhat clean and fresh). IT SUCKS taking off, pay someone else its worth the money!

Bottom paint - VC Offshore

1. VC-Offshore is a vinyl based low copper content bottom paint. It was not formulated to handle areas where fouling is a big problem. And all vinyl based paints lose a good part of their effectiveness when exposed to air. It makes sense that a trailered boat will spend a good part of it's time with the hull out of the water. Out of curiosity, where do you sail?

<< why would it have to come off at the end of the year >>

It doesn't really have to, but the copper will "wear" off, leaving the paint carrier intact on the hull. You sand it down ever other year, so you've got it under some control. But don't sand for a couple of years and you've got X coats of useless paint on the bottom. There are also a bunch of rules as to what you can put a vinyl paint on top of. They tend to use a very strong solvent that can attack just about any other bottom paint - so you can't put vinyl on top of anything but vinyl (and bare gelcoat).

The ablative paints work differently. The carrier wears off at the same rate as the copper, and you wind up with almost nothing on the boat (after 2 or more years). According to the paint manufacturers themselves, these are the only ones that can be hauled and re-splashed.
Ron Marcus

2. I get a couple of years out of my Baltoplate (now VC-Offshore). I just 3M abrasive scrubber to cut to the fresh paint underneath. Seems to work.
Dennis Neumann, Milagro

3. Had good experience (5 years) with VC-Offshore (Baltoplate) conditions and venues as described above. (In an Army flood control lake in a slip 80% of the time, 3-4 trips to the Great Lakes, a Trip to the Nationals - salt water!)
Felix Kagi

Bottom paint - Woolsey Hydrocoat

1. I've kept my Catalina 400 only a few miles south of Worton Creek (at Rock Hall) for several years, and it's in NJ / NY now. Yup - you got it. You will definitely need some sort of bottom paint around either of these places, and the Chesapeake is probably worse.

Because you want to stay trailerable, you've got other problems as well - most bottom paints cannot be hauled for more than a few days without losing their "protection". And the paint has to be strong enough (against abrasion) to withstand the launching and retrieving. You're down to a very short list now. Some sort of ablative paint (long periods out of the water) that's "scrubbable" (most aren't). Paints like Interlux Micron would wind up with more paint on the trailer.

Woolsey's Hydrocoat would do the trick. There may be others too. I've been using Hydrocoat on the Catalina for about 3 years now. It works pretty well in that part of the Chesapeake. No real hard growth for at least 18 months (with 2 1/2 coats), but you will pick up some slime. The paint is also water based (no solvents needed for cleanup) and it's fortified with Teflon. It's the only ablative I know of that is scrubbable and it can also be burnished to a slick finish. Woolsey says that the paint is hard enough for trailerable boats. Finally, when you do change your mind and decide to keep the boat out of the water, you won't have to sand it off.

There may be other choices, but this one will work.
Ron Marcuse

2. You will definitely need some sort of bottom paint around the Chesapeake. Woolsey's Hydrocoat would do the trick. There may be others too. I've been using Hydrocoat on the Catalina for about 3 years now. It works pretty well in that part of the Chesapeake. No real hard growth for at least 18 months (with 2 ½ coats), but you will pick up some slime. The paint is also water based (no solvents needed for cleanup) and it's fortified with Teflon. It's the only ablative I know of that is scrubbable and it can also be burnished to a slick finish. Woolsey says that the paint is hard enough for trailerable boats. Finally, when you do change your mind and decide to keep the boat out of the water, you won't have to sand it off.

Bow Reinforcements and Bowsprits
Note – The F-27 needs a bow fitting beef-up and a new lower bow eye for the initial installation of a bowsprit. - Editor

1. We have done a few of these by adding an aluminum plate under the deck that gets glassed in with cloth that runs down the sides of the hull a few inches. Sometimes these even get through bolted with the bow pulpit legs.

For the bob stay you will need to add an inspection port on top of the V-berth; the glass on the stem of the boat is plenty strong enough but a long backing plate or bent fender washers do help.
Bob Gleason

2. My F-27 (hull 11) was modified to accept a bowsprit in the same fashion. The new tang has three bolts down through the deck with four more through the bow of the boat where the tang extends down at an angle to match the slope of the bow. The fiberglass on the inside of the bow was reinforced with the addition of three ¼" plates, one below the deck and two in the bow section to reinforce the tang and the towing ring. The additional fiberglass added to the bow allowed for flat ¼" stock to be used without the need to bend it at any angle. Make sure to seal the through bolt holes well with a marine bedding compound!

3. Our aluminum (cheaper than carbon and not significantly heavier) pole has a single large "u" bolt out at the tip, facing up. The line goes through the base of the "U" bolt. The roller furler attaches to the same "U" bolt. Light and simple.....no rods, turnbuckles, shackles, etc. We have been using Spectra T-900, 8mm. as our bobstay (F-31 RL) for 5 years.....no failures.

We start at the “U” bolt on the bow, go around the whole pole, then back to the “U”, then up the bow to the mast-raising roller, then to the deck cleat. We can therefore, raise the pole as we please without leaning over the bow to detach the bobstay and puking our lunch into the clear blue sea!

We just tie the T-900 to the floats using a “truckers hitch” to get two to one pulley advantage (the lines do not need to be too tight. The bobstay line starts at the bow “U” bolt, runs to the pole, goes around the pole (the pole acts as the pulley) through the “U” bolt on the pole itself to keep the line from sliding back along the pole, back to the “U” bolt on the bow then up the face of the bow, over the mast raising pulley on the bow and then to the deck cleat. You get two to one pulley action and you never have to lean over the bow and attach or detach the bob-stay. You can raise the pole from the fore-deck. We use 8 mm T-900 which is good for 8000# or so and since there are two holding the load that’s 16,000 # breaking strength. I did this after breaking ¼” wire bobstay.....now, no problems.

I understand that carbon is necessary for the new style bow poles and they work pretty good...but for the older boats.....
Mike Multimarine

4. The bow stem fitting is pushed into the fiberglass hull, ripping the fiberglass on each side of the stem fitting. The top “plate” of the bow fitting actually pushes through the deck first. If you are lucky the bottom bolt of the stem fitting stays attached, the fitting rotates into the hull and you don’t loose the headstay and mast.

Compression from the pole is the cause and reinforcing the deck area under the stem fitting is the solution. We used birch plywood and epoxy, faired everything to be flush with the sandwiched part of the deck and then glassed over that. I am not a fan of aluminum in this situation since it will not bond well to the fiberglass.
Mike Multi Marine

5. Don’t try to make an articulating sprit. If you want to move the sail laterally, use lines to the floats to handle that.

6. Without a sail attached to the sprit, you definitely have to pay attention to the sea state when sailing, as you don't want to stuff an unsupported sprit into waves. The wire you currently have, as others have indicated, will not suffice for the forces encountered when dragging the sprit through waves. You'll be most unhappy by the amount of damage that may occur. Either tie it up to the bow pulpit, or run a spinnaker tack line out through the end and attach that to your spinnaker halyard.

I don't think you need to do any reinforcing if you're just flying a spinnaker off the bowsprit. However, if you plan on using a screacher, REINFORCING IS A MUST! A backing plate underneath the stem fitting to spread the loads, and additional material, actually, a backing plate, for the bow eye. I know that lowering it reduces the load, but mine was simply reinforced and I've had no problems.

For frequent trailer sailing, going to a high tech line with a multipart purchase will make your life easier.
Regards, Ira Heller

7. For strengthening the bow where the anchor/sprit attachment/forestay chainplate is, I went to a pro. He had already done the glass work on another boat and didn't want to work under the bow again, and so what we did for my boat is make two plates- one to go on the deck under the fitting and one to go on the bow under the chainplate. Both were designed to spread the load put on the fitting across a bigger area of the boat. The load you need to worry about in this case is from the screacher, which is trying to drive the bow fitting back through the boat and down through the deck.

We made these plates out of a Kevlar/carbon fiber/glass sandwich to be thin, strong and "cool" looking. After one season I've been pleased. Lose a side stay or the bobstay and all bets are off.

I know when I made these plates I had discussions with several people about making others. My glass man made mine for a fixed price (he really did not want to work under the bow again) but we were concerned that making others from the male tooling we made off my deck might be iffy- the shapes on my boat were not very symmetrical and all the edges had to be fitted after the piece was made, so I never tried to follow through on making more. I think metal would work as well, but that is a different weight, skill, and appearance.
Jesse Deupree
F-27 ION

8. Here's what a friend and I did on our F-27's; and this info is from Ian Farrier: The U-bolt should be mounted 31" below the hull-deck joint. Make a cardboard template of the bow (inside) past the forward stanchion of the pulpit so that the inside bolts pierce the plywood you will cut from the template. Use several layers of glass and plenty of resin. Let the glass hang well over the sides of the plywood to fasten to the hull. It's tight in there so wear an industrial type filter. Also, the U-bolt will be below the V-berth so it's necessary to cut a hole and insert a deck plate to seal it. Good luck!

9. In the last few years we have repaired about a half a dozen broken bows. The most recent one was the most telling in some ways. The owner of the boat asked his young strong crewmember to crank in on the winch for the screacher halyard as much as he could. Well, he did exactly that and the headstay chainplate moved aft about 6". Nice clean brake straight aft. Fortunately the baby stay held the rig up. Many of the others we have repaired were real nasty brakes where the bow was literally ripped off by the bowsprit pulling off to one side. The initial brake seems to always be on deck just aft of the chainplate but from there it varies depending on the sails and other related forces involved. Hope this sheds some further light.
Bob Gleason

10. Inspecting the welds at the bowsprit attachment and noted the beginnings of stress failures just behind the roller where the vertical and horizontal pieces are welded together Anyone else see failures of this sort in the aluminum weld?

R/Thom, F-24 MK II, Puppeteer, #284

I had the same failure on the F-27. Rewelded the seams and replaced the pin that goes through the bow roller with a nut and bolt to hold the sides tight at that point and have had no further trouble.
Mark, F-27 WITCHCRAFT #167

11. Bow poles have varied over the years, with a few problems, and hopefully this email will explain the differences and what to watch out for.

The F-27 bow pole was an after market item and was first used by double Olympic gold medalist Rodney Pattisson in England around 1989. Rodney was also the first to fit a rudder fence which had become more necessary as speeds became faster. The F-27 bow pole was further developed and popularized in the early nineties by the Finish Line who began offering it as a kit, but being an after market item, there was never any allowance for the additional loads in standard F-27s. Thus the bow does need reinforcing.

The highest loads are under screacher, and result in the pole being pushed towards the cockpit creating a major compression/twisting load on the bow fitting that it was not designed for. The loads possible are surprisingly high and using the standard trailer winch line bow eye for the bobstay will make them even worse - nearly twice as much in fact. This is usually the prime reason for the bow fitting failing. Screachers can develop enormous loads, particularly when hard racing, and it can be very difficult to make the associated fittings strong enough. A second bow eye located further down the bow is essential (should be at least 30" down). Access can be achieved by fitting an inspection hatch in the forward end of the bunk. The bow should already be fairly thick in the new eye area, but an extra 1/8" or more of glass backing (6 x 6") on the inside or a good size backing plate would not hurt. Backing plate can be a piece of hardwood or thick plywood shaped to fit into the bow and around 6" long - epoxy glue in place and use large washers.

Using a lower bow eye will considerably reduce the load on the bow fitting, but this is still borderline and should be reinforced. This can be done by adding extra glass laminations inside the bow at the top and either what Bob Gleason or Mike Leneman has recommended would do the job, but plywood would be my choice as the backing plate for ease of use. Another alternative as suggested is to add 'ears' to the bow roller itself, each side, and extending outwards to where another two bolts can pass through the deck to hull join flange, to spread the load. However, extra reinforcement inside is probably stronger and easier. I believe that the Finish Line at one time offered modified (stronger) F-27 bow rollers for this purpose.

The original F-9A/F-31 was the first of my designs to have a bow pole designed in as standard, and this worked well. Only significant problem was dipping pole into a wave which could bend it downwards, which is hard to design against, but it is solved by the latest retractable poles. A longer (82") fixed bow pole was introduced in early 1997, and if upgrading an earlier F-31 (with 58" pole) note that the longer pole must also have an additional lower bow eye fitted, at least 32" or more down the bow (measured from deck

level). The original eye (at 24" down bow) is too high and will cause the pole to overload the bow fitting. The bow roller deck area may also require stiffening with extra glass inside to prevent excessive flex in this area, which has been about the only problem.

12. The later retractable poles such as on the F-28 are stronger, and have been mostly problem free. However, a few early retractable bow pole equipped F-31s (from around hull no. 138 to 148) have had some problems with flex/cracking in the bow bulkhead where the pole is pinned due to incorrectly built bulkheads. These should have had molded webs extending aft to take the pole compression loads and Corsair is now (January, 2000) rectifying this under warranty.
Ian Farrier, http://www.farriermarine.com

The weight saving of a carbon pole is not the reason for using one - it's the elimination of the side stays that makes it worthwhile, for the convenience, but this is only possible with a retractable pole. *Note - The F-27 does not have provisions for a retractable bowsprit. - Editor*
Definitely not worth it if replacing an existing aluminum pole - better to just replace the wire stays with lighter high-tech line.
Ian Farrier, http://www.farriermarine.com

13. Pelican hooks should not be used for the bowsprit side stays or bobstay, as they are not strong enough and usually only intended for light duty use such as lifelines. Use plain shackles, snap shackles (both rated stronger than the wire) or a synthetic line such as spectra, properly done, is even better.

If anyone else out there has lifeline type Pelican hooks then I recommend
you replace them ASAP, as they will eventually break, even on an F-24.
Corsair may replace them under warranty.
Ian Farrier, http://www.farriermarine.com

14. The F-27 bow pole was actually developed as an after market item for the Formula 27, and there was no point in reinventing/redesigning it, so there was never any official design or specifications by me. Corsair just incorporated the Formula 27 pole for the last few F-27s, which maintained class uniformity, and somehow Pelican hooks got in there. So it was just one of those things - very hard to check everything these days, and I have to concentrate on the more important areas.

Further on Pelican hooks, Wichard, as I recall, may make a pelican hook that could be strong enough, it being a sort of a converted snap shackle and it may be worth a look. Pelican hooks have the advantage of being able to tension the line when snapping closed, something a shackle or snap shackle are not so good at.
Ian Farrier, http://www.farriermarine.com

Note - synthetic rope is excellent for the bowsprit lines. - Editor

15. The pad eye for the F-24 Mk II should be 27" down bow. For the bobstay, 3/16" 1 x 19 SS. wire is specified which has a breaking strength of 4700lbs. *Note - Synthetic line should be stronger than that. Editor*
Ian Farrier

16. The following is from some earlier postings that cover what to do to beef up the F-27 bow for a bowsprit and I'm reposting so that they become part of the archives:

The loads possible on a bow pole are surprisingly high and using the standard trailer winch line bow eye for the bobstay will make them even worse - nearly twice as much in fact. This is usually the prime reason for the bow fitting failing once a bow pole has been fitted. Screachers can develop enormous loads, particularly when hard racing, and it can be very difficult to make the associated fittings strong enough. A second bow eye located further down the bow is essential (should be at least 30" down). Access can be achieved by fitting an inspection hatch in the forward end of the bunk. The bow should already be fairly thick in the new eye area, but an extra 1/8" or more of glass backing (6 x 6") on the inside or a good size backing plate would not hurt. Backing plate can be a piece of hardwood or thick plywood shaped to fit into the bow and around 6" long - epoxy glue in place and use large washers.

Using a lower bow eye will considerably reduce the load on the bow fitting, but this is still borderline and should be reinforced. This can be done by removing aft bolt in bow roller assembly, and then bedding an internal backing plate (1/2 - 3/4" ply) on putty inside the bow under the bow roller. Then laminate extra glass across under the backing plate down the hull sides and around the bow. Two layers of an 18oz (600gm) fabric should do.

Another alternative is to weld some 'ears' or a surrounding plate to the aft section of the bow roller itself, each side, and extending outwards to where another two extra bolts can pass through the deck to hull join flange, to spread the load. However, extra reinforcement inside is probably stronger and easier.

> We are considering a different approach. The idea is to remove the chainplate/anchor fitting and using the bow as a mold, make a curved carbon fiber plate that is a little longer than the chainplate and wider so it takes that compression load and spreads it over the entire curve of the bow. Our thought is to use the bow as a mold, but make the carbon piece removable. We will give it nice edges and protect it from UV, but it will be exposed and visible. We are not planning to strengthen the deck.

> I understand that this will move the forestay chainplate/anchor fitting forward the thickness of the carbon fiber plate. We will have to fill the holes in the deck and redrill the bolts through the deck. The holes through the bow will also need work, but repair there will be under the plate.

> I can handle the aesthetic decision, and the cost comparison as well. My question is, will this idea work to prevent the kind of damage people have seen when the fitting implodes the bow. Its not a backing plate- more of a pushing plate. Will it work?

Probably, but I think it would be easier to do the above, plus all reinforcement is inside and cosmetically there is no difference.
Ian Farrier

17. You can not use the breaking strength of the halyard as a design load for the bobstay. The halyard on my screacher is good for 11,000 lbs. Now, multiply that by 3 and you have 33,000 lbs for the bobstay.....Sorry, that would be too much of a handicap for me!
Mike Leneman, Multi Marine

Bulkhead Damage - F-31

1. Actually several F-31s have managed to do this, and one possible cause is a known failure mode that can result from a fore and aft float collision. Details and more can be seen in the Beam Care Bulletin at http://www.farriermarine.com/owners/index.html and in my Newsletter No. 28 at http://www.farriermarine.com/index/newsletters/index.html

The initial cause was a mystery the first time it happened, as the reasons for the various failure points are hard to follow. The boat concerned had a fwd. beam bulkhead delaminate from the hull, and the bolt pad was ripped out of the deck. It also showed damage to one float bow, with the spinnaker pole forced back, and stress marks around each beam to float connection. However, the owner said the boat collided with a dock after the failure, as he was in a hurry to get back in. The boat was repaired for him anyway, and he kept it for another 5 years without any further problems.

Then another failure a few years later demonstrated what could happen. This boat hit a sandbank at high speed near Brisbane, and hard enough to throw some crew into the water. There was no sign of any damage to the float bow, but the beam bolt pad was ripped out of the deck, and the forward beam bulkhead delaminated from the hull, with extensive secondary flex damage inside.

This is all caused by the forward diagonal brace wire (at front edge of bow net) redirecting the shock loads from such a float bow collision into the forward beam area, forcing it in and up. What is avoided is the whole side being forced aft, and probably causing much more extensive damage.

To try and minimize such damage, the diagonal brace wire has been moved aft between the beams where it has a more effective angle, and any reduced shock loads will now be directed into the aft beam area, which is usually loaded less, so the extra shock load has less chance of doing any damage.

However, collision is not necessarily the reason for all such instances. Another cause can be just a bad secondary bond between the bulkhead tape and the hull, and such bonds have become more of a problem for manufacturers since the introduction of low styrene resins a number of years ago. There is an interesting article on this in the Feb. 2001 issue of Cruising

World. Basically, the laminate from such resins cures quicker, and secondary bonds will not bond as well as they can to a slower curing 'green' hull.

In one case, as mentioned in the article, a new monohull had all the interior keel floors delaminate from the hull, after a tack.

All it takes is for a hull to be left after molding for short time (such as over a weekend) and then not being properly prepared. Vacuum bagging cures the hull even quicker, and thus even more care has to be taken. Corsair is aware of this problem, and I'm sure they will make improvements if they consider it necessary.

Another bulkhead delamination failure (aft beam bulkhead this time) was on a boat where a 16 : 1 tensioner tackle had been fitted to the side stay. This is really asking for trouble, as a strong enough tensioner could give enough purchase to break the boat while just sitting at the dock, particularly if the stay is pre-tensioned.

Failures thus just don't happen without a reason, and will not happen from normal sailing, no matter how heavy. There has to be some other factor involved as well. The F-9A (home builders equivalent to the F-31) has never had any problems in this regard, but this is not to say it could not happen, particularly from a collision. Secondary bonding failure is unlikely however, with the epoxy resins usually used in most home built boats.

Regardless, the F-31/F-9A hull alone can withstand the full beam load on its own, without the bulkhead's support, and the boat will still hold together after a bulkhead/hull delamination. But there will be a lot of flex, which can then also cause secondary damage. The hull alone would also not last for long, so obviously the load has to be relieved as soon as possible.

The main problem with bulkhead delaminations is that the tape bond to the hull can only be so strong, and is hard to improve, no matter how thick the tape. This has been looked at several times, to try and lessen collision damage, and on later F-31s this tape is now also through bolted to the hull as an extra precaution.

It is difficult to make any boat bullet proof where collisions are concerned, and if a significant collision or impact has occurred on the floats and/or beams on any boat, all areas should be checked thoroughly, as described in the Beam Care Bulletin on the above web site. If nothing is found, continue to monitor over a period of time as a failure point may have been created, and any cracks may take some time to become visible.

I know inspecting this area on the F-31 can be difficult due to the internal liners, and this is the main reason many designers, myself included, strongly dislike such liners. However, manufacturers like them due to the labor savings, and where possible one should try and fit inspection plates as necessary.
Ian Farrier

2. “Our approach to Tahiti was an entirely different story as there was a bit of a typhoon there. We ended up beating into it for a day, with 10 miles of it being so severe that we were

doing 14 knots into the waves. That's something I can't recommend, as the hard pounding tore the forward bulkhead away from the main hull, adding more damages to the already long list."
Curtis Nettleship, F-31, as recounted in the June, 2004 issue of Latitude 38.

Bungees

1. Remember the windsurfer uphaul? It was bungee with a loose Dacron braid over it. Buy some regular bungee and then strip the outer cover of some Dacron double braid and slip it over the bungee loosely.....voila, a bungee that will last about 10 years outside!

Of course, I let my bungees rot 'cause I never seem to have the time to do such a simple thing.
Cheers, Mike Leneman, Multi Marine

Buying Advice
Note – This is Ian Farrier's advice: - Editor

1. The quality of F-9As will vary more, from much better than a production F-31 to much worse, so one has to be more careful when selecting. A survey is always advisable.

Structural safety factors are the same, or a little greater in the F-9A, and weight can frequently be less due to no gelcoat being necessary (this weighs around 400lb alone on the F-31). One could thus pick up a better quality lighter boat if prepared to spend the time to look.
Ian Farrier

2. The following is a general guide to available used boats and any particular issues with each boat to watch for as they age. A copy of this will also be available for download as a PDF file from my Owners Page at: http://www.f-boat.com/owners/index.php

Overall, the best guide to the general condition of any boat is to run through my Maintenance Guide which can also be downloaded from my Owner's Page. This covers everything in general and checking off each listed item will give one a good idea of the general condition of any boat, and will help to find any problems. The New Boat Delivery Checklist can also be a good guide to check that everything is as it should be.

Common areas to check with all production models are the beam join glue seams and the compression pads on the F-24, F-25, F-82, F-9A and F-31. Both these aspects are covered in detail in my Beam and Folding System Care Bulletin on the above Owners Page. If compression pads are not fitted to beam ends, or are in poor condition, then also check F-24, F-31/F-9A and F-25/F-82, Upper Folding Strut mounts for any signs of failure/cracking as these can be expensive to repair. Where fitted, circlips on folding system pivot pins should also be checked for condition, as these can corrode and fall off if there is insufficient clearance in the groove.

Looking at the various boats, the individual issues that I am aware of and may apply are as follows:

Trailertri 18, 680 and 720
These are the original Farrier folding trimarans, and have no significant weaknesses other than the possibility of rot, or problems resulting from bad workmanship. If fiberglass sheathed, and fully sealed with epoxy, they could last for 25 years or more, and there are many good boats out there at good prices (which have actually been increasing in recent years). Rot is the major issue to look for, and the most common areas are the beam recesses in the main hull, particularly if the specified drains were not fitted, or have become blocked. Check out also any areas where fresh water might collect.

Tramp
My first production design and built both in Australia and the US, the US built version being known as the Eagle. No significant weaknesses, the main annoying problem being a common tendency for leaks. These are mostly due to the difficulty of finding reliable glues for polyester moldings in the eighties. The best glue available was used, but it still tended to be too brittle and prone to cracking.

The join seam between cockpit floor and centerboard case top is one of the main areas to check, as this tended to open up, and allow water inside the main hull from the centerboard case at higher speeds when considerable pressure can build up. Other common leak areas are the cockpit drains (an awkward area to seal), centerboard case to keel join, and float deck to hull joins. Best adhesive to reseal is a polyurethane such as 3M 5200 which is very flexible and results in a virtually permanent bond. However, it is difficult to get in place and totally eliminate all leaks. Just keep an eye on the bilges.

Flex cracks are also not uncommon around the cockpit sides in the floor, but these are a cosmetic nuisance only. The molded foredeck hatch also tends to leak on early models, due to some deck flex, and water level in forward bow compartment should be monitored in very rough conditions.

The Tramp was built by a power boat manufacturer, who could not be persuaded to vacuum bag, or get rid of the chopper gun, so the Tramp's weight will vary somewhat, and usually is on the heavy side. However, it is still one of the best and most fun sailing boats of all of my designs, and remains my wife's favorite boat. Over 200 were built.

The Tramp's production eventually ended due to it being too complex to build for what it was (beware of monohull methods, and textbooks on production fiberglass boats) but it was valuable experience. This was to be a key factor in the F-27's subsequent success, particularly in making it simple enough to be practical and buildable, in spite of the much more complex folding trimaran configuration.

F-24 Mk 1

My third production boat, and completed after I had left Corsair in 1991 to concentrate on design. Corsair was allowed some latitude to change this design to suit their preferences, but things went a little overboard. Too many features were added, and what was intended to be a low cost simple entry level boat became too complex, overweight, and impossible to build at a profit. On the other hand it was a great deal for buyers as they got those many extra features at below cost, for a nice pocket cruiser, plus it still sails well.

No real problems, but one structural aspect to check is that the aft beam bulkhead is taped properly to the hull on each side. I was going to introduce a more advanced monocoque structure with the 24, but Corsair wanted to stick with my older F-27 system, and sneaked it in when I was out of the country. This works fine with aft cabin boats, but is heavier and more complex than it could be. Coupling it with a small boat aft cockpit configuration such as the F-24 also made the aft beam bulkhead area very difficult for the laminators to get to, and thus taping quality suffers. Not a serious problem if noticed early - just awkward to get to and fix.

F-24 Mk II
This reverted back to my original simpler design concept, with a rotating mast, and incorporated the more efficient monocoque structure, with the cockpit floor and forward bunk top being used as part of the beam structure. This makes it much easier to build and lighter. While re-tooling I also took the opportunity to add more headroom. Only a couple of problems, one being the mast step which tends to break if mast is allowed too far off center sideways. A thrust washer was also left out of many steps, which allowed the step to self destruct over time. Easy to rectify by replacing the step. Thrust washer is best being a dissimilar metal such as bronze.

Check also compression pad areas on beam inner ends. The pads were placed too high on some boats creating a point load on the inner beam end corners which could cause cracks to develop here. Mostly a cosmetic problem, and cure is to move compression pads down and off the corner radius. More details again on my Owners Page.

F-25C
A light weight flier and kit boat based on my F-25A design for home builders, and perhaps the best looking of all my designs. It is an all carbon/epoxy balsa cored boat, and oven cured. Initially built by MPG in Denver, and then Colorado Composites. Only significant problem has been small bubbles which could be created during the heating process between the laminate and mold primer coat. They are a cosmetic issue only, and proved to be elusive to cure, and needed to be found and fixed prior to final painting. If not, they can cause annoying paint problems later, but nothing serious. Once this issue was discovered all the builders took precautions to eliminate before painting.

The F-25C can be hard to find on the used market, there being considerable interest in what is a very unique boat, with only 48 ever built.

F-27
My second production design, the most numerous, and generally very reliable and trouble free. However, a number of F-27s built from 1992 to 1994 had large voids in the beam foam

fill, due to the correct filling procedure not being followed. This can become a serious problem, but most such beams have now been replaced by Corsair, and this issue is covered in detail on the Beam and Folding System Care Bulletin (as above). Indications of this problem are any sponginess underfoot, or visible 'oil canning' in the beam top.

The F-27 rig is also not foolproof, and care needs to be taken that the rig is tensioned properly, as per Sailing Manual. Adding an additional spreader makes the rig bullet proof, but also makes it harder to rig up.

Wing net lashing flange along the cabin side can also flex, which can cause cracking along this area, but this is again mostly cosmetic. Can be fixed by adding supports underneath to eliminate the flex - fixing the cracks alone will not do it - they will only open up again.

If a bow pole has been added, make sure that a new lower anchor point has been added further down the bow, and that bow fitting has been reinforced to take the higher loads.

F-28
This is virtually a Mark II F-27 with many refinements, and also incorporating the simpler monocoque structural system as pioneered by the F-24 Mk II. Few, if any problems of significance.

F-31
This design followed the F-24 and is the production version of my F-9A design for home builders. There have actually been three builders, which came about from Corsair originally not being interested in the 31. They had instead wanted me to design a larger boat to their requirements, but unable to agree with their ideas I had declined. At that time Corsair also had exclusive rights to my folding system for the US market, and would not permit the F-31 to be built by myself or anyone else in the US, so I had to develop it through the back door by remote control in Australia. The three versions are as follows:

OSTAC F-31
The Australian company OSTAC had started building a custom F-9A for an Australian client, and became interested in taking molds off this. I granted the required permission, and they became the first licensed builder, with the F-31 then being built essentially via a fax machine. Fortunately, at that time, OSTAC had several experienced Trailertri builders on staff, one of whom was a perfectionist and a qualified patternmaker, and did an excellent job of the important beams and critical folding system alignment. OSTAC's team just followed the plans, without changes, and the first F-31 was built and launched in just 11 months, an excellent achievement. In spite of the various limitations it turned out very well, with no major problems.

It is a little heavier than later boats due to less extensive vacuum bagging and some aspects had to be compromised due to it not being built from the ground up as a production boat. However, some excellent racing performances in very arduous conditions soon put it on the map. I also recently inspected the #1 production boat in Australia and overall it was still in

excellent condition (apart from some collision damage) Even the beam join glue seams were excellent.

TPI 31
The first 31 to be built in the US, and came about from Corsair being too busy with their own in house design. The OSTAC version had quickly generated considerable interest that could not be ignored, so Corsair handed the F-31 over to TPI to build (which had the same owner as Corsair). However, many changes were then made, a different interior installed, and the boat ended up very heavy at well over 5000lbs. The final result was disappointing and not what I had intended, so I requested my name be removed soon after the first launching. Only six or seven were built before production ceased.

Corsair F-31
Production of the F-31 was finally moved to Corsair in 1994, after its own design had not worked out as hoped, and management changed. The F-31 was then built true to my original design, from OSTAC supplied molds, and became very successful for Corsair. There have been a number of variations since, which have all worked out fairly well, with no major problems.

One thing to check is for any signs of collision on float bows on all versions, as such collisions can cause a forward beam bulkhead delamination and other hidden damage. If unnoticed this can come back to bite you later. Clues to watch for in this regard are covered in my Beam and Folding System Care bulletin on my owners page.

F-25A/F-82 and F-9A/F-9AX/F-9R
These are all designs for home builders and being home or custom built, quality will vary more than with a production boat and can be far better or far worse. Most however are somewhere in between. They are usually all epoxy boats with an LP paint, and as such are more durable and can be significantly lighter than gelcoated polyester boats. If looking at a used one it is always a good idea to get a qualified surveyor to take a look, and this is also a good idea with any production boat.

No problems of any significance, just check the beam join glue seams on boats that have used OSTAC or Corsair production beams. Later boats with owner built beams don't have join seams and are immune to this issue. Presence and condition of compression pads should also be checked on all models. Later foam core boats are probably the best, being lighter, but earlier epoxy Durakore or cedar strip boats seem to be standing up well - I've actually had no reports of any rot at all.

F-36
A true ocean going design, and no known problems of any significance. Rare and hard to find on the used market however.

Overall, the same problems that can affect all production boats such as osmosis, or de-laminations, can also be a factor in all F-boat models, but they do seem to be relatively rare. An NPG gelcoat and a vinylester backup layer was always used at Corsair while I ran it, and

still is I believe, and this is very effective at eliminating osmosis problems. The extensive vacuum bagging processes we developed at Corsair also makes de-laminations very unlikely, provided the process is monitored and checked properly during construction.
Ian Farrier, http://www.f-boat.com

3. > I am wanting to buy a Formula F-27. One boat on my short list was capsized then refitted in 2000. Benefits are that it has a new mast, sails and wiring. my questions are: 1) What are the drawbacks of buying a capsized boat? Will it be difficult to resell when (if) I want to upgrade?

Usually there is no structural damage as a result of a capsize, only water damage, unless the boat has hit something or is impacted during salvage. In this regard check out the Beam and Folding System Care Bulletin on my web site at:

http://www.f-boat.com/owners/index.html

Check out the 'Used Boat Guide' and "Beam and Folding System Care Bulletin'

This shows what to look for. The capsized F-27 (Ray Well's Wingit), shown in the Sailing Manual, was the first F-27 to capsize on San Francisco harbor, way back in 1990. Last I heard it is still going strong today, and it appears there were no long term problems. Only damage was water related - even the Frontrunner fabric stood up well.

All existing owners should also read the Beam and Folding System Care Bulletin carefully, as beams do need care and regular checks, especially if the boat has been in a collision.
Ian Farrier, http://www.f-boat.com

Cap Shroud Adjusters

This is the 6:1 cascade system that Mike Leneman designed for my F-27. Works great. The red Technora is deteriorating in the strong UV at the high lake I sail at, though. The Regatta Braid white line has good hand and good life. The short discussion below relates to this assembly. The thin lines on the snap shackles are there for back-up.
Dave Paule

> When I rerigged my F-27, I replaced the cap shroud adjusters with hardware rated at about 750 pounds working load. Is that enough?

I work on the principle that in certain circumstances the adjusters could take up to half the shroud load if

incorrectly adjusted, and thus the working load of the adjusters should be around 1,900lbs.

However, if correctly adjusted, and the shroud takes most of the load, then 750 lbs would do.
Ian Farrier, http://www.f-boat.com

Carpets

1. With a little ventilation, the carpet is fine. If it does get mildewed, Floatzing Rolloff, a garden hose and a shop vac to suck up the soapy water, will clean it right up without bleaching the fabric. Rubbing alcohol also works well (but it may weaken the contact cement on the back side of the "carpet")

Ventilation is helpful (read "essential").

2. If your mouse fur is coming loose in some places - if you've been using your cabin liner for Velcroing objects and it is starting to come off in some places you can use a hobby glue called CA (CyanoAcrylate) to re-mount it. Contact cement is what was used originally but you'd need to cut the liner to get it in there neatly... To use CA, just glue some 1/16" tubing to the glue container tip using the glue itself (tubing found at hobby stores along with the glue), poke a small hole in the liner which you won't see later, put the tubing through and squeeze out the CA as you rotate the bottle, then you press the liner and you have instant bond that is VERY strong.
Jim Burkert, F-27 #119 - Andiamo

Centerboard Gaskets - F-24-1

1. I would not use slot gaskets for centerboards - they are more trouble than they are worth on larger boats in my opinion.

Last time I used one was on a monohull dinghy, where access is easy for maintenance etc. Just roll it over on the beach or lawn - but try that with your F-boat!

Only thing I ever did was made sure the centerboard fitted neatly into the slot on the forward side when fully down, while using sharp edges on the slot to minimize slot width, and also tapering it off to match centerboard at aft end.
Ian Farrier

Chairs and Cushions

1. We have found that the "crazy-creek" chairs from EMS are really nice in both the cockpit and out on the float ... it spreads the point loading on your butt and gives you back support ... you can lean back without falling over (unless you lean too far).

2. I mounted molded chairs, like from West Marine, with a quick disconnect on each beam. These are WONDERFUL esp. for those of us over fifty. I only made one mistake, I placed them too close to the rudder, so when racing I just leave them folded in the aft cabin.

The trick is mounting: Ian says NO, NO to screwing into beams. So I had a SS plate made, that goes under the SS bolts that secure the beams. Then four captive bolts to further secure the plate. On the plate goes the chair mount.

Seats are “Fish On” by Tempress of Seattle Wa. Can even get seats with padded covers. Weight is nil. Talk about comfort!!! Mine have been on four years and no problems with beams.
Patrick Gilhooly Hull # 201 Hawaii

3. Also, the fenders can be placed here and there and tied on....

4. I went out and got two “Sport-a-Seats” for my F-27. WOW, comfort is king !

Laying flat they are about 3” too wide for the cockpit seats, but don’t get in the way too much (except during emergency panic throttle mode). Folded and locked these are INCREDIBLE. It gives full back support. You can sit facing the bow, put you legs up on the cabin top and fingertip the tiller forever. Just make sure you don’t drift off to sleep.

5. I found a really good generic cockpit cushion at West Marine. It's made by a company called So Pac. They are made in 2 sizes and will fit F-24s and F-27s. I'm not sure about the F-28s and the F-31. They are inexpensive, water proof and can be used as an emergency float. They're made of close cell foam without a cover. If you toush gets sore after a long sail, buy them. You'll be pleased.
Marv

6. When you guys say "inexpensive", how much are we talking? We have a set of Bottomsiders that are a custom fit, color matched to our nets with pinstripe to match our canvas covers. Around $200 in 2001. They fit snug in place; won't fly out at high speeds. Closed cell foam, very high quality. We also have some throwable cushions that we use on deck or as pillows when on the nets... about $13/each at WM. Still, the most comfortable purchase for the boat has been the Sport-a-seats.
Happy Sails to You, Jim Bathurst, Wide Open, F-27 (#451)

7. IMHO best cushions on the market are made by C-Cushions of Rockport TX. Talk to Bill or Tonie Coxswell down there. The link is -

http://www.ccushions.com

They know F-boats, leaners and other multihulls. We have the original set made for our boat in 1989 and cant find a way to destroy them. Fire, flood, wind, hail, spills of all kinds, don't touch 'em. Don’t know what they charge, but its worth every penny.
Cheers, Barry W

Cleaning and Polishing - Gelcoat

"On-Off" cleaner

1. I've used "ON OFF" to clean waterline stains on my F-27. I understand these are not rust stains but rather scum/algae growing in the pores of the fiberglass. The stuff worked well. I think the active ingredient is the same oxalic (or is it muratic) acid that someone else mentioned.
To stretch this thread one step further, I'll put in a good word for poli-glow and the other hard non-wax boat finishes. On my older (#60) neglected F-27 hours of rubbing compound, ON OFF and Finessit restored my hull to a nice white, but two coats of the best wax let the waterline stain again in weeks. In desperation (I hate the infomercial tone of their advertising) I turned to Poli Glow and was pleased with how it turned out.

2. Faced the same thing this winter on my salt water 24. The local boat works (power & sail) here in So. Florida all recommended "On/Off" - a strong acid that, used carefully, will remove rust stains and water stains very fast. Wear gloves and don't inhale the fumes! Something this nasty has to be good. It was faster and more thorough than anything else I tried (hull cleaner, rubbing compound, rust remover sprays). Your bottom paint can be discolored if it runs down so be ready to wipe off excess. My local West Marine carries it.
Bruce

"New Glass" wax

1. Just want to reiterate a recommendation for New Glass II as an alternative to boat wax. This stuff isn't a wax but a type of resin that, when applied to very clean gelcoat, really brings the shine back and LASTS.

At 4,000' altitude down at out lake the sun is harsh on gelcoat. This spring I stripped the wax off the boat, got most of the oxidation off (including using some 2000 grit wet sand paper to get yellowing off the rolled edges in the cockpit) then resealed with multiple thin layers of NG II. I undertook this task by doing different parts of the boat on different weekends. The inside of the floats and the transom were first and the transom is always in the sun. After 7 months the shine looks like it's just been applied. That would never happen with any boat or car wax I've ever used in the 6 years we've had the boat.

IMHO New Glass II is the best restorer of gelcoat shine I've ever used. [Truth in advertising: I have no financial interest in this company.]

New Glass II is in the West Marine catalog. It comes in quart bottles that will last forever at the rate at which you use it. I've refurbished all my topsides and may have used 5-6 oz. NGII also has a wax stripper/cleaner but I found the stuff difficult to work with because it's so concentrated. I scrubbed the boat down with SoftScrub with bleach then got that off with Simple Green. If the oxidation had been worse I'd have used rubbing then polishing compound to take the gelcoat down to a new clean layer. I did use 2000 grit wet sandpaper to

take the yellow oxidation off the rounded edges in the cockpit and now the boat looks like new!

Collinite "Fleetwax" wax
1. Fleetwax by Collinite is supposed to be a pretty good wax. Practical Sailor likes it. But don't let it dry hard before wiping it off or it will be very hard to remove.

"FSR" cleaner
1. To clean up stains on the gel coat, including creosote, try FSR. It's a weak acid (oxalic) in a gel so it won't run. Almost any oxalic acid-based cleaner will clean these stains. But then waxing or polishing is essential because this leaves the gel coat porous and susceptible to further stains.

"Zud"
A product called "ZUD" is better than all of the muriatic acid stuff and the high priced marine products. It is available in the cleaning supply section of our grocery store and takes off all of the brown at the end of the season, even if it has been sitting dry for a week. Also it won't deteriorate the nets.
Bruce Fabens, Artemis F-31 #19

Pressure washing
1. Steam cleaning at "high heat and pretty good pressure" does a good job of cleaning the boat. Not so hot or high pressure that anything gets damaged, though….

2. I have been using a powerful commercial level pressure washer to clean the non-skid on F-oats over the last few years and have yet to peel of a single speck of non-skid.

Un related warning: On the other hand, bedding accessories in 5200 and then trying to remove them can peel off the non-skid. (I was the unfortunate remover not the bedder).
Don Wigston, Windcraft

3. I use a power washer[forgot head size] on mine and it cleans up perfect. Also, I use it on my decks. This cleans everything out of my antiskid that I could not get off for years, I've done this for years with no problems.
Greg, Takin Off, F-27, #117

Other Hull Cleaning Recommendations
1. The white pad Scotchbright can be used to polish the fiberglass when removing barnacles. If all that is left is the "whitish" calcium residue from the barnacle or worms, I have used a grocery store product called (I think) "Lime Away" or something similar. It's used to remove calcium deposits and works well. Be sure to wear gloves, and rewax after using.

2. Any oxalic acid product will clean up the rest of the brown. Be sure to put some wax on the gelcoat after all this treatment.

Cliff Sojourner

3. Along the Gulf coast, that scum's known as an "Intercoastal moustache." I'm guessing that it's associated with tannin released into the water from leaves. Almost any of the cleaners with oxalic acid will do the job like magic. I recently tried the West Marine hull cleaner on my boat and found myself calling friends to endorse the stuff. No rubbing required - just wipe it on and give it a couple of minutes to work before rinsing.

Although it's a mild acid solution, it's a good idea to use rubber gloves. The directions warned of possible bottom paint discoloration, but I didn't see any apparent problem with the Micron CSC I'm using.
Don Abrams, F-27 #352

4. Clean the sides with a product containing oxalic acid. It will take the stains off in seconds. On the down side, it will also take your wax off that is protecting the gelcoat. Therefore, wash down the side with soap and water (simple green or similar), allow to dry and rewax with Aurora "Bottom" Wax. It is made for Fresh Water applications but kept stains off the sides of my amas in Salt water for about 1-2 months. It is "supposed" to last for six months in fresh water.
J.E.B. Pickett

5. Snobol toilet bowl cleaner works like a charm. I'm not sure if it has oxcylic acid but it works perfectly for the stains picked up on the Chesapeake bay. Squirt some on your hulls and spread it around with a sponge or brush and wait a minute or so. It dissolves the stains while you watch and doesn't cost much. A ZERO elbow grease solution... When you're done wax your hulls to seal the porous gelcoat (that is what caused the stains in the first place).

6. Muriatic acid is what we have always used. It's cheap, it's instantaneous, and it's easy to find. Even in my pre-Randy days, we always used it to clean our beach cat hulls. Any marine/boating store has it. Usually it is sold in gallon jugs.

It is hazardous though as any acid product is. Gloves, mask, and protective outer garment should be worn. You don't want to use it on grass (driveway is best, especially concrete, it really will clean that up too.) And, as mentioned below, be sure to apply wax after to seal the porous surface.

We've found that softscrub works well on tree and bug stains, but not for water stain. Rubbing alcohol removes pine sap (ours is kept on a trailer near a pine tree, so that's a problem for us).

Wax....we've tried many. Our favorite is the el cheapo Teflon wax available at West Marine. Long life and great shine.
Paula Smyth, F-25C, "YO!"

7. We have had excellent results using Star Brite Hull Cleaner. When we first bought our boat it had a lot of brown stain. After working very hard to get it off, I tried the Star Brite

Hull Cleaner. Wipe it on (wear rubber gloves as the active ingredient is oxalic acid) no rubbing at all-wait a few minutes and hose it off. Amazing results. Very easy-and no abrasives to scratch the gel coat. You will of course have to pull the boat and let it dry before starting the process.
Good luck! Roger Harshaw, F-24 MK I # 28 Pterodroma

8. My F-24-2 was pretty oxidized when I purchased it. I used 3M Fiberglass Mold Cleaner. It is pretty expensive- but wow! This is what the pro's at my marina use to restore boats. Dab some on an orbital and do a 2' X 2' area. Then buff off with a clean orbital (having 2 orbitals makes this an easy & fast process).

I then used Starbrite Silicone to finish it off. Shiny, Shiny, Shiny!
Good luck, Norm

9. The good news is that the gelcoat on Corsair boats is very good quality, and will reward your efforts. The bad news is that it can be a lot of effort. Nothing restores shine like buffing with a good compound. I've had great luck with Finesse-it II and the Imperial compound from 3-M. This is an area where spending money on the compound saves time (and money-I think-compared to how much cheap compound you will use). I have a commercial buffer but this stuff also works well by hand- don't let your nice clean pad get anywhere near metal.

I have an older boat which was neglected in it's early years so the glass is porous- no matter how much wax I put on, the waterline yellows quickly from algae in the pores. I switched to Poli-Glow, one of the acrylic "restorers" (I think this stuff is the same as latex vinyl floor finish), but no matter how I try, the finish streaks, runs and pinholes, thus ruining the effort I put into compounding. It does stop the yellowing, though.

For me the final solution (short of paint or re-gel coat) is Poli-Glow in a one foot strip around the waterline of the main hull, and Meguiar's #45 polymer wax/coating everywhere, including right over the Poli-Glow (The wax covers the streaks and runs in the Poli-Glow). The amas outside surface just gets the Meguiar's .
Jesse Deupree, F-27 ION, Portland Maine
Whose white bottom looks great, but sure makes any yellowing in the topsides obvious.

10. Scrubbing solutions can be bad for the gel coat and a lot of work. I use a green liquid called "Hull Cleaner" that you can get at West Marine. It is simple. You put it in a spray bottle, spray it on, wait 5-10 minutes tops, and the gel coat looks great. You can then rinse it off or splash it off (depending where you are) Then you just have to wax the area.

As far as I can tell there are no bad side effects to the gel coat.
Jim Burkert, F-27 #119, Andiamo

Cleaning and Polishing - Non-Skid

1. Don't laugh but try Mop & Glow. It's great for removing dirt from non-skid and does not leave a slippery finish. It also removes oxidation. It's clear as water and will not turn yellow. No guaranties but it might work. Buy it at the local supermarket. Tell us if it works.
Marv

2. Well, Mop n' Glow and all that schtuff just wouldn't do it, even water pressure by itself would not do it but steam did. A steam cleaner at high heat and pretty good pressure (without washing the non-skid off) did the trick. Tedious work, but the boat looks like new.

What did we learn from that? If you cover your boat for the off-season, don't use a colored canvas tarpaulin or you'll get a surprise.
Felix Kagi

2. >Does anybody have a suggestion for a really good scuff marks remover? I've tried Soft Scrub. It works but I'm afraid the abrasive would scratch the gelcoat.

I tried a half-dozen different things before a friend recommended Bon Ami--a "good friend," eh? It's cheap, and it works pretty well, and it's supposed to be safe on fiberglass.
Marv Marcus

3. Don't know why, but I've found the spray cleaner from Mary Kate, used with a Scotchbright pad, to be better than anything from Starbrite. Your mileage may vary.
Jesse Deupree, F-27 ION, Portland Maine

4. I've successfully used mechanic's hand cleaner, the orange-smelling stuff.
Dave Paule, F-27 Second Chance

5. I found that a soft bristle brush, exactly like a tooth brush only a little larger, was the best for cleaning the non-skid. The bristles had to be soft and small in diameter. Anything with larger bristles didn't do nearly as good a job.
Billy

6. The old "floor wax trick" eh? Don't recommend it Thom. Not because of nonskid issues, but because what the sun does to the stuff. Remember it is an INTERIOR floor finish. After a period of time you would be asking how to clean the stuff off. Doesn't look bad when first put on, but... After the sun has done a number on it, kind of looks like the difference between a 20 year old and a 55 year old who has spent too much time in the sun (like me)... Not good.
Regards, Phil Sanders, fadin' fast F-27F #305

Clothing

1. This is what I wore in this year's Marblehead - Halifax Race which included 170 miles of sailing in fog where the water temp was 49F. Layers from inside to out...

Silk underwear, top and bottom
Polypropylene long underwear, top and bottom
Thick fleece pants
Long sleeve fleece pullover
Another long sleeve fleece pullover
Fleece vest
Gill OC1 Ocean Racer Jacket and Trouser
Fleece hat
Sea boots w/ 2 pair of fleece socks
Fleece gloves

This combo kept me warm and dry.

The only deficiency left to correct is to add a pair of high quality breathable gloves. I was wearing plain unprotected fleece gloves which did keep my hands warm but they were still wet.

Another nice addition would be a pair of Dubarry sea boots but damn are they pricey.

An upgrade from last year was a set of new Gill foulies. They were expensive but it was worth every penny. Previously, I could never justify the cost. I mean, buy recreational clothing that costs 3-5 times what my business work clothes used to cost? Syd bought me an upgrade this year as a present and I can report that the stuff works. I'm no longer living in my own personal sauna!
Ira Heller

3. I use shiny rubberized gloves with a synthetic fuzz inside. $3 at the hardware store. That's what the watermen wear in the Chesapeake Bay. They do not look sporty but they are tough, kept me warm during a late November offshore sailing out of NY. That said, temps hovered between 35 and 50 and the boat was big enough to keep us dry most of the time. You can add a silk lining to increase their warmth too.
Claude Dussaud, F-31 #115 "Idefix"

4. > My secret to staying dry is to hide behind a crew member.

He is not kidding. The technique works very well. It is important to have the crew not be looking ahead, if he looks ahead, he will see the wave coming and duck, then you will still get wet....

Clutches

>Has anyone experienced rope clutch failure? I have an F-27 #375, vintage 1993. The cam got stuck in the open position and will not hold the line from slipping.

Happened to me with an older Spinlock clutch. Turned out the return spring had slipped off the 'gripper' mechanism. It was an easy fix with needle-nose pliers, but disassembly was required. Beware: there's a plastic pin that the spring rides on, break that and you're off to West Marine for a new clutch... ($$).
Good luck, Colin, F-31 #14 (1995)

Cockpit Seat Crazing

1. > The cockpit seats just aft of the cabin have an interesting crazing pattern (both sides) just aft of the cabin right at the "knee" of the seat. I would think (looking at them) that it is a result of some sort of flexing, but can't figure out how any load is transmitted to those spots.

Probably just point loading from some one's foot or knee, which could cause enough flex to generate the crazing

> The crazing may be cosmetic, but why on both sides?

It can be on both sides, and is probably just cosmetic - not unusual along seat edges. I would just keep an eye on it, and if it appears to be getting worse then consider adding some sort of stiffener under the seat.
Ian Farrier

Collision Damage

> Several months ago I hit a medium size log (estimated 8~10" diameter x 12~16' long) near the north entrance to Dodd Narrows, BC, an area notorious for logs & dead heads. Boat speed was slightly over 8 knots SOW close hauled. The depressed leeward ama hit the log squarely and I heard~felt several more impacts on the main hull and/or dagger board with the final impact being the rudder, which jumped up slightly with some effect on trim.

> The boat continued to sail okay so I transited the narrows and, at the next layover, found that the rudder shear pin could not be removed. I drove the pin out with punch and hammer. The pin was bent but did not shear.

The rudder shear/lock pin was always mainly intended to be a positive locking device to hold the rudder down at high speeds, should the standard cleat prove inadequate, as per Sailing manual. If in shallow waters, or where logs are likely to be, better to hand hold or use cleat only, which will usually allow line to pull through, without the rudder being damaged.

I also like to have horn cleat on the tiller as a positive backup should the cleat be destroyed by an impact, as has happened. A hardwood dowel or plastic rod are other options for the lock pin, should it be used as a permanent shear pin.

With the initial collision being on a float bow, you should also check for any damage around the forward beam recess area. Things to look for are covered in the Beam and Folding System Care bulletin on my owners page at

http://www.f-boat.com/owners/index.html

Hidden damage here can come back to haunt you later. Most obvious indication of possible damage are cracks radiating out from the beam bolt pad in the beam recess.
Ian Farrier, http://www.f-boat.com

Coolers

1. I use an Igloo Survivor - it uses 12V, propane or 110V. It just fits and you can leave your beer/food on board if you are connected to shore power and it will we cold and waiting for you. It will even make a small tray of ice.
Joyce

2. The vertical clearance on our 1990 F-27 for the ice chest is about 17 1/4". We have a Rubbermaid ice chest (17") that just fits and a 3 way frig (like the Survivor) sold by Dometic (Model RC 2000) that just hits at 17 1/2". I raised the step 1/2" (shim on each side, with Velcro) and now it just clears.

The manual say it uses 75 watts (DC or AC); but it also says it draws 7 amps on DC. Like Joyce, we use it on propane when boating. One 16 oz bottle lasts about 2 days. We use the DC when it's in the van (and the engine is running), 120 VAC at the motel or shore power. My wife likes the "no soggy stuff at the bottom of the ice chest" feature. Volume is about the same as our ice chest with a block of ice.
Rich Holden, F-27, #161, Sea Bird

3. We use an Igloo Koolmate 50 cooler that uses a Peltier cell powered by 12 volts, that might be a less expensive and less complicated idea than others. It is about 17" high by 20" by 20" when used as a top-opening chest. We drop in a block of ice that cannot leak, and with judicial use of the 12 volt cell to assist and as few openings of the unit as possible, it is good for about 5 days. The cell uses about 4 amps I think at 12 volts. It does not have the crunching power to make ice, but certainly is able to keep things like dairy products, lettuce and drinks chilled. I hear people with them often use a solar panel to top up the batteries. They were available at Costco for about $CAN180 which would be about $US120 in 2001. This includes the 110 v power pack that we use at dockside and to pre-cool the unit before leaving the dock. Ours has been a great success over two seasons.
Richard Britton, New Westminster, B.C.

4. I just got back from a week in Maine ... using the "Ultimate Cooler" from West Marine $45 ... used 1/2 block of ice in 5 days ... everyone else was melting like mad. Even put a bag of cubes in with it and 2 days later could not see any melting (so used it to refill my beer cooler and make rum drinks).

West Marine claims "5 days at 90degrees" ... seems to be true. Goes under the cockpit in the 28 (or 27) but need to remove the step.
Bob Glandon

5. I also use West's "Ultimate Cooler" but it does fit under my step. I just pull it out from under the cockpit, get what I want and push it back. No moving anything. The little space on the side of the cooler (u need that to allow the top to open because of the thickness of the top) is perfect for 2 collapsing camp chairs I lug around.
Greg Cole, F-27 #302 "Mxyzptlk"

Core, Hull

1. Small voids in production core hulls are not all that uncommon as it is very difficult in the production environment to avoid these, it being so dependent on worker skill at the laminating stage. There are many sheets of foam to apply, all usually with multiple cuts to allow conformity, which are then usually filled with resin or putty during the process, depending on method, but it is hard to guarantee every void will be filled.

While I was at Corsair Marine, from 1984 to 1991 we made a special effort to avoid such voids by minimizing foam cuts, cutting them by half in fact with a special custom single direction foam cut (now known as the Corsair cut) but it is still impossible to guarantee every cut would be completely filled with resin.

You can also have voids in solid laminate hulls, if all the air has not been gotten out, and even Marine ply hulls. Marine ply is not supposed to have voids, but I have found them. The only way to ensure there will be few or no voids in any cored hull is to custom build, use only plain uncut foam sheets, and hand fit every one. But this is very expensive, and there will always be some voids still there, unless the builder is very good and very particular.

Such voids don't normally cause any problems, particularly when you compare to a Nomex cored hull which is composed of nothing but voids. The main potential problem is with large voids which can cause delamination if filled with water and it freezes, and the gradual build up of weight. However, trailerable boats usually don't have many problems with this, not spending all their time in the water.

Water can enter in a couple of ways, either through a leaking fitting, or through the inner skin which is relatively thin and not necessarily watertight as may be commonly believed. A thin fiberglass laminate is surprisingly porous, as anyone who has ever hand faired a fiberglass boat will know. It can take for ever to get rid of all the pin holes. This is the reason for the thick and heavy gelcoat coating on the outside, it being the only sure way to keep the water out, and this also usually backed up with a resin rich layer of chopped strand mat for the same reason. Custom built boats take several layers of paint, and elimination of numerous pin holes before they too can also be fully water resistant

Thus what can be a relatively porous inner skin of any fiberglass hull can allow water through to the core and this may fill any voids it can find. Manufacturers usually apply a flowcoat (a special finishing gelcoat) on the inside of all laminates anywhere water is likely to be such as in the bilges. This adds weight, and is still not a guarantee of absolute water tightness as some pin holes will survive. Thus it is always important not to let water lie in your bilges as it will start to work its way into the core or laminate. I personally don't believe this is a major structural problem as it will eventually happen with any boat left in the water anyway, due to osmosis, and older boats always become heavier as the moisture content goes up. The laminate can be slightly weakened but usually not to any serious extent. It is just a fact of life with any boat, and safety factors usually take this into account.

The inner laminate will also let water vapor out, so if you want keep the moisture content as low as possible, and the boat light, leave it on the trailer, and always ventilate the inside well.
Ian Farrier, http://www.farriermarine.com

Note - I had a hole due to a trailer bunk coming off that lined up with one of the cuts in the foam. The water migrated eight feet aft to where there was a screw hole, and leaked into the cabin there. The repair involved a week of vacuum pumping, to dry it out, and the insertion of thin epoxy while the vacuum was still on. - Editor

2. In regards to cedar versus foam, cedar is still a fine boat building material, but the foam will be quicker to build and more than 500lbs lighter. However, home or custom builts don't use gelcoat, which in itself can weigh 500lbs on a production boat, so the cedar strip F-9As end up about the same weight as a foam core F-31. But it all depends on builder and techniques.

Note also that the time saving with foam strips is only with the actual hull and deck building. From then on, there is little or no difference. So overall, while building time is less with vertical foam strips, it is not a hugely significant saving. The main advantages with foam are resale value and the significantly lower weight.
Ian Farrier

Core - Balsa or Other Wood

1. We finally had a weekend of good weather and I got back to work on the balsa core on the decks of my floats. It turns out that these are only around the inspection hatch areas. All other places seem to be foam. These are visible from the inside, but you'll need a flashlight. Apparently the factory decided to "reinforce" the hatch cut-outs with balsa, but only in a few areas bothered to seal the edges.

I found dry-rot and delamination in these areas:

a. Around unsealed edges which had gotten wet.

b. In the vicinity of the screw holes for the hatches.

c. Where the float halves were joined, under the doubler strip.

I must emphasize that the last two sometimes occurred even in places where the edges were sealed. Apparently the water can get in through the screw holes.

You can check to see if your boat has balsa there by using a mirror and a light, and looking at the inside of the floats three or four inches away from the cut-out edge. Unless it's been painted there, you should clearly see the balsa and the foam. You won't see any of the delamination or rotting unless its pretty far gone. Access for this is simply by opening the screw-in ports.

If you see balsa, consider removing the hatch covers and checking for these problems. I found that a long 1/4" chisel made an excellent probe. If the balsa is wet, then you'd better fix it, even if it's otherwise intact.

My boat has the floats which were joined on the vertical centerline and have smooth upper sides. Later ones had a hull and deck joint there.
Good luck! Dave Paule, F-27 hull no. 80, Second Chance

2. I have hull 72, and I have found rot between my ama chain plate and the aft inspection port. A sort of balsa soup :<

Also, I pulled all the inspection hatches and found wet balsa all the way around.

I will be sure to mention your findings to the boatyard that's doing the repair. Thanks for posting! That is very interesting about the foam everywhere else.... (I have not been able to confirm if my boat is the same) The guy at the boatyard mentioned that balsa was 4x stronger than foam, so using balsa in that area would make a certain amount of "sense". Too bad they did not seal it!

I have not pulled my opening hatches out yet..... Perhaps I will not like what I see?
Thanks again, Eric Bowden, F-27 #72, Chimera, Gig Harbor WA, and Portland ME

3. I've since found that apparently all the core reinforcements under things like chainplates, cleats, etc., is plywood. That makes sealing the holes absolutely essential. In fact, I'd recommend that bout once a decade, if not more often, that all the fittings be removed and resealed.
Dave Paule, F-27 hull # 80, Second Chance

4. The F-27 decks have always been foam, as have all hulls and bulkheads, and most interior furniture. However Balsa core has been used where it offers superior performance, or is required, such as in lower daggerboard case sides for the high compression loads. It may have also been used as high density core material in some high load areas on occasion. This should not have included around open hatch edges as you appear to have found, which should have

always been high density foam. I can only guess that they had run out of H.D. Foam on the factory floor (which can have supply problems) and substituted balsa, which is not a good use, unless the edges are also dug out and refilled.

F-25Cs were all balsa to take advantage of the higher properties, particularly with thin carbon skins. Too many think Balsa is a low grade material to be avoided where in fact it is one of the best core materials available. It is not used more in f-boats as it is heavier than foam, though the latest Super Light versions offer much superior properties at around the same weight as foam. Used properly, it is one of the best cores to have.
Ian Farrier

5. The type of core reinforcement in the places where hardware attaches can vary depending on when the boat was built, and what was available. High density foam, either PVC or urethane is the most common, but on occasion was unobtainable, in which case a well sealed marine ply could be substituted *(Note - it was in F-27 hull #80.)* Balsa was not used for deck fittings as far as I'm aware, but I can't guarantee this, as I cannot recall it being used around float deck cutouts either, while I was at Corsair, but it has appeared there. Regardless, if sealed correctly, balsa is an excellent engineering material in many areas (the F-25C uses balsa everywhere as it is a perfect match for carbon).
Ian Farrier

6. > Question 1- Does my F-24 Mark II #116 (1998) have any balsa core or is it all foam?

Foam core was specified for all my production designs, except the F-25C which was all balsa, for the higher properties, and the higher heat tolerance required for 'baking the boat'. The only balsa specified in my other designs was in the daggerboard case sides, and sometimes along the keel, for the high compression loads there. Balsa may have been used by the manufacturer in other areas for economy, or when high density foam was unavailable. However, balsa is fine to use - it has it problems like every other material, but provided all fittings and exposed edges are sealed properly, then I would be happy to use it. Mechanically, it is superior to foam.

> Question 2- If the fittings leak and the foam gets kinda wet, can this cause the same types of soft spot and delamination problems these guys are describing for the balsa core boat?

Yes - extra care must be taken with balsa core so that water cannot get in. If a leak appears, or laminate gets damaged, fix it immediately. No ifs or buts!

> Question 3- I have been having a problem since I got the boat 2 years ago of a very small amount of water getting in the cabin when it rains. Was never able to track it down till this last weekend and now I think it is coming in around the forward hatch somehow. Carpet feel slightly wet there too. Very small leak. Could this leak into the foam core and cause me a big problem in the deck area around the hatch.

Not a major problem with foam core, but one that still should still be fixed promptly. You may have to remove hatch to check for source, and then re-seal. Best way to reseal hatch, or

anything else, is to run a bead of sealer between bolt holes, and then around each bolt hole (not straight over the top of the hole which does nothing). The same sealant must also be run around under the head of the bolt to seal that side as well. Even the most expensive sealant is no good if it is not applied correctly.
Ian Farrier, http://www.f-boat.com

7. HD foam was always specified for such areas around hatches, windows, HD inserts etc., as the edges would be exposed. The only reason balsa would ever be used would be if there was a supply problem with HD foam, which could occur from time to time. Regardless, balsa is still fine, provided the edges are sealed, but it looks like some were not. A good thing to check.

The only areas where balsa is regularly used are in the daggerboard case sides and a strip along the keel. This is solely due to balsa's high mechanical properties coupled with a competitive cost, not due to an ability of balsa to spring back (or have a memory) as was claimed a while back, this being incorrect.

Balsa actually works well in such fully enclosed areas, as they are usually totally sealed, and there have never been any problems as far as I am aware. HD foam inserts were specified where depth or speed senders are located in the F-27, to avoid balsa edges being exposed. The position of these inserts was then marked by a small screw.

> Also my hull guy was wondering if it was vinylester or polyester?

Vinylester is used in outer skin, iso-polyester from there on in. Many early boats were all vinylester, but I don't have the data of where this ended.
Ian Farrier

Core – Water Removal

1. The preferred method for drying the laminate is to drill a series of small holes in the laminate and use vacuum to draw the water out of the laminate. A vacuum bag can be sealed over the area with a bleeder cloth underneath to absorb the water as it is drawn out of the laminate. Once the laminate is dry, the holes should be repaired with epoxy. Unfortunately, this is not a quick process as it could take weeks for the laminate to completely dry.
James Jones, CCT-I
Engineer - Technical Services
DIAB Inc.
315 Seahawk Dr. Desoto, TX 75115
Ph: 972-228-7644 Fax: 972-228-2667
Note – I asked him for advice with this problem on my F-27, following a hull puncture, and water migration into the core along the slits in the core that were part of the core forming process at the factory, and which weren't filled with resin. Water leaked into the cabin from screw holes which fortuitously were placed along the path. I opened up the screw holes, vacuum-bagged the exterior hole, sealing off the interior part of the hole, and let the vacuum

pump suck for a week. The air in Colorado is dry, and a moisture meter confirmed that the core was dry. The remainder of the repair was normal. And now I've got a vacuum pump. – Editor

Corrosion Control

1. Always use some sort of insulating anti-seize between aluminum parts and stainless steel fasteners. If necessary silicone or 5200 can be used, but there are commercial products available. One is USS Ultra Tuff-Gel; it worked on "Almond Joy."

2. Aluminum corrosion is rarely a problem unless caused by a dissimilar metal, where the aluminum can be literally eaten away. Otherwise even bare unanodized aluminum will last for years without any significant problem. The whitish surface corrosion that appears actually protects the aluminum underneath from corroding further.

A strip down and repaint is usually all that is required with an old aluminum mast. But be sure that all stainless steel fittings are insulated from the aluminum by a suitable bedding compound (silicon works fine) when reassembling. It is a good idea to check for this on any new mast also, and re-bed fittings if bedding compound is missing. Stainless and aluminum are actually not too bad together, but the aluminum will be slowly eaten away over a period of time.
Ian Farrier

3. Stress corrosion cracking (SCC) of 300-series stainless steels can occur at chloride concentrations far less than that of seawater, and at ambient temperature. The aggravating conditions are environment (especially chloride), tensile stress near the yield stress for the material, and elevated temperature. SCC can occur at ambient temperature although it may be slower than at higher temperatures. Residual tensile stress is generated by innumerable effects such as bending, welding/cooling, etc. Annealing can eliminate residual stresses, but screw threads, bolt heads, etc. in service also have highly stressed points that can initiate stress corrosion. SCC occurs in heat exchangers and reactor systems, but also in more commonplace marine applications.

On top of this is the tendency for crevicing where cracks exist, e.g. where metal parts are assembled, or where stainless contacts other materials such as elastomers or plastics. Crevicing and localized corrosion at these sites can lead to failure, or they may initiate stress corrosion. With most parts, tensile stress increases as cracking proceeds, so things usually get worse. There is some tendency for stainless corrosion to increase at high and low pH, which increased my concern with Muriatic acid as cleaner. Worst case: your stainless rigging part has residual stress and a pre-existing crevice or crack (always present), which retains the acid leading to failure in a few weeks or a couple of years (not immediate, and therefore unexpected).

Enough sermon. I'm no corrosion expert but am involved with design of corrosion resistant containers in stainless and high-nickel alloys. More relevant, I've lost a rudder and had a few

other surprises on my boats. I think the best defense is high quality to start with (good design, annealing, and surface polish), periodic replacement, and just keeping stuff washed down.
Elh

4. All aluminum and stainless steel joins should be insulated in some way, and this is always specified for all of my designs. Basic protection is a sealing compound such as silicon, which is simple and works well as described, or there are specialist bedding compound for this purpose, plus plastic washers are strongly recommended between any stainless and aluminum. This applies in all areas, and particularly the rudder and mast fittings.

However, not all builders do this, and it is a good thing to check on any boat. If nothing is found I would strip and bed everything - easy to do if new, and could save a lot of trouble later. Eventually non-insulated stainless steel bolts can lock solid in aluminum, and the bolt head will even break off before it can be removed.
Ian Farrier, http://www.f-boat.com

Covering the Boat

1. I just buy two or three blue tarps (use the gray colored tarp, not the really cheap blue stuff. The blue breaks up and leaves junk all over the place.) and cover the boat using the mast as the ridge. Make “T” cuts for the beams. This decreases the amount of air inside and also is much cheaper than a custom made cover. I believe The Finish Line has custom made covers for more than a boat buck.

2. Tyvek is a good pattern material when making covers or nets.

3. Sailrite is a good source for marine fabrics and related accessories. For gray tarps, Harbor Freight, 1800.905.5220, http://www.harborfreight.com and Northern Tool & Equipment 1800.556.7885 www.northerntool.com but watch for sales, both have several prices for the same item, depending on the item # you use. It's worth it to wait for sales and order then. Green (26# for 20x30) is about $50US, Silver (19#) about $55 vs. blue (ugh, 12#) about $25 at Harbor freight on sale in 2000.
Paul Abendroth

4. Allow me to highly recommend my canvas guy for making covers. His name is Mike Zettel. He charges $20/hr and does excellent work. If you’ve got a pattern he could make a new cover from, it’d be an exact replica. His phone number is (505) 323-1306
June 2000
Reid Hester, Ph.D.

5. Cover the solar panel, too, so that moisture doesn’t get inside and break it. Take the battery out first....

6. I got a 12'x20 (12x24 would be better) gray tarp, and put it over the mast and aka ends. Secure it to the boat and trailer with line and hooks. Don't rely on bungees, as they'll stretch

when you don't want them to and pull too hard when you don't need them to. I rig a long piece of continuous line through all the grommets and crimp little wire hooks out of coat hanger wire to the line to attach to stuff. You'll probably have to empty a water pocket occasionally. Oh, crank up the tongue so the cockpit drains if you're worried about ice. The tarp has 3 winters on it with no apparent wear.
-robertw

7. The window idea isn't a bad one, unless the window blocks the precise wavelength that the solar panel relies on. Murphy says it might!

We have such a clear plastic panel in our boat cover. It's the same stuff used for auto convertible rear windows. That plastic seems to let in sufficient sunlight to keep the battery charged via the solar panel
Reid Hester, Ph.D.

8. For the last several years my "covering Barefoot routine" has been as follows. Using the mast raising beam between the front beam ends I raise the mast until it just touches and lash it in place. Then, using a 2X6 between the rear beams I lift and place and tie down the aft end of the mast on top of it. This makes a pretty good ridgepole for spreading three tarps, (after I have run several lines between the mast and the sides of the boat to provide rafters) the center one goes between the two sets of beams and the other two cover the beam tops, with carpet chafe protectors, and run far enough out (I think 8 feet) that most of the boat is covered. I do not bother with the grommets having had most of them pull out. Instead I use the little yellow ring within a ring thingies (scientific term) that are folded into the material. I attach the tarps with lines on one side of the boat and bungees on the other. There are a few other places on the boat that need chafe protection; carpet and duct tape suffice. The snow slides off pretty well and I can get under the cover to check the inside of the boat every so often.
Tony Cabot

9. For mast-up storage, I use plastic tarp (grey on one side, black on the other, much tougher than the cheap blue stuff) draped over the boom and rear beams, and then down over the sides. I believe it was a 12 x 24, long direction goes over the boat sideway, short direction goes front to back of boom. Almost touches the ground on the sides. Have a slit cut from the bottom on each side to go around shrouds, then tie the slit area back with three small cords on each side. Use bungee to tie it down to trailer in front and bungee around the back end of ama and back up to rear cleats in the back. Two long bungees in front between beam and mast on each side hooked into the tarp and then hooked up to front of boat. This keeps wind from blowing it off backwards away from mast. Completely covers large nets and the boat from mast to back of boom. Does not cover the front nets. In the dead of summer, I usually wrap the front in some more cheap blue plastic to keep the ultraviolet from beating on it so hard. Back 3 feet of boat is shaded by trees.

Secure the mast by putting dock lines around the shrouds about 2 feet from chain plate and GENTLY tensioning the ropes by hand with the cockpit winches on each side. Don't overdo this as it cam bend the 8" long swaged connection at the bottom of the shroud. I need to find a

better way to do this...I really don't like the bending moment it puts on this swaged part of shroud, but been doing it for two years.
Ken

10. I stretch a tarp over a frame over the dodger of my boat. The frame is made of $40 worth of black 1-1/2" ABS plumbing waste pipe. It is strong, light, resilient, has rounded corners from the joint fittings, it is easy to cut and assemble and has given me great service over the last 10 years. Only some of it is glued permanently together, so that it is in storable sections for the summer that can also be transported easily. The larger sections will slip together at the joints, where they are pinned with a few sheet metal stainless screws. I would recommend this material for anybody else needing a frame for a cover.
Richard Britton, Friendly Dragon, New Westminster, B.C.

11. I bought a Cover-It vinyl covered garage for my F-31 in 1999 and am pretty happy with it. (38' long x 14' high x 14' wide peak-style roof juuuust makes it, but you have to cut a hole in the rear door for the mast). The garage door is a roll-up affair that just barely clears the amas when lifted to the top. You can work on your boat in the winter or in the rain. It keeps the boat free of leaves, etc. while you are doing your spring commissioning. You don't have to worry about chafe of your gelcoat. It tolerated a 4" diameter tree branches falling on it with very little damage. I hung 4 cold-start fluorescent light fixtures from the roof and with the white interior it is plenty bright inside. I installed a propane heater (yes we leave the doors unzipped and propped open a bit when we run it) so it's a great place to work on the boat in the winter, which was my goal.

Downsides: Cost approx 3 boat bucks, needs a bleach wash to remove mildew every year or two. Boat still gets dusty as garage has peak vents and we leave the doors lifted an inch or so or they will wear out rubbing on the ground. When the snow gets deep, sometimes you have to poke the roof from the inside with a broom to get it to slide off.

The web site is at www.coveritshelters.com. The phone ordering is quick and efficient and the tech support makes up for the lack of really specific instructions.
Vince Miccio, F-31RS #145 "Warp 9", Beverly, MA

12. www.coverit.com. The 24x36 has made my boat chores much more pleasant.
Jay Spalding, F-25C

13. If you have a Sunbrella cover for your boat, your nets won't get trashed by the sun. We learned this lesson in 92-3. We eventually put up the money for a good boat cover and since then our new nets show NO signs of UV degradation and they've been on the boat for 4-5 years now. Sunbrella's a lot cheaper than new nets!
Reid Hester

Daggerboard, Case and Slot

1. I made a combination guide/shim for the bottom opening of the daggerboard trunk on my F-27. I had chewed up the board once by dragging a piece of pot warp up into the trunk, so part of my motivation was to close the oversized front opening. I got a thin piece of slippery plastic from Layline (sold as a board shim/glide- p 55 in most recent catalog) and, with the boat on stands I lowered the board, pulled it aft and fit pieces of the plastic around the front and rear of the board at the bottom of the trunk, and caulked/glued them in place with Life-caulk. The plastic is completely bendable and in the rear I creased it to match the trailing edge profile of the board. The shims hold the board in one position and have worked well for two years-the board goes up and down as easily or more easily than before, and has no movement when down, and no space at the front for seaweed or lines to be drawn up into the trunk.
Jesse Deupree

2. We always whip the daggerboard downhaul line at the location it hits the cleat. This is more permanent and visible than a magic marker and at a glance it tells you how far down the board is. - Bob Gleason

3. There are actually two kinds of sailors; those who ran aground and those who will run aground.

If you are adventurous and go to different places you will sooner or later run aground. If you are a cautions person, the grounding will be at slow speed. Sand and mud, no harm done. Solid rock or coral call for repairs. Submerged objects such as trees, cables and/or concrete usually will get you when you "studied the chart" and know, or at least think that you should be safe. I suppose those things could possibly damage your daggerboard case. I hit concrete (a submerged school house foundation) at 5-6 knots while supposedly in 13' of water, a dead stop, two crew slightly injured, cuts on the faces from sunglasses and ST-60 speed instrument.

Obviously, the daggerboard had a piece missing and the gelcoat on the lower rear casing (inside) had cracks from the flexing of the casings rear edge. On another occasion, I followed an F-31 that hit coral, which really cut a chunk off the bottom of the board.

With a significant hit of this kind, I take the board out at my earliest convenience. It's very easy to remove and if a person is handy with fiberglass and fillers it's usually a quick fix. Or any local boat shop or fiberglass repair place can do this.

Otherwise, part of the routine maintenance in spring; board out, fill if necessary, sand and bottom paint the lower third.

I have used West- as well as Interlux epoxy. I am not interested about cosmetics, hence no gelcoat. The shape needs to be re-established and it needs to be smooth. Then I use Baltoplate or VC Offshore (same thing), which is burnished with a copper wool pad when dry. This provides a finish that is slicker than a waxed and polished gelcoat and at the same time you have the advantages of bottom paint.
Felix Kagi, F-31 #136

4. To remove the daggerboard -

a. Drop the mast and tie it to the pulpit so that it's off to the side of the daggerboard.
b. Remove the cover around the daggerboard case on the ceiling inside the cabin. Don't lose the screws!
c. Remove the nuts and washers from the mast base crews inside the cabin. If this is the first time they're off, you won't need any one holding the screw topside. Don't lose the nuts and washers!
d. Unscrew the screws on top. Don't lose them!
e. Carefully lift up the mast base. If your boat has the lightning strip, remove the acorn nut and polyurethane bumper to disconnect it. Don't lose them, either!
f. Keeping the lines clear, lift out the daggerboard and carefully lower it to someone on the ground.
g. Take a good look at the mast base and related hardware. It may need corrosion maintenance or replacing the turning blocks.
h. While the board's out, it's a good time to replace the lines.
i. Just use silicone when replacing the mast base. No need to use anything stronger!

David Paule, F-27 hull #80, Second Chance

To replace the downhaul line -

a) End-to-end stitch a new line onto the old line (take 10 minutes to do it well).
b) Pull the old one out. The new one follows in.
c) Tie the knot. Cut to length.

It worked for me.
Peter M. Lucas, F/C 31 #225, "Flexible Flyer", North Bend, Oregon

5. Hit a sand bar going about 5kts, board all the way down. Stopped the boat hard. No visible damage to the board when I checked it on the trailer. You can see the bottom front edge of board on the trailer. Any more requires pulling the board, which is easy. It only weighs 40lb or so. (F-24 Mk II. The -31 board is probably heavier).

Last summer we hit a rock pretty hard while trying to avoid an ugly sea in the channel but not paying attention to the chart. Going about 7 kts. Hit and kept going. I think the swell let us down on a solitary rock. Again the board was all the way down. We raced our best race of WIRW that day. Afterwards I wanted to check the board, because we couldn't get it to come all the way up. To shorten a long saga, the guys managed to drag the board on the launch ramp while I was getting the trailer. That must have dislodged a rock, cuz after that it retracted fully, saving us figuring out how to get the boat on the trailer with the board down. Later, when I pulled it I found the front corner had been split open, back and up about 6". I cleaned it out, filled it with bog and clamped it back to it's original shape. No further problems.

I emphasize that the board was all the way down because it is my understanding there is reinforcement in the trunk at that location to absorb the shock of owner idiocy. Other parts of the trunk are not so strong, so it's probably not a good idea to use your board as a feeler for the rudder, half down.

You definitely don't get good early warning from the depth gauge, even if you are watching it. The sand bar I was looking for. It came up too fast to detect. I wish there were a reasonable look forward sounder.

I've also beached (intentionally) several times. If you do this on a shallow beach, pull the knot meter sender, up the board, uncleat the rudder hold down, and release the engine down lock. If you're backing in, you can't use the engine, but probably won't have to worry about the sender. I'd only do this on a quiet sand beach. I've fixed some small dings from a gravel beach, and I'm leery of the quality of the sanding job the bottom would get from a beach with wave action.

As far as how to react, If you don't stop, change direction - it's probably getting shallow that way :-). If you do stop, pull the board, check the rudder before attempting to back out or continue. No point in banging both boards. No worries about sinking, they don't. You'll get her home, no matter what.
-robertw

6. Ah yes.... Daggerboard all the way down!

I found a rock in Camden, ME.... Cheating the channel, I sailed too close to Curtis Island. My board was not quite all the way the way down.

I figure I was going about 8 or 9 knots.... I put the trailing edge of the board through the trunk! Because the board was not all the way down, the sharp trailing edge of the daggerboard was able to cut through the aft edge of the trunk.

An earlier posting mentioned flooding the boat with 2 feet of water.... I only got about 1 foot before the buoyancy of the amas and the 2 water tight compartments of the main hull took over. It flooded slowly so I had plenty of time to pull everything up to "higher ground" (contents of lower lazarettes) without damaging anything. The water level never reached the power block that is mounted under the cockpit on an F-27

We calmly motored back into the harbor and pulled the boat. A few days at Lyman Morse boat yard in Thomaston and the daggerboard trunk was as good as new. Those traditional boat builders did a great job, but they sure thought my boat was odd for the coast of Maine.

I replaced the daggerboard with a new one.

They say there are two kinds of sailors..... Those that have hit rock, and those that will !
Eric Bowden, F-27 #72, Chimera

7. I have repaired at least 5 daggerboards and have never seen any damage to the case. Once I even broke my daggerboard completely off (a defective daggerboard) and once it was half way up and I went over staghorn coral in the Bahamas. Reasonable damage to the daggerboard but none to the case.

Nonetheless.....A weaker bottom end to a daggerboard or rudder is not a bad idea if you're making a board from scratch.....I just don't see any big benefit from chopping up an exiting board and changing it. Speaking from someone who as often used their board as a depth sounder in the Bahamas.
Mike Leneman, Multi Marine

8. >After noticing a crack in the daggerboard of my boat (an early boat - hull #18)I took out the board to find several long cracks and a substantial hole in the upper part of the leading edge where the top 10" has delaminated. There is no sign that the board has hit anything and the damage seems that it might just be the result of a lot of stress over the years.

>Although I am pretty handy with fiberglass and epoxy I am wondering if I should attempt repairs or purchase a new board. If I do repair it do I need carbon fiber in the laminate?

Possibly/probably repairable, but Third Movement is an 13 or 14 year old boat now (May, 2000), and raced many times. It may be wise to think about a new board. It can be repaired without carbon, as this is embedded deep in the board sides at the thickest part, and well away from the edges. Just grind away all the rough stuff, dig out any soft spots or cracks and refill with a strong putty mixture. Finally glass over the exterior of all patches, with as much glass that you can, but not enough to jam it in the case - be careful here and check as you go - a jamming board is a real nuisance.
Ian Farrier, http://www.farriermarine.com

Note - Daggerboards are available new for less than a boat buck (November, 2003) from Corsair or your dealer. - Editor

9. A belt sander is too vicious for beveling the trailing edge of the board and rudder - just a hand held sanding block would do it. The thin edge could indeed be a problem - make sure there are no open cracks, or delaminations. If so, fill them with epoxy.
Ian Farrier

10. > How to repair/replace the area under the Cheek Block mentioned above? My first though is to cut out from inside leaving the outer layer of fiberglass and epoxy in a square of some other material and then a layer of fiberglass on the interior.

That is the best way.
Ian Farrier

11. It is far better to have a loose rattling board than a tight one. A loose board is easily fixed by adding plastic shims. Tight boards can be a real problem.

The aft sharp edge should never really be in a wear situation. The rectangular top section should bear against the aft flat edge of the case, preventing the sharp lower edge ever coming into contact with the case or hull. To remedy, place a plastic shim on the flat aft edge of the daggerboard at the lower end of the top rectangular section to prevent the sharp edge touching anything.

Ian Farrier

12. > My board was all the way down when we hit the rock. It looks like the Kevlar wrapping around the front of the case just popped away from the underlying glass. The Kevlar itself is not torn. It looks like the Kevlar reinforcement only extends between two and four inches back from the front of the case, and I bet that it >is put on with a secondary bond. We are going to beef the hell >out of it in completing the repair.

I once hit a submerged rock doing 12 knots. Much to my chagrin, the daggerboard did not shear off but levered itself through the trunk. The head came clear through in front and the aft edge cut through the trunk into the boat. It was VERY difficult to get the board up to put the boat back on the trailer (I eventually turned the boat around at the dock and drove it in reverse into the shallows and was able to lever the board back to a position where it would move in the trunk. A LOT of Kevlar was added to the trunk during the repair.
Regards, Ira Heller, F-27 #297

13. The daggerboard is designed to break before the case, but this can never be guaranteed as there are too many variables. In most cases the daggerboard case will undamaged, or have a few leaks, but a few may be more seriously damaged.

Variables include how deep the daggerboard is (the case can actually be more vulnerable to damage if the board is partially up), workmanship in the case, and the different ways of making the daggerboard.

The daggerboards were originally designed to have a relatively light 5 lb density foam core, with a high density insert down the middle. But some were made using a much higher density expandable foam throughout, which made them considerably stronger fore and aft, and less likely to crumple at the point of impact, which will help soften the blow to the case. Such boards are thus more likely to damage the case.

The best solution is to try and avoid unexpected groundings, or if the likelihood is high, slow down. I once saw the factory F-27 hit bottom at around 7 to 8 knots off a beach, the bows almost disappearing under water with the force of the impact, but without damage. However, we were lucky, and the bottom was sand. Hit a rock at 7 knots and there is going to be some damage.
Ian Farrier

14. My experience with fast sailing boats (not F boats) has been that board hum is all about the trailing edge. The worst is a soft, rounded trailing edge. This will throw off strong vortexes and will hum like a bad dog. Scratches and unfairness in the board itself will add drag, but does not cause hum, in my experience. The hum is very detrimental, as it absorbs lots of power.

The trailing edge needs to be either feathered to a sharp edge, or squared off, with very sharp corners (which I prefer). The thickness of the flat on the TE is not so critical, but I like it at about 1/8".

Dave Culp

15. Well, it finally happened - we hit a submerged object at about 9 knots today with our 1989 F-27 and broke the daggerboard. It broke about 12 inches up from the bottom. We were able to fish the fragment out of the lake. Initial inspection reveals no significant damage to the trunk or hull beyond some cracked gelcoat on the aft edge of the trunk.

Thanks to Ian for accounting for the fact that knuckleheads like me are going to hit solid submerged objects while going fast. 'Twas an amazing thing - at first the board hung in there - apparently the broken portion was flapping about - but finally it sheared away. I shudder to think of the damage that would have been done to a keel boat by the same collision.
Barry Warburton
F-27 "Little Wing"

16. > I finally tracked down the source of the nice puddle on the floor in front of the daggerboard trunk:(

> I am guessing long ago the previous owner hit something quite hard with the daggerboard causing the top of the board to pivot into the trunk. The trunk is leaking (due to rain or rinsing the boat) on the leading edge about 4 inches below the deck, which is a strange place to leak unless he hit with the board barely extended...

> Could this be a mast compression issue instead of a collision issue? There are no signs of this on the deck, but I am not sure how the load is transmitted through the trunk to the hull or if it even is.

Would not be a mast compression or collision issue. Probably just a pin hole or some sort of defect in the case joining tape. Check down the case on the inside to see if there is any visible crack/hole/defect in the join seam which should be visible. Join seam will be covered with a bead of gelcoat.

> Would I grind off the glass and the foam core from inside the boat and try to fix it this way or do I need to remove the daggerboard and attempt to fix from inside the trunk(not much room or access for this)?

It is solid glass on both front and back of case, so no core to contend with. If any defect is visible on the inside of the case from the deck, and it can be reached, then a simple/quick solution would be to fill any hole or crack with a polyurethane sealer. A bit more professional and long lasting cure would be to use an epoxy putty in any defect, and laminate over with some glass tape. But the sealer would probably work fine.

Otherwise just grind/sand off any paint in this area inside the boat, fill any holes/cracks, and also laminate over with some glass tape. But if possible, best to seal from the outside.

If no obvious defect is visible, then there may be some sort of leak around the case top edge to deck join (through a mast step or some other fastener?) and water may be finding its way

internally to the front edge of case to escape. Hard to believe, but strange things can happen in fiberglass.
Ian Farrier
Farrier Marine, Inc.

Daggerboard Cheek Blocks

1. Daggerboard Cheek Blocks: There was a question raised recently about the securing machine screws stripping out in the daggerboard case laminate, and this is simply due to them being fitted the wrong way around. The heads should be on the inside of the case, threaded end protruding out into the boat interior and acting as studs. They are still tapped into the laminate, but acting as studs they should never turn and thus the threaded laminate is much less likely to be damaged. To remove the cheek block one just removes the nuts from inside the boat, and this never disturbs the machine screws.

It is more difficult to fit them this way after the daggerboard case is joined together, but should you ever need to remove a daggerboard, and find your machine screws were fitted incorrectly, then it is a good time to try and put them in the right way, which should be possible with the daggerboard removed, even if a little fiddly. Bed them in some 5200.

As per previous posting, if you have stripped the threaded laminate, the easy cure is to drill oversize and re-thread for a larger machine screw.
Ian Farrier

Deck Hardware to Beams

1. > I'd like to mount a cam cleat somewhere near the inboard end of both aft beams on my early model F-31 (#14).

The cam cleat can be mounted on the top of beam end, provided the load will be mainly horizontal, and self-tapping screws (#10s best) into the beam top laminate should do the job. However, whenever tapping into a beam top like this, be sure to seal hole well, and use a polyurethane sealer for maximum adhesion. It is very important that the stainless steel screw be insulated from the carbon fiber by a sealer.

Should #10s prove inadequate, then a metal plate (1/8 - 3/16" stainless or aluminum) can be attached to beam top with four #8 screws, with a polyurethane sealer/adhesive, and the cam cleat is then tapped or screwed into this

It is okay to put screws like this into the beam tops, but only when the loads are in shear, and avoid doing it from a point 2' inboard of the lower folding strut brackets right out to the float end, without seeking advice first. If anything needs to be attached to beams the best place is usually through the side join flanges, where the wing net eyes are attached. You should find an aluminum strip on the inside of this join that can be tapped into for high loads.

Ian Farrier, http://www.f-boat.com

Diagonal Lines Under the Nets and Aft Cabin Hatch Brace

1. > My F-31 has a single diagonal "wire stay" under each trampoline. I noticed at the Annapolis boat show that the F-31 had 2 "wire stays" crossing each other under each trampoline. Is this a new arrangement and is there some problem with the single stay system??

These stays are not structurally important and were introduced with the F-31 mostly to keep the rig tight (which is not important anymore with the rotating rig) and to help minimize potential damage from any fore and aft float collision.

There were always two stays, the second one being used to also support the bow nets. However, the angle of this fwd. stay was not so effective, and while it appears to have mostly prevented major damage from a fore and aft collision (requiring beam/folding system replacement), some damage can still occur to the inner end of the forward beam. This is due to the wire angle turning any float impact load traveling aft inwards at the fwd. beam, driving the beam inwards and up which can damage the forward beam bolt area or bolt pad. Moving the stay aft has improved the angle and made it more effective.

The boat's resistance to collision damage is thus further improved, but the best way to avoid collision damage still remains not hitting anything in the first place.

These stays are also an ideal application for synthetic line.
Ian Farrier

2. > Am I missing something here? If one wanted to brace an F-24's amas against collision, one would run the stay from the ama aft beam to the main hull forward beam intersection to keep the ama from moving back. I would think that if you were bracing the ama against loads from the cap shroud, the stay would run from the forward ama beam to the aft hull beam to keep the ama from moving forward. Two completely different stays.

Correct - two are used per side
Ian Farrier

Definitely a good use for synthetic line, and I would use it on new boats. Similarly bowsprit dolphin striker.
Ian Farrier

3. The under-wing diagonal wires are only a performance enhancing feature - not necessary for the average F-27. It's only used to stiffen rig for the absolute best windward performance.

So is the cross brace in the aft cabin access hatch - but this is a good performance enhancing (stiffening) device to add, as more flex can come from this area than any fore and aft flex of the float/beams.
Ian Farrier

4. Following a "minor" collision - after a long time I had noticed that if the diagonal stays are too tight that the locking pin didn't quite line up. As soon as I loosened the diagonal stay, the pin alignment was corrected and has not been a problem for the past 2 years.

5. Synthetics are okay for these braces, provided they are regularly checked and re-tensioned as required. They should not be bar tight, but not sloppy either. Their purpose is to minimize any fore and aft flex of the beams which can slacken the rig, something that becomes more obvious on larger boats like the 31. The F-24 or F-27 do not need them as standard, but they can have some benefits if added.

Another important additional purpose is to minimize major damage to beams and folding struts that could occur in a severe fore and aft collision. The float being forced back could write off both beams and the folding struts, which could be a very expensive repair. The fwd. braces will help prevent this, but they then redirect the forces into the forward beam bulkhead area which should be checked after any collision as per the Beam and Folding System Care Bulletin on my owner's site.
Ian Farrier

6. I did make a slight error on the size of the Spectra that I used for the under wing wires. It is 1/4 inch Spectra and I spliced eyes in both ends of the line with one end having a stainless steel thimble and the other without. This is then fastened to one padeye on the ama just at the front of the large center compartment by passing the bitter end thru the eye. The other end is then lashed to a padeye on the main hull just ahead of the rear ama with Kevcored. The line can be tightened by taking up on the lashings. Wire and turnbuckles will chafe the hull badly when folded and trailering down the highway. The correct line to use is V-12 Vectran 5 mm, and the padeyes are Schaffer part # SHCAFE78-01, the measurements are 3"x1"with a 1/4" bail.
Wayne Erickson, Almond Joy, F-27 #345

7. Mine are hand tight before cap shroud tensioning and very tight afterwards.
Rich Holden, F-27, #161, Sea Bird

Dinghies

1. Tinker Traveler worked fabulously without an engine. Tied up very nicely just inside an beam, and put the sailing kit and oars down below the cockpit.

2. In the Northwest a rigid dinghy is good because it will have to be dragged over rocks and barnacles to the high-tide line.

3. For inflatables, a 10’ 6” with a 3 hp motor, with a wood slat floor and an inflatable keel, works for an F-27. It will plane with one person. It’s rated for 10 hp.

Docks

1. I did this one year, where the slip was a little single dock facing the lake. The 5 mph buoys were only about 50' away. Major wave action from water skiers and other lowlifes.

Take the end of a jib sheet or spare line and tie a loose bowline on the forestay. Bring the tail back to the winch. Pull it until the side shrouds tighten up. If you have a hank on jib the end will slide about half way up the forestay. Otherwise you'll probably have to flip it up there by hand.

Put an old life vest (the cheap variety) or fender over the end one of the folded akas. Place the boom on the outside of the aka, resting against the life vest. Sheet it down pretty hard. Tighten the mast rotation limiter to keep the mast in line with the boom.

If you can, cross tie your boat in the slip so it doesn't bang the folded ama against the dock. I don't think they're made for that sort of abuse. Don't tie mooring lines on the amas.

Did you put bottom paint on the sides of the amas? If not, try marine wax. Clean them frequently, rewaxing when the crud doesn't just brush off.

Sail your boat frequently, to avoid buildup of crud on the ama, at least twice a week :-)
-robertw1.

2. With the discussion of keeping the boat folded and stabilized at the dock, no one has mentioned using the mast raising wires (tensioned) to help keep the mast from too much movement. Per the manual I understood the F-24 MkII was to always have these wires attached prior to folding the amas.
BillnBess, Essence, F-24-MKII

3. I have a unique way of holding a boat off a dock. It works similar to whips, but cost only a very few dollars.

Attach a 4x4 beam to the middle and end piling near your bow end of the boat.

Screw in an eye bolt in the bottom of the beam.

> a. Install a Forespar aluminum spinnaker ring to the side of the mast, as you would for a reaching strut for a mono hull boat.
> b. Get a long weather proof 2x4. At one end attach a spinnaker pole end. I think Ronstan makes one that screws into a wood pole. This end goes to the mast fitting.
> c. At the other end, drill a hole in the 2x4 and install a large diameter loop of shock cord.

d. Attach shock cord to 4x4 beam eye with a carabiner shackle.

You still have to tie off your boat with spring lines and bow and stern lines. Also you need fenders. But this method will keep your boat from constantly hitting the dock.
Marv

4. I have used docking whips on an F-24 for a number of years. I found them to be sufficient (and quite convenient) until waves or strong winds came. With power boat wakes or waves developed from sustained winds the boat's momentum would overcome the whips ability to hold the boat off of the dock. I wound up adding a couple of mooring lines at 45 degrees to the bow and stern for when I was away from the boat. With this configuration the boat handles the waves and wind very well.

I would think that in a marina, where the boat is in a protected area, the whips would work quite well.

I would go with the largest size that you can reasonably get. The whips bend in a progressive manner so I don't believe that using the good heavy duty ones would cause any problems. They are certainly gentler than tying to a solid immovable cleat on a dock.

The instructions call for spring lines and lines straight from the bow and stern to the dock so even in the event of whip failure the boat is still secured. It's really not a bad system.

BTW, I replaced my whips last year, after about 5 years of use. It seemed that the sunlight and flexing had taken their toll on them and they were looking a bit tired. They might have lasted much longer but I figured that my boat was worth a lot more than the price of replacement whips and a 5 year life didn't seem unreasonable.
Larry Shaw, F-24 Mk1, "Riaka", Auburn, AL

Documenting Your Boat

1. http://www.uscg.mil/hq/g-m/vdoc/genpub.htm

2. > Documentation is better if you leave the country as well, but it also allows the government to commandeer your boat in times of war

Also, it is illegal for a non-US citizen to be in command of a USCG documented vessel.
Don Wigston

3. It might or might not affect whether you have to register your boat in your state. State laws vary. You'll probably still have to pay any taxes due.

Dogs

1. No dog will be able to climb back aboard.

2. The nice thing is if you get them young enough they can be litter trained. (Obvious advantage on a boat!)

3. Don't get a water dog! My dog loves to swim. Needless to say...he is not invited on the boat, as he won't stay on it. If a duck swims by...he's off. He'll fetch swimmers...he doesn't care.

4. Get lifejackets for them. The jackets have handles on top to make it easier to get back on board. My lab's eyes practically bug out of her head as she strains to pull herself up with forepaws on deck but rear end swinging under the boat. She needs a quick grab to boost her up and over.

5. She loves to sail fast, hang out on the nets, bark at the dolphin and sleep under the stars. As anyone who has ever had a golden can attest, these dogs live for the water. I cannot imagine sailing without her, unless of course we are racing and I leave the extra ballast ashore!

6. Keep their toe nails trimmed , so they can use their paws (That is where Sperry Shoes got their tread design from originally) instead of sliding around. I put down a bath rug on the floor for traction.

7. Dogs with long, thick nails, like terriers and spaniels, on occasion may become temporarily 'stuck' in the net.

8. I have a 75lb Chow that Loves to be on the boat. He's Not much of a water dog though.

9. I watched a man that owned a schipperke bring it to his boat (small mono sailboat) for a ride. He did not do this regularly but the dog jumped on board and moved about the boat with complete assurance and took up station in the bow where it stood like a figurehead as the boat tacked and sailed. I had never seen a dog so at home on a boat, especially one that was not raised to water.

10. When your dog is a puppy train him/her with a crate, they love the security of a crate and feed them in it and have their water in there. Now when the puppy is small put the crate between the daggerboard trunk and the port side on the seat, then you have control of your dog when you can not keep watch over him/her while sailing and if they get seasick it is inside the crate.

11. It's the temperament not the breed. Unfortunately, you'll not be able to tell whether you have a boat dog until it's too late to take it back for an exchange.

12. The Chessie is the ultimate water dog - far more so than any lab or retriever. They have a special coat that allows them to swim in freezing water and are used for hunting in snowy conditions where they need to jump from a snowy bank into freezing water to retrieve fowl. The water doesn’t ever actually reach their skin - it penetrates the outer layer of hair but not the inner one - they actually have two layers of fur. In the water they actually swim better

than any dog I've seen. They have webbed toes and splay their toes making little paddles out of their feet which makes them fast swimmers. Its fun to watch them underwater with your snorkel gear. They can swim underwater with their eyes open. They are also very strong dogs - more stocky than a lab and have tremendous stamina.

The problem with ours was that she was a bit over enthusiastic about being on the boat. The wetter and colder the better and she would just jump in as soon as I slowed the boat to anchor etc. She was also really heavy to haul out of the water into the dinghy - it was like pulling aboard a person. Also a bit too heavy to lift in and out of the cockpit. Also the nails that any big dog has is going to trash your gelcoat so you can kiss that waxed shine goodbye.

Apart from that they are really cool dogs.

13. Our 30 pound poodle mix Lucky sails with me often. After a 9 hour crossing from Oceanside to Catalina his eyes are just about crossed. The worst part of him not being able to go on the boat is when I want to get an early start from an anchorage and my wife has to kayak him ashore in the chilly predawn. (I have a sit-on-top kayak that does not keep the paddler's backside dry.) But, Lucky is a trooper and doesn't complain too much.

When Lucky singlehands with me (he has only paws so it is still singlehanding) I keep a tether on his lifejacket that allows him to move around the cockpit. I can tell him which side to be on and he'll move as needed. He stays out of the way. I just have to keep our tethers from tangling.

Lucky is fascinated with marine mammals. He gets excited by dolphins cavorting by the boat. Sometimes he'll spot dolphins in the distance before we will. He will sit erect and stare or stand with his tail out and up and there'll be the dolphins. It is entertaining to watch him with harbor seals and sea lions. He gets super animated.

He seems to enjoy being on the nets while sailing in calm water or at anchor and roams the entire boat while moored.

The biggest negative is the sand his poodle coat brings back on board.

14. The most funny thing happens, when the waves splash from below: You should see how long dogs legs can become.

BTW: Samoyeds can NOT swim. They hate water.

15. I guess the only piece of advice I would give is to get the puppy on the boat as early as reasonable, once it is housetrained. Hanna (our lab) is totally comfortable on the boat, and generally will hold out without potty visits ashore for up to 4 or 5 hours. On the very rare occasion (actually only once that I recall) when she got "caught short" she rushed around looking very concerned for a while and then squatted in the net....which was just fine!

Labs love to swim and Hanna is not exception. So far she has never tried to jump off the boat into the water, but we have been careful not to encourage this for fear that she might do it at the wrong moment!

The only downside is that you will very quickly have little black (or yellow) hairs in every nook and cranny on the boat.....unavoidable!

When we are racing, we generally put her below, at least during critical maneuvers! Likewise we find it is a good idea to tie her to something when leaving the dock and arriving....she is liable to jump ship....particularly if the call of nature is great!

16. I sail with my Schipperke and I am fitting a sport ladder onto the transom of my F-9A to accommodate her. I don't like worrying about her falling in and not being able to get back by herself.

One of the catalogs (either Boats US or West) sells canine transom ladders. They are worth a look... but very expensive ($400).

17. Got a schnauzer naked Skipper. Not very nautical but the poor thing got its teeth cut on a 70 knot squall, then later fell off the boat during a nice spring day race. Almost lost wife who didn't believe dogs could swim. Recovered both, dog still sails, wife doesn't!

18. Most important thing is life jackets with a good handle on back. Even water dogs can't swim all that long, especially in any kind of seas. Keep their nails short. Dogs tend to slide around on the 'glass surfaces, we put down rubber bath mats in key areas.

Biggest downside is the HAIR! everywhere.

19. Well if you are going to take a dog along you could at least train it to hold a sheet in it's mouth and pull. Go for a breed with good holding ability with a bit of bulldog and you should be all right.

20. I put a life vest on my girl [85lb pointer/lab mix] because she will chase a bird or fish in heartbeat. Getting her back on board without the attached handle is actual work [something I don't like to do]. Also sometimes you can't get back to them as quick as you would like. Her nails scratch no matter what length and on occasion the claws snag in my tramps and she is literally anchored until I get her loose. Its that or she rips one out which she has done previously on my other boat. Basically she sits when this happens because it hurts a lot. Thom Merrill, F-25c 009, Charisma

21. Our 60 lb chocolate lab doesn't do any damage to deck or nets without booties. I did find paw wax this winter as the 03-04 bitter cold winter hurt her paws during our runs. The paw wax protected her paws and provided incredible traction.

If I were offshore (or on Champlain in a blow) I would not hesitate to put it on her paws for traction. She also wears a harness collar to pull her out when we swim.

James, Kokopelli

22. > I've been thinking about getting a dog. Haven't decided yet. Does anyone have any advice or first-hand knowledge of what breeds of dog seem to do well on an F-Boat?

Oscar Meyer....
Roger L

Note - After this thread, I got a black Lab mix. Sawyer is exceptionally active (his main job is to make me get exercise). He loves retrieving tennis balls form the water, so there's a standing order - no tennis balls on the boat - and his black hair gets everywhere. He's learned "go below" to get out of the way, and is still apprehensive of sailing. But he's comfortable on the boat when it's not moving You'll often find him on the closed pop-top hatch. - Editor.

Drogues, Series

Editor's Note - I asked Donald Jordan about the recommendations for an F-27. His reply follows. Also see **Sea Anchors***:*

David, I would stay with the 130 cones on 5/8 line. This includes a 75 ft. leader. There is no danger of it developing too high a load. There is little experience with very light boats and it is well to stay on the conservative side. As you can imagine, a light boat is accelerated at a higher g than a heavy boat if struck by a breaking wave.
Donald J. Jordan <donaldjordan@worldnet.att.net>

Electrical - AA Battery Chargers

I think you would want about 20 of the solar units to keep up with your usage. I am not quite as much a AA user as yourselves but do have the various flashlights and toys. Recently purchased a Ray-O-Vac Model PS 4 Nicad/NiMn charger and a supply of 1.8 AH, NiMn, AA bats at a local K mart.

These bats are not cheap but seem to be clearly the best. Have not tried the Eveready and other versions but expect they all derive from same source. Hold an exceptional amount of charge and will recharge in less than 1 hour. Seem to hold charge for well beyond one month in storage.

The PS-4 charger is also expensive but most sold include a 12 volt cig. plug. I have used these both on 12 and 115 V and find they are a quality product that really works. Works at night too when the flashlight screams for juice.

The Lithium ion bats will need their own system and these cost a lot more. Maybe in another few years they will displace the NiMn system as the rechargeable of choice but for now I

would go with the 12 V Ray-O-Vac system and power it through the boat's solar charged battery system.
Tom

Electrical - Batteries

1. The problem with wet cells, as has been shown by experience in capsize situations, is they leak acid when inverted and the resulting fumes/gas make the interior completely uninhabitable, which is a good reason to avoid their use if possible.

However, this is not a problem of any significance with boats used as intended and not venturing far offshore where inside living for a period of time may become a possibility/necessity after a capsize, due to unavailability of any nearby help or rescue.

However, there was one case of an F-27 being capsized in 1994 in the 'Needles' area in England, where there can be a very dangerous wind against tide situation. Winds were gale force and waves were very big to where skipper fell sideways while the boat was running, hitting tiller, and causing a broach to where the boat went over. It then became a relatively safe life raft but with one problem - the skipper had neglected to place any safety gear in the safety compartment, as recommended in the Sailing Manual, this being accessible from underneath. No flares, no radio, nothing. Thus a woman crew member swam inside to where she passed out some flares. However, swimming out again looked too dangerous due to the many ropes, obstructions etc. and she decided to stay inside. She was rescued six hours later by divers summoned after the flares had been observed and rescue had arrived.

Had this boat had a wet cell unsealed battery, it may have been impossible for her to get back inside and certainly fatal to have stayed in there where it actually proved to be quite safe. The F-27 was towed ashore, righted, and is sailing again today.

Incidentally, by way of comparison, the 35¹ ballasted monohull yacht Fairview Two¹ capsized in the same Needles area in 1997. However, in this case the boat did not make a good life raft and three crew members died.
Ian Farrier

2. Also in regard to batteries we all should really have sealed Gel or AGM batteries since a flooded battery, if capsized will spill battery acid into the seawater creating deadly chlorine gas making the interior of the boat deadly. The stock battery is flooded which provides the most amps for the $ and the weight.

Electrical - Chargers

Note - These concern chargers that maintain the battery during periods of little use. A small solar panel works fine, and you can leave the battery in the boat. - Editor.

1. One way to avoid overcharging is to get a little timer for the 110 V supply to the charger so that it only switches on for a couple hours per day.
Peter M. Lucas. F-27 #89, "Odyssey"

2. Check out the Marinco/Guest Chargepro portable 10A. It's available in versions for 1 or 2 batteries at around $100US, in 2002. West Marine handles this. May be available in a 220V version. Advantages: small, light, totally sealed to the marine environment, shock resistant, portable, 3-step automatic charger with LEDs so you know the battery status. Portable is nice if you ever want to download stuff to make your boat really lightweight.
Ernest Hardin

3. Best kept secret of battery storage are the small $20 automatic "float" chargers. Got mine at Harbor Freight for $16 (item 41288). It is a 13.5 volt regulator designed to prevent long term self discharge without water loss or plate damage associated with the constant current "trickle" chargers usually employed. Use on autos, boats, aircraft, lawn mowers, etc. One size fits all batteries to 125 A-H. Guest has a somewhat more capable one for more money. Theirs can also charge a discharged battery and then switch itself to the float mode for storage.

A solar panel with regulator achieves the same result but at about 20X the expense.
Tom

4. For as little as $30 you can get a Guest marine multistage charger which is both current controlled and voltage limited. THAT is a safe device to connect a battery to for long periods. They come in all sizes from about 1/2 amp max which is quite enough for float charging all but the largest batteries to multiple 10 amp circuits for fast charging at the dock. I've used them and they are terrific.
Pierre

Electrical Connectors

1. Fill them with petroleum jelly to help avoid corrosion.

2. Home depot and any major electrical supply house will sell you a small tube of circuit breaker grease. Some auto part stores also carry a brand of electrical contact grease. These are all conductive to electricity! Care must be used in the application of the grease, a small amount goes a long way and any amount allowed to "bridge" between two conductors will cause a short circuit. That said I use it for all connections exposed to the weather. A small amount applied to the male portion of the connector, (with the circuit turned OFF), will lubricate the female portion when pressed together. Be sure to clean, a small paper towel will do, any residual grease before turning the power back on!
Jim Bourgoin, SinGood F-27 #11

3. I built a horizontal housing for my connector set-up using 1/2" UHMW plastic with a 1/10" anodized aluminum top. The sides are screwed and bonded to the cabin top with 5200. The

top is screwed down to the sides with a silicone sealant along the edges so that it can be removed if necessary. A separate piece of UHMW with cutouts supports the aft end of the plugs should I inadvertently step on them.

The connectors that I used on Water Skipper can be obtained through Newark Electronics (www.newark.com 1-800-463-9275). The connectors are ITT Cannon brand listed on page 256 & 257 catalog #119. Receptacles, plugs, cable clamps, & pins must all be ordered separately as well as a special pin crimping tool. The "O" ring sealed versions are insulated to IP67 standards. I used gold plated pins & sockets and filled both plugs & sockets with dielectric grease. There is no sign of corrosion in 2 years of use.
Hank Brooks, F-31 "Water Skipper"

Electrical Meters

Note - the Link-10 is for single-battery installations, and the Link-20 is for dual battery installations. A web search will let you download the manual, which is useful. - Editor.

1. Despite what you might find published, the relationship between battery voltage and percent of full charge is a poor one. Ambient temperature is the largest confounding factor. The bottom line is that it is very hard to determine how fully charged your battery is based on the voltage alone.

I was frustrated by this for a long time. I finally got a "Link-10" battery monitor. It cost me a little over $100., but was well worth it. It is a small device that fits nicely on the small electric panel of my F-27, though it does project back towards the battery a bit so some care is required in locating a mounting location.

It is an electronic device that measures amps of current (charging and discharging) and integrates this over time to tell you how many amp-hours your battery has been discharged from full charge. This is the real battery level monitor. It does require a bit of wiring, and a bit of programming.

But once done, you can quickly see how "full" your battery is, as well as how fast it is "emptying" or "filling".

Try it. You'll like it.

The Link-10 battery monitor has certain charging parameters that it uses to determine that the battery is fully charged. They are described in the manual. (First, you need to follow the steps in the manual to input the amp-hour capacity of your battery.) At the end of charging, the voltage needs to be at least 13.50 v (if I remember correctly) and the current inflow must be no greater than some small percent (I forget the number - it's in the manual) of your battery capacity. For example if the number is 1%, then the charging current for your battery would need to be less than 1.05 amps. When these voltage and current conditions are reached, the monitor zeroes out the amp-hour counter indicating a fully charged battery.

So the answer to your question is that your charging device needs to be smart enough or small enough to finish charging at a small current.

By the way, the device has a little flaw in it's design. As you continue to charge your battery beyond the moment that those fully charged conditions are met, the amp-hour counter continues to count upward, suggesting an overstuffed battery. This accumulation of positive amp-hours is of course a fallacy. The manual describes how to manually re-zero the amp-hour counter in this case.
Peter M. Lucas, F/C 31 #225, "Flexible Flyer" North Bend, Oregon

2. I was tired of not knowing what my batteries were doing so I bit the bullet and re-wired the whole thing with a Link 20. It seems very robust and provides good information about my two batteries. Since I cruise / race, I have two of the 25lb gel cells and the Link 20 is very good at telling you what's happening to each, even current transfers from the strong to the weak battery when the switch is set to All!!! I also now have my 4 amp outboard charger coming into my solar panel's 2-battery charge controller / regulator (it can handle 8 amps and the panel can supply .6 max it seems OK to add the outboard charger to it and it has tested out well) I am convinced that wiring the outboard charger to the service switch and running the outboard for long periods without charge control is what toasted a Raytheon Wind instrument last year. Now I select the battery to charge using the charge controller and run electronics isolated from chargers on the other battery by using the service switch.
Jim Burkert, F-27 #119 - Andiamo

3. I've left 2 Siemens 55 w solar panels connected through a regulator and a Link 10 to a single 255ah battery for 5 months with a 12v refrigerator active the whole time (to keep cold 2 cans of Coke, one jar of mustard, one bottle of ketchup and a box of baking soda, but I won't go into that so close to Valentine's Day) without the battery being drawn down. The Link 10 was the only thing that kept me sane.
Ernie Lorimer

4. Besides a cutoff switch, install an inexpensive analog voltage meter, that reads in % of charge left in your battery. West marine sells them. It will tell you when it's time to turn the switch on or off. If you never let your battery fall below 50% charged it would probably last twice as long.
Marv Marcus

5. There are other ways to find this out...

For example...

a) Sound of Engine on - power going in to battery.
b) Motor is tilted up - battery is not being charged by engine.
c) Sight of sun in the sky - solar panel is charging.
d) Sight of moon in the sky - solar panel is not charging.
e) Radio making noise/little numbers are on instruments/cabin is bright even though its dark outside - power is being drawn from the battery.
f) Stock volt meter reads 13.5v - battery is fully charged.
g) Stock volt meter reads 10.5v - battery is dead.
h) Stock volt meter reads somewhere between 10.5v and 13.5v - battery is between full and empty.
i) Lights dim/and engine turns over very slowly or not at all - you need to start by hand.

I don't mean to be a smart ass but while the Link 10 is a cool gadget, it is hardly essential - most of the information from it is not truly essential.
Tim Cobb, "Wahoo" F-31

Electrical Regulators

Note - You can download the manual for the popular Flex Charge NC25A regulator. Do a web search for it. - Editor.

1. If you look in the West Marine Catalog the cheaper regulators are marked as “shunt type regulators” and cost $50-60 and they are marked for solar panels only because they short (shunt) the output of the panel. The more expensive “series type” can regulate solar panel or an outboard and cost $110 plus. When the manufacturers marks the regulator for solar panel only they have a reason.

The original problem was how to prevent various charging sources including an outboard motor from overcharging an Absorption Glass Mat battery. This problem is especially severe because my solar panel keeps my battery fully charged at all times, and thus if I get in my boat and have to motor some distance the battery is always getting overcharged. Overcharging AGM batteries causes the electrolyte to be electrolyzed faster than the gases can be recombined, so they leak out the valve and cannot be replaced.

Here are all the kinds of battery charging regulators that I discovered:

a. Alternator regulators. These work by adjusting the field strength in your alternator to control the amount of current that it generates. This is what you want if you have an inboard engine with a marine alternator. It's better than anything else because it actually adjusts the charging source to control the amount of current produced (and thus the amount of load on the motor) to just what you need.

However, I don't think that small outboard motors have alternators of this type. Instead, I think they have permanent magnets that you can't adjust. In any event, I did not want to take apart the electrical system of my outboard to add components because I was afraid of opening up a sealed system, and I didn't think I could get anything else inside the case. I also didn't want to run additional wires to the motor that might give more opportunities for things to corrode and fail.

b. Shorting regulators. Also called (incorrectly, I think) "shunt type". These work only with solar panels. The idea is that you already have a diode which permits current to flow from the panel into the battery, but not vice versa. Thus if you short the panel with a relay, the solar panel current will flow through the short, and not into the battery, and the diode will prevent any current from flowing out of the battery. Obviously this works only with charging sources that are happy to be short-circuited. I cannot understand why someone would build such a regulator, since it seems that the exact same logic, trivially different wiring, and a less hefty relay would make a disconnection regulator instead. I think that the FlexCharge PV7 and PV14 are of this type.

c. Disconnection regulators. These work by disconnecting the charging source from the battery. They work with solar panels, wind generators, etc. They won't work right with alternators, because when you operate the alternator without any load it will produce a high voltage, which will probably burn out the diodes. This problem can be fixed by installing higher-voltage diodes, but I don't know if the result still causes trouble with your alternator or not. I didn't want to use this technique to regulate my outboard motor alternator anyway, because of wiring issues. The Flex Charge NC25A is of this type.

I got in the above diode trouble once without using an alternator. The problem was that I had a solar panel and a towed-propeller generator connected together, and then a disconnection regulator between them and my battery. When the regulator opened the circuit, the sudden loss of load to the propeller generator caused all the twist to come out of the torque line suddenly, driving the generator very fast and creating a high voltage which burned out the solar panel diode. I fixed it by putting better diodes in my solar panel.

Some regulators of this type have a "diversion" output, which directs your charging source output to some device that you run only when your batteries are full. The device has to be able to accept completely unregulated voltage from the charging source. Don't confuse this system with the type of regulator below.

d. Diversion regulators. These attach to your battery, and don't need to know anything about your charging source. When the battery voltage is too high they activate some load to use up the excess incoming current and protect the battery. They work with any charging source, including outboard alternators, and they don't require extra wires to the charging source. I bought a "Rudman regulator" (see www.manzanitamicro.com/parts.htm) for about $20. There's also a brand called Battpro and perhaps others.

The regulator that I got came as a bare circuit board with no housing, but I got it to go nicely in a small box from Radio Shack. You also need to have a large enough load to dissipate the power that your alternator produces. I used a regular automobile headlight for this, but a better choice would be a "dock light", which is really the same thing in a better container. Another possibility would be a bar of a few lights intended for brake lights or trailer lights. Remember when you are calculating your load that it is the current at 14V or so, not 12V that you care about.

The Rudman regulator turns on the load at an adjustable voltage, and turns it off 0.1V lower. The result of this is that the load turns on and off quite rapidly if the extra charging power is smaller than what the load can dissipate. I wouldn't use anything but a resistive load (heating or incandescent lighting).

I have connected my regulator directly to my battery, so that it is on even when the main power switch is off. The power draw is quite small (4mA), but this does mean that if the regulator fails with the load on that my battery will be wrecked. If you aren't worried about overcharging your battery by solar panels or wind generators that run when the power switch is off, then you could wire it differently.

This system takes care of my main need very well, but there is one thing that it does not address. That is that when you have solar panels, your battery is likely to be floating at a voltage fairly close to the maximum charging voltage for a significant portion of each day. This is not really that good for batteries. It's good to charge them up to 14.2V or so, and to hold that voltage until they are charged, but if you're keeping them on a charger for long periods of time it's better to use a float voltage of 13.2V instead.

Thus, what you really want is a regulator that knows whether the batteries are charged or not, and uses 13.2 if they are charged but 14.2 if they still need charging. It might be possible to use something like a Link 10 amp hour meter that has an output saying that the batteries are charged. You could also wire in a manual switch to change the voltage, and when you're leaving your boat and you know the batteries are charged already, to set it to the lower setting. I haven't tried any of these ideas.

One often hears that if a solar panel produces (in amps) less than 1-2% of the battery capacity (in amp-hours), then it does not need regulation. This claim does not appear to me to be correct, at least with my new 95 AH AGM battery. At noon, my "18W" solar panel was producing about 1A, and this was all being dumped by my regulator, with < 0.1 A going into the battery, which was nevertheless maintained at 14.1V. I think without regulation it would

have been being significantly overcharged. Thus, at least with AGM batteries, and perhaps with any type, even small solar panels should be regulated.

If you don't regulate your alternator, then your battery voltage will not be 14.2 or 14.4, but rather 15 or 16, depending on your alternator regulator, if any, in your outboard. This will not be good for your batteries.

As for the problem that the solar panel will charge the batteries every day up to too high a voltage, one solution is just to set the voltage of your regulator lower (say 13.8). Your batteries won't get charged as quickly, but the slow charging will occur only when they are mostly charged. When they are discharged, the voltage won't reach limit anyway, and so the charging will proceed at the regular speed. In any event, if you leave the solar panel in the sun while your boat is on the trailer, then your batteries will end up fully charged by the time you want to use it next.
Ken Olum

2. My -24 has a 85a/h gel and a little 11w flexible solar charger. That's it, no alternator, no regulator, no shore power. I run instruments, lights, including 3 cabin lights, gps, sometimes a laptop and an autopilot.

My boat came with a Seattle Cruising battery monitor. This little gem of a unit tracks amps in and out of the battery, and voltage. It can tell me at anytime what the charge state of the battery is, and what it's reserve capacity is, (which theoretically goes down over time).

The cabin lights are little 1.2A halogen singles, except for the night light, which is an LED stop light array off the back of a GMC truck. Nav lights are standard tungsten, although I've been watching the LED nav lights with interest. When mine get corroded and quit I'll change.

The computer and the autopilot are the worst hogs at 4.5A each.

At no time have I drained my battery more than 20 a/h, which is about half it's usable capacity. This includes a 3 day trip on the Columbia River single handing, using the autopilot about half the time. In fact, because I put some effort into orienting the panel to the sun, the battery had more charge after the trip than before. After 5 days of racing at Whidbey, including staying on the boat at night and running the PC, the battery was down 6 a/h.

Sometimes the solar panel will push the battery 5-10 a/h into overcharge. But the rate is so low that I haven't noticed any out-gassing or loss of capacity, which the monitor would alert me to. I just disconnect the panel for awhile when that happens, or leave a light on to pull it back down.

3. You can get a smart 10 amp regulator for $30-40 from www.windsun.com- works a treat.

Also as far as regulating the outboard I seem to remember someone saying that you could not simply disconnect the engine charger without damaging it, rather you had to provide an

alternate load. I think there are warnings in the manual about running the motor with the battery disconnected.
Tim Cahill-O'Brien

4. If you look in the West Marine Catalog the cheaper regulators are marked as "shunt type regulators" and cost $50-60 and they are marked for solar panels only because they short (shunt) the output of the panel. The more expensive "series type" can regulate solar panel or an outboard and cost $110 plus. When the manufacturers marks the regulator for solar panel only they have a reason.

I used the PV7 regulator for 3 years with my 40W panel and I still have my original battery and the system is working great.

I'm sure the NC25 would work well for you, but I don't see any need to divert the excess current. That feature is only for a wind generator or devices that would run too fast without a load. A solar panel or an outboard generator can be disconnected without any ill effects.

The PV7 works only for solar panels because it shorts the output as means of regulation and the solar panels do not mind being shorted or opened or anything.
John Pavel, F-28

5. I also had two independent regulators installed. I had a problem with the solar panel charging the battery fully causing the FlexCharge NC25A unit to disconnect the battery from the engine and engaging the divert circuit, though the solar panel was still charging and the engine was off. The FlexCharge unit would not re-engage the battery until the voltage dropped which it wouldn’t do since I wasn’t running any load and the 75w panel was still charging. Then because the battery was disconnected from the engine I couldn't start the engine. The solution was to disconnect the solar panel and turn on some lights to draw down the voltage so the FlexCharge unit would re-engage the battery/engine. This problem does not occur if you don’t have a second regulator and use the FlexCharge unit regulate both the panel and the outboard as it is designed to do. This problem only happens when the panel is plugged and the battery is 100% charged.
Tim Cobb, F-31

6. Yamaha tech said divert load was definitely required if installing regulator (charge has to go somewhere). FlexCharge recommended solenoid as initial current used to turn engine is fairly high and may damage regulator.
John Croft, Summer Breeze

7. My F-27, hull #80, came without an alternator on the motor. It does have the 43 watt solar panel, hooked directly up to the battery with no regulator. In 2002 I replaced the battery for the first time since the boat was built in 1989. Our electricity load is minimal though. On a trip we use it more and haven't run low.
Dave Paule, F-27 Second Chance

Electrical Troubleshooting

1. Hopefully you have a volt/ohm/ammeter and not just a voltmeter. If not, this is a good excuse to get a new digital one. Any inexpensive one will do for these tests. I also assume that the battery is KNOWN to be able to take a charge. Don't ignore that possibility; it is the most likely culprit....

a. Now begin by checking the output on the flexible panel again. Do this test in sunlight without the panel connected to anything except the meter. You are making sure that the output wires on the panel were wired in the proper polarity. A digital VOM will let you know this by a showing a + or - sign before the voltage number. You want to see a +. If you are using an old analogue meter type of VOM with a swinging needle, most will attempt to move the needle backwards when it is put into a circuit with the wrong polarity. A few of the old type VOMs just won't show anything when reversed because they have an internal blocking diode.

b. If the panel passes the first test, the next test is to darken the panel completely and connect the panel directly to any 12 volt wet cell battery WITHOUT having the Link in the circuit. Change the VOM mode to read the highest current range, and place the VOM leads in series with either one of the leads between the battery and panel. Since the panel is darkened, you want to see that no current (amperage) is flowing. This is a check that the blocking diode in the panel is working properly. Note: anytime you check current with a VOM, begin with the highest scale and work backwards. Expect that most blocking diodes will "leak" a little and even a good system will sometimes flow a few microamps in the wrong direction. If it is flowing in the ma range or above, then the blocking diode is leaking too much and will discharge the battery during dark periods.

c. For the third test, you can leave the VOM connected like in #2, and with the panel completely darkened, but add the Link in the circuit so that it is wired between the VOM and the panel. Again you want to see no current flowing. Be careful here, because if the Link 10 is bad then the current can be high enough to melt wires. BTW, in any electrical test you can always limit current to a safe level by placing any 12 volt bulb in series with the meter. With the "safety bulb" in series, any discharge current cannot go above the rating of the bulb. (25 watt bulb at 12 volts would limit the current to about 2 amps). If you see current flow now then either the Link is wired wrong or is defective.

d. Final test: With the system wired up as in #3, expose the panel to sunlight and you should see a charging current begin to flow. And if that is the case then I'd say everything is right and we are back to suspecting the battery's ability to hold a charge.
Roger Loving, F-28CC

2. Some time ago I reported of a seemingly healthy solar panel totally discharging the battery instead of charging. Speculation had it that the Link 10 battery monitor might be in part the culprit.

Well, with Roger L's descriptive "how to" instructions I found the real problem: a small regulator that I installed to protect the battery from being overcharged, gone bad. With the solar panel plugged in, the device put about a 350mA discharge on the battery and in a weeks time usually left it totally drained. Even with the solar panel disconnected it must have put a small amount of discharge on the battery, thus my interpretation that the Link 10 is using excessive power.

Should this device be replaced for charge sensitive batteries? Again Roger's advice to use a 10 Watt solar panel in an unregulated manner will likely not harm the AGM battery I am using was the right choice. Indeed after a few weeks cycles of solar charging I usually found a fully charged battery on the weekend and there is no indication whatsoever that the Link 10 battery monitor has any negative effect on the system.
Felix Kagi

Emergency Preparation

1. If you have to use the emergency hatch after a capsize, it's best if it is located somewhere between the akas. If it's aft of the aka, you have nowhere to go but into the water as you emerge, and trying to shinny down the sloping bottom to get back into the hatch will be a pretty iffy maneuver.

If it's between the akas, you can stand on the tramp and only have water to your calf. And being able to stand on the sill of the hatch would provide good footing to hop onto the hull. On 3D, we found it was next to impossible to get an adequate grip on the flared part of the hull and depended on the folding strut attachment points. It would be much more feasible to drop from the hull into a hatch that was between the akas.

As for cutting into the aft cabin at sea, where're you going to be standing when you do it? Not much room for cutting from inside the aft cabin, either. The berth may be above water level, but not by a whole lot. The cockpit sole on 3D was submerged, so you'd only have the height of the footwell under the cockpit to work with. You will basically be laying on the backside of the cockpit sole with your head and shoulders extending into the aft cabin.

In general, I don't see cutting through the hull at sea as being a very viable option, especially with something like a hatchet. A drill and cable saw may be a better option. Try it out on a sample of hull structure - I'm sure the list would like to hear your results.
Cheers, Tom Speer

2. If I put a hatch in aft I would install aft nets in the triangle aft of the rear aka to stand on in the event of inversion. (Can you use aft three times in the same sentence) Wouldn't try to cut from here. Best cutting option is just aft of the forward starboard aka & underlying bulkhead. On my boat there is an open area here with no furniture or anything else in the way. My cutting tools are a hatchet to start the job and a cobalt reciprocating saw blade in a multi saw handle. On test panels it easily goes through hull material. One of each goes in the crash

compartment and a second of each stays inside the boat. We have carried this combo for years, long before the Doublehanded experience.

Note - The blade and handle by itself is sufficient - scrape a hole. It takes less than a minute to penetrate to where you can saw an opening. See the picture under **Hatches - Emergency** - *Editor.*

The ideal cutting location would not be under the cockpit as this is the driest spot inside the inverted boat, on the bottom of the cockpit floor. I wouldn't want to expose this area to breaking waves.
Ron White, "Stampede" F-31

3. I have read the capsize threads with great interest, as I'm sure we all have, in order to learn from them. Based largely on Tom Speer's account on 3D, I thought it would be a smart Idea to try and relocate my EPIRB into the capsize compartment that is built into each of our production boats. The purpose of this note is to let you know how it worked out.

I detached the EPIRB from it's mounting bracket and placed each piece into the safety hatch one at a time. I then re-attached the EPIRB to the mounting bracket. There is enough room to mount it to the forward facing wall of the safety compartment; something I will do very soon. I then took the GPS wire and led it under the cockpit and over to the port side (my gps is on a swing mount on the inside stbd side of the main bulkhead). I drilled a small hole into the safety compartment from inside the boat. I fed the GPS wire in through the safety compartment, into the inside of the boat on the port side under the cockpit and rebooked up the wires (after initially cutting them so I could feed the wire through the hole I drilled). I then left enough wire in the safety compartment to enable me to remove the EPIRB with the wire still attached, then I sealed up the small hole. It worked out perfectly. I now have an EPIRB mounted in the safety compartment that gets ongoing data from my GPS. If I flip, not only is the EPIRB easily accessible, but the latest GPS data is ready to transmit.

Additionally, the spare GPS I carry in the safety compartment is a Garmin (as is my main GPS), and with it I carry a wire harness that connects this spare handheld GPS directly to the 406 EPIRB. That way if my main system fails because of shorting out or something, I can still transmit my position. Once everything was in place I had plenty of room to reload my handheld VHF, flare kit, water and emergency food, etc. back into the compartment.

I'll likely remove the EPIRB and put it in the main hull when I'm not sailing (for security purposes), but I wanted to share with you all the fact that you can have a GPS compatible EPIRB hooked up and ready to go in your safety compartment if you choose to. From reading the capsize accounts, I for one feel much safer having it in this location than mounted in the main cabin.
Mike Maurer, F-31 #179, Third Wish

4. I believe some early F-31s may have got away from the factory without the required safety compartment being fitted (some early F-24s too). If not there you can contact Corsair and they can remedy this.

Ian Farrier

Engine Covers

Note - There were more comments like these. Some people added additional sound insulation to it. - Editor

1. I've got the one from "The Finish Line" and find it very well built. It helps to lower the motor noise of my 8 hp Nissan and gets rid of a place to break my ankle when I'm doing something on the roof of the aft cabin. It fits and looks like a factory item.
Greg Cole, F-27 #302 "Mxyzptlk"

2. I had one on my old boat and loved it. It not only made walking around much safer but significantly quieted the outboard. You will need to set up a block and cam cleat to raise the engine,
David Shneider, High Priority 2 F-31R

3. Suggest purchasing an insulation kit from Defender for your OB. It's foam on one side and Aluminum foil on the other. It really works. You cement it in the engine cover. Will cut the noise in half!
Marv

Engine Well - F-27

1. > Can anyone help me? I wish to cut away 2 to 3 inches of the flange on the starboard side of my engine well on my F-27. This flange is limiting rotation of my Yamaha 9.9 for steering .I would like to know how deep I can cut into this flange without causing any problems?

Cutting it away is not a structural problem, but it could create a leak problem. Could then be hard to fix on stbd. side.
Ian Farrier

2. The main problem with outboard wells, besides the inability to turn the motor, is they are very time consuming to make.

Far easier to just put a bracket on the back, and run control cables as required. Everything can be done remotely.
Ian Farrier

3. > I purchased a Honda 8 hp 4 stroke for my 1987 F-27. it was supposed to fit. I got it mounted but it doesn't have enough aft clearance to go completely down or to bring it up sufficiently. at first I thought I should return it because I didn't want to do any carving on the engine well, but I saw another F-27 like mine that had carved out a big chunk for a Yamaha

9.9. Will I encounter any structural problems if I cut the clearance out and epoxy/glass? does anyone know of a 4-stroke that will fit the stock well? Is a 2-stroke the best option?
Kenny McLain

We've done quite a few F-27 engine upgrades, and unless you're sticking with a Nissan or Yamaha 2-stroke replacement, you'll most likely need to enlarge the space. Simply attack with a Sawzall until you've hacked away enough material so that the engine lifts and drops properly. You may even be able to create a large enough space so that you can swing the engine left / right to give you greater maneuverability. Don't worry, you won't be affecting anything structural.
Regards, Ira Heller, The Multihull Source, http://www.themultihullsource.com

4. Tomorrow I put the finishing touches on a new engine installation. I'm installing a new 2000 Honda 9.9 four stroke in our older (1988) F-27. The glass work is finished. We had to open the engine compartment considerably. It is 4" longer and 2" wider than stock.

Someone asked about turning the engine. No, it won't turn but then my 8 hp Johnson wouldn't turn in the original well. There is just 1/2" of clearance on either side of the engine before it hits the edge of the well.

All told (December, 2002): $2,200 for the engine, shipping and shift/throttle bracket; $1,500 for the glass work; $200 to install the engine with a control box and new cables.
The 2002 Honda is wider than the 2000 model and looked impossible from the start. I am not able to turn my new engine at all.
Jack Johnson

5. I did not do the mod myself and unless you were a "good" glass worker I wouldn't try it.

Width. The compartment is about 2 inches too narrow. The hull side can be fixed by simply removing the lip that extends into the compartment. The outside was accomplished by removing some of the material which squares off the outside of the housing and opening the join, pushing the wall out and reglassing the join.

Length. This was the most extensive portion of the project. He took a Sawzall and made a vertical cut at the edge of the rear panel of the compartment from the bottom to within an inch of the top. He then cut across the bottom of that panel which made it into a flap. We then started fitting the engine in the well and removing as much material from that little shelf in the aft cabin which is between the aft cabin bulkhead and the engine compartment. It took about 4 inches. He then took the rounded corners of the compartment which were now not attached to the flap and made several horizontal cuts with the Sawzall. This made the curved corners more flexible. This left us with a flap, hinged on the top and large gaping slots in each rear corner. The bottom of the flap was tab glassed to the remainder of the shelf. When this set he ground the rounded corners to make them thinner and more flexible. He then laid up the whole back of the compartment from inside the boat (we removed the rear window). When the resin set he ground and fussed until he was happy with the smoothness and then he gel coated it all. It really looks like it was made that way. The engine mount was untouched.

Jack Johnson

6. The picture below shows just part of the work done to my boat this past summer (January, 2004) to change from a 1986 8 HP Yamaha 2 stroke to a 2000 8 HP Yamaha High Thrust 25" shaft four stroke model. LOVE the higher torque of the engine and the quiet when I am sneaking back through the moorings late at night!

Jim Bourgoin, First Tri, F-27 Hull # 11, Wareham, MA

Jim Bourgoin's F-27 engine well, in the process of being made larger for a Yamaha 8 hp 4-stroke high-thrust outboard. Note that at this stage, he's cut completely into the aft cabin. Also, he hasn't touched the mounting plate for the motor.

Dodgers and Biminis and Triminis

1. The Lexan doghouse from The Finish Line worked, was quite strong but also quite heavy. It was a bit fiddly to install, but once setup, was quite solid. The quality of the finish wasn't brilliant. You might be able to build one yourself for less.

2. I'm not sure I would want that for two reasons:

a. Yes its nice to have a clear view in all directions, but it is nice to have the breeze come thru when at anchor, or when cooking.
b. Weight, as mentioned before
c. After sailing our F-27 with the pop top cover(Canvas with bug netting for windows, the canvas Velcroed the window shut) which I liked until I started sailing the boat harder in bigger seas and realized that unless I wanted to bail the main hull I was better off shutting the pop top to prevent water from coming in.

If you have a tarp or boom tent at anchor then you really don't need the doghouse. It's rare that you will use it while sailing!
3. For ventilation on hot summer nights, nothing beats a "mosquito bar". This device is a huge pile of mosquito net fashioned into what appears to be a room which can be suspended from trees. Just drape the thing over the open pop top and voila, the breeze comes through and the critters don't. We use it over the pop top cover and without the cover. My wife insists that it goes on before it begins to become dusk.

4. We used a "mosquito net kit" from West Marine. I think we used 2 of the "large" kits.

Simply cut the pieces and glue on the Velcro ...

a. We have 2 pieces that Velcro into one long piece that are then velcro'd to the underside of the pop top and then the underside of the lip -- onto the carpeting.
b. Another piece, velcro'd to the pop top carpet drops down and covers the companionway and Velcros to the mouse fur on either side and under the bottom.
c. A small square with Velcro glued on 4 sides sticks to the ceiling to cover the front hatch when it is open.

Easy to deploy and get in and out.

F-24 Mk 1 Bulkhead to Hull Joint

1. This is an account of a major structural failure on my recently acquired F-24 Mk I, hull 135. Under the cockpit of this model is a transverse foam bulkhead that helps support the cockpit weight, but whose primary purpose is to hold the hull sides together at the location of the folding mechanism. Each time an ama is depressed, this bulkhead receives a tremendous load in tension transferred from the lower folding mechanism arms .Without proper bulkhead to hull bonding, these loads would be absorbed by the hull alone, which is then flexing freely at the attachment point of the folding mechanism. Sooner of later, the loads from the lower folding mechanism will cause the hull material to fail.

'Creaking noises' under the cockpit lead us to inspect the area and a flashlight made the damage instantly visible. On the port side we saw that all the tapes joining hull to bulkhead were detached from the hull. Also visible was the free flexing of the hull material. That ended the St Pete NOODs for 2002.

In a rising breeze we beat a hasty retreat from Tampa Bay to the quiet of our slip. Next came the task of locating a good (and skinny) glass artist to slither down to the damage and effect repairs. Part of the joy of ownership on the F-24 Mk l model is its single cockpit locker hatch. Just inspecting the under-deck areas to port requires a contortionist free from claustrophobia. Our brave repair artist was Kevin Dunn, skinny and a true professional in the art of laminates and resins. His inspection found a yard of 4" tape that been inadequately wetted out with resin. The opposite side had detached from the hull. The bulkhead itself was a crudely hand

fitted affair using substantial amounts of putty to make contact with the hull. In several locations the laminate tape ended at the putty line rather than the bulkhead - totally useless as structure. We pondered a thorny question: after 134 previous F-24 Mk l's, why hadn't Corsair patterned this bulkhead for a better fit and cheaper construction?

Using the cap shroud adjustors we could open up the bulkhead-hull gap by 3/4" which translates to 4" of vertical movement at the ama - not a good thing for speed or safety.

An email to Ian produced an 'unofficial' schedule of laminates and bill of materials. He commented that his involvement with the F-24 Mk I ended prior to production and marketing. In any event, the recommended repair was 3 schedules of glass in epoxy. Kevin translated this into 3 staggered layers of DBM 1708 on the port side and 2 layers on still attached starboard side. He used a 5 to 1 scarf ratio for the laminates - very conservative. The grinding, mixing and laminating took 2 1/2 working days followed by one day of touch up grinding and vacuuming. Our folding mechanism support structure is now at least three times as strong as the factory originals. The strength and stiffness is immediately visible as soon as the boat hits a wave; the amas no longer flap up and down. The shrouds stay tight too. There is also less water being disturbed by the passage of the amas.

The three key ingredients to this repair were: a strong air exhaust, proper raw material with a method to transfer glass and resin into the work area. And, of course, a professional glass artist (not your kid nephew) who can operate in a very restricted space and still turnout uniform work.

For both sides of the bulkhead the job took around 21 man hours for the man inside the boat and the same time for a semiskilled helper working on the ground.
Carlson

F-24 Centerboard Case

1. > I've bought a '92 F-24 Mk I last week and sailed it for the first time yesterday. When sailing upwind (centerboard down), there is a loud cracking sound that resonates in all the boat....each time I pass through a wave. I've tried to search the origin and it appears to come from the vertical panel of the main berth (the one that become double) who is moving side-to-side by 1/8". All the berth is moving. I presume that this come from the centerboard ? When it is up, the sound is less.

> Do I have to worry about something serious or it is normal. If this must be repaired, does somebody has done it before and can suggest me a solution.

Needs to be checked out properly and cause may depend on what hull number you have. It is probably the top of the case breaking away from the screwed down top cover, in which case you should be seeing some leaks at higher speeds as well. So you need to remove this cover and look.

Early F-24s also had a narrower top sealing flange than I specified, (one of those 'unauthorized changes') and this is much more likely to leak or fail over time - there can be a lot of pressure inside the case. Usually silicon is more than enough to seal this join, but if the join area top flange is less than 1 1/4" wide then it may be best to use a stronger polyurethane such as Sikaflex or 3M5200. Just a bear to get off again. If the problem looks like it is something else in the case area, then email me a photo.

If the case is not the cause, then check out your beam compression pads as Mike Parsons suggested. Details of these are on my owner's page at http://www.f-boat.com/owners/index.html
Ian Farrier

2. I had a direct request to detail the repair of my jammed center board on my F-24 MK I.

I removed the top plate while the boat was in the water. If you do this repair while your boat is in the water be very careful removing the top plate. The buoyancy of the rudder will push up when the plate is removed pushing a steel retaining rod out of its groves. The rod could fall down beside the board into the water. The steel rod lays into notches on either side of the center board trunk. Around the rod is a loop in the blue 'board down' line, which then goes to the top of the rudder around a block. Pulling on the blue line pulls the top of the rudder (which lays facing forward in the rudder up position) aft causing the board to go down.

On top of the rudder just before the block was a plastic 'line guide' that was broken. By the looks of the broken edge, it had been broken for some time. This break may have contributed to the jam, but I believe it jammed because I pushed the board into the trunk from below without having tension on the lines.

I bought about 4 inches of inch and one quarter plastic reinforced tubing and cut a 1/2 inch section out of the tube. I then used the original two screws to screw this line guide in the original position. Cleaning the caulk was about a 2 hour job. After cleaning I attached the top plate with about 10 screws and did a test. It worked fine.

After cleaning caulk for two hours, I just could not make myself pull the trigger on my caulking gun. If it jammed again, two more caulk cleaning hours.

I went to West Marine and bought some closed cell gasket material used for lining hatches. The material has one sticky side and is about 1/2 inch in width and about 1/8 inch thick. I lined the gasket material on the top plate just inside of the screw holes, and then rescrewed the plate in place.

Went sailing Saturday on San Francisco Bay. The knot meter said 15.3 knots at one time and NO LEAKS.
Roger Harshaw
F-24 MK I #28 Pterodroma

F-31 or F-9 Double Mainsheets

> The picture of TRI ME with the double sheets
> <http://groups.yahoo.com/group/F-Boats/files/Leneman%20System.jpg>
> looks as if there was no traveler. What provides the referenced required compression support?

The inward compression forces from the aft beams can be up to 15,000lbs, which is considerably higher than that ever developed between the deck attachment points of such a split mainsheet system (maybe 1500lbs tops).

So there is no need for a compression member as the open cockpit can resist this on its own without help. Just a little flex at most.

Just don't remove original traveler!
Ian Farrier

Faucets

1. Our F-27 used a Fynspray # WS63-B, about $50 - West Marine. Uses a 2" cutout. Service kit ($7) includes seals and link between handle and piston, but not the seal around the handle. Other similar pumps have different cutouts and size of "barb" for the hose. I'd rather have a foot pump or electric, but haven't designed an installation yet.
Paul Abendroth

Fastener Material

1. Either 304 or 316 stainless steel fasteners can be used, and there appear to be no problems in combining 304 and 316

Type 316 is the most corrosion resistant, but it is also slightly weaker. However, safety factors are usually always high so this should not be a concern.

Type 304 is cheaper, but will rust stain over time in salt water, and can start to look ugly and even stain the surrounding hull surface in many exposed exterior areas. Thus I prefer Type 316 in all such areas wherever possible. Type 304 is fine where economy is important, and is used on many commercial fittings (one can tell by the brown staining). Frequent fresh water washing can help prevent this.
Ian Farrier

Floatation Compartments

1. > Boat does float when main hull full of water, but very low in the rear. Would render motor inoperable in any waves. Boat immobile. Anyone ever think about making the area underneath the cockpit watertight?

This is one area where the aft cabin boat is superior, with the aft bunk being an additional watertight compartment *(Note: the F-27 uses this area as an aft floatation compartment. The question refers to one of the Corsair aft-cockpit boats. - Editor)*. In this respect, with the original F-31, note that OSTAC put hatches with ply covers in the aft bunk, which was something I was never keen on, as this is not the best place for storage, and an extra buoyancy compartment is lost. Corsair continued with these hatches for some time, and if your F-31 has them I would recommend screwing them down with some silicon sealant, and making it a true watertight compartment. But also fit a 'screw in' inspection hatch in the cover or at forward end of bunk top to check for any water entry.

Without an aft bunk, the boat is still not going to sink, but will float much lower aft, and this can be countered, if wished, by fitting a sub-bulkhead just under the companionway, with a large but sealable hatch in it.

I also recommend checking the forward bunk for water tightness at the aft end, as it is not uncommon for wires or hoses to be run through this without properly sealing the hole. This has occurred on new boats too, and it's something I would always check for.
Ian Farrier, http://www.farriermarine.com

2. The major compartments, as under bow bunk or aft bunk, should be separate and watertight from the rest of boat below the top of the bunk, so that they can act as watertight compartments. But they must also have an access port to inspect for water.

Otherwise and elsewhere there should always be limber holes to drain any water to lowest point.
Ian Farrier, http://www.farriermarine.com

3. > There's a concept here that I'm missing, maybe. It can be demonstrated that an F-27 (or any F-boat?) will stay afloat with ALL compartments flooded. So why bother with any water-tight compartments?

So that the boat will float higher should it ever get flooded - could be an important factor in any survival situation, particularly if motor is required.
Ian Farrier

4. If the bow U-bolt needs replacing then it is quite acceptable to fit a good inspection hatch, if your boat doesn't already have access to it.

The very forward compartment has a drain hole in the aft lower corner to prevent any water collecting in this compartment, unknown to owner (which has happened and would be a bit of a drag/safety hazard to say the least). It thus then drains into the second watertight

compartment behind anchor well bulkhead, which should be watertight, and has an inspection hatch to check for any water leaking in.

In general, with watertight compartments, it is important that every such compartment should have a drain or access hatch of some sort so that it can be inspected for water.

Further in regard to watertight compartments, there are other safety related items that are also worth checking as follows:

a. Check that any wiring or head hose holes into any watertight compartment have been properly sealed.

b. Where aft bunk is present, also check that this is a watertight compartment. Some earlier F-31s were sent out with a loose floating hatch, instead of a sealable hatch, as should have been there. If you have the loose hatch, consider screwing it down over some silicon, and fitting a 'screw in' inspection hatch at the forward end of the aft bunk, so one can check for any water.

c. With aft cockpit models, there is no aft watertight compartment as such, and I have recently begun to regard this as a possible safety weakness, in the case of the main hull being holed and flooding. This was demonstrated by a recent incident with a Dragonfly 25, which flooded, and was capsized backwards, when the crew moved aft, and all the interior water also flooded aft, As it heeled backwards, the weight of the mast was enough to send it over - the exact opposite of the inverted righting procedure in fact. Not a likely occurrence with my designs, which have much more buoyancy aft in the main hull and beams than the Dragonfly 25, but it has now been demonstrated as a possible hazard in any aft cockpit boat, with the transom area being open to the main cabin.

Thus I am now considering adding an aft watertight compartment to all my aft cockpit designs to guard against this - just in case. Wouldn't take much to incorporate in an existing boat, a simple method for example being just tying some empty large plastic (light) containers inside near or at the transom.

However, I don't recall anyone reporting this as a potential problem on those few F-boats that have ended up with the main hull flooded, but it is something to keep in mind.

d. Similarly this would also a possibility with boats that do not have a forward bunk, and where the bow is open and devoted entirely to a head area. In this case, be sure that there is adequate reserve buoyancy in the bow, and any compartment there is properly sealed and watertight, top and bottom.
Ian Farrier

Float Stern Caps

1. > Anybody know how the end caps on the back of the amas are attached to the amas?

Bonded with a special vinylester putty

> If I don't hear anything back this time I plan on routing the cracked seam and filling with either thickened epoxy or 5200. I'll decide when I get there I guess.

Both will work fine, but epoxy is better if you intend to paint.
Ian Farrier

Float Vents

1. There should be small vent holes drilled in the very tops of both the forward beam and shroud bulkheads so that the relief valve vents the whole float.
Ian Farrier, http://www.farriermarine.com

2. Each float compartment is vented via a very small hole at the very top of the bulkhead. This is to prevent any buildup of pressure in any one compartment, which can blow join seams. The hole should not be sealed.

Not a problem when boat is upright, even if one compartment is holed. The water level would have to rise to the very top before it could enter the next compartment and this would be just about impossible, given the buoyancy remaining in the other compartments. At worst, any flow into the next compartment would also be very slow.

If upside down, then water could migrate between compartments, but the total air lock formed with the float upside down would prevent any major loss of buoyancy.
Ian Farrier

Floor

I used an Epifanes matte finish oil- pretty similar to Sikens (Epifanes distributor is next door). If it doesn't have any stain in it, you won't cover over the wear pattern. If it does its going to get pretty dark- that was ok by me and didn't make it slippery.
Jesse Deupree, F-27 ION, Portland Maine

2. If your F-27 has the plywood removable floorboards that fit into the recesses in the fiberglass liner, and they have not been sealed with a good sealer such as epoxy, they may be the source of your odor. The "teak plywood" had a Luan core that when mixed with moisture smells a bit like vomit. Sealing the floorboards in my boat with epoxy eliminated the smell.
Don Eskelund

3. The Teak veneers inside your boat are made for "interior" use only. The veneer is only .060 in. thick and bonded onto a substrate. If Don is correct (re: vomit smell), then this substrate is mostly paper. It also has "unidirectional" grain which makes the veneer bendable. They are

designed to be oiled or varnished to maintain its "flexibility". Any high gloss, hard coating would defeat this and the teaks natural anti-slip properties.

Teak is a naturally oily wood. If you are going to varnish or epoxy your floor, then the oils need to be removed with acetone or other dryer for proper bonding. If varnishing, think about maintenance down the road, which will surely involve some sanding. Since the veneer is so thin, and you sand it, it must be done with extreme caution or you will soon only have a substrate floor.

Scotts Liquid Gold or lemon oil are very good and cheap alternatives to making your floor look good. This is what I do. My floor looks nice, is not slippery, and water beads up on it. Most of all...it's easy AND recommended by the manufacturers.

The idea behind teak maintenance is to keep it from drying out, and to maintain its natural oiliness. Keyword: OIL. When its vertical and pretty, use Interlux 60 or other rub effect varnish on it if you want. When its horizontal, keep it from being slick and slippery.

Everyone agrees though....you have to do SOMETHING to the floor in your boat to prevent water damage. If your a builder, and can't start your day without your daily dose of epoxy, then go for it I suppose, but I will stick to wiping on some oil once a month. Cost is 5 min of my time.
Dale Paul, F-28CC #133

Furlers, General

1. There are these generic types of roller furlers -

a. Using a rigid foil. These are generally reliable, but more awkward for trailering, as the foil must be dealt with. One comment describes a successful method. Changing headsails is difficult and can only be done when the sail is unrolled.

b. Using a foilless system. These are generally reliable, my experience notwithstanding, and are easier to trailer. These typically use a zippered luff which makes changing headsails more difficult and can only be done when the sail is unrolled.

c. Using some sort of flexible foil system. These are generally reliable and are easier to trailer than a foil unit. Changing headsails might be difficult and can only be done when the sail is unrolled.

d. Free-flying like a screacher. These may be reliable - it's too early to be sure - and are very easy to trailer. Changing headsails is easy, drop the old and hoist the new. These use a 2:1 halyard and need a tack point aft of the forestay chainplate, so the luff length is shorter for the others.

The following comments elaborate on some of these issues.

2. I suggest you install an old fashioned small horn cleat for your roller furling line. I've seen people put their boat to bed and gone home while their furling line came out of the cam cleat when there was no one on board and the jib self destructed!

A cam cleat is fine for temporary use but if you leave your boat in storage or at a dock or mooring with the mast up and you roller furled sail on, you're courting disaster. If the sheets get hung- up it could also capsize your boat while it's on the trailer.
Marv Marcus

3. Last weekend was picking up my mooring under sail, in about 12 kts of wind. On this occasion I came head to wind and stopped a little short of the mooring. The bows fell off enough for the mainsail to set and I put the helm up to bear away. To my surprise, the boat started moving quite fast SIDEWAYS! The main was set and pulling but the daggerboard and rudder were stalled and had no grip on the water. I tried playing the mainsheet and rudder, but by this time I was less than 100 ft from the shore. I quickly set the jib and was able to pick up enough forward motion to tack and head out. Thank God for roller furling!

Continuous-Line Furlers

1. We used a cheap ass 3 strand 3/8 line from West. When we cut it to length, we melted the ends together and then whipped it, whipped it good per the ubiquitous Leneman. It took a time or two thru the furler before the joint became flexible enough to run free, now its not an issue. This line will only ever see as much load as you can put on it by hand, so its strength is not too critical.
Barry Warburton

2. People are using a block near the cockpit that's on a bungee to hold the human end of the continuous furling line.

3. > What type of furler do you have for your code zero?
Facnor 1000 continuous furler, which we sell for $550. (November, 2003)
Mike Leneman, Multimarine

Furlers for Screachers and Code Zeros

1. Screacher furlers do not use a foil extrusion of any type. The sail has a sewn in luff rope, ss wire was used originally, but now more typically a synthetic rope is used. The sail attaches to the furler on the bottom and a swivel at top that attaches to the halyard (typically a 2:1 halyard). This works well as long as the halyard is tight when furling.

To store mine I fold the rolled up sail in thirds, put a couple of sail ties around it and it then is easy to handle.
Mike Parsons

2. The screacher furler is the "typical" Harken system where the drum capacity is marginal, so you have to be very careful about the number of wraps and line size. Hence the interest in continuous-line furlers. Also, a continuous-line furler is shorter, allowing more luff length.

3. Our F-27 has the "typical" small Harken (4" dia.x2"high) drum with a separate swivel at the top. While it works fine, I finally had to go down to a 3/16" dia. furling line since the 1/4" would exceed the available spool volume.
Rich Holden, F-27, Sea Bird

4. I have just taken delivery of a Facnor SDG 1000PC endless line furler as recommended by Mike Leneman. Haven't used it but it's well made and compact. www.facnor.com
Graham Stewart, F-24

5. While the Facnor endless line furlers look like a dynamite piece of gear they are quite pricey. I'd recommend a Schaefer 550 furler for a Corsair 24. (not a continuous-line system, though...)
Regards, Ira Heller, The Multihull Source

6. We have a Facnor (I think its their smallest one) on our Code Zero and are really happy with it. Its an enclosed design, not the open ones you see on open 60's and such about 4 inches in diameter? . It is precisely machined and the bearings are super smooth. The thing is bullet proof. I'm sure it would be satisfactory for screacher furling.
Barry Warburton

Gas Tanks

1. Have you considered one or more of the alloy backpacking fuel bottles to stash your 1/2 gallon reserve?

Gel Coat Repair

1.a.Sand the damaged area and also ½ inch around the area with 80 grit sand paper, creating a dish in the area to be repaired.

b. Clean the sanded area with acetone and mask around it.

c. Place fresh gel coat in a cup and add catalyst in the following amounts: (catalyst can not be sent in the mail. You can purchase it at a marine or auto body supply store. Ask for catalyst or hardener for polyester resin) - Above 65 degrees F: use 5 cc (one teaspoon) of catalyst per one 6 or 8 oz. Cup of gel coat. - Below 65 degrees F: Use 10 cc. (two teaspoons) of catalyst per one cup of gel coat. - Mix well. (In smaller quantities, one drop of catalyst per teaspoon of gel coat works fine.)

d. Coat the damaged area with gel coat / catalyst mix by spreading with a tongue depressor or brush. If you allow the gel coat to sit a while, it will thicken and fill deep areas well. Working time is short, however, once thickening has started. Try to overfill slightly, but not heavily, while tapering the edges of your repair area. NOTE: If the area is small, you can tape a small piece of plastic wrap over the wet gel coat to give a smooth finish.

e. Spray the area with mold release using a Preval spray bottle or similar. Gel coat is inhibited by contact with air, so you need to eliminate the air on the surface.

f. Once the repaired area has hardened (4 to 8 hours depending on the temperature), wet sand with 180, 400 and 600 grit wet or dry paper. Buff polish to match the gloss and then wax the area. If carefully done, the repaired area should be invisible.

g. If two applications are needed, the second can be applied after the 180 grit sanding.

2. I had some minor gel coat repairs done at a Corsair dealer and the tech used a Preval precharged gun. I would imagine anything that would spray the material out would work. If you spray it on, don't forget to spray a "guide coat" before sanding. A guide coat is a mist of black which tells you that you have sanded out all of the "valleys" and no more so you don't sand through. Sand with 350 then 500 then buff out the sanding swirls.
Jack Johnson

Glossary

Aka - beam. Too easily confused with "ama" and hence not recommended.

Ama - float. Too easily confused with "aka" and hence not recommended. Also, a Texas term meaning "I am" as in, "ama fixin' to go sailin'"

Baby-stay - inner forestay on F-27.

BOAT - acronym, standing for Break Out Another Thousand. Eventually, this will become funny, even if it isn't at the moment.

Boat Buck - $1,000 US.

Cap-shrouds - the shrouds that go out to the floats. Upper cap shrouds might be either the longer, upper parts of these, or additional shrouds going to a higher point on the mast.

Centerboard - the vertical plate that pivots down from the hull to prevent leeway on the F-24-1

COB - acronym for Crew OverBoard. Referring to anyone, regardless of gender or whether they are passengers or crew, who falls off the boat.

Corsair - Corsair Marine, Inc., builder of many of Ian Farrier's trimaran designs.

Daggerboard - the vertical plate that drops down from the hull to prevent leeway on many of the F-Boats and Corsair trimarans. Also used to describe a type of rudder system, as in "daggerboard rudder" or dagger-style rudder" whereby the rudder may be lifted up part way to reduce draft.

Farrier - Ian Farrier, the boat designer, or his company, Farrier Marine, Inc.

Foils - lifting surfaces underwater, to lift the hulls. Not to be confused with the daggerboards.

MOB - acronym for Man OverBoard. Referring to anyone, regardless of gender, who falls off the boat. There is no recognized acronym for Hat OverBoard.

One-Design - a term describing a Class of racing boats that race in a common configuration. The configuration usually includes standard sail shapes (and sometimes the cut of the sails), rudder and daggerboard shape, etc. Since the boats are so similar, they race together without ratings. At the time of writing this, the F-28R (or Corsair-28R) Class is the only One-Design Class among the F-Boats. The F-27 Class is a development Class, allowing numerous options. Corsair introduced the Corsair-31 OD Class very recently, and it hasn't built a fleet yet.

ORCA - Ocean Racing Catamaran Assn., A. Victor Stern, Sec-Treas, 279 Ravenna Dr., Long Beach, CA 90803-3613, USA, 562-433-3900. A west coast multihull racing organization. If you're thinking about sailing in the Newport-Ensenada Race in April, you'll need to join.

Ratings - handicapping for sailboat racing, to allow boats with dissimilar designs to race together. There are several handicapping methods out there.

Glue Removal

1. I was the one who posted the original question on removing Velcro glue residue, and the most common response was acetone/nail polish remover. I bought some nail polish remover (albeit a bit embarrassingly) and it worked great .
Mike Maurer
F-27 #420
Tri Dreamin'

Headsail Furling Systems

A benefit of the furling jib is that it puts the sail in and out of action so much more quickly than would be possible with a hank on sail. The jib adds so much to performance over that with mainsail alone. For us as new owners, the feeling of setting the jib is somewhat akin to flooring the gas pedal on a high performance car: Release the furling line, trim in the sheet, and bang, you have lift-off!

Mark Segraves

Headsail Furling Systems - Pro Furl

1. There are essentially three kinds of systems--rigid foil systems, flexible foil systems and systems with no foil. My systems have no foil (the foil is the aluminum extrusion that surrounds the forestay on most furling systems. *(Note - this was prior to the introduction of free-flying headsails which do not use the forestay. - Editor)*

Rigid foil systems work great for furling and reefing, but are heavy and it is a pain to deal with a rigid foil when raising and lowering the mast, and when trailering. Flexible foil systems don't work very well. Foil-less systems are excellent for trailering, furl well, but are not recommended for reefing.

> How hard is it to change headsails with one of these units?

With my foil-less system, it is a bit of a pain. With a rigid foil system, it is quite easy.

> Can they be used for reefing or are they strictly furlers?

My systems are strictly furlers.

> What do you recommend for an F-27?

Since you do a fair amount of trailering I would recommend the foil less system with a properly designed jib. With a well designed jib will not lose much compared with a genoa.

> What would it cost me?

The system itself is $1850 in 2001, plus the cost of a jib built with the requisite zipper luff. We can modify your existing jib to a zipper luff if it's condition warrants it for around $300-400. For your $1850 you get a complete kit, including a replacement forestay, furler, replacement jib halyard, all mounting hardware, furling line, furling line cleat etc.

Profurl have two models that can be used for a foilless furling system--the EC 1500 and EC4000. Unfortunately what we really need for an F-27 would be an EC 2500 or EC 3000 but they don't make one. The EC 1500-based system works well on say an F-24, but is marginal for an F-27. Of the several we installed on F-27s none have ever broken, but some have exhibited excessive friction when furling under load. We now use only the EC 4000-based systems on F-28s and F-31s and they have been totally trouble-free. They are very beefy, in fact far beefier than the comparable foil based system. But most of the weight is down low. Unfortunately they are also quite expensive.

If you can put up with the trailering hassles the rigid foil system will work well--but you will get sick of dealing with it. That said, having a genoa available and relatively easy to switch is

nice, as there is a wind range where the genoa definitely helps. Most of us use a screacher instead, so we can have both roller furling sails ready to go, and just forget about switching sails, which is a pain. I hate folding jibs and will do anything to avoid it!
Don Wigston, Windcraft

2. I would encourage you to check with Don Wigston regarding the Pro-Furl, Smyth combination I got two years ago to replace my Harken furler on our F-27. I trailered over 3000 mi. and the only time I took the jib down was this fall to do an inspection and cleaning. With a little attention to where it's laying, it rides furled on the deck like a wet blanket when trailering. Mast raising is a one person job again and the rig is much lighter without the foil. I disconnect the furling drum and stow it in the anchor locker for trailing so I don't have to deal with coiling and uncoiling the furler line. You can't reef it but that's a problem I've never incurred.
Allen Jacobson F-27

3. I too have the Pro-Furl wire furling system from Don Wigston. I too have been happy with it's light weight and easy rigging. The only things that I do not like are that it cannot be reefed and that with that tiny two-piece zipper it would be essentially impossible to change headsails in anything but the calmest conditions.

a) You said that you leave the jib on deck while trailering. I never thought of that. I tie it to the mast with every thing else that gets tied to the mast. This works well for me. I leave the drum attached while trailering, just pull the whole sail aft (up the mast) to bring the drum right to the foot of the mast so that it is easily secured to the mast without dangling.

b) I had a failure of the very small turning block that turns the wire halyard around at the head of the jib. Keep your eye on that very small, but highly loaded bit of hardware. I replaced it with a larger block.
Peter M. Lucas, F-27 #89, "Odyssey", North Bend, Oregon

4. I have a furling system on our F-31 that was set up by Don Wigston. This one has no foil to worry about, so it is especially well-adapted for trailering. The setup uses a Profurl drum and swivel that are directly in series with a standard headstay wire. The jib has a pocket in the luff that goes around the headstay and zips close. This gives a nice clean luff shape for the jib, and the furling works beautifully. When lowering the mast, we take the jib off and put it in its bag. The headstay is detached from the top of the furling drum in the same way that you would remove a standard headstay for a hank on jib.
Mark Segraves

5. The hank on jibs usually are battened on the F-31, and until recently the foil for the furler was a lot of weight that was not needed, and the furling units were a pain to trailer with. Now that the Profurl system is set up the weight is down, the forestay is easily taken down for trailering, and the only con is that it does not have a battened jib, but one can be hanked on to the forestay, if the luff is short enough to fit.
Jon Alvord

Headsail Furling Systems - CDI

1. I use a CDI Flexible Furler. It's the least expensive of those I've priced and it's guaranteed for as long as you own the boat, even if you run over it while its laying on the ground! You will need a FF #7 for your F-27 It has a foil with only one groove so changing racing sails would be a challenge. Your current sails could be modified for use with this unit. Battened jibs won't work.

I've had one on my boat since 1998. It has never jammed. It is a plastic extrusion which slips over the headstay. What's to jam?

I do use it as a reefing device...it works nicely for that as my genoa has a luff pad and was designed to work with the CDI.

We only set up twice a year. We tow to Florida in the fall, returning in the spring and to Canada for a few weeks in the summer. We live on our F-27 about 4 months a year. Our genoa stays on the furler all the time. It has only been off the CDI 3 times for cleaning.

It would not be the device of choice if you plan to race and change sails.
Jack Johnson

2. I have the biiiiig CDI roller furler (#8) on my F-28 and it is essentially bulletproof. It does have a wire halyard and it work very well, furling and all. the only downside is it's weight, both when you're raising the mast and also it's weight aloft.
John Pavel

3. I had a CDI on which the halyard wore through the plastic housing around the sheave so that the halyard wouldn't stay on the sheave. Switched to Furlex which has given no problems and is much easier to reef under load. Downside is the greater time required to rig/derig a rigid aluminum extrusion. When lowering the mast, someone has to stand aside the trailer and walk the furler back. To trailer, you have to rig a pole (such as a docking pole) off the base of the mast to hold up the last few feet of extrusion. Taking the furler off altogether would be even more time consuming.
Glenn Madere, F-27, Valiant Tri

Foil System - Mast Raising and Dropping

When raising the mast, I lay the furler in the "Y" of the gin pole and attach it to the halyard using a yellow strap provided from Corsair. This brings the furler straight to the bow of the boat and keeps it from dragging across the deck. When I drop the mast, I do the same thing.
Bill Edwards, F-28 CC-R, #105, Tri-to-Fly

Mainsail Roller Furling

1. It is somewhat counterintuitive, but to encourage the sail to roll-up and stay away from the mast, you need to raise the aft end of the boom a little higher. In addition, I do two other things;

a) Make sure the sail is wrapped loosely on the boom as you roll, and

b) sometimes I need to vigorously push the mass of rolled up sail aft once or twice while rolling it up.

Peter M. Lucas, F-27 #89, "Odyssey", North Bend, Oregon

2. I'd echo the comment about keeping the boom raised above the horizontal; also I find it helps if for the first 6 or 7 turns you force the bolt rope to keep spiraling back with each turn laying behind the turn in front of it. If later turns then bump up against the mast it's a lot easier to pull back just the last few turns than the whole mass of the sail.
Glenn Madere, F-27, Valiant Tri

3. The roll up main can work quite well, (although not quite as effective as battslide / lazy jacks for pure sail raising) But, it is a little more fiddly to set up correctly. You need to get the topping lift in the exactly right position for the sail to go up and down really well. Coating the sail in Sailkote also helps. I can take my F-28R all the way up by hand. The way that I do it, is to self bump. With the line lead aft along the deck, this is really easy to do. Stand on the trampoline beside the halyard, take a single turn with the tail around the winch, and bring it forward to where you are standing. Then, pull outwards on the halyard, between the clutch and the mast. Take the tail in with your other hand to pull up the slack. Works great. Also helps to pre spin the rotating boom some first, to loosen the sail. The big advantage of the system over lazy jacks is for constant trailering. Much easier to raise and lower the mast, and handle the main when it's wrapped around the boom.
Ron Radko

4. If a sail isn't cut (batten placement being the issue) for roller-furling, it won't work well. That is why I went to great lengths to preserve roller-furling on the F-31 aft-cockpit. For a quick reef (tropical thunder squall) we just roll it up and re-lock the handle. When racing or a long term (over 20 mins or so) reef we roll until we get to a cringle (reef point), lock the handle and then tie the tack down and then tie an out-haul/down-haul strap around the sail at the clew. It works well and I've never had a problem.
Mike Multi Marine

Hoisting

I am another F/C-31 sailor in the SF Bay who hoists in and out every time we go sailing. I love it.

If you already have lifting eyes installed, double check the reinforcement behind the aft lifting eyes. Several boats including mine have gelcoat cracks around one or both of the aft hard points. They weren't built hard enough, I guess. If you don't have the cracks yet, I suggest

reinforcing the area behind each aft lifting eye a lot. Spread the load to the vertical surfaces and you will be spared the cosmetic crazing.
Randy Devol F/C-31 #213, Joint Venture

GPS

Note - GPS equipment, like most consumer electronics, is evolving too rapidly for comments from the List to be useful here. People have generally liked the Garmin units but that's not to say that other brands aren't as good - Garmin has most of the market, along with good customer service, and so gets mentioned more than others. There's an interesting cross-technology device called a Yeoman that's reviewed later that might be worth considering. Also, the developer of Pocket Navigator and Memory Map owns an F-28 and sometimes contributes, if you're interested in Pocket PC GPS applications. - Editor

Halyards

1. May I suggest all rope.....Technora T-900 or something like that for the halyards. No meathooks, no splices, less expensive (usually) and easier.
Mike, Multi Marine

2. To prevent 2:1 halyards from twisting in the almost-hoisted position, the dead end point on the mast should be at least 6 inches above the halyard exit point. This helps with untwisting as anything closer seems to twist like crazy.

3. I have had good results installing new halyards on my F-27, 37 foot mast, with a large magnet, a paper clip and thread. One benefit, it seems to me, since there are always other halyards in the mast, is that the mast can be oriented so that the new halyard does not get wound around any of the others. YMMV.

By the way, my mast dropping sagas include a jib halyard which broke at the wire/rope splice during lowering. I had been backing up that halyard with the spinnaker halyard to a block at the bow and back to a winch so that the mast didn't fall very far. One other time the mast raising bar came off the amas, the mast was almost down when that happened so there was no damage. I have not forgotten to cleat the jib halyard to the mast yet but I did forget to put a stopper knot in the main halyard and when it caught on the aft mast support as the mast was going up the bitter end disappeared into the mast base. That's how I learned about magnets and paper clips; I had not heard of electrician's fish tape.
Tony Cabot

4. We had a spinnaker halyard break once on a delivery sail to a Chicago Mac race. Dropping the mast was not an option as we didn't have any of the mast stepping gear with us. We sent a crew member up the mast with a messenger line with a heavy clevis pin tied to one end. the mast was leaned to the side that the missing halyard was to be lead, and all other halyards pulled tight. Leaning was accomplished by easing the opposing highfield lever and having

two people stand on the low side (opposite) ama. Messenger was dropped in and carefully eased down (we could hear the clevis pin scraping on the inside of the mast). The clevis pin was easily snagged at the bottom of the mast and line pulled through, halyard attached to it and the whole thing pulled back through. Mission accomplished with no internal wraps or tangles! Whole process took about 25 minutes.
Ron White, Stampede, F-31, rotating Al rig

5. You can extend the service even further than merely swapping the halyard end for end. After the second year, you can cut the eye splice off the top and take the core out of the cover about 8 diameters back from the cut. Then create an eye splice in the core (don't forget the shackle). Slide the cover down a bit (as little or as much as you want), then bury the cover (the 8 diameters) inside the core. Smooth and tighten and whip (you now have a longer halyard than before because of the excess cover at the other end; you can cut that off if you want).

From then on, if you see wear at the clutch, it's just a matter of undoing the whipping where you've buried the cover inside the core, pulling it out, and moving that splice to some new spot on the core further toward the clutch. Eventually, though, you will end up bursting the cover at the clutch, but I've found that if you bury a smaller diameter core inside the halyard core where the halyard runs through the clutch, the cover and core do not shift separately and that reduces both wear and opportunity for the halyard cover to burst.
Thom Davis

6. I heard of an interesting way of attaching a halyard without a shackle. Put a figure 8 knot at the bitter end of the halyard. Double up the line and push it through the hole in the head of the sail. Push the figure 8 knot through the loop in the halyard and pull tight. This should give you maximum hoist with out a shackle.
Marv Marcus

7. Halyards on the F-27 were actually always 3/8", 7/16" being too big *(This corrects an error in the Sailing Manual.)* With modern synthetics one could go down to 1/4" but this is too small to handle comfortably. 5/16" to 3/8" (8 to 9mm) are best all around.
Ian Farrier

8. One replaces s/s halyards with rope for a variety of reasons:

a. cheaper and easier, generally

b. a little lighter

c. NO MEAT HOOKS (strands of wire which stick out and cut your hands) : The biggest reason for me

d. NOT to reduce stretch normally.

For shrouds the reason again is not to reduce stretch, 'cause you won't. It's for chafe, cost, convenience, and weight
Cheers, Mike Leneman, Multi Marine

9. Finally launched yesterday and got a chance to try a new 2:1 main halyard. What a difference! I used to winch most of the way up; now the main pulls all the way up by hand. Just use the winch to tension. As an unexpected dividend, the main is easier to roller furl because the halyard falls an inch or two behind the mast reducing the tendency of the luff rope to bunch against the mast.
Glenn Madere, F-27 Valiant Tri

Hatches - Emergency

1. I tested panels provided to me by Meade Gougeon (Didn't want to hack up the boat) The best combination was to start by punching a hole with a small hatchet, and then cut with a 12" fast cut wood saw blade. the blade was actually a reciprocating saw blade mounted in a multi saw handle. A shorter blade was very difficult to use as it didn't allow enough of a cutting stroke to get the cut started.
Ron White

2. The picture shows that merely scraping the blade against the hull will scratch a hole through it. This hole took 30 seconds. Now the saw itself can cut an emergency hatch. Thanks to Hank Brooks for the picture.

3. There are a number of choices for installing a safety hatch in the F-31/F-9A depending on the interior. First preference is between the beams adjacent to nets for easy access, second is on stern side just beyond this, and third (and worst place) is in the transom. Main structural rule is to keep edge of opening at least 12" (300mm) away from beam bulkheads. Note I prefer to call 'akas' beams, and 'amas' floats, as it is then perfectly clear which is which. Some still confuse the two terms which can be a problem.

Generally, the hatch should be placed low down but above waterline by a min. 4"/100mm, but at least 150mm/6" from bottom edge to waterline is best. Hatch should be recessed back into hull so that it is flush with, or below outer hull surface. Edges of cutout should also be reinforced/stiffened to where they feel solid without the hatch in place. If low to the waterline, then an additional flush outside cover (doesn't have to be watertight) may also be a good idea.

The hatch can also be simply made by cutting out a section of the hull, filling the foam edges and building up a solid flange on the inside, and then screwing the hull section back into place with a weak sealant or rubber gasket, screws having wing nut type heads, or a screwdriver (plus a spare) has to be available somewhere under the boat (and on a lanyard).

The ocean capable F-36 has its standard safety hatch beside the cockpit, where it is well out of the way, but there is also headroom there allowing easy access and one can sit on the cockpit floor beside the hatch if inverted. This is not the case with the F-27/F-28 and F-31 where the cockpit floor extends right to the hull side. Cutting out the storage locker floor for access is an option here however, but could get complicated.

It could be aft of the aft beam in aft cabin models, where it is an easy step forward to the aft beam, or an external fore and aft step could also be attached to the hull to make this easier. Advantages are an easy fit, extra view/ventilation for aft cabin, disadvantages being the step required to get to aft beam, and possibly outside appearance. Add some non-skid on the step and under the beam in this area. Traveler loads would not be a problem as the hatch is well below and the cutout edges have to be stiffened anyway.

The best and almost only place for aft cockpit models would be somewhere in the main cabin, which is not so easy as one is going to have to cut into a seat and seatback to make room, the ideal place being probably with the cutout centered just above the outer edge of the seat top. Making this blend into the interior would be a challenge, but then the F-31 was not intended to be an ocean going boat, so I never really allowed for such a hatch.

I'm not really keen on the hull area forward of the starboard settee, which is open area on some models, as this is close to the beam bulkhead forward access opening, which does increase hull stresses in this area. But it would be possible, provided any hatch here as located as far aft as possible, with some additional athwartships/vertical uni-directional on the hull side in front of the hatch opening. A stiffening athwartships/vertical rib between hatch and forward beam bulkhead would also be a good idea.
Ian Farrier

Hatches - Float

1. Corsair sent around a modification kit from Lewmar for the Lewmar hatches to owners in 1989 which stiffened the keep-open detents on these hinges. Unfortunately the hinge extrusion wasn't up to the increased force.
Paul and Sue Abendroth F-27 #31

2. There's a hatch seal fix for the Bomar float hatches that had a bad seal. The fix is form 2000. If you have one of these, contact Corsair.

3. One of the little rivets holding a Lewmar float hatch hinge to the frame came out. I replaced it with a #2 screw and it's working fine - but I mostly sail in fresh water.
David Paule, F-27 hull #80, Second Chance

4. Take your current gaskets off and move them 180 degrees on the hatch. This'll give you a little more life and fewer leaks while you are looking for replacements.
Thom Davis

5. Not flush, but designed for the job look at latches here:
www.gebo-boomsma.nl

They have a distributor in Thomaston, ME - 800 696 4326.

After putting their hatch side by side with Lewmar, I am getting all hatches for my boat from them. *Note - Ian Farrier recommended these. - Editor*
Jan

6. > Does anyone know where to get a new hatch seal? Mine leaks nicely when rinsing the boat.

It is a fairly common seal, but usually needs to be purchased by the roll. Best bet would be a Corsair dealer
Ian Farrier

Hatches - Pop-Top

1. I saw this modification on an F-24 MK-II that I sailed on in Stuart, FL. A former airline pilot who loves to tinker owns it. Don Wigston referred him to me. It was kind of neat; you could stand on a step that was on the cabin floor, fold your arms and rest them on the top of the cabin. It was a VERY comfortable position. I don't remember all of the details clearly. The regular hardware to latch and hold the top up was gone and replaced with hardware to only latch it. A set of rollers (Home Depot) was attached to the forward bottom edge of the hatch. Operation: unlatch, lift and push, roll forward, bungee down.
Peter Dube

2. I followed the link to the C22 Pop-top lift kit. These parts look very much like the gas shocks and mounts available at West Marine. I bought a couple of promising sizes, marked out the locations and test fit with clamps before drilling holes. Worked well with a heavy fiberglass foredeck hatch, and total cost was around $40, not $129. Same process should work for the F-27 pop top. An easy afternoon project. Now if someone wants to loan me an F-27 for a weekend, I'll put a set on for you :>
R.E. Libbey

3. > I found on my F-27 that cutting about 1 inch off the pop-top on my F-27 stopped almost all the mold forming in the boat
> Phil Conker, hull #330

I did the same thing. First, I removed and discarded that edge molding trim around the edge of the pop-top. Then I cut away about 1 inch of the carpet (all around the outer edge of the top.) Then I painted the exposed gnarly looking fiberglass with grey paint. Then I installed a new edge molding piece, with a big bead of 4200 inside the trim first. Worked out great.
Peter M. Lucas, F/C 31 UC #225 "Flexible Flyer"
(had F-27 #89) North Bend, Oregon

4. I saw a neat system for the hatch on one of the F-25's down in Stonington this past season. They have the same Pop Top but instead of the aft bars going vertically through the cabin they mounted a hinge at the cabin entrance. The fittings on the bottom of the aft supports has is the same as on the top. The top hinge gets removed and the top of the aft supports gets led to the track. A longer track is required but this allows the Pop Top to move horizontally forward toward the mast. A simple arrangement of two plastic blocks mounted to the deck allow the forward edge of the top to slide. The added benefit if this arrangement is that the top will still allow for vertical lift! I have all the parts gathered together and will be happy to show you when I'm done.
Jim Bourgoin, F-27 #11, First Tri

Heads and Related Equipment

Note - many F-27s came with the Lavac head and a eight gallon holding tank. It is relatively reliable. Defender sells the Lavac heads and probably spares. Some F-27s came with Porta-Potties, and some with nothing.

Finally, something that I've noticed is that while many people feel that topics such as human waste are repugnant, two classes of people just calmly deal with it and don't make a fuss: parents and sailors. True adults! - Editor

1. I installed a sensor light think it was about $40. It has a tank l float and a light. It is a small led that I installed in the light in the head. It will start to flicker when tank just about full. You can adjust the sensor by filling your tank with water then pump it out with the pump. Do that a couple of times and you can set the sensitivity where you want.

Steve Halter

2. Sealand Tankwatch I Alert System. $38.20, Defender Marine, Defender number 312. P 64of the 1999 catalogue. 800 628 8225.

3. I never liked a Porta Pottie. The idea of emptying it is repulsive. I understand it's also frowned upon to empty a Porta Pottie in some marina bathrooms.

Instead of a Porta Pottie I use a white plastic pickle bucket with a plastic fitted seat from West Marine. You can get a bucket for free at your local Burger King.

It has the following advantages; It's very light, non polluting, makes a good emergency bailer, no through hull fittings required, no hoses or smell, and cheap. It fits under the vee berth. It compiles with the meaning of KISS.

I rarely ever use the head but when I do it's comical. A guest would say, "Hey Marv I gotta use the head" and I would reply, "OK but you gotta take it home with you". This usually brings a puzzled expression to the face of my guest. I then explain the mechanics of the head. You put a plastic bag around the rim of the bucket, press the seat in place, use the head, tie an overhand knot in the top of the bag to seal it, put it in a larger food market shopping bag and dispose of it on shore in a dumpster.
Marv Marcus, F-24, MK 1

4. I just bought an F-27 with a Lavac head but this thread revived some memories of earlier mono days that now seem to be applicable to light weight tris. It was in the Practical Sailor issue of September 1993. It is a sort of Porta-Potty that gets no enemies on shore. "Potty Time" costs $49.95 (1993) and is a cardboard head and plastic bags. Tablets turn the "whatever" into a polymer that is hard, does not smell and can be disposed of with other trash. Practical Sailor had a very favorable review of it. I kept the back issue and do not know if they are still in business. Design Tech International, Inc, 7401 Fullerton Rd. Springfield, VA 22153 703/866-2000 (copied from Practical Sailor).
Frank Meyer, F-27, #382

5. We have never had a head odor problem on our F-31R. Mike Leneman built a holding tank that the head sits on. The plumbing is minimal. One pump flushes the head into the holding tank and a separate pump empties the holding tank.

The holding tank is constructed of fiberglass and whatever and fits precisely between the daggerboard trunk, aft side of the main bulkhead and the inside of the port hull.
Jeff Cohen, F-31R, Mental Floss *Note - it won't fit in an F-27, at least under the Lavac head. There's not enough room for any significant capacity. Editor*

6. Actually, the holding tank is made from Plywood and epoxy/glass. The head outflow goes directly into the stand/holding tank with no hose (therefore no odor). Then there is an exit hose with a gusher pump in line to empty the holding tank. They're a bit of a pain to build....but I'll sell plans!

Cheers, Mike Leneman, Multimarine.

7. "We do sell flexible schedule 40 PVC in short, cut to order, lengths for those projects that require this special pipe."
http://www.plumbingsupply.com/spaflex.html
Cheers, Dave Howorth

8. For removing hoses, you have to use: a hair dryer or soak the ends in very hot water. Applying a little liquid soap helps. Also, avoids dips in the hoses that leave sewage standing in them. I.E., pump it up and try to route the hose so gravity will empty it into the holding tank. Otherwise flush the hose with clean water after use if you have room in your holding tank. It is the anaerobic bacteria that stink and they will permeate any hose or pvc pipe in about a year.
Allen Jacobson, F-27, #293, Triple Play

9. I carry a Henderson waste pump on board. It has 1.5" fittings on each end. I have a piece of flexible hose clamped to each end and the proper sized male fitting to connect to the deck pump out fitting. When outside the 3 mile limit I simply hook up the pump and pump myself out. The pump gets rinsed with sea water and then stored in an ama.
Jack Johnson

10. I have a standard medium size diaphragm pump mounted to the main bulkhead to pump out the holding tank thru just such a second y valve. Its mounted about shoulder level with the pump handle facing down so you can just sit on the toilet and pump the tank out.
Greg Cole, F-27, #302, "Mxyzptlk"

11. I have exactly this arrangement and it works very well. It comes with the entertaining "recirculate" option in which you set the input valve to come from the tank but forget to set the output valve to go overboard.

My only problem was that I could not find a way to route the hoses without a low point in the hose from the tank to the valve, which probably makes things smellier. Another non-obvious thing to think about is whether you will smack the valve handle with some part of your body while trying to use the head in a seaway.
Ken Olum

12. Easiest quick solution for a self-contained pump-out capability is to screw in a macerator pump directly into the deck pump out, attach a dedicated garden hose to the pump, and run wire to your battery. I use this set up as and emergency back up or when need to pump out at the RV storage lot in which I keep my boat. It all fits nicely in a small plastic tool box.

The more complicated version is to remove your Y valve, run the waste line from the head directly to the holding tank, put a T in the deck pump out line and attach either a manual pump or an electric macerator pump to the T which will pump waste to the below waterline through-hull. When you pump out using the deck you need to be sure the thru hull is closed. Also when using the pump, the deck must be sealed and the thru hull open.

If you use and electric pump, be sure to use sufficient size wire to keep any voltage drop to a minimum. Macerator pumps need full voltage to work according to their specs. This is the system I use on my boat. Works great.

Big fines in Catalina if your pump any waste overboard in the harbor. I decided not to take a chance with a Y valve accident. Not sure of the rules in the Bahamas, but we spent a week on a 45 ft catamaran in the B.V.I. (with four heads & 8 people on board), which never closed their overboard waste valves. The Moorings captain said the whole fleet did this and the current through the B.V.I. was sufficient not to cause a pollution problem. We did not dive too close to any boat!!!! Even our own.....
Alan C. Johnson, Los Tres Amigos, F-31UC

13. Removed the Y valve and used Schedule 40 pvc from head to pump...pump to tank inlet where I installed a T...one branch of T to the deck pump out fitting and the other branch to a Guzzler pump and then to the through hull fitting (valve).

Down here I use the local pump outs. Abroad or if no pump outs are available, I store in the tank and later pump overboard in deep water. I try to use paper that is designed for rapid decomposition and also installed a nifty sanitizer metering device to help eliminate the usual odors.

Do not use the flex tubing as it will pass gas in time and smell and the new thick walled stuff just takes an extra year. The schedule 40 is a bit of a pain and everything must be dry fit but it is designed for sewer use and lasts "forever". I even found some soft fittings for all the pump fittings.
Martyn Adams, Cuttlefish, F-27

Heaters

1. I recently installed a cabin heater in my F-27 made by Toyoset. It burns kerosene at a very economical rate and is not a huge power thief. I mounted the unit in the V berth area on the side of the hull about 8 inches down from the deck. Since this is a forced air heater I ducted the heat into the main cabin and then back to the aft cabin. I have been able to heat the cabin while sailing and motoring I believe that this is a very good solution for keeping warm here in the Great Pacific Northwest.
http:www.toyotomiusa.com/products/cabinboatheaters/ns2700-2.html
Wayne Erickson, Almond Joy, F-27, #345

2. I have installed Toyoset heaters in our F-27's for charter and they are fantastic!! Living in the NW you need heat. It was the second thing I bought for my F-27 after roller furling. My wife required it and I love it! Runs on kerosene or Diesel. Kero burns cleaner. Mounted it in the head area and ducted it through the whole boat to the aft cabin. 1.5 amps while starting for 2-minutes, .75 amp while running. I installed two batteries for week-long cursing. A single battery is fine for a weekend. See http://www.toyotomiusa.com/ I would buy another again!!

Chris Sherman, F-27 #158 RAVEN

3. Years ago I bought a Coleman catalytic heater, I think it was called. It has a nice wide save base made of plastic. Reflector is made of Al. One bottle of camping propane lasts 5 hrs. Dries out dampness, and makes boat toasty in no time. Make sure you have good ventilation! Don't know if still made by Coleman--lasts for ever--still use mine during Gulf Coast winters. .. where it occasionally freezes at night.
Jim Larson

Highfield Levers

1. There may be a danger of fatigue with long term reliance on highfield levers alone (where fitted, typically on the rotating mast boats) to support mast while folded for an extended period. If any bending loads are generated on the lever, and the boat can move around slightly, then the lever could eventually be damaged from the mast swaying sideways. This could put alternating bending loads on the lever, to where it could break unexpectedly sometime in the future. Not likely, but it could happen, particularly if any part of the lever or swage is being bent around the deck to hull join flange.

If this is the case (can vary from boat to boat), then the mast raising wires should be added to take the load.
Ian Farrier

Hiking Straps

Also see **Lifelines**

1. These straps are not used to droop-hike like Star boats, or to straight leg hike like Lasers...they are used as a safety strap.

An F boat on a fast reach is very sensitive to helm input and it is easily possible for the driver, with a quick helm correction, to flip a crew sitting on the windward ama, feet inboard, right off the boat. I have done this to two different crew, on two different occasions (albeit on the same day) while on a blasting screach. The hiking strap is attached to the nets so that a crew sitting in the vulnerable position of on the ama, feet inboard, can spike their feet under the strap, and thus be much less likely to get flipped off the boat.
Mike Parsons

These straps are an additional safety feature. The do not allow you to sit anywhere that you couldn’t anyway - they just allow you to be a bit more secure when sitting near the edge - just like the lifelines on my boat. They are similar to the small toe straps that you find on the floors of some inflatable dinghies.
Tim Cobb

3. We've got straps on our 28 at Bob Gleason's suggestion -- great place to hold a windbreaker, beach towel, sandwich bag or crushed empty beer can while sailing .... we also tuck our feet in when bouncing around on waves, just to feel safer. I have also used it temporarily to hold a doused spinnaker when my hands got too full.
Bob Glandon

4. These "hiking straps" are basically what you would see on a Hobie 18,20,21, or 17. They are also standard on a Nacra 5.2, 5.8 and 6.0. We initially designed them to be just like the above beach cats and Sunrise graciously added them to my nets. You can also order a new 28 or 31 with them added. They are a safety issue only and do not in any way allow one to move his or her weight further outboard. Having had them on the last 3 Corsairs that I have owned, and having had multiple crews during that time, there has been no crew that did not think they were a good idea. In fact, everyone used them when they were out on the floats.

As for weight distribution, it seemed to me that as the TWS built, it was very important to get the weight out on the floats. As the chop built, it was very important to move it back. In the big breeze down wind with the chute up, you MUST put weight aft or you will not like the result. Doug Harkrider

Hose – Engine Well to Fuel-Tank Locker

This mysterious hose is attached form the inside. Here’s a picture of the aft end:

View towards the port side of the aft cabin of the F-27, with the access panel removed. Note the wood pieces that hold the screws on. The wood is attached with 5200 or similar, directly to the mouse fur. The hose is attached with a hose clamp. The flange that the hose clamps to can leak. The hose runs form the flange on the bulkhead on the left though the bulkhead on the right.

The hose itself is available from Aircraft Spruce and Specialty. See **Sources** for details.

This is the forward end of the hose, on the aft face of the fuel tank locker's aft bulkhead. You can see this from under the cockpit. The bulkhead on the left is the forward face of the right bulkhead of the previous picture.

Hull-Deck Flange

1. > Any other F-27's out there with cracks along the flange that secures the nets to the hull? Both sides of mine are cracked ... Kind of a shock!

Such cracks along this flange are a known problem, but are mostly just a nuisance, and will always be a possibility where fiberglass can flex excessively. It does this very well as when used in fiberglass fishing rods, but coat the rod with a brittle gelcoat and it would soon crack. The rod itself would still be fine however.

Usual cause is walking on or near the flange, which can generate a very high point load, and hence flex. However, it usually only results in just surface gelcoat cracking, and this seldom

becomes a structural problem. But, should the flex become severe, to where broken fiberglass strands can be seen, then it should be repaired.

However, there is no point in repairing unless the flange flex is also removed, otherwise the cracks will just open up again. The best way to eliminate flex in this area is a number of small triangular gussets/supports bonded underneath the flange and extending down the hull side. Molded fiberglass gussets would be a simple solution, and I have asked Corsair several times to make/provide them but unfortunately nothing has been done. Wood gussets would also do, but would need to be weatherproofed.
Ian Farrier

2. > I've noticed a small delamination in the hull-to-deck joint near my bow chock. What's the best way to repair this?

Not a major concern at this stage, and can be repaired by digging out and filling with epoxy. Check inside also, and, if delaminated there, tape over with a little fiberglass tape and epoxy.

Repair can then be covered over with a little white paint, Gelcoat can also be used, but it may not stick well to the epoxy, and in some cases may not cure at all, so check.
Ian Farrier

3. > I have just installed new wing nets and observed the following.... My F-27 has had small cracks at the curve of the upper deck/hull joint, where the lashings for the wing nets attach, for several years. I have been told not to worry as it is due to the difference in flexibility between the gelcoat and the underlying GRP matrix. Whew!

>OK, I didn't worry about it until the last outing when I noticed that the upper 6-8 inches of cabin wall is merrily flexing in and out 1/4+ inches. It is on both sides and may be more prevalent in the middle 1/3 between the beams. The wall appears to have separated from the core material and seems to flex irrespective of the part of the hull under the lip.

This is unusual and more serious and needs to be looked at. Fix may be quite easy however, you would just need to drill some holes into the voids near the top, open them up by putting some weight where needed, and then filling the voids with some epoxy resin. Once full, remove weight and let boat return to its normal state. This should squeeze out epoxy and fully fill the void. Then allow to cure.

Flexing of this rail is a known issue and is usually not of serious structural concern, as the cracks are usually cosmetic, and impossible to fix unless the wing net rail is first stabilized/stiffened. This can only be done by supports on the outside from underneath. This flexing was noted very early and corrected by adding extra glass along this rail during manufacture. However, after I left Corsair in 1991 this may have been omitted on some boats, as my checklist building system was not always followed, nor was I there every day to check on such things.

I did ask Corsair some time ago (1996 or 1997) to mold up some simple supports that could be easily bonded under this rail to stiffen it on the outside, and blend in with the boat, but don't think they ever did anything. It would be an easy solution for anyone with this problem however, as such supports could then be simply bonded in place with some 3M 5200 - epoxy is probably not needed.
Ian Farrier
Farrier Marine, Inc.

4. *I asked the West System technical folks about preparing the hull for a reinforcement.…*"The hull-deck flange of my Corsair F-27 trimaran flexes. I plan to add reinforcements under the flange and wonder if I must remove the gelcoat or if there's a way that your epoxy will adhere to it." - *Editor*

Dewax gel coat first with Prop-sol or similar silicone and wax remover that you can get at an automotive parts repair store then sand gel coat with 60 grit sandpaper. You should then get good adhesion to the substrate.
West System Tech Support

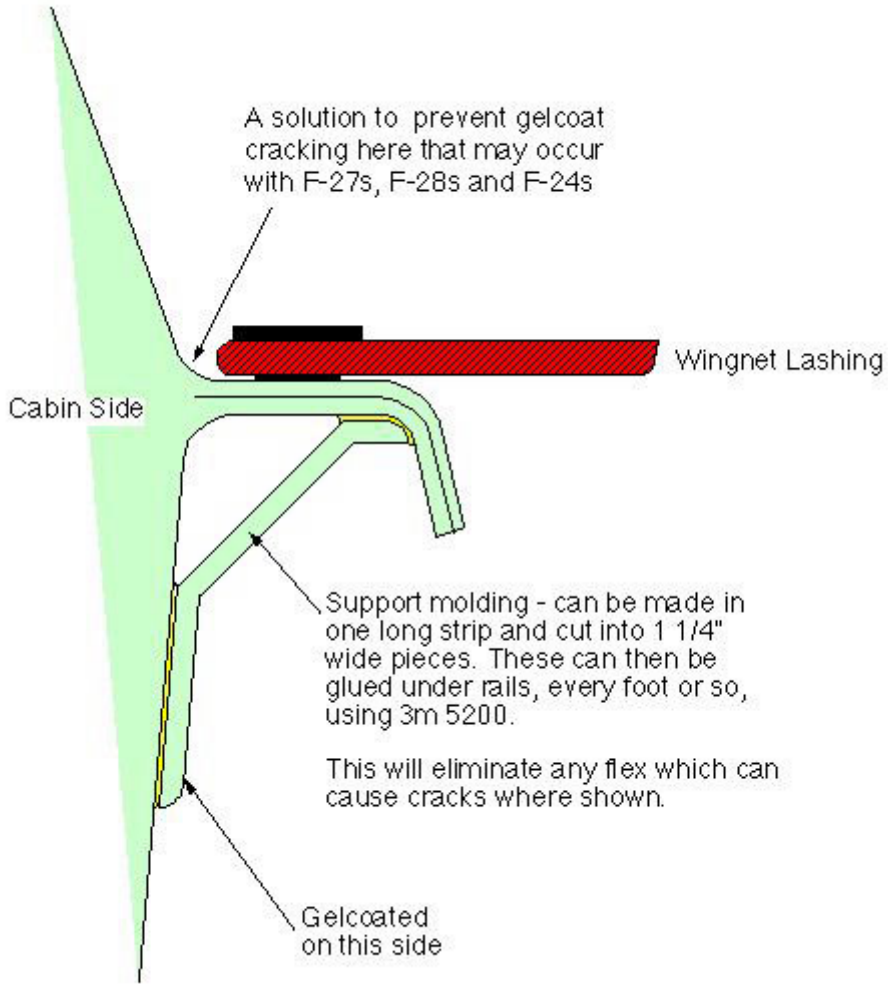
F-27 Advisory Bulletin

A number of owners have reported problems with gelcoat cracking along the wing net lashing rail, right in the corner where the rail connects to the cabin side. These cracks are caused by the wing net rail flexing up and down when someone steps on the wing nets. They are mostly a cosmetic problem in the gelcoat, which is a very hard and brittle material compared to a fiberglass laminate, which is a relatively flexible material (hence its use in fiberglass fishing rods and battens).

The loads from a heavy crew member jumping on the wing nets can also be enormous, being many times that person's weight, depending on how tight the nets are.

There is not much that can be done about these cracks, and, if repaired, they will only reappear again due to ongoing flex. There are no real structural concerns, as it is only flex in what is a brittle cosmetic material covering the structural laminate. However, if it becomes excessive over time, or crew members are particularly heavy, then rail integrity may degrade to where the glue line between deck and hull along this rail may fail, which will allow the cabin side to flex in and out. The boat is not threatened, as the wing net rail is still bolted together, but the cabin side flex can certainly be disconcerting.

Should these cracks exist, and significant rail flex can be observed, then it is advisable to support the wing net rail as follows:



Best material for support molding is fiberglass, and this can be made over a simple and easily made mold. Another alternative is to bend them up from an aluminum rectangular bar, minimum size being 1" x 1/8" (25 x 3). *(Note – The angle between the flange and the hull varies between 94.5° and 96.5°. The radius on the bottom of the flange to the hull just about matches a dime – it's smaller than a penny. – Editor)*

Supports being fitted to Martyn Adam's F-27 Cuttlefish in Seattle. These supports were made by Martyn from a large fiberglass rectangular pipe (with rounded corners), so are not of the ideal shape, but more than make up for this by plenty of thickness, plus they have been made extra wide. Being held in place until adhesive cures by C clamps on this side.

The other side, and supports being held in place by stakes to the ground. Note also the PVC Ferrari mesh being used in the wing net - this is a very strong low stretch material, and may have caused a higher load to be put on the wing net rail, due to the higher degree of tightness possible. However, this will not be a problem now.

Ian Farrier
Farrier Marine, Inc.

Inboard Engines

1. Inboards: These are a viable option in the F-27 and up, though I would only use the lighter 4 stroke gas inboards in the F-27/F-28. The F-9A/F-31 can handle the weight of a diesel (F-9AX even better) and this has always been an option in the plans. A couple of F-27s successfully used the DB10 (similar to the Saildrive 280) 4 stroke inboard in the eighties No problem with the trailer, and the owners were very happy with the performance last time I spoke to them. However, in general, I find the simplicity and flexibility of the outboard installation preferable for a trailerable boat, would not like to lose the access aft under the cockpit, and really like the ability to completely lift the prop out of the water.

Inspection Hatches for the Floats

Note - there's a lot of discussion for these things which are around $10 new. Might be better to simply replace them every ten or fifteen years. Especially if they're cracked.... - Editor

1. Here’s the scoop on the O rings. Buy silicon grease, comes in eight oz. And useful for preserving rubber and esp. screw out hatch covers.

Or use Vaseline.... doesn’t get silicon on everything.

2. I'm not sure if this would be sufficient for water tanks, but we put Vaseline on the ama inspection ports threads before screwing them down. Makes it easier to open too. Also, they have a rubber O-ring seal that is easily displaced or lost.
-robertw

3. Petroleum jelly will not affect standard O-rings - generally made of Buna N or nitrile.
Dave Howell - Hydraulics Engineer - UK – F-9AX "Gem"

4. Don't know a source for new O rings, but if you do find some, don't put petroleum jelly on them, that wrecks them, or at least the O rings I'm used to, that are in faucets and such.

There is some type of grease in the plumbing dept. of hardware stores and home centers that is just made for O rings and rubber washers.

I found this out after putting petroleum jelly on the O rings of a faucet cartridge. Worked OK for a few days but then the faucet got very hard to use and pulling it apart I found the O rings were in pretty bad shape.

I don't know, maybe the O rings on the deck plates are OK with petroleum products.
Hope this helps, Mark

5. This problem was so bad on my F-9A aft floats that I lost a few ports whilst at sea. I made flat epoxy bases for the inspection port housings, using a piece of waxed ply to get them flat. No problems since (at the same time I fitted the float relief valves which the builder had omitted).

O-rings are generally available from an industrial seal or hydraulics distributor. Note that if you have difficulty in obtaining the right size, get some O-ring cord (sold by cross sectional diameter & length), cut it square with a razor blade/knife, and stick with "superglue", lining up ends carefully. Done properly, O-rings so made can be regarded as permanent.
Dave Howell, F-9AX

6. I have an F-24-2, and have experienced what appears to be standard mild to major flooding of my amas, depending on the intensity and duration of the weather and the ride. I have never been able to control the ingress of water into my main hatches, but have reduced ingress through the inspection ports to a dribble:

a. I completely ignore the O rings and instead seal the threads with Teflon tape. There are three thicknesses - the standard ultra-thin white stuff, heavier pink stuff (natural gas lines) and some super heavy duty yellow stuff. All three are usually available at one of the big home

supply stores. I use pink - two or three turns around the threads of the screw-in cover. The last half turn can be a doozy, but you know they can always be opened again (hey, it's TEFLON tape), and you also know that you needn't bother to open them except for a twice-a-year dry-out or after a long run through a tremendous blow.

As for the main hatch, I have laced together four of the 3" diameter foam plastic "spaghetti" tubes that my kids no longer use for beach games - laced them into a flexible "mat" configuration that I use to line the bottom of the ama storage compartment. They don't keep the water out, but they do make the difference between damp and drenched stores. I measured: It takes 5 gallons of water to rise above the "floor" they create.

Now, if someone could just figure a way to keep the water out in the first place...
Fred Cox, Reno, NV, F-24-2 #76, "Preshusss"

7. > Does anyone know of a good technique for replacing the o-rings? I have had no success in getting them to stay in place once they are out and even with two people (four hands) working and holding them, they always pop out after about 3/4ths of it are in place. Any suggestions are appreciated.

I had good results using heavy grease. I think the exact product was Lanocote corrosion block. very thick and sticky. It was still a pain but it got the job done.
Mark Darius, F-27, WITCHCRAFT

8. I ran into exactly the same problem with the ports on my F-24. I warmed the o-rings with a hair dryer (because it was last winter when I put them in) and then used tape to hold the sections that I didn't have enough fingers for. It worked and, to my amazement, they didn't pop back out after the tape was removed. (Even 1 year later after many opening and closings of the ports.)
Larry Shaw, F-24 Mk1 #009, "Riaka", Auburn, AL

9. Coat with Vaseline. Pull the ring wider, the plastic will stretch. Position over the groove. As it shrinks fit into the groove.
Eventually the ring will break (5 years).

10. The problem with the inspection ports has little to do with the 0 rings. If you look closely you'll probably see that yours have them. The problem with leaks is rather that the inspection port flanges are screwed down to the ama with self tapping screws and the bedding caulk doesn't stick to the flanges. The solution is replace the self-tappers with machine screws and nuts and use 4200 which adheres better to the flange than the Sikaflex that the factory uses.
Ron White, Stampede, F-31RS

11. BTW - If you use Viton o-rings:
If Viton has been subjected to heat or fire (heaven forbid!), do not allow to touch the skin. It will penetrate and continue to do so until medical treatment is received.
Dave Howell

Instruments - Cooking and Propane

1. I installed a CO monitor inside Wahoo, F-31. It seems to work well and the alarm sounds when cooking with one hatch board in if I'm not careful. CO is not to be messed with.

I also installed a propane sniffer which will shut off the gas automatically if it detects propane. I located the sniffer under the stove at foot level inside the louvered doors. The theory was that it was a good place to hide a sniffer and the gas would creep in through the louvered door and set off the sniffer. It works well if the door is left open, but if the door is closed, the styrene fumes from the boat (2 years old) set it off making the stove essentially unusable. So I disconnected it.
Tim Cahill-O'Brien

Instruments - Calibration

1. The Raytheon ST-60 instrument reads way too slow. Unfortunately the correction needed is not linear. 1.31 seemed right for me for around 7-10 knots. Its still way slow when going very slow or very fast. Everyone I know who has these instruments has the same problem.
Tim Cahill-O'Brien

Instruments - Recommendations

1. I also had a lot of instruments on my first boat, and none on my second. They can be fun to watch, but they never really helped much, except perhaps for the depth sounder. If I could have only one instrument it would be a GPS chart plotter with depth sounder capabilities.
Don Wigston

2. I'd second that.

However the cost of a (good) GPSMAP Sounder including transducer is as much as the cost of a Tridata (depth & speed) instrument with the addition of a GPS (handheld w or w/o charts or a bit higher the GARMIN GPSMAP 180 or 230) (the 185 or 235 are Sounders needing a transducer; price difference $150 plus transducer, another $155 to 300)

The advantage: you are not relying on one single (electronic) instrument, where in case of failure everything is out. Two more points; the recognition of the numerals is much better on a dedicated depth and speed instrument, second GPSMAP Sounders can be battery drainers.
Felix Kagi

3. I have seen a few who put liquid(floating) compass on the inspection ports on the amas for the captain to see. Works great, and you don't have to worry about the electronics! It would seem to me if you put instrument repeaters by the window one slip of a crew member while on the deck for whatever reason they might be gone.

Jon Alvord

4. We would have suggested Raytheon ST 60 series instruments. Easy to install, and have been extremely reliable. We have not been happy with Nexus, or KVH for that matter.
Dogpound

5. Got the Speedmaster installed. A single instrument with speed, depth and race timer. It is solar powered, and has an integral battery. Mounted it on the front edge of the pop top. Highly visible, out of the way, dead simple, and reputedly reliable. I am very happy with it. The race timer is particularly excellent.
Vincent B. DePillis, F-28R, Freda Mae, Seattle.

6. If I had to do it over again I would purchase the Garmin charting GPS with a built in depth finder. Unless you're racing and use the knot meter for sail trim the GPS is fine. The speed over the bottom with the GPS is very accurate on the average vs. speed through the water. The paddle wheel on my knot meter gets plugged and has to be cleaned out about every 4th time I go sailing. It is a Raytheon SR-60 Instrument. There is one really nice feature, when you remove the paddle wheel it doesn't flood your boat. They designed a better mouse trap. It just dribbles a little.
Marv Marcus

7. Being the CB (cheap bastard) that I am, I finally broke down and bought an $89 Hummingbird DX100 fish finder. It shows me more info than I could ever need (fish, bottom structure/density) for at least $50 less than the cheapest "sailboat" depth sounder. And my bass fishing neighbor likes it too. For a little more add speed and temperature, and its still cheaper than the usual instruments.
Robert Libbey

8. Ditto on the Hummingbird DX100 portable fish finder. It's a great value. One of my favorite toys (I use it for fish). A bit heavy in its carrying case, but operates for approx. 100 hrs on a pair of 6V batteries. Could use a more secure way to anchor the transducer when underway.
Ernest Hardin

9. I have had one of these flush sensors for 5 years. It works perfectly.
http://www.cyber-marine.com/bridges/kaytek.htm
I do work in acoustics, so was aware of the technology. Mine is not NEMA compatible. It was designed to replace the paddle wheel of an existing knot meter. The exterior surface can be coated with antifouling paint. I dry sail and was more concerned with breaking the paddle wheel on the trailer.

I have had no problems with it. It installed exactly as specified. It replaces the paddle wheel and has provisions to duplicate the pulse rate of most sensors. It does go through the hull but is flush with outer surface and smooth. (there are no little holes for things to get into) There is nothing to foul other than the flat smooth surface of the sensor which can be coated with antifouling paint, same as hull. So far as I can tell with GPS it is dead on accurate with a

resolution of 0.1 kt. It works up to as fast as I have gone, 20 kts and down to 0.1 kt. The response time is much shorter than the update rate of the display. The display is your original knot meter electronics.
I have seen no down side.
Voldi Maki, F-28R #60

10. > A remarkable thing about these boats is that you become very sensitive to the apparent wind that they develop. This past year was our first full season for sailing our new F-31 (#174) and we never got around to installing the Nexus wind instrument that we had purchased. With both day and nighttime sailing, we never felt we were hindered by not having it. I think you will find that the gestalt feel of the way the boat is performing will be much more informative than the numbers that you read off of a display.

I've been trying to get this across to a number of people but often don't have much success.
Thanks!
Mike Multi Marine

Instruments - Reliability

1. We've had the B&G system for nearly a year. The installation was marginal (in my opinion) and the service/reliability has been minimal. I am currently in a round a bout with B&G corporate and the reps that did the installation.

Has it won any races for us.....NOPE !!!! The win @ Newport to Ensenada was because we were so seasick we couldn't wait to get off the boat. The only functioning instruments were Garmin handheld gps.
Jeff Cohen, F-31R Mental Floss

2. A friend of mine has B&G instruments on his C&C. He said B G stood for "broken gauges"
Edward Wagman

3. Spend the money on something that can give you some return like lottery tickets.
Raytheon ST60 Depth meter - works.
Raytheon ST60 Speed - way off most of the time - most valuable function is that light lights up the cockpit. Has caused gelcoat dings when the helmsperson read the gauge rather than looking over the side and banged into the dock.
Autohelm ST4000 pilot - works well when the compass course is within 90
degrees of where it should be.
Tim Cahill-O'Brien, F-31 Wahoo.

4. I had a Standard Horizon depth for just over a year, the display failed and I had to shell out $180 for a new one. Now after 1 1/2 years, this display has failed, Standard sez I have to buy another one. Either spend the bucks for upper level stuff or go really simple.
Ed Saleem

5. I have a Nexus Mast Rotation Compensator on an F-31R -- had it for two years-- now that I have a Zener diode rigged up on the outboard the system doesn't blow out and require me to return to the factory anymore. However, I cannot get wind speed or direction from it. I don't believe I ever got wind speed or wind angle from it. I have given up -- at least temporarily -- in trying to get Nexus to help me. Their communications confuse me, the turn around time is slow, and I am worn out by fiddling with this problem.
John Corson

Instruments - Transducers

1. We have the speediest knot meter. We put it aft just where the hull trailer bunk ends so as not to wipe it off when launching/retrieving. Seems to pick up a little turbulence from the motor when its running and gives some false readings. This didn't happen with a 5hp motor but does with the 8 we have now. But of course we are mainly interested in good readings with the motor off and it does fine for that. Speedtech doesn't give much customer support though, had a hand held wind meter from them that got dropped and quit working. They neither repair nor replace.
BillnBess, Essence F-24 MK II

2. > I did see a F-28R that had mounted a pvc pipe up off the stern with his instruments attached to it, but I am not sure if it read accurately.

Interesting. If that is the boat I think I think it is it was stainless steel tubing, and no it did not read accurately on one tack. This sounds like Doug Harkrider's F-28R What Up now owned by Phil Brown who summers in Maine and winters in Florida and who has renamed the boat Cirrus.
Don Wigston

3. For what it is worth, my transom-mounted transducer doesn't work at high speeds even though it's mounted according to manufacture recommendations. I'm going to put the next one through a hole in my hull next!
Jim Larson, F-27

4. I have to pull my paddle wheel censor out every time I beach the boat. Sand gets in the works and it will not turn and that is a little counter productive. I got tired off mopping up afterwards so I build a PVC standpipe around the sensor housing. I put a aluminum rod where the pull ring was and now I stay relatively dry.
Renzo Spanhoff, Ms Leading F-9A

5. I have Raytheon instruments and for my depth transducer we epoxied it into the hull under the aft end of the forward bunk on the boat center line. From the inside we cut a hole (hole saw) through the inside layer of fiberglass and core material (balsa on Milagro) but did not disturb the outer layer of fiberglass. We then mounted the transducer in an epoxy bath in the hole. Works great.

Dennis Neumann, F-9A. Milagro

6. I did something similar, but a bit different on my F-28R. I drilled out the inner skin as Dennis described. Then I scraped away the core, plus about 3/8 inch more between the inner skin and outer skin (hull). (Burrowing back 3/8 inch will give the epoxy some space to fill between the skins, and help insure it doesn't pop out.) I mixed up a batch of epoxy with fiber fill and half filled the hole. Then after that cured, a second batch to get it back to the old inner skin level. If you do it in one pour, it'll get REALLY hot while curing, and might even give a very, very minor bit of sag to the outside skin. Now, after that cures, you have a circle of epoxy with fiberglass skin outside that the transducer can shoot through no sweat. Next squeeze out a small cone-shaped pile of silicon in the middle of the epoxy circle. Then set the transducer on top of the pile and slowly work down until it bottoms on the epoxy, with a layer of silicon holding it in place. Let dry. Viola - you have your depth transducer mounted with no through-hull. And best yet, if the thing craps out, it's not impossible to break loose from the silicon, scrape it all off, and silicon the new one back in.
Michael Zotzky, Persevere, F-28R

7. The trick with the epoxy base or the silicone is to ensure that there are absolutely no air bubbles in the substance, or the unit will not read correctly.
Richard Britton, New Westminster, B.C.

8. I used the Navman system (multi 3100), using an "in-hull puck" transducer designed for this kind of installation. It works great! It sounds fine down to 435 feet, which is the deepest sounding in Cayuga lake. http://www.navman.com/marine/products/sailing/index.html
Richard Stephens

9. Airmar now makes a sensor with no paddlewheel, when I spoke with them they felt it would output the same signal and thus be compatible with the KVH system but made no promises- KVH still offers technical support and a rep might be able to help you if you want to go that route- it is the future.

I have this same Airmar paddlewheel sensor (and a KVH system) and made a plastic spacer so that I can unscrew the locking nut on my paddlewheel, retract it till the wheel is inside the hull line, and wedge the spacer against the underside of the floorboards so the sensor doesn't come out entirely due to water pressure thus gushing water into the boat at an inopportune moment (I anticipated rather than experienced this moment- I usually experiment by experience). This is easier than attempting to remove the sensor and replace it quickly with the plug, and mine does not leak at all when retracted the 1/2" necessary.
Jesse Deupree, F-27, ION, Portland Maine
living the phrase- "Good judgment comes from experience- experience comes from bad judgment".

Instruments - Wind

1. The apparent wind might always be in front of Mike L's F-31, but the true wind won't necessarily be. About the only value I can see in wind instruments is in racing at night when you can't see the water or the tell tales (but I still wouldn't bother with them. For one thing, I hate racing at night!
Don Wigston

2. We would not have suggested the expense of wind instruments because of the difficulty in calibration etc Wind instruments are great for getting an estimate on wind strength, but attempting to compute TWS is never as accurate as the manufacturers would have you believe. Then there is the question of where to put the sensor. If you put it on the top of the mast, not only do you have to correct for mast rotation, but now, you may not fit under some bridges on the ICW (like at Ft Walton for the nationals or Round the Island race).
Dogpound

3. What I would suggest for your wind instruments is to attach the sensor to the bow sprit. *(Note - this only works if you jibe the spinnaker inside rather than out in front. Editor)* I have done this since the Nationals and the only problem was just recently when we crossed the Gulf Stream in 10 foot waves. The sensor got wet and went south. I have since made an extension that looks like a sideways "S" that raises the sensor approximately 16 inches and it works great. Now, with the rotating mast, there is no correction factor as the sensor is on a fixed point, and I have not had any problems with foul-ups with the spinnaker.
Doug Harkrider

4. The spinnaker has never been a problem. We always jibe inside anyway. Initially I just mounted the sensor on the end of the pole using a flat plate there instead of the standard dome shape. This worked great until we tried to cross the gulf stream in some big waves. We then had Tommy Grainger make us a carbon tube that attaches to the standard dome and it raises the system up 30 inches and angles it forward 30 degrees. I think that you could make this system yourself or have Tommy make you one. Also, the Raytheon system is stable and it works.
Doug Harkrider

5. I built a mast rotation compensator (MRC) for our masthead wind instrument. We just put the boat in the water and tested the MRC and it works very nicely. The idea is to make the wind instrument on top of the mast point forward while the mast rotates. To do this I bought a small Harken swivel base, took off the cam cleat, and mounted the swivel base upside down on the top of the mast pointed forward. Note that the swivel is now pretty close to in line with the axis of the mast's rotation. I mounted a crossbar about 18" long on top of the swivel, then mounted the wind instrument on top of the crossbar. From each end of the crossbar I ran light lines down to the cap shrouds; they meet the cap shrouds about 1/2 way from the hound to the spreader. With fiber cap shrouds a rolling hitch is a good knot to hold the light line to the cap shroud. It did take one trip up the mast on a bosun's chair to fine tune the position of the light lines. If I were to build it again I would use a batten instead of building a wooden cross bar.
Dave Lansky, F-24 II, Mayfly
Note - this would be a nuisance if one dropped the mast often. Editor

Insurance

1. Allstate, State Farm, Farm Bureau, Cincinnati, Boat US, West Marine, Defender and many more write boat insurance. Ask them to quote you AGREED VALUE and give you one of their blank policies. The trailer can be insured (costs very little so with liability, don't rely on homeowners)

You will see that policies are quite similar, Boat US has some add on policies if you plan to go to the Bahamas, but it's also more expensive.
Felix Kagi

2. FYI, the best quote for my F-24 Mk II and my current F-28R was through State Farm, who has my other insurance. They're pretty no-hassle, and have paid off well on other claims.
Mike Zotsky

3. West Marine has been insuring my F-24, Mk II for over 3 years now (January, 2000) without complaint. I haven't filed any claims, however.

The coverage seems pretty generous: racing is okay and the boat is covered into Mexican waters to just south of Ensenada -- obviously designed around the Newport to Ensenada Race. For that I pay $270 a year. The coverage is valid while trailering and sailing in other areas, too. The trailer is not covered, but it is insured through my auto insurance (strangely enough.) Maybe West Marine will drop me if they get around to it. :)

I know from experience that insurance rates elsewhere can be much higher than in Southern California.

Even stranger, in 1996 Chubb didn't want to insure a boat with a 5 hp engine that could surpass 20 knots. I guess it just depends who you talk to.
Karl Komenda, San Diego, CA

4. I concur about USAA. If you are eligible, and I think they now are open to non-commissioned as well as commissioned officers (retired and dependents also), you should probably be doing all your insurance through them. Not only do you get good rates, (I think they are one of only two companies here in Massachusetts still (January 2000) giving the 15% auto discount) but because they are policy holder owned there are annual dividends and they contribute to a capital account which also pays dividends.

I have had two F-27 claims. One was my first F-27, a total loss from a mooring in an October '88 storm and the other a collision in the '94 Buzzard's Bay Regatta which required the replacement of the front third of the starboard ama. The first F-27 wound up on a beach, the adjuster was there in two days, I got the check, including the deductible, in about 10 days, bought the boat back for $500 and stripped $5,000 worth of gear including winches, mast, rudder assy, two hatches, stove, sink, etc. much of which I shipped to Corsair (they were very accommodating about building me a partial boat which I finished at home; this was 1988

remember) for inclusion in my new boat. I should also mention that they are very aggressive about pursuing the other guy. I t-boned a 40 foot lead mine who was motor sailing around in the racing area just after the start of the BBR. They recovered the total costs of my repairs from him.
Tony Cabot

5. I have AAA and also towing coverage on my Suburban warranty, but they would not touch the boat. I am a member of Boat US and have their unlimited towing and 'trailer club' coverage so I called them. Someone answered at the first ring. I explained where I was and they told me they would call me back. After about 15 mins BOAT US called back. They had called 5 tow truck companies but no one wanted to deal with the F-31. Then they had contacted a company who would do it, and haggled a fixed price to take the boat to its marina at San Rafael - about 35 miles away and then drop my truck off at the local Chevy dealer. A Huge tow truck arrived - the kind that they use to tow Semi trucks. They had to lift the front of the Suburban up and then disconnect the drive shaft. This huge truck towed my Suburban which was still towing my F-31 to the yacht club and then the Chevy dealer. The cost of the truck was $180/hour and it took 3 hours and 10 mins to tow the boat the 35 miles to my yacht club. That would have normally cost $570 but Boat US haggled a price of $450 and then paid the first 150 leaving me with 300 to pay. Apart from saving me $270, the real value was them finding me someone with the right skills and the right equipment to get me and the boat home when I was stranded.

People who tow a lot might want to consider Boat US's trailer club - I think it only cost about $10 extra.
Tim

6. When I asked this question of my State Farm insurance agent early in my F-25C project. He said I not suppose to show you this, but here is what's in the State Farm manual for their agents. In big red letters was a paragraph that basically stated that under no circumstances would any coverage be allowed for a boat under construction. I had no problem insuring my boat with them after my survey was done on completion. Given the frustration level that can build up during a boat building project, this seems to be a wise move by the insurance companies.
Neal Gunderson

7. The 10 year old Nissan outboard on my F-27 left me stranded yesterday for the first time. I keep my boat at a dock in the water behind a home of a friend. The canal is narrow and you cannot sail up to it. You must power in and out. I purchased Sea Tow insurance for just this reason. I was very pleased with the service I received. I anchored in the bay and called them on the VHF and they were out there in about 15 minutes. Just like AAA. They were very professional handling my boat and I highly recommend them.

The insurance costs $99 / year. They will come out for you even if you're half way to the Bahamas at no further cost. Out of curiosity I asked how much the tow would have cost if I didn't have the insurance coverage. He said about $300.
Glad I had the insurance!!

Marv Marcus

8. I have my boat and trailer insurance through my home-owner's policy. It's convenient and specifically covers racing. Although I have towing coverage with them, too, I don't know if it covers the boat and trailer. The only time I needed that, I hitchhiked into town to a repair shop, and they sent out a tow truck for the Tahoe and drove out with a fine pickup truck and brought in the boat as a good-will gesture - and to get the repair work. I was still stranded for three days in a tiny Oklahoma town, but that's another story.
David Paule, F-27, Second Chance (no longer have a Tahoe.)

Interior Cleaning - "Amazing Roll-Off"

1. When I bought my boat through Bob Gleason in 1996, the interior was black with mildew. A little "Amazing Roll Off", a garden hose and a shop vac to suck up the soapy water, the interior looked like new.
Eric Bowden

"Oxy-Clean"
1. A product that works well for us is one named Oxi Clean. It is sold on TV, at a local store chain called BOSCOV's, and can be purchased via phone at 800-781-7529.

There is a mildew instruction right on the container label. It will not bleach the fabric and has no smell.
Good luck! Dave and Linda Toth, F-24 Mk II #290, ESOP's Fable

Interior Cleaning - "60 Seconds"

1. The best thing to make the interior look brand new is a product called "60 seconds". It is a lawn and garden product and kills mold and mildew. In Washington, we get it at Lowe's Home Improvement.

You dilute the stuff 1:1 and spray it on with a garden sprayer. You then leave it on for 60sec, I left it on for 2-3 min on my bad spots. You then rinse it with water. You can do this with another garden sprayer or a squirt bottle and have a wet vac there to suck up the water. I wore a respirator when spraying the 60sec.due to the closed nature of the boat.

I chose to covered all my electronics with plastic, removed my knot meter and brought in the hose!!! And rinsed the 60 sec. and the mold out. Now mind you I had MAJOR mold!! And I did the whole interior including the aft cabin. It came out looking brand new and I haven't had a problem since due to its residual effect and leaving small passive heaters in the boat during winter.

I cannot take credit for this discovery, it came from my dealer Wayne Erickson at Multihulls Northwest in Seattle.

Chris Sherman, F-27 #158, RAVEN

Interior Cleaning - "Tilex tub and tile cleaner"

1. I have used Tilex tub and tile cleaner with success. Spray it on and immediately blast it away with a garden hose. Remove everything from the boat interior first.
Tom

Interior Cleaning - Chemicals

1. I don't have my chemical compatibility tables at home. I quickly can't remember how nylon/polyester hold up to hydrogen peroxide but I think it is ok. No rinsing needed.. It is available in gallon jugs at some pool stores. (Baqua Shock or something like that). Usually 27 to 35% strength. You should dilute it to 3 to 10% before using. Another thing is something called zeph(ren?) chloride. You can buy an 8oz bottle in medical supply places, a little goes a long way. This is the active ingredient in some "sanitizing" hand wipes and works on bacteria, viruses, mold, mildew. I don't think you have to rinse but you should probably test it in an inconspicuous area first.
David Beretta

2. The products mentioned were Baquicil which is a non chlorine product. I used it in my previous pool instead of chlorine because it does not have the negative effects of chlorine like bleached clothing and rugs when you drip.

The shock is pretty intensive stuff but appears to work just like hydrogen peroxide. It will foam up just like HP but will immediately dry out your skin (and it hurts!). Do wear gloves when diluting.

You need to find a pool store that is a Baquicil dealer.

Once in the pool, you could swim in 5 minutes! and is only mildly more expensive than chlorine.

Interesting concept to use it on carpeting. It is very effective on algae in the pool.`
Bob Condon

Interior Cleaning - Moth balls - mildew prevention

1. Fill 3 bowls (6" diameter by 3" deep) with fresh moth balls once each year. Every time you leave the boat, put one bowl in each section (forward, center, and aft cabins). The sinks make good places to place the bowls. Pull them out and let your boat air out while trailering. Stops Florida mildew and all the bugs too. Simple, cheap, and it really works!
Craig, F-27 #390, "Sandman" Tampa, FL

2. We keep our F-24 in mast-up storage in The S.F. Bay Area, and have, for 2 years, done only two things:

a. Leave the front hatch cracked (but still locked)
b. Leave a small (slotted) bowl of desiccant (Dryeze?) above a large bowl in the sink.

Maybe we are attempting to dry out the outside air with the window cracked, but I like lack of stale air when we arrive. The desiccant soaks up the moisture in the boat and eventually drips into the bowl in the sink. Normally the large bowl has only an inch or so of liquid in it. But we leave it in the sink in case the large bowl overflows.

When we got our boat, there was mildew in the fabric liner. The above procedure completely stopped the mildew that was there from spreading and the boat never smells musty or unpleasant when we arrive to go sailing.

San Diego will be a little worse, mildew wise, than the Bay Area, but I still think the above 1-2 punch will work for you.

Enjoy San Diego. Be sure to take your screacher. :-)
Randy Devol, F-24 Mk I #32, Joint Venture

3. It takes only a few minutes to air out if you open up all the hatches even if you're still sitting on the trailer. In FL, on the trailer, in my back yard 3 bowls does a surprisingly good job with mildew. I add to the supply of moth balls just before the rainy season starts and that takes care of the problem for me.
Craig

4. We have found that even without a leak, there's plenty of condensation when you overnight with the boat closed up. We keep a container of DampRid open on the boat all the time. It's an easy, inexpensive way to keep mildew out of the boat. Dump it once in a while and pour in some fresh pellets and you're good to go. Our boat stays in the water 9-10 months out of the year.
Jim Bathurst, Wide Open, F-27 (#451)

5. The following link describes an anti-mildew product.
http://www.bioshield.com/our_products.htm
Richard Keller

6. The renewable stuff is called "Drierite Desiccant" we use it here in the lab for chemicals that we want to keep water out of. The blue form of the crystals turns pink when they are saturated, and can be renewed by putting them in the oven.
-Lisa, lab geek at Amgen and crew of F-31 Indefatigable

Interior Cleaning - Iosso
1. There was a discussion on the list a week or so back regarding Iosso. Someone reported that their phone number was no longer working. I went digging and found my invoice from when I ordered back in '97 and called them. Their number is working. They also reported they now have a toll free number 888 747 4332. This stuff really works!
Jack Johnson

Interior Cleaning - Odors
I purchased an old fiberglass monohull boat years ago that had a baaaad smell. I took everything out of the boat and scrubbed it down with Pine Sol purchased at the local supermarket. The boat smelled very good of pine needles for about a month then the smell went away and there was no odor of any kind. Try it, Good luck.
Marv

Interior Cleaning - Tools
1. I have used a variety of ordinary household cleaning products with good success. The stains have not been tough to remove. My "secret tool" has been a small wet vac (a great little appliance that is primarily used for small carpet stains in the house). I would liberally spray a dilute cleaning solution on the carpet (any thing with a little bit of bleach is generally good for mold and mildew), then vacuum it.
Peter M. Lucas, F-27 #89, "Odyssey" North Bend, Oregon

Interior - Finish

1. After having the lightweight grey carpeting in our F-25C, we highly recommend AGAINST any carpeting. We are having our boat refinished in late June and the first item on the list is to remove the carpeting.

It gets wet, it stains, it mildews and it traps moisture against other components.

A painted surface is much easier to maintain and will last a lot longer and still look good. There's just nothing like being able to take a hose to the inside of your boat.
Paula Smyth, F-25C "Yo!"

2. We have three boats here without carpet and I have had to paint each one of them.....and I won't do it any more. We use a very smelly epoxy paint with an organic filter respirator on our face and it still smells until it's set. Nonetheless, if I was building.....I'd paint it. Ordering from the factory....carpet it, except for the head area. I do like to put soap and water to the walls of the head occasionally.
Cheers, Mike Leneman, Multimarine

3. I lived on the boat in Portland Maine this winter, and I had no problem with the carpet. Ironically it was the non-carpeted areas that gave me trouble! Because of the harsh

temperature differences between the inside of the boat and the cold Maine winter, I get condensation on all parts NOT carpeted.
Eric Bowden

4. Don't replace the headliner...nothing finer...just steam clean it, dry, then apply a product called "Bio-Shield" if you can find it. We had an '88 F-27 that was heavily mildewed at one time but cleaned it that way and it looked nearly new from then on. Now have an UC and plan to use that stuff regularly. Meltemi

5. The F-36 interior at http://www.farriermarine.com/index/designs/F-36.html is all painted and a beautiful job. It is the only painted interior that I have seen that would be acceptable on a showroom floor. However, it took one man three months full time to achieve, and I bet he will never paint an interior again (to that standard). Only other choice is a gelcoated interior liner, but this adds hundreds of pounds of weight.

I've done them all, 7 painted interiors, 2 carpeted interiors (with Frontrunner). The paint can mildew just as much as the carpet if you don't ventilate properly, and it can also be a dirt trap if not completely faired, smooth and glossy. Looking at the work required, and the standard of finish of the end result, I would use Frontrunner and ventilate well on my next boat, painting where it is not seen, or in areas likely to get frequently wet.

The best 'quickest' interior I have seen was in an Australian built F-82R where the owner used a non-skid textured paint throughout. Looked surprisingly good, but a little non-friendly. Probably very useful in a capsize (you could walk around the interior as it goes over).

It is nice to be able to hose the boat out, but then not everyone is a messy camper either!
Ian Farrier

6. >I'm planning on having an interior auto upholster install a new vinyl interior. I would not want a carpet interior.

Arrgghh - don't use vinyl - it is terrible stuff, much heavier than Frontrunner, and it can mildew terribly. Particularly avoid the foam backed stuff - probably the worst thing one could use. The fabric interior was not responsible for the F-27 being damp and smelling that way - it is lack of ventilation.

If you don't like Frontrunner fabric then best to just paint. An important point about Frontrunner also - it is actually a polyester/nylon blended fabric, not a carpet - just looks like carpet, but is only around 1/16" or less thick and is thus very light. It is nothing like the same heavy carpet (1/4" or more thick) as typically seen in power boats, and which I would never use.
Ian Farrier, http://www.farriermarine.com

7. What I would now use is a simple acrylic latex exterior paint, with a textured or speckled finish. No major toxic or allergy problems, dead easy to use, water cleanup, and it is low cost.

Actually used a latex paint on the inside of my original ply 30' tri back in 1969 (no funds for a 'Marine' paint) and it worked very well. Strongly considered using it for the F-27, and even tested latex painted fiberglass samples submerged in a bucket of water for months. Never bubbled or showed any sign of any defects. However, wasn't game to use it in the final production boat, as the boat was odd enough, without coming with a 'un-marine' like painted latex interior. Could have been a sales disaster. However, as I recall, we did paint #2 with latex, to see if there were any long term problems, but it was destroyed in a storm (blown on the rocks) a few years later, so was never able to follow up.

However, latex/acrylic would now be my first choice, with Frontrunner fabric in a few selected areas, and a glossy LP paint in head or galley areas, as required.
Ian Farrier

8. > I am looking for a white interior paint for my F-9R I am building. One that hides imperfections so I don't have to fair much.

COR-O-FECT III

I used the 134-3020

It won't fill to much but the texture and the flecks break up the visual stuff very well.
David Tikal, F-9a FortyTwo

Interior Finish - Mouse Fur

1. The carpet is called Frontrunner and is actually available at many chandleries in Australia but not here. It is very thin and durable, and actually lighter than paint, but also three times as expensive as normal carpet. Just any carpet will not do, most are too thick and do not conform well. If you cannot get Frontrunner then it is better to paint, but to get a good finish takes forever, and a lot of fairing compound - best to use a textured finish.

Corsair may be able to supply the carpet, otherwise you have to buy it by the roll. Not everyone likes it however, but is very popular for boat interiors in Australia. I have even seen it survive a capsize quite well - a quick hose and scrub and it looks fine. Prone to mildew however if not well ventilated.
Ian Farrier, http://www.farriermarine.com

2. > For those of us with older F-27s where can we purchase Frontrunner to replace the worn sections on our boats?

Corsair or one of their dealers, otherwise you have to buy it by the roll.

>Can we simply peel the old fabric off and use something like 3M spray adhesive to reapply new Frontrunner?

Yes.
Ian Farrier

3. > What is the "rodent adhesive" you would use for frontrunner?

The manufacturer recommends several glues, and I find plain old contact cement to work fine, either brushed or sprayed on. Frontrunner is stretchy so will form around many curves, and it is just a matter of practice to find the best ways to apply. Some cut in place to match seams exactly but I dislike doing this as a sharp knife can also cut through what is a thin laminate if not careful. Best to pre-fit and use the fabric's stretchiness to align the join seams exactly.

If it doesn't go well just rip off and do again. Try to also work down, or on the vertical. The experts can frontrunner upside down such as inside a cabin under the roof with ease, and in one large piece from the center out, but can be tricky first time. Best to start out with small areas and work your way up.
Ian Farrier

Interior- Trim

Trim strips in the aft cabin. The small buttons are covers that pop off with a knife or a screwdriver, revealing the small Phillips screw that holds the trim on. There's also a clear plastic button retainer that you don't want to lose. The screws go into pieces of wood that's held in with 5200 or something like that. If your boat came factory-equipped with any electronics that is hidden by the trim, the wiring is also bonded in with 5200. If you look closely on the right-hand wood piece, you'll see some old loran antenna wiring that's still there. The rest has been cut away.

Jacking and Folding and Unfolding While Jacked

Note - some of these suggest that the trailer jack be used to lift the boat in some way or another. I tried that on my F-27 and the jack mount wasn't strong enough and started to bend. If you try this, exercise great care and keep your eyes open. Editor - May be better off with auto jack for this as there is a tremendous load on the jack - Jon Alvord

1 a. Equipment needed:

i. 4 63" screw jack stands, (angle better, straight O.K., Holster 1-800-783-9303)
ii. 1 hydraulic floor jack,
iii. rags,
iv. lumber 4x4x 30, 2x6x24 (two or three pieces),
v. tie down line.

b. Find a piece of level and firm ground, and secure the trailer with wheel chocks so that it cannot roll.

c. Move floats outside of trailer fenders. This can be done two ways; a) by loosening the bolts that support the floats and lowering the bunk boards. This is a time consuming procedure. b) move the hydraulic floor jack under the stern, perpendicular to the trailer. Set the 4x4 upright onto the jack and fix a 2x6 (to distribute weight) across the top of the 4x4 so that it is at or near the back edge of the stern. Activate the floor jack and lift the back of the boat until the floats become clear of the fenders. Put some rags on the fenders and move the floats outside. (here is where extra hands are very useful)

d. Raising the stern of the boat is achieved by lowering the trailer jack as far down as you can.

e. You are now ready to fold out the floats and move jack stands under the rear. It is very important to do this with two extra people because the boat will tilt on the trailer. If you must do this by yourself it **is essential that the opposite side of the boat be tied down to the trailer.** You are now ready to put one stand under the rear floats, just outside the folding frame attachment. (put a rag on the wooden support plate to prevent scratching the floats) Now do the same on the opposite side. After both jacks are placed move the screws on the jacks up a bit. The floats will not be out completely, they tend to want to "fold".

f. You are now ready to for the front jacks. You do this by raising the tongue of the trailer as high as you can with the trailer jack. This will put pressure on the jacks in the back and "fold

out" the floats. Once the trailer is up, you move the two remaining jacks under the front and adjust the screws up until the floats are out completely and everything is snug.

g. Now you lower the trailer jack until the trailer is in its normal level position and you can remove the trailer to do your underside hull maintenance.
This procedure can indeed be done in little more than 15 minutes, provided you have manpower. However, you need to think the steps through, otherwise the boat can tilt on the trailer and it takes a bit of manpower to get it upright again, never mind potential damage.

2. How do you unfold the boat on the trailer without a hoist? With the F-27 you need to lower one of the side bunks for the floats (time to find out if your bolts will still adjust- I replaced galvanized with stainless to make this easier) Then you put thin padding on top of the wheel fender and tilt the boat over to the side with the lowered bunk. At this point you can open one float (I make sure the fender is clean and smooth and put thin plastic sheeting to help the float slide over it). Support the float, tilt the boat the other way and open the other float.

3. . I can tell you my experience with the F-27. A good way and a bad way. I've used a piece of 4x4 and a floor jack to raise one side at a time (the bad way). I put the 4x4 between hull and float, with the end under the folding mechanism bracket where it bolts onto the hull. This worked but was a pretty scary operation balancing the 4x4 (and the boat) on the floor jack while unfolding. I wanted to jack it up from a hard point, as I never felt comfortable jacking the boat up from the hull directly.

This season, I made a wooden cradle out of 6x6's that made the job much safer. The cradle consists of two nearly vertical pieces that go between hull and float and are joined at the bottom to a horizontal piece about 8 feet long. The vertical pieces are lag-bolted to the horizontal piece and braced as well. The ends of the 6x6s are angled to mate with the folding mechanism bracket. I use a floor jack and then put jack stands under it. It took me about $40 and an afternoon to make.
The wife is very curious where I'm going to store it. Part of a really, really sturdy picnic table perhaps.

4. Although one can get an F-27 off the trailer by moving/removing bunks and fenders, it is not necessary. I do the following:

a) Lower the hitch-post jack stand all the way.

b) Place two (short) boat jacks under aft end of the bottom of the boat and crank them up until the aft end of the boat lifts off the aft end of the bunks an inch or so.

c) Raise the hitch-post jack all the way.

d) Tie the side that you're not going to unfold to the trailer by running a line from the winch to the trailer.

e) The floats will now open just squeaking over the fenders.

f) As the float opens the first foot or so, you can get a tall boat jack under the aft folding mechanism plate. Do this to keep the boat from rolling as you open the float.

g) Get a short boat jack ready to support the unfolded float.

4. Straight vertical stands under the beams is the simplest support location and is what I would use. Min. distance apart for the beam support area as shown on the F-24, F-27/F-28 and F-31 will range from 11' to 13' which should allow one enough clearance for an 8' wide trailer to pass through. This also depends on trailer, wheel location and stand base type. That shown in Manual is just a simple artistic illustration and may not necessarily the best type to use. The inner brace may have to be reduced, removable, or eliminated, to clear trailer wheels on smaller boats, or the beam support pad could be moved further outboard slightly. In this case use a wider pad under beam to spread the load over at least 12" of the beam athwartships.

The folding mechanism attachment area on the main hull is strong enough to support the weight of the boat but it's a difficult area to support and will require a more complex jack stand. It would work well, but I would still prefer to use beam supports. Supporting the boat as shown in the Manual really is a simple matter and general rules are:

a. Always choose a strong part of the hull or beams to support. Usually in the area of a bulkhead. The float keel itself is extremely strong and can probably support the boat at any position, but pick a spot at one of the internal bulkheads just to be safe.

b. Always spread the load at every support point, so that you do not create a point load on the hull or beams. Use a large strong support pad with some relatively soft material (such as white Styrofoam) between it and the hull. Styrofoam will crush well before the hull foam will, and thus gives plenty of protection.

c. If worried about the whole boat being supported by beams or floats only (it is strong enough to do this) then one or two vertical props (say 4 x 6") to a large pad can also be used under the daggerboard case. Then just move as required when working in this area.

d. For safety reasons, should the boat be toppled sideways for some reason while working under it, I would also try to get some other alternative supports built up at each end of the center hull to catch and at least hold The boat up sufficiently high enough to protect anyone working underneath. A strong stable drum, or pile of bricks or timber with some foam on top, for instance, with a small gap to the hull. Move to a different position when required. It is very unlikely that the boat could be toppled, due to the wide support base, but extra safety supports can also be easy to rig up, so why not.
Ian Farrier

5. One item to consider when unfolding the amas onto jack stands that I didn't consider. When you are about to unfold one side, it is prudent to tie a line from the winch to the trailer on the opposite side until you can get the unfolded ama supported. Similarly when folding

back onto the trailer, it is prudent to continue to support the unfolded ama until you can again tie the folded side to the trailer.

Puppeteer was heeled at about 40 degrees after I folded one ama back in. Fortunately, I had some soft material under the unfolded ama so it crashed into something that didn't hurt it. It never reached any speed, kinda slow motion--you know that helpless feeling when something goes wrong and there's nothing you can do.
Thom Davis

6. We find that having the mast up is quite useful, as you can secure a halyard to a fixed point (e.g. a nearby tree) and use the leverage to tilt the boat one way or another to make it easier to get the ama out over the trailer fenders. This way you can unfold without lowering the fenders (tilt one way, unfold, then tilt the other way and unfold on that side).
Don Wigston, Windcraft

7. We unfold the amas while on the trailer by putting a jack stand under the stern and raising it about 12 inches or so. This allows the amas to clear the trailer fenders.

8. To unfold on the trailer you will need stands of some sort (saw horses will work) to support the amas.

9. I have unfolded my F-31 on the trailer by myself. I used 3 short boat stands (Brownell Boat stands in MA.) that I had for the F-27.

Jack up the transom with a boat stand so that the ama clears the trailer bunk. Be sure to keep one side tied from the spinnaker winch to the trailer otherwise the boat rolls to the unfolded side. Once clear of the bunk, the transom jack can be let down. Extend the ama and place a stand under the ama. You can then unfold the other side. You will find that the boat has tilted a little even though tied. Use a stand under the other ama. At this point you can bolt down the beams if you want. Once unfolded, you could use taller stands under the folding mechanisms at the hull and lift the hull and completely remove the trailer.

Folding up again is tricky by yourself. Better to have 1 or 2 additional persons (stronger than the average wife!) as you will need to lift one ama up enough to slide it onto the trailer bunk. Fold the ama that was unfolded last as the boat will be tilted to the other side. The ama will easily clear the bunk. Then the fun begins. The second ama (first to be unfolded) must be lifted as the boat is tilted slightly to this side. Lift and fold the ama at the same time and then force it up onto the bunk and it will gradually slide into place.

Since I was alone and my wife (small but strong!) declined to help, I was able to use the short boat stand under the ama (and carefully placed), to jack the ama up onto the bunk and complete the folding. It was actually fairly easy once I had the sequence.

This was the same sequence that I used on the F-27 and I believe this will work on any F boat. It was much easier to do on the F-27 as the amas were lighter.

You could get by without boat stands by jacking up the transom and having 1 or 2 people help you unfold. You will still need some way to support the ama once unfolded however.

Sounds complicated but was fairly easy. What was surprising was how heavy the amas were in comparison to the F-27.
David Shneider, High Priority 2, F-31R

10. If you just want to unfold and stay on the trailer, it's quite simple. All you need is a jack (or an assistant with a lever, a piece of 4x2 and some blocks are useful here...) and a couple of timber props. If you want to get the trailer out from under, more equipment is required.

Remove the tie down on the side you're unfolding first, and ensure that the other tie down is well snugged up.

Loosen the bolts holding the ama support board, which will slide downwards somewhat, taking the weight off the ama.

Make sure the fender is clean, the ama may slide across it and scratches could result.

The ama will slide outwards quite easily, and happily sit in midair at about the position it falls to when unfolded on the water. place a prop under the ama, and insert the beam bolts if you wish.

Repeat for the other side if required. If you only want to open one side, it is maybe a little easier if the trailer is across a slight slope. Open the uphill side... make sure the downhill tie down is tight.

Closing is simply the reverse of the above, when the amas are folded, and the pins are in, jack or lever the ama support planks back into position and tighten the bolts.
Regards, John Reddell, F-24 Mk II, #47

11. Our "technology" is as follows: We bought four 50gal metal drums and four jack stands. Bill cut four 2x10 planks long enough to span the top of the drums comfortably. Also four 4x4 pieces were cut and fitted to the area where the center folding mechanism on the aka is. This is shown on the diagram in the manual. The jack stands were purchased from Campers World, and they hold 7,000lbs per pair and can be extended up quite high. We use the trailer tongue to help pivot the boat, first down at the bow to raise the stern as high as it will go, set up the rear jack stands, then raise it up as high as it will go to set up the forward stands, then lower again and there will be about 3 to 4 inches of clearance between boat and trailer to pull trailer out. We have done this a couple of times now, and it seems quite stable. The cost for the drums was $60 and the jack stands were $40 per pair.
Bill & Bess, "Essence" F-24 MkII, #112

12. Real jack stands can be ordered directly from the Brownell Boat Stands in Massachusetts, www.boatstands.com, for $35 or $40 each. They delivered mine to Camden Maine for free when they were visiting a nearby marina.

For my F-27, I use 2 "medium" angled sailboat stands that I prop under the rear folding strut where it attaches to the hull and 2 "small" power boat stands, one for each ama underneath the bulkhead for the forward aka.
Eric Bowden

13. FYI, we've owned an F-24 Mk II and currently an F-28R. I've opened both of these boats on the trailer, typically to wax the hulls. Followed the same steps for each: tied a line to the trailer on one side and winched it tight with the spinnaker winch then cleated. Then I unpinned the opposite ama, laid a piece of carpet on top of the fender for protection, stood between the main hull and ama in the front, and bumped it out with my butt! (How many of you remember the dance "the bump"? That's another story). Went to the back of the boat and did the same thing there. Each time the hull would move about an inch or so. Eventually, the ama will clear the bunk and pop out. Fold it out, and prop it with something (I used a work bench and a cushion). Oh yeah, it helps to wet down the bunk before starting, and then to spray some dishwashing soap and water on it before closing back (to make it slide easier). What not to do? Make sure you have the rope on the opposite side tight. If not, the main hull will slide over when the ama clears the bunk (while opening), and it takes a lot of huffing, grinding and bumping to get it back in place. Otherwise, one person can do this with ease - I've done it several times. And for these boats, you DO NOT need to loosen any of the bunk bolts and lower them. Or at least I never had needed to.
Michael Zotzky, Persevere, F-28R

14. The input I got from Bert at the multi hull source works well and is safe but requires more stands. I bought my stands directly from Brownell, www.boatstands.com, and saved a lot of money compared to ordering from a catalog outlet. I'm doing this on an F-28 so the 27 should be the same.

Note that the top of the stand needs to be specified.

Qty	Model	Top	Height	$ Each (April, 2001)	Location
2	MB-OX	Flat	53 - 70"	$64.75	front beams just past strut mount
1	MB-2	Flat	28 - 46"	$47.75	just in front of rudder
2	MB-3	Vee	25 - 28"	$46.75	floats, just behind fwd beam
2	SB-2	Flat	48 - 65"	$62.00	rear struts (add blocks)

Total is $394.74 Plus about $100 shipping in April, 2001.

15. I used the 4 Brownell MB OX- 53" to 70" for my F-28R and they worked fine. I used 4' by 4' sheets of 3/4 inch plywood under each stand because the boat was on grass in the back yard.
Voldi

16. The stands are not even near the trailer. There is a good foot or more to the wheels as I roll the trailer out. This would not even be an issue with these stands. If I had a level spot, I wouldn't hesitate to use 4 of the straight stands- as it is I'm glad I got the 2 angled ones- I would have had to dig a hole to put one of the straight ones under the beam, and the bases of those MB stands are not that large- about 20" or so.
djfoley

17. I would highly recommend going to your local Home Depot or equivalent and buying some 1"-2" Styrofoam to put under the beams. I used the normal white foam not the higher density pink stuff, and it was great. This will distribute the load much better than wood.

Mostly I was surprised at how sweetly the floats unfold even when not in the water. My buddy and I were expecting it to be a lot of effort, but no, it's perfectly counterbalanced, with very little effort to move. We were very impressed with the excellent engineering.
Thank you Ian!
Jerry Garner

18. I would like to thank all those who replied to my plea for help in regards to getting Humpty back on the trailer. The suggestion that helped the most was to place my car perpendicular to the boat and attach a line between the trailer hitch and the jib sheet winch. With putting tension on that line at the winch, not by moving the car, and with 3 strong backs we managed to get the boat back upright.
Marv Marcus

19. For my F-27, I used a method quite similar to the one described by Michael Zotsky in item 13 above.

I would add a couple small points:

a) After raising the trailer tongue with the aft supported, the floats would not quite clear their trailer support bunks. I needed to jack up the rear a bit more.

b) When you pull out the first float, I would be very careful about relying on the rear jack to completely prevent the boat from tipping. I tied off the opposite side tightly from winch to trailer. And I would get a support under the unfolded ama right away.

c) On mine, to get the trailer out from under the boat, the boat had to be quite high off of the trailer. This was because, on my trailer, the aft end of the center trailer bunk was curved upwards a few inches as it followed the rocker of the main hull.

I also did this by myself a few times. But it is a lot easier with one extra pair of hands.

It is interesting that on the F-31, the floats will pull out without any need to lift the boat first.
Peter Lucas, F/C-31 UC, #225, "Flexible Flyer," San Diego, California

20. A word of caution to anyone contemplating using the trailer tongue jack to lift the boat after the stern has been set on stands. You are seriously in danger of ruining your tongue jack. Most of the boats have the cheap version which is only rated to 800 lbs. If you are trying to raise the boat to get the amas clear of their bunk supports you will be over the limit of your tongue jack and it most likely will deform at the pivot mechanism that is also used to attach the jack to the trailer. *(As I learned the hard way – Editor)*
Regards, Ira Heller

21. I should have offered an alternative when I sent my comments about using the trailer tongue jack. We raise the trailer tongue with the trailer tongue jack and then use wood or cinderblocks to support the trailer tongue.

We then use a short vertical boat stand to raise the transom until the amas are free of their support bunks and will clear the trailer fenders (how much is required varies by boat model and trailer model).

One can also lower the trailer tongue, place supporting blocking under the transom and then raise the tongue using either a scissor jack or a floor jack to free the amas.
Regards, Ira Heller

Jib Tracks

1. >In the marina where I keep my boat there are 8 other F-27s, so I decided to do some measuring. I discovered that on the boats with the separate jib lead tracks, the track not only extends 9 inches further forward, but perhaps more important, they are positioned 1.5 inches further inboard.

>Before I go drilling holes in my boat (and filling old ones) I would like some opinions. Could the lateral track position (1.5 inches) be the cause of the different pointing ability between the boats? Has anyone else with a late model F-27 noticed this same difference in pointing ability?

The tracks are best positioned as per the older F-27s, these being to my specifications, and this will improve your pointing. Corsair's management of 1991 to 1994 made this change and I believe they did it to avoid having to supply an extra set of genoa leads. Wasn't a good move.

Having tried many different jib track settings over many years I know track position can make a significant difference. Another 1 1/2" inboard from my specified setting can result in even higher pointing, but only with very good sails and a skilled crew. However, I never specify

such close settings as unless everything else is 'dead on', the boat can be a dog to windward. The settings I specify give the best all round performance.

Sail shapes, sheeting tension, and crew skills also all play a part, but one has to at least start with the best track setting. Sails that are too flat can also be a common mistake, one may be able to point higher but without any speed. A main that is too full can also be slow. Point of max. camber with a fixed mast must also be from 44 to 50% aft to avoid closing slot.

Rotating masts are different again, jib sheet tracks need to be further out, while fullness and camber settings are different. It gets very complicated, and if you want the fastest sails choose a sailmaker who is experienced and has a fast and proven track record amongst identical racing multihulls.

But in the end it finally comes down to the crew, and the settings they choose, and no textbooks can teach this - only experience. It really is a fine line to be able to point high and go fast.
Ian Farrier, http://www.farriermarine.com

2. The jib track locations were first changed in length and position after I left Corsair in 1991, but restored to their original position after my resumption of support in 1994. Any other changes are not known to me but may have occurred with unsupervised tooling changes.

3. The jib track for a 1990 F-27 is most likely to be Ronstan RF706 track -
http://www.ronstan.com/
Ian Farrier

Ladders

1. After trying two cheaper ladders for my F-27, I finally broke down and bought West Marine's gunwale-mount ladder, model 518969, which mounts in brackets on the ama. Price is about $168. It works great and stows in the ama. It didn't come with backing plates so it is necessary to make or buy them.
Jim Pease

2. The ladder designed by the folks at The Multihull Source is quite nice.
Wesley R. Wallace

3. I made one out of 3 pieces of 3/4 ' schedule 40 PVC , 16' long, holes drilled about 1' from each end. with poly 3/8" line and a carabiner, it works very nicely form the stern or the cap shroud on the ama. Lightweight and storable, it is easy to use and better than anything I have found.
Ed Saleem

4. I have mentioned before the simple and unusual ladder at:
http://www.ongaromarine.com/misc.htm. I like it.

Steven Tripp

5. > We're partial to this product...
http://www.sandycovemarine.com/ladders/gare_bastrlad.htm

Second that, Garelick Sport Ladder, bracket mounts right to transom on F-31 and F-28, holds a good bit of weight, is light (aluminum) and floats (just in case).
Felix Kagi

6. One day, I had two 19 year old girls on board, and while swimming, I told one of them that they can grab the front edge of the forward net, facing forward, do a curl around it, and wind up on the net on their bellies. One girl tried it and succeeded, but I've never known anyone else to succeed at it. And I sail with pretty fit people, generally. I can't do it.
Dave Paule, F-27 Second Chance

Leaks

1. Ahh, one of the few things on an F-27 that isn't perfect. Small leaks are a struggle because there are a number of sources, and it can be very hard to track them because of the way water can appear far from the source. I second the advice that an electric bilge pump is not a very useful approach- better is to track down leaks and fix them. I'll list a few that I've had personal experience with, in no particular order. I'm sure others can give you more.

a. The already mentioned daggerboard cheek block is a common leak- this one is usually easy to isolate because of the way it fills the compartment to port of the trunk. Follow the advice of the thorough fix.

b. Chainplates- the shroud chainplates will leak if the caulking is not regularly renewed with a caulk that will stick to stainless- which silicone doesn't. Leaks from the starboard chainplate can flow through the battery box and into the plastic tube wire chase and appear aft by the cockpit bulkhead- it took me forever to learn this.

c. The hull deck joint at the akas is caulked and sailing the boat hard can drive spray through this joint if the caulk is not renewed. It is rarer but also possible for the bolt pads to develop leaks.

d. The tube that runs from the cockpit locker to the outboard well (for your controls and gas line) can deteriorate.

e. All deck fittings are suspect for allowing small amounts of rainwater in. Recaulk as necessary.

f. The cockpit locker drains and the outboard well drain can develop leaks as the hull works over time.

g. All your thru-hull fittings can leak- for the head or speed and depth instruments. The lower rudder fitting can leak, though this is obvious as it wets the aft berth.

I try and get the boat dry and tape pieces of paper across suspected leak paths- they will show evidence of being wetted if your boat only leaks when it rains or when you sail hard.

Good luck and let us know what new ones you find. Its not surprising in a 13 year old boat.

Jesse Deupree
F-27 ION
Portland Maine

2. What a GREAT list-only other one I have found is the water fill on cockpit seat. Boy, are you exacting!!! I didn't re-caulk at amas, I reglassed at deck to hull joint now I don-t have to sponge out a gallon of sea water-Ha!
Pat G.

Excellent list Jesse. There were a couple of new ones I hadn't learned of yet.

3. One more possible source of saltwater ingress, which I heard about last year at Summer Splash, is the anchor locker. It seems water can get into the hull through the bow eye and/or anchor locker drains. This water can then migrate through scarfing grooves in the foam core which are incompletely filled with resin.

In my case, small amounts of water was able to bypass 2 bulkheads and end up in a distant bow locker. Over time, with lotsa sailing this could accumulate to 1/2 bucket or more. The fix was to work liquid caulking in and around the bow eye and anchor drains.
Good Luck,
Colin

4. The leaks can be between the hatch and its mount, the mount and the hull, etc. You find them by taking an extra inspection port cover, put a hole in it to take some source of high volume, low pressure air such as your vacuum cleaner "running backwards", use it to put positive air pressure on the inside of the floats and spread a soap film over any suspected leaks. I used my 12volt dinghy inflator to pressure the float. My experience on my F-27 was that leaks occurred around the inspection port /mount seal, the mount/float deck boundary , various screw/bolt fittings, chain plates, etc. Not in every hatch, nor every bolt, but generally in all possible places. Just rebed the problem areas. My F-31 doesn't seem to take on water in the floats so I've never done the above drill on her and BTW she does have 0-rings on the inspection ports
T.W.Fulton

5. Main cabin window leaks - get one of the break off razor knives which can get in to cut all the old sealant easily, some was nearly non-existent where it should have been. This was key to keeping the windows in one piece. There would have been no way to get them off in one

place without this type of thin strong blade. Got a tip from Steve Marsh to use black silicone when re-bedding, the result is a very consistent look and the secret is in a lot of evenly applied sealant and pushing the windows on, not using the screws tighten. Also, those O-rings really hold up well. Almost all of mine were in perfect shape, but some did need to be replaced due to over tightening previously.
Jim Burkert, F-27 #119 - Andiamo

6. I have replaced the caulk around my windows. I got the window out using a razor knife and very carefully cutting the existing caulking both inside and out after removing the interior trim.

Taking your time not to overpressure the window, the seal will be broken. I next cleared up all the caulk using a heat gun and a sharp knife - be careful not to score up the trim nor the window. I used BoatLife caulking on the outside, popped the window in and making taped it in place. I went inside, caulked the inside seam (my boat does not have a core at the window, just fiberglass), installed trim, then undid the masking tape...

6 windows later, we are dry!
Bob Condon

7. Leaks were always a common problem with the Tramp, and there can be several causes:

a. Boat overweight - the Tramp was always heavier than it should have been, and when heavily loaded water will tend to overflow in through cockpit drains. Only real fix is to take weight off, or figure out a way to install one way valves to these drains.

b. The Tramp also tended to have annoying, hard to find leaks into hull, below cockpit floor, and possible culprits include:

i. A leaky centerboard case to hull join seam - fix by reglassing along keel on outside, or inside if you can reach it. Look closely at this area under the boat and you may see a join seam crack running fore and aft each side of case about 1" outwards from centerboard slot. This is what you would have to glass over (use a 2" tape along keel area)

ii. A leaky centerboard pivot point - this is actually a molding, and trailering could cause the centerboard to hammer up and down to where glass in pivot point area of case could be broken down and start to leak. Cure is to cut inspection hatches into cockpit floor each side of control box and reglass over pivot point. Not a common leak but I have had reports of it. Pivot point location is shown in Centerboard Details drawing in the Tramp Manual

iii. A leaky join seam between underside of cockpit floor and top of centerboard case, around cutout for control lines where they enter case. Remove centerboard control box, and you may see a cracked seam around the edges of the rectangular cutout through this join seam. This will allow water to leak into bilge, particularly at high speeds where there can be considerable pressure in this area. Any crack should be dug out as much as possible and sealed with a good polyurethane such as 3M5200.

iv. A leaky centerboard control box - this will always happen at high speeds, where considerable pressure builds up inside case, causing an 'overflow'. A common problem with centerboard cases, and hard to fix, as the pressure will find its way through most baffle systems. Only real cure is to raise box, by gluing/glassing vertical sides on box around forward end to retain water until speed drops allowing water to drain back into case. I have seen the water climb vertically over 12" at very high speeds, so even this may not be a full cure. A good internal baffle system will help, by cutting flow down, and there should be one baffle inside box that lines pass through to cut down water flow. This can be either a horizontal fiberglass plate, or a rubber diaphragm. External c/b slot covers along keel may also help reduce internal pressure but these can be troublesome on a large boat, Low tech quick cure, and quite effective, is to stuff a rag into the leaky area.

v. Leaky cockpit drains - being close to the water, they are frequently under water, and water can leak into bilge through cockpit side to hull side join. Cure is to reseal, or fit drain hole with a PVC tube liner and plenty of sealer. Can be a difficult one to fix however.

>I am adding centerboard slot covers to my SuperTramp. When we get the boat moving fast, there is a fountain of water through the control line exit in the centerboard box cover. It is hoped that the centerboard slot covers will reduce the pressure in the centerboard well by smoothing the flow aft of the board, with the board down and closing the slot when the board is up. When planing, it does not appear that the stagnation pressure line as far aft as the centerboard. Anyone have any data? Ian?

If you have a fountain of water, it sounds like the internal baffle is missing. At most, you should only have water bubbling up and out of the c/b line exit sheave box at very high speeds, but not a fountain. The internal baffle should be a flat rubber sheet, or a fiberglass plate on later boats, that is held down by the Centerboard case control box/cover, and the baffle has only a small hole for the control lines to pass through. This then limits how fast the water can pass through, eliminating any fountain.

No one has tried external covers on the case slot itself, that I know of, so have no data. But I suspect they could be a big help.
Ian Farrier, http://www.farriermarine.com

8. Can be a problem finding the place that's actually leaking - most common include the through the deck chainplates which are very hard to seal, and windows. Another one is the outboard well drain, which can leak into the aft cabin, or the transom gudgeons.

Best way to find is to make sure the inside is thoroughly dry, get someone outside with a hose, and run on all the suspect areas. Then wipe around inside with some paper towels or tissue paper until you find moisture appearing.
Ian Farrier

9. > Is there a recommendation for how to caulk the outboard drain other than just running a bead around the fitting in the well- it could be a source of one of my afterberth leaks.

This was always a difficult area to seal, and if a thorough leak test around the outboard well drain does not show any leak then just leave alone.

Many plastics are hard to seal, as many sealers just will not stick to certain plastics. Usually the best solution is plain old silicon, which will stick well to many plastics, and that is what I use on plastic deck hatches.

The bolts holding the folding strut brackets to the underside of the beam should never be touched. These are embedded in epoxy, to insulate the stainless steel bolts from the carbon fiber used in the beam, and to properly spread the load into the carbon fiber, which is even more important. It is specified that the whole bolt, bracket, and nuts etc. are assembled with epoxy, and turning the bolt will only break the bond to the beam.

Don't check these bolts by turning with a wrench - just visually check and if they seem solid, or will not turn by hand, leave well alone. This has not been a problem area.

Note also that beam and float really are much clearer terms when describing the aka and ama, and many confuse the two, so be careful here.
Ian Farrier

10. Water left in bilges is never a good idea, as one, It can penetrate the laminate to build up moisture content, and two, it can freeze, and while not a significant problem, if on the surface, it could delaminate the hull if it finds and fills a void in the core.

I know most believe a fiberglass laminate is always impervious to water, but this is not the case. Thin laminates as used in multihulls can have many pin holes which will let some water through to the core. Even solid laminates will always absorb some water. The core is close celled which will prevent water from penetrating further, but should there be voids in the joins between the foam, or the manufacturer has put multiple 1/8" wide saw cuts through the foam, then some voids are sure to be there. Usually they fill with resin but this can not be guaranteed in a vacuum bagged molded boat.

To prevent voids (and avoid excess resin weight) I always closely monitor foam placement to ensure there are no large gaps, never use saw cuts, and use an extra layer of resin or flow coat in all areas of the boat where water could collect, including the float sides while folded. But even this is no guarantee that all voids will be eliminated, or every pesky pin hole is filled. Anyone who has faired and painted a boat will know how determined these little devils can be.

So try to prevent water gathering, and fix any leaks.

If you are having problems with leaky 'screw in hatches' then the best sealer to reseal is plain old silicon, as this usually bonds well to plastics (many sealers will not). But check first as some silicones are better than others. On the underside, be sure to run the sealer between and

around each bolt hole, not over them, and then run a small bead of sealer around under the head of the fastener. If you don't, then it will leak.

For a good seal, the application technique is far more important than the type of sealer.
Ian Farrier

11. > In the Cabin sole of the F-28, about event with the sink, there is a small (6" by 6") hatch. I am getting some salt water leakage into the bilge, which I first noticed when I pulled this hatch up. It is not a lot, but I would think that this area should be bone dry....

I also get water back there occasionally. Don't know where it comes from, but it does get there. Also, the water may be coming from anything behind the front bulkhead. There is a separate watertight compartment in front of your holding tanks for the head and water tank, that brings the hoses in for those two compartments. (Actually I suppose you could be getting water through those fittings as well) The bulkheads by the daggerboard trunk are only partial, water can get past there to the bilge.

As a secondary note, I've found that a wet dry shop vac works wonders at taking out water from all the various compartments ...
Ron Radko

12. On my F-27, the cause for water in the bilge was the cheek block in the side of the daggerboard trunk. Everything looked o.k., but after sailing, there would be water in the recess in the top of the water tank. The cheek block plate is attached to the trunk with sheet metal screws, and if excess force is used to try and get the board down, it can cause the sealant to fail. So, check the top of your water tank (I am assuming the f-28 has one on the port side of the daggerboard trunk). I'll bet this is where it is coming from.
-Chris Harvey, F-27 #404

13. This is a typical problem, the evidence of which is water in the compartment under the starboard settee just to stbd of the daggerboard, and most likely comes from winching the daggerboard down. It is a bear to rebed, especially if you have to totally remove it, but as with most things can be done with ingenuity. If necessary you may have to create a long tool to reach down into the daggerboard well from above, or remove the daggerboard and get access from below.

In case anyone out here has not heard, and my apologies if this was not the cause-NEVER WINCH YOUR DAGGERBOARD DOWN.

If it won't go down by hand pulling, head up, slow down, and ease the sails before pulling it down. It should now go down easily.
Don Wigston, Windcraft

14. > My F-31 has leaks that appears to originate at the chainplates on both port and starboard sides. The water trickles (runs in a heavy downpour) from the two flat, rectangular boxlike

protrusions immediately aft of the chainplate bolts. What type of caulk should be used to seal these areas?
>Michael J. Hanson, F-31 Trimanta

Those with F-31s will know the specifics of design better than I, but having battled this problem on my F-27 I have decided that silicone caulks do not work as well as the more flexible Sikaflex types for this application. Silicone does not stick to the stainless.
Jesse Deupree, F-27, ION, Portland Maine

15. BoatLife caulk is the best stuff for chainplates. It is wonderfully messy and sticks well to all except the most oily surfaces. it is better than Sikaflex or 5200 because it is not an adhesive but a waterproofing caulk.
Bruce Fabens, Artemis, F-31, Ithaca, NY

16. > Several months ago, a contributor suggested a gasket material to use to seal the cover plate to the top of the F-24-1 centerboard trunk. 'Sounds like a major improvement over silicone sealant.

I went to West Marine and bought some closed cell gasket material used for lining hatches. The material has one sticky side and is about 1/2 inch in width and about 1/8 inch thick. I lined the gasket material on the top plate just inside of the screw holes, and then rescrewed the plate in place.

Went sailing Saturday on San Francisco Bay. The knot meter said 15.3 knots at one time and NO LEAKS.
Roger Harshaw, F-24 MK I #28 Pterodroma

17. I hooked a shop vac to blow into a float inspection port (loosely duct-taped to limit pressure) and brushed soapy water all around the amas. Found a leaking seam, leaking bedding around the ports, and hatches, and other fittings.

Soap up all covers, bolt holes, etc and see where the leaks are. You'll probably find that some fasteners and some covers leak but not all. I did this on my old F-27, took about a day per float. Sometimes it was the inspection port cover where it screws into the female part of the port, sometimes it was the bedding of the female part itself, etc.
Paul and Sue Abendroth F-27 #31

18. I have had good luck using Teflon thread tape on my screw-in inspection plates. There are three weights: white (very thin/frail), pink and yellow - which are progressively thicker and stronger. I have settled on the pink stuff as a good compromise and it has kept most of the water out, plus I can really cinch the covers in and they will still screw out again. What little water I still receive (this only after aggressive sailing in heavy weather, semi-submerging the floats, etc.) may be due more to leaks in the bedding compound than the threads.

Just take two turns of pink tape around the edge of the threaded cover & screw it in. Trim away the visible excess with a pocket knife or razor. Voila.
Fred Cox, Reno, NV F-24-2 #76 "Preshusss"

19. This may have been mentioned but on some early F-27s with the vertical joins in the amas there were leaks at the bottom seam in the amas. I had one small leak in the forward port side compartment which I found when the boat (#73) was opened on land and water was dripping out. It did not do so when folded. An application of not very thick epoxy filled the hole.
Tony Cabot

20. Find the exact source.

My boat hull 167 developed cracks just under the windows from the flexing caused by the nets. I eventually noticed stains coming from under the molding at the hull deck joint.

Anyway there are so many places in the cabin roof it could come from, I would spend lots of effort to find the exact source. Otherwise you may do much work and not solve the leak.
Witchcraft, F-27

21. I'm battling persistent small leaks above the waterline in my F-27. I have successfully brought to bay small leaks from rainwater at the chainplates, using goopy Lifecaulk and liberal repeated applications. Several small leaks persist, and they have proven very hard to identify. I believe I may have small rainwater leaks from the fittings on the cockpit coaming, the spinnaker winches and cleats and fairleads. I'll deal with these this fall by removing and re-bedding- no big deal.

The problem I've had the most difficulty diagnosing is the possibility of leaks in heavy air from the main hull pads for the beam hinges. I can see no evidence of gaps or problems when the boat is at rest, but I have water under my aft cabin mattress and water in one of my battery boxes (near the chainplates but not leaking from them).

I'm prepared to re-bed these fittings. Can anyone tell me how this is done, whether it has been for others a source of leaks, or any other possible source of leaks and cures.
Jesse Deupree, F-27 ION, Portland Maine, who has become a fan of Hypervent dampness protection- the scrim that goes under your berth cushion creating ventilation.

22. Hi Jessie, Been there, done than and got the t-shirt. I removed all of the factory caulk from the hull/deck join in the area of the beam recesses (all 4 recesses). Beams have to be open to access this area. I then recaulked and I've been dry ever since.
Jack Johnson

23. I think I've found my mysterious leaks aft---

The void space at fwd beams-access hole on fwd side- gets moisture from I don't know where - but I do know any water getting in there works its way down my VHF coax which is routed out bottom of the void and through forward bulkhead thence under the battery. I found water

there (under battery)and then observed the PVC pipe used as cable run funnels the water aft so it exits in near inaccessible spot near the cockpit drain. My leak shows as trickle running down hull below the cockpit drain and then under the aft cabin cushion. Bow down attitude evidently keeps water in the cable run/under battery - then - mysteriously water appears aft when sailing with weight in cockpit changing the for-aft trim.
Casey

24. We sail all winter, in the finger lakes of New York and yes water in the amas freezing will (did) separate the hulls (#117), the older hulls are joined together in halves, so we pump and dry them everyday we go out.
Greg Harding, F-27

Lifelines

1. Corsair offers lifelines as an (albeit rarely) used option. Our boat was ordered with them and raced VERY successfully in the Marina Del Rey circuit under her previous owner for many years.

Racing/Crewing in Ventura, CA, we have to deal with big wind and big swell and waves on a regular basis. Crew double duties as "wet ballast" on the rail and weight distribution can make a huge difference in the speed and efficiency of the boat. Some of our races are 30-40 miles...THIS wet-ballast crew member really appreciates having the lifelines since it allows you to sit in several different positions and keeps your legs from getting cramped up. Especially for our boat that has the old-style flat mesh nets- it would be WAY too easy to flip off them without the lifelines...if we didn't have the lines, we'd have straps for sure.
Lisa, F-31, Indefatigable

Lifting Eyes

1. Corsair is apparently not responding (April 2001) to requests for instructions on where to fit their supplied F-28 lifting eyes, so I have now made up an location sheet for the F-28 which is available on request.

However, no longer being associated with Corsair I cannot guarantee that the locations as shown will always be correct, nor do I know if Corsair has or will continue to put in the extra reinforcement required.
Ian Farrier

Lightning Avoidance

1. The first time I encountered lightning in my F-31 on the way to the Bahamas was very scary. In the SF Bay area lightning is an annual event - if that. In the Bahamas it was from 2 pm till 11 pm every single day and we were on a 2 month cruise. We dropped the sails, put

the autopilot on. Turned the boat away from the squall, pulled up the centerboard and floored the throttle while the wife kids and I huddled inside waiting to get struck. The squall just chased after us and we ended up in the middle of it anyhow.

The daily lightning storms in the Bahamas were more spectacular than anything I've ever seen the weather do before.

I then looked at what other cruisers there did and changed my policy. If you tried to avoid lightning in the Bahamas you'd just never go sailing there. The strategy was to just take down the sails, put on the motor and keep on going. If its your time to get hit, well there's really not much you can do about it. It didn't matter whether you just headed right through the middle of the squall or not the lightening was inside as well as around the outside of the squall and there was really nowhere where you were safer. Squalls also moved upwind and in every direction and though several people tried to explain to me how you could predict their paths it seemed impossible to do so. So just pull down the sails, put on the motor, stay on course and ignore the lightning. I'm not saying that you won't get struck if you do this but I don't really think there is anything you can do to avoid getting struck. And if 60% of the sailing time involves sailing through lightning ridden squalls you can't spend all the time hiding inside.

There are many schools of thought on avoiding lightning but I've never seen any consensus in what works and what doesn't. I ran into boats in the Bahamas that had all the gear and been struck multiple times. Other boats (like us) with no gear had never been struck. Like I say I think if your numbers up your going to get hit no matter what you have on board.

The USCG position on lightning equipment for your boat is that the only thing it does is provide a path for the electricity that might make it a little less likely to go through a human. If your F-boat mast is struck the power is going to come down the mast and the shrouds so I'd stay away from the shrouds and the centerboard. I don't see the point in trying to put copper in the CF mast - all that that does is to increase the weight aloft that you've paid dearly to save. Anyway I think the CF is probably a superior conductor to copper. Either way I can't see how the mast would be worth anything after the strike. I've seen Omohundro masts destroyed when they touched a standard overhead power line so there is no way it's going to be ok after getting hit by a bazillion volts because its got a copper wire in it. Likewise a lightning bolt that had the potential to jump several miles through the air isn't going to be intimidated by having to jump from the mast foot to the bottom of the hull.

Worst case if you don't get killed is that you get a few holes blown in the bottom of the boat. It still won't sink.

I think the best philosophy with lightning is to just get good insurance. If you get struck, well it's time for that shiny new Ultimate Cruiser you've had your eye on.
Tim

Lightning Protection Strip

1. The lightning ground strip is not installed on recent (March, 2001) production boats. The reason I believe is because it may be a point of contention in a law suit if a boat "has lightning protection" and something happens. I think it is the Coast Guard that has a recommendation for a lightning grounding strap to be of at least 12" X 12" copper.

My opinion is that something may be better than nothing. We have repaired a few boats hit by lightning strikes; damage can be extensive. Most recent one had a hole in the main hull aft where the stern light wire was closest to the water line, both amas with holes near the water line under the cap shrouds, and the bottom foot or so of the daggerboard had numerous 1/4" round burn holes through it's skin!
Bob Gleason

2. Our F-27 was hit by lightning last year. We were sleeping on board at the time, tied up at a marina in Dinner Key Florida with lots of bigger boats around us. The boat has the "standard" lightening protection that we believe was installed by Corsair.

I was in that aft cabin and looked up as it happened. The bolt hit the VHF antenna and sent sparks flying. Our VHF, speed, depth and wind instruments were all fried, but there was no structural damage to the boat, and no injuries to the people on-board.

We don't know if the lightning protection helped or not.
Larry Geller

3. On my F-24, its not a matter of has the boat ever been hit by lighting but rather how many times. During the first four years I had the boat it was hit twice. The first time it just toasted my instruments, the second it blew multiple holes in the boat below the waterline, not to mention melted all instruments and wiring on the boat.

When I arrived at the boat the water was two feet deep in the cabin. That it was still afloat a day later when I was able to get to it is a testimony to Ian. I heard from the neighbors who saw it that it gave off a great midnight masthead fireworks display.

I've since moved the boat, and added wire brushes and other hex signs to ward off lighting and other evil spirits. Of course my friend's F-28 moored next to mine, has never been hit.
Charlie Cook

4. Hmmm, the only carbon fiber mast I have seen that has been hit by lightning didn't explode. Tony Townsends (ex F-24 owner and ex F-27 owner) TRT 1200 mast got hit by lightning late last year in its slip behind his house. It looks perfectly sound, but from what the experts told him there is no way to truly ascertain whether its prone to failure now.

The carbon guy had some explanation of why it was ruined (I think something about affecting the bond between carbon and epoxy). So Marstrom shipped a new one. His front cross beam, which is made out of the same carbon section as the mast, is easier to see the damage, as the

lightning blew a hole through it in its quest to reach water. Another path blew a hole through the starboard hull too.

As the lightening traveled through the wires behind the stairs, it managed to blow the stairs off of the wall. (Tony didn't like the old stairs anyway – too steep – and his redesigned steps are great.) FYI, a TRT 1200 with the main hull compartments flooded will still float, due to the buoyancy compartments fore and aft.

Oh, and another lightening path was through the plugged-in battery charger and up to the house. Ouch.

Tony's working frantically to get all of the damage repaired and wiring, etc. replaced before the Harvest Moon regatta in 1-1/2 weeks. If any of you know Tony, you can bet that the boat will be better than new afterwards.
Michael Zotzky

5. Mike's explanation of what happened to my mast/boat is exactly correct. The insurance company finally sent a marine engineer out to inspect the mast because I couldn't tell if it had really been hit. He was able to find telltale signs of slight discoloration of the laminate (the mast was clear coated) which I'm still not sure of. It was definitely hit though as there was an obvious path down the forestay and port shroud which are connected at different places on the mast. I have since inspected a carbon mast from a Catana 43 which was hit and the strike location was an obvious 2 inch diameter blackened circle with the carbon frayed.

I am in the process of adding a lightning rod at the top of the mast with an isolated wire going to a grounding wire which can be dropped into the water when needed.

The hull damage was due to wire laying against the hull below the water line as well as the depth sounder transducer (which blew apart in my boat and flooded the port hull). If you leave your boat in the water make sure your wires are not routed against the inside of the hull below the waterline... I would also attach something like jumper cables to the shrouds and forestay with the other end in the water. F-boats don't have a grounding plate in the electrical system so the lightning will either go through the hull or the shore power connection to reach ground if you don't provide an alternate path.

Believe me when I say you really don't want to deal with what I have had to over the past 10 months. Mike is also correct when he said that the boat is better now than it was before...
Tony, TRT 1200 GT, "Thalia"

6. My F-27 factory original lighting protection strip in the daggerboard case had pulled up from the bottom and was bent up in there. I was afraid that it would eventually jam the board and removed the mast step and removed the strip.

The strip is thin copper, held in with 5200. It was corroded and peeled off of the 5200 easily enough. It attaches to the aluminum mast base with the mast pin screw that also holds the urethane daggerboard bumper. Since I mentioned the words "aluminum" and "copper" in

adjacent sentences, you're probably already thinking about corrosion. Yup, the aluminum mast base was plenty corroded there.

I cleaned the mast base off and repainted it there.

I made a new strip out of aluminum flashing and stuck it in with 5200. Don't know how well it'll work, but at least it won't corrode the mast base.
David Paule, F-27, Second Chance

7. There's a lengthy article in "Professional Boatbuilder," December/January 2004 called "Lightning Protection," by Nigel Calder, if you are serious about the issue. In summary,

a. Round-end copper rods 3/8" to 3/4" diameter, at least 6" above anything else at the head of the mast, is a good air terminal.

b. The main conductor to ground should be at least #4 AWG cable. An aluminum mast doesn't need a special conductor. Carbon fiber masts do.

c. Secondary conductor paths should be at least #6 AWG cable.

c. The ground plate, in the water, should have at least one square foot of area for boats in salt water, and at least 10 times that for fresh water. The edges are most effective, so long strips are better than square plates.

d. Sintered ground plates may be ineffective, as there's insufficient water in the pores to conduct electricity away; the water flashes to steam, destroying the plate.

e. Cables should have wide bends and should not be stranded cable - solid is better. Don't use solder to make the connections as it'll melt and lose the connection.

f. There are special clamps for connecting lighting protection sections. Seyla Marine offers some.

g. The article goes beyond these suggestions.
David Paule, F-27 Second Chance

Lights

1. Our running lights are on the bow pulpit like almost all Corsair boats. The "steaming light" used only while under power needs to be only 4 ft. above the running lights. When we motor at night (I hear that it's illegal during a race) we just tape a 120 deg. white light to the mast as far up as we can reach. For an anchor light we use those amazingly efficient LED lights that plug into our "cigarette lighter" plug and then dangle the light from the boom. It lights up the deck and is certainly more visible than a masthead anchor light...which in my opinion is useless.

Mike, Multi Marine

2. We take it a step further and mount the VHF antenna on the stern pushpit and make a removable steaming light, now we have NO wires running inside the mast or connections on the deck.
Mike Multi Marine (Mr. Clean Deck)

3. I've been happy with one of the Mini Amp Mega Lights (now made by Davis, and available at West Marine) for an anchor light. Uses little current and doubles as a cabin or cockpit light. I believe this light is not "approved" but its visibility is fine.
Jesse Deupree, F-27 ION, Portland Maine, boat #60 and doing just fine, thanks

4. The battery won't even know there is something sucking juice with one of the Davis lights. One thing though, the photo cell seems to have a life of it's own, but it's an easy fix, detach the lens and twist the photocell wires together, i.e. shorten it out when the time comes.
Felix K

5. I made my own anchor light by getting a old glass prism salt shaker which acts like a Fresnel lens, and mounting a 12 v low amperage lamp base inside (from Radio Shack) by drilling out the top of the shaker and sealing the little holes with Sikaflex. The wire plugs into the 12v cigarette outlet and I can hang this from the boom or at the bow. I have had people row over to ask me where I got it. It draws about .2 amps. It cost less than CAN $5 in December, 2001. John Green

6. Also FWIW there is no such thing as a USCG approved anchor light. The Coast Guard don't approve lights. They require that you can see the light from 2 miles in nominal visibility. If you can see it from 2 miles away then you're ok. There are no anchor lights with a USCG Approved stamp on them.

Anyway I think folks should take a look at the Scotty light - its much more effective, brighter than the David light - I've had a few of them. Its more reliable and cheaper too!

See http://www.scotty.com/boating_safety.htm the light is no 955 at the bottom. One set of D cell batteries lasts me a whole season - probably 10 nights at anchor.
Tim

7. I got the Perko LED bow lights from WM on my boat also. USCG approved and they are bright. Also bought a number of bulbs from Superbrightleds.com. Trying to find something for the stern. Great service and quick delivery. A little disappointed with the amount of light emitted. Use the led festoon bulb for the interior light in my truck and not as bright as the original bulb. And its dim. So shop carefully. If you do buy from Superbrightled, get a couple of their squeeze led flashlights. I only bought one and wish I had more at $3 each, August, 2003.
Spinakerjohn

Lines - General

Lines - Ends, Finishing

1. Push the core out a bit, by sliding the cover back, and cut it off, then pull the outer cover over the core and melt it. The outer cover is Dacron and melts the core does not melt so you have to bury it inside.
Mike Multi Marine

Lines, Jams

1. >Yes indeed I meant jamming. I saw this twice in two training sessions with a new boat owner--each time I took the tiller and he trimmed the sheets, he managed to jam the sheet in the self-tailer. And by jam I do not mean an override, I mean jam--the rope impaled itself on the device that leads it up on to the self tailing ring on a Harken winch--don't ask me how,

I know how! It's the cheap rope that Corsair was using (October, 2000) for the jib sheets.....it was an open braided Dacron which catches on the "stripper" on the self-tailer. It has happened on the last two boats we had here. If you change the line to good quality sheets this will never happen.
Mike Multi Marine

Lines - Longevity

1. >And Mike, You have been using synthetic shrouds for 6 years. Does that mean you have been using the *same* shrouds for 6 years? If not, how often have you replaced them?

I sold my original rig a little over a year ago (posted November, 2000). I used Spectra shrouds on that rig but they crept too much so we changed to Tech 12 which work fine. The longest set that has been up without changing is a little over 4 years old. As I suggested, I'd change every 5 years for our climate and use (365/24/7)
Mike Multi Marine

2. As for Technora.... it is great. it is cheap (comparatively) BUT it has CONTINUOUS degradation in sunlight if left uncovered. Vectrus looses approximately 15 % of its strength from sunlight and then remains unchanged. We are covering it anyway.
Dogpound
Note - The data that's available on Vectrus (or other Vectran ropes) does not go far enough to extrapolate the life under UV very far. I cover my Vectran, too. Editor

3. I'd look at the sheet stopper if that's where the wear is. I used T-900 for three years on a F-24 Mk II with a 2:1 screacher halyard, and it showed no wear. I'm sure the lower load helped. But my experience with the T-900 has been good. We have 5/16 inch on the mainsail and

screacher halyards (both 2:1) on our F-28R, and I likely will change to this on the jib too when the original halyard gets a bit worn.

Check your sheet stopper for sharp edges.
Michael Zotzky, Persevere, F-28R

Lines - Management

1. I keep my excess outhaul lines in a small mesh bag with a zipper that's Velcroed to the boom. Works pretty well at keeping them out of the way.
Reid Hester, Ph.D.

2. I use these little suction cup hooks that you can find at an RV store. I just plop them onto the hull by the windows, lever the hook down to cause the suction and place my lines on them. Someone who saw me using them said "nawww...they'll wash over" but they have yet to. Since they are up tight by the windows, it would take a pretty good wash to get to them. I tried sticky bags and they kept getting washed away. Now those are inside holding towels, gloves and other sundry items :) Works for me...and keeps my lines out of the cockpit.

The only other alternative is to put fish hooks on the end of your lines and catch dinner while you sail :))
Dale Paul

3. I heard of an interesting way of attaching a halyard. Put a figure 8 knot at the bitter end of the halyard. Double up the line and push it through the hole in the head of the sail. Push the figure 8 knot through the loop in the halyard and pull tight. This should give you maximum hoist with out a shackle.
Marv Marcus

Lines - Recommendations

1. As for sheets, I have tapered sheets- that is the sail end of the sheets are 1/8" spectra, then I put a grippy thicker cover on the handling end. I have done this with the halyards too. Layline will do this for you , I learned to do my own.
Ed Saleem

2. I'm not a believer that super high tech lines are important for any of these applications- you want the lines to be nice and big for easy handling, so strength is not really an issue. I am partial to the lines that don't absorb water, and partial to Yale Cordage as they are from Maine so I went with the following:

3/8" for my jib and mainsheet- Vizzion from Yale
5/16 for my spinnaker and screacher- Yale light

Jesse Deupree, F-27 ION, Portland, Maine

3. For main and jib, 3/8 Technora/spectra core, polyester cover. At the 3/8 size (for ease in pulling and winching) strength is not really an issue, but I wanted less stretch than polyester core.

For the chute, 5/16 polyester/polyester. Free running was what I wanted here, strength/stretch not an issue.

For the screacher, 5/16 pure Technora core, polyester cover. I wanted max strength/low stretch here.

You can get a lot fancier if you want, stripping covers, light tails etc. I second the advice on Layline as a company- helpful and knowledgeable.

I had all the splices done at Layline, but I've since gotten comfortable with doing them myself.

As to the masthead sheave, make sure it has no burrs and is not V shaped or grooved- be more careful if you are being aggressive with your line sizes.

You can buy new teeth for some clutches.

Jesse Deupree, F-27 ION, Portland, Maine

4. If you want the lightest, slickest spinnaker sheets (January, 2002), use Yale light 5/16 into 3/16 spectra.

Also, the trick thing to do is "Y" the sheet ends into a 3/16 spectra tail so that there is one attach point to the clew. You do this so that there are not any knots on the clew and nothing to catch on the forestay as the spinnaker is jibed. This arrangement was first used on Melges 24s, but we have used it on Rocket Science (F-31 R) for 2 years.

We also use 3/16 spectra into 5/16 XLS for screacher sheets with the same arrangement as the spinnaker sheets (these sheets and "Y" attachments can be made by any shop, but we use Layline. When asking, just tell your shop that you want the same ends as what the Melges 24s are using). For halyards, use 3/16 spectra into 5/16 XLS tail for spinnaker. Use Aracom T 1/4 with 5/16 XlS cover where the halyard goes thru the rope clutch for Main, Jib, and screacher. We use a 2:1 main (and screacher) so the middle of our 150 foot halyard is covered with 5/16 XLS. We do this so that the halyard can be reversed when it wears out on one end....

You can also get creative and loose weight by using 3/16 spectra into 5/16 tail (XLS) for traveler, and for that matter, main sheet as well....
Doug Harkrider

5. I've been happy with the Yale Light- I bought 1/4 originally and that was too small. The 5/16 works better. (In a perfect world I'd make up a screacher sheet that was 3/8 for about 10' coming off the screacher and then 5/16 the rest of the way- I like 3/8 around the winch and in

my hand when close hauled). I noticed yesterday that they are offering a new "Yale Light Competition" with a softer finish. The original is a little shiny as it comes which is harder to grip. I like the low water retention because I store my sails in the cabin.

I fly the chute using two wraps on the winch- I'm human, not Superman. I'll set the chute in anything to 20 knots when I'm alone and I'm comfortable to that. The loads downwind are so much less than a mono (my background) that I haven't found the chute difficult.

I've been very happy with Layline for lines- their prices are fair and they are knowledgeable about F-boats. For jib/screacher/spinnaker sheets I just ordered twice the length I needed. To tie to the sail I just fold the sheet in half, push the loop through the crew cringle and feed the sheet through the loop. On the jib I stitched the loop so It can't slip, but none of the sheets has ever slipped and it is a very tidy attachment.

For what its worth I bought the following lengths:

mainsheet (8:1 standard setup) 80'
jib sheet- 44'
Spinnaker- 120'
Screacher- 110'

I doubled the purchase on my cap shroud adjusters with a length of 1/4 Vectrus and a block on the cap shroud joint. I used 3/8 Vizzion on the adjuster line through the tackle."
Jesse

6. I used 3/8 Vizzion for both main and jib sheets on my F- 27 and have been very happy with them. I think 3/8 is the smallest line that really handles easily, and it is not necessary to get anything stronger. A smaller size would feed easier in the main sheet blocks, but would be hard to pull.

I've had great luck with these lines not tangling and running free after just piling them in the cockpit.
Jesse Deupree, F-27 ION, Portland Maine

7. Don't use climbing rope! It's far too stretchy!

8. From many people - Layline offers good advice and fair prices on lines. APS and Defender and Sailnet are also good.

9. I did replace the long topping lift line from the block to the boom with 1/8" spectra- less windage and nice and slippery.
Jesse Deupree

Lines - Splicing

1. http://www.neropes.com/splice/default.htm
http://www.samsonrope.com/home/recmarine/splicing/index.cfm?source=splicingimgARB
http://www.yalecordage.com/html/splicing_instructions.html
http://www.briontoss.com/index.html

2. The easiest tools I've used are the Samson tools, the Brion Toss video, and a doubled length of welding rod as a puller. That last, a Jesse Dupree idea, works better than Brion Toss's tools, but I had to tape the rope to the end.
Dave Paule, F-27 Second Chance

3. I did an eye splice precisely according to New England Rope's instructions once in a fresh piece of Sta-Set X (parallel core). It was brutally difficult. It took hours, and required redoing (cutting away several feet of partially spliced rope) once or twice (when the fid came loose while inside the rope). I would never try New England Rope's splicing method again.
Peter M. Lucas, F-27 #89, "Odyssey" North Bend, Oregon

4. FWIW, I too recently learned to splice. I could only do one splice every two weeks since it took that long for the blisters on my hands (which were sometime bad enough to require bandages) to heal. Each splice took over two hours to do. I tried New England Ropes and Sampson methods and even bought their tools. Then I got Brian Toss's splicing wand and video and followed that method using the play and pause technique. The result is an amazingly neat splice in short order with no blisters or sweating or grunting.
Tim

5. I have tried to use the NE Ropes Unifid. I didn't like it.

I then tried the Sampson stuff, and I was able to make very satisfactory eye splices in double braid lines, both 5/16 and 7/16 new. I personally will continue to use the Sampson stuff, pusher and fids, but I have to admit I am not nearly as enthusiastic as the rigger below who uses the Toss Product.

Two things I found useful when doing the splices are to wear my sailing gloves. That took care of any blistering of the hands. The other was to tie the line to the bumper of my tow vehicle when doing the last step of the splice.
Todd Olsen F-27

6. I spliced the dead-end of my 2:1 screacher halyard on my F-28R. It is made of 5/16 inch T-900. Previously, I had a lot of experience splicing double braid (really easy). I downloaded the core-to-core instructions for splicing T-900 off of the New England web site and followed them. You are right, you need a good pair of gloves to work the cover back over the splice. I started without and ended with about 8-10 blisters. But I would say it took only about twice as long as double braid, and the end result looked very nice (and hasn't crept under load yet!).

It just takes a bit more time, more work to get the cover pulled over, but is still a pretty simple splice. My experience.
Michael Zotzky

7. There is a neat way to milk core on high modulus line: Take a large diameter dowel, wrap the line around it a few times. With the bitter end of the line tied off to something sturdy, let the friction of the wraps on the dowel work for you, and pull on the dowel. The friction of the cover on the dowel allows the core to slip into place. ALSO, on halyards, if you through stitch the cover to the core where the rope clutch grabs, you will prevent slippage of the core, which makes it look like your halyard is slipping. Don't forget to stitch at the reefing clutch points on the main halyard as well.

Line Strength

1. My rock climbing buddies (my brother) tell me not to ever use Kevlar (or any aramid, like Technora) line in a situation where it is in a tight radius and subject to chafe. The fibers chafe against each other and it turns to dust within whatever shielding or coating you use. Vectran or Spectra is much preferred vs. Kevlar. My point is...If you have Kevlar rigging - don't trust it.
Barry

2. > The general guideline I used when replacing wire with Vectran line is to match the "breaking strength" of the wire with a line that has a similar 'breaking strength'. Fore example 1/4 " wire has a breaking strength of around 8000 lbs. 5/16" polyester covered Vectran has about a 7000 lbs. breaking strength. The West Marine catalog has this kind of information.

I think this might get you in trouble. SS wire used as standing rigging is generally captured in fittings that allow it to be loaded without bending.

In contrast, the line will be spliced into a loop, or tied off to something. Generally if you have to make any kind of knot in a line, figure that halves the strength of the line. Additionally, the tensile strength ratings for line don't specify the amount of stretch at that rating. The only catalog I've seen that quotes stretch does so at 15% of tensile strength. I think someone said they figure on using line at 20% of it's tensile strength, but I can't find the reference. I suspect even though it's "low stretch", it'll stretch more than wire at significant fractions of it's rated tensile strength.

In summary, same strength is probably OK for running rigging, I'd go up a size for standing rigging like under net diagonals.

About UV, yes most of the hi tech lines suffer UV degradation. T-900 has a polyester cover that should eliminate that problem however.
Robert Williams

Lines - Thickening

1. You can add a 'bulge' to the halyard at the spot it goes through the clutch.

1. About a foot above the clutch, open the halyard cover and extract the core for about 3 feet.

2. Insert the cover from some other line (not too thick) into the core (you can squash the core together to form a big space and use a coat hanger piece with a hook at the end or something to pull the cover through).

3. Smooth the now filled core. Pull the core back into the halyard (you may have to stretch the line). Smooth the halyard back together. You may want to practice this on some practice line before you do it
T.P. Davis

Line Tension

1. The word "taught" often gets confused with "taut." Here are some hints regarding correct usage of the two words.

"Taught" is the past tense of "teach." Consider the following sentence:

"I done teached him all I know and he still don't know nothing."

You can improve the sentence by replacing the word "teached" with the word "taught," so that it reads,

"I have taught him all I could, and he's still remarkably ignorant."

You can see the improvement.

Now let's look briefly at the other word.

"That line was so tight that it done pulled the winch right out of the cabin top."

Here, you can replace the word "tight" with the word "taut." That won't help the cabin top or the winch, though, and perhaps this sailor should have reefed earlier.

But be careful, because in the next example you can't reef your sails with a simple replacement of one word for another.

"I used that new gasoline-powered blender that I got from Cabela's to make a batch of margaritas, and I've been tight all day."

Here, the word tight is used to mean slightly drunk, and it's a slightly out-of-date use of the expression. And yes, that store does sell that product. The engine has 2.5 HP - I'm not kidding!

One thing that you can't do is teach an old rope new tricks. Ropes are pretty stupid. Even if they're expensive ropes. So this is wrong, just plain wrong:

"He cranked that winch until the line was so taught that it pulled the mast pivot fittings right out of the cabin-top when he was raising the mast."

It's wrong for several reasons. In this case the narrator alludes to the general fault, that some teaching has been ineffective, but blames it on over-education of the rope rather than under-education of the person.

One thing they teach in those Coast Guard classes, and if you've ever taken one then you've been taught this, is that you ought to read the directions. In this case, the Farrier or Corsair Sailing Manuals. Another thing they teach is that rope can't read, no matter how taut it is.

I hope that this discussion has made the whole issue clear now.

Thank you.
Dave Paule

Locking the Hardware

1. Some f-boaters use those quick release “6” shaped Sea Dog quick pins to secure the shrouds. It doesn’t take a lot of jerking of the shrouds to shake one of these pins loose. Every year it seems I hear of someone whose mast falls down because of this. IMHO key ring style rings should be used everywhere that is critical and the ring taped too if possible.
Tim

2. Last year after 2 12-hour days of motoring straight into 4-6’ steep chop and 35 knot winds in BC, my mast tiller fell off the mast. Luckily all the bits fell into the centerboard (F-24-1) trunk and I was able to save everything. This stuff was secured with nyloc nuts which should have held. They now have Loctite.

3. >I happened to notice that a circlip and nylon washer was missing from one of the shafts that the struts fold on. I think that it was a damn good thing I found this as the pin was half way from falling out.
Peter Dubé, F-24 II "Wild Thing" #311

This is not an uncommon problem. I though Corsair informed everyone to check these clips.....which they don't use anymore. My boat did the same thing. I replaced the pins with bolts and castle nuts w/cotter pins in the offending area.....not all clips break and not all work their way out. Be careful replacing the clips.....over stretching them seems to cause them to break. Open them with the proper tool and only enough to get them on.
Cheers, Mike Multi Marine

4. There is nothing more secure that an appropriately sized cotter pin! Just make sure to tape them up good with a self amalgamating rigging tape, or put a turnbuckle boot over it, or even better, both, or your spinnaker will be unhappy.

Alternately, I recently found something called a Rue Ring cotter, made by a company named Pivot Point (www.pivotpins.com). I am using some on my F-24, they are much more secure than the factory ring clips. They also have a product called a bow-tie cotter, unfortunately is available in SS only as a special order (interpret that as expensive), however, in zinc plated steel they are so cheap (like $5 per 100 for a 1/2 inch pin), that when they start to rust, just replace it.
Mike Parsons, "I would rather be on my boat, with a drink on the rocks, than in the drink, with my boat on the rocks"

5. There is a warning about the risks of using spring retaining clips as supplied by Corsair on page 31 of the current Sailing Manual (Technical notes). I've used them for 27 years for the convenience with a frequently rigged trailerable boat, and have never had a problem. But there is an extra risk, as they can fall out on their own if the clip has been damaged, or the clevis pin hole is too near the end.
Ian Farrier, http://www.farriermarine.com

6. In defense of those 'damn P clips' I've actually used them for over 25 years without ever losing one, and would still use them where needed on any trailerable boat. They are the most convenient quick release system for clevis pins, and such things are essential to get sub 20 minute rigging times. Those rings can be a real pain to get off.

However, P clips must be checked for tightness in the cotter pin hole, as sometimes the hole can be right at the end of the clevis pin to where the P clip can slide straight out without any resistance. I regularly checked this when I was at Corsair from 84 to 91, as different batches of clevis pins could vary. Bad ones were rejected and I don't recall ever having any problems at that time. The P clips could also be bent in use, or wear, to where they became a loose fit, at which time they should be replaced. It is just a matter of keeping one's eyes open and regular maintenance.

I would not use them on an ocean going boat however, or where quick release is not essential, as the risk factor is slightly higher - not foolproof in other words.
Ian Farrier, http://www.f-boat.com

7. One other hint, if like me you don't have the patience to fiddle with rings, and want to keep using P-clips, then always insert clevis pin with the head on highest side, so that should the P clip come out the clevis pin will have to defy gravity in most situations for it to work its way out. Also a good idea even with rings or cotter pins.

P-clips by the way are a Ronstan product, part number for replacements being RF 413.
Ian Farrier, http://www.f-boat.com

8. A good argument to always use gravity on your side when inserting clevis pins, no matter what the securing device - I've seen cotter pins disappear also. If there is no 'up' side, then put clevis pin heads on forward side so that water rushing by will at least push pins back in - every little bit may help.

> Anyway, as a precaution, I always put a wrap of vinyl tape around my clips. It only takes about .1 seconds, and is CHEAP insurance.

Very cheap, and easy when it really matters.

Another advantage with P clips is that they are much easier to remove quickly in the dark, or when fingers are cold/frozen, or without tools.
Ian Farrier, http://www.f-boat.com

Lubricants
Seacocks

<< Does anyone know what to do as far as maintenance for seacocks
made of marelon (sp?) (identified by having black plastic body and handle)? >>

1. Forespar (the manufacturer) markets something called Lanocote (or some name like that). Otherwise, use a waterproof grease such as that made for a winch. If you're in the water, close the seacock, pull the hose off, brush or spray some of the lubricant on the inside of the valve, put the hose (and both clamps) back on and then work it in by opening and closing the valve. If you're out of the water, you may be able to do it from the outside with a long brush or q-tip. It wouldn't be a bad idea to do both sides if you can. This should be done at least once a year, maybe more.
Ron Marcuse

2. I've poured ordinary salad oil into my Lavac head and pumped it out, operating the Y-valve and the seacock at the same time, to lubricate those. Seems to work fine. I do this when the boat's on the trailer.
David Paule

Mainsheet - Blocks

1. The block is one of our hex-a-cat bases. The safe work is about 1000# with break of about 3000#. I hear your story from many multi hull owners as they are always worried about mainsheets becoming two blocked. In October (written in April, 2001) we will be introducing or new 57mm carbo ratch-0 matic which is an auto (adjustable ratchet) but I am not sure about the safe work load on these blocks yet. I have got a couple on one of the Worrell boats and they seem to be holding up well so far but time will tell.
Jim Bourne, Harken technical service

2. As previous posts have indicated, to get headstay tension, use the mainsheet *(Note - especially with the rotating mast boats - Editor)*. I suggest adding a "fine tune" system to your mainsheet. (Harken suggests a #060 fiddle with cam and a #127 double big bullet block - for those of you with a 2001 Harken catalog, see page 199). My last boat had this and my back really appreciated it.

The universal solution to solving most "problems".....just throw money at it.
Phil Sanders, F-27F #305

Mainsheet - Cleats

1. > The cam cleat is a wonderful device for holding the sheet, unfortunately, I can't seem to uncleat it successfully from the trampoline. This usually occurs when I want to ease the main so the lee ama doesn't get too far underwater.

I struggled with this for awhile too, before coming up with a solution...

Call Layline and order a mainsheet swivel base bracket (Layline part # LL1005), a swivel base (i used a Ronstan #RF7 because it has adjustment for angle of the arm and the Harken unit does not), and a large Spinlock PX Powercleat with adapter plate (Layline # PXB0812).

By moving the cleat off the floating mainsheet blocks, the cleat is always at the same angle to you....that's half the problem solved...and the PX Powercleat solves the other half....the cam cleat not releasing easily under load...that sucker releases as smooth and easily at high load as it does at low load...

Oh yeah, also get a Harken Ratchamatic....

Mount the swivel base bracket to the traveler bar (be careful that it is low enough that the traveler car does not hit it...) Mount the swivel base to the bracket, the PX Powercleat and the Ratchamatic to the swivel base (use a stand up spring under the Ratchamatic). Now remove the ratchet block with cam cleat from the lower mainsheet blocks, and attach the lower blocks directly to the traveler car, with a standup spring under it (this will solve the annoying habit of the lower blocks to flop around in light air).
Mike Parsons

2. Those Spinlock power clutches are great but just a tad too small for the F-27 and larger. I had one on my F-27, broke it and replaced it and broke that too, but it was great prior to failing, I wish they would make a larger version.

It just quit holding. As I remember,(long time ago), it didn't fail under load, it just wouldn't grab under big load. I really liked it when it was working, I even replaced it when the first one quit working, but the second one quit also. Easy to set and release under load but just not strong enough.
Tom Fulton ,F-31, formerly F-27

3. A while back there was a discussion about the main sheet cleat being difficult to release when it is under extreme tension, I.e., just when you want to ease it. I had previously tried the Powercleat but I was not happy with it. Someone mentioned a Harken cleat that I had never heard of. It is called a Trigger / Nash cleat. It is pretty much a direct replacement for the standard 150.

I have had it for about 3 weeks now. I LOVE it! It works very well. The other day I had it out in 45 mph winds and it worked as advertised. There is a bail that the line runs over, if you put line pressure on the bail it opens the cam cleats. You can mount it up or down, so if you prefer an up or down motion to release, you can have it.

I no longer worry about being able to release the main in high winds!!!

4. After hearing about the Harken Nash Trigger Cleat on this list, I adapted one to the Lewmar tackle on my F-31 mainsheet. Basically it has a spring loaded actuating bar that opens the jaws when the sheet is lifted against it. When you let go, or reduce the angle, the jaws close. Very nice for easing a little sheet under a lotta tension. Alternatively, you can still blow the whole thing in traditional fashion.

I like it a lot.

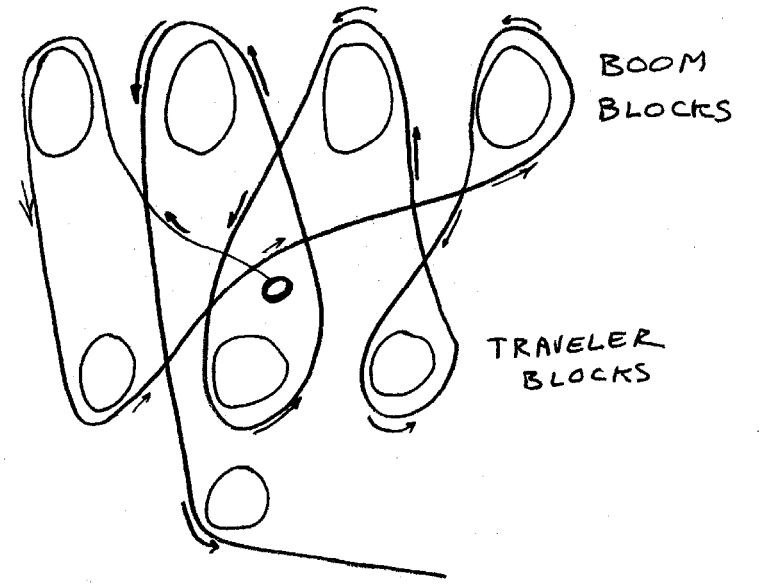
If you get one, read the instructions carefully, as it must be properly adjusted for line diameter. First time, I had it maladjusted and my co-pilot took great delight in pointing out that the old one never failed... Now it works great!
Colin

Mainsheet - Reeving

1. Had the same problem with twists and jams on my F-28. Solved by ignoring Harken's recommended routing, and routing as follows:

Becket to one end of boom block, down to one end of triple block up to OTHER end of boom block, down to OTHER end of triple block, up to inner spool of boom block, down to middle of triple block up to remaining spool of boom block, and finally through ratchet.

I have original mainsheet, it doesn't look pretty set up like I have, but the load is much more balanced.
Joe, F-28R "Zeke"
(Note - this REALLY, REALLY works much better than Harken's. See the sketch below. Thanks, Joe! - Editor)



Mainsheet - Shackles
Also see **Shackles**

1. I replaced my mainsheet shackle 2 years ago; abut 1 more year left. I also use a snap shackle at the mainsheet to traveler attach (so I can remove the mainsheet for trailering) and, after breaking 2 of them, switched to a titanium (boat show special) one. Much better.
Rich Holden, F-27, Sea Bird (aka Tri Hold'n On)

2. The mainsheet shackle did not release accidentally - the open/close business end of the shackle remained attached to the strap that goes around the boom.

The shackle itself is attached to the top set of 4 blocks of the mainsheet by a pin that appears to be an integral part of the shackle, and that has a flattened head that keeps it attached to the metal frame that surrounds the blocks. The long axis of this pin is parallel to the line of the mainsheet, and perpendicular to the boom.

In a more simple form of this type of shackle, this pin would connect the open/close part of the shackle with the metal eye where a halyard is attached. In this form, the pin allows the shackle to rotate without twisting the halyard. In the main sheet version, if the blocks need to rotate relative to the shackle, the point of rotation is between the pin and the block frame.

If you looked at the shackle, you might swear that the pin was a forged part of the shackle, or that it had in some way been permanently fastened to the shackle. In fact, the end of the pin is threaded and the pin itself is threaded into the shackle.

What happened in my case, is that when the blocks rotated, instead of the head of the pin turning relative to the blocks, the entire pin rotated, and the pin became unscrewed from the shackle.

I don't think this is a problem that can be corrected by seizing. If you seize between shackle and block casing, you essentially defeat the purpose of the pin, you lose rotation. If you had the right equipment, I suppose you could drill a small diameter hole through the shackle body and the pin and insert a small locking pin that would prevent movement.

Marina Folding Struts

1. A marina folding strut was developed and offered for the F-27 back in the late eighties, and the principle worked okay with a secondary folding motion that lifted the float higher for a slightly wider folded beam, giving less problems with growth on the float side while folded, and a greater folded stability. However, it was costly and difficult to make, and really needs to be designed in from the start to work properly.
Ian Farrier

2. The Marina docking struts were designed to give a different folding motion so that the folded floats were higher out of the water, without the growth on the float side problem. It was also wider than legal trailering beam (I forget how much), but not a problem for docking.

The secret was a special upper folding strut, that had two pivot points, and one could change between a docking mode, and a trailering mode.

Changing between the two modes was a little difficult but the system did work. However it was discontinued because of expense, and it was difficult to set up a locking system to hold the float/beams securely in the wider marina docking system, where it was vulnerable to waves while motoring. Just not enough time to develop it properly.

It was an 'add on' or 'after thought' for the F-27, but I did design the F-9A/F-31 to incorporate it better, but again, not enough time to develop it.
Ian Farrier

Mast Ball - Rotating Mast Boats

1. I have an F-31R with a carbon mast (hull 126). When I received the boat, the casting at the bottom of the mast was very rough. I removed it and sanded as described by Mike Leneman. I then found an aluminum casting company and took it to them. They polished it and it was significantly smoother than when I finished sanding. This season, there is no halyard wear from the casting. We did have a discussion in May or June '99 on this Listserver about this topic.

The company is Behrens Aluminum Foundry in Lansing, MI 517-485-5724. It was about $100 for them to polish the casting. It was well worth it. You may be able to find a similar company in your area.

David Shneider, F-31R, High Priority 2

2. One year we did the Harvest Moon regatta - offshore race of 150 miles length. We trailered the boat to the ramp, launched, sailed out to the line, waiting for our start, and THEN realized I had forgotten to lubricate the ball before raising the mast. Squeaked like crazy. Fourteen to twenty hours of sailing left to go, and it was driving the crew crazy. Had this look in their eyes that they might mutiny every time we sailed by a Gulf shrimper. I wouldn't steer close enough for them to jump, although they begged me to. After liberal amounts of WD 40, and just some wear, it stopped squeaking. And we went on to win the race but that's another story.

Another owner (Voldi Maki) recommended molybdenum disulfide (I think) to lubricate the ball with. I do know that trailer ball lube with the Teflon doesn't work (from experience). Turns out though that molybdenum disulfide is the same stuff marketed by Permatex as Anti-Seize Lubricant, in a 1 oz tube. You can get it at any auto parts store. Hard to wash off, high temp, but works great. Also can be used to bed screws and keep them from seizing - so it serves two purposes in your toolbox. A little dab spread on the top of the ball works for a full season of mast-up storage for us. No squeaks.

Someday West Marine is going to sell this stuff as rotating mast lubricant, and quadruple the price!
Michael Zotzky

3. For those with rotating masts, it might be a good idea to inspect the rotation mechanism periodically. When Gary Helms and I inspected the failure, we noted that the ball bearing needed additional grease and had worn a large hole instead of the little dimple that the fork is supposed to ride on. This was probably caused by storing on the water with mast up and insufficiently immobilizing the mast between uses.

One thing I was particularly impressed with and which I consider a really good design characteristic in these spars is a designated failure point on the mast fork so that when something like a mast falling happens, it breaks intentionally at that point (so your cabin top remains intact).
Thom Davis, F-24 Mk II, Puppeteer

4. The carbon fiber masts made by Marstrom (the current supplier) have a brass cup. The Omohundro masts all had the aluminum casting.

The F-24 (since model year 2001), as well as the aluminum F-28 and F-31 masts all have the aluminum casting.

Ira Heller
The Multihull Source

Mast - F-24 Mk I

1. >By now you know "Summer Storm" ,my F-24MK I, has broken her mast while racing in the Huron Invitational. My local dealer is being told by Corsair there is no way to get a replacement mast (September, '99). I find this a little disheartening that that they can not support their older boats. However, if we can find the right extrusion we can build one.

The problem is I don't think anyone has or knows where the plans for the original F-24 Mk I mast are. This was redesigned by persons unknown after I left Corsair and had removed myself from the Mk I project. The bunch of characters running Corsair at the time are now long gone so the whereabouts of any plans are probably a mystery. Sparcraft may have a set as I believe they made the original masts, but I'm not sure if Sparcraft are in business any more, or if it's even the same company. The only other option is to copy your existing mast, which just about any mast maker could do, and any similar size or larger section could be used. Hopefully all that mast bits were rescued so they can be measured.

However, I was never impressed by the Mk I mast with its odd double spreaders/diamonds, and would recommend anyone with a broken mast to upgrade to the Mk II mast, which is simpler and faster. If you must stick with the original Mk I mast then at least make sure the diamond wires are actually anchored at the end of the spreaders, otherwise they are only relying on friction to hold the mast in column.

I believe Corsair can supply replacement masts for every other model, current or not (and the mast/rig plans all exist).
Ian Farrier

Mast – F-25C

Mast - F-27 - Pivots

1. For the F-27, a critical factor is the alignment of the mast pivot points with respect to the lower and intermediate shroud attachment point on the deck. When they are lined up properly, the lower and intermediate shrouds remain fairly tight as the mast is let down. This keeps the mast from swinging left and right as it comes down. If the mast pivot points are too far aft - even just a little bit - the lower and intermediate shrouds are too tight when you are trying to get the pivot pins in or out. Conversely, if the mast pivot points are too far forward with respect to the shroud attachments, the mast is easy to pin to the step, but the shrouds will loosen quite a bit as the mast comes down, allowing a lot of swing.
Peter M. Lucas, F-27 #89, "Odyssey", North Bend, Oregon

2. I like my rig tight (set up at the very top end of the range in the sailing manual) and it can be a bear to get the pins in. I do it by bracing my feet against the forward hatch and pushing against a cushion on the bottom of the boat. It can be a difficult painful job, especially alone.

The only reason why I can do it, I believe, is that I put a 1/4" aluminum plate under the mast step and under each raising pin. This makes my mast 1/4" higher when up but changes the geometry of the setup so that the shrouds slacken that 1/4" when the mast is horizontal. Now I ain't no genius ("don't know much about trigonometry"), but I think I've got the effect of the plate right, and it hasn't caused any harm that I'm aware of, and lets me rig the boat alone, which I do 90% of the time.
Jesse Deupree, F-27 ION, Portland Maine

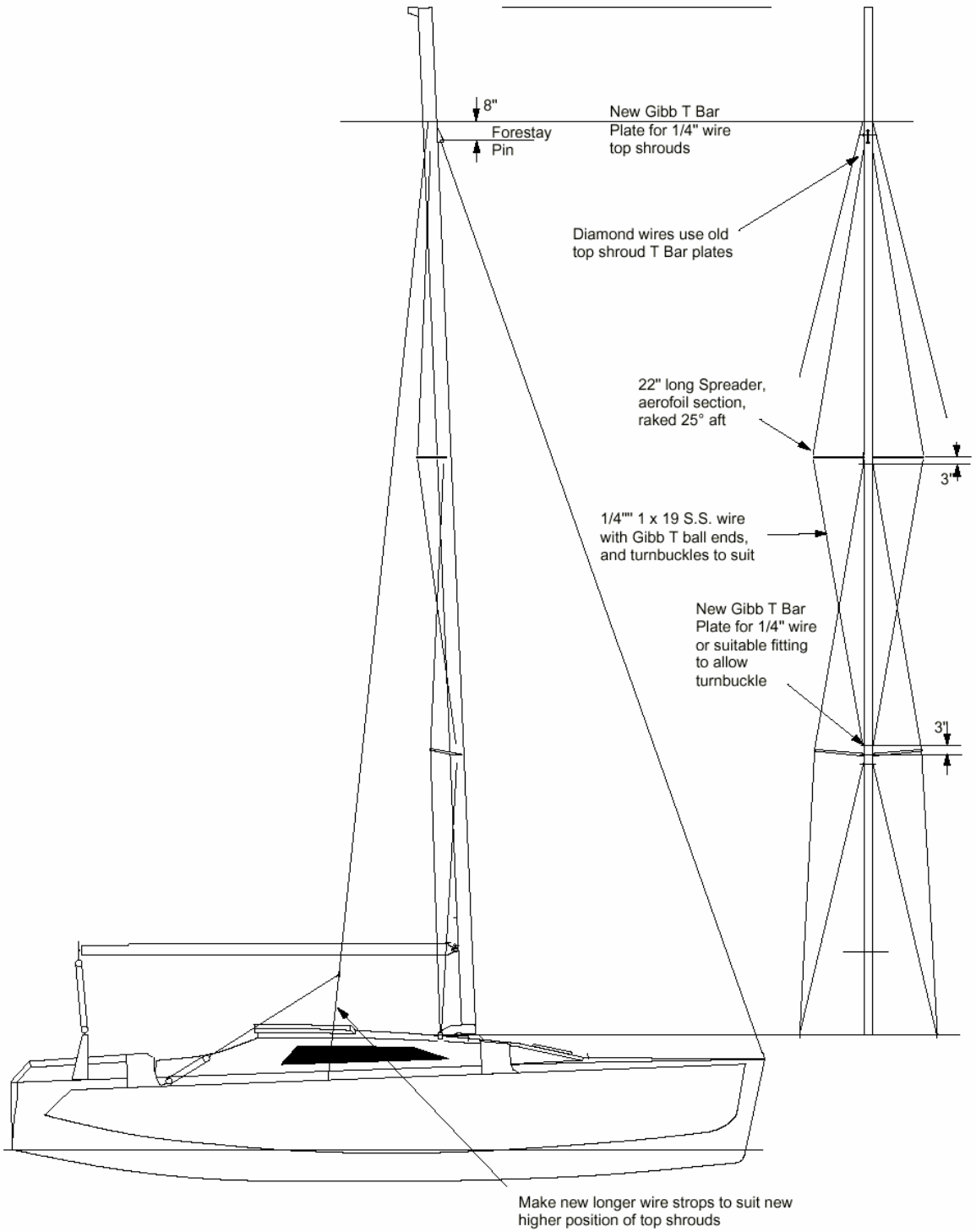
3. The mast step and pivot location on F-27s was moved on boats built at the factory at least once; I believe around hull #180. The boats before that number would have extremely difficult mast foots to pin or even unpin for that matter if the shroud tensions were at the correct higher settings. The rig settings in the manual are too low. The intermediate and inner forestay should be set at 45 on the Loos tension gauge; The lowers at 43.5. The headstay will have considerable sag until the cap shrouds are tensioned. Once tensioned the cap shrouds should read a maximum of 45 for high wind settings. This should produce up to about 6" of prebend in the mast if the headstay is set correctly.

If you have an older boat or even a newer boat that is extremely difficult to attach the mast foot, your best solution is to move the pivot point on deck forward as much as 3/8" to make it easier to attach. It is a simple fix. The only scary thing then is how much you bend the mast forward to attach the inner forestay without loosening it while raising or lowering the mast.
Bob Gleason

Mast - F-27 Double Spreader Rig

1. The double-spreader's (picture below) main advantage is to make the F-27 rig more immune from crew error, or lack of attention, while also eliminating the inner forestay. In this regard, with the F-27 stock rig, it is important to monitor rig tension as the wind becomes strong to make sure the mast stays in column. If unsure, the simplest preventative measure to take for strong winds is to tighten the inner forestay which helps minimize any slack in the lowers. Then just make sure the top shrouds are tightened enough to keep the mast straight.

I would tighten up diamonds until at least 3 to 4" of pre-bend is forced into the mast.
Best regards, Ian Farrier, http://www.farriermarine.com



F-27 RIG OPTION

The second set of spreaders eliminates
Inner Forestay, and makes tuning easier

FARRIER MARINE
P.O. Box 40675, Bellevue, WA 98015-4675

2. I bought the parts to convert my mast to a double spreader from Finish Line last year and have not regretted it for one moment. Since the conversion I have been able to sail in winds where I actually had to change down the head sail before reefing the main. Not even one wiggle from the mast when the main was back winded. I promise you won't be sorry making this upgrade to the F-27 no matter what others say I think the boat needs the upper spreader to truly keep the mast in column.
Wayne Erickson, Almond Joy, F-27, #345

3. After seeing my mast hula far too much I went to the double spreader improvement and my mast is FAR more stable than without and they ARE class legal!!

Highly recommended!!
Chris Sherman, F-27, #158

Mast - F-27 Double-Spreader Rig - Aft Mast Support Interference

1. The solution to spreader interference with the mast support is to make a elliptical wooden strip that fits into the mast track and that is strapped to the mast with the yellow strappies. This allows the mast to lift itself over the roller at the spreader while remaining in the roller V. I haven't bothered to do this myself (I just lift the mast over the roller) but I might if I stepped the mast more often.
Tim

2. I replaced the stock rollers on the aft mast support with these wheels, to allow the second pair of spreaders to pass over the mast support. They have ball bearings. The middle one is 7" diameter, and the outer ones are 8". I used split pvc pipe for spaces - you can see the cable ties

holding them together (please ignore the duct tape.) This works very well. The only things I don't care for is that it's heavy and bigger. But it sure works nicely.
David Paule, F-27 Second Chance

Mast - F-28 Carbon - Spreaders

1. One of my spreaders (F-28R) had inverted, pulling the aft corner all the way off the locating pin. At the request of Corsair folks I went up the mast to check it out. The front tip of the spreader is crushed, and the mast itself has a significant dent. Enough to create a two inch crack in the paint, maybe 1/8th - to 1/4 deep. I gave this information to Corsair Friday and they are in contact with Omohundro. No response yet.

My understanding is that Carbon laminates are quite notch sensitive. I have to believe that the denting has permanently degraded the laminate. Is the mast itself at risk? Any clue whether something like this could be repaired?
Vincent B. DePillis, F-28R, Freda Mae, Seattle

2. >I too raced this week in 30+ knots with gusts to 53 knots (confirmed by USCG) in F-28R #51 with straight spreaders, at 1st reef, no noodles. Once gusts reached the 50s, we rolled down our main. In the same race Keith Larson and Charlie Gregory F-28R #52 with straight spreaders never even reefed.
Bruce Jenevein

I was wondering what it would take to get a positive comment on the F-28R carbon fiber mast.
Voldi Maki

3. Omohundro never made the original F-28R spreaders with the specified amount of rake, maintaining it was not necessary, which could have been the case if they had incorporated enough carbon to give good fore and aft stiffness. However this was found not to be the case and it is wise to replace the original spreaders.
Ian Farrier, http://www.farriermarine.com

4. The main problem with early Omohundro carbon masts was their failure to use the specified amount of rake (12°). They instead used spreaders that had only 6° of rake, and which were fitted in a rather distorted way to increase it to 7.5°. I questioned them on this after having seen the first mast but they insisted that everything was okay, which could have been true if they had used extra carbon in the forward and trailing edges. However, the rake did prove to be inadequate.

In this regard, the right amount of spreader rake will vary from mast to mast, depending on mast bending characteristics, but 10 to 15° is a good starting point, and some masts may even require up to 18 or 19°. Always have some pre-bend induced as this goes a long way in preventing inversion while reefed.
Ian Farrier

Mast - F-31 Aluminum

1. While raising the mast in Pennekamp for a Florida Keys cruise, a slight side breeze came along from the side while at that critical mast angle of 30 or so degrees off of horizontal, the mast swayed, then POP! SPROING!! three of the mast raising pivot bolts sheared off or pulled out, the mast rotated until the raising halyard slid off of the gin pole and the whole thing came crashing down, avoiding ground contact by catching the aft mast support crutch with a diamond shroud. Fortunately, no injuries.

Some time ago there was a post here about this happening before, and that the above mentioned pivot bolts should be upsized from the feeble #8 or #10 to 1/4". I had it in the back of my mind to do, but I thought well one more time wouldn't hurt... So instead of the 20 minutes that this fix takes while at home, it cost me a day of the Keys cruise, some epoxy work, drilling and tapping, and a bunch of beer to convince a welder to stop working on his race boat for a while and fix the mast raising base. So if you have a 31 and have this hardware upgrade in the back of your mind, bring it to the front, DO IT NOW! Fix this stupid construction flaw and reduce your risk of serious consequences.

Make that a 36-hour setup....
Jeff Lebesch

2. Something similar happen to me. The mast swung about 30 degrees off the centerline before I could grab it and reenter it. Did not drop mast but did crack cast alloy mast base where pivot pin passes through. Was able to repair with epoxy as this part is no longer available for my LeFiel mast. The F-31 alum mast is a beast. I now always raise mast on water with boat unfolded and run halyards from top of mast to amas so mast absolutely cannot move off centerline. I also run two mast raising lines for backup.
Tom Fulton

Mast - F-31 Carbon

1. I have a carbon mast on my F-31R. After one season of racing, there are some rub marks on the paint just below the large shackle (the shrouds and headstay attach to the shackle) on either side. There is also some marking just below the spinnaker halyard exit on either side. These are superficial and not deep into the paint. I do not think they are significant. You could solve this problem with high tech shrouds rather than stainless as Mike Leneman has done. I do not think this is a significant problem. If enough wear occurs, I will find out about touching up the paint.

Overall, I have been very happy with the carbon mast. It seems stiffer than the mast on my old F-27 although I have seen a little pumping in a blow. An advantage I see compared to the aluminum masts, aside from the weight, is the single large shackle attachment point for the shrouds and headstay. This makes rotation of the mast effortless, in fact in anything but light

conditions, we have to limit rotation. I have seen the aluminum masts close up and if I had one, I would have it modified to a single shackle attachment rather than the side attachments for the shrouds. It doesn't appear that this would be a major problem to have done. I still have some reservations about the durability of the carbon mast over the years but time will tell! It has not been any problem trailering and I have not scratched it from lashing the shrouds and halyards to it. I do not detach the shrouds for trailering.
David Shneider, High Priority 2, F-31R

2. I'll try to explain why I went to shrouds that are attached to the side of the mast, as opposed to a single shackle on the front of the mast.

a. Load - the shrouds load is taken through the "middle" of the mast and not the front. This helps prevent reverse bending of the mast and you don't need such a big "nose" piece, which can rip off the mast, so you have an added margin of safety.

b. Slop in a sea-way. By reducing the ability of the mast to rotate too freely the rig is less sloppy when it hits a wake or sloppy sea conditions.

c. Shrouds chafe. The problem mentioned here.

d. Rotation control - If tensioned properly, the rig will be self-adjusting. Going to weather the headstay is tighter and the rig will rotated less. Off the wind the headstay is looser and the rig rotates more. I have sailed without a rotation control for 5 years now, and my race record shows that we give up speed to no one, and we have never had to control mast rotation ONCE in 5 years!

e. Not that I copied it, per se, but the big multis do it the same way. The Formula 60's, Commodore Explorer, etc. rig their shrouds in the same manner. I noticed this after we started doing this 5 years ago. And you know what they say...." 150,000 Frenchmen can't be all wrong"
Cheers, Mike Leneman, Multi Marine

Mast - F-31 Hardware

1. This weekend I was loading the boat on the trailer and taking the mast down. My boat is a new F-31RL with the new rotating aluminum mast. I use the jib and screacher halyards for stepping the mast tied off to the cleat at the base of the mast. One of my crew was on the ground cranking the trailer winch, I was on deck. just forward of the mast (thankfully) I was looking down at the mast base with the mast at about a 45 degree angle to the ground. I watched in horror as half of the (plastic) cleat folded over, releasing the halyards and allowing the mast to drop freefall the rest of the way down. it landed directly on the stern roller with a loud thud and bounced off to the side. Although it flexed significantly all appears to be OK, I'll find out for sure next weekend at the St Clair Solo race, hopefully I won't be reporting on a dismasting.

The moral of the story, I'm putting an aluminum or steel cleat on today and would strongly recommend that everyone else do the same. Ian, you might want to advise Corsair to do the same, doesn't appear to be a good application for a plastic (folding) cleat!
Ron "Crash" White, Stampede II
70

2. On the carbon mast the fasteners are 1" 1/4-20 flat head screws tapped into the carbon fiber. There are no nuts inside the mast. The reason I know is when loading the boat on the trailer, the headstay was draped overly this cleat, caught on the trailer winch and pulled the cleat off the mast. I was prepared to repair this with nuts inside and longer screws. I did not retap the carbon and when I inserted the longer screw 1 1/4" it was very solid and the inner screw end did not project into the interior of the mast very far. This lead me to believe that the 1" screws were barely adequate in length and threads did not fully engage the carbon section. I replaced both screws with the longer screws and 5200 sealer. It is very solid and I do not think it will come loose. It might be a simple, worthwhile change to put the longer screws in and seal them on all the carbon masts.
David Shneider, F-31R High Priority 2

3. Warning: the spreaders need those little rolls for the jib to slide by. My omission of them cost me $200. in sail repair and victory in the San Diego NOOD. Every time I tacked the spreader would punch through my jib and put me into irons. Note: I made different spreaders than Corsair but the standard ones also need those little rollers that they come with.
Mike Leneman, Multi Marine

Mast Finish

1. I doubt if the bubbling up under the paint on the painted masts is aluminum corrosion, and more likely to be a paint bond failure. Aluminum corrosion is rarely a problem unless caused by a dissimilar metal, where the aluminum can be literally eaten away. Otherwise even bare unanodized aluminum will last for years without any significant problem. The whitish surface corrosion that appears actually protects the aluminum underneath from corroding further.

A strip down and repaint is usually all that is required with an old aluminum mast. But be sure that all stainless steel fittings are insulated from the aluminum by a suitable bedding compound (silicon works fine) when reassembling. It is a good idea to check for this on any new mast also, and re-bed fittings if bedding compound is missing. Stainless and aluminum are actually not too bad together, but the aluminum will be slowly eaten away over a period of time.
Ian Farrier, http://www.f-boat.com

Note - it sure looks like corrosion to me. Editor

2. I stripped and repainted the Forespar mast on my F-27 (#60) this last winter. It had developed corrosion bubbles like yours at a number of locations where stainless and aluminum touched.

After sandblasting (gently, gently with organic walnut husks or some such) it was apparent that none of the corrosion was serious, and we only used filler in a few places.

I contacted Forespar to see if there was anything I could do about the T-ball fittings which had the most direct contact and where corrosion seemed the most critical. They indicated that 12 years life for the paint job seemed perfectly fine to them and had no recommended way to eliminate contact at all points. They indicated they gave up the 27 contract when everyone realized that a trailerable mast is better off anodized.

I think I'd do the work myself if you just touch up- sand and pick away at the corrosion and get an aluminum primer and just use a good enamel. Keep the corrosion at bay and minimal and you have a long way to go before it is critical.

We stripped, etched, primed, painted professionally for appearance reasons mostly- our mast was scratched all over and we changed from black to white. Painting aluminum is not something most body shops understand (unless Audi A*'s are in their repertoire), so if you do go the professional route, make sure they understand the etching and timing issues involved.
Jesse Deupree, F-27 ION, Portland Maine

3. I did this work during the winter of 2001-2 on my 1989 Forespar mast and boom. I spent $2,000 to do the whole nine yards- sandblast with appropriate grit, putty and sand pitted areas, acid wash and Alodine rinse, zinc chromate primer, 545 Awlgrip primer and finish Awlgrip. I did not get competitive bids, thought my price was high, but liked the man doing the job's integrity and quality of work. I took all of the rigging and fittings off and re-installed them myself. I called Forespar and they were very helpful with specs for the job.

The mast certainly looks great (I changed the color to white)- the only problem has been that the mast track inside ended up rough as it is so difficult to sand, which contributes to sail raising difficulties. Now I'm all paranoid about scratches which makes trailering set up slower.

That being said, I don't think any of it is necessary to preserve the mast. Just repairing the pitted areas where stainless meets aluminum and renewing your corrosion protection is all the mast needs from a longevity point of view and you could just sand, prime and enamel those areas and the scratched areas by hand with Rustle type paint and it will last decently. What I did was out of love and respect for the boat:-), or vanity:-), or both.
Jesse Deupree, F-27 ION, Portland Maine

4. I would second everything Jesse noted about the paint blistering and what to do about it but would also remind that it is a very good idea to use silicone rubber sealant as a bedding compound between any stainless components or fasteners and the stick.

The main idea is to keep water and salt from collecting between the parts and forming a long lasting galvanic battery which is probably what caused the blistering you have. As previously discussed the silicone rubber is preferred because the slight amount of silicone oil in the rubber makes the joint hydrophobic to further repel water and salt.

If you repaint do the bedding after the painting.
Tom

Mast Hardware

1. There should be a 4" cleat one side at base, and a matching saddle eye on other side, to clip on the Cunningham tackle. A line from the other side of tackle then goes up through the Cunningham eye and back down to the cleat on the other side. A 4 : 1 tackle will then give an 8 : 1 purchase

Looks like my Rigging Checklist was not followed - if your boat was built prior to my parting with Corsair in December 2000 then you should claim it under warranty as the boat supplied was not to my specifications.

The Cunningham eye strap should be attached with at least two 1/4" machine screws, with nuts and washers inside, and be directly opposite the cleat (on other side of mast). Position is about midway between gooseneck and base of mast section.
Ian Farrier

2. > Adding the hardware to the mast as Ian Farrier specified sounds like the best solution. I am wondering, however, if there is anything wrong with David Shneider's solution of putting a bolt with an eye on one end through the holes in the casting at the base of the mast that is used for attaching the mast raising yoke. On my boat (aluminum mast) we have just tied a short loop of line through those same holes, and attach the Cunningham to the loop.

The eyebolt idea will work fine - only problem being you have to remove it when lowering mast.

Another possible method, If there is no saddle eye, is to attach a small stainless steel tang to the existing Rotator Arm bolt. Something like the Ronstan RF 47 would probably do the trick - cut down to 2 - 2 1/2" long with one hole being drilled out to 1/2", the other 1/4". This avoids having to drill holes in mast for a saddle eye (though this is not a problem) or having to remove an eyebolt.
Ian Farrier

3. > My old mast has an attachment point for a fair lead block through which the screacher halyard runs after is exits the mast at the top. My new Corsair mast has no such attachment point. Has it been found that the block is superfluous or is it still necessary?

The extra eye is optional and there to allow a two to one halyard for the screacher. This makes

it easier to achieve the necessary tight luff to windward. I recommended that Corsair fit this eye, as it is easy to do at the manufacturing stage, but they have not done so. My boat would have it, but it is not essential for cruisers.
Ian Farrier

4. For fastenings the choice depends upon the mast wall thickness: maybe too thin for reliable tapping, particularly if the fastening is in tension rather than shear. "Monobolts" are a good choice if available: the brand name is "Avdel". They are not unlike pop rivets, but are stronger and the back is neater. This last point can be important: sharp edges inside the mast can cause chafe. They are also available in aluminum. The 1/4" rivet is listed as supporting 1350lb. in shear and 950lb in tension, so they're effective. The downside is that they can only be applied using the proprietary tooling, a regular pop-rivet gun won't do. You may be able to hire the tool.
John Reddell, F-24 Mk II

5. I added a fourth halyard to the mast of my F-24 Mk I for the spinnaker a few years ago. I installed a Schaefer Exit Box (Schaefer No. 34-35, West Marine No. 285454, pg 996 of the 2002 catalog) in the space above the factory installed spinnaker halyard.

I don't remember the exact location but you don't have too many options of where to place the box. You will need to bend the ears on the box to match the curvature of the mast, then drill and tap holes for the bolts.

Before permanently installing the box, I used the main halyard, which you can reach through the hole, to pull a messenger line to the base of the mast, then I used the messenger line to pull the halyard through the mast, using the vacant exit block at the base of the mast. I then had to replace the single sheave deck organizer with a double and add another clutch. So now I run the spinnaker from the new exit box using the Dacron halyard that came with the boat and the screacher from the factory installed exit box using a no-stretch halyard.

I haven't had any problems with chaff. Hardest part of the whole project is deciding where to locate the new hardware.
Bob Nelb, F-24 Mk I #94, Tri To Fly

6. OK, just popped my second screacher halyard in two months (August, 2002). It's chafing 6 inches or so about 10 inches from the head shackle. The exit sheaves have no pre-feed. There is just a s/s rod welded to the perimeter of the exit sheave.....this doesn't always work too well, especially when the mast is highly rotated. To solve problem you should put a pre-feed on. We use a Schaefer s/s half hour-glass looking thing (West Marine).
Mike Leneman, Multi Marine

Mast Raising Hardware

1. > After careful assessment by myself and others with extensive experience analyzing this type of incident, the most likely scenario for my mast falling uncontrollably to the deck after

capturing the Y on the gin pole of my F-31, was the failure of the head(s) of the #10/24 ss deck mounting screws which secure the pivot point hardware to the deck.

This was the problem as these machine screws were undersize. They should be 1/4" (6mm). The stainless steel bracket itself (Seadog 270200 deck hinge) has to be drilled out to suit, as it comes with only #10 (3/16" or 4.5mm) holes, which is a nuisance, but #10s are too small for F-31 mast loads. I always used 1/4" machine screws on all F-27s for the same pivot brackets, but they were changed to #10s on the F-28 in 1997, but only after 1/4" had proved to be overkill for the F-27/F-28.

Probably no significant danger on F-31s if left as is, as there have been very few problems reported in this area that I am aware of. But the possibility of failure does exist if the mast is allowed to twist or go off center too far. Not a big job to replace if desired, you just have to know how to drill stainless, which can be tricky.

2. I am shocked that you would consider lowering your mast with your wife up it. Lowering wife-laden masts is positively dangerous, and it is a design error to provide a system where it is possible to lower a mast when your wife could be up it. It is not sufficient to rely on your memory so that you have to remember to tell your wife to come down before you lower the mast - I can see a scenario where you think she went home to make some scones while in reality she's up the mast trying to get the compass compensator of your Nexus wind instruments working and you forgot to look up.

Because I am your friend I have initiated lawsuits on your behalf against Corsair, Nexus, all the mast makers (since I don't know which type of mast you have), all the makers of bosun's chairs, and your wife. I hope you don't mind me forging your signature.

In the meantime I'm sending you some antique divers lead boots that she can wear while around the boat. That should keep her off the mast. This is only a stop-gap measure 'til I'm finished working on a better design (since if I don't no one else will).
Your Friend, Tim
"Together we can make the world a safer place"

3. We have an experimental addition to the mast raising/lowering system for F-Boats up here in Minnesota. Dave Tikal (F-9 builder) came up with the original idea off a posting from New Zealand. Dean Wilson (F-24-1) and I (F-25C) have tested it. It uses a mast car that fits into the bolt rope track of the mast. The car has two 1 2ft aluminum tubes (four 6 ft sections) attached by tie rod ends. The tubes also attach to the inside of the cockpit combing at their rear with the same tie rod ends. The car has a rod to fit the mast bolt rope track and bearings (roller blade wheels) or a slide that contacts the back of the mast. These lifting tubes form an A frame and completely stabilize the mast from sideways motion and after the mast almost up, support it from falling backwards, at least for my carbon mast. For lowering the main halyard is attached to the top of the mast car and is used to put tension up on the car so the mast will lower. I still use raising wires at the mast pivot to prevent side toppling and use the float stays tensioned on the Highfield levers to prevent the mast from going forward. This is still experimental, Dean has tied it a couple times and I have used it for all my raising and

lowering. But, I just launched this fall, so I have only used the system four times. It is rock solid for single person raising and lowering and this piece of mind offsets the added complexity.
Neal Gunderson

Mast Raising Line

Basic polyester is fine. *Note - On the F-27, there's a point when the line really, really stretches. I recommend one of the low-stretch synthetics for this, covered with polyester covering because you also need good UV protection. - Editor*

A word of warning also about straps. I tried them back in the eighties with the F-27, replacing the then standard wire, and they looked great for a while - no more broken wire strands to contend with, and they would roll up evenly and neatly on the winch.

However, the strap was also used to raise the mast, and while doing this it tended to fold over on itself on the combination concave bow roller. Worked okay for a while but it appears this is not good for the straps at the time and eventually the edges became frayed to where the strap would suddenly tear across, and completely fail unexpectedly. So watch out for this.

I then tried ordinary polyester line which has worked fine ever since, though it will still bunch up on the winch. Next time I will be looking at straps again, but with a dedicated flat mast raising bow roller.
Ian Farrier

Mast Rake

You won't get far with mast rake, it just doesn't change the helm feel. Personnally, I go for max rake, the more the better (max out the forestay and hope that you have enough adjustment in the side stays to have the correct amount of rig tension), and then rake the rudder forward by drilling a new rotation hole.
Doug Harkrider

Mast Replacement

1. The F-31 mast is way overkill for the F-27 and SHOULD NOT be used for a replacement mast. Just add a second set of spreaders to your existing mast as per my conversion guide.
Ian Farrier

Mast Slots

1. If you have a painted mast, check to make sure that the paint isn't chipped at the slot. If it is, sand it down and smooth it out.

Practical Sailor likes McLube SailKote for initial results, but it didn't last as long as other lubricants. After two months, the Elmer's Slide-All was best, followed by Turtle Wax 2001 and candle wax. Which hints that if you leave your mast up, you'll use different materials than if you raise it every time you sail.

I've sprayed the luff rope with McLube as I've raised it and that's helped lower friction. But the very best thing is to have the sail luffing - don't try to raise it unless it's dead to wind. See **Boom Roller Furling,** in Book 1, for some other hints.
David Paule, F-27 "Second Chance"

2. I have to say I am a little wary about stainless steel slides or plates running on a carbon mast, but the mast manufacturer has not recommended against them. In reality the amount of movement is very little (once up and down the mast maybe once a week) and it would have to take many years before any significant wear could take place. The manufacturer may have also added extra reinforcement for wear in the laminate in this area. Thus I would not be too concerned - just keep an eye on it.
Ian Farrier, http://www.farriermarine.com

3. Installing metal inserts inside the carbon mast behind every screw is about the only way to attach a metal luff track to a carbon mast. Gougeon brothers (http://www.westsystem.com/) used to sell an aluminum bolt rope extrusion that was specifically made to be bonded to the back of a composite wing mast, but I don't know if they still do. The different thermal coefficients of expansion could also be a problem.
Ian Farrier

4. As the mainsail on my F-9A aged and stiffened it became harder and harder to raise. I had to head dead to windward and the last third required the high power gear on my winch. It was exhausting, slow and required a lot of sea room.

I read a series of messages on this email group about this problem and several owners seemed very happy with a solution using the Tidesmarine Strong Sail Track and Slide System. I bought one and just finished installing it. It's every bit as good as those other owners claimed. You install it with the mast standing. The new track slides up inside the luff-rope track built into my mast extrusion. I was surprised how simple it was to do. The track is made of UHMW-PE, a light, strong, low friction plastic.

Fitting the replacement batten pocket slides was a bit more involved. At first I was going to take the sail to my sailmaker and get him to do it. But I realized it would be quite straight forward. I just had to unscrew the old pockets and screw on the new ones. All my battens were about an inch short for the new pockets. So I bought a new bottom batten and moved the old one up a position and sawed a bit off it, and so on up to batten No.7. The whole installation took about five hours for two people.

The only problem was that Tidesmarine provided three screws of the wrong size. To secure the track, you use three machine screws at the bottom of the track (the top doesn't need to be secured). They are thoughtful enough to pre-drill the track and they provide a drill and tap to tap into the mast. The trouble was the drill and tap were 10-gauge while the screws they provided were 8-gauge. Other than that the operation was easy.

How did it perform? I must admit, I had a fantasy in my mind that the sail would float up effortlessly. It's not quite like that, the sail is, of course, quite heavy and I'm hoisting it with a 1:1 purchase over three blocks. But it's sooooo much easier than before.

I was able to raise it quickly and easily. Because the new track stands out a bit from the mast and the new slides hold the batten pockets out a bit further, I could raise it while sailing on a close reach. That's the first time I have been able to get my main up without using the outboard to power directly into the wind. We dropped it the same way, on a close reach while still sailing briskly.

Next to my jib furler it's the best bit of gear I have bought for my boat. It cost me US$1100 but, being in Australia, I was paying extra fright and import costs. I expect it would be cheaper if you're in the US.

There's a strangely uninformative site at www.tidesmarine.com. It tells you almost nothing but you can email them for the name of a dealer who will give you a more informative brochure.
Steve Townsend, F-9A "Phoenix", Lake Macquarie, Australia.

Mast - Stiffening Plates

1. Stiffening plates on the carbon masts are stiffeners added to the sides of the mast aft edges to strengthen the built in sail track area in cases where the mainsail bolt rope or slides are pulling out. This may happen at the headboard area, with either aluminum and carbon masts, particularly when reefed.

Causes are usually either insufficient bolt rope size/density, headboard slides that are too small, or a weak mast track area. It can be very difficult to make this strong enough for a multihull, and the much higher sail loadings of a multihull do make them more prone to this problem. With aluminum masts I usually recommend a solid or hard braided line for the bolt rope, or on larger designs a large stainless steel slide at the headboard, or two if necessary. With carbon masts, a section of the bolt rope at the headboard can be replaced by fiberglass rod inserts, or a large stainless steel slide can be used, but this tends to be harder on the mast.

If necessary, the track area at the top of the mast can be made super strong by bridging the track just above the headboard slide/bolt rope, but this is not possible at the track area where the headboard is positioned when reefed. Thus one has to rely on good slides or bolt rope, but if insufficient, the mast track must be strengthened in this area, and the only way to do this is with stiffening plates either side.

Ian Farrier, http://www.farriermarine.com

Mast Step

1. A silicon sealer is all that is needed on any mast step - it only needs to be waterproof. There's no need for either Sikaflex or 5200 which is overkill.
Ian Farrier, http://www.farriermarine.com

2. Here's a report on the removal of the mast step for my F-27, hull #80, which I did in early 2003. I believe it was the first time the mast step had been removed since the boat was built in 1989.

There are five screws that attach the mast step to the mast - two practically fell out. The internal threads in the mast step corroded and the screws were lucky to still be there. These were at the aft side of the mast.

One got its head twisted off. I drilled the shank down to where the mast step came off and will make a replacement hole. My hole in the shank was too poorly centered to be usable for an easy-out. Thanks for Roger L's reminder on the dangers of work-hardening, I used my portable drill because of its high torque and low speed, and except for the bit wandering, didn't have any trouble. This and the two below are on the front of the mast.

Two, after copious penetrating oil application and a lot of tapping, and a brand new Vice-Grip on their heads, unscrewed.

Apparently, none of these five had been set in silicone as Ian Farrier recommends.

There are four flat-head screws at the bottom of the mast step, oriented vertically. These hold a block to the step which is threaded for the forward three screws. There was no need to remove these.

I also removed a #10 screw from the front of the mast. It held a yellow cord which was evidently used to help route wires down the mast. There is a conduit in the mast for these wires. The yellow line was broken, and the screw no longer had any function. When I tie the end of the line back, I'll use this screw again, this time bedding it in silicone.

The lower cleat, the big one, used for raising and lowering the mast, had corrosion under it on the mast. These screws were threaded right into the mast wall. They protrude just enough on the inside to add nuts, which I plan on doing. These were fortunately bedded in silicone and came right out with no difficulty. These and their threaded holes can be reused.

The halyard sheaves are in fine condition and are suitable for reuse.

The purpose for doing all this is to get rid of the corrosion on the mast. I saw Lou Castle doing this on his boat, and that inspired me. My boat is an inland boat, and while it sometimes

did get salt-water use, that was not often. My mast is one of those black-painted Forespar masts. I don't know how the anodized masts fare.

If you've read this far, I have two recommendations:

1. If you own a previously-built boat: Remove any screws threaded into aluminum, anywhere on your boat, and ensure that they have a suitable anti-seize. The silicone used for the cleat screws did fine for 14 years - I'll use that again. Various other anti-seizes have been recommended on the List, too.

2. If you are building an F-Boat: avoid threading aluminum and using stainless steel screws in threaded aluminum holes. That eliminates this problem. If that's not possible, make certain that you use an appropriate anti-seize.
Dave Paule, F-27, Second Chance

MOB Equipment

1. We were on a new Hunter 34 with decent sized winches. It was impossible to lift a small man with the winch at the end of the main halyard. We then tried the lifting tackle that is sold as an option for the Lifesling. This made it super easy - in fact you could lift the person without any winches at all. If you could detach your mainsheet it would work just as well. Next time your boat is tied up on a side tie, put on a harness, lie down on the dock and see if your crew can lift you aboard.
Tim Cahill-O'Brien

2. Even better than a Lifesling is their new rescue sling model. It's smaller than a Lifesling and combines a throw bag with a Lifesling.. You have a good chance of being able to throw the bag of the rescue sling right into the hands of the MOB and when it hits the water, a SOSpenders type auto inflator inflates the harness and it turns into a Lifesling. It makes retrieval quicker than with the Lifesling since you don't have to circle to get the harness to the MOB.
Tim

3. Before you spend the $800 (December, 2001) on a MOM-8 I suggest you see one in action first. One of the Annapolis Book of Seamanship videos has a demonstration of one in use and its is a rather poor imitation of the real thing - especially the small inflatable 'pole'. If you are trying to comply with the ORCA regs than the MOM-8 is certainly the neatest solution out there but if you want something that is actually useful, a standard Forespar pole and associated stuff is far more practical and at least on the F-31 can be stowed out of the way so that it can be deployed almost as fast as the MOM-8.
Tim

Moorings

1. My two 20' 3/4" mooring lines are attached to the underside of the mooring ball with a shackle and swivel. The underside is recommended by the mooring service because the mooring ball dampens the strain on the bow cleats as the mooring ball gets sucked into the water by the waves.

Each line is covered with a 6' section of washing machine hose (should be longer) located so that they guard against chafe on the bowsprit main hull shroud.

Both lines are also lead through one piece of 15' 3" fire hose (hard to come by). This prevents the mooring lines from drooping back over the mooring ball on a very calm day as the boat nuzzles up to the mooring ball. (if that happens, the lines could chafe through on the mooring chain when the weather gets rough).

One eye of the mooring line has the pick-up buoy the other eye just the float from a pick-up buoy that I can fish up with the boat hook under the bow sprit ama shroud after the other eye is secured to the bow cleat.
Frank Meyer, F-27/#382

2. Make sure your pennant comes off the bottom of the mooring ball, and is not the type that extends through the ball to a big metal eye on top. That type can scratch the bejeezus out of your topsides when you ride over the mooring- and you will ride over the mooring now and then.

My problem has been with being given various moorings in a field, some of which are not padded. If the ball is big, when you ride over it, it can hit the flare of the topsides and do some real gouging. Another answer is to pad the shackle attachment carefully.
Jesse Deupree, F-27 ION, Portland Maine

3. We have been using the following setup for almost two seasons on with an F-24 II on a fairly exposed mooring. It does take a bit to set up and explain but works very nicely. It lets us use a bridle easily both on the mooring and when cruising. This setup works well for sailing on and off the mooring in all conditions with or without crew.

Our mooring, from the bottom up, is a large concrete block, chain, a swivel, and a large buoy. Shackled to the upper side of the swivel we have a 2' long piece of 1/2" 3 strand nylon with an eye splice and a thimble at each end. Then we have another shackle, connected to a thimble and eye splice to make a pennant with a 14' long piece of 7/16 nylon double braid. A large (6") eye splice in the end of the pennant makes it easy to tie in the dinghy. I stitched leather chafing gear onto the pennant where it goes through the bow chock. There is a small (glow in the dark) float on the end of the pennant. Next year I'll put one at each end of the pennant.

I replaced the bow sprit side wires with 1/4" single braid high tech line. At the ama ends I used a sailmaker's thimble and a Wichard twisted D shackle. At the bowsprit ends I used ordinary thimbles. I made up the new side wires and prestretched them between a tree and the trailer hitch on the car using a 12:1 purchase. After stretching I compared them to the

lengths of the old side wires. The single braid is so easy to splice that I didn't mind doing it several times to get the lengths just right. The final step was to stitch through the splices.

The sailmaker's thimbles at the ama ends of the side wires make nice chocks or fairleads for the bridle lines (one on each ama). The bridle lines are each about 12' long with a Wichard snap shackle on the forward end and a good sized eye splice on the aft end. The aft end is tied to the large stainless eye loop at the outboard end of the forward aka using a cow's hitch. I stitched leather chafing gear onto the bridle lines where they go through the sailmaker's thimbles.

We use only one bridle line at a time. The pennant goes to the bow cleat and the bridle line's snap shackle goes onto the shackle connected the pennant to the 2' long 3 strand.

There are at least two ways to get on and off the mooring. I'll describe two methods. I like the second when we are taking the dinghy with us, my wife likes it all the time.

When leaving the mooring with the dinghy at the mooring we first remove the pennant from the bow cleat, pass it outside the pulpit, then under the bowsprit side wires, then tie the dinghy's bowline to the end of the pennant. We are now hanging only by the bridle line and we are at about 25 degrees to the wind and the dinghy's bow is a few feet off the stern of our windward ama. Hoist the main, stand at the inboard end of the cross beam and pull on the pennant until you can unclip the snap shackle, toss the pennant and dinghy bowline overboard, bear off (the pull forward usually gives us just enough speed to steer) and sail away. If we want to sail off the mooring but we are on the wrong bridle for the way we want to go we switch bridle lines before we move the pennant. Sailing back onto the mooring we simply reverse the procedure.

Another way to work the departure is to first lead the tail of the pennant outside the pulpit, around the bowsprit wires, and then tie it to the dinghy. Then pull forward and release the snap shackle on the bridle and untie the pennant. Drop back on the mooring as far as possible then pull forward to get steerageway then drop the pennant in the water. It can be a bit tricky here to get the pennant and dinghy bowline clear of everything.

When cruising we anchor, then tie a bowline in a bight, ease out a bit more line, then snap the bridle line into the bowline loops, and finally ease out a bit more line to balance the bridle.

This setup keeps at least half of the mooring load on the main hull and helps prevent some of the swinging around at anchor. Longer bridle lines would reduce the swinging even more, but they take up a lot of room in an already crowded mooring field.
Dave Lansky, F-24 II, Mayfly

4. Regarding the anchor...Have someone make up a rod, about 5 feet long with an eye on one end. Bend one end of the rod into an eye and weld it shut. Weld several pieces of junk iron onto the rod and set it in a 50 gallon drum with the eye out. Fill the drum with concrete. The rod should be about 1/2 inch in diameter. When finished, the only part of the rod sticking out of the concrete should be the eye.

Assuming that you're anchoring in 10 feet of water, fasten a 5 foot long piece of 3/8" chain to the eye and then 10 to 15 feet of lighter 1/4" chain. To the end of the chain attach a swivel and to the swivel the buoy. Your mooring pennants are fastened to the top of the swivel (where the buoy is attached) and then to your boat. Use 2 pennants, one to the deck cleat and one to the bow eye. I usually have a snap on the one to the bow eye and when I tie up, the one to the bow eye is slack. This is a safety line in case the main pennant comes loose.

To launch this thing, find a friend with a pontoon boat. Roll the barrel to the water's edge and tie the anchor to the front of the pontoon boat with a short piece of 3/8" line. Back the boat out while rolling the barrel and soon the barrel will be suspended under the pontoon. Move to where you want to anchor and cut the line. Voila! You're set.
Jack Johnson

5. My pennants are attached above the float- it's the only way I've ever had a mooring set up and I've never had a problem with it. I have a 2 eye splices on a 10 foot pendant that I bring to either side of the bob stay and through the chocks to the bow eye. I also have 2 3/8 three strand nylon pennants that I spliced a thimble to one end of each that attach to the same shackle that the main pennant attaches to (above the float).

The other end of these longer pennants have ss carabiners tied on to them. I snap these onto the straps on the floats near the front beam. I don't really want to lay out on the float to snap them to the float bow strap. These bridles keep the boat from sailing too much. I tied them so that the load is on the main bow eye when it's all straight.

When we use the dinghy (a 10'6" inflatable with and outboard, I just let it slip under one of the tramps and back off the mooring. I thread a pick-up buoy through both eyes and carabiners, and I have one float threaded onto the main pennant. The pick up buoy stick is cut down so that the bow sprit side attachments don't knock it flat. I don't remember what's below the water- I had this mooring set up for an 8000 pound boat (hence the 3/4 inch pennant), so I figured the F-27 wouldn't strain it.

When I used to have a mooring in Marblehead (this one is in Hull, MA), the harbor master required that the top chain be replaced every three years- how many of you do that? What about inspecting the bottom chain and it's attachment?
Dennis Foley

6. This is what I did for a Wharram 25 and it was recommended practice for mooring on a tributary of the Bristol Channel - mud bottom, 40' tides:

Make a tangle of iron rebar, 5/8" minimum dia, in a small truck tire. One piece of rebar, (1" dia is good but I used 3/4") is bent into a U with hooks at the ends. The U sticks up in the middle of the tire, the hooks are tangled in the tangle. No welding required. Fill tire with concrete. You end up with a solid disk, not a donut. The U sticks out of the concrete about 15" to 18".

It's a good idea to have one bow and stern.

The result weighs about 200lbs (each). This was light enough to transport in a Ford Escort and move to position using the boat to be moored by it. It could be rolled around, with care.

Add swivel and chain. 3/8" chain minimum, and there should be at least 10' of chain lying on the bottom when you're moored (I think, but there are standards for this, and my memory fades).
Bill.

7. Hmm, it seems like I may be taking the mooring business too casually. I attached a large galvanized swivel to my mooring ball with a large galvanized shackle. To the swivel, I attached a 3/4" x 15' docking line from West Marine with an eye splice in one end. The non-spliced end is fastened to the swivel with a bowline with a long tail, which is whipped back onto the line. The eye splice goes over the bow cleat. (I also have a pickup buoy attached with 1/4" polypro to the eye splice, and this is cleated to the same cleat.) I do not use my bow roller, but just bring the pennant up over the rail just aft of the bow pulpit. Simple, and works great.

I inspect regularly for chafe -- nothing significant yet. I'll probably replace the docking line every other year anyway.

There's one add-on that also seems to be working fine. I have a fixed bowsprit with a wire bob stay. To keep the mooring pennant from rubbing against the bob (and to maybe introduce a small bridle effect), I tied a carabiner to each end of a light (3/8" 3-strand nylon) line whose length is about 7/16 of the total beam. One carabiner snaps onto an ama bow eye, and the other snaps onto the mooring pennant (on the same side of the boat, of course), thus holding it "out" from the main bow a bit. The inboard 'biner slides along the pennant as necessary, and the pennant never quite touches the bob.

I do have a very protected anchorage, however, and can see how in a more exposed location this arrangement might not be enough.
Art Watson

8. Because I moor my F-27 in Quincy Bay (MA) where it sometimes grounds out at low tide I didn't want to have anything, like the shaft of a mushroom or a 50 gallon drum, sticking up ready to impale it, I use the mooring described in Chapman's of three Danforth style anchors in a triangle.

The bottom is mud (and probably several heavy metals) and about 13-14 feet deep at max moon tide. The anchors (20lbs ea) are connected by three fifty foot 5/16" chains to a swivel from which another 30 feet of chain rises to the ball. It is attached to the ball leaving about 2 feet free to which I attach my bridle. There is another pendant on the top of the ball which is used to retrieve the lot and then loosely cleated at the bow.

I believe that any significant tension on the center line would work against the effectiveness of the bridle. The bridle is two 50 foot lengths of 3/8 nylon with thimbles at the ends. These are led from the spinnaker winches, through blocks at the forward attachment of the lifelines (about 4 feet back from the ama bows) and end with ss snap hooks. I have put chafe pads on the crossbeams where the lines rest and under the blocks on the amas.

I have had the lines tangle around the ball but since I am out there fairly often I have not noticed any chafe where they pass over the chain. I put bottom paint on the ball to keep the barnacles down.

My usual procedure for departure is to paddle the dinghy to the ball, disconnect the bridle leaving the boat on the center pendant, and if leaving the dinghy behind attach it to the ball and pull it back to the boat where I leap gracefully into one of the bow nets. Then there is only one line to uncleat. One other benefit is that I can, with a little help from my son because the anchors bury quite deeply, retrieve the whole mess or just inspect and reinstall it. I have noticed that the chains from the anchors to the swivel show very little wear, it's the one from the swivel up to the ball that has to be replaced about every 2 years.
Tony Cabot

9. I used found materials to create a mooring anchor which provides for much flexibility and low tech deployment: I acquired old auto tires and had my friend who worked in construction fill them with excess concrete left over from foundation pours. In a week he had five for me with a loop of re-bar protruding. Though I never weighed them we figured that a 15' tire of average width would provide ~250-300# on dry land. While I wouldn't relish it now and don't recommend it, I could lift one up into my Suburban and unload it alone without blowing a disc. They could be balanced on the tread face and rolled to the waiting boat and cinched up one at a time for deployment. We actually did it first with 4 x 4s lashed across a canoe. The idea of a friend with a pontoon boat is appealing but when you're lifting and rolling around large concrete wheels, I have observed that friends become acutely scarce. When the proper spot is attained, the tires can be lowered slowly and then linked together with chain and connectors by a diver. Having many small weights strung out is very effective as to move them each one in turn must have its contact with the earth broken before the next in sequence is affected. We used 5 to hold a 3000# mono with virtually no "scope" and it is still being used after 25 years with prudent inspections. Another nice feature is that you can retrieve or move this system. One summer I was invited by the Michigan DNR to relocate my mooring within 14 days or endure unspeakable acts. We picked a calm day and looped 3 ropes thru the tire eyes and lifted the 5 weights with the sail winches and motored slowly and smugly to a new approved private site.
Mike

10. Having always used a bridle on my present F-27 and my previous 30' mono, skippers with more experience than I have advised that a long bridle will cushion the waves and take the strain before the cleats are torn out. To prevent the bridle from looping the buoy on calm days, be sure and attach the bridle to the bottom of the buoy (not the top) and to lead both lines through an 8' section of 3" fire hose. (a donation to your local fire department may get you a piece)

Frank Meyer, F-27

Motors - Electric

1. The trolling motor is fantastic for use in a marina and exceptional for docking due to the instant reverse and low speed settings. Where a trolling motor is not useful is in currents and higher winds. As to battery capacity and duration, that just depends on too many factors.

As a guess - most fully charged group 27 batteries could let a 45 pound thrust motor operate for about one hour at top speed - and much longer at lower speed settings. After one hour of operation, the battery would be about 50% discharged and running the motor more might result in a shorter life of the battery.
Jobst

2. I'm as much of a fan of electric propulsion as anyone, but anybody who thinks that docking and marina work don't involve strong currents and winds must either live in a different part of the world or go to different marinas than I do. I can't imagine making do with a motor that couldn't stem a five knot current.
Ken Olum

3. ....Or a 30 kt wind.

4. A couple of numbers that might put electric motors in perspective. These are based on my F-27 with an 8 hp outboard and a 43 watt solar panel:

a. It would take 355 hours of sunlight to accumulate the energy in a single gallon of gasoline.

b. It would take 139 solar panels like mine to generate the 8 hp that the motor needs, assuming no additional losses.

c. And as far as I can tell, running an electric motor at 8 hp would ruin a normal Group 24 or 27 battery pretty quickly.

Nets - Aft Line

1. I've used a simpler solution than the Grangers (below) - just a small shackle on each padeye with the lacing line led around the shackle pin. This lead has much less friction and lets you pull the lacing real tight. I do not put anything on the eye that fits closely between hull and aka when folding.

I can get the nets tight which I like- but I do loosen before folding; just undoing the knot and letting the line slacken without unlacing (figure eight in line end).
Jesse Deupree, F-27 ION, Portland Maine

2. I copied Tommy and Suzy Grangers (F-27 Triple Up) solution. I put a tiny Harken AirBlock on each of the eye straps across the front of the aft cross arms and installed a small Ronstan clam-cleat on the lower inboard corner of the cross arms (just inside the cockpit). I then laced Spectra starting outboard through the nets and blocks and lead to the clam-cleat inside the cockpit. Now when I want to fold the float's I just release the lacing line out of the clam-cleat. Since making this change, the locking pins just fall into place!

BTW, lacing the nets with Spectra really works great. Since it is very slippery it is much easier to pull tight, doesn't hold water, due to low stretch rarely needs retightening, and is less likely to sand through the gelcoat on the inbound flange.

*Note - **DON''T** unscrew the eyes on the aft beam. You won't be able to screw the screws back in! - Editor.*

3. I believe the idea originated with Tommy and Suzy Granger. After a couple of years' trial and error I've found there are a few "tricks" to getting it to work consistently, so here's my 2 cents' worth. I use the Harken #292 block--this is a 7/8" micro block with swivel, which allows the line to lead as fairly as possible. Install these in the eye straps that are on the leading edge of the akas, but skip the second and third eye straps (#1 being the most outboard). If you install blocks on the second and third eye straps, the blocks themselves sometimes get pinched between the aka and the main hull when folding--keeping you from fully folding or, worse, mangling the block. Use 1/4" uncovered Spectra line which is quite slippery and abrasion-resistant. To tie off the line, I use a 4" aluminum horn cleat mounted on the leading edge of the aka (others have used cam cleats), inboard of the most inboard eye strap, but with plenty of clearance to the main hull.

Glenn Madere, F-27 Valiant Tri

4.

This is how I do it on Second Chance. The 1/4" Spectra lacing line is doubled around the hull lacing line and back through to the net at the aft beam. This gives me a 2:1 or even a 3:1 leverage. I didn't use any additional shackles or blocks or cleats - to secure the line, I used a daisy-chain knot and that worked great. This is simple, cheap and light and best of all, pretty effective.

Also, this shows the wear patch that Sunrise built in to my net, at my request, by the aft cockpit.

The bracket on the forward edge of the beam is the spinnaker pole bracket. My 1989 boat originally had a spinnaker pole.

The black marks are where net lacing previously wore through the gelcoat.
Dave Paule, F-27 Second Chance

Nets - Coatings

1. > I ordered a gallon of coating from Sunrise, and would be interested in other's experiences recoating nets. Particularly:

On or off the boat? Sunrise recommends stretching the nets; would seem to be easier on the boat. I plan to unfold one side at a time while it's on the trailer
Roller, brush, or other?
Does one need a blotter on the bottom side to catch the excess?

Any thoughts are greatly appreciated.

I did mine this spring on the boat while it was unfolded on the driveway. I would suggest going to U-Haul and getting their 2 ft wide plastic wrap and wrapping the amas. If you are worried about dripping on the drive, lay a net. I scrapped a good majority of the old off with a wire brush, then painted. Worked like a charm!
Jon Alvord

2. I applied Yale Maxijacket to all of my nets. The F-31 nets had three Lake Michigan seasons on them prior to coating them. The nets were structurally sound, but showed several areas of typical traffic wear patterns. The application was place in April of this year (the beginning of the fourth season). I would judge the application a great success. Looks 100%, no peeling, great under foot, and very cost effective. One quart at $40 covered all four nets. I use a small paint roller designed for trim work. I prepared the nets first with a cleaning of TSP then wiped them with denatured alcohol solvent. Maxijacket can be purchased from the APS catalog.
Jim and Jo Kouracos, F-31 #132 Ms NITRO

Nets and Tramps - General

1. Replace the nuts and locking washers that hold the net lacing on to the hull with self-locking nuts. The original ones corrode. Loctite the screws, in addition.

2. If the nets aren't tight enough, the lacing will chafe the gel coat on the hull. Also, they'll squeak, at exactly that wrong pitch.

3. To help overcome this the aft ends of the wing nets were made solid with an extended flap overlapping the top side of the aft beam. This is intended to trap any spray from this area and/or funnel it under the beam.

If spray is still getting out from under this flap then check fit, and make sure it is not lifting. If needed, it can also be extended further inboard.

Spray can squeeze through any gaps between the beam and hull at the inner end, particularly at higher speeds. Determine exactly where it is coming through, and glue (contact cement) a rubber flap to cover the area. It may need to be on the underside of the beam, or on the hull. This can then bend out of the way when the beam folds, but will help keep out any spray at other times.

Ian Farrier

4. My Sunrise nets came with a flap as Ian describes on the outer half of the rear of the netting, but I had had a greater problem with spray off the inner half of the beam/strut so I had them make and sell me a second flap for each side with two grommets on the forward side and shock cord through the aft side. This flap is held in place by the lacing and the shock cord and folds easily when the rear lacing is slackened (It does not have to be unlaced, just slackened- having two flaps means there is a joint where the net folds when trailering).

5. The only problem to folding the boat is to loosen the rear lashings (if they're too tight to allow complete folding). I also replaced the nuts on the round washer/keepers at the main hull with nylock nuts to keep them tight. My next time to relace, I think I'll get some smaller, low stretch lacing line.
Rich Holden, F-27, #161 (late 1990), Sea Bird,

6. We bought and applied the produce 303 aerospace UV protectant to the nets and have this word of caution, the nets get very slippery when wet after having this product applied. The only pair of shoes between the two of us that even remotely have good holding power is a new pair of shoes from "Shoes for Crews" that practical sailor endorsed some issues back.
BillnBess, Essence, F-24-MKII

7. The nets aren't happy once the snow freezes into ice. I haven't broken them that way - yet. - David Paule

8. Thread the nets and lines while on the trailer but don't tie the ends.

Then put the boat in the water and very carefully unfold the boat making sure that the nets are not too tight and pulling on the net rails (if you pull at the net rails using the massive leverage provided by the folding mechanism you'll find a lot of nasty cabin leaks at the rails next time it rains.)

Then when the boat is unfolded and bolted brown, tie the nets as tight as you can by hand.
Tim Cahill-O'Brien

9. Sure, sew a patch on the hole. Find someone who does commercial sewing and have then sew a vinyl tarp patch over the hole (the same stuff that you find around the edges of your nets). It fills the hole, prevents it from getting bigger and prevents another hole in the future.
Jack Johnson

10. > Is there a proper pattern for lacing the wing and bow nets?

We use three pieces of line for each wing net, two for each bow net. On the wing nets, we start at the aft deck fitting with a stopper knot and work forward, keeping the line taut. Then work each aka from the ama inward, being to line up each grommet with the fitting on the boat. We tie off this line nearest the deck with two half hitches so it is easy to untie and loosen when we fold.

On the bow nets, it's about the same, except there is a gap where the lifeline from the bow pulpit meets the deck. Working from the corner where the aka and deck meet forward, like stitching. When you get to the lifeline fitting, skip to the next grommet and at the last grommet run the line forward to the forward-most deck fitting and loop it back to the grommet - this will give you a forward pull necessary to keep the shape on the net (so that it "cups" you when you sit in it). Again, we tie it off with two half hitches. Test sit. Go sailing!
Jim Bathurst, Wide Open, F-27

11. One idea from the catamarans that like really tight tramps is to use Spectra for lacing line. It is very slippery, so chafe is not an issue, and taking up slack at one end pulls through other grommets easily. Finally it can give a very tight tramp.

I'm not sure that a very tight tramp is the best answer, and I have no experience using this on our F-27. But it worked very well on our Farrier Eagle.

I used a horn cleat rather than clam cleat, to give positive locking but easy adjustability
Robert Libbey

Nets - Materials

Also see **Net - Construction** *in Book 4, Homebuilt Boats.*

1. Latest material being tried in Australia is a PVC mesh material called Ferrari 492 which seems very strong, and tough, but it will take a few years to see how it lasts. Feed back so far is that it is working well, but it can be slippery when wet, which could be a problem for some. Usually welded together which eliminates stitching

Sources for nets in this material are:

Ian Davis, Hood Sails, ox@ecn.net.au.

Gary Martin Sails gmsails@winshop.com.au
Ian Farrier

2. I just replaced my wing nets with Ferrari (1/4 inch square hole white) from Sunrise and found that the amas will not fold without slacking the aft lacing 18 - 24 inches...every time. The boat lives on the trailer and this is a nuisance. They are also more slippery than the original polyester mesh (round hole).

They are more solid (less stretch) but transfer loads to points rather than spreading the loads over wider areas. I like the look and feel but do not think I would do it again!
Martyn Adams, F-27, Cuttlefish

3. > Does anyone know what kind of nets Corsair used before Sunrise? They are some type of noncoated material, black in color.

It has always been a material call Fablok, which is a polyester mesh from a place in New Jersey. Sure seemed to last much longer in the seventies and eighties than it does now. Usually white, but we had it dyed black as the white looked dirty very quickly. There was a Trailertri 18 built in Brisbane by a school that stayed on a mooring (the boat) in front of the school (great school) all year round in the Australian sun. Their nets lasted for years as I recall, as did most others. Usually the sewing was the first thing to fail.

4. There's a white PVC mesh called Ferrari (which, of course, is just another way of spelling Farrier). Has been used for wing nets in Australia now for a couple of years, and some big cats are now using it for bow nets.

Very strong and does last longer, but is more slippery, and being stiffer, harder to fold. If your nets already make folding hard, then it may not be a good idea.
Ian Farrier

5. I have recently had a new set of Ferrari Wing nets fitted to My F-24 II here in Australia, and they have been excellent so far.

Folding has not been a problem, they are great on bare feet or deck shoes, and if the UV resistance is as good as promised, I will be very happy. The air certainly seems to pass through easily. I would make sure the material is welded however, as some sailors here have reported that the materials fibers cut through stitching unless it is Gore-Tex. The inner edge should not have eyelets, but a rod pocket with plastic conduit inserted and vees cut in opposite plastic discs on main hull.

Another bonus I have not yet explored is that some of the bigger catamarans here have sheet blocks bolted directly to the nets with two aluminum backing plates. If the angle is wrong, just undo and move to a new position. Perhaps a new permanent sheet position or the Screacher?
Peter Hackett, Intrigue, F-24-2 #004

Nets - Service

1. A recent experience (January, 2002) I had with Mentor Marine of Ramona CA went above and beyond. I want to acknowledge them.

My F-24-2 is now 6 years old. I had previously ordered replacement bow nets from Sunrise Nets, and have been thoroughly satisfied both with the original product and subsequent service. Last summer, I ordered new wing nets. I wanted a goofy custom green color, and decided to use Mentor, simply because they are closer.

Because of the custom color it took quite a while to get the nets, but when they finally arrived, I found them to be excellent. I asked for a pint or so of additional vinyl product, so that I could do an overcoat at the end of the season. Mentor advised they had used it all up on my nets; they would have to order more for me.

They contacted me a few times over the past several months, saying they were still working on it. Last week, a box showed up with two full quarts of the stuff, coating instructions, and an invoice. The invoice was for $-0-; free, not even UPS charges. The explanation read "no charge due to excessive time to fill the order".

I make no claim of product superiority over any other supplier, but these people have shown themselves to be stand up guys, and I wanted to noise it around.
Fred Cox, Reno, NV, F-24-2 #76 "Preshusss"
Note - As of December, 2003, I was unable to locate Mentor Marine This is included on the chance that they are still in business or may return. - Editor

2. The nets are warranted for 5 or 10 years or some such time, far longer than they will ever last. This warranty covers UV damage. However the boat will have the nets wrecked way before then. My nets were being eaten by abrasion from the shrouds so I sent them back to Sunrise and had wear patches installed. Sunrise were great to work with. The cost of the postage was more than the repair and they mailed them right back - great service.

If the nets are being pulled apart I'd expect its because they are/were once laced up a bit tight - very easy to do. The leverage from opening the beams will quickly pull them apart.
Tim Cahill-O'Brien

Nets - Wear

Note - I've seen two people fall through nets.... Once was through the bow net of an F-31, where an existing hole suddenly burst while a person was standing on it. The other time was the main net of my F-27, one September. This net had been repaired once, and was uncoated. It was about 11 years old at the time, and due for replacement that November anyway.

UV exposure is a significant issue and so is chafe and general wear. The application of the coating should help with both. Unfortunately, the uncoated nets are more comfortable and are less slippery. - Editor

1. My crew (wife) insists on handling the 22lbs anchor we carry on board. However, during the process of letting it over the bow net into the deep blue yonder, she can't quite keep it away from the vinyl sleeve of the bow net. The result is the occasional burn mark and a little premature wear on that side of the net.

McMaster-Carr item #8672K68 or #8672K59 is the ideal solution. A wear strip, three-quarter round UHMW tubing with a 0.375 slot that goes tightly over vinyl sleeved wire going from

the bow to the ama, holding the bow net. A 6' to 8' piece will do it. Obviously, this strip has to be removed for trailering. Look under "wear strips."
Felix Kagi, F-31 "Espresso"

2. If the area you are speaking of is near where you step out of the cockpit then I would suggest getting some more of the polyester mesh material uncoated, using a spray glue to adhere it to the old nets where it is wearing, then sewing it down with a zigzag stitch. Then with a roller or paint brush, using our vinyl coating to go over the where you sewn the new material top side and bottom side so it soaks in real well and dries for at least 24 hours. Before any of that happens you need to clean off any sea water so that you spray, sew, and coat on a clean surface. It will work and look better that way.

The material is $36.00 per yard (March, 2001), it's width is 126" so you probably would definitely get by on the minimum 1 yd purchase. The vinyl coating in twelve colors (since you want contrast you may want to choose a different color) black, grey, dark blue, pacific blue, red, burgundy, white, Persian green, forest green, light blue, navy blue, and aquamarine. The cost is $18 a quart or $59 a gallon. If you have any further questions please call and I will assist you in any way possible.
Susie, Sunrise Nets

3. The forward nets are of a much wider weave than the main nets which reduces windage (this is in Ian's Manual) - also Sunrise nets upgraded their forward nets two years ago (written October, 2001) and have stronger ones that are shipped on the new boats.

The attachment points to the boat are a forward wire - which is a structural member on the boat and multiple heavy duty eyes for the line which should be super low stretch synthetic line so the net material strong though it is should be the weak point.

When the coating started to wear off my nets from abrasion with the Hyfield levers, I them back to Sunrise Nets who put an abrasion patch on the net where it contacts the lever and redipped the nets. They were like new when I got them back - awesome customer service. I'm planning to get Sunrise to re-dip my nets in the off season every couple of years as the coating wears off.

Someone is on the forward nets on my boat when ever the wind is under about 15 and the waters are flat.

That said - I've seen and heard of more than a few F Boat sailors fall through the worn out nets so this does not seem to be where one should skimp, at least if you sail in cold water.
Tim Cahill-O'Brien

4. Sunrise offers (October, 2001) light duty and heavy duty open netting that may be used as materials for the bow net areas. I think that regardless of F-Boat size, if I wanted to walk on them I would opt for the heavy duty. If I was just looking for sail storage and an occasional step on the net then the light duty would suffice. These nets may be "dipped" to match the color of your wing nets and to protect from the UV. Most nets that I have seen on the F-Boats

have been the lighter ones. My 100 lbs. daughter loves to "ride" and nap there although she always gets up and looks like a "caught fish" with the net indentations in her skin.
Rick Zern

Noise in the Boat

1. If you are having creaks in the forward beam area, don't forget to also check the mast step. Anodized aluminum rubbing against itself can also generate loud cracking noises.
Ian Farrier

Nonskid Paint

1. You can match the texture of the deck by using Interlux 2100/2101 multithane primer with silica mixed in as a thickening agent. You apply with small short nap roller and work until you achieve the desired texture.
After it has set, you can lightly sand to lessen the non-skid to you liking then just paint with a good two part paint to match and you're all set.

2. After 5 years of trying different techniques, I have come up with something that is close to perfect.

First, you have to be able to make a non skid pattern. I did this by purchasing some mold making RTV from TAP Plastic. Find a level spot (or close to it) on your boat and create a border around 18" square (I used modeling clay for the border). Add the catalyst to the RTV and pour the mixture onto the area you've bordered--the mold should be around 1-2" thick. Wait a couple days for it to gel and remove it and clean it--mark the top so you don't forget which is the bottom side.

Second, you have to repair the area that needs new gelcoat with epoxy and sand the surrounding area a little. I've found that it's important to get the epoxy level with the surrounding gelcoat (no bumps or voids), which means the patch will be bigger. It's been helpful to mask off the area of work so I don't sand off too big of an area.

Third, you have to be able to match your non skid color with gelcoat. It's best for white boats to be a little brighter for the repair as the eye glides over the whiter instead of getting "stuck" on the darker. I have been using oil based wood stain (dark oak) as the tint--mostly because I have it around. I use about 4 drops of stain to color each batch of gel coat where a batch is made of about 2-3 tablespoons of gelcoat and appropriate amount of catalyst.

Finally, apply a thin layer (less than 1/16") of the color matched gelcoat over the area to be repaired and apply the "non skid pattern". It helps if you put a flat weight (about 5 pounds) on the RTV. Wait 24 hours and remove...

You will find that you will have made too much gelcoat, sometimes I have made a pretty good match if you wait until the stuff (excess gelcoat) is really thick, then apply a small amount and patiently tap it with the flat of a spatula or scraper. As it hardens the peaks formed by this process will eventually stay as peaks and look somewhat like non skid (but it is slipperier since there's no sharp peaks).
Thom Davis

3. One technique is to use putty (or play-dough). Take an imprint of the nonskid texture from an undamaged area of the deck, and place it over the repair to mold the same texture onto the new gel coat.
Richard Stephens

Outboards
(*See also* **Engine Well – F-27***)*

Outboard - Exhaust Modification

1. I took a deep breath and started the 5/16" drill bit carving into the side of our Nissan 8 hp. Four holes and a trial run later, I realized it is the best thing you can do for that motor save mixing oil in the gas. The drilling went perfect, but the trial run was more exciting. I tried to see how fast I could motor in reverse against a 5-10 knot wind because there is a huge increase in reverse acceleration compared to the stock motor. As I passed 3.5 knots there was a loud boom as the new-found reverse thrust pulled the motor off the mount. Luckily, on the F-27, it doesn't fall in the water. After tightening the motor back on I tried again. Just under four knots there was another boom. This time it was the reverse pull suddenly snapping the motor sideways against the motor enclosure. Enough for trials (and no, I don't motor 9 knots in forward). This modification is a real improvement with no downside.

In reverse the exhaust comes out the four holes above the cavitation plate allowing the prop to engage water only. In forward it comes out the holes until about 1/4 throttle and then the low pressure behind the prop pulls it out through the prop just as before. The exhaust is obviously vented above water more frequently in waves(the better for the fish), but the surprise is that the only way you can tell is by watching. The sound is as muffled as it gets by the time it comes out the holes.

Here are the details. The four 5/16" holes are drilled vertically on 1" centers, with the lower hole 1/2" above the cavitation plate. The hole centers are located 5 3/8" back from the leading edge of the shaft. This located the holes just about right in the middle of the exhaust passage that is the aft section of the housing. You can insert a wire in your first hole and feel the size of the exhaust passage. The shaft housing is about 1/8" thick. I drilled the holes to angle backwards and further filed them to enlarge and recess them aft(somewhat like the cooling water entrance holes). I wanted the exhaust to be able to exit easily in forward in case the holes let in water and restricted the prop exhaust exit. The info I had called for 1/2"

holes, but I took one look at the bit and didn't have the guts to start a hole that big. These work fine.

Clarifications -
(Lay a tape measure along side the housing and measure from the leading edge back. Center punch at 5 3/8". This isn't a critical measurement because as you will see, the exhaust chamber is about a 1 1/2" aft section of the unit. I wanted to get the holes far enough back that they were in the area that wraps in rather than on the flat side of the housing. This should help the exhaust exit when moving forward. It turned out that measurement put the holes about right in the center of the exhaust chamber.)

(I drilled two holes on each side on one inch centers, the lowest being just above the flat anticavitation plate. The original instructions called for 1/2" holes, but 5/ 16" seem fine. They are probably closer to 3/8" after I filed and relieved them to the back, again to ease the exhaust outflow when going forward. I was afraid that water would come in the holes when going forward and it would then restrict the exhaust flow thru the prop. As it turned out the exhaust goes thru the holes in forward at low speeds and in reverse. Above 1/3 throttle in forward it goes out the prop as before.)
Allen Jacobson, Triple Play, F-27 #293

2. I drilled the vent holes in my '98 Honda 4 stroke 5 hp, like has previously been described on this list for different engines (four 3/8" diameter holes, 2 on each side), and can report that it works great, much better reverse thrust, no difference in forward, same amount of exhaust noise.

On my 5 HP Honda 4 stroke:

I drilled two 3/8" inch diameter holes on each side, both holes are 1 5/16 " above the top side of the cavitation plate, 5/8" center to center, and the center of the aft hole is 1 1/2 " fwd of the squared off aft edge of the housing (where it meets the top of the cavitation plate.)
Mike Parsons

3. Seems strange that no-one's mentioned the Mercury reverse thrust system. It seems easier and safer than drilling holes. It is simply a cone-shaped washer that covers the exhaust opening in the prop. (Slides onto the prop spline before the nut).The propeller nut is backed out a little so that the prop can slide fore/aft on its spline. Thus, when in fwd, the prop slides forward, leaving a gap for the exhaust gas. In reverse, the prop slides aft and the cone blocks the exhaust, forcing the gas out the gap in front of the prop. Works a treat. I've used it the last two seasons and wouldn’t be without it. You don't have to drill hoes in the gear case, which would void any warranty, I suspect..

I believe it could be adapted to other brands of motor. the parameters would be:

a. enough thread on the prop shaft to allow the nut to be backed out about 3/8" Nut needs to be nyloc type.

b. The outer, cylindrical part of the prop hub needs to protrude about 3/4" further aft than the inner, splined part. This allows room for the conical washer.
c. The washer may have to be specially made: I don't know of availability for other motors. It could be turned from bar stock, or pressed from 1/16" thick ss.
Regards, John F-24 Mk. II #47

Outboard - Flushing

1. I flush about once every two months, and the motor is run at least twice a week year round. It's a Yamaha 4 stroke 9.9, and after one year of use, I was starting to see significant corrosion in the lower end. The other area I found that needed rinsing out was up under the hood. I spray that off periodically now as well.
Ron Radko

2. Our Honda 5 HP is now in its 4th season. We don't flush it with fresh water since it is on mooring. My previous experience with several outboards has been good with no flushing (10 and 15 year life) but I may have been lucky. I figure what I save by not being at a slip can pay for a new outboard every couple of years.
David Beretta

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David Beretta

Outboard - Fuel Consumption

1. As a newbie, I just checked the Nissan website and there they said that the
5 hp (4 stroke) consumes less than 1/2 gallon per hour at full throttle.
Peter Dubé, Dream On, F-24 #311

2. As a rule of thumb:

Each 10HP 2 Cycle will consume approximately 1 gph (gallon per hour) where best torque meets rpm.

Each 10HP 4 Cycle will consume approximately 0.75 gph.

Each 10HP Diesel will consume approximately 0.5 gph.

I.e. a 5 hp 2 cycle will consume about 1/2 gallon per hour.
Felix Kagi
Note - Other estimates were higher. Editor

3. I have a Yamaha 9.9 on my F-27 and can get about ten miles to the gallon.
Wayne Erickson, Almond Joy, F-27

4. We had to motor back from Catalina to San Diego last month (bummer). In 9 hours motoring our Honda 9.9 Power Thrust (BF9.9) used a total of 5 gallons at 3/4 throttle. Pretty miserly I'd say.
Reid Hester, Ph.D.

5. You can figure on 3 liters/hour at ¾ throttle or cruise power setting with a Yamaha 9.9. With a 12-liter tank you have a one-way range of approx. 25 miles, uncorrected for wind and current. To extend range, a second 12-liter Yamaha tank fits under the other seat (aft cabin boat) and there is also room for a 1-gal. reserve tank that doubles as the dinghy tank. Giving altogether 9 hours of operation---maybe 60 miles in a pinch.
Ernest Hardin

6. A couple of summers ago I (unfortunately)had to motor for about 12 hours on a very long lake. It was a nice sunny day, obviously no wind or waves and had the motor just into forward gear. Boat speed in the 2.5 - 3 kts and I burned less that 3 Canadian gallons (I have a 3 gal tank and did not run out of fuel) - I guessed that it worked out to about 1 liter/hour - I thought that this was unbelievably good! A more normal situation is around 2 liters/hour at 5 kts. The Yamaha 9.9 is on my F-9RX. Boat weight may also be a factor (mine runs in the 3,700 - 3,800lb range). So if you plan on about 1/2 U.S. gal/hour plus reserves you should be fine.
Bruce Bolton, F-9RX "Dream Chaser"

7. We have averaged more like 1/2 gal/hour or 2 liters/hour cruising at 6 knots in calm, flat water, with the Yamaha 9.9. Is that 1/2 throttle? 2/3? I don't know. But the hull speed of a 31 foot hull is 1.2 * sqrt(31) = 6.7 knots. I want to stay below that speed when cruising under power so I shoot for 6 knots or even 5.5.

Also, I find that there are plastic 3 gallon gas containers that fit in the space below the hinged cover where the forward crossbeams are bolted to the hull. So I start long cruises with 9+ gallons when fully fueled and can motor for about 18 hours at 6 knots if becalmed. That's about 100 miles. :-)
Randy Devol, F/C-31 #213, Joint Venture

8. I get just over 1/2 gal per hour at 7 knots (still less than full throttle) in my F-31UC, or 12 MPG in neutral conditions, with one person aboard. Yamaha 9.9. I have 800 motor miles in one trip to back this up. Oddly, at near idle ~3kts, the fuel consumption in volume/hour is about the same, 0.4 gph.
Jeff Lebesch

Outboard - Fuel System Difficulties

1. > Ran full throttle about two miles. Parked overnight. Next day, starts normally but dies after a few seconds. Repeated starts yield same results, won't stay running.

I had a similar problem last year with my Nissan 8. turned out it was sucking air at the connection of the fuel line to the engine. I tried a new O ring but replacing the fuel line was the ultimate solution. I now carry a spare. (Oh no, not more extra weight!)
Mark Darius, Witchcraft, F-27

2. Enormous difficulty starting, and it would sometimes die. Acted like it wasn't getting fuel, in spite of the fuel bulb working fine. Turned out that I forget to unscrew the vent plug in the fuel tank cap and the fuel tank had gotten all sucked down.
Dave Paule, F-27 Second Chance

Outboard - Honda

1. I have my Honda 8 HP for 4 years now and it replaced a 2 stroke 8 HP (Mercury). It's been very reliable, uses about half the gas, it's very quit at idle and low speed, similar in noise at high speed, and doesn't smell or pollute (still pollutes but much less then the two stroke).

The only complaint is vibration. It shouldn't surprise anyone since it's configured like and old British motorcycle, straight 4 stroke without balancers.

For my next engine I will seriously consider the Honda 9.9 since it does have balancers and they should reduce the vibrations considerably. Is it worth the 20 lbs extra right on the stern?
John Pavel

2. We have one of the many 5 HP Honda 4 stroke motors and are very happy with it. Reliable starts, reliable running, running for hours at idle won't foul the plugs, and somewhat quieter than a 2 stroke.

The 5 pushes our F-24 Mk I at 5 knots at approximately 1/2 throttle. Full throttle is 6 to 6.5 knots, and twice the fuel consumption. Only once or twice per year do I use full throttle and if full throttle were 5 or 5.5 knots, I wouldn't mind. Most often, we use the motor to get to/from the dock and don't need/want 6.5 knots. Once away from the dock, we sail, mostly, or we putt-putt along at 5 knots so it is easy to speak over the motor noise.
Randy Devol, F-24 Mk I #32, Joint Venture

3. I get 7.6 knots with a 10 HP Honda, although I never use that speed. The Honda uses about 1 gallon in 4 hours at 4 knots. That's my preferred speed when there is no wind. Regarding max speed, you have to take in account that the F-27 acts like a monohull when under power. Speed is restricted by hull speed.

I mounted a electric starting 10 HP Honda on my F-27 (#348). Had to enlarge the engine-well to do it, but I am very pleased with it (economy - sound - reliability - comfort).

Also took away the restriction on amount of throttle in reverse to increase breaking power. It has tremendous braking power now. I can easily go against the wind in reverse in 30 knots of wind. To accommodate for that breaking/reverse power I had to bolt the bracket to the boat. Honda uses the same system Mercury does, leading the exhaust gases out in front when in reverse.
Greetings, Han Bijlard - The Netherlands

4. We have the 5 hp Honda on our dinghy (March, 2001). We bought it based on previous experience with a larger Honda on our monohull. The 5 is a single cylinder and is noisier and vibrates more than the Nissan 8 2-stroke on our F-27 (no smoke, though). I have been less than pleased with the performance of the 5... we've tried both Honda props; no difference. It just seems to be doggy. We've had it back to the dealer twice and they say that's just the way it is. Funny, they didn't mention that BEFORE I bought the Honda 5! We have a friend who has the Honda 8 - much smoother and quieter.
Jim Bathurst, Wide Open, F-27

5. I put a Honda 9.9 Power Thrust (BF9.9) on our new F-31UC last fall. It's started reliably, run smoothly, and very quietly. You have to listen closely when it's at idle to be sure it's on.

Only caution with the 5 hp, which we had on our F-24 Mk1, is to get some shear pins for the Honda 8 and cut them to fit the length of the 5. We went through a number of them and they usually broke at the worst possible times. Yes, we had our idle set low and shifted carefully. That didn't make any difference until we put in the 8 hp shear pins which are SS, not brass.
Reid Hester, Ph.D.

6. I have a Honda 8 hp 4 stroke, 2000 model year. This past summer I experienced the failure of the alternator. I took it to the dealer and found the fault was in the connection to the battery wires- the contacts were completely corroded. Even though they are housed in a rubber boot, the fit is not tight enough to survive a saltwater environment. The use of dielectric grease may help, but I anticipate replacing this connection fairly frequently, as there is no way to keep the area free of salt spay.
Jim

Outboard - Honda - Throttle

1. I have had a problem where the motor will not idle when I twist the grip to the slowest idle setting. This is on the Honda 8.8 (F-28R). *(Note - don't know if this is the 8 or the 9.9... Editor)* After removing the cover, I located the pieces that are moving when the grip throttle is released. I was able to use a finger to push on this to set it back to the full idle state. I called a service guy, thinking maybe I was missing a spring, but they wanted me to bring it in. Finally, in a fit of desperation, I loosened the nut holding down the arm that the cable from the twist handle works upon. Since then, no problem.

Another way to slow the motor is to use the choke.

Kim Toms, F-28R Kerberos, Buckeye Lake, OH

2. The old Nissan was a two stroke. I really didn't realize how nasty it was until one day I ran it in a bucket, and afterwards had to clean the oil ring off of the bucket.

Honestly, I have been a bit disappointed with the Honda. It's been hard to start since day one. At two years old, I started having problems. Throttle sticking. Which can be a major pain because if you cannot get the throttle turned down low enough, you cannot shift into neutral to start. Had it die in the Kemah channel one evening and do just this. Luckily Tony Townsend was nearby (very nearby) to toss us a line and tow, before we got swept into the bulkheads.

Now, that said, I had the motor serviced recently and the guy drilled out some adjustment plate, changed the settings, sealed it back up, and it runs better than ever before. Another owner here with a four year old motor had the same historical problems, and the local rep did the same thing to his and it runs great now. Makes you wonder why Honda couldn't do this when the built the motors instead. The work they did voided the warranty though, even though they are Honda-authorized service center. Go figure.
Mike Zotsky

Outboard - Honda - Unlocking

1. I have a 9.9 Honda outboard. When in reverse, the engine "pops up" as if it unlocks. I've had the engine checked and the dealer replaced some part of the locking mechanism, but that has not solved the problem.
David L, F-31, Triagain
Note - At least one other boat had this problem. Editor

2. > I have a Honda 9.9 on my F-27. I love it...smooth, quiet, good economy. It has just one problem, namely, when in reverse at more than 1/2 throttle or so the engine hold down unlatches and the engine pops up. This always seems to happen at the worse times like when you really need to stop. Anyone out there have the same problem and has anyone come up with a fix?

A local boat here had the same problem. Motor was new - purchased with his new boat about two years ago. Would stay down in reverse until you gunned it, then it would pop up. Was a real pain coming into the dock. Brought it into the local Honda dealer, and he said that Honda had forgotten to install a hold down spring. They added the spring, and he's had no problem since.
Mike Zotsky

Outboard - Impeller and Cooling Issues

1. > What happens when an impeller fails? Are there any other telltale warning signs?

It's a two-stroke? Then you will hear the motor running rough usually and it will start smoking. If you don't shut is down in time it will usually "freeze - up" as it over heats. This is the same scenario as when a plastic bag wraps around the water intake, which, in our marina waters happens will all too regularity. Let the motor cool down, remove plastic bag, and re-start... usually not a problem. In the case of a bad impellor.. let motor cool down and either anchor with the motor... they hold well in all bottoms except mud... or sail in and replace impellor. Over-heated seizing certainly isn't great for a motor... but it never killed one of mine.
Mike Leneman Multi Marine

2. These engines contain a small automotive type thermostat which regulates the flow of cooling water through the block. The thermostated hot water exiting the block is discharged with the exhaust inside the lower unit. The tiny "pisser" has nothing to do with this thermostated flow except to indicate the water pump is functioning.

It is possible your normal five minute rinse at idle is insufficient warm-up time to open the thermostat and allow fresh water flow through the block and lower unit, which would explain why there are salt crystals in the block. It is quite likely the thermostat is by now clogged or failed so I would suggest removing it and testing in hot water. I would only open up the water pump after checking the thermostat and cleaning. The water pumps on the 9.9 are quite reliable.
Tom LaMers

Outboard - Instrumentation

1. The engine hour meter / tachometer can be ordered from your local Honda dealer. The tach has a digital readout. Cost is about $45. I think it would work with any OB, but check with the dealer first.
Marv

Outboard – Mercury

1. I installed a Merc 15Hp 2 cycle 25" shaft on my former F-27 Cuttlefish, Hull #190. The motor weighed only slightly more than the 8Hp Nissan and fit the motor well perfectly with room to swivel a bit for better maneuverability. The Merc 10 & 15 are the same motor with slightly different carburetion & timing settings. I also permanently installed a tach and bought and tried all five props that fit in the Mercury line-up. As I recall, the best prop was 9" x 6.5" pitch 3 blade with a reverse thrust cone adapter. The motor would push the boat about 8-3/4 to 9 knots at wide open throttle and I cruised at 7-1/2 knots. Other than terrible fuel consumption, the motor performed very well. The slightly faster speed proved decisive

several times in obtaining the last available moorage space! Despite what I did, I would recommend an 8~10 hp four cycle.
Hank Brooks, F-31 Water Skipper

Outboard - Nissan

1. After expounding how great the Nissan 5 HP OB is, I have to eat humble pie. It is very loud and can vibrate your fillings out. I found a buyer for it and it's gone!
Marv Marcus, F-24 MK 1, Tinkertoy.

2. Firstly, it has always taken my 1987 Nissan 8 hp 2-cycle 30 secs ([okay,15-60 secs) to start, juggling the choke, a worry in an emergency. After a nonstart and no spark I removed the contact button on the kill switch and waterproofed the contacts with a plastic cap. The motor ran again until the next day when, once again, it cut out at the worst possible moment---no spark. A mechanic at the marine repair in Northaven said "nearest dealer for small HP Japanese OB is in Rockland, but I hate those kill switches, cut the wires to it and tape the wire ends." I did and the motor ran again. After several hours of sterling, beat free performance, it again started VERY reluctantly on one cylinder, traced to a spark plug cable shorting to the engine cover. Conclusion: disconnect the kill switch, ensure the spark plug cables are in good condition and carry a spare power pack/coil. This after servicing the motor at start of season.

The problem is that the F-27 NEEDS a motor at times that will not let you down. Next time you approach a crowded mooring or a lee ramp bordered by rocks, think "what if my motor died right now?" It has ,three times.
Barry Salter.

3. For a better engine raising line, get a replacement lawnmower starter rope with the wood handle, drill a hole near the back of the engine cover, tie a square knot in the line behind the hole and run the line thru a cleat(that traps the line) that you mount on the deck between the rear aka and the engine well, toss out, or disable, the latch and raise and lower your engine with ease. Just remember to flip the wood handle into the well when not in use so it isn't under the aka when unfolding.
Allen Jacobson, Triple Play #293

4. I have had my 8-hp Nissan, 25 inch shaft rebuilt with larger engine and fuel system, with performance parts. This gives me almost 15 hp in the same outside size as my old 8 hp. Look for parts and do it yourself or go to a 1st class shop and have them do the custom work....it will all be new !
Greg "Takin Off" , 117, F-27

5. > After solving one problem with my Nissan 8 hp it seems I have developed another. I replaced the prop because it was spinning on the shaft. It now has plenty of thrust. This may or may not be related but the engine now has a screeching sound, more like a whine when running at middle throttle. At low speed or 80 percent throttle the sound is gone.

Check the drive shaft bushing that's in the housing extension. When it gets hot it whines... before it locks up...
Greg Cole, F-27 #302 "Mxyzptlk"

I would check prop to housing clearance. It is possible that you are missing a bushing here. This happened to me when I changed my prop. The bushing was stuck on the old prop that the parts store had to see if it was repairable. Fortunately we were able to dig the old prop out of the dumpster and get the bushing.
Rod T., F-9A

Outboard - Nissan - Frozen Bearing in the Shaft Extension

1. It turns out that I won't need a new motor. My mechanic jumped to conclusions when he saw a little water in the power head. My Nissan had a frozen bearing in the shaft extension. I read about this problem on this list, and I asked him to check it as the source of my not being able to pull the motor enough to start it - the battery wouldn't even turn it. He got the extension apart (no thanks to my having stripped off a few heads trying to do it myself) and found that he had to break that bearing out with a hammer. So, no new motor! Thanks to the several people who had posted this problem in the past- I remembered it.
Dennis Foley, F-27 100

Outboard - Noise

1. I went to the Miami Boat Show and found a company called Soundown Corp. They are in Marblehead, Mass. (781) 631-9611. I talked to the salesman regarding noisy outboards. My 8 HP Honda is fairly quiet but when you have to motor for hours at a time, the noise can get annoying. He sold me a product that cut the noise in half!!

The material is Aluminum foil on the exposed to engine side, a layer of foam, a layer of Vinyl, another layer of foam, and a very sticky pressure sensitive backing. You just cut and fit in place inside the engine cover. The only problem is the minimum order is 24" X 54". I could probably insulate 2 more outboards with what's left. Anyone interested in what's left, get in touch with me.
Marv Marcus, F-24 MK I, Tinkertoy

Outboard - Prop Issues

1. I have an F-27 with an 8 hp Suzuki. Last year I had a situation where the engine would run fine at up to cruise but when I tried to use full power it would basically run away as if not connected. It turned out that over the years (9) the prop had gotten enough dings and scrapes that it would cavitate at higher rotational speeds. I changed the prop and that fixed it. While this happened in calm waters I would think that a rough prop would exacerbate the problem of cavitation in a chop.

Tony Cabot

2. I had the "Handler" ducted shroud on the Yamaha 9.9 high-thrust on my F-31. The difference in reverse thrust and low-speed forward thrust was substantial. I also noticed about a 15% improvement in gas mileage at 75% power. The added weight at the bottom of the leg makes raising the motor an extra pain, but the improved performance is worth it. I also think that the shroud provides more positive steering when the outboard is used as a backup rudder. My understanding is that the manufacturer is no longer selling this model for the Yamaha 9.9. When I changed to the new tri (Contour 34), I moved the Handler to the new engine.
Michael J Hanson, Solar Express

3. I purchased a "prop-mate" IT DOES NOT WORK ON A NISSAN 8 HP!!!!! In fact power and thrust were, WORSE. so save your $ on this one. I have it to give away, for shipping charges.
Pat G.

4. For those of you using the Honda BF8 on an F-28, the performance can be improved dramatically by replacing the stock 9 1/2 x 8 5/8 propeller with a 9 1/4 x 7 Michigan wheel propeller. The engine will now operate at rated speed, and pushes the boat at least 1.5 knots faster, especially in choppy water. Don't know what happens to fuel economy, as I've only used this prop for an hour or so.

5. > While motoring out to the bat today, our engine appeared to be "spinning" - like the prop was not in the water or secure on the shaft, but it was. We were able to motor in, but only at very low rpms.

The prop most-likely has a rubber hub that has been sheared. You need a new prop. I had the same thing happen on my Nissan 9.8 dinghy motor. These props don't use shear pins. The rubber hub is designed to be sacrificial so the drive train isn't damaged. You might have struck something, wrapped a line, or the prop might be defective.
Larry

6. This is the design of the Nissan prop. Even the new ones. The bond on the hub lets go in the "shear" mode. You throw the prop away and buy a new one. The hub will eventually let go with age even if you do not hit anything.
Geoff Deutschmann, Tyger Tyger

Outboard - Recommendations
Note - Also see **Engine Well**, *above. Editor*

1. The small Honda and it's brother, the Nissan 4 stroke, are not all that terrific (March, 2000). Most owners that I know haven't received the benefit that they felt was forthcoming. The engines are noisy, they vibrate more than the two stroke, and they have nasty reliability problems. If I were you, I would fix-up that old two stroker and keep it.

Gary Helms

2. Bogus!! I don't know what the hell Gary is talking about, my 5 hp Honda 4 stroke is MUCH quieter, smoother and reliable than a previously owned Nissan 2 stroke.
Mike Parsons, F-24 Mk II #121, happily propelled by 5 HP Honda 4 stroke

3. Outboards are improving due to the 2006 EPA rules. There are more available and they are getting lighter. Wait as long as you can before getting a new one.
Dave Paule, F-27 Second Chance

3. My conscience moved me to buy the cleaner 4 stroke. Please do the same. :-) An added benefit is that the plugs won't foul from idling. We do a lot of idling, raising the main, approaching the dock, leaving the dock, etc. So reliable idling is important for me. I understand that idling with a 2 stroke tends to foul the plugs because of the improper oil/fuel ratio for that motor speed. (Might be my misconception, though.)

The vibration is much less with our Honda than there was on the same boat when it had a Tohatsu 2 stroke.
Randy Devol F-24 Mk I #32, Joint Venture

4. We previously had replaced the original Tohatsu 5 hp 2-stroke on our MKI with a Honda 5. The 2 stroke vibrated so much the whole boat rattled, especially the winches. Once we got the Honda, however, all that rattling went away.
Reid Hester, Ph.D.

5. Look into the Yamaha 8 H.P. with a power tilt. This has been in my experience the best motor for an aft-cabin boat and I believe you will see no notable speed difference between the 8 and the 9.9.
cheers, Mike Leneman

6. If you'd buy a Nissan 8, Mariner 8, Mercury 8 you'd be buying a Tohatsu, it's all the same, but Tohatsu costs less. Good motor.
Felix Kagi
Note - Tohatsu (and Nissan, etc.) are coming out (January, 2004) with a 25" 9.8 hp, that's right, not 9.9 but 9.8, that apparently weighs 15 to 20 pounds less than the current Hondas or Yamahas. No feedback yet on it, although the pictures show that it has a narrower bottom section, and it might fit the well better. However, as stated, at this time it's an unknown engine. Oh, yeah.... they also make a 2-stroke that's even lighter, and has been on the market for a while. - Editor.

7. Over the last 13 years, I've had four Hondas, and two Yamahas, all 4-strokes. The Hondas were easier to work on, and had the big advantage of a proper recoil starter in case the electric start didn't work for whatever reason.. The Yamahas had better reverse thrust/stopping power, the Hondas better forward thrust. Early Honda 7.5/10 models had a 'funny' in the carburetor that stopped them idling sometimes, down to a jet which seemed to block easily. This fault did not occur with any of the later models I owned. I found the Yamahas to be

unnecessarily complicated to my way of thinking, and the auto-choke systems were a nightmare. I notice that the new Honda 9.9 referred to above is a lot lighter than a Yamaha 8.
Mal Ratcliffe, F-27 Tinkerbelle 338 (Wales UK)

8. I tried to install the Honda 9.9 HP four stroke in the well of an older (hull #11) F-27 and ran into the same type of clearance issues, not being able to raise or turn the engine due to the size and placement of the head. My solution was to go with the Yamaha 8 HP four stroke in a 25" shaft. The engine weighs about the same but the head is smaller and placed further aft of the motor mount. This allows the head to clear the forward section of the engine well. The engine also has a way cool electric strut to raise and lower the engine, no more reaching back into the well and pulling on the cowling to get the engine out of the water. The Yamaha is also so quiet at idle I have to check the water flow to determine if it is running! The torque at low speed pushes the whole boat around, F-27 engine is mounted very far off center.
Jim Bourgoin

9. I just changed my original 8 hp Honda with an 8 hp Yamaha high-thrust, and I am very satisfied with it: Because of the low position of the Honda cavitation plate, it was not possible to mount a larger propeller: I could go 10 knots in flat water, if it was choppy, I could not maintain speed at all.

Now I have a high thrust propeller with my Yam, and I can still go up to 8.7 knots. Last summer I had 25 knots of wind in choppy water: NO problem, I could motor 4-5 knots head into it.
Niek Visscher, F-27 Middelste Jager

10. In moving from a Nissan 8 to a Tohatsu 9.8 (also a 2 cycle) I got top motoring speed up from 6 to 7 knots. I also noticed better thrust in reverse. There was no need to modify the motor well and I was able to use the old remote.
Glenn Madere, F-27 Valiant Tri

Outboard - Remote Controls

1. After deciding a few years ago that my controls were too stiff, I switched to Morse Supreme-X (red-covered) which noticeably reduce friction. They have a plastic coating on the inner cable, so that plastic is sliding against plastic. I find that they deal with small radius turns much better than standard cable. I think they've re-named the product, but you should be able to find it at http://www.morsecontrols.com/marine/MNS.html.
Glenn Madere

2. >My cables came with about a 2 foot loop, out the front, over back and then into the tube through the aft cabin. Never a problem pinching, don't have to turn the motor. That may have been the OSTAC way on Hull #19
Bruce Fabens, Artemis, F-31 #19

The Morse cables are heavy and don't bend easily. The Morse cables last one year on the dot at which time they seize up then break at the bend.

I now use Teleflex - much better - thinner and lighter with the plastic inside. 2 years and counting.
(F-31 Corsair hull #14 1995)

3. I had to replace my engine control cables a while ago, also. I found that there are two grades of the red Morse cables. The more expensive ones tolerate a smaller radius of bending. They work well.
Peter M. Lucas, F-27 #89, "Odyssey" North Bend, Oregon

4. When I first purchased my F-27, the engine control cable bracket was rusted to the point of needing replacement. Instead of purchasing a new one every couple of years, I decided to fabricate one out of stainless. Two and a half years later, it still looks as good as new!!!
Christopher Harvey, F-27 no.404 "Three Sigma"

5. The kinking of the control cables was especially critical if you had one of those early new-style transom F-31s. These were the boats that had the new style rudder but not the wider transom step and were built between October '98 and Summer '99 starting with #125 (my boat). The reason is that they moved the motor mount but not the location of where the cables exit the transom. The cables were forced to bend severely and this combined with the desire to use the cheapest cables on the market lead to problems with the cables kinking. I have the first aft cabin F-31 with the stern hung rudder. The cables the factory put on cost around $10 and kinked on the first day, resulting with the throttle opening up when you turned the tiller one way and closing when you turned it the other way - exciting docking to say the least. The factory replaced my cables under warranty with $15 ones, which were a little better but became awfully stiff, leading me to break some plastic parts in the remote control over the following year. I replaced my cables this year with Morse Supreme cables - the most expensive ones they do which cost around $160 for 2. The difference is night and day and there is no friction problems at all. I noticed that Corsair seem to be putting better quality cables on the later boats. The bottom line is to use the most expensive cables you can find. If I was doing it again I'd look into getting the new Yamaha 8 instead of the 9.9. You give up 2 extra horsepower which you don't really need but get the cool electric raising system which is all integrated into the remote control.
Tim Cahill-O'Brien, F-31 #125 Wahoo

6. The Spinlock product is a clever winch handle socket that mounts on any external surface of your cockpit and connects through that surface to a shift/throttle control mounted on the back side (like under a cockpit seat). Although you can buy the whole thing from Spinlock (and probably should), the actual shift/throttle control is manufactured by others, namely Morse or Teleflex.

On the Spinlock website at:
http://www.spinlock.co.uk/welcome/index.cfm

the basic unit is shown as ATCU/1. The complete unit with a Morse "SL3" shifter is ACTU/3MS+, while the complete unit with a Teleflex B700 shifter is ACTU/1TX+.

I have the Morse-based unit and I can highly recommend it.

Cables run from the shift/throttle control to your outboard, where they replace the cables that run from the twist/grip handle. Leading the cables requires careful planning, in order to avoid turns that are too tight, and to ensure that the motor will tilt and/or turn properly without crimping the cables. My Yamaha 9.9 also required modification with a special Yamaha part to replace the stock part where the cables enter the motor casing.

Morse has recently been bought out by Teleflex, but I suspect Morse shifters and cables will be available for a while. The big change is that officially you can no longer buy replacement parts -- unless you have a very creative outboard dealer. Teleflex's policy is to not sell any parts. They make you buy a whole new unit (don't ask me how I know).

For those who like to file these things away, if you purchase a Morse-based shifter (ACTU/3MS+) and need parts later to attach the cables to the shifter, the Morse Part # is 212151/001.

My original cables recently wore out (after only two seasons) and I replaced them with Morse's best. They have a thicker wall, and are lined with Teflon (like high-end bicycle brake cables). The difference is amazing. The minimum length is 6', but that would have been a special order so I got 8'. I am glad I did. I think a longer cable with high-radius curves is almost always going to be better.
Art Watson

7. I would second the comment about the Spinlock shifter. Makes for a clean cockpit with no handles to gouge shins or catch lines. After trying several makes of cables, including the Red-Jacket line, I moved up to the X-Treme cables available at West and Boat/US. They sustain the bending better than any others and the small price difference isn't noticeable with the improved performance and durability.
Doran Cushing/F-27 tri Southwinds

8. A new 2002 Yamaha 8 HP with power tilt/trim has just been fitted into the well. The part number for the Yamaha kit to remove the tiller handle and replace it with remote controls is 68R-48501-00-00. This kit does not include the Yamaha remote control box or the two cables (throttle & shift) needed. Also not included in the kit are extensions for the electrical wiring (stop and start switches and on mine the tilt switch).

http://www.yamaha-motor.com/products/categories02.asp?lid=5&lc=otb

From the above link (July 2003) find the tab for Parts & Service. The select Parts Catalog from the pull down list. This will open a new window. Select Outboard under the Catalog pull down menu and hit the GO button. You will be prompted to select the year of the engine. Once you choose the correct year ALL of the engines manufactured in that year will be

available from the list sorted by the Yamaha code for the size and style of engine. Very good exploded parts lists with coordinated individual part numbers for each assembly.
Jim Bourgoin, F-27 Hull # 11, Wareham, MA

Outboard – Speed

1. This topic cycles around each year. I believe that when Ian came in on the discussion he pointed out that the sailing speed of these boats is a totally different set of forces and that when it comes to motoring you are going to have difficulty getting more than 7.5 knots or so due to the fact that having all of the power on the stern will just force the stern deeper the more power you apply. Thus you get 7.5 knots with a 9 hp and little wake and 8 knots with 15 hp and larger wake.

Perhaps others on the list have been able to get 10 knots under power but I don't remember any.
Good luck, Randall Johnson, F-27 Bird of Prey

Outboard - Steering
Note - The F-27, with its engine well, doesn't easily permit the motor to steer. However, the later F-27s have bigger wells, and small motors do steer in them. - Editor

1. I have an aft cabin F-9A .I have a bar connecting the tiller and my 9.9 Yamaha. It goes on and off very easily and stays with the tiller if desired. It is rated for trolling motors up to 25 HP. It consists of two 3/8" pins with ball ends- one pin for the tiller and one for the motor. A spring loaded ball end socket fits over the pins. A 3/8' rod of the appropriate length threads on the socket ends and connects them. The tiller end is 6" up from the rudder centerline and the motor end is on the carrying bracket on the front of the motor 4" outboard of the motor centerline. This allows me to turn the boat under power in just a little over a boat length. The ends are made by Goldeneye Products of Minneapolis Minnesota 55435 and are about $43 (March, 2001) and the SS rod was about $5. You can play with the mounting length and make the motor movement more or less sensitive.
David Miller F-9A 3D

2. Especially for those with aft cockpits, I can highly recommend the "EZ Steer" product, available from West Marine and others. It's a motorboat product intended to connect a trolling outboard to the main motor, so that you can use the steering gear while trolling. However, with judicious use of a hacksaw and some hose clamps, it can be easily modified to connect a transom-mounted OB directly to the rudder. Quick-connects make it easy to snap on and remove when you don't need it. Makes for very effective steering at slow speeds. I have it one my boat and would not be without it.
Art Watson

3. Gleason showed me the light, but I have yet to turn it on (August, 2002). Anyhow it goes like this, Find a PVC or aluminum tube long enough and small enough to act as the "Bar" that

goes between the motor and the tiller. Tie one end of line to the motor, then run it through the tube, then though a padeye strategically placed on the tiller and then up to the clutch for the tiller. When you want to steer pull the line tight. When you want to raise the motor, release the line, the pipe will drop and give room to raise the motor.
Jon Alvord

Outboard - Sunken

1. Outboard motors don't float or run well when they are totally underwater but you can retrieve them if you have remote cables attached to them.

Actually, as Steve Rypka will attest, I dragged the motor out of the water, laid it across my lap, burped it, re-clamped it (8 H.P. don't have bolt holes for bolting on) and re-fired it up. It's true that if you start it right away it'll probably be O.K.
Cheers, Mike Leneman, Multimarine

Outboard - Winter Storage

1, Running the engine out of fuel for the winter is not necessarily a good practice and often "gums" up the carburetor forming a varnish, the gaskets & o-rings dry out and the needle gets stuck.

The non-metal parts in a carburetor are resistant to oil and gasoline and it's better to have it all "submerged". For prolonged non-use, put a fuel conditioner into the tank and make sure it gets to the carburetor.

To prevent gas contamination in the tank and the engine, it's best to let the engine sit with a full tank of gas and the carburetor full.
Felix Kagi

Outboard - Yamaha

1. Fitting the Yamaha to an F-27 can depend on the year of the boat, some of the later F-27s have a bigger motor well. The cutting required on my boat was to the inside aft corner of the motor well. There is an angle between the side and the deck that must be removed.
Wayne Erickson, Almond Joy, F-27

2. This past weekend I took my boat to the local Yamaha dealer to test fit a new 4 stroke 8 HP outboard (September, 2001). The engine would require about two inches more clearance room than the currently installed Yamaha 8 HP of 1986. This would still not allow the engine to turn at all!

The Yamaha engine technician was able to diagnose the problem I am currently having with the existing 8 HP Yamaha 2-cycle engine as a bad head gasket. The engine starts easily, but will not idle at a reasonable low speed. To shift between forward and reverse I have been dropping the speed quickly and playing with the choke to keep the engine running. I am going to replace the head gasket and try the engine again before purchasing another engine and making more modifications to the engine well.
Jim Bourgoin, F-27 #11, First Tri

3. I wonder how the diagnosis of a bad head gasket was made. I am certainly not a mechanic, and everything I know about Outboard Motor Mechanics I learned from reading a shop manual I checked out from the library, but I had the exact same problem with a Yamaha 8 HP outboard of similar vintage. First I diagnosed it with a potential leak in the diaphragm of the fuel pump. I took the fuel pump apart, and replaced the diaphragm, and the problem persisted. Then I diagnosed a clogged jet in the carburetor. There is a low speed jet, and a high speed jet. I took the carburetor apart and cleaned it with some stuff called carburetor cleaner and blew it out with a can of compressed "air." That solved the problem, and it was interesting that when I got the low speed jet out of the carburetor, I could see some of that varnish obstructing the outflow, and when I finished cleaning it, I could see a perfect little pinhole at the end. That particular manual is published by Clymer.

Clymer Yamaha outboard shop manual : 2-225 HP 2-stroke, 1984-1989 (includes jet drives)
Overland Park, Kan. Clymer Publications, 1990
Todd Olsen F-27 (No Commercial Interest)

4. My F-28CC has a Yamaha 9.9 (January, 2004) and next year I plan to take the cover off the engine, say hello to the squirrels, check their food and water, and maybe oil the treadmill. I'd have already done it, but they seem to be doing fine without my attention.
Roger L.

5. The Yamaha 8 hp fits in the motor well very good: It is not necessary to change the engine cover or motor well to fit the engine. We sailed with the new engine in the summer 2003 season; it proves to be a good combination.

The only thing is: it is almost impossible to push the knob to enable the engine to tilt down, when the engine is in 'up' position. Is solved this in an easy way: I mounted a cord to the knob, and now it is OK.
Niek Visscher F-27 Middelste Jager

6. The Yamaha 9.9 impeller replacement is not difficult. The pictures in the shop manual are very helpful. I also cleaned the salt corrosion from the temperature control valve. It is a good idea to have the shop manual available. I purchased the manual from West Marine.

To clean the temperature control valve. Put the valve in a pan full of apple vinegar and slow boil until the corrosion is gone.
Richard Keller

Outboard - Yamaha - Hard Starting,

1. Had the same problem with mine toward the end of the '99 season. Seems the automatic choke wasn't automatic anymore. Temporary fix was to remove cowling and choke engine with thumb over air intake (worked every time). Once the engine was warmed up, it would start with no problems.
JC
Note - Several folks reported this problem. - Editor

2. I just (December '99) spoke with a mechanic that I know well who works on 'em. He said there is a service bulletin recommending enrichening the pilot mixture, and bumping the float height. I guess it's not as EPA compliant, but it will start much better.
Ron Radko

3. Another trick is to shift the gear shifter from neutral to full forward to neutral to full reverse to neutral a couple of times before you hit the starter button. This action injects fuel directly into the cylinders. When my motor doesn't start doing this usually fixes it.
Tim Cahill-O'Brien

4. The old problem with the Yamaha 9.9 is that it starts but doesn't stay running, sputters, then does not start, etc etc. Unless it is ignition (can't help you there) it is a set of contaminated high speed-, idle speed jets. Only a mechanic or shop which works on these rather specialized motors, the Yamaha 9.9, would know how and take the time to properly take the carburetor apart, remove the jets and blow the these out as well as all the passages. Then next and most important; install a larger fuel filter.

The Yamaha 9.9 is one of the best four stroke outboards, but has a very sensitive fuel delivery system. Yamaha USA is very difficult to deal with but many other consumer product companies of same size are no different when it comes to dealing with an individual.
Felix Kagi

5. You will find the Yamaha 9.9 injection system has a tendency to clog very easily. The auto choke works only about half the time. And if you every have to start it with the rope when the auto chock is not working properly, good luck. The tilt mechanism for raising the motor while sailing is a joke when compared to a Honda. The Yamaha 9.9 on my F-31 was repaired 3 times under warranty. Each time Yamaha admitted there was a problem with the fuel metering system. Then as soon as the warranty was up, within 1 month they refused to do anything. And I am not the only person that has had problems with the motor. Maybe they have cured the problem by now. My F-31 was a '97 model but some boats equipped Yamaha in '98 had problems.

Plus in southern California Yamaha dealers do not want to work on small outboards because they can make triple the amount of $$ on the big horsepower models.

If you have trouble with the 9.9 Yamaha not wanting to start or it does not want to run

properly close off about a 1/2 of your air intake with some type of tape. It may use heaps of gas but at least it runs. Although the experience did teach me much more than I ever wanted to know about the outboard motor industry.

6. Regarding Yamaha 9.9 hard starting... I have the #2 F-9A sailing the USA,(Nov 1992) and had a problem like yours with the "new" (then) automatic choke. Two (wheelers and) dealers charged me a total of $390 to fix the problem. The factory had become aware of the problem and published a fix to the dealers but not the customers. It required reboring and enlarging a jet in the carburetor fuel system that was too small. One guy never even opened access to the area (so Calif. area dealer). I tried another in Washington State where I live. He did the work but the work did not fix the problem...so I tried him again. He found the "rebore " was still too small , oversized it slightly, and I have not had a recurrence of the problem in 8 years. He did not charge me for the 2nd fix. I don't know if your 9.9 and mine are mechanically the same but the problem sounds awfully familiar!
Del Jacobs F-9A "Wings"

7. Try a automotive speed shop for small, tapered hand drills. I've enlarged many jets using these tools when racing motorcycles. The only other thing you should get at the same time is a small (tiny) bore sizer. Its also a tapered device that you put in the bore and see how far it fits. Its calibrated and will give you the jet size.
Greg Cole, F-27 #302, "Mxyzptlk"

8. I have had a tremendous variety of experiences with Yamaha but have found the "premier" dealers to be the most helpful. Apparently these are the full service dealers as opposed to those who only sell and do minor maintenance. The one in Port Clinton is a Premier dealer and quite good.
Tom

9. I've used the following technique on almost every motor I've owned, 2 stroke and 4, even lawnmowers. Carefully screw in the idle mixture screw and count the turns to seat to nearest 1/8 turn (actually exactly by remembering the "clock" position of the slot in the screw head). Then remove the idle mixture screw. Insert the little red straw nozzle with a can of WD-40 and give a good blast. Put the screw back in, reset the number of turns counted.

It's worked for me 100% of the time when the idle jet has been clogged. Even helps remove some varnish buildup. Doesn't seem to harm the engine.

Once in awhile though, it simply blows the offending piece of dirt back into the area from where it came and will clog again later--sometimes minutes, sometimes hours, sometimes never. Give it a try. Also get a good fuel filter.
Steve Swanberg, F-31 "Quick Trip" #33

10. The suggestion last year by this group for 4-stroke 9.9's has saved me a lot of problems this year. Before starting, shift into forward and "pump" (or turn)the throttle to full three or four times. This injects a little fuel into the carb. Automatic choke never did seem to work right!

Also, I found last year that if I disconnected the fuel line going into the motor I wouldn't have as much problem starting the next weekend. I installed a quarter-turn valve near the motor disconnect this year, and turn the fuel off if the boat is going to be sitting for a while. I'm not sure, but I think that the summer heat would form a vacuum lock of sorts, suck the fuel out and cause major headaches. Vigorously pumping the ball upon starting helps also.

Have not had any problems starting since implementing these two procedures. In fact, I'm usually surprised at how easy it starts!
John Croft "Summer Breeze"

11. After thinking about it, instead of looking for a single problem that needs fixing I probably ought to do everything that is recommended by the list to cure the Yamaha 9.9 low idle problem.

So far I'm hearing: Clean out the gas tank, remove anything that is sloughing particles, and clean out the vent cap. Then replace the fuel line, put on a new filter (or two) in the line, free up the control cables, and adjust the motor's locking up/down catch. Next take the carb off, clean out the jets and passages, and put a new diaphragm on the fuel pump. Finally, expect that if the motor is used only periodically then deposits left by evaporating gasoline will be unavoidable.

The good news is that there isn't anything in the list that I can reasonably think of as being Yamaha's responsibility or even questionable design. Everything falls under "normal owner maintenance". Well I'll be....it turns out to be pretty good engine after all. Part of the problem that I have is that the motor is so quiet at idle that sometimes I cannot hear if it is still running or not. That sometimes makes low speed maneuvers exciting, but I sure wouldn't want a loud motor just so I could hear it.
Roger L., F-28

12. > I have a 1999 Yamaha 9.9 that will only idle very fast, and if the idle speed screw is turned out even very slightly to slow it down, the speed drops over 10 - 15 seconds till the motor dies.

You have just described the classic symptom of a low speed orifice, passageway, or jet being clogged up. This is a very common problem....in fact, it is probably the most common "engine problem" that any small engine repair shop sees. It almost always happens after a motor is left to set for a while with gas in the carb. I have personally gone through the same damn carb half a dozen times....doing the same things.....before I finally got the low speed circuitry working properly, so the fact that neither you nor the repair shop found it means nothing.

In general, I think you are better off doing this job yourself rather than entrusting it to most shops. Carb rebuilds are jobs that are traditionally used as part of the education of new mechanics. Get an exploded parts diagram and trace the circuits through the casting by probing with tiny copper wires. A spray can of carb cleaner with the long plastic straw nozzle is also helpful for tracing circuits.

It is easy enough to test the low speed jet system. You or any motorhead with a screwdriver can do it in 30 seconds. On the side of the carb there can be any amount of adjustments...but there should always be two that you need for this test: one for idle speed - this controls the position of the throttle when it is at idle, and one for idle mixture - this controls the proportion of gas to air. What you do is to set the idle speed for as low as the engine will dependably idle and then turn the idle mixture screw from all the way in to several turns out. To pass the test, turning the idle screw adjustment should make a define change in the way that the motor runs. It should die at one extreme and rev up at the other. If your idle mixture screw will not cause the motor to do that, then the idle circuitry is clogged. QED.

I am making several assumptions: one is that your ignition timing is set OK and also that the spark plugs are new. Based on your saying that it works well at normal settings that is probably all close enough. Another assumptions is that any diaphragms in the carb and fuel pump were also replaced when the carb was rebuilt. If it passes the test above but still will not run for a while at idle I'd go looking for fuel pumping diaphragms - though I don't even know if this engine has them, it is where I would look.
Roger L., F-28CC with a Yamaha 9.9 that idles.....

13. I perceive you have yet to wrestle with your Yamaha. It ain't that easy.....

This is not an old fashioned carburetor - it is a new generation carburetor made possible by Japanese skill at miniature machining and specially made for small 4 stroke engines. As such, the passages are not like those in your 1975 Nova - they are the size of hairs and they clog with distressing frequency. I think all small 4 stroke engines are susceptible, but these Yammys are notorious.
Barry Warburton

14. My Yamaha 9.9 sat for 5 months unused in the hot weather this year--it didn't run that well to begin with--and the carb fouled completely to the point where the motor would hardly run at all unless I sprayed gas into the air intake.

Lesson 1: Run the motor dry or otherwise remove gas from the fuel system if it is going to sit around awhile. This is a 4-stroke so lubrication and fuel are separate systems and you can do this safely.

I took the carb apart and sprayed/soaked/blew/reamed/replace parts yadda yadda and it still didn't work. The local certified Yamachanic took 6 weeks to clean out the carb. Always replace the fuel pump diaphragm every time the pump is disassembled--the part is cheap and really easy to break during assembly.

Lesson 2: It's definitely not a '67 Nova.

We didn't sail for 6 weeks while the motor was in the shop. I went nutso and bought a new motor. It runs great! The idle is so low I can barely hear it (insert hearing aid joke here). How

to avoid this happening again, especially if I only get to use the boat only once or twice a month?

Lesson 3: Dump old gas (>1 month) in your truck, and use a fuel conditioner.
Ernie Hardin, F-31, #64 Kailani

15. My Yamaha 9.9 had all the symptoms of a plugged idle circuit, but these were modified by the "computer" trying to compensate for it causing the idle speed to vary. I too have worked on small engines for 45 years. This carb does have more complex idle circuit than many. I went through carburetor again and checked the continuity of all the passages and orifices by squirting carb cleaner in and watching where it came out. The passages and orifices really aren't that small.

I found a very small brass cylinder that could be removed from the body of the carburetor that had a ball check valve (the ball was about .3 mm in diameter) in it that was stuck closed that we and the Yamaha mechanic must have missed the previous times. It took quite a bit of work with carb cleaner and air to free it.

BTW this carburetor does NOT have any idle mixture adjustment screw. This is true of other recent outboards, and also some lawn mower engines.

It does have a large bowl drain screw that is readily removed with the carb on the engine. I think that the bowl should be drained with this for long term storage as" running the gas out leaves some fuel in the bottom of the bowl that turns to gum faster(I think) than a bowl left full of fuel. I have had much less trouble with the carb on my generator at the office, that is seldom run but can't be drained, since I quit running it dry.
Sam Showalter DDS, F-31 "Trilobyte"

O-Rings

Petroleum jelly will not affect standard O-rings - generally made of Buna N
or nitrile.

Dave Howell - Hydraulics Engineer, F-9AX “Gem”

Outhaul

1. I take the line thru the shackle of the outhaul, thru the grommet, then under the boom, then back thru the grommet and then around the shackle again and tension/tie. This provides "downhaul" and outhaul. It ain't perfect, but it's fast and simple. I should have an eye strap and cleat on the outhaul end of the boom which would be better.
Mike Multi Marine

> The boom on my boat has never had the bracket that holds the cam cleat for the out haul. It is an L shaped bracket that bolts directly to the boom. The cam cleat bolts to the bracket. I understand that the new corsairs still use that set up. I have been unable to find the L shaped bracket or find someone to make it. My local dealer does not have one and I have emailed other dealers and gotten no response. I also emailed Corsair and got no response.

It is a standard Harken part with exit block, bracket, and cleat all in one. Part no. 197
Ian Farrier

Outhaul Line Replacement
The boom on my F-27 swallowed the loose end of my outhaul. Anybody ever had the end off their boom on a F-27? Anything special I should know/do?

1. You have to drill out all the rivets to remove the 'boom caps',
2. Take a long pole, attach a wire coat hanger and remove all the nests from the inside of the boom (hint - don't use your wife's vacuum cleaner!).
3. Remove the outhaul block assembly and replace the line while your at it.
4. When I take the ends off, I drill out the rivets with the correct size drill for a ¼ - 20 tap. Then when I put the end back together, I tap out the hole and use ¼ - 20 screws to fasten it back together. Then it is easy to take apart and put the out haul car on :-).

Hint: I have moved the bolt further in to provide move travel. It helps to pull a line into the bolt hole half way down the boom. This will make getting the blocks back....so much easier.

Outboards

1. I have a Honda 8 on my F-28 and have really enjoyed it. I sailed down the West Coast of Mexico and up into the Sea of Cortes last year. I found that if I didn't push too hard I could extend my range to 14.5 miles to a gallon. I think that the 8 hp is often overlooked as a viable option. It is much lighter than the 9.9 hp; and it gets away from all of that other garbage - electric start, remote controls, and other maintenance nightmares. It does come in an extra long shaft. I would strongly suggest it as a replacement engine for any F-boat. If simpler is better, then this is a better engine choice.

2. My Honda 8 is now three years old and it worked very well on my F-28. The only objection I have is the amount of vibrations. I tried to rubber mount it but my attempt was not whole-hearted and did not help much. The 9.9 has balancers and I suspect it is much smoother.

3. I recently put a Yamaha 9.9 High-Thrust on my F-27. It was a tight fit but went in without any glassing. I had to trim the lip at the back of the motor well. I also fabbed a bracket for the tiller handle and mounted it remotely. I also had to trim the little plastic cup that covers the grease fitting on the tilt-shaft for the motor to mount the motor as far outboard as possible.

I opted to not use a remote control model as the remote always seemed to get in the way if there was more than 3 people on board. Top speed isn't much higher than with the Nissan 8 but the amount of thrust accelerating and stopping is much much better (especially reverse).

4. I have the 1996 Yamaha 9.9 outboard. Same problem first year. I took it to a local dealer in Cassopolis Michigan who correctly diagnosed the problem and fixed it under warranty. There is a temperature sensor that reduces rpm's when the motor heats up and it's factory setting was incorrect. It was fixed promptly and the problem has never reoccurred. All in all the motor is powerful and bulletproof but to heavy for a race boat, great for a cruiser.

5. > I also wash/flush my engine after every use.

Well, that's your problem right there. You offended the gods of laissiz faire.
Ira Heller

Outboards - Fuel Consumption

1. I have a Suzuki 8hp and get about 1 hour per gallon. Depending on the length of the trip (we sometimes have to motor the entire 50 miles to the Cape Cod Canal) I may carry 3 or 8 extra gallons. The oil does not have to be mixed with the gas.
Tony Cabot

Paints and Painting -Hulls

1. > Is there a way to change gray non-skid to white??? I thought about grinding it off and put on new but that would take some real time/effort that I can't spare presently...

Paint it? Or if you read the Book of Witches, there's a nifty incantation on p. 387 that might do the trick.
Ira Heller

2. Exterior skins are vinylester. Barrier coat for paint is not required but make sure the bottom is prepped very well. This means lots of de-waxer so paint sticks. We have had some paint flaking problems when primer was not used(due to mold wax).
Bob Gleason

Paints and Painting - Linear Polyurethane and Gelcoat

1. LP (linear polyurethane) two pack paint is far more durable than gelcoat, being harder, with a higher gloss, which it retains much longer.

Gelcoat is great stuff, but its application requires it to be much thicker, and hence it can be scratched without the laminate underneath showing through. This can give the appearance of

being more durable, which can be regarded as an advantage, but the extra thickness also adds around 300 lbs to a boat like the F-27. That is why the F-25C used an LP paint rather than gelcoat, even though built in molds. One could also make the LP coating thicker, but I prefer to avoid the extra weight.

If you are going to be rubbing around a lot of rocks, or allowing hulls to grind on a beach, then gelcoat is the best choice - not because it is more durable but simply because there is more of it to grind away.

The other problem with gelcoat is that it has to have a resin rich backup layer of chopped strand mat (csm) which is there to prevent print thru of the underlying fabric or structural layer, and to eliminate any air bubbles between the gelcoat and structural laminate. The csm adds even more weight, for little if any structural gain. I in fact ignore it in all my structural calculations. This csm layer is not required in an epoxy/LP paint laminate, and when extra thickness is required for wear or impact (such as along keel) I prefer to selectively reinforce by using extra layers of a fabric, which also contributes strength, not just bulk, and a much more refined boat is the result.

For an example of the gloss possible with LP paint check out the F-9AX photo on my F-33 web page at

http://www.f-boat.com/f-33.html (third photo down)

A two part LP paint, with the appropriate non-skid particles, and a flattening agent is the best solution for refreshing non-skid or changing its color. Can be applied by either roller, or buy a cheap spray gun from K-mart (that's how we used to do it at Corsair). Roller works fine however.
Ian Farrier

2. I originally painted my boat with Systems Three water reducible linear polyurethane. It chalked and wore out after 4 years- much to my disappointment. They claim that they have reformulated it and it is better. The water clean up was great. I did not have the nerve to repaint with it though. I sanded the whole boat down, except my molded non skid and repainted it. I primed with System three's two part epoxy paint. It is water reduced, high build and easy to sand. It can also be used to fill small voids. I then painted with a two part urethane paint that is used on concrete floors. This is a pretty toxic paint but is really hard. It also only cost $40 per gallon. The paint if holding up really good. The only wear spots are where the crew (myself included) pull a loaded line over a painted corner like the cabin top. I got the paint from Farwest Paints in Seattle. I learned of this paint from Wayne Erickson who is the Corsair dealer in Seattle. I used the Skythane Gloss on the boat. To spray it needs to be thinned with their reducer.
Rod T (F-9A)

3. I found this link that looked interesting. Thought I would investigate it when its time to paint mine.

http://www.aircraftfinishing.com/

I have been very impressed with the Awlgrip on my boat.
Jay Spalding
F-25C #026 Blue Moon

4. Linear polyurethanes, like Awl-Grip, have a clear resin that comes to the surface as the paint dries, the pigment settles to the "bottom". This is like giving your paint job a "clear coat" automatically. If you sand/polish the paint through this clear coat the finish will never be as shiny as the original. That's why you can't sand/polish out drip marks when you paint with this stuff (you can but you can see where you have done so). Nonetheless, I think Awl-Grip is the best paint for custom boatbuilding.
Mike Leneman, ex-Awl-Grip Distributor and painter
Multi Marine

5. IMHO, the priorities should be as follows:

a. Surface preparation.

b. Competence of sprayer and his (I don't know any women in this trade) familiarity with the product.

c. Access to a suitable environment. No direct sunlight, no bugs, good lighting etc.

d. The paint itself.

Most paint jobs need redoing after 5 - 6 years because of wear and tear, not paint degradation. There are many excellent polyurethanes on the market and the marine and auto types are about four times the price of the industrial polyurethanes.

I suggest a look at the Imeron line available her in Canada through Pittsburg Paints. It's 1/3 the price of Awlgrip and seems to be just as good. It seems to be pretty forgiving to apply with good flow characteristics. The gloss is excellent.

The Industrial Imron paints from DuPont are also very good. With Awlgrip you are buying a whole lot more than a good paint..
Tony Hammer. F-25c hull# 11. (No name but now flamingo pink.)

6. I hope I can add some gloss to the debate on polyurethane paint choice, having had my boat repainted by a multiple award winning guy down here in OZ last year (August, 2002).

He loves the linear stuff (in all the rich brands) for expensive jobs that are not going to need repairs to those little areas that we are good at bashing. He also is happy to do a complete respray on a luxury yacht every time they have a prang, because they can afford it.

Because our little boats are such complex surfaces that often result in a dribbly run, and because we often have a bit of movement or a little start-line bingle to patch up, he prefers to do our boats in a (much cheaper) buffable polyurethane.

Now before you howl about your lovely linear wet-look finishes, let me finish. He achieves a wet-look of the same quality by mixing about 1:5 "anti-graffiti clear" polyurethane in the final coats of gloss. The result is stunning, my first boat in this stuff was a PLYWOOD Trailertri 720 at http://www.f-boat.com/pages/background/TT720.html and many observers thought I had a glass boat. It had a few runs that were easily polished out, and I have done quite a few easy repairs since.

My next boat was an F-24 in the same stuff, and you can see its gloss level in my album in the F-24 site.

Apparently the clear rises to the surface like in a linear poly, and can be applied later also for touch-ups. The brand we use down here is Wattyl PolyU 400, and if you can get it up there, you'll save enough for a sail or two. I have no financial connection to the company.

Happy Sanding and Spraying,
Peter Hackett, Intrigue, F-24-2 #004

7. As is typical in this world.....there no definitive right or wrong on top-coats.

For a custom boat and light weight - L.P.U. (linear poly-urethane) paint is probably the way to go.....and I like Awl-Grip and Sterling .....note I was a distributor for Awl-Grip (U.S. Paint) for a number of years and have put gallons of this stuff on.

For production boats gel-coat is usually the way to go due to cost, longevity, repairability, and ease of manufacture. Gel-coat is heavier.

Now, to the comments that 9 and 10 year old L.P. still looks great.....note the comment: the boat is stored INDOORS. If I could store my boat indoors I would definitely use L.P.U. After 10 years the L.P. will need to be re-painted (this has been my experience), the gel-coat boat will look just as chalky if not more.....but a complete "wet-sand" and re-polish will generally bring it back. This is due to the fact that, as Ian said, it's much thicker (a lot thicker).

Note: spraying gel-coat on a boat "after the fact" which, on a custom boat would be the way you'd have to do it... is a bitch and extremely time consuming. You have to spray the boat and then wet sand and polish the entire boat. In this case L.P. is THE answer.
Mike Leneman. Multi Marine

Paints and Painting - Masts

1. The hot paint for Rustoleum is their 5200 Industrial enamel high performance acrylic. Its a very nice paint and has life without equal. Paul Abendroth and I and several others in our area have used it to paint galvanized roofing and it sticks and retains gloss very well. Very easy to flow out too. They claim their primers such as 5281 gray and 5269 red are suitable for aluminum. We have been buying them from WW Grainer ~$35 gal.

About the only concern I would have for masts is to check with their tech line (800 323-3584) for proper surface prep for Al. Also, it tends to dry a bit soft compared to Imron but it should last a lot longer.

2. > I've noticed a little corrosion (paint bubbling) on the base of my spreaders. I have an F-27 with the black Forespar mast. I can get rid of the corrosion but what do I prime that area with before painting.

Last week I had occasion to look at an aluminum spar that I painted black enamel by hand 25 years ago using whatever Rustoleum recommended at the time- it was a thin translucent greenish paint that I put on after sanding and washing- nothing special and I would assume it or the equivalent is still available. This spar still looks great-scratched in places and a little dull, but no adhesion problems at all. I'm sorry that I can't be more specific and trust someone else can- but I think you can find a simple touch-up sequence that will get you what you need.
Jesse Deupree, F-27, ION, Portland Maine

3. As a past distributor of AWL-Grip paints and a retailer of almost every other type of Marine paint.....I have NEVER seen instructions on how to paint an anodized mast.....everyone I've ever talked to said we had to sand the anodizing off, which is an extremely laborious and costly process. Have I missed something here?

Primers and top-coats don't like to stick to anodized masts !!!!!!!! The only process I've heard about is powder coating and anodized mast (this can't be done "at home").
Mike Leneman, Multi Marine

4. The only reasons to paint an aluminum mast in my opinion are:
a. You like the "look" of a painted mast. Painted mast can look very cool.
b. You want to save some money.....which won't be much.

Don't paint a mast if you think:
a. You'll save a lot of money
b. It will be less maintenance
Mike Leneman, Multi Marine

5. For those who asked for the product name of the spray that I used to clear coat the mast, it was "Tectyl 151 Clear Rust Preventative for Aluminum and other metals". I think it was marketed here in OZ by Valvoline, but not sure now.
Peter Hackett, Intrigue, F-24-2

Paints and Painting - Nonskid

1. I'm not sure what Corsair uses, but Petit has the absolute best nonskid additive I have ever used. We apply it with a salt shaker under the final coat of what ever. We call it "not on your life skid"
Willie Blevins

2. For non skid I used Gibco moldings and the non skid looks really professional but it is way to much work. I would prime the boat, mask off the non skid area, paint and salt on nonskid and then paint the whole boat after sanding the non skid to the texture you like.
Rod T (F-9A)

3. I have made a couple of attempts to repair non-skid on our F-24. What worked pretty well was to spray gelcoat using a Preval sprayer, then sprinkle sand on the wet gelcoat, then spray another coat.

I've recently learned a better method from a pro. Mix gelcoat with sand and apply with a roller. It isn't a perfect match, but it is very good.
Dave Lansky, F-24 II, Mayfly

4. I recommend using a foam roller with L.P. Paint to do the non-skid. NO overspray, all the paint gets on the deck and it works very well. I like Awl-Grip (I used to be a distributor) but Imron, Sterling, etc. work well too. You need to get the brushing reducer though.
Mike Leneman, Multi Marine

5. So much musing.....so little information.

It might interest some that Corsair used to put on all the non-skid particles and color surface non-skid on the F-27's and at times, later models... WITH LPU. It's not that Corsair doesn't know how to spray L.P. paint... heck, a low-pressure high volume gun (legal in Ca. costs a few hundred dollars for the top of the line). I don't THINK Corsair wants to build custom boats. It's more expensive and messes up the production line... this is what Corsair has told me over the years, AND Corsair wants a kind of one-design... standard boat, not a bunch of different boats out there.

Unfortunately for them, the market place may not be geared that way. Boats as sometime "custom" items for a lot of people. They want them "their way" (sorry for the Burger King analogy). Corsair seems willing to live and maybe die by their philosophy (in this case, all of their philosophy... "custom" boats being just a part of it). They can build boats and spray them with L.P. if they wanted to. So be it.

BTW - L.P.U. is not the answer for everyone. Yes, L.P. is lighter but it is not as durable. Yes, it looks better when new, but it doesn't look better 10 years down the line. Things just aren't that black and white, despite some people's musing.
Mike Leneman, Multi Marine

Parts for Older Boats

Yeah, a parts list would be great but this thread caught me at a humorous time as I am refitting my F-27 #14 with just all of the little bits that wear out with time. BUT nearly all of the parts are a different size than 12 years ago! The rectangular hatch covers in the cockpit....slightly larger now. The screw in deck plates on the amas...slightly different hole pattern. Even the main companion way Plexiglas are a different size. Basically I would have a parts list with "no longer available" after each entry and an item that "almost" fits listed after that. HA! some fun.....
Randall Johnson, F-27 #14

Plumbing - Water Supply

1. Trouble-shooting a blockage - Got a good tip (directly to me) to look into the "T" where the water supply line branches to the galley and the head vanity. Each branch has a check-valve (one-way valve) adjacent to the "T". Upon disassembly of the galley-side branch, a huge clog was found consisting of plastic shavings and threads of Frontrunner fabric. There was only a couple drops of water in the hose past that, so the blockage was pretty severe! This might be a good location to put a filter of some type that could easily be changed/cleaned to catch debris.

One of the hose clamps had crushed/cracked off part of the check-valve, so I'm going to replace it before re-assembly. I'll also need to get into the other branch and look there, but it seems to pump ok. Hope the clog was the cause of the problem!
Thanks again, all! Dave Gilman & Tint Khine, F-31 #143 "Prime Directive" San Francisco

Pop-Top Cabin Hatch and Dodgers and Nets

1. Lexan Doghouse from The Finish Line? I had one. It worked, was quite strong but also quite heavy. It was a bit fiddly to install, but once setup, was quite solid. The quality of the finish wasn't brilliant. You might be able to build one yourself for less, I never priced the materials.
T.W.Fulton

2. I made a "soft-top doghouse" out of some 'end of the roll' remnants of clear vinyl from a canvas shop which makes dodgers. It uses Velcro to attach top to inside vertical edge of pop-top carpet, while bottom is cut a little long and just lays on cabin top. It does keep the rain out, and is light and easy to store (just roll it up). I used a longer piece for the cabin entrance

which can be pushed out of the way to enter and exit cabin, while the other 3 sides are only about 16" high. It's great for visibility. Haven't used it in major weather yet, but it seems fairly substantial and should take some abuse. Thinking about making something similar out of screen material to allow more ventilation (for summer nights) than pop-top allows.
Enjoy, John Croft

3. For ventilation on hat summer nights, nothing beats a "mosquito bar". This device is a huge pile of mosquito net fashioned into what appears to be a room which can be suspended from trees. Just drape the thing over the open pop top and voila, the breeze comes through and the critters don't. We use it over the pop top cover and without the cover. My wife insists that it goes on before it begins to become dusk.
Jack Johnson

4. We used a "mosquito net kit" from West Marine. I think we used 2 of the "large" kits

Cut the pieces and glue on the Velcro ...

We have 2 pieces that Velcro into one long piece that are then velcro'd to the underside of the pop top and then the underside of the lip -- onto the carpeting.

Another piece, velcro'd to the pop top carpet drops down and covers the companionway and Velcros to the mouse fur on either side and under the bottom.

A small square with Velcro glued on 4 sides sticks to the ceiling to cover the front hatch when it is open.

Easy to deploy and get in and out.
Robert E. Glandon

5. The pop-top can be made to slide forward just by removing the pivot pins/screws at the aft top brackets. The pop-top will then be able to slide forward on the forward slides. Plastic strips on the deck or rollers would also be a good idea to aid sliding and avoid damage to the rubber edge trim. However, a good strong gust of wind could also catch the aft end and cause an unwanted increase in sail area or other problems. Thus it is not a 100% satisfactory solution, but it will work.

An improvement would to be split the aft support tubes into two parts, that socket into one another, with a quick pin holding them together to make the changeover easy. Still doesn't solve the wind problem however.

The F-25A system works, but it is a little fiddly to setup, nor is it an easy conversion for existing boats. See http://www.f-boat.com/pages/construction/poptop.html

Ian Farrier, http://www.farriermarine.com

Propane Systems

1. New boat owner here so I plead ignorance to any systems Corsair might have had. I did not see any propane systems on the price list when I purchased so I have no point of reference here. There are holes in the cockpit compartments also (low point drains). However, the low point drains in these compartments drain both ways (to cockpit and overboard) so water can flow out of the cockpit also. So its not quite a full proof barrier lip. The propane I have seen leak into homes has been through crawl space vents located about 12" above ground...so I wouldn't rely on the companionway lip to stop a good leak.

When I was an active Fireman, we would often respond to propane emergencies. If I could offer the following tips:

> a) Never let a person fill your tank to more than 80% of rated capacity. Modern tanks have shut offs now but older tanks don't.
> b) Make sure the vent on the side of the valve is closed tightly after filling. We have had numerous leaking bottles due to filling
> station people not tightening this screw properly.
> c) Keep a spray bottle of soapy water handy to spray on all fittings and valves. Any bubbling indicates a leak. Common leak points
> are:
> i) around valve stem on bottle. Most valves should be opened fully then backed off 1/4 turn. This does not apply to propane bottles.
> Open valve fully to seal packing gland.
> ii) regulator. Diaphragms in regulators age and break causing propane leaks from the breather hole on the back of the regulator.
> Erratic flames and humming are indications of a bad/failing regulator.
> d) keep tank valve closed when not in use.

With all this said and done, the disposable bottles and portable grills have worked for years with no problems and paranoia, so this thread would seem to be water cooler conversation (pun intended).

I almost feel like ducking from flying objects since this thread isn't about ratings...but I guess threads like this help out us slow poke, over weighted cruising boats :)
Dale Paul

2. I have done lots of camping with the Coleman type cans. About 1/3 of them continue to leak gas after they have been disconnected from the stove/lamp because they don’t have enough gas left in the to function. This is fine when your camping outside and a gas leak is no big deal.

Different story on a boat. I do store the empty Coleman cans in the anchor locker on my boat. From my experience with them camping I would not be happy with them being used in a confines space.
Tim

Editor's note - the F-27 anchor locker has exterior drains. It also has cabin vents. Don't store the bottles there if you don't have those vents closed (or if you're storing anchors in the locker!)

Radar

1. I have an 18-inch radome mounted on a pole on the stern of my F-31 aft cockpit. It is a Raytheon SL72. It works very well from this location - no real problem with mast and rigging. It is a ten foot fixed pole that is attached to a glassed-in block on the hull, goes through the cockpit seat and deck beneath, and is also attached with a bracket to the stern pulpit. This is very sturdy. You can see a picture of the setup at mihanson.home.att.net.

I don't trailer the boat and have no knowledge of any possible trailering drawbacks except for the fact that my pole might be 6 inches or so higher than the trailered mast.
Michael J. Hanson, F-31 Trimanta

2. I bought an F-27 that had radar installed on the mast. The boat used a radar cable long enough to run from the mast when in the trailering position to a waterproof thru-deck fitting. When the mast was up, the deck fitting was loosened and the extra length stuffed below decks. It was a pain in the ass. We had a waterproof junction put in the cable- a competent marine electrician used to the tiny wires and the tiny soldering required can do it- I wouldn't try this at home. The radar dome was a nuisance trailering- it's weight really wanted to roll the mast and took a lot of extra tie downs to hold up. The weight wasn't a problem when hoisting the mast.

The radar was older and wasn't a great performer. We took it off.
Jesse Deupree, F-27 ION, Portland Maine

3. I suggest incorporating your aft mast carrying roller into what ever tower you build for the radar.
Mike Parsons

4. The enjoyment in our off shore sailing trips increased after the purchase of a simply LCD radar, after the GPS the second best toy we installed. Fog is still very annoying, but we aren't completely blind anymore. The best effect was to my wife, being night-blind or at least she thinks everything she sees at night will run over to us. With the "helicopter view" of the radar she is much more able to judge the situation (and no reason anymore to wake me up when se see a light in the dark somewhere :-)

The judgment of collision course is much easier, especially when sailing with spinnaker.

Once in a race we tacked very frequently and optimal in the dark along a rocky coast. Without seeing the rocks in real, but clear on the radar, we tacked on the shortest distance we dare,

being half a mile longer than the other competitors. By the way, if you dare, the same thing is possible with a electronic chart. Good for the nerves :-)

The best look out. We use a alarm zone around the boat, beginning at 2 nm. Distance and ending at 4 nm. Distance. Because of the first 2 nm. there is no disturbance. Everything that comes in the ring notifies themselves by a loud beep. When singlehanding I can have short periods of sleep with it. Sometimes it can take long before the other vessel comes out the ring again. It has happened that I changed the course somewhat to make the alarm zone free and to pick up some sleep again :-) Surprisingly, also some very small open fishing vessels without any reflector were picked-up by the radar (at night in good weather!).

It's 8 years ago we installed the radar and we use it (off shore) about 50% of the time, also in daylight while having lunch or dinner.

We never use the energy save mode. During 24 ours of sailing with a 108Ah battery, 50% radar and 100% PC, radio, Navtex, Autohelm (and tri-color during the night) and some minor energy users we have two periods of 1.5 hour of using the main engine for energy supply (stationary forward with a TWC chip for fast loading) A small Honda gen. with a suitable marine charger will do the job also I think, not to mention alternative energy sources, which we don't have.
Henny van Oortmarssen
www.fram.nl

5. I had a tower integrated into my stern pulpit. For the F-Boats consider the radar pc - light and small and laptop is the display. Can't imagine life without radar - could see jet skis on their way to Catalina during "June Gloom". Works great as navigation when shore gives a return (looks like the chart at Point Conception-nice rangefinder too)
Bob
Kantola 38 "DEVORAS"

6. I have radar on my rotating mast F-31 - the dome is mounted to the mast. My unit is a combination radar and GPS chart plotter - Raytheon RL72RC with 2 KW radome. This is one of the best small size radars and works extremely well. I use the chart plotter function far more than the radar. I cut the signal/power wires @ the radome and installed a weather proof plug and socket for easy dome removal. The wiring is inside the mast and the dome is installed just above the mast raising wire attachment U bolt about 7' above the deck. I would argue that mounting the dome to the mast is the optimum location for the following reasons:

a. Dome height is optimum for near shore sailing at about 12' above the water. This is a low enough height for detecting nearby items but still high enough for the limited long distance capabilities of small radar units. At this height the heads of people in the cockpit or cabin are out of the radar beam angle and the dome is high enough off the deck for good head clearance at the mast. Also this height minimizes the effect of added weight aloft.

b. Utilizing the mast for support, rather than a separate aft mounted pole, makes for a much lighter package and less windage. The mast support for my dome weighs about 1-1/2 pounds.

A custom mount made out of bent sheet aluminum could be fabricated under a pound. I modified my mount to utilize quick pins instead of bolts for easy dome removal when raising/lowering the mast.

c. For true heads up display, the mast can be centered when radar is required with a rotation limiter or positive rotation control. This might slow the boat some; but in fog, depowering the boat could be an advantage.

d. I have not had a single instance of the jib hanging up on the dome while tacking in thousands of miles of sailing; nor does the jib show any signs of wear near the dome. With the rotating mast generally the dome is angled to windward away from the jib. A genoa might be different (?), but the screacher is no problem since it must go around the head stay anyway. A few times I have forgotten to tack the mast when heaving to prior to reefing the main in high winds. In these instances, the jib was pressing tight against the dome but no problems ensued.

The radar display should be weather proof and mounted in the cockpit where it can be easily seen when needed. I use a PC for navigation, but keep it down below and hopefully out of the rain.
Hank Brooks, F-31, Water Skipper
http://home.bendcable.com/brooksfamily/

Reefing - Boom Roller Furling

1. This is why the F-27 roller furling system works - I made sure the sailmaker's understood that the battens had to be parallel, and used the right bolt rope, and made sure that they continued to do so. The mast feeder slugs (not balls) were then set in the right position (height is important), and the correct distance apart. They have to be positioned right on the aft edge of the mast, and were screwed to the mast sides. The commercial ball type that slide into the bolt rope groove end up too far back from the mast and are not suitable. Have all this correct and the system will work very well. I then constantly monitored the whole system on the factory floor to ensure the specifications were adhered to, and that is why the system works so well on every F-27.

There is no reason why it cannot also work just as well on F-24 or the F-9A/F-31. Just make sure the sailmaker builds the mainsail to plan, with lower battens parallel to boom,, and that the bolt rope feeders are correctly placed and spaced as per my specifications (should be at least 20" above boom center, with around an 1/8" gap between or just wide enough to let mainsail through). It is also very important to have the batten pockets spaced back from the boltrope (min. 1/2" gap as per sail plan) to let them pass by the feeders without jamming. The bolt rope must also be a smooth hard braid, otherwise the main will not go up very well when hoisting. Then read the Sailing manual to get the right techniques, and you will never mention the words 'lazy jacks' again, unless you get an F-41.

The only problem has been in aft cockpit boats where mounting the traveler across the cockpit at the end of the boom just breaks the cockpit up too much. This was then solved by the split sheeting system as used and recommended by Mike Leneman.
Ian Farrier

Reefing – F-25C, Gamera

1st version, parts necessary line with shackle on it, short double loop strop and a block with a shackle attached.

Attach strop and block to traveler (above main traveler), line through block and attached to bottom clew. Tighten open end of line to winch and release main-sheet, lower main halyard to reef point and reattach main sheet to second reef point. Sounds good in theory, then try it in the double-hand race 3 years ago when the wind went from 0 to 40 knots in under 5 minutes. Main flying around like crazy, bottom line doesn't work. Should have hove to like Ron did.

2nd version, parts necessary, same as above but two additional short lines. Take the 2 short lines and attach each to 1st and 2nd reef points, assume 6 foot slabs, tie a bowline or splice 4 1/2 feet below reef point, attach bungee cord to splice and to bottom clew and 1st reef point. This is to keep lines from flying around.

Ok reef now, attach strop and run line through block, but instead of the 1st reef point go to lower splice attached to the bungee cord. tighten with winch, release main-sheet, lower main halyard, tighten reef line more, reattach main sheet to 1st reef point. No more flying around main clews.

Worked well, but, I'm a perfectionist. Sail solo often, Chicago to Mac solo race in June among others. Just can't stand losing a second.

3rd version, Parts: buy 2 fiddle blocks, both with shackles and one with a cam cleat, kinda like an old vang. Optional: replace your halyards and use an old piece of spectra for the line, or old line laying around.

Now reef, one fiddle(the one with the cleat) to strop on traveler the other to the splice on the reef line, tighten, remove main-sheet, lower halyard, tighten more, reattach main-sheet. clean up lower slab. DONE, less than 2 minutes, solo, no hove too, no change in course.

A note on when to reef…. Upwind the boat can handle 20 knots in flat water, no problem, downwind you better have a good team (I have this) with weight way back. Waves are different, I like to be reefed by 22knots, there is a very fine line here. Downwind in bigger waves reefing early is good, less stabbing, can climb back up the front of waves better, meaning the wave you just surfed down. The boat is very top heavy in big wind downwind in waves, wants to dig, the 31's don't seem to have this problem.

The F-25Cs, while more responsive, need extra care, with the right systems in place no conditions are impossible.
Matt
Gamera

Reefing - Jibs

I received a few emails from members asking how I reefed my hanked on jib, so I thought I would explain to the F-group.

I was going to get a roller furler. The sailmaker suggested putting a set of reef points in the jib instead. He told me the shape would be better and I would be lowering the center of effort, making the boat less tender and saving a lot of money. If you decide to do this, have your sailmaker come to the boat and measure for the location of the reef points. If he does the geometry right, when you reef you will not have to move the jib sheet blocks forward as you would with a roller reefed sail. You will need the following setup. A Cunningham hook in the reef grommet with the line running along the luff down to a turning block at the deck and then aft to a cleat on the cabin top.

Here's how it works: Assume your on a port tack and you want to reef. Take the lazy jib sheet bowline off the clew and fasten it to the reef cringle along the leach then tack over to starboard. While you are in the middle of the tack and your jib is luffing, ease the jib halyard and pull down the Cunningham block till it is at the deck. For all practical purposes your reefed. At this time move the other lazy jib sheet up to the reef grommet on the leach. If your sailmaker did a proper job and you want to stay reefed for a while do the following; Take the clew with no lines on it diagonally up to the row of reef points and roll the foot also up to the row of reef points. Tie the reef lines around the rolled up sail with slippery reef knots.

With 25 knots of wind sailing single handed on autopilot I was able to comfortable reef my boat.
Marv Marcus

Reefing - Lazy Jacks

1. Lazy jacks work well on a boat where the mast is left up, but having to contend with those extra lines on a trailerable boat being rigged and launched every week becomes very annoying. They were used on the prototype F-27 and soon wore out their welcome. Give me roller furling on a trailerable any day.
Ian Farrier, http://www.farriermarine.com

2. Lazy jacks are a commonly used system for putting a jiffy reefed mainsail away, and were a topic in the original message. The mention of lazy jacks in conjunction with a trailerable boat always revives unpleasant memories, as I found the extra lines required to be a real 'pain in the neck' on a frequently rigged trailerable compared to a properly setup boom roller

furling system. I have now rigged and launched well over 400 times, and I know it would have been much less had lazy jacks been involved. I still shudder at the thought.

However, they work very well on larger or non-trailered boats where frequent raising and lowering the mast is not a factor. They and luff slides then become preferable as the boat becomes large enough to where the greater friction associated with bolt ropes becomes too great.

I usually recommend or use the roller furling/reefing boom setup for all my trailerable designs, wherever possible. However, the rolled shape is not good for racers. Outhaul control can added by reattaching outhaul to clew reefing eye, or just fit both systems - jiffy reefing when racing, roller furling when cruising and for putting main away which is the real advantage. The main is also always stowed loosely rolled around the boom which I believe is far better than being folded on top.

Unfortunately there is no perfect system that fits all. On an F-28 or smaller my preference has always been roller furling and a bolt rope for easy trailering. On an F-31, it would be roller furling if frequently trailered, slides and lazy jacks if left mostly in the water or in mast up storage. Anything larger, slides and lazy jacks.
Ian Farrier, http://www.farriermarine.com

3. Corsair had lost its shirt literally on the Mk I (you Mk I owners got a helluva bargain), due to the many redesigns and added features to my original design.

New owner/management coming into Corsair in 1994 then had no choice but to cut costs with the Mk II and did not want to fit roller furling. I had no strong feelings either way as the F-24 main is just small enough for one person to handle/stow which is almost impossible on the F-27. It would have been nice to have included roller furling but it does cost more than jiffy/slab reefing. This is another reason why other trailerable manufacturers don't supply roller furling as standard, as it is very difficult to build a small trailerable at a profit (particularly one with three hulls, four carbon fiber beams, and a folding system).
Ian Farrier, http://www.farriermarine.com

4. I used to have an F-27 with roller furling which gave very nice sail stowage, infinitely variable reefing but was difficult to use in adverse conditions because it required leaving the cockpit to go to the mast and, although not essential, begged for an additional line to be rigged at the clew after reefing. The sail feeder was fiddly, the main luff/boltrope required maintenance at the loft every year due to batten abrasion when sailing free. When we moved to an F-31 with Fredrickson cars, UK lazy jack cradle(this is the key element for ease), there was considerable complaints from the crew on the hassle of hoisting and dousing sail. However, once we got the single line reefing working properly, its now clearly superior for our purposes, which is husband-wife crew, ages 55, who occasionally get caught in Chesapeake Bay thunderstorms where the winds go from 10 to 30 knots in seconds. We can reef in 1 minute without leaving the cockpit or hanging off the transom. This while sailing close-hauled with the jib fully powered and the main still partially drawing.

We have not required any sail maintenance in three sailing seasons. When we douse sail for the day, the sail is flaked and zipped inside the UK cradle. This takes a few minutes longer than rolling but leaves the sail already in a bag.

For trailering, the lazy jacks can be derigged in a few minutes by releasing a shackle or undoing a knot, leaving the hoisting part of the lazy jacks rove on the mast. The hassle is removing the cars from the mast. The choice between the two depends on how often you trailer, how many crew, their physical fitness, how often you reef and under what conditions, i.e. In flat protected water or large ocean swells(benign) or in gusty winds in a large shallow body of water with steep chop(malign conditions)
T. W. Fulton

Refrigeration

We do not use 12v for refrigeration, but have a Dometic 3-way cooler (110/12v/propane) that we run on propane unless tied up to a dock. It uses very little propane. One of those disposable Coleman dispensers last 2-3 days. With the boat being fairly flat while sailing, the pilot flame rarely goes out. It can make ice cubes, albeit, small ones.

Removing Old Compounds

1. “Goof Off” slowly dissolves 5200. So will acetone.

2. I knew I'd track down the stuff to remove 3M 5200 or any other similar adhesive, bedding compound. Although my tube does say kryptonite on it, it is now just called TG-55. It is still available (ph 1-800-636-5206). It is supplied in 2 oz or 4 oz sizes. You can call 8 am to 8 pm on weekdays or 8 am to 5 pm on Saturdays.
David L, F-31 Triagain

Replacement Parts

The Corsair factory replacement parts might fit poorly on the early boats.

Rivets

For the huge stainless rivets .... I was successful using a regular rivet gun and a large clamp taken off my drill press, I used the clamp to slowly close the rivet gun instead of my hand .. Took time and a couple of passes but it worked.
Bob Glandon

Rotating Mast

1. I do not support fitting a rotating mast to the F-27 as they increase the load on the aft beam, which it is not designed for. In reality, the risk is small, and a number of F-27s have converted without a problem, but they do so at they own risk. Same situation in fact as adding a turbocharger to a new car - any warranty is voided.

Once the leeward shroud becomes loose, as it should with a rotating mast, the total heeling load on the windward side, fixed or rotating mast, will be identical. However, the fixed mast has three shrouds to absorb this load, with two lowers taking a share of the mainsail load into the center hull. On a rotating mast there is only one shroud, which then directs an increased load to the windward float, which in turn, due to the position of the shroud, increases the load on the windward aft beam.
Ian Farrier, http://www.farriermarine.com

2. Talking as designer, my official position is that the F-28 mast is not recommended on the F-27 as it will increase aft beam loading (3 point rig versus an 8 point rig). The F-28 aft beams are stronger than the F-27s for this additional load, and thus any warranty for F-27 aft beams will be voided. It's the same situation as fitting a turbo charger to a car - some parts in the drive train may not be up to the greater load. Usually everything is fine - I once dropped an engine four times more powerful than the original in my racing car back in New Zealand. It was two or three years before I managed to blow up the rear axle, so it lasted quite well. However manufacturers just do not want to be bothered by such 'improvements' and opt out even for the smallest change.

Talking as a sailor, you can do it if you want but any risk of damaging aft beams is yours. I don't think the risk is high, as other factors apply that also help reduce aft beam loads, and I would do such a change myself, but I would also accept all responsibility for the aft beams, and check them a little more frequently.

In this regard, from observations of beam break testing, beams do give considerable warning that they are failing by lots of big cracking noises, usually followed by major distortions and splitting glue seams. Even after you get to the really big noises the beams still seem to hold together for a continued high load remarkably well. So there will usually be plenty of warning of any problem.

As always, as per my Beam guide on http://www.farriermarine.com/owners/index.html, any cracks that may develop in glue/join lines on beams should be investigated immediately and fixed, a faulty glue line being a potentially hazardous and progressive failure point. It is usually a case of the glue line itself not being 100%, as this is very workmanship dependent, and even a careless fingerprint can be the start of a glue line failure. Such cracks thus do not necessarily indicate the beam has been overloaded, and the usual cause is more likely to be just expansion and contraction in hot and cold weather which continually tries to find weak points.
Ian Farrier, http://www.farriermarine.com

3. Actually more wires can mean there are more parts to fail, and thus there is a good argument that less wires mean a safer rig. There are certainly less things to check and monitor. The mega cats that just raced around the world proved that a properly setup three point rotating rig (with synthetic rigging) can be extremely reliable.

I avoided rotating masts for years, mainly because their raising and lowering was more complicated on a folding boat, and my folding designs were 'odd ball' enough, without the extra 'concern factor' of a rotating rig for the average monohull sailor switching over.

However, once the F-27 was established, it made more advanced features like the rotating rig possible, and I would now not use anything else.
Ian Farrier, http://www.f-boat.com

CONVERTING AN F-27 FIXED MAST TO A ROTATING MAST

This conversion is possible, but it will increase the load on the aft beams, and thus any aft beam warranty will be voided. This is due to the rotating mast having only a single stay to each float, compared to the fixed mast being stayed to both float and main hull, which spreads the load between float and main hull.

Loads on leeward float remain the same, with the aft beam taking about half the load of the forward beam. However, the rotating mast could generate up to a 50% higher load on the windward aft beam and it was not designed for this.

The aft beams on the F-24, F-28 and F-31 are of identical strength to the forward beams and can take the extra loads generated by their rotating masts. The F-9A/F-31 also didn't need any change when it went to a rotating rig, as both forward and aft beams were always the same strength, to prevent any chance of a mix up in production, of what are identical beams. The back beam was thus always stronger than it needed to be with a fixed rig and any F-9A/F-31 fixed mast boat can be converted to a rotating mast without any concern. In contrast, the F-27 aft beams are obviously different, so they could be of a lower strength without any danger of a mix up in production.

However, due to some other compensating factors, and high beam safety factors, the risk in converting an F-27 is low, and many have done it without any problems. However, the owner must be prepared to accept the extra risk as his responsibility, just as if one had added a turbo charger to a car's engine, which would also void any warranty, as the engine or some parts in the drive train may not be up to the greater load. If the conversion is made, the aft beams should be regularly checked for any signs of stress, which usually first shows up by cracks developing in the join/glue seams. In this regard, as demonstrated in beam break testing, beams give considerable warning that they are failing by lots of cracking noises, usually followed by major distortions and splitting glue seams. Even after you get to the really big noises the beams still seem to hold together for a continued high load remarkably well.

So there will usually be plenty of warning of any problem - just monitor the glue lines, which one should do anyway on all beams.

No drawings or guidelines exist for converting to a rotating mast, but the F-28 system can be copied or used on an F-27. Main difference will be in side stay length.
Ian Farrier

4. A rotating mast is much more efficient in many ways, but whether the cost for converting is worth it depends on your priorities. Definitely the first choice however with a new boat.
Ian Farrier

5. > Would it be practical to purchase and/or build new beams for an F-27 to bring it closer to F-28 specifications ?

Would be cheaper and far easier to sell your F-27 and buy an F-28. It may look like an easy change but there were more changes under the skin than most realize.
Ian Farrier

Rudder - Balance

1. The correct rudder balance area is important to achieve a nice helm, and it should be light right out of the box on all of my designs. You should never need more than two fingers to control. Balance area is the amount of rudder blade that is forward of a vertical line drawn down through the center of the two rudder pivot pins. On the F-24 the rudder blade leading edge should be from 5/8" (16mm) to 1 1/2" (40mm) in front of this line.

If it is heavy, and all other possible causes have been eliminated (check also that rudder goes fully down and is not jamming in case), then fill existing pivot hole in rudder blade with some high density epoxy putty (not the light fairing type), and then redrill pivot hole further fwd. by around 6mm (1/4"). This will increase balance area by 6-8mm. If not enough, then repeat process. Don't worry about weakening blade - it is not really under much stress at pivot hole area.
Ian Farrier

2. > With main alone, the boat is almost unmanageable. If you get head to wind in a stiff breeze, it is almost impossible to get going again.

I've struck this before and cause was an significantly oversize roach on the main. In this case the boat was totally unmanageable under main alone, which is not the case with the standard F-9A/F-31.

If main seems okay, then you should check mast step position - ball should be 12 1/2" aft from beam centerline, or 16 to 16 1/2" aft from front edge of daggerboard case.

> Even with full jib flying, and both main and jib trimmed well, there is a LOT of weather helm when going to windward in a breeze.

This is usually always due to lack of sufficient rudder balance area. First check that your rudder goes fully down, and if so, then the pivot hole in the rudder blade will need to be moved forward, and slightly up (depending on how much clearance there is between forward tip of rudder blade and hull bottom. Hole can be moved by filling with an epoxy putty and then re-drilling. I would start with moving forward by 1/4".

All my designs have weather helm built in, as this is important for windward performance, and the amount is the same on the F-31 as it was with your F-27. However, the helm will still be very light and virtually neutral if the rudder balance area is correct. Provided mast step is correctly positioned as above, and main is not oversize, then the first thing to look at should always be the rudder.
Ian Farrier

3. > In my case, I remedied the situation by redrilling the rudder pivot, and raking forward. Note, this just is kind of like giving you a boost in power steering. You reduce feel in the rudder, but the rudder is more balanced and you have reduced effort to drive it. The improvement was enormous, but the amount of weather helm is exactly the same ...

This is the correct solution - forget about raking mast or putting larger headsails on.

All my designs are setup for a good amount of weather helm, as this gives better windward performance, and also helps keep balance when the really big headsails go up (screacher).

If rudder does not have enough balance area, then helm will be heavy and it feels like a lot of weather helm.

To cure, first check that rudder is going fully down/forward and stays there at speed.

If this is not the problem then fill and redrill the blade pivot hole to allow the rudder blade to swing further forward, providing more balance area. This is like adding power steering assistance, and can be done on any rudder.

Once set right the helm can be as light as a feather - you still have weather helm but it is not apparent at all.

If you need more than two fingers to steer then you do not have enough balance area.

If you find the rudder suddenly takes off on its own, either way, then you have too much balance area. And that is scary at speed, I can tell you.
Ian Farrier

4. > So how do you adjust the angle on the F-25C with stock rudder?

You can't adjust the underslung rudder with the rudder post, and that is one reason why I no longer use them. It has to be built exactly right or you are in trouble, or doomed to have a heavy helm for ever.

The F-33 daggerboard rudder (which has adjustable blade rake built in) is too big for the F-25C - unfortunately I'm also too snowed under at present to do a smaller version for the F-24/F-25C. But it will come.
Ian Farrier

5. Heavy helm is usually due to the rudder blade not being raked forward enough. Different helm from one tack to the other usually means a warped rudder blade.
Ian Farrier

Rudder - Cracks

1. Regarding zigzag cracks in the rudder seams - any cracks in this area are usually just cosmetic, in the gelcoat only, and possibly caused by the impact when the rudder swings down against the stop. The shear loads in the rudder blade are easily absorbed by the high density core currently being used inside the rudder, and there's no need for glass backing behind the join seam in this area with the current construction system as being used by the manufacturer. Such a glass backing tape was specified in all earlier foils, that used a lower density core, and which were built to my specifications, but it is superfluous with the current core (November, 1999).

The only significant danger with production rudders or daggerboards, is from either hitting something or water attacking and scouring out the forward join seam if not gelcoat sealed. The rudder can then fail by splitting apart down the center. The forward seam was left raw for a period from 1991 but problems were still relatively few. The join seams are now gelcoat sealed (no seams visible) and quite reliable as far as I'm aware. I believe a light tape has now also been added to the rudder top seam to help prevent gelcoat cracking, but it is not a structural necessity if the core is high density.

If a zigzag crack exists, and the blade has not broken, then it's probably just from normal flex or impact and should not be of concern. If a shear failure has occurred or started then the rudder is not going to last for very long, but I think such a failure is very unlikely.
Ian Farrier, http://www.farriermarine.com

2. >I have one of the "old style" F-31 rudders. I removed the assembly this year to make bottom painting easier and noticed a long, linear vertical crack at the forward end of the casing (~1/16" wide). The remainder of the rudder assembly seems fine. Can I just fill the crack, or is there something more to worry about?

May be just cosmetic, but cannot say without looking at the actual part - best to have a dealer look at it. Otherwise, fill and glass over to be safe.
Ian Farrier, http://www.farriermarine.com

3. A zigzag line is the typical sign of a crack line introduced by excessive shear. You need to sand off all gelcoat, maybe even some glass until you get to the bottom of the crack and rebuilt the glass layers from the bottom up.

See to it that your fiber orientation is at about 45 degrees to the crack. Then filling, gel coating, etc.
Have fun, and do a thorough job. Just adding gelcoat only is like just closing your eyes.
Sigi (had that type of failure on the top part of the centerboard, so I know the pain of fixing shear cracks)
F-24 Mk 1 #153

Rudder - Hinges

1. > The holes in the F-31 (possibly others) transom bracket are punched (not drilled, kind of like shaken, not stirred), resulting in an oversized hole. Tightening the bolts squashes the plastic bearings flange into the top and bottom of the bracket and then the "clunk" isn't there, just the movement.
Mike Multi Marine

I have been unable to check on the above until now, and comments are as follows.

The holes in the transom brackets should be 0.625", and larger holes here are the main cause of any slop. The 0.015" oversize would be hardly noticeable with the much wider spaced F-27 transom brackets, but slop from such holes could become an annoyance on the much closer spaced F-28 and F-31 transom hung rudder brackets. Corsair should have rectified this by now (December, 1999).

Replacing any clevis pins with bolts is a quick and easy solution, with tightening them (as Mike recommends) helping to remove any clunking. A hard rubber washer each side of the bracket may help further. When selecting a bolt (5/8" 316 stainless steel), make sure that there is no thread in the bushing area as this will soon chew out the bushing material. You will probably need an extra long bolt that will need cutting back to achieve this. Make sure also that a nyloc nut is used. A metric 16mm bolt is also slightly larger at 0.629" and may be worth considering.

There should also be two 5/8" bore flanged plastic bushings used at top and bottom of each rudder gudgeon, giving a total bearing surface area of around 0.47" per pin. Material is a glass reinforced Acetal, which is a very strong engineering plastic. This is also used in the folding struts bushes where loads are much greater and wear has not been a concern, but it looks like they may not wear well with a lot of frequent movement under high load as can occur with the latest transom hung rudders. If wear has become a problem, then bearing surface area can be increased by inserting additional plain (not flanged) Acetal/glass bushes into the gudgeon between the two flanged bushes, and these will double surface area. If Corsair cannot supply these then I do have some 5/8" bore flanged bushes that can have the flange cut off, and two of these would fill up the gap between the existing flanged bushes.

The only other cure for slop in existing stainless steel transom brackets is to either make oversize pins, or increase the pivot pin to 3/4" and drill the bracket holes out to 0.75" to match. Tricky to increase a 5/8" hole in stainless like this but any competent machine shop should be able to do it. The rudder gudgeons would then also need drilling out to 7/8" (0.875") and new larger 3/4" bore bushes used with 3/4" pins/bolts.

Corsair has some 3/4" bore flanged bushes, at 1/2" long, but I can also supply a longer 5/8" version which are used as F-36 strut bushes, also from a glass reinforced Acetal. Surface area would then be increased by around 160%, or 224% if an additional plain bush is also used, and this should completely eliminate any wear problems.

The only other answer are metal bushings, but these also have problems of their own that would need to be investigated first.
Ian Farrier, http://www.farriermarine.com

Rudder Operation, Hardware and Lines

1. You should be able to pull the rudder down easily by hand. Having to use a winch is not okay. Installing a new rudder blade is not hard and you should be able to do it.
Ian Farrier, http://www.farriermarine.com

2. If one is having a problem with the rudder creeping back then consider replacing the old cleat with a new one. Usually the cleat is enough to hold the rudder fully down, without using a shear pin, but should the down line ever have pulled through then the cleat teeth can loose their edge, and never hold the line sufficiently at speed again.
Ian Farrier

Rudder - Rake

1. Early F-28s had the same rudder rake as the F-27, but this proved to be insufficient for the F-28, due to various other changes. Establishing the correct rake can be tricky, and increasing it will lighten helm considerably.

>Could someone with a late version F-28 measure the distance between the leading edge of the rudder (on the trailer with the rudder upside down it will be the outside edge) and the pivot hole.

The head shape on later rudders was changed to give more rake so this will not help. Try moving pivot hole forward 5/16" and up 1/4" (to ensure blade does not then swing up against bottom of case). If there is already plenty of clearance between top of blade and bottom of case the 1/4" up may not be needed - check before drilling. You will also need to fill and redrill shear pin hole.

>If anyone on the list performed this surgery I would appreciate any advice or experience. I was told to fill the existing hole with epoxy mixed with filler and just drill a new hole. Does the new hole need any reinforcement or waterproofing?

No, additional glass is already there, in the rudder skin, plus core should be a high strength polyurethane (strong and waterproof). If helm is still not light enough then procedure can be repeated. But be sure to use a high density filler.
Ian Farrier, http://www.farriermarine.com

2. Rudder rake may be one of the most underestimated factors in good helm. Hard to get it exactly right on every boat leaving the factory as it can vary with production tolerances, type of rig and sails, and it can be a fine line between just right and over steering (too much rake and scary). Changing rake is covered briefly on page 31 of the Corsair Sailing Manual, but this is only possible with transom hung rudders. Much more difficult on underslung rudders and this is another reason why they were discontinued.

So if your helm feels heavy, or truck like, you need more rake, which also helps reduce rudder ventilation. First check the rudder blade is fully down, with any ridges or tightness preventing the rudder from going fully down have been removed. If necessary, a quick check on helm difference can be made by removing bumper pad from front of blade (but don't leave off as blade can be damaged more easily). Make sure also that pull down line cannot slip, allowing rudder to move back slightly at speed. An extra horn cleat is very handy for this when needed.

If more rake is required, then this can be achieved by filling and redrilling pivot hole further forward (say around 6mm or 1/4"), and slightly up (say 3mm or 1/8"). Moving it up helps prevent forward part of blade from hitting hull bottom. If still not enough, refill and drill again - moving the hole is not a big problem, the blade is strong in this area - just use a high density filler. If the blade becomes too 'Swiss cheese' like, just drill the hole well oversize and fit a bush once the correct position is found.
Ian Farrier, http://www.farriermarine.com

3. Raking the rudder forward will greatly eliminate the ventilation problem by causing the spanwise flow to migrate up the rudder, from bottom to top.

This is a definite advantage. Correct rudder rake is also actually quite important and few realize this. My latest and future designs will all have 'kick back' daggerboard rudders coupled with easily adjustable rake for this reason.
Ian Farrier

Running Backstays

1. >I seem to remember hearing somewhere that Mike Leneman's boat with the spectra shrouds had runners though I could be wrong. The goal is to explore options for adding temporary support to the rig when it has 2 reefs in the main and a headsail flying.

The most common problem when heavily reefed is mast inversion (mast bending backwards at center), and this can occur with many boats when being pressed hard with a double reefed main. Mast inversion is very hard to counter without a permanent inner forestay, which is a nuisance on any trailerable boat. The best solution is probably a temporary inner forestay, made from spectra or similar to a block and tackle on the deck to tension, and only used when required. The single line can stay on the mast permanently, running down the mast to be secured to the mast base, and is only moved forward to attach to the deck when required.

Such a temporary inner forestay is an option on my F-41, depending on mast fore and aft stiffness, and they are becoming more commonly used as an additional control when required on many racers with swept back spreader rigs.

The other solution as mentioned is runners each side to the masthead, which help force the mast center forward by bending the top back, but control is not as positive as an inner forestay. Two extra lines are also required versus one, but they have the additional advantage of being there to support a masthead kite or screacher in light air areas, if required.
Ian Farrier, http://www.farriermarine.com

Sails - Code Zero

1. First, you don't need a masthead rig or running backstays to use a code zero. We have two stock rigged 31's here in So. Cal. with code zeros.

Performance? With a two boat testing program (yes, like the big boys :)) we've determined that the code zero (just a very flat, straight-luffed spinnaker) is faster in light winds (under 8 kts.) especially in Pacific swells but slower in moderate breezes. We have no data for over 18 kts.

We use a continuous roller-furler, which, if not set-up right, seems to give some people problems but when set-up correctly, is light, efficient, clean and as the surfers use to say "sanitary". I recommend code zeros to sailors who want to have a "three sail program": main, jib, and code zero, since the code zero is half way in-between the spinnaker and screacher. If you want to go full race then a 4 sail program is better.

The code zero will not point nearly as high as a screacher but higher than a spinnaker. It's area is half way in-between.

My preference is to eliminate spinnakers altogether (that's my goal, but I haven't reached it yet) like the Formula 60's. I'm close though. We won all the races at the Summer Splash in 2002 with just my girlfriend and in one other race one other girl as crew. We never even used

the screacher, never set a spinnaker and used only the maxi-screacher (like a code zero but less shoulder) which is on a furler.
Mike Leneman, Multi Marine

Sails - Cloth

Note - Please avoid sails that were made for other boats. I learned this by watching a friend's new jib one day. He'd gotten it from a good sail loft, where it had been for sail at a steep discount because it hadn't been picked up. The jib had two problems. The easy one was the leech hook - the UV cover was a little tight. The harder one was the draft and curve. It was obvious that this sail was clearly not designed to point well. It looked like it was cut for a boat that rarely went to weather, and never had to concern itself with the difference between apparent and true winds. Turns out that the sail was from a Westsail 32. Totally unsuitable for an F-Boat. Doesn't matter how cheap it is. - Editor

I. In my 5 years or so representing three sail lofts (Smyth, Calvert and Sabre) I have learned at least one thing: “There is no such thing as the BEST cloth”. Everything is a compromise! When you buy a sail be sure to discuss your intended use with the salesperson/designer. We see an awfully large number of cruisers out there with Kevlar sails when they might well be better served with something else. There are lots of choices (a good thing and a bad thing!). However, right now I’d be tempted to say “Pentex” in answer to your question as it was posed.

There are a lot of different sail cloths available for different applications and things are changing all the time. Last year Rick Zern from Sabre Sails in Ft Walton Beach (the loft that builds Smyth Sails) gave a really good presentation at the Corsair Nationals in Pensacola. Dave Calvert speaks annually at the Multihull Symposium at the Miami Boat Show and this talk is usually reprinted in Multihulls Magazine. It would take hours to go over all the different cloths and fibers etc etc.

To a certain extent, each sailmaker has their own preference. By the way, the new breed of Kevlar --Kevlar Edge or even Kevlar 49--) has pretty much superseded Technora as the main load bearing fibers in modern racing sails). The latest think in performance monohulls (an oxymoron I know, but at least that is how the leaner owners think of them) is PBO. This is bright orange stuff that is popping up on mainsails at major regattas. It looks as ugly as sin, but then that is what they said about Kevlar when it first came out. But ignoring PBO for now, to keep things simple, for mains, jibs and screachers, I think of three main choices for performance multihull sails:

a. A Mylar/Kevlar based laminate with Technora X ply for the out and out racer. These come in different weights and strengths and cost. Go all out strong, light (and expensive) if you are an all out racer (very few in our fleet): example Dimension’s KX series. Go less radical if you are like most of us, and sail for pleasure at least as much as you race, but when you race, you expect to be a contender: example Dimension’s SP series (SP stands for Sport Cloth).

b. A Pentex based laminate for more cruising, with some racing. Pentex is 2.5 times less stretchy than Dacron, whereas Kevlar is supposedly 5 times less stretchy. However Pentex is much more resistant to UV than Kevlar. Pentex is a very good choice for jibs, as this sail is the most abused of our inventory (especially in non-roller furling form).

c. A woven Dacron-based laminate. Dacron will stretch more (Dacron is usually equated with lower performance but note that Dave Ullman won the huge Melges 24 class at Key West last year with Dacron sails) but should last longer than either Pentex or Kevlar. If you primarily cruise, you should consider a high performance Dacron laminate such as the CX series.

There are other issues, such as whether you should have a taffeta backing, (which increases durability but increases weight), composite vs. solid glass battens etc etc. and these can be discussed with your sailmaker. For example, some recommend solid, round battens with non-rotating masts (which otherwise tend to break composite battens).
At the risk of starting a war, let me end by saying that the hyped up promises of North's fancy 3DL technology, or UKs tapedrive system, have simply not been born out in the field. I have never seen a North equipped, or UK equipped F-boat winning in any competitive class where well-designed paneled sails from the cutting edge designers were present (I guess this may start a war, but I stand by what I say). And this is not really surprising, as essentially the 3DL process starts out by gluing a bunch of panels together! 3DL sails are expensive, and do not seem to be any faster. So personally, I think there is a lot of hype going around about their supposed virtues.

If you want to read some more about sailcloth here are a couple of sail cloth manufacturer sites to browse: Contender: http://www.contenderus.com/
Bainbridge: http://www.sailcloth.com/
Don Wigston, 3/99

2. This might be the most important thing we do, trying to match the right sailcloth to the right person.

We are one of the large users of Technora, even though it is a little more stretchy than K49, since we slightly overbuild all our sails, the cloth never gets pushed to the limit and thus ultimate stretchiness is never really tested.

Then the Technora lasts better in the sun, is a lot less affected by kinking, folding and so on. We have real racy Technora sails that have been out there 6 years, I do not believe that you could do that with Kevlar.

Of course we do use a lot of Kevlar (always the top fiber "Edge") but will warn the client honestly as to what to expect as far as wear and tear. We can make much lighter sails with Kevlar.

The newest fiber, Zylon, also called PBO is even less stretchy and more light sensitive (it will actually wear down in ANY light, even in the bag.

Pentex is the newest Polyester like fiber, wears the same, 50% less stretch, but no increase in modulus (breaking strength), it is 30% more expensive than the same cloth with Polyester fiber, but really helps on things like screachers.
Calvert Sails

3. "Square Dacron" is commonly used in beach cat sails and is much stronger than regular Dacron.

Another excellent choice for longevity combined with high performance for F-boat sails is Pentex. But Pentex does not enjoy the economical price of square weave Dacron. In fact Pentex sails are not significantly cheaper than Kevlar.
Don Wigston

4. Our battened square Dacron jib is two years old and still pretty crisp. The shape is great and although it takes a few minutes to setup it spends the weekdays inside the boat or sitting on the boom under cover(as do the sheets). Last spring we bought a square top main from Calvert just like the jib and like it a lot. Maybe a little heavier than the high tech material but it goes up easier than the used one we got with the boat. I think the wine bottles for dinner in the bow lend to more slowing us down than the sail material.

5. My screacher (5 years old now) is made of square weave Dacron. It looks like rip-stop nylon, the concept is the same, but it's Dacron material.
Mike Multi Marine

6. As far as materials go, without going too deeply into it, there has a been huge progress in the last few years, both in cloth and in computers. While just a few years ago it took forever to design and cut a Radial sail by hand, the computer design and cutting does it easily. Radial sails used to be as much as twice as costly, they are now about 20% more, accounting for the fact that those multiple triangular shaped panels waste material (15-25% over crosscut) and we have to tape assemble and sew 30+ panels instead of 6-7 for a crosscut.

But in trade, we now get to spread the mould shape of the sail over 30 seams instead of 6, making a far better shaped, smoother seemed sail while at the same time aligning the much more unidirectional fibers of modern warp oriented cloth to reduce side loading and the need for heavy fill fibers. Sailcloth can then be 30-40% lighter with the same strength, or much stronger for the same weight.

Without going into the respective performance of hi-tech cloths, I will address Cruise Mylar since it is such a great fabric for the performance cruiser who wants durability. With low stretch scrim and Mylar layers sandwiched between taffeta (Dacron) layers, this cloth is almost as rugged as Dacron (I would guess 70 - 90% as durable, some now say more durable) while having the low stretch of its Mylar core. The early types had occasional glue problems leading to some delamination after 5-6 years, this seems to have been addressed well and I have not personally seen one case of premature delamination in the last few years. While I feel that Dacron sails might have a slight overall durability advantage, it looses shape so much faster, making your sail fuller, slower, less able to point, having to be reefed earlier.....

The problem gets worse as the boat size increases, we multihull sailors are the poor cousins of the sailcloth industry, and there is almost no Dacron cloth out there that has the required characteristics for a large roach multi main. Some cloth is sort of acceptable on smaller boats, up to about 7 ounces but becomes awful on larger boats with long booms as the thread count becomes more and more fill oriented as the cloth weight increases.

In conclusion of this long winded exercise, I feel that the small price difference ($300-500 for an F 27) does not justify going with the lesser sail and the small aggravations of the square top are well worth it if you actually sail your boat (not counting a lesser resale value since most Fs have and want a square top, you are looking at a loss of almost the full value of the sail at resell time).
Gilles Fumat, March, 2000
Calvert Sails
calvsail@aol.com

7. The latest sails that I have purchased are Technora radial cut from Ullman sails. After Two years of extensive racing and some cruising they still look like new.

8. Cross Cuts were popular in the 60s and 70s before laminate materials were available. Simply put, the loads on sails radiate primarily from the head and clew. A radial panel sail addresses these loads with fibers aligned with the loads. A cross cut sail, however, only addresses a small part of these loads in the one direction that lines up with the fibers in the cloth. Thus with a cross cut, most of the loads are not carried by fibers, only the stretchy bias/direction of the cloth. This excessive stretch no only detracts from the performance of the sail, especially in high winds, but also shortens the life of the sail dramatically. Building a sail with cross cut material does save on sewing labor and cloth wastage so cross cut sails are less expensive than radial panel designed sails. But...the radial panel designed sail performs better when it is new, and has a dramatically longer useful life span.
Paula Smyth

9. "Special K, " is made by Dimension Polyant (one of the big 3 in sailcloth manufacturers) and is a fabric called Twaron Cross Cut laminate.

Twaron is a low quality Kevlar. It is an inexpensive Kevlar built for industrial products. It has much less Kevlar in the load bearing direction as compared to the Kevlar Edge we use at the Smyth Team. Kevlar Edge is a fabric that was, in fact, developed specifically for sails.

A technical comparison between equal fibers of Kevlar Edge and the Twaron Cross Cut laminate can be summarized as follows: The modulus which is the stretch resistance of Kevlar Edge is 18% better than Twaron, the tenacity (ruggedness) of Kevlar Edge is 24% better than Twaron, and the breaking strength of Kevlar Edge is about 48% better than Twaron. Both have equal U.V. stability.

The bottom line is that it is a low priced product that can be found in the standard Dimension Polyant catalog and it is available to any sailmaker’s who wish to purchase it.

Randy would never consider using this Twaron Cross Cut laminate because it stretches more when it's new, because of the fibers (see above), and also because it is only fairly low stretch in one direction whereas a radial sail has fibers taking the loads in all load directions of the sail. The difference gets obvious when it's windy and the cross cut sail stretches and gets full whereas the radial sail holds its design shape.

If you would like confirmation of any of this, feel free to contact Dimension yourself at 800 441 2424.
Paula Smyth

10. Dimension has been offering a seam gluing system to their customers for several years now, and many sailmaker's have taken to making radial paneled working sails AND spinnakers with out any stitching in the body of the sail (on seams between panels - - most still stitch corners, leech tapes, batten pockets, etc.).

These glued sails are less likely to stretch or come apart.

11. *2001 Carbon reinforced sails...*Yeah it is all carbon in a Mylar laminate. The carbon is actually soft uni strands about 1/4 inch wide. A couple of strands crept out of the edge and it is neat to brush a finger over them. They feel like my granddads shaving brush! The sail is laid up with uni panels oriented along the load paths. A recent development understanding in sail design is that cloths of different makeup (Kevlar, taffeta, colored and clear Mylar) all age and stretch differently. Hence, over time the sail loses shape from this standpoint. Also, look at your sail. If it looks like mine did, it has Kevlar strands going up the sail along the load paths, but none across the sail. This allows the sail to stretch more horizontally than it will vertically. I've talked to two other lofts in addition to Randy, and these ideas was confirmed by them. The carbon (Dimension GSP) and the new Kevlar 49 both have strands running vertically and horizontally. Randy has new software that allows him to design more advanced ideas into his sails. The jib is quite different, more roachy. You should consider it too, and ask him about the differences in cut.
Lyman White

12. a. Dacron - low performance/moderate durability if made heavy enough - crosscut construction.

b. Square Weave Dacron - better performance/Moderate Durability. Can be either crosscut or radial.

c. Mylar - Moderate performance when new/Low durability. Most sailmaker's will do this in radial construction like it should be.

d. Pentex-Good Performance/Good durability/Radial Construction. Perfect for F-Boat applications.

e. Kevlar-Very Good Performance/Poorly moderate durability in most styles. Great for racing F-boat applications.

f. Carbon Composite-Great Performance/Moderate or "decent" durability. Great for F-boats. Very expensive.

13. Materials (February, 2002)....if you want longevity get something with taffeta (Dacron) base or "skins" and Technora, or spectra or Pentex core strands. In my experience Mylar skins are lighter but not nearly as durable, and there is nothing wrong with a good Dacron sail.....many races have been won with them and they last a LONG time.
Mike Leneman, Multimarine

Sails - Code Zero

1. Loads on an F-31:
Bobstay tension = 4,400 lb.
Sideload on bobstay U-bolt (parallel to mounting surface) = 2,300 lb.
Axial compressive load on bowsprit = 4.600 lb.
Halyard/Luff load - 2,000 lb.

We have snapped a 1/4" 7x19 bobstay wire which is good for 3500lbs. or so! So a 2200 lbs bobstay load is way low.
Mike Leneman, Multimarine

2. In our iteration it is a sail that is lighter, fuller, and bigger than a screacher. Mine is 800 sq. ft., so it's smaller than a spin. It sheets outside the shrouds - always. Designed originally to "beat a rule", we hope to use it instead of a spinnaker most of the time. True wind angles of 100 to 140 deg. (note, we never sail deeper than 140 anyway) unless it's really blowing. It has a straight luff and a roached leach.
Cheers, Mike Leneman, F-31 Delta Vee, Multi Marine

3. You can't sail as fast as the F-31R in your F-27 and your apparent wind direction does not change as much.....nonetheless, the Code Zero is much easier to use and sail with and I believe that a smaller sail properly trimmed is better than a bigger sail that is often stalled (i.e. a spinnaker).
Cheers, Mike Leneman, Multimarine

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Mike Leneman, Multi Marine

Sails - Jibs

1. Gilles at Calvert says the following re battened blades: “No way a equally sailed roller fuller boat can stay with a battened blade boat up wind. Order of magnitude advantage (wild ass guess on his part?) is 6 to 7%.”

Well I beg to differ. It all depends on wind strength. In light air, the fully battened bladed boat will indeed have an advantage, because of the extra power. In heavier air, this advantage goes away, and in fact I have maintained boat speed and in fact passed a fully battened bladed (Calvert sails too) F-31R on my standard F-31 with roller furling jib. However there is no question that for the ultimate racing performance the fully battened roachy jib is the way to go as it will never be slower than a furling jib. However there are times when the ease of handling the furled jib may help tremendously--for example when switching from screacher to jib--it can be done in a split second without sending anyone up to the bow.

I believe that for most of us in the long run a furled jib will last longer than a fully battened jib because unless you flog the former mercilessly, you will do more damage to the jib bunching it up on deck than you will do to it based on its lower resistance to flogging.
Don Wigston *(who sells roller furlers for jibs.)*

2. Storage wear for battened sail comes mostly from crimping and folding action. I roll my battened jib.....it's lasted 4 years now.
Mike Multi Marine

3. The full-batten jib is notably faster than the non-batten roller furled jib.....in every race on a variety of conditions and a number of different boats. I suggest that you are over sheeting

the full-batten jib if you are going slower with it. For cruising I would get a partial battened jib.....full battens at the head and short battens at the bottom. The sail folds easier and performs well in light and strong air and LASTS longer.
Mike Multi Marine

4. I am very happy after two seasons with my furling Smyth blade jib. It had noticeably more power than my original equipment jib and it seems to me it can be kept in good trim over a wider range of wind direction. Trailer sailing is easy because I never take it down. It lays on the deck like a damp rag(it is furled around the headstay with no rigid foil).

4. Have your sailmaker install a set of reef points in your jib. If he comes to your boat and measures correctly you will not have to move the jib sheet blocks when you reef. Install a Cunningham hook in the luff reef cringle and a small block at the bow and bring the line aft to a cockpit cleat.

Lets say you're on a port tack going to the windward mark, with one more tack to make before you round the mark. It's gusting to thirty and you would like to reef the jib. Move your lazy jib sheet from the clew to the reef cringle on the leech of the jib. When you are on the layline, tack the boat and while the jib is luffing ease the jib halyard to a predetermined mark and take up on the Cunningham till it's at the deck. That's it. You're reefed. To cleanup the boat afterwards, move the new lazy jib sheet up to the reef cringle along the leech.

If you're cruising or going to be reefed for a long time do the following: Take the old clew which now has no lines on it, fold it diagonally along the horizontal where the reef grommets are in the jib, then roll up the loose sail and tie it to the reef grommets with sail stops like the old square rigged boats did 150 years ago.

Sails - F-28 Mainsail Foot Length

1. > Ian, Gordon is correct. He's built a sail for a 28R. The sail plan you cited shows mainsail foot for the 28R as 145.2 inches (or 3,690 mm, or 12.1 ft). What he found is that is too long.

Yes, you are right, I automatically presumed the F-28R foot was the same length as the F-28, this being the case with all my current designs, such as the F-33 and F-33R, where the foots are identical. It was 6 years ago when I did the F-28, and I am a little busy with the F-33 at present to spend too much time investigating changes to the F-28, and thus didn't look any further on the F-28 sail plan than the F-28 foot dimension, the F-28R dimension being further down and slightly longer.

I did however recall, as stated in an earlier posting, that I maxed out the F-28 sail dimensions as much as possible to try and prevent the sort of changes that have occurred, and this is why the F-28R foot is slightly longer. It is right on the limit in other words at 145.2" - 146" is too long.

> A question though. I am assuming that the foot measurement you quoted is measured from the tack to the clew, with the tack defined as the intersection of: a) a line extending the foot and, b)an extension of the line drawn along the outside edge of the bolt rope. Is that correct? Because this corner is well below where the bolt rope ends.

That is correct, one normally extends the bolt rope line down to where it hits the horizontal foot line, and this is the measurement point. Similarly at the clew. Then the corners are cutaway as shown on the sail plan to give room for the gooseneck and the outhaul. You will note I also had two clew eyes shown on the sail plan, so I must have had my doubts about the F-28 foot length at the time, and added a second clew eye just in case it was too long and there were problems. The second would only be of use, however, if the boom is made to plan.
>
> Also, was it expected that the boom for the 28 mainsail would be shorter than the boom for the 28R mainsail?

No, the booms are the same, for consistency, and boom is relatively short, for minimal overhang at aft end (and to prevent oversize mainsails). But if the boom is built to my plan then the 145.2" F-28R foot will just fit.

However, if boom is not built to plan, and without the 2:1 strop system that I specify for the F-28/F-28R outhaul, then the F-28R mainsail is not going to fit very well, if at all. This would be the case should a simple wire with shackle outhaul be fitted. There is enough track, just not much room between outhaul exit block and clew eye, particularly if the sailmaker fits clew eye right at the very aft corner.

The reason for the 2:1 strop/line system, with one end of the line going to a cleat on the boom side, is to give more leverage, and an outhaul system that can also be reused when the sail is reefed by roller furling, giving one jiffy reefing style controls. Just uncleat the outhaul line from cleat on boom side, pull out line, and rethread through new clew eye. However, outhaul cleat must also be in the specified position under the boom and aft of rolled mainsail, otherwise this will not work either.

>You specified foot measurement for the 28 to be 1-1/4 inches less than that for the 28R. The Class Rule shows a maximum length of 146 inches for both sails - no differentiation.

I don't have a problem with them being made the same - my problem is with the changes originally being made without consultation, and the resulting 146" then being too long, plus the square top being made wider than I believe appropriate.

This is where the whole can of worms with design changes can begin. When I do the original design, most things will usually fit and work, and then the first boat is launched and tested to find the few areas that will not, and these are then corrected.

However, 'after the fact' design changes made by others without consultation can then have negative ramifications in a number of areas, to where things will no longer fit, or worse, failures can occur.

Ian Farrier, http://www.f-boat.com

Sails - Genoa

1. Leave the genoa in the basement, it is a poor choice for the F-27. You will lose 10 degrees upwind compared to the blade jib. Your tacking angles will be 100-110 degrees with the genoa, 90 with the blade.

2. >It may be a sign of age but these days my feeling is if it doesn't roller furl I don't want it!

Blade jibs certainly don't need to be on roller furlers. Anyway, genoas don't work well on rotating rigs, they close off the slot between main and genoa too much. In 5 to 10 (max) you could have tried the screacher.

Since it has a bigger "J" and less overlap than a genoa it SOMETIMES works well in these conditions. It is also the Achilles heel of the F-31R and F-28 R.....upwind in 5 to 10 kts. Cheers, Mike Leneman, MultiMarine

Sails -Kites - Not Spinnakers

1. >How do you go under a bridge with a kite sail?

Thom, haven't you seen those kite board sailors - you just accelerate, pull hard on the string and fly up and over 'em.
Ian Farrier

2. I had a chance to experiment with some traction kites in September, hoping to adapt something to my small tri. Not exactly what the guys are doing with kites made for the boat, but similar.

Perhaps the biggest issue is touched on in their discussion - you don't have a spar supporting your sail kite. So while a momentary miscue on a spin will have the sail flogging or deflating, the kite will be in the water. The other issue is the need for some significant amount of wind. The advantages to kiting come along as the wind speed picks up. Short of that the kite offers few advantages.

And when the wind does reach the useful range, things heat up radically. I found myself skimming along at powerboat speeds far in excess of hull speed. Foils cavitating, with a vague rudder. Maybe the AC guys like it this way, but yikes. And stay away from bridges and power lines - that thing has to stay at least 100 feet in the air.

Kites have promise, but the boat needs to be designed for +20 knot speeds. Mine was not.
Bob

3. Our kites can fly to within 45 degrees of apparent wind. Thus a good bit higher than asyms, but not (generally) upwind, especially on fast boats like F-boats. They're competitive to about a square reach on fast boats, and down to dead downwind, in sufficient true wind. There are kites which will sail extremely well to windward, but none I know of which will either a) fly with the boat's rigging in place or b) self-launch from the boat unassisted.

Our kites are flown from 3 sheets, lead to individual winches. We've used boat's existing spin sheets, but most aren't long enough, and we like to use tapered spectra or Dyneema-cored lines smaller than is typically found aboard (1/4" Dyneema SK75 is as strong as 9/16" Dacron, for instance, at 1/8 the weight). We also like to take the launch/retrieval line up the mast to the hounds, so we have a simple launch and "suck it out of the muck" line, but this isn't strictly necessary. This line is kept slack at all times while flying.

Other than long thin sheets, almost nothing else is altered. The flying lines are typically taken from the kite through turning blocks, either at the genoa cars and or at the stemhead, then back to the boat's regular winches. I like to use the primaries for the wingtips and usually a halyard or other winch for the tail line. I like to tail both primary winches, have the helmsman tail the tail line, but others will do it differently.
Dave Culp, www.kiteship.com

Sails Main

1. No question- for ease of use cruising the pinhead is your choice. Having a cat and F-boat with each type of sail the pin head main will:

a. let you sail readily on just main alone, minimizing "weathervaning"

b. raise and drop main without having to deal with the top several feet of sail that won't lie flat because of the top batten holding the sail up

Benefits of square top are mostly realized by racing - and a rotating rig.

It'll be interesting to hear what the rock star set says.

2. Having followed the mainsail material and square top controversy for several days and in the absence of my esteemed competitor's reply, I thought I would throw in my 2 cents worth.

Square top or not: The square top originates from the basic observation that masts, especially fixed masts create a wind disturbance. This disturbance extends behind the mast proportionately to mast size, windspeed and other factors. While this disturbance is a problem and should be minimized over the whole sail, the interesting point is that by the top of the mast, the disturbance can actually extend further aft than the sail, making that area useless. Since it is useless it might as well be removed and cut off. You now have a sail that is actually a few feet too short for the mast. If you push this concept, you can in fact make a much taller

sail, proportionately carrying a lot more roach and cut it off at the top of the mast. You now have a bigger sail with more useful area.

The second interesting thing with the square top is that this fairly unsupported area will tend to twist quite a bit, naturally trimming itself to account for differences in windspeed between the top and bottom of the mast and thus raising again the sail efficiency. The third good thing, is what Rick White calls the "automatic transmission effect", as the wind picks up, the unsupported area bends and twists off more and more, depowering itself effectively and lowering the center of effort through a flattening of the top part, thus keeping the boat at least as stable as a pinheaded boat (although by then you have lost your power advantage).

>From these we can say:

a. Square tops are more powerful in light air.
b. More profitable on fixed than rotating masts.
c. Not more overpowering in higher winds.

For all this, all you have to do is deal with a harder to raise main with a little more wear and tear in the top part (luff rope essentially) and to find a way to deal with that diagonal top batten.

Not a bad deal I think, if you like performance.
Gilles Fumat, Calvert Sails, calvsail@aol.com

3. I replaced the original pinhead main on my older F-27 a few years ago. It is the right thing to do if you want a little more power in light or moderate air. There are very few pinhead mains out there anymore. The one disadvantage is that the boat will no longer be balanced when sailing with main alone (the square-top puts lots of new sail area aft of the daggerboard). I was amazed at how dramatic this effect was. So if you like sailing with main alone, this may annoy you. However sailing by main alone is an uncommon sailing mode and the boat is very well balanced with square-top plus jib.

4. I replaced just the top third of my pinhead with square top on my F-31. It worked well although I was surprised by just how much extra weather-cocking effect there is. When tacking in a good breeze and you leave the mainsheet hardened in, you have to get the jib in quick or you end up stopped head to wind but it is not a problem unless your crew is a bit slow to wind the jib in.

Although I have slab reefing, I did not want to extract the 45 degree batten when lowering sail onto the boom, so I have a pin between two roller slides at the headboard. When lowering sail, I simply pull out the pin and the head of the sail is then free to move aft allowing the angled batten to lie neatly along the boom. This is quick and much easier then trying to deal with a long batten whilst standing on the cabin top.

4. We've been very happy with our choice of a square Dacron(for longevity) Calvert square top for our replacement sail last year. 99% of our sailing is cruising with just the two of us

and the top bends off when the breeze is high and when the wind is light it gives us a little extra sail up high. The top batten is pulled out and put in the slot for the 2nd batten for storage and even though we have had people mention the problem raising it with the topping lift in the way it has never been a problem. We just pay attention when the sail gets close. Of course when we decide to race we can sail with the formulas that much closer.

5. No question in my mind- get the square top. Its not as if the boat is overpowered and you will sail more in light air. I have a UK tapedrive and have had no problems with furling. I made a batten pocket on my sail cover for the top batten that you need to remove to roll the sail completely.

6. Having recently made this decision myself, one factor I considered is that with the square top I presume you would have to reef earlier--another reason the pinhead is more convenient for cruising.

7. By the way, the boat IS well balanced with reefed square top main alone.

8. "Square tops" with diagonal battens do offer good sail shape and power up high, as well as the ability to "twist off" as the breeze increases.....but that can all be done with horizontal battens and an elliptical shape as well. We have been doing it for 6 years! And Winning! As well, we can roll the sail around the boom without having to remove the top batten (a very nice feature). This "square top" thing was introduced to get more area than the old "pin heads" but there are other ways to do this. You will note that the following boats DO NOT use a "square top": all the Formula 60 trimarans, all the new Vim's (Very Large Multihulls), most of the Formula 40's, etc. etc. Even the very fast Windsurfers have gone away from the square top in favor of elliptical. Square tops are a good marketing idea.
Mike Multi Marine

9. We just bought one of those "left coast" full elliptical mains for our F-27 as a replacement for the old pin head. We love it. Its faster than the pin head, its easier to handle than a square top, is easily reefed and its damn pretty too. Don't know if its faster than a square top however.

10. I like my UK Tapedrive (square top) made at the San Diego loft. Nice shape, rope luff slides well, battens at the right angles for easy roller-furling. Bought it a couple years ago through Corsair for $2500. or so. (February 2001).

11. In response to Tim's question on what to do about the poor shape at the head of his sail.....Take it to a real sailmaker and have the top vertical batten eliminated and the head cut down a bit so that no sail sticks above the top of the headboard. I think you'll be happier. This business of trying to add sail area above the headboard looks great on paper but after the sail stretches a bit, it looks pretty poor and you don't get any reasonable shape from the top.
Mike Multi Marine

12. A little more information on mainsail luff/headboard pull out problems and masts:

Whenever getting a new mainsail, or taking delivery of a new boat, remember to check the mainsail luff, particularly at the headboard area. It is hard to ensure that plans or specifications will be followed every time (the world would be a much better place if directions were just followed) and many monohull sail makers still don't realize the high loads that a multihull can develop.

So check that the bolt rope is at least 3/8" or 9mm (unless the mast has a small luff groove, but no less than 5/16") and that the luff rope is of a hard smooth braided type. Reject soft ropes, or the traditional 3 strand twisted together type, as these can lever the track sides apart more easily. If slides are used at the headboard they should be at least 1 1/2" long, 2" is recommended, or two at 1" close together. If a carbon mast, it is recommended that the luff rope be replaced by one or two fiberglass rod inserts at least 4" long at the headboard.

Softer or incorrect luff ropes are more likely to pull out of a mast, and once this has occurred it is then much harder to fix the problem as the mast has now been weakened in that area, and more pull outs are very likely. Two many pull outs may weaken the mast to where the only cure is fitting a new separate track. Thus it is best to make sure a pull out cannot happen in the first place, and this applies to both aluminum and carbon masts.
Ian Farrier

13. >Incidentally, I notice that the square top main is sometimes blamed for the tendency to round up. I can't see how this can be, because the extra area is forward, not aft, in the sail.

Yes the extra area of the square top is almost directly above the center of effort, so this has little effect on weather helm. However, it does increase the efficiency of the mainsail as a whole, giving more drive from aft in the boat and hence slightly more weather helm, but which is particularly noticeable when sailing main only. Thus square tops should not be made any larger than specified, otherwise ability to sail main only can be lost.
Ian Farrier, http://www.farriermarine.com

14. The boomless main remains an interesting option, with still more room for development. I still have my reservations and hence it has never been a standard feature on any of my designs other than the F-25C or F-82R (amateur builder version on the F-25C), but both these have a fixed boom option. However, it was interesting some years ago when an F-31 crossed the Atlantic with a boomless main, the Dutch skipper being a very experienced sailor with one previous Atlantic crossing in an F-27. I did not think the boomless main on an F-31 was a good idea for ocean crossing, and expected to find him unhappy with it. However, he was very enthusiastic and said it worked very well. So the jury is still out.....
Ian Farrier, http://www.farriermarine.com

15. The F-28R sail plan calls for a 3/8" to 1/2" bolt rope, and covered with a Teflon tape. The sail plan can be downloaded from my sail plan site at http://www.farriermarine.com/sails.html
Ian Farrier

I don't think head form matters much regarding weather helm, but more roach than I specify does. On all the standard F-31s I have sailed, pin head or square top, they all sailed fine with

main only. The only one that did not was actually a square top, but an excessively large one, coupled with even more roach. So if having a problem in this regard then first thing to look at should be the mainsail itself.
Ian Farrier

18. Sorry guys, just could not leave this subject alone, as I would prefer to see all boats go with square tops for a number of reasons including a uniform look for all my designs, they have proved to be better on identical boats, and I prefer not to hear from disappointed owners who decided to go with elliptical tops. It is harder to then convert these to square tops, while it is easier to convert a square top to an elliptical top.

A little history on square tops may be of help to decide which is best for you:

Square tops were first introduced to F-27s by Randy Smyth and Eric Arens, and I was originally reluctant to embrace them due to my already expressed concerns about adding more sail area up high. However, I tried them, and this, plus many other favorable opinions, eventually convinced me to change the F-27 stock sail plan to include square tops for the last year of production.

Randy was then given a free hand to redesign the F-25C sail plan, at which time he also introduced the recessed halyard. This I felt was another brilliant move as it eliminated the extra weight and windage of the mast sticking up above the mainsail. I then decided to incorporate it in all my subsequent designs, as one can get away with a shorter mast with less weight and windage aloft - which is just another one of those many small details that can add up to a good design. Randy then agreed to do the F-31R sail plan, with excellent results, and has also just optimized the F-41 sail plan.

The square top and recessed halyard have thus now become standard features on all my designs, and any sailmaker recommending against them is not a sailmaker I would endorse. Instead I suggest you go to one of the many other experienced multihull sailmaker’s who do support such sails, such as Randy, who will be only too pleased to help.

Don't mistake this as a condemnation of elliptical tops, or think they are bad sails, as this is simply not true - some of my best friends (such as Mike) still use them. I am just stating my position as designer. They are another choice, and in this regard check out the photo under April 2000 on my history page at http://www.farriermarine.com/index/history.html This F-9R performed very well, except he probably would have done just that little bit better with a square top to plan!

I believe the rebated square top may have been invented by Randy Smyth, but I could be wrong - A Class cat sailors are also very innovative and it may have originated there. However, the moment I saw it on Randy's version of the F-25C sail plan I immediately appreciated that it was a significant improvement, and hence adopted it for all my subsequent designs. Many sailmaker’s are incorporating it as per plan, though in the end the decision is up to them and the owner. However, I would not be without it.

Construction of the headboard is obviously going to be a little more difficult than with the typical pin top or even square top mainsail, and it is going to take some extra effort. Different solutions can include a short vertical batten, a custom aluminum headboard, or perhaps even stiff Mylar/plastic imbedded in the head itself. Obviously, some methods will not work out, and new techniques may be needed, but eventually the right system will be developed. Wrinkles in the head area are not unusual with any sail, and can also be from faulty tensioning, bad battens, or just a bad cut.

The rebated square top does not represent an improvement for fixed masts, the mast itself blanketing the head area and making any beneficial air flow impossible. So you are not going to see it on monohulls, and the very top of their sails is usually regarded as ineffective. But combine the rebated square top with a rotating mast and an improved air flow can then occur over the head area, making it now possible for this to contribute for the first time. The sail's effective leading edge is immediately increased to the full height of the mast, eliminating the top parasitic bit that is only there to support the halyard. The additional drive/efficiency will obviously be small, but it is an improvement.

Adding a rebated square top to an F-24 Mk II will increase the effective mainsail leading edge by around 2.5%, and many monohull sailors would pay a fortune for this sort of advantage.

I have always found it interesting how anything new in sailing can immediately attract instant opposition and will be resisted by many or even banned for years before it is finally recognized and adopted. This has happened with Bermuda rigs, aluminum masts, Kevlar in sails, multihulls of course, still ongoing with carbon masts, and I experienced it personally with my original designs and folding system. The knockers had a field day with this - what better target than a trimaran in the seventies, and, even better, one combined with some sort of contraption folding system! Many delighted in constantly telling me that it would not work and trailerable trimarans would never succeed!

So before anyone rubbishes the rebated square top too much, it may be wise to pause and do a little serious thinking.

Ian Farrier, http://www.farriermarine.com

19. Bolt ropes can be great or a curse, depending on how they are setup. They have to be used for boom roller furling mains to work properly, and there are some important factors to look for:

a. Bolt rope should be a hard smooth braided line, and have a tough smooth cover for maximum resistance to wear and tear. Avoid the twisted strand type line as this will be a major jamming or pull out problem.

b. Good feeders are critical with the roller furling boom. They must be effective and of sufficient height (at least 20"/500mm) above boom center to allow easy feeding as the boom unrolls. Too low and the bolt rope will be more likely to continually jam. Slot opening also needs to be of sufficient length below feeders, to give the bolt rope plenty of room to enter

mast, with length depending on mast section. A 21"/530mm long opening was used on the original F-27 section, but later masts could get away with less. All edges should be well rounded.

I also tried and tested many commercial feeder types when setting up the original F-27 system but found they all had problems. Most work fine with a non-roller furling sail but do not work well with roller furling where the demands are greater. Custom feeders that screwed directly onto the mast each side of the slot, right at or just below the bolt rope entry point, were developed, which worked well, and these feeders are still the recommended option.

However, they must be positioned correctly and be of the correct distance apart to work properly, and should be held on by machine screws to allow some adjustment to suit the mainsail. Unfortunately the factory fitted feeders for the past year or so have had the gap too wide, and some have been held on by pop rivets making them non-adjustable. This wide gap was still a problem on my final visit to Corsair late last year, and if buying a new boat, insist on having correctly positioned and adjustable bolt rope feeders put in the sales contract and this may then finally get a result.

c. Be sure also to check mast and boom track area where bolt rope feeds in. It is not uncommon for masts to come with sharp edges here, and also check around the halyard slots in the mast step. I put procedures in place to have these checked and remedied at the factory, but it proved hard to ensure such procedures were always followed. Any sharp edges can damage your mainsail or halyards, not to mention ruin your day.
Ian Farrier

20. > Is there any practical way to measure or define how "full" a particular mainsail is? I understand the concepts of chord and draft, but can you measure it on a sail?

You can take a photo from the cockpit floor looking straight up the mainsail. The degree of fullness up the sail can then be easily measured on the photo from the batten lines, and using a ruler. Should usually be around 10%, 12% at most.
Ian Farrier

21. My last racing mainsail lasted 7 years! With no loss of shape or speed. It was a Spectra cruise-lam (heavy) with an elliptical top and parallel battens so that it rolled up on the boom with ease. I now have a Cuban fiber (square top only 'cause that was what they make) sail which weighs less but has no rebate.....and time will tell.

Re-cutting a rebated mainsail.....I suggest cutting off the re-bate and trimming the top of the sail from the headboard or new headboard to the first batten. Adding another batten will maybe help for a short while, but THE problem is the rebate. Get rid of it.
Mike Leneman, Multimarine

22. If roller-furling booms are set up right with the right sails then they are fantastic on big sails (C/F 31).

After rolling the sail up around the boom as best you can, hold the headboard and COUNTER ROTATE the boom handle, this will loosen up the whole roll and allow the battens to straighten out; usually, unless you have really angled battens. In which case, the only solution is to find another sailmaker.
Mike Leneman, Multi Marine

23. I doubt that slugs will make reefing any easier if the sail is loaded up and unable to be luffed. The total load that is now being exerted over the entire bolt rope will be transferred to the slugs (mostly at the batten slugs) and will probably be more difficult to reef. There are systems (such as the Tides Marine Strong System) that will make this task easier than simply bolt rope or slugs. The best bet is to totally unload (luff) the sail, when possible, to effectively reef. Even partially battened, fixed mast monohull sails have difficulty reefing when the sail is loaded.
Rick Zern

Sails - Masthead

1. I think masthead spinnakers or screachers are just too much trouble for average day to day sailing with the extra runners required etc. However, they can be useful in light weather areas, or those big races, where the extra complexity can be justified.

I used a masthead spinnaker and gennaker (with supporting runners) on my SuperTramp back in 1983 for Australia's classic Marlay Point Race (generally light weather) but did not bother using them otherwise.

The new F-38ST has a masthead spinnaker as standard, it being designed to be as fast as possible in every condition, but in general it is not a sail that is suitable for the all round use that my designs are intended for.
Ian Farrier

2. The masthead rig allows longer luffed screachers (and spins) primarily. This isn't such a big deal but it also allows separation between jib luff and screacher luff, allowing for a more efficient "double headsail rig" on a reach. The screacher is then so effective that you barely need a spinnaker; ever. I developed this due to the light airs we predominantly have in So. Calif. and my general dislike of spinnakers. Now we are using a roller-furling Code Zero and a jib and find that so far it's as fast as a spinnaker.....but we've only done the two boat program in light (6 - 8 kts.) winds. Time will tell in the near future. New motto for bowsprited sails " all roller-furling, all the time". Why go shrimping when you can roller-furler. Don't get me wrong.....I'm still not excited about roller-furling jibs - due to mast raising and dropping difficulties.
Mike Leneman, Multi Marine

Sails - Sail Lofts

1. I personally am VERY pleased with the Calvert Sails weight, strength, shape, and speed of our new square top from them (and it's way fast).

2. North Sails does not have my [writer unknown] endorsement due to their failure give me any assurance that they would build sails to specification, after some past instances which resulted in some class uniformity problems.

It is also worthwhile to note that supplying sails to large 'one off' multihulls is not necessarily an indication that they are fast sails, unless identical competing boats with different sails have been beaten. For the fastest multihull sails, check what is on the winning boats at events where there are identical boats, remembering that crews are also a factor.
Ian Farrier

3. Dave Calvert certainly makes a great set of sails for F-boats. Randy Smyth makes excellent sails also. In fact I think if you look at the results of the Corsair Nationals in 1999 you will find Smyth and Calvert were fairly equal overall, and ahead of the competition (with the caveat that you cannot obviously credit the sails with winning the race--the crew and skipper have a small influence also:)

For example in the hotly contested F-31 class, Doug Harkrider (Smyth Sails) was slightly ahead of Bob Gleason (Calvert Sails) if you do not take the throw-out. After the throw-out the two were tied, and Bob won the tie breaker for the win. Pretty even though I would say.

In the F-28 class the Young brothers won by a good margin with all Smyth Sails. Second place was I think either Ron Roth or Phil Styne, both with a mix of Calvert and Smyth Sails. The F-27 Class was won on handicap by Dave Lussier with a Calvert main and unknown (by me) other sails, second and third places were I think Tony Townsend and Doran Cushing both with full sets of Smyth Sails. I am not sure about the F-24 Class, but I think Mike Parsons had a Calvert spinnaker, not sure about his other sails (UK perhaps?). Of course Randy Smyth himself was out in front in all races that I can remember, and I think he uses Smyth sails too! But I think by now you are probably getting the picture.

If the best performance is important, I personally would go with these proven winners and simply use UPS to take care of the distance factor. With e-mail communications and UPS delivery, I really don't see that proximity is as important as it used to be.
Don Wigston

4. I feel compelled to put a word in here for Elliot-Pattison Sails in So. Cal. and Jay Glaser both whom make very good sails. My race sails are over 5 years old and still winning.
Mike Multi Marine

5. I'll put in my 2 cents: My UK main, jib and spinnaker were very good out of the box, but I needed some minor rework on the main, and UK promptly took care of it. The UK Screacher stinks. As for North, I bought a North main for my leaner from the Charleston SC loft, a little rat named Squeaky (I should have known by the name) absconded with the money. After

eight months of "discussion", North Sails Chesapeake finally sent me a "club racing" main, a piece of junk. I probably will not use a North anything again on any boat.

The thing about Calvert and Smyth is that they are both active multihullers, know the boats and the conditions. Randy had even given me advice on my UK sails, and is known for being particular about what his loft puts out. I have heard Calvert is the same way. IMHO you can't go wrong with either one.

6. And speaking of equipment limitations, the UK tape drive sails that came with the F-28R never performed very well, and weren't very durable either. When we got a new jib from our local Neil Pryde sailmaker Scott Rush, our pointing and race winning ability improved *dramatically*. If you want to win races, get a good local sail maker who knows F-boats, and who will come out sailing with you to get them tuned up.

7. There are lots of options out there but for my two dollars worth, I like to use Smyth Team on Silverheels. The others North / Sabre / Calvert /Ullman all have a fair shape, but Smyth really knows what is fast and how to build in durability. Look at your sails as the motor for your boat. Just because we all mostly cruise doesn't mean we don't want the best shape, and quality for the money.

8. I've got a Calvert main on our MKI, Sandy Bottoms. It's our 2nd Calvert. The first was much heavier and had, in my opinion, too much draft built into it. The 2nd main we got from them is flatter, at our request, and MUCH lighter, yet still bullet-proof (Technora). With the new Calvert main our light air performance improved substantially and when the wind blows, we're outta there.

9. I purchase my sails from Gary Martin Sail, Multihull Specialists. These sails are made right in their loft in Southport, Queensland, Australia. I found them thru Mr. Farrier. The workmanship is very fine-the materials first class. What makes me smile every time I go sailing is the PRICE- the exchange rate is GREAT!!!!! I save SO much! The price even includes shipping!! I warn I have NO interest in this fantastic Co. But are they wonderful! They have a web site, but I e-mail them at gmsails@winshop.com. Happy sailing.

10. You can use a square top main on a fixed-mast F-31, and it will give a definite improvement. Two sailmaker’s in Australia who can do a very good job of a square top main are Gary Martin Sails (Gold Coast) and Ian Davis of Hood Sails, Brisbane. Many sailmaker’s are not familiar with square tops and may try to persuade you otherwise and you should avoid these.
Ian Farrier

Sails - Screachers

1. One of the big attractions of the screacher is ease of use, due to it being on a furler. Take it off the furler and I don't think it would be manageable.

The screacher tacks at the end of the spin pole, 5 or more feet past the bow. How would you attach/detach the tack? Or would you tack it on a tack line like the spinnaker? That would lead to a whole new batch of structural problems...the loads on the screacher luff are huge, if they were carried down the pole by a tack line and up to a cleat on the deck, the compression loads in the pole would cause trouble, perhaps even buckling the pole.

Buy a furler, and don't try to scrimp by with a marginally sized one, that screacher becomes a big liability in a blow if the furler jams and the sail can't be rolled up.

2. The term screacher comes from a combination of Spinnaker and Reacher (hence the correct spelling screacher). In practical terms however a screacher IS a headsail as it is used like a headsail and has therefore has been treated as such in the class rules for Farrier boats. The practical differences between a screacher and an asymmetrical (note correct spelling) are that a screacher is typically cut much flatter, and is built of stronger cloth, typically a Mylar laminate of some kind. A spinnaker is of course typically built of nylon or something of comparable light weight. Typically a screacher will be used at higher (i.e. numerically lower) apparent wind angles than an asymmetrical spinnaker. But a screacher can be used as a "storm spinnaker" especially when sailing short handed.
Don Wigston

3. On my F-24 MK I, I have eye straps along the edge of the main hull. I Take the barber hauler block and attach the shackle to the eye strap at the edge of the main hull.. This gives me the same effect as if I had a jib sheet block on a track. By easing it in and out it is just like moving the jib sheet block fore and aft. Of course this is used only when going to weather with the screacher.

4. Screachers should be sheeted inside the cap shrouds for better pointing ability, but may be sheeted outside if being used as a spinnaker.

5. Is a Screacher worthwhile? In a word YES. But if you rephrase the question to "Is a screacher worth the money?" it is more difficult to answer. In any case, having a dedicated screacher halyard and sheets is the ONLY way to go. For one, there is way to much stretch in the standard (polyester) spinnaker halyard to get the luff tension you need for the screacher. Second, you want to eliminate the stretch in the tack line by tacking the screacher furling drum directly to the bowsprit. That is why all new Corsairs have 4 halyards and a tang or eye on the bowsprit for the screacher (if you order the spinnaker and screacher control kits that is). Installing an extra halyard in an F-27 or F-24 is well worth the (small) effort. The process for an F-24 has been described in detail in past F-24 newsletters, archived on the Farrier Class Association web site.

I just returned from delivering/commissioning an F-31 to a new owner. On the first day out, we hit 17 knots in about 12 knots of breeze (no whitecaps), close reaching with the screacher. Under jib, speeds were more like 9-10. I guess no one NEEDS to go 17 knots, but it sure is fun. I would venture to suggest that the BEST application for the screacher is for cruising, and advocate putting UV protective strips (white) on screachers so they can be left up all the time. True, this creates windage when they are not in use, and probably shortens the life of the sail,

but after all, the point of the sail is to use it right? You just can't beat the convenience of a roller furling jib combined with a roller furling screacher (not to mention a roller furling mainsail mind you...). For racing, particularly on windward/leeward courses, the advantage of the screacher over a powerful well designed jib on most F-boats (except the F-25C which has a very small jib) is IMHO marginal at best. But for cruising, on all the F-boats, its killer. Some days you can cruise with only the screacher and save the hassle of raising the main. I must be getting lazy as any way I can think of to avoid folding a jib and genoa at the end of the day sounds like a good idea to me. Plus I would venture to say that a screacher left up all the time would probably last about as long as a genoa that got dragged around on deck, stood on occasionally and folded every day. Oh yes, I like my screacher.
Don Wigston

6. > Do you have any suggestions for tacking a big screacher through a small forestay slot?

I have found that Sailkote on the screacher and forestay helps.
Peter Dube', Wild Thing, F-24 II #311

Sails - Spinnakers

1. last weekend was my first use of an old Niel Pryde asymmetrical which came with my F-27. It's great in light air and worked in AWA between 100 and 50 degrees. I noticed by losing the tack up to 6 feet off bowsprit I could achieve a fairly high angle 50 degrees and very good boat speed for the actual wind speed available around 5-7 kts, the boat went 7-9 kts. Great upwind sail, I cannot see the need for the screacher unless the wind speed is higher or I need to point up more.

It does seem strange that a looser luff works better upwind but it works. I love the asym its a huge advantage over a symmetric kite and much easier to use.

Sails - Spinnaker Bags

1. The best (most reliable & simplest) bag is the one described by "BoatDoc4" from Calvert Sails. Finally one that stays put, is extremely easy to load with the spinny and keep the corners where you want them. Just drop spinny into large mouth rectangular bag whose flap edges are tensioned with shock cord. It's like having an extra pair of hands.

For security when not in use there's an easy clip to hold it closed. All four corners have clips for easy attachment to tramp, lacing, etc. Also has large mesh sides to let water drain fast while in use.

Sorry to sound like an infomercial - I've loathed the cylindrical bags that made chute a drag (literally).

2. Randy Smyth makes a triangular bag that attaches to the inside corner of the net. It's big and has zippers down 2 of the 3 sides. When I first got it I thought it was WAY too big. Until the first time I used it. It's FABULOUS! There's never any tension of the chute coming out of the bag, it's far easier to stuff when doused because the opening's so big, and it's a great cushion to lean against when you're going to weather in light air.

IMHO, Smyth's bag is far superior to any turtle bag I've ever used.

Sails - Storm Jibs

1. I have had a storm jib for 9 years and it has never been out of the bag. Unless you are doing long distance cruising or long races, you will not need a storm jib. I have one because it is required safety gear for the Mackinac Races here in the Great Lakes.

2. Another option for a storm jib to use with furling jib is to get the type made by ATN (Gale Sail) that has a luff that will fit around the furled jib. We have put a 60 sq ft. Gale Sail on our F-31 with Don Wigston's Profurl setup. The sail fits and sets well, although I haven't yet had the boat out in a storm for a true test.

Sea Anchors

1. As recommended in the Sailing Manual, a properly set up sea parachute with a long elastic nylon rode is the only way to go when caught out in a large storm offshore with huge seas. It keeps the boat bow on while the nylon rode is intended to stretch allowing the boat to absorb the punches. The general principle has now been proven offshore many times.

The more usual sea anchor (drogue) is fine for slowing the boat down when running, but is virtually useless in holding it bow on. One needs a full size parachute for that, and staying bow on is the best way for a multihull to survive the rogue waves possible in major storms. Where such waves may be possible, running is definitely more risky.

A sea parachute is not necessary for general coastal and inshore sailing, but if crossing an ocean (not a recommended use for trailerables) it is the first piece of safety gear I would put on. I always carried one when sailing my original tri off New Zealand where it tends to get very rough very quickly.

Only used it in practice - my tri was fast enough to get out of trouble when needed. Spent one full afternoon running at 12 to 15 knots up the coast of the South Island in front of a 'southerly buster' to reach Port Underwood in Cook Strait - 15 knots was fast for those days. It then gusted up to 80 knots for three days, and would have been definite parachute time if offshore. Glad I hadn't been caught out there in a slower mono. One who did make it in just after me anchored alongside, but was being frequently laid flat in the gusts just from the mast windage - so he came over and stayed on my tri.

Ian Farrier, http://www.farriermarine.com

2. >What size chute (sea anchor) would you recommend for an F-31?

Best to check with a parachute specialist or supplier such as http://www.paraanchors.com.au/

Another excellent source for parachute sea anchors and information about them is

Victor Shane,
Para-Anchors International
PO Box 19
Summerland, CA 93067

Tel: (805) 966-0782
Toll-free: 1-800-350-7070
Fax: (805) 966-7510

Website: www.dddb.com
Ian Farrier

Settee Crack at Daggerboard Case

1. > Has anyone ever had a crack appear where the seat (interior port seat) attaches to the daggerboard trunk? Mine has about a 2 foot crack that flexes nicely while under sail. I likely will have to glass the inside of the crack, but I wanted to know if this was a common problem first.

Not a serious problem, the main structural attachment for the daggerboard case to the seat being a fiberglass 'strap' around the back edge at the top of the galley side seat.

The side flange that I think you are talking about is not structurally important, and I would suggest just re-bonding back to the case with some 3M 5200 polyurethane adhesive. You can use some small screws to hold in place while setting up (no longer than 3/8") - just be careful not to drill right through daggerboard case side, just the initial laminate layer is enough. Get plenty of 5200 in the screw holes as well to reseal.
Ian Farrier, http://www.f-boat.com

Shackles

1. Wichard shackles are made of very soft metal. It cuts quite easily with a hacksaw and bends with little force.

This means that it will seriously deform before it breaks - a good thing, making it easy to inspect.

It also means that it doesn't have much wear or chafe resistance, and as those things are harder to inspect, be careful with them.

The poor chafe resistance was confirmed by the mainsheet shackle that attaches to a tang at the end of the boom. The tang is fine, but the shackle was badly worn. Yes, Second Chance is a 1989 boat, so it's been a few years, but it hasn't been sailed hard.
Dave Paule, F-27, Second Chance

Showers

1. We used the Solar Shower for a while, but found the trickle less than great. Last year we switched to a 1-gallon garden sprayer (sounds better than bug sprayer) with pump pressure... good for getting shampoo out and rinsing off. I can take a decent shower with less than half a gallon. Paint it black and it heats just like the Solar Shower. An added plus: it works great for getting dirt off the deck... our summer dockage has no fresh water. :-(The one-gallon weight is easy to tote around; the container has a convenient handle.

OK, this has little to do with where to put a water heater in an F-boat... but, it works. I just need to figure out a way to get a microwave, fridge, water heater, shower stall, satellite TV, 100 gallon fresh water tank, and Select Comfort bed into my boat... oh yeah, and make it all weigh less than 20 pounds!
Jim Bathurst, Wide Open, F-27

Sound Systems

>I'd like to mount some speakers in my F-24-II. There are two indentations in the forward third of the cabin that house part of the folding mechanism (on the outside). The interior of the indentation is unused space. I would like to cut a hole in the rear face of the indentation to flush mount the speakers.

>Is this a structural member? Would the boat be weakened by a 4-6 inch hole there?

Sorry Steve, but this is an important structural member, and I cannot answer this off the cuff, as it would take some study which has to be paid for. However, even with payment, my work load is such that I could not even get to it until much later this year. Surface mount speakers may be the best way.
Ian Farrier, http://www.farriermarine.com

Sources

1. For the duct that goes from the engine well to the fuel tank locker, use Aeroduct tube, CEET-14, 3 ½" ID, 2 feet long. It's available from Aircraft Spruce and Specialty Co., (877) 4-

SPRUCE or their Georgia office, (877) 477-7823. The minimum order is two feet, which fits exactly. Their 2003/2004 catalog price is $6.80 a foot. Their part number is 05-30514.

Standing Rigging

Note - Synthetic rigging technology is rapidly changing. The approval Mr. Farrier gave was from November, 2000, and the materials, hardware and techniques have improved since then. The 2003 revision to the F-27 Class Rules allow synthetics for the forestay, the cap shrouds and the inner forestay, with Mr. Farrier's approval. He suggested the inner forestay. But please note that synthetics are not yet suitable for the diamond wires, the inner shrouds or the intermediate shrouds on the F-27 due to potential creep, and are not allowed in the 2003 Class Rules. - Editor

1. I don't think there is any risk to changing over to synthetic rigging on the rotating mast boats, as Mike Leneman's pioneering work with synthetics on his F-31 and others has now proved it is very reliable.

> The load on the shrouds when the MAIN hull is flying and crew is on the weather float, in flat water is somewhere between 4,000 - 5,000 lbs. (maybe Ian can confirm this).

That is correct and a 17000 lb breaking strain will give an adequate margin of around 4 : 1 with a trailerable. However, I would probably go up to 5 or 6 : 1 with a larger offshore boat like the F-41 where rigging is more difficult to check regularly (and safety factors need to be a little more conservative).
Ian Farrier

2. > Anyone else have their shroud fail after such a short time? In case you wonder, I managed to save the rig because 6 strands didn't fail and I was able to quickly gybe onto the other tack.

> Inspection of the failure seems to implicate some corrosion inside the swage.

Such failures can happen and are the main reason why wire stays are not a good idea when used for a structural purpose where lives may be put at risk from a sudden unexpected failure. They are just not 100% reliable, even from new, and crevice corrosion does not help after a year or so.

I also remember a brand new F-27 that had the forestay pull out of the swage in the first year but fortunately the inner forestay saved the mast. Swages can depend on operator skill to achieve full strength, so there is also always the chance of the occasional bad one.
Ian Farrier

3. > Corsair replaced my 2 year old shrouds that had failed for free. Buzz Ballenger (of Ballenger spars) says they failed prematurely via metal fatigue at the swage. Hmm! Any Neat Ideas out there for keeping the swage and the wire above it straighter? I raise and lower

the mast weekly and keep the shrouds pretty loose, so that's where the bending is coming from.

It is why you have to check and replace these wires every few years as per Sailing Manual. If lucky, they may last considerably longer, and there are 10 year old rigging wires out there. But there is a risk, particularly with frequently rigged trailerables, where wires can get kinked more frequently, and every kink is a possible weak point. I've never suffered from a failed wire, but several instances have been reported.

Usual warning signs with stainless are broken strands, but it can be hard to spot any corrosion in swages.

This is in fact a good argument in favor of synthetic rigging where any developing problems will be more obvious.
Ian Farrier

4. Synthetic rope should be at least as strong as the wire rope it replaces. And to allow for strength loss at splices and knots, perhaps even stronger.
Dave Paule, F-27, Second Chance

5. The problem is that stainless steel wire can fail suddenly and without warning. It is subject to crevice corrosion, and in the right circumstances can corrode and fail very quickly, particularly near swages, or if wire is kinked.

It can also be problem free and last a long time, ten years or more, but you will not find many riggers or boat manufacturers prepared to warranty stainless wire longer than 1 to 3 years. Thus check carefully every year after 3 years or so, and replace if any doubts exist.
Ian Farrier

6. I have now taken a close look at Erik Precourt's deadeyes for synthetic rigging and was impressed. Very nice parts, and I will thus be using these on the new F-33 and details are available at:

http://www.precourt.ca/

Erik has fittings suitable for both carbon and stainless steel chainplates.

Erik's deadeye system can also be used to replace Highfield Levers or turnbuckles on rotating masts, and then be connected to existing stainless steel shrouds. This applies to F-82s, F-9Rs, as well as the F-28R and F-31R. A much lighter and easier to adjust setup, and is the way I would now go.

Note - Check your Class Rules if you plan to race your boat. Some Classes do not permit synthetic rigging and the removal of the Highfield Levers. The F-27 Class does permit some synthetic rigging but not at all locations. - Editor

Just be sure to regularly check for any wear on the smaller 'lashing' line, and replace as required. In this regard also check the inside edges of the lashing line holes and file or smooth over if required. These deadeyes are not an easy thing to machine, and sometimes there is no substitute for a little hand finishing.

The Highfield Lever is fine (I designed it), but I'm the first to admit it is heavy, rather clunky, and can cause damage when the boat is folded. The Deadeyes would be much easier on the boat, and I believe almost as quick as the Lever (some would argue that they are quicker). Having now taken a close look at them I was impressed, and feel that they offer definite advantages that owners should know about.
Ian Farrier

7. We have been experimenting with rig tension on our rotating mast boat for the past 2 years in boat to boat as well as checking tacking angles on individual boats. There is a point when the rig becomes too loose, and no amount of mainsheet tension will affect headstay sag and you may think that you are going upwind but you are not....
Dogpound

Sun Protection

1. I have the "stick-on" sunshield, a rubbery self-adhesive film which was delivered as part of my new Calvert roller furling jib.

I was out yesterday in blustery winds, constantly shifting between jib and screacher, with the attendant flapping of sails and flogging of sheets - a brisk day but nothing remarkable. At the end of the day, I saw at least a dozen new gaps in my self-adhesive sunscreen: rubbed areas where a screacher sheet had flogged against the furled jib, delaminated areas from the jib itself flapping during a tack or while furling/unfurling, etc. At this rate, I will be surprised if it lasts a season, and I expect to have a checkerboard mess on the leech and foot of my sail. (Oh goodie, it is only HALF sun-rotted!)

My recommendation: Pass on this stuff - it is way too delicate; doubly so if you trailer your boat. Go with the sock.

2. I keep my F-27 on a lift over a salt-water canal. Rubber bungee cords last a couple of months. My local True Value carries a solid silicone material that lasts years in the South Florida sun.

3. I have had good luck using sun block on conventional bungees. I hesitated to try it, fear a greasy mess. The sun block gets absorbed by the outer fabric so it was not bad.
Peter Dubé, Wild Thing, F-24 #311, Sunapee, NH

Swim Steps - F-27

Note - this is an aftermarket modification. It's effect on boat speed and therefore ratings has been controversial. Editor

1. I got no problems with them sailors with "Swim Steps".

I don't think that anybody that's got em, should be penalized, jist 'cause they like to swim a little, either.

So.... Here's my suggestion:

Anybody who goes racin' with woman deem "swim platform thingies" - has got to use it to go swimming at least once in each race.

Now, since I got me a "Force 10 BBQ", I'm willing to cook sumptin' during each race as well.

Watcha think? - burgers or baby-back ribs?

Best to ya's
Rob in Austin, F-27 Trist

Tell-Tales

1. I have found the most useful telltale locations to be as follows:

a. Mainsail: Rotating masts give us the ability to use the complete leeward side of the mainsail very effectively. This means that you may position tell-tails much closer to the mast than you can on non-rotating spars. I like to see the tell-tails back about 12-15" aft of the mast positioned at 25%, 50% and 75% heights in the sail. I also like a set of telltales on the upper leech section (about 12" from the leech at the 25% height) to help gauge twist in light air and on reaches). In addition to these I like a few sets in a line from 50% aft of the mast to within a foot or so from the leech). These give me an indication of how far aft I am able to keep flow attached with different combinations of Blade, screacher, spinnaker, etc.

b. Jib: I like 3 sets 10-12" from the luff at the 25%, 50% & 75% heights. I also like one on the leech at the upper batten to check for over-trimming in lighter or choppy conditions. The three sets along the luff enable you to set your lead positioning on your blade track to achieve the best vertical and horizontal angle of attack for the sail in that particular wind condition.

c. Screacher: Three sets back from the luff 15-18" at the 25%, 50% & 75% heights. You may get erroneous readings if you are unable to get your halyard tight enough for the conditions. This is why the majority of the performance sailors use 2:1 low stretch halyards.

d. Spinnaker: Three sets along the luff in the same positions as the screacher are very helpful. The luff tension may be determined by "reading" these telltales (as well as the proper trim/sheet tension). If your halyard is too tight then the luff will be very round and hard to

trim since the sail will have a very narrow "groove". If the luff is too loose then the sail will be excessively flat on the luff (and round on the leech/exactly what you do not want). The sail will be, once again, hard to trim. Great spinnaker trimmers will play with the tack line tension while observing the luff profile (and telltales) to determine what the best setting is for that particular wind speed and angle.

Telltales are just tools to get us in the "ball park". You will go crazy trying to get all of your telltales streaming perfectly all of the time. Subtle changes in certain lead positions, sheet tensions, etc. and the results on your telltales on the total system (main, blade, spinny combination for example) help us understand the affects and determine if the change has been beneficial or not (in addition to the results on the knot meter). Arvel Gentry has written several articles on the implementation of telltales and what to look for. It really is one of those subjects where "the more you know , the more you realize that you don't know".

Tents

1. OK, Ok- I've gotten so many emails about these things, I will just post the site. You can find them other places, but these guys were $20 cheaper and had all the different kinds.

http://cftoys.com/popuptents.html

We got the "All American" tents. They came within 2 days of ordering. They fit great on the nets of out old-style F-31 (big, flat nets). We use some short pieces of line and some D-clips to keep them from blowing away. Now everybody can snore, thrash, grind their teeth without waking up the boat. Colin esp. likes them because it's nice and cool, he can check out the stars and keep an eye on the anchor lines (otherwise he'd be getting up and going out to check a couple of times anyway) BUT you don't have to worry about being bombarded by pelican-poo or ending up with a flying fish in your sleeping bag.....
Enjoy!
Lisa, F-31 Indefatigable

Things that float - or Don't

1. Let me start the list of what I have learned does not float, starting with the most expensive item. Whisker Poles do not float.

2. Tupperware containers full of spare stainless bolts and screws do not float. They sink slowly, tumbling while you reach and grab; then drift out of sight leaving you thinking that they will be around as long as the pyramids, and never be found.
Jesse Deupree, F-27 ION, Portland Maine

3. Spinnakers and Jibs do not float long enough to untangle and retrieve. - Ed Saleem

4. Also, those nice Forespar 3' to 6' tiller extensions (the ones that Forespar doesn't make any more!!!!!) definitely DON"T FLOAT.

BTW, If anyone is looking for one of these, I have the GPS coordinates of where mine is laying on the bottom of San Francisco Bay.....Arrrrgh!. :-(
-Chris Harvey, F-27

5. Outboard motors don't float or run well when they are totally underwater but you can retrieve them if you have remote cables attached to them.
Mike Multi Marine

Ha ha Mike.

The key is to be sailing at 9 knots when the motor falls off, so it behaves like a water skier. In which case, head the boat into the wind, reattach the motor, and check your fuel line for kinks (including INSIDE the engine cover), turn the key and it will start. Then bolt your motor to the transom as you should have done. Don't ask why I know this.....
Don Wigston

6. Beam bolts certainly don't float but there is a way to stop losing things that don't float! Have plenty of spares. After I dropped two in the first month I had my new F-24mkII I purchased a bag of 10 of them and haven't lost another one in three years. Likewise with winch handles - two spares and so I've never lost one.
Richard Hally

7. Watches don't float....and cause me to wonder if there are creatures who now come to listen to the alarm every 24 hours for the next five years..."Hey, Charlie, there it goes again." - Randall Johnson

8. Winch handles certainly don't float! I still see it now, it is like in slow motion, sliding off the hull (mono), it took so long to reach the water, certainly someone could have caught it in mid-air ..... splash, just grab it before it sinks, gone .....

Yes, buying excessive spares, completely eliminates the possibility of another loss ...
Peter Dubé, Dream On, F-24 #311

9. 12 years of sailing.....12 pairs of prescription sunglasses!!!! And.... You forgot to mention truck keys?
Rev S Wesson

10. Anchor, chain and rode - if in a storage bag. - Chuck Hamilton

11. Fiberglass battens flung from your sail like the javelin toss don't float. However, the broken off bit of your daggerboard DOES float.
Barry Warburton, F-27 #96 Little Wing

12. Oh yeah, juicy steaks cooked in the middle of nowhere don't float. Metal clamps expand and loosen with heat, and heck, we wanted to be vegetarians anyway!!
Ed Saleem

13. Nissan outboards do not float. (be sure to attach a safety line before testing this for yourself)

Winch handles don't float either, and the expensive Harken ones sink the fastest...
Mike Parsons

14. Many fly swatters don't float! These wonderful toys, great for children (of all ages, increasing their desirability), can be used in all sorts of playtime activities, but they don't float! Sometimes even the fly swatter that Dad walked a mile and a half for, in 90 deg F. and 100% humidity weather - and back, to replace the other fly swatter that didn't float -doesn't float!

This may not strike some as a big problem, but in the Chesapeake in August, being without a fly swatter in extreme windless conditions tests even the best-humored captains. And no, there is no truth to the rumor that this captain is running a fly swatter retail business from his boat, it only seems that way. :-)
Jerry Foster, F-27 Origami

15. Concrete doesn't float either, otherwise you could see it on the surface instead of finding it with the daggerboard at 6 knots. Ouch!
FRK

16. Oh, yeah, I almost forgot - wallets don't float. Lost mine in Yaquina Bay to the crabs, while single handing my sailing dory. I was sitting out and the rail popped it out of my back pocket.

Since then, I make it a habit to take all the land based pocket contents and put them in my ditty bag, exchanging them for the water based pocket contents - like rigging knives, which also don't float, although I've yet to loose one. Where's some wood to knock on?
Robert Williams

17. And that reminds me of some things that DO float but weren't actually recoverable. A UNI Solar 5 W solar panel (reportedly floats, but in delta water isn't visible beyond 5-10 feet from the boat) and a Tilley hat that also supposedly floats, and I suppose it does, but unfortunately I was in 2 feet of water at the time trying to get off the sand bar.
R/Thom, F 24 Mk II # 284; Puppeteer

18. Those little black plastic drain plugs for trailerable power boats, don't float. Oh yeah - Ford custom vans with trailer attached don't float at the bottom of ramps. (wasn't mine, I was just watching in amazement.)
Jon

Tiller Extensions

I believe mine is 8' when fully extended and I wish it was another foot or so longer so I could sit farther forward on the floats.
Jim Lyden, Formula 27 - Panacea

Tires

Towing

1. >Along these same lines, I've sprayed the akas with SailKote (too expensive, though); something that works pretty well is plastic wrap, just wrap the akas with it (you actually only need to do the forward surface.

Oooo, I like that idea. Note to self, buy cheapo plastic wrap and do up all 4 akas and spreaders for next delivery!
Ira Heller

2. Truckers, RV's and some boat owners coat with Vegetable Spray to keep the bugs from sticking; this lasts a little better in the rain and emulsifies as soon as dish detergent is applied.
RZ

3. >We leave our F-27 in the water at Yumenoshima, Tokyo, and have always taken the boom off and laid it on the deck when not sailing, to reduce windage and wear on the topping lift. We thought this was recommended by Ian Farrier.

The only reason to take the boom off is for trailering, where I recommend it be laid on deck rather than have to carry it down below. Saves a lot of effort, and have never lost a boom yet in 15 years of doing this.
Ian Farrier, http://www.farriermarine.com

Note - another reason to take it off is if you're leaving the boat in the path of a hurricane, to reduce windage. - Editor

4. During my time at Corsair we always fitted a nylon clip on the float deck half way between the aft beam U bolt and the wing net rail saddle eye that you clip the cap shroud adjuster tackle to. You can see the white clip in that photo on page 8 in the Sailing Manual. This then would prevent the tackle from moving too much against the deck. However, I would still remove the tackle on long trips, as such trips normally take more preparation to guard against damage. I would leave wires on for say a 100 mile trip, but well tied up with Velcro straps, but take them off for anything longer than say 200 miles, depending on the road.

However for short 20 or 30 mile trips, there are many things you don't have to do, which makes rigging much faster. Too many knots, as Bert said, is a common problem.
Ian Farrier

5. Trailering Windage - this has always been a problem with my folding system, due to the four beams sticking up in the air, which cannot be avoided if one wants a truly trailerable trimaran. Even streamlining the beams doesn't seem to have the advantage it should, as the Tramp beams were aerofoil mast sections, and it still had a surprising amount of drag at high speeds. It seems the main problem is just the four beams sticking up there.

The only way to improve this is with shorter beams, and the narrowest possible depth up towards the top. The F-33 follows this theme, and even though overall beam is wider, its beams are actually 6" shorter than the F-9A/F-31 beams resulting in a lower trailering height, and proportionally less drag.
Ian Farrier

Trailers

1. Tried to get some Galvafroid today, trailer maintenance you know...Not sold in U.S., available from Canada COD basis, at $69.36 per 800ml can(weighs over 4#). Looks like I stick to EPOXY.....or two component Polyurethane.
Per Flem, F-24-MKI
2. >Where can I find information on the cold galvanize process?

Basically, this is it: very fine zinc powder solved in pure alcohol (no, not drinkable). When the solvent has evaporated, the zinc powder forms a non-porous surface protection. I trusted the stuff after I saw it being used on steel structures at the local ferry terminals.

You apply it like paint, best over a freshly sand-blasted metal surface. Don't try to mix metal powder and alcohol yourself!!!

http://www.zingacanada.com/

I had good results in spot repairing our Pacific Trailer when it started rusting in a few places.
Sig

3. Float supports should be adjusted just to stop boat rocking, and make sure they bear against a bulkhead (which is usually always the case).
Ian Farrier

4. The float supports are there primarily to stop the boat rolling sideways, on the trailer and to prevent any chance of the floats unfolding on the road while being trailered. This last aspect is not essential if the floats are secured properly, but as a manufacturer I would be very reluctant to supply any folding trimaran on a trailer where there is a chance such an unfolding could happen.

The floats will take a lot of weight, the whole boat in fact, but there is a greater chance of damage to the float side if the bunks are not aligned properly. There are no core HD inserts in the float sides, as there are in the main hull keel. Thus the trailer should be set up so that most of the weight always goes into the keel bunk board, as this is where the boat is the strongest, particularly around the aft end of the daggerboard case.

Note that the keel bunk board should also cover the aft area of the daggerboard slot, so as to prevent the daggerboard falling out on the road, which could be embarrassing. Does not have to fully cover it, but at least the aft section. I did once find some trailers where this was not the case, so check this.

The float supports should be moved up until they are 'tightly snug' and bearing evenly against the float side. Don't jack them up tight in other words. They should be just tight enough to stop any rolling. If the bunk is misaligned - with an edge only bearing for instance, then you run a small chance of actually denting the float side.
Ian Farrier, http://www.f-boat.com

5. If your Bearing Buddies ever fall out on the road, cut the end of a 12 ounce aluminum beverage can and use it as a bearing cover. We found that it fits perfectly over the outside of the wheel hub and stayed put until we took it off. It saved a lot of hassle on a trip back from Florida to Pennsylvania.
Steve H., F-31, #040, "Nice Tri"

These Bearing Buddy Belts are home made from short pieces of nylon webbing and hose clamps. They prevent loss of the Bearing Buddys. They have had no bad side effects, and the change in balance is unnoticeable.

Trailer Brakes

1. > There are only three types of F boat sailors.
> a) those who are expert on brakes.
> b) those who will be expert on brakes in the near future.
> c) those whose brakes don't work.

There's a 4th type..... Those like me who don't use a trailer! I just drop the docklines and go sailing.
Marv Marcus

Trailer Jacks

4. After two Fultons trailer jacks in two years I got sick of them and bought a very similar jack made by Dutton-Lainson and it came with an exploded view of the parts so if I get diligent (unlikely) this winter I'll take it apart and clean and lubricate it. So far it's holding up.
John Pavel

5. I had a small hole in the end of the jack's tube between the plastic end cap and the steel wall of the jack, so I "explored" the interior of the jack using a small diameter wire. I found that the area next to the tubular wall of the jack was devoid of mechanisms, so I drilled and tapped a grease fitting. It's worked great ever since.
Craig Carlson, F-27 #390 "Sandman" Tampa, FL

Trailer Lights and Brackets

1. > I have an older F-27, hull #49. I've lost a part of the trailer light set up. The tail light bracket is attached to 2 slides which slide onto a track. The slice I'm missing is about 1 1/4" long, 3/4" wide each long edge has a groove cut into it about 3/32" wide

I had to get one of those also some time ago. They are found as parts for bimini mounting brackets. In fact, you will find a similar part on the underside of the pop-top. In the meanwhile, you can "borrow" one of the identical brackets that should be on the back of the trailer (to hold the lights when you are trailering without a boat).
Peter M. Lucas, F-27 #89, "Odyssey" North Bend, Oregon

Trailertri 720 Performance Items

The 720 should match or beat any monohull of up to 20% larger to windward, so something is not right. However, windward performance is subject to so many variables that it is impossible to give much guidance via email. The easiest and best way is to take a top notch sailor (mono or multi) out with you to check it out. You will be amazed at the difference.

A couple of basics to check on a fixed rig are:

a. Sail have to be cut right, not too full and not too flat, and shaped correctly. If sails are old then you are just not going to perform. Must be fitted with telltales.

b. Mast bend must match sail to give correct amount of mainsail camber (around 10% to 12% and located 48% aft on a fixed mast Trailertri).

c. Headsail leach must not hook in - leach battens strongly recommended

d. In heavier winds forestay has to be bar tight, most don't have it tight enough on a fixed rig. Mainsheet tension can be a big factor here.

e. Mast position and rake are not all that important on a Trailertri in my experience.

f. Foils must be fair and clean

g. Finally, the helmsman must concentrate on sails and sea to get the boat in the groove and keep it there.
Ian Farrier, http://www.f-boat.com

Tramp Cuddy Cabin

> When I saw pictures of Ian's experimental Tramp with the cuddy cabin and the OSTAC Tramp with a similar set-up, I keep thinking that might be a nice winter project. Any experiences on that front?

It is a major job and I would avoid doing it again - I did the conversion on my own Tramp but found sawing through what proved to be up to 1/2" thick solid fiberglass in some areas of the deck was very tiresome, not to mention an eye opener! Some manufacturer's technical expertise and lamination controls can leave a lot to be desired to say the least. The Tramp's base weight could vary from 1400 to 1800lbs, and mine was one of those that weighed 1800lbs!

But, on the plus side, it was a big factor in my then decision not to do any more production designs for anyone unless I had full control over all aspects to ensure it was done right, and the F-27 was the end result.
Ian Farrier

Ventilation and Airing Out

1. Leave the front hatch cracked (but locked) and a small slotted bowl of desiccant resting over a large bowl in the sink. The large bowl rarely gets more than about an inch of water, even in San Francisco. The boat smells fresh every time.

2. Three bowls (6” x 3”) filled with mothballs when the boat is being stored, keeps bugs and mildew at bay. Remove before sailing or trailering.

3. I installed a solar vent in the aft cabin, and I have not had any problem since in Oregon. With a little ventilation, the carpet is fine.
Eric Bowden

Useful Load

Note - Aircraft have a very sensible terminology for discussing weight. There are three main weights: the empty weight, the useful load, and the gross weight. The gross weight is simply the total of the useful load and the empty weight. The useful load can often be broken down further to payload and fuel, but for our purposes, that's not necessary. These terms are not used in boats, and it's too bad. They should be. Please bear these concepts in mind as you read about weights. Also see **Weight**. *- Editor*

1. > In a cruising situation what is the load carrying capability of the F-31 or F-9A?

It depends on how heavy the boat is, it being the difference between the bare weight and the fully loaded displacement.

The bare weight can vary depending what is on the boat, and how it is built and thus there is no real set figure.

But as a rough guide F-9R/F-31R has a load carrying capacity of around 2300lbs and the F-9A/F-31 around 1600lbs. You have to include all removable items in this figure such as safety gear, outboard etc. It can be exceeded for short cruises inshore, but not for long offshore passages.

> How about the rough load capacity of the F-9RX in Core Cell foam?

Depends again on bare weight, which can be a major variable, but will be some 500lbs more than an F-9R/F-31R or around 2800lbs.
Ian Farrier

Note - I saw a useful load of 3,500 pounds on a placard inside a 2002 Corsair-31R. I don't know what the empty weight of the boat was, or anything else about it. At the time, the boat hadn't been sold. It was brand new. Editor

VHF Radios

Watermakers

For use in polluted waters, include sediment pre-filtration and disinfection on the supply lines, to keep the reverse osmosis membrane from getting clogged or infected with bacteria. The membrane will block bacteria, until it "grows through."

Water tank

Note - there are two kinds of water tanks. The earlier boats had a bladder tank under the main cabin floor and the later boats have a tank adjacent to the daggerboard case on the port side, under the settee. - Editor

1. To drain the water tank, without pumping in into the sink, try this. This may sound a little odd, but it works. I have a 6' length of tube that I carry in the event I need chafing protection. With the boat on the trailer, I put one end of this tube in the tank, remove the speedo thru hull on the stbd side of the daggerboard, and siphon the tank out thru the hole in the boat. Then put the thru hull device back in its hole. Or you could just use a pump of some sort.

You can also use a drill pump. Go the hardware store and look for a drill activated water siphon. (maybe $10.00) It comes with fittings for a standard garden hose in and out. It will work with a AC or battery drill. It is self-priming and can be used to drain the floats, too.
Kelly

2. Sure, open the top of the tank and pump it out, either by hand pump or I use submersible portable show pump, I have.
Patrick Gilhooly

Weight

1. An inboard is a fixed item so its weight is included in the 3,730 lbs of the F-33. An outboard under my bare weight definition is a removable item so it is not usually included, and it is possible to race on occasions without an outboard (I've done it myself). *Note - this probably isn't allowed by current Class Rules - check it first. It certainly isn't allowed by the F-27 Class Rules. - Editor.*
Ian Farrier

2. Over the years many racers have resorted to undersized or no motor at all to gain a competitive advantage. I have a photo somewhere of an F-27 moments before a race and no motor is visible at all despite a race rule requiring one of a declared type. Perhaps it was stowed below decks for weight distribution. The boat won the regatta impressively.

Removing the motor, gas tank and battery from my boat (Yamaha 9.9) can save almost 200 pounds and I have done this for certain races until the RC outlawed the idea. We used a 30 pound, 2 hp kicker for power and it would drive the boat at 5 knots. With this mill we were unable to offer tows to our competitors who elected to skip the motor altogether.
Tom
Note - In most Class Rules, there is a requirement for a particular sized motor. It is a safety issue, as this writer alludes to, as well as being a rating issue: if you're racing using a rating that's based on a Class-legal boat, and you don't have Class-required equipment, you are cheating. - Editor.

Winches
Harken

1. About those winches, the bases are bolted down....I have never had a problem lubing my Harken winches....if you look down the handle socket there is a screw at the bottom of the socket. Unscrew that and the drum lifts off, allowing access to the guts. All bearings are caged, so you wont have any loose balls jumping out, but the caged bearings can come out so watch for that.

2. > I have brought the winches home and will lube them before bring them back to the boat. Ill have to patch the gelcoat and then reattach the winches to the boat. The question is do I need to rebed the winches using sealant?

Yes, but just use silicon - there is no need for anything stronger. The silicon will seal perfectly and it will be relatively easy to remove the winches again.
Ian Farrier, http://www.farriermarine.com

Window Refinishing

1. Start with 1200 wet/dry sandpaper on a sanding block. Use a CONSTANT stream of water to work the sandpaper over the windows. If you don't have a constant stream of water from a hose, you'll scratch the windows. Move up to 2000 wet sandpaper and repeat the process. Use a polishing (not rubbing) compound and after about 3 steps of coating then polishing, the windows are good as new! The whole process takes several hours and is certainly worth the effort.

Window Replacement

1. There can be a number of causes for leaky windows, but by far the most common is poor application of the sealant. Even the best and most aggressive sealant will not work if it is not in the right place.

Trying to fix leaks on an old window while still in place will seldom work, and usually complete removal and re-installing is the only real solution.

Acrylic (Plexiglas) is fine for windows on my designs, Polycarbonate (Lexan) being over kill and more easily scratched. Multihulls just don't get green water on deck as can monohulls, so windows are under much less stress.

Thermal expansion is a problem with large windows, which then have to have a join in the center. The F-27 seems to be about the largest window size one can use without a join. Even then, bolt holes have to be oversize to allow some movement.

Select your sealant of which there are now a number of types, from modified silicones to newer types capable of holding the window on bolt free (but these take special handling and preparation to work well). Plain old construction grade silicon used to work well (up until about 1989) at which point it would suddenly not stick to acrylic. I never found out why, but F-27 windows were suddenly popping off in the yard before we even sent them out. Most frustrating. Prior to that, using ordinary silicon would result in a window that had to be chiseled off. Just make sure the sealant you use will bond to the window material.

First step in the installation process is to make sure both window and cabin side are clean, and contaminant free.

Then, when applying the sealant, run a bead between each bolt hole, and then completely around the bolt hole, NOT over or in it. This is the most common mistake I have seen and applies to all fittings as well. If you run the bead over or in the hole, then it is just forced through the hole and out the other side when the bolt is inserted, leaving very little in the hole, and nothing on the sealing surfaces each side of the bolt. A bead around the hole will spread inwards to completely envelope the bolt when the window is put in place.

Finally, put a small bead of sealant under the head of every bolt, and this is also a frequently omitted step. If not done, then water can enter under the head, and travel down the bolt, through to the inside if the bolt is not enveloped in sealant as above. In the case of windows, a small O-ring can also be used. Never use sealant inside the boat under the nuts/washers - if a bolt or fitting is leaking then you need to know, and sealing inside will only trap moisture in the core which is something to avoid.

The window is now positioned with a firm even pressure to squeeze the sealant out. This is a tricky part as one does not want to squeeze it all out, as some thickness will allow more movement to absorb expansion and contraction. One also wants enough pressure to squeeze enough out to evenly fill the complete sealing area, otherwise it can look ugly.

Finally, beware of over tightening the bolts as this can cause ugly dimples in the window edges, and squeeze out too much sealant. Tighten very carefully and step back for a look to make sure a dimple is not appearing. If it does, slacken off the bolt, or squeeze down the window slightly more each side.
Ian Farrier

2. I've done this job a few times. Some steps are:

a. Sikaflex 295 UV (black) is the best used with Sika primer 290 (black).The primer will hide any voids you may miss with the adhesive.

b. Use a 6mm foam automotive dam (with single-sided tape) placed around cutout. The dam will stop adhesive coming inside (less clean up) and will be a guide as to how much tension to apply to screws. Also looks neat. You want 6mm of adhesive to be effective long term. *Note – 6 mm is about ¼" And the next posting explains the automotive dam a bit).*

c. Pre-fit windows and mask around neatly with tape being 2-3 mm wider than window edge (important for easy clean up). Bolt holes through windows to have clearance. Mask windows inside around cutout neat.

d. Remove, lightly sand and solvent wipe gluing surface and apply primer - do not touch.

e. Apply Sikaflex to cabin using dam as guide for thickness, fit windows and carefully tighten nuts so that dam is only slightly compressed. Screws ideally should not turn as they can leak later, one person outside holding screws and another inside tightening nuts. Remove masking, cleanup should be minimal.
Greg Bate

3. Automotive dam is used for fitting car windows etc. It is basically a strip of flexible HD foam with single sided tape. It is cheap and easy to apply, comes in rolls and in various sizes.

In this case use 6mm by 6mm and simply tape around outside edge of cutout. It is not intended to be a leak deterrent. It provides a nice even finish inside without cleanup but more importantly allows a correct consistent depth of adhesive.

I have only seen light grey but I guess inner edge could be painted prior to fitting windows.

You can buy the dam from an automotive windscreen repairer.

You should have clearance where screw passes through glass. If your windows have bolts that go through to nuts and washers a bit of the adhesive will come through with the bolt but you can carefully wipe it off with mineral turps before putting on washers and nuts. If you are using polycarbonate keep protective paper on as long as possible, it scratches so easily.
Greg Bate

4. Thanks Greg

This stuff clearly solves 90% of the problems encountered when trying the install the way I did, with just caulk freehand.

Because I cruise mostly in remote areas and don't spend time in marinas or real hot weather, I wanted a much lighter colored window than what Corsair uses. The problem with a lighter window is that one can see the sealant through it. A light grey would probably work, so long as I could get a caulk in a similar color. I used a clear caulk when I did my windows last, and it is visible at least to me, though most people think it looks fine.

Hopefully it will be a while before I need to worry about this for real. I polish and wax the Lexan each year, and so far the scratches aren't bad at all. I do think the corners and screw points are less likely to break in Lexan than acrylic, which is why I had to do my replacement in the first place.
Jesse Deupree, F-27, ION, Portland Maine

White Plastic

1. The white plastic we used to raise our deck organizers is HDPE which stands for High Density Polyethylene. It is easy to work with wood-working tools and should stand up well to UV. You can also find Ultra-HDPE which is even strong and will probably hold up better to UV than plain, old HDPE but I found the HDPE around the corner (at Tap Plastics) and so did not look for U-HDPE.

We also successfully used HDPE to replace our beam compression pads. No more creaking!! Yeah!
Randy Devol F-24 Mk I #32, Joint Venture

....Thanks for correcting my terminology. It is more properly called HMW PE (High Molecular Weight Polyethylene) and UHMW PE. The correct name will help others find it in catalogs and stores.
Randy Devol F-24 Mk I #32, Joint Venture

2. My F-27 from 1989 has (from the factory) HMW PE beam compression pads that have functioned perfectly all these years.
Peter M. Lucas, F-27 #89, "Odyssey"

3. One of the problems with PE is exposure to sunlight. It breaks down fairly rapidly. I found a recycled UHMWPE that has UV inhibitors added. It's black, not white, and I believe it was actually a little cheaper than virgin non-UV protected PE. I would recommend using this rather than the usual white stuff.

My source is Mill Supply, 541-926-5831, in Albany Oregon, but I'm sure there are local suppliers most everywhere. The stuff is commonly used in industrial assembly lines of all sorts, including food industry.

I used it to replace the aging beam pads in my '95 Mk II, as well as for other construction projects. For instance, I made an under pop-top enclosure that snaps to 1" x 1" bars of PE bolted down to the cabin top in front of the pop-top.

BTW, I believe the original beam pads aren't exactly UHMWPE, on the MK-II at least. I think they're some kind of fiber reinforced plastic. They seem harder than UHMW. Wasn't there a change in the folding geometry, such that the newer boats put more load on the beam ends?

I've machined the stuff I have with woodshop tools, but I didn't like it. It's abrasive, seems to dull blades quickly. I had some excitement when the table saw grabbed a piece and threw it across the room. Had a similar problem on a cutoff saw and a power planer. Twist bits work, but control the piece with a hold down or vice, it'll want to ride up the bit. A Forstner or small spade bit is OK, but keep the speed down. Bandsaw or jigsaw works well.

You'll get a slick shiny surface with a hand plane or chisels. Anything else will leave the rough finish your jointer probably left. The stuff is totally abrasion resistant. No sanding/abrading device worked even a little. An advantage of the hand plane/chisel is I made the beam end pieces oversize and planed to fit 'en situ'. But be aware the dimensions change when the rig is up, by quite a bit.
-robertw

Wiring, Buried

1. Wires and or cables are no longer buried in the foam of the cabin roofs. On the Corsair 28's and 31's the cables now run in a channel at the corner of the cabin top/side. We implemented this procedure approximately a year and a half back, in late 2000. I believe we started this procedure on hull # 100 on the Corsair 28's and hull # 180 on the 31's.

The cables/wires on the 24 have always been run under the interior liner and then up, so there are no wires along the cabin top. If you are contemplating drilling holes into your cabin top and are not sure, please contact us to determine if there may be wires or cables where you want to drill.
Your biggest fans, The Corsair Team

2. Owners should always be very careful when drilling holes into the deck/cabin roof of F-24s, F-28s and F-31s, as a number of wires have been buried into the foam core, and drilling through one of these can really ruin your day.

Not a problem with the F-27, except for one wire running to the aft cabin light, and in some cases, a very small section to the forward cabin roof light. The aft cabin light wire runs diagonally from the forward starboard corner of the cabin roof to the light.

Burying wires is not a practice I like, except where there is no other alternative, but it is the way it has been done at Corsair for a number of years. The method may have been changed by now, and one can check by following the wires from the battery/switchboard. If they disappear into the laminate then the wires have been buried, so take care when drilling holes.

A wiring map showing the position of such buried wires would be very useful, and I requested such a map be made up for owner reference many times without luck. If enough do likewise something may eventuate.
Ian Farrier

Wiring – F-27

There's a major wiring junction on the starboard side of the boat, on the forward face of the aft beam bulkhead. This view is looking aft at it:

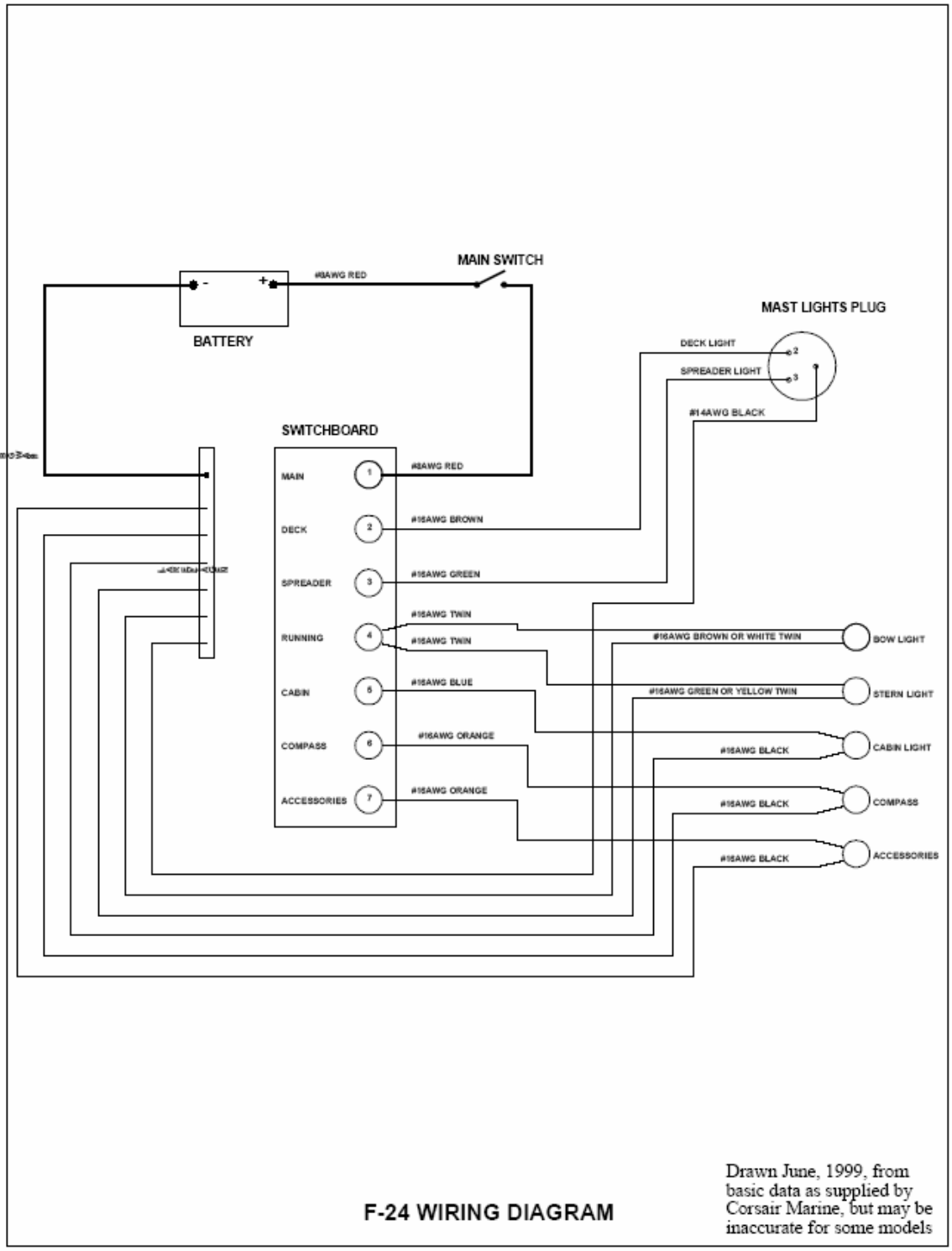
This is pretty much stock as shown. If you look closely, you'll see a terminal that has no wire where the loran ground was removed. The cable clamps only screw into the inner face of the hull – which means that they make a leak path to the core.

There's another bundle of wires hiding behind the trash can:

Bundle of wires that resides outboard of the trash can on the F-27. This view is looking upward and outboard, and ever so slightly forward (to the left in the picture). You can barely see the PVC conduit through the hole. The cut line in the bulkhead to the upper left is the hatch to the trash can. The socket with the two light blue terminals is a 12 V outlet. Note the ubiquitous wood trim attachments, here shown from the back side. The two black wires going down go to the speedo sensor and the depth sensor.

Wiring Diagrams

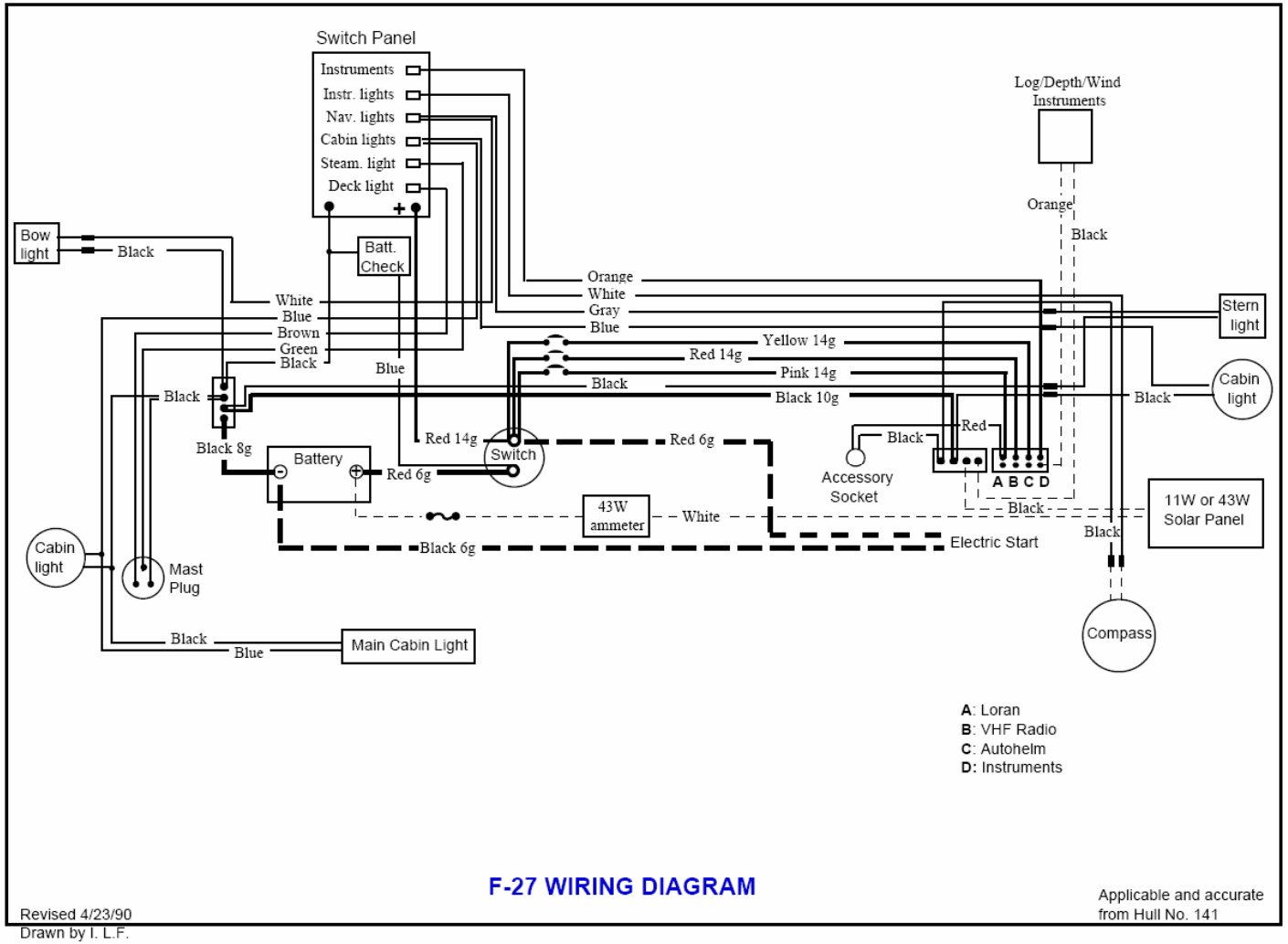
The following wiring diagrams have been taken from Farriermarine's web site: - Editor



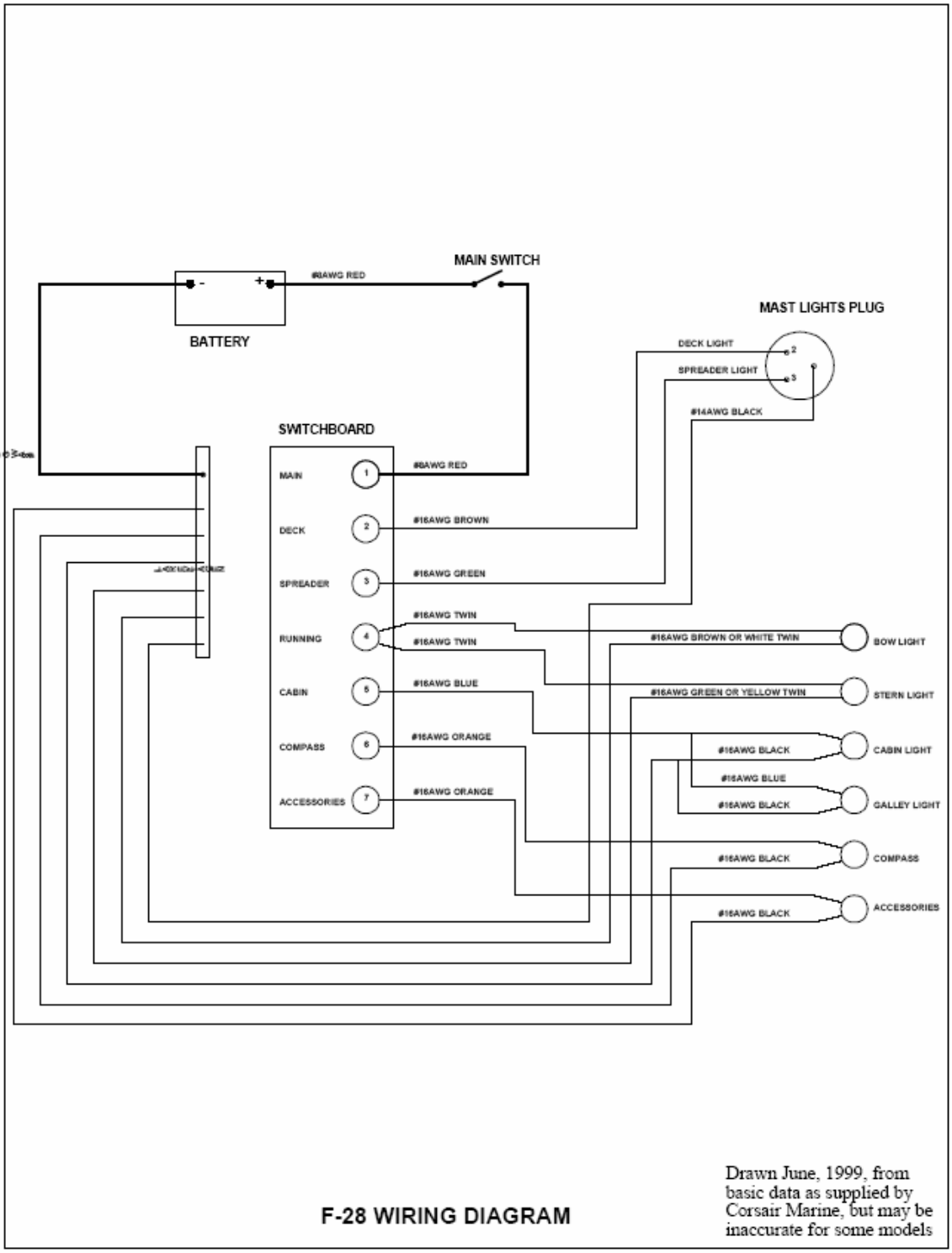
F-24 WIRING DIAGRAM

Drawn June, 1999, from basic data as supplied by Corsair Marine, but may be inaccurate for some models

Farrier Marine, Inc.



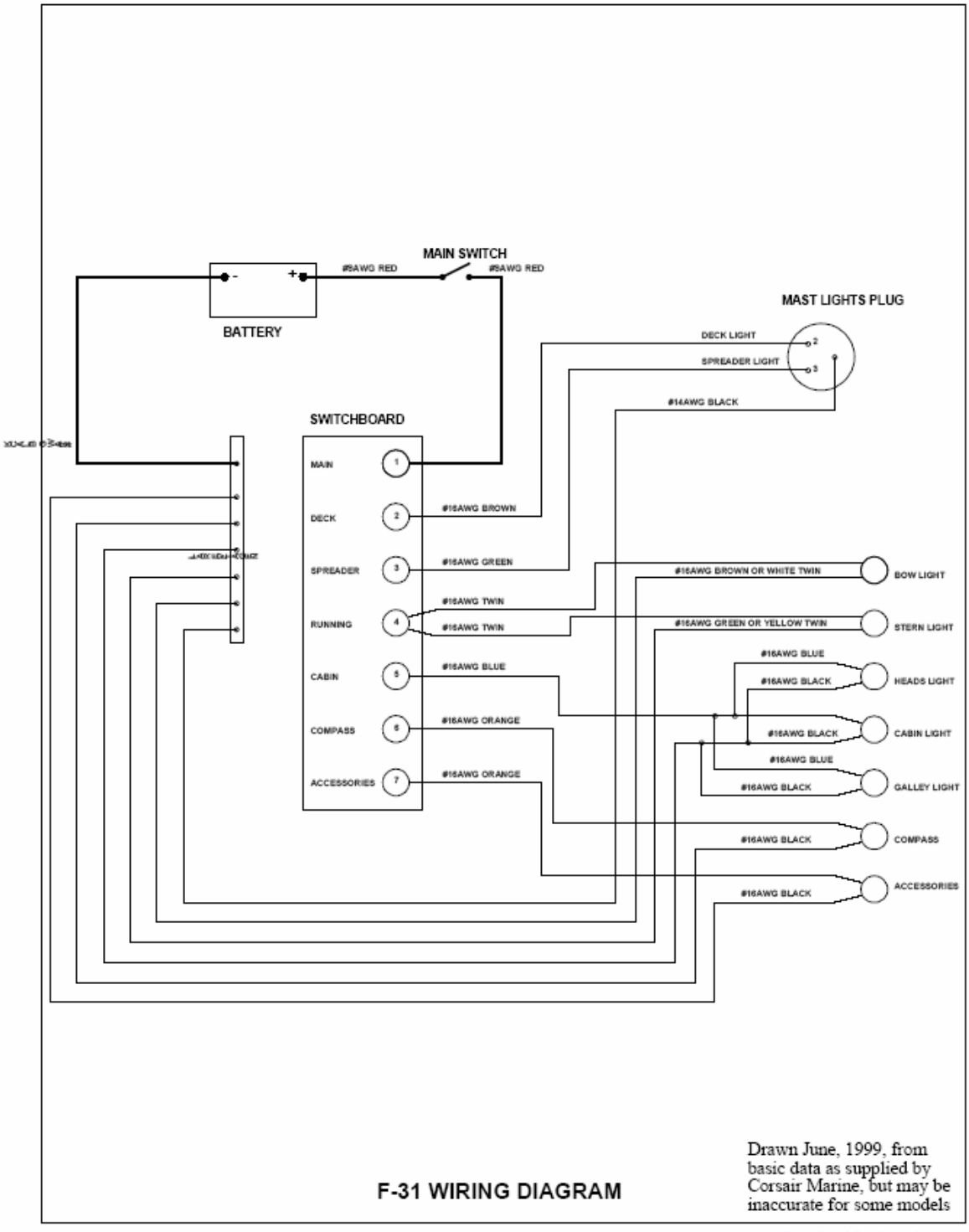
Wiring diagram for the F-27. Hull number 80 is very similar, as far as I can tell. - Editor



F-28 WIRING DIAGRAM

Drawn June, 1999, from basic data as supplied by Corsair Marine, but may be inaccurate for some models

Farrier Marine, Inc.



Yeoman Plotter

1. This interesting device is a chart plotter that uses a paper map and a GPS to find your location on it. It does much more, of course, since it's got its own computer and can connect to most GPSs. It's sized to work with the common Maptech Chartpacks, and knows those maps. Other maps (it'll read any) need some initializing, which isn't hard.

The device is fairly bulky, about 19 inches by 27, and about 2 inches thick. There's a sort of mouse affair which locates itself on the device and thereby knows where it is on the map that you've inserted. It needs a 12 volt source, and the GPS that you're using also needs power. There's a cable between the two, and the GPS is still operable independently of the Yeoman.

The chief advantages are that it lets you use a paper chart that's nice and large. Any paper chart, and it only takes a few minutes to swap between charts. You can mark on the plastic overlay with erasable pens to track your position.

It knows its location on the chart and it happy to let you know, too. Its mouse has a window and there's arrow lights that surround the window. Put the mouse on the chart and the lights will tell you where to move it so that the appropriate position is visible on the chart under the window.

The gripes I have with it are that

a. It takes a dedicated hand to move the mouse around. No hand, no location.

b. It's a little large for the F-27 cockpit, although some folks have reported success with strapping it on the cabin hatch.

c. The monochrome display is very poor by today's standards, and the software is a little clunky and old-fashioned. The unit needs a make-over.

d. It's not waterproof. It is water-resistant, though.

Since it has Velcro on the back, it can be pressed against the port side of the daggerboard case and is out of the way there when not in use.
David Paule, F-27 Second Chance

2. I find the Yeoman very easy to use. I leave it hanging from the cabin roof against the starboard settee back, always plugged into both boat battery and handheld gps. I have a gps repeater on the coach roof next to my other instruments. I can go below, find my position on the chart, enter a new waypoint with the Yeoman and back in the cockpit in about 15 seconds. The bearing and track to waypoint are displayed where the helmsman can easily see them. I particularly like the point and click method of entering a waypoint with the Yeoman. We find it very useful when racing as we can very quickly put in the next mark which is often not visible in our races and, as we are the fastest multihull in our area, we can't rely on follow the leader.
T. W. Fulton