

Sailing Manual For All Farrier Designs

Revised August 15, 2012

Includes **F-22, F-82, F-85SR, F-32, F-32SR, F-36, F-39,
F-41, F-44SC**, and all variations

This manual has been compiled to help you to operate your Farrier design with safety and enjoyment. It contains details of the craft, and information on its operation and maintenance. Please read it carefully and familiarize yourself with your trimaran before using it.

If this is your first sailboat or multihull, for your own comfort or safety, please ensure that you obtain handling and operating experience before assuming command of the craft. Your national sailing federation or yacht club will be pleased to advise you of local sailing schools or competent instructors.

**PLEASE KEEP THIS MANUAL IN A SECURE
PLACE, AND PASS ON TO THE NEW
OWNER WHEN YOU SELL YOUR BOAT**

If required, a replacement copy of this Manual can be purchased from Farrier Marine, current contact details being available from www.f-boat.com

Design _____
Sail Number _____

Owner 1. _____	Owner 2. _____	Owner 3. _____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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FARRIER MARINE,

www.f-boat.com



The first 5 Trileris of different types on the beach in Moreton Bay (Brisbane), Queensland. Farrier designs have now been sailing world wide for over 35 years, and the experience from all these years is the basis for this manual.

GENERAL

This manual contains important information about the safe operation and maintenance of your Farrier designed trimaran. Read it carefully, become familiar with the procedures described, and follow the recommendations to help make your sailing enjoyable and trouble-free.

Your Farrier trimaran is designed and built as a high performance family cruising yacht, which when used as intended, with its enormous stability and unsinkability, is one of the safest, most comfortable, and fastest sailboats afloat. However, while speed is an important advantage, it should be remembered that it is not necessarily the most important multihull feature. Slow gentle sailing can be even more enjoyable when combined with the multihull's spacious and level decks to lounge on.

As you become familiar with your boat, you may discover alternative methods of operation that have advantages. We would appreciate if you would share these with us so that we can share them with other owners and this can be done on the F-boat forum, of which there are several, as listed at.

<http://www.f-boat.com/pages/forum.html>

PREPARATION

Before going sailing, you will need to provide the proper safety equipment as required by local regulations. This should include life jackets for all crew members, safety harnesses for children, anchor, compass, bilge pump, fog horn, First Aid kit, fire extinguishers, flashlight

and batteries, life buoy, flares, a chart of the area to be sailed, food, water, and adequate fuel.

LOADING

Multihulls should be treated like **aircraft** when it comes to loading. Farrier designs are light, responsive craft, and due to their narrow waterline do not have an unlimited load carrying ability. Overloading can affect performance and handling, while excessive overloading can also affect safety margins, the ratio of float buoyancy relative to the total weight becoming lower. A higher ratio is faster and safer. Always be conscious of weight and avoid carrying unnecessary items.

The load-carrying capacity of the different Farrier designs is listed under Specifications towards the back of this manual. Some overloading is acceptable for general sailing in sheltered waters, the only adverse effect being a loss in performance. However, an overloaded boat offshore in large waves can become dangerous due to greater loads generated in the structure, and the sluggishness which can prevent the boat from rising to go over or with the waves, as it should.

When storing supplies, try to keep all heavy items located as low down as possible and in the **forward end of the cabin**. Avoid storing any heavy items aft of the main entry hatch inside, as too much weight aft can cause transom drag, affecting performance. Farrier designs have a very buoyant bow, which actually **lifts** at speed, and additional weight should always be kept forward rather than aft.

Should your model have float storage, avoid heavy loads in the floats. These should only be used for light bulky items such as sails, fenders etc. Heavy weight in the ends of any boat, be it the bow, stern, or floats, can adversely affect the general motion.

To maintain a light boat, and that sparkling edge of performance, it is highly recommended that you go through everything on board several times a year, and take off any items that do not get used. This prevents the gradual buildup of unnecessary weight.

SAFETY COMPARTMENT

Before sailing, it is important that the Safety Compartment be loaded with the appropriate safety gear. This compartment is accessible from top or bottom and should have been built in as per the plans.

Its purpose is to keep important safety equipment that should be available to the crew in any emergency situation, especially a capsize. The equipment stored here should include flares, a handheld VHF radio, EPIRB (offshore), extra line, spare tools, cutting implements etc. **in watertight bags** (this is not a watertight compartment).

WARNING: No multihull should venture offshore without safety gear in such a compartment that must be accessible from under the craft

OUTBOARD MOTOR

The recommended motor size is given in the specifications in your original literature and later in this Manual. This is more than adequate for most circumstances.

A long shaft motor is the minimum required, and the **extra long 25" shaft motors are the best**. A remote control can also help make operation very easy with aft cabin models. With weight being important, try to choose the lightest possible outboard.

There are a number of specialist 'Sail Boat' motors now available and some of these are designed for heavy, hard to push, displacement boats, and their propellers are effectively 'geared down' to give high thrust at low speeds. However, Farrier trimarans have a very easily driven hull and may not need such a propeller. The result can be the same as always driving your car in low gear. You will have plenty of thrust, but speed is low, and economy can be poor. These motors do have advantages, and if used, you may need to experiment with different propellers to get the best and most efficient performance.

Refer to the engine manual for details of operation, maintenance and winter storage. Always be sure you have enough fuel for your planned trip.

The motor can be used while the floats are extended or folded and should always be tilted up when sailing.



An F-22 on the trailer, with outboard and daggerboard rudder. This type of rudder can be lifted fully up for local trailering or removed altogether for long distance trips. Note separate light bar high up and well clear of water

Daggerboard or centerboard **SHOULD ALWAYS BE DOWN** when motoring, which will prevent sideways movement. If not, the boat will tend to have a hovercraft like motion with wide skidding turns. Having the board fully down means that handling will always be excellent.

TRAILERING

The total towing weight can vary considerably, depending on the design and options fitted. The actual weight can be determined exactly by using a weighbridge.

Check also that the vehicle is approved and equipped as recommended by its manufacturer for towing this weight, and the capacity of the towing hitch is suitable.

While towing, watch for strong crosswinds. A Farrier design is a relatively light boat for towing, but it still has considerable windage. For easy, stable towing, the trailer should be balanced to have 8 to 10% of the total weight on the coupling ball. This can be measured by a bathroom scale. If you find 'fish tailing' occurs, **increase** this tongue weight. If necessary, a simple change like shifting the gas tank or outboard forward can make a considerable difference to trailer behavior.

Trailer lights can be fitted either on special brackets or as a separate light bar on the boat's transom. They are best independent from the trailer, as the wiring then never gets near the water, considerably improving reliability. If separate, be sure to fit the correct lights on the appropriate sides. The wire should be run along the top of the boat, looped around the foredeck cleat and then con-



An F-33 on trailer, separate light bar in place on aft mast support, and daggerboard rudder blade removed for trailering. Lights can also be separately mounted each side (see below left), and this makes it much easier to store in vehicle.

nected to the towing vehicle. Independent wiring avoids the frequent breakdowns that occur with wiring through the trailer being attacked by saltwater. When the trailer is being towed on its own, the lights can be mounted directly to the trailer.

Before trailering, check that tires are inflated correctly, the beam locking pins are in place, the rudder is fully up and secure, the pop-top or hatch is secured, and the boat is tied down to the trailer. There should always be one tie-down per side, these being looped around the winches or brackets on the cockpit coamings, and tied to the tie-down loops on the trailer. The bow eye should also be tied down to the winch post, in addition to the winch line. Check that all the trailer supports always bear equally against the hulls. Use extra ties for long distances.

When trailering, BE SURE to pivot up or remove the trailer jockey wheel, and check that the hitch is locked on to the ball.

Should the mast extend aft past the trailer lights by more than the legal amount, the appropriate warning flag should be tied on the back. If mast extends too far aft it can be positioned further forward which will eliminate any excessive overhang. However, this may not be possible if the towing vehicle is a tall van.

When trailering, always allow extra distance for stopping. Particularly watch for **low bridges, overhanging trees or awnings** etc. If necessary, the boat can be partially unfolded on the trailer in order to pass under a low bridge.



Trailer lights are mounted separately each side on this F-27

CAUTION

Measure and **KNOW** overall height on the trailer. Care should then be taken to avoid all low overhead bridges, awnings or roofs.

RIGGING

The following is a general rigging procedure and applies to all designs. For ease of rigging, it is highly recommended that you follow this general procedure, as it has been developed from hundreds of launchings and proven to be fast, easy and efficient.

CAUTION

Always park into the wind, or uphill, to help the mast stay in line while being raised. Trailer should remain hooked to towing vehicle

Two should be able to completely rig an F-22 or F-32 ready to launch within 15 - 25 minutes of arriving at the ramp by using the correct procedure. It is possible in fact, for F-22 to be launched, unfolded, and sailing within 12 minutes. One person should be able to have the F-32 rigged and launched in around 30 - 35 minutes. However, note that loading any extra gear or supplies onto the boat is not counted in these times.

DANGER

Before starting to rig, check that there are no powerlines that the mast could touch, either while being raised or moved to launch ramp

Don't be dismayed if it takes you considerably longer the first few times out. It will take a little practice to become familiar with the procedures, and the more you rig the boat, the easier and quicker it will become. However, it is very important to follow a set procedure each time.

Recommended Set-Up Procedure Is As Follows:

1. Remove the trailer tie-downs, and the trailer lights. The tie-downs can be tied together and used as the bow line for launching. Saves stowing them, and then finding a bow line.

2. Undo the trailer winch hook, and pull some slack so that the hook will pass over the bow or mast raising roller. Place on the foredeck.



F-22 mast rolled back and attached to the deck pivot brackets, with mast raising pole in place.



Mast raising pole in position on an F-28 with winch line connected to jib halyard, ready to raise mast. Depending on design, take care that rotating mast is restrained once up so that it cannot topple forwards. This can be done by using the Corsair type Highfield Lever to connect shrouds to float chainplates, on older designs like F-28 and F-31. Modern designs like the F-22 or F-32 do not require these.

3. Place the mast raising pole on the foredeck ready for use. Climb onto the bow using nonskid areas on the float bows as stepping points.

CAUTION

The float bows can be slippery. Particularly warn children to take care when climbing up or down

4. Move aft alongside the mast undoing the mast ties (at each end) and the rigging ties as you go.

5. Lift the forward end of the mast and walk aft, rolling the mast on the aft mast roller while checking that the rigging lines or wires do not catch. Stop once the mast foot is over the pivot brackets. Now's the time to fit any masthead indicator to the top of the mast. Lift the mast up until the indicator can be fitted to the masthead from the ground behind the boat. If rigging single-handed, the mast can usually be balanced in this position to do this.

With rotating masts, the mast yoke will now need to be fitted to the mast foot using the through pin (yoke can also be fitted prior to rolling mast back, or be left on the foot at prior de-rigging). This can vary with different models so check specific drawings for your particular step (can be downloaded from F-boat forum files)

6. The mast foot is now connected to the mast step as follows:

F-22: Slots onto pin in step.

F-82: Pinned to brackets on cabin roof.

F-9A: Plugged onto pin in deck step.

F-9R: Attach yoke to deck brackets with fast pins

F-32: Slots onto pin in step.

In some cases, it may be necessary to push the mast firmly aft to fit to step. If difficult, check that all stays are clear, the terminals into the mast have not snagged sideways, and the mast is centered on the aft roller.

7. If required, fit the mast raising wires, running from an eye on the mast to the side anchors on the cabin roof (aligned with the mast pivot point). These raising wire anchors can be chainplates, or 'lift up loops' depending on design. Some designs such as the F-27 and F-25A use the lower shrouds to stabilize mast.

Note that the length of these raising wires should be adjustable and they should be slightly loose and monitored on the first mast raising. This is to ensure they cannot become overtight during the initial raising procedure. They should never be more than moderately tight, and, once adjusted and set, need no further monitoring or adjustment. Avoid any line here as it stretches too much.

An alternative to raising wires is to use spinnaker or screacher halyards. These can also provide an extra backup in difficult conditions, but they take longer to setup. If used, they must be cleated to bottom of mast.



Raising wire Deck Loops - these work well to anchor raising wires as they can fold down to be flush on deck when not in use. F-33 mast step with raising pole yoke shown above and below left. The same basic mast raising setup applies for both on trailer or on water mast raising.

has been unhooked from the mast). Winch line should extend at least two feet (60cm) aft of the mast pole fork.

10. Now check the following:

a. All halyards are positioned or led correctly from the base of the mast, and that jib halyard is **SECURELY TIED OFF** to the cleat on side of mast.

b. Rotating mast shrouds to floats should be positioned so as to avoid catching on anything which can cause damage during raising procedure.

Later models (F-22 & F-32) always leave the stays attached to floats, but on many earlier models stays have to be released to fold. In this case a solution is to

use a Highfield lever to attach shroud to float chainplate (photo on Page 23). Otherwise a block and tackle can be used to attach shroud to aft beam area on float, but be careful that mast is always supported when up and raising wires have been removed.



8. Position the mast raising pole on the mast or in the yoke socket. Attach the wire from the top of the pole to the eye on the front of the mast, with the pole being approximately perpendicular to the mast.

If considered necessary, (strong cross winds or single-handed) additional light side lines can be fitted from the pole end to the raising wire anchors (as shown above) to stabilize pole better sideways.

Where a yoke is used (rotating masts) the length of the wire from the pole to the mast can also be adjusted, and a little experimenting will give an almost perfect moderate tension on the raising wires throughout the complete raising procedure.

9. Take the trailer winch line hook, pull it back over the pole and then connect it to the jib halyard (after it

CAUTION

With **rotating masts**, the side stays must always be connected to the floats, otherwise there is a danger of mast toppling forward if over winched.

11. The mast is now winched up, CHECKING AGAIN FOR POWERLINES.

Check to see that all rigging wires are clear and have not snagged anywhere, particularly aft chainplates on F-9As. Raising wires should initially be slightly loose, and



F-31R/F-9R mast half way up, winch line just about to leave 'cradle' on raising pole. Watch float shroud turnbuckles if fitted, as they are easily snagged and bent. If one has to park on a side slope or be in a cross wind, then it is also a good idea to have someone on deck to stabilize mast or raising pole, or use extra side lines to stabilize pole, particularly on larger models.

tighten slightly on the way up.

If the mast raising pole tends to twist sideways then this can be controlled by light lines to the raising wire anchors as mentioned earlier.

CAUTION

During mast raising, it is very important to be alert to all items of rigging lifting or supporting the mast.

If any resistance to raising is felt at any point, **STOP**, and check nothing has fouled. Do not proceed until any obstruction is clear

Check that the socket in the rotating mast foot aligns correctly with the pivot ball on the deck with earlier rotating masts, as the mast nears the fully up position.

Monitor the float stays with rotating masts on initial rigging to ensure they do not become too tight or catch on anything during raising.

Corsair models with rotating masts use custom Highfield levers to connect side stays to the float chainplates and these give the stays just enough slack for the mast to be fully raised when the float is folded, while preventing any danger of the mast toppling forward.

These Highfield levers can be purchased from Corsair and are an **important safeguard** against accidentally dropping the mast while folding or unfolding, provided

they are **not disconnected from chainplate**. The more modern Farrier designs (F-22, F-32, and F-32SR) do not need these levers, as their latest folding geometry allows boat to be folded without detaching the side stays.

CAUTION

Winch operator should be careful to ensure trailer winch line lays evenly across the drum while mast is being raised. With an offset bow roller there can be a tendency for incoming line to pile up on one side of the drum to where it can suddenly slip off.

Larger masts can be heavy, with high loads, and extra care should be taken to ensure they do not swing too far sideways. Never park in a cross wind or sideways on a slope, unless extra help is available to steady mast.

12. Connect forestay once the mast is fully up. At initial rigging, mast rake should be set to around 3 to 4° which is slightly more than the rake of the aft edge of the forward beams when viewed from the side. Once initial adjustment has been done, the forestay turnbuckle **does not need to be undone during normal rigging or de-rigging**, only the clevis pin is removed or inserted.

Lower and intermediate shrouds on the fixed F-27, F-9A/F-31 mast **remain connected during all rigging and de-rigging** procedures. After the initial adjustment, there is also **no need to undo** these or disconnect them from the shroud chainplates.

13. Once forestay is connected, slacken off the trailer winch, disconnect jib halyard, and return it to the mast.



Mast raising wires may need to stay attached until after the boat is unfolded, depending on model. F-28 shown.

Remove raising pole etc., rewind the winch and reconnect hook to the bow eye.

Leave rotating mast raising wires attached to the mast, as these may still be required for support until after the floats are unfolded and stays are properly connected to floats.

14. The topping lift is now disconnected from the mast lower end and connected to the end of the boom to help take the weight. Remove the sail bag from the mainsail/boom and connect the boom to the mast.

15. Tighten all the battens in the mainsail, if required. Connect the mainsheet to the boom. Feed the mainsail head into the track on the mast and connect the main halyard

16. If required, run all the halyard lines from the mast through the turning blocks back to the correct rope clutches on the aft end of the cabin roof.

17. Connect the mast electric plug if required.

18. The headsail can be fitted now if wished, or after launching. The sheets are laid out and connected to the clew (sheets can be kept in the anchor well for quick access). The headsail can be kept under control by a shockcord which can be left on the foredeck for this purpose. Just keep it hooked to the toerail or pulpit.

19. Fit or untie rudder so it is ready for use (still retracted), and check that daggerboard up-line is cleared. **Outboard** motor should also be in the **up position**.

20. The aft mast support is now removed and stored.

WARNING

Before taking boat to the water check there are no powerlines that the mast could touch

LAUNCHING

Back the trailer down the ramp until the trailer is submerged up until just past the inward bend of the side frame members (about 6 to 8' back from the winch post).

Disconnect winch hook and push the boat off while holding on to the bow line, or you can get on board (having started the motor first). Be careful of crosswinds or wind from the stern. The boat, with its shallow draft, will move quickly sideways in such conditions, and you should not launch until there is sufficient maneuvering room alongside.

This ability to go sideways is one drawback of shallow draft, and you should always make allowances when launching/retrieving or under power. **First priority** at every launch should be to **LOWER DAGGERBOARD!**



Launching an F-33

This helps to prevent any sideways movement, and gives excellent maneuverability under power.

Some models are large boats to handle at ramps, but because of their lightness, are easy to move around. The trick is not to fight it, but to plan ahead what you are going to do, and gently guide it in the correct direction.

An offshore wind at the ramp is ideal, as the boat will lie quietly downwind at the end of the bow line. It's then just a simple matter of boarding over the float bows, and backing off or just walking her over to a boarding dock, if available.

An onshore wind is the most difficult, as the boat will swing sideways once launched, and come towards the ramp. In this situation the boat should be held off the ramp from a central position on the side. You will find a balance point where it will lie evenly until you are ready to board.

If a dock is alongside it is a good idea to run a stern line to the dock, so that the stern can be pulled to the dock after launching, thus preventing it from swinging around.

A good way of launching in all conditions, if extra help is available, is for someone on board to start the motor before launching, and simply back the boat away from the ramp, remembering to immediately drop the daggerboard once clear of trailer.





*Folding stability is good, but it is limited, so don't push your luck. A few owners have managed to roll their folded boats over. Take particular care with tall rigged **R** versions, and avoid tight fast turns in strong cross winds.*

All designs are always launched folded, and unfolding can be done either at the dock, or while motoring away, even in choppy conditions. Folded stability is good, **but it is limited, particularly on bigger boats like the F-9 & F-32, and even LESS so with 'R' masts.**

Take care in strong winds, as it is possible to roll boat over! If necessary, **immediately unfold** at least one side to avoid any risk. The F-32 has a secondary wider folded beam of 9' 6" which improves folded stability, and if an **F-32R**, or motoring very far while folded, use this position.

WARNING

Always take care in strong winds while fully folded and with mast up. A combination of a fast tight turn and mast windage and weight could cause a roll over in such conditions. If in doubt, unfold one or both sides to eliminate this danger.

See also <http://www.f-boat.com/foldedstability/>

To unfold, first check that there are no ropes across the beam recesses, and the tiller is clear. Remove the



F-33 being unfolded at dock. Folding is harder on larger designs with low profile beams and foot should be placed on Upper Folding Strut for leverage. May take two, or block and tackle assistance can be used if necessary - see later.

beam locking pins, **place your foot on the top of the upper folding strut**, grasp the top of the beam and pull downwards, while pushing with your foot.

WARNING

Always check that no one has their foot or hand in or near beam recess when folding as the beams can come down quickly!

The float will unfold, but be careful it doesn't pick up too much speed towards the end. Hold the beam down and tighten the bolts using a speed wrench. These bolts should be tightened firmly, but **NOT OVERTIGHTENED**.

WARNING

The beam bolts must always be in place and tightened before sailing

If anything seems hard or difficult when folding, **STOP** and see if anything is misaligned, or snagged. It is usually a wingnet catching. Should it be difficult to hold beams down to tighten the bolts, then usual cause is wingnets that have been lashed too tightly.

It is not necessary to hold both forward and aft beams when folding, one person operating either beam is all that is required, except for larger designs. The wingnets will extend and tighten themselves. There is a knack in unfolding of using both your foot to push on the upper folding strut and your hands to pull the top of the beam in and down. After a few tries you will find it easy to do.

The side stays are now secured correctly to the float chainplates, where required. They may already be attached with rotating masts, or where the stays have Highfield levers fitted. Just close the levers to tension.

With the F-27 & F-9/F-31 fixed mast, the turnbuckle must be directly connected to chainplate, and there should be just enough slack in the wire (**but not too much** - which can overload tensioners) to insert the clevis pins. The stays are then tensioned by the block and



Turnbuckles have now been replaced by deadeyes and lashing on later models - much lighter and easier on boat



F-27 shroud tensioner - these are used to take up the slack necessary to allow easy connection of the stay to float chainplate after unfolding.

tackle tensioners anchored at the aft beams and attached to the shackle located about 4' up the top stays. Pull these on firmly, checking that the mast is straight. The first time out, both tensioner lines should be marked when the mast is straight, as a reference for future use and adjustment.

These tensioners on fixed masts need considerable tightening when going to windward in high winds, as they keep the mast straight and forestay tight for good pointing. Avoid letting the leeward shroud become too loose.

Once adjusted at initial launching, turnbuckles should not require to be adjusted during subsequent launchings. Just release the Highfield levers with rotating masts or turnbuckles from the chainplate with fixed masts.

Rotating mast side stays only need to be moderately tight, even slightly loose, as a tight rig can restrict rotation. Thus synthetic stays and the latest deadeye tensioners can be used with rotating masts, and these save considerable weight aloft, and are much easier to handle.

Once the mast is properly supported by the stays, the mast raising wires (where needed) can be removed.

The spinnaker pole bowsprit can now be fitted or extended depending on model.



MAST RAISING ON THE WATER

It may be necessary to sometimes launch with mast down and raise it later. To do this **you will need an additional strong block** to attach to the bow roller/stem fitting. A spinnaker sheet block is ideal and can be lashed around bow if no suitable fitting is present. The mast raising pole/yoke must also be carried on board.

Once in clear water, follow the same mast setup and raising procedures listed under RIGGING, but instead of the trailer winch line, a line from a sheet winch to the bow block, and then back to the jib halyard is used to winch up. The procedure is reversed for lowering.



BOARDS

The daggerboard or centerboard have two control lines, one to pull up (red) and one to pull down (blue). The daggerboard will not kick back, and should break off if it ever hits bottom hard enough. This protects the daggerboard case from damage in most cases - a much more expensive repair.

CAUTION

Even at low speeds, a grounding can cause the crew to be thrown forward, and care should be taken to avoid this. Slow down in shallow water.

Obviously, one should always be careful around shallow waters, keeping alert, and the boat speed down. The daggerboard is very strong and will only break off with an exceptionally hard grounding. Normally you can expect the boat to come to a shuddering stop, with no damage, should you hit bottom at speeds less than 5 knots or so. It's then just a matter of retracting the daggerboard and continuing on your way.

The daggerboard case itself is exceptionally strong, and is not likely to be damaged in a grounding, though this cannot be guaranteed. But even with a lost daggerboard, your Farrier trimaran will still be sailable, and will still go to windward. In this case you should allow her to heel as far as possible, submerging the lee float to pick up lateral area.

The centerboard, as is optional for the F-

22, F-82, F-32, and F-36, can kick back and is thus less likely to be damaged in a grounding. However, it should only be cleated in a cleat that will let go at a certain load to avoid any damage. A clam cleat with the teeth filed slightly to reduce holding power can be used for this. Never use a horn cleat to hold the centerboard down.

When maneuvering in confined waters **always have the board down**. This promotes quick turns, preventing any sideways motion. In general, the board should always be down, except perhaps when running downwind in light conditions. However, no speed advantage has ever been found for this, so probably easier to just leave it down.

The board should always be half to fully down when running or reaching in heavy winds or seas. It greatly enhances directional control, keeping the tiller very light.

Should you at any time find the helm heavy, then the causes could be the daggerboard being up, the rudder has kicked back slightly (always watch for this), or is not raked forward enough. Another possible cause can be the mainsail sheeted in too tight (a common fault). Even in the strongest winds, or the fastest 20 knot spinnaker run, the helm should always be light enough for easy one-handed control. If not, you should check for reasons why.

RUDDER

Kick back rudders were used on all earlier designs, but these do not work well in shallow water. Later designs now have lift up daggerboard rudders, which are much more effective. It is just a simple pull up or push down, and depth/wetted area can be varied to suit the situation.

The daggerboard blade can also kick back in some models, or is designed so that case aft end strip will shear out in any grounding, so boat escapes any damage.

The earlier kick back rudders still work well and have two control lines, one to pull up and one to pull down.



F-33 daggerboard rudder, with blade fully down



F-22 daggerboard rudder lifted partially up. The best solution for shallow water

These should be color coded, with red (for danger) to pull up, blue, for deep water, to pull down. The rudder will kick back, should it hit bottom hard enough, the pull down line pulling through the cleat.

At high speeds, the cleat alone may not be enough to hold rudder down. In this case, a lock/shear pin can be fitted through the case and blade as a positive lock down.

It is also a good idea to fit a horn cleat on the tiller as a backup, but this should only be used if the hold down cleat is worn, and the lock/shear pin is not available. Never use the horn cleat where there is a danger of grounding.

The rudder is held in the up position by the pull up line, except with transom hung rudders, where the **pull down** line can actually work better once the rudder is lifted vertically.

MAST SETUP

Rig tension and mast setup are very important for good sailing performance and while rotating masts do not require much rig tension (to allow full mast rotation), most owners do not tension the fixed mast rigs enough. To avoid this, a simple rig tension gauge (Loos Type recommended) available at Marine stores can be purchased, and this includes hints on tensioning your rig. Rigging wire will stretch a little initially and all settings should be checked after a few sails.

Rotating masts can use synthetic rigging, which will stretch a little more, but this does not matter on a rotating mast. Synthetic rigging is much lighter, easier on the boat, easier to handle, and is now the recommended choice.

Depending on type, synthetic rigging will stretch more the first time out, sometimes considerably, so it needs to be tightened up as you go. But once the initial stretching phase is over it becomes very stable and only needs the occasional check.

All masts should be set up with some prebend (center of mast pushed forward). This will range from as little as



3/4" with Rotating masts (even less with wing masts), to 3 to 5" with fixed masts. Mainsail should then be cut to suit this.

There is no correct amount of prebend as such, other than each mast should have some, as it will help stabilize the mast, and it can also be used to control the mainsail shape to some degree. This means that if the mainsail is cut for say 3" prebend, less will make the main fuller for light airs. More will tend to flatten the main for windy conditions.

Prebend in Rotating masts is harder to adjust in this regard, but the ability to rotate the mast can give an even greater control over mainsail fullness.

For good windward performance the forestay **MUST BE TIGHT** and this is essential. Fixed masts can increase forestay tension by pulling on the shroud tensioners, along with more mainsheet tension. Rotating masts can only use mainsheet tension, but the superior mainsail shape due to the rotating mast, more than makes up for any jib luff sag

An important rule, vital to the well being of all masts, particularly fixed masts, is to be sure that your leeward cap shroud never becomes **TOO LOOSE**. Some looseness is not unusual, but if it is very loose and visibly flopping around, you could risk losing your mast.

To tighten the shrouds on a fixed mast while underway, you can use the spinnaker winches on the tensioners, or else snug up the leeward tensioner a set amount to just remove any slack. Now tack and pull on the other side an equal amount. It is easier to tension the leeward shroud rather than the windward one.

On the F-9/F-31 fixed mast the top shroud's tension in heavy weather should always be 2500lbs or more..... **Don't forget to relieve this when not sailing.**

SAILING

This manual is not intended to be a Sailing Instruction Manual, and it is presumed that all owners will have a basic sailing knowledge and skill. There are however, many aspects of sailing a Farrier trimaran efficiently, and the following covers some of these:

THE BASICS

The mainsail is usually hoisted first. Turn directly into the wind and commence pulling on the halyard. You may find winching necessary to get the main fully up, and if fitted, use the jib halyard winch. If the boom roller furling system is fitted, the main will automatically unroll from the boom. Winch the halyard tight until all the wrinkles just disappear from the mainsail luff, no tighter, and lock the halyard with the rope clutch. The topping lift can now be eased.

All models sail and tack easily under mainsail alone, unless a non-standard mainsail with an oversize square-top/roach has been fitted. These can be impossible to tack main only, plus be dangerous downwind.

If you have a lot of tacking to clear a channel then it may be much easier with just the main. You don't have to worry about tacking the jib, you won't be going too fast, particularly in crowded waters, and visibility is excellent.

The correct technique for sailing mainsail only is to sheet it free to avoid choking the boat. The traveller can be locked on the centerline, and the mainsheet slackened off so the boom is about 12" out from center. Your boat speed should be 5 - 6 knots in 10 to 15 knots of wind, even better with a rotating mast. If less, then the problem is an oversheeted main or trying to point too high.

There is a technique involved in sailing main only, and



Even an extreme racer like the F-32SR can sail well main only, provided mainsail roach is not oversize

once learned how, it is a very relaxed form of sailing. The secret is to keep the main eased out more, particularly after a tack. Don't try to point high until boat speed has built up.

Jib halyard can now be connected and the jib hoisted. Tighten until the wrinkles just disappear from the jib luff, using the halyard winch if needed. There's no need to go any tighter. As the wind increases you will find the halyard will need tightening, again, just enough to just get the wrinkles out. Sheet the jib and you are sailing!

If available, two additional controls may be added to the mainsail at this stage, these being the boom vang (fixed masts only) which just snaps on, and the Cunningham eye tackle. A min. 4:1 fiddle block with cleat is snap shackled

to the mast step, and the line from the top fiddle block is passed through the Cunningham eye on the sail and connected to the horn cleat on the other side of the mast. This will give an 8 : 1 purchase, and should be adjusted to just remove the wrinkles from the mainsail luff. Neither of these controls are essential for everyday sailing, their main purpose being to give more efficient control over the mainsail. Both must be removed when roller furling.

Farrier trimarans are sailed like any other yacht, the most notable differences being the response, lightness of helm, and low angle of heel. This ranges from an average of 5 to 10 degrees to a maximum of about 15 degrees.

Pointing ability is excellent, but care must be taken not to oversheet or try to point too high. Just a few degrees less pointing, with sheets slackened slightly, can see boat speed jump from 6 or 7 knots to 9 or 10 knots.

When reaching, the headsail shape can be improved by using a barber hauler. This is a line hooked to the headsail clew, or a small block on the jib sheet (allows easier tacking), then led to a block attached to an eye on the float deck and then back to a camcleat on the cockpit



Jib barber hauler in use on an F-27 - will considerably boost performance

coaming. Two barber haulers give a wide range of sheet adjustment. One can also be used on the boom to hold it down while running or reaching. This is more effective than a traditional boom vang and a good safety feature to prevent an unexpected jibe.

For the best performance while running, weight should be kept forward. At least one crew member should sit on the main hull bow when racing downwind. This reduces wetted area and can make a significant difference.

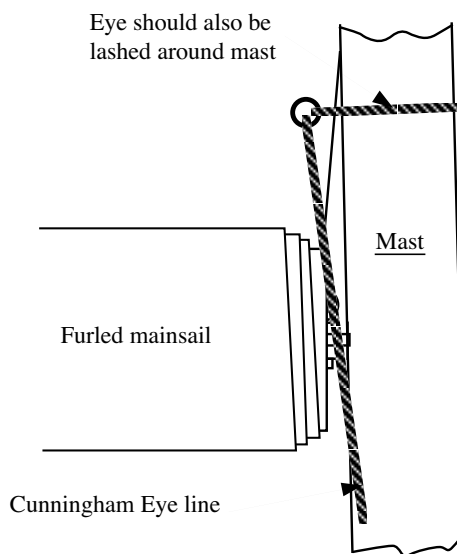
REEFING

Several different reefing systems can be fitted, and all the various operation procedures are well documented. With jiffy reefing, the reefing lines are led inside the boom to cleats at the forward end, and if necessary down to the mast base and then back to a winch.

A roller reefing boom is also optional and this is a very effective reefing system, being fast, easy to operate, and infinitely adjustable. The other main advantage is the ability to easily roll up the mainsail for storage.



Boom vang and Cunningham eye controls on an F-27 - Boom vangs are not used with rotating masts as they will restrict rotation



Roller Furling Boom



F-28 Mainsail being roller furlled. Note foot being used to control halyard.

To reef, first disconnect the boom vang (if fitted) and Cunningham eye tackle. The topping lift should also now be used to lift the back of the boom a couple of inches above horizontal. This stops the main from creeping forward to bind against the mast when furling. This may not be required, depending on the cut of the mainsail.

Now take the main halyard around the winch and release the rope clutch. Go forward with the halyard held in hand, unlock the furling handle and begin turning. As the main is rolled down, let the halyard slowly run out to suit. When the main is rolled up sufficiently, lock the furling handle, let off the topping lift, return to the cockpit and retension the halyard. Reefing is complete.

You should always try to locate the head of the reefed mainsail close to or just above a staying point, rather than in the middle of a mast panel. This avoids unwanted bending loads on any unsupported mast section.

As mentioned previously, if you find a problem with the



Main neatly roller reefed on an F-27



An F-25C with boomless main and reefed

mainsail rolling up close to and jamming against the mast, this is usually caused by **not lifting the end of the boom sufficiently** with the topping lift.

You may also find it easier to regulate the speed at which the halyard runs out, as you wind the boom, by using the ball of your foot on the line just before it enters the mast.

The boom vang cannot be reconnected, but with the barber hauler system available, if needed, from the floats, this is not of any importance.

The Cunningham eye tackle can be connected to the reefing tack eye if wished, as shown, and again used to tension the luff as required.

It is also advisable to take a line from the Cunningham eye forward and around the mast. This avoids the possibility of the bolt rope pulling out of the mast groove.

Boomless Mains: These are reefed differently and can in fact be easier to reef. Luff is reefed the same as jiffy reefing, using basically an extra long Cunningham Eye tackle, with a single line threaded through the first reefing eye. One pull and luff is reefed. It is also a good idea to take a line around front of mast if reef is likely to last a while, to ensure main luff cannot pull away from mast.

Leach end uses a rope clutch on side of clew board, with a line running from opposite side of clewboard, up through reefing eye, and back down to rope clutch. One pull and leach is reefed. No need to disconnect main sheet which just stays attached to clew eye.

ROTATING MAST CONTROL

The correct rotation of a rotating mast will give a much more efficient and powerful mainsail. It is thus important that the rig not be set up too tight as this can prevent full rotation.

There are many opinions on what the correct amount of rotation should be, but a general guideline is to keep the mast rotated enough to give a smooth, even transition from the mast to the mainsail on the leeward side.

The amount of rotation will depend on the type and shape of mast, and can range from 35 to 90 degrees from the boat centerline. A good rule of thumb is for the mast to be rotated around 40 to 50 degrees more than the boom.



Avoid allowing the mast to rotate or swing back and forth, which can happen in light winds combined with waves, or when sailing off the wind with less sail pressure. This is usually prevented by having the mainsheet angled forward from the boom, which forces the boom forward to keep the mast rotated when pulled tight.

The amount of mast rotation is controlled by a line to the rotation arm on the mast from either the boom or the deck. A line from the boom has the advantage of being self-tacking, by maintaining the mast at a constant rotation angle relative to the boom on all points of sail. However, the control line will have to be detached from a roller furling boom and transferred to an eye on the deck when furling the main.

A control line from the deck is also self-tacking, but it does not automatically adjust for different angles of sail. It will thus need to be let out when bearing off. Some racers like to fit two lines to the deck, one from each side for absolute control, but this can also be just another complication and is not necessary for general sailing. A 2 or 4 : 1 tackle is now recommended for the control line, as the loads here can be high.

WINDWARD PERFORMANCE

All Farrier designs will point very high if set up and sailed correctly, but this can also be very dependent on the crew's skill. It is possible to point just as high or higher



F-33 Mast Rotator Arm & attached to boom for self tacking

than an equivalent monohull, but this may not be the fastest way to windward. A good multihull is capable of much higher speeds to windward than a mono, which also brings the apparent wind forward, to where pointing will be lower, but the speed to windward is much greater.

One thing to avoid is oversheeting the headsail, as while pulling this on very tight will guarantee a good pointing angle, the boat speed may be slow. The correct way is to let the sheet out 1 - 2 " from being tight on, so that curve of the headsail leach matches the curve of the mainsail. It should then not backwind the main, and your pointing angle and boat speed should both be excellent.

Once you have achieved good boat speed, then experiment by tightening sheets a little, pointing slightly higher, while trying to maintain the same boat speed.

The mainsail traveller should be around 6" to windward in lighter conditions, then around the centerline in moderate winds, and, as the wind increases, moved to leeward slightly with more mainsheet tension being applied. In very strong winds the mainsheet should be pulled on as tight as possible. Stand above it and pull it on as hard as you can - most sailors don't have this tight enough in strong winds. A tight mainsheet helps keep forestay straight for good pointing ability.

If the jib is backwinding the main, open the slot, by moving the traveller a little more to center. Keeping an open slot between jib and main is crucial to good windward performance, as any backwinding of the main will choke the boat. Equally as important, the jib must be relatively flat with NO HOOK in the leach, and not oversheeted. Leach battens are highly recommended to keep the leach flat.

If set up and sailed correctly, a Farrier trimaran will match the windward ability of the best monohull racers, 20 to 30% larger. Pointing high and going fast is one of the hardest things to achieve in any boat, but with a little care and tuning a Farrier design is one of the best.



F-27 hard on the wind off San Francisco

REACHING

When reaching, it is vital that the mainsail be let out far enough. A common mistake is to sheet it in too tight, with loss of boat speed, a heavy helm and an excessive heel angle.

ALWAYS REMEMBER YOU WILL GENERALLY GO FASTER BY EASING THE SHEETS OUT. PULLING THEM ON TIGHTER IS MORE LIKELY TO SLOW YOU DOWN

Your mainsail should have leach tell tails fitted as standard. Watch these, and should they disappear behind the mainsail to leeward, then you are sheeted in too tight. They should always be flowing aft.

In light winds the mainsheet system can tend to bind and be hard to let out. To overcome this there is sometimes a lever on the side of the camcleat block that disconnects the ratchet. The mainsheet system will then run out easily.

The headsail should also be barber hauled out to the floats when reaching. This is used to get the perfect shape in the headsail (so that it doesn't backwind the main), and will boost reaching performance significantly.

SCREACHER

This is an optional roller furling wire or synthetic luff combination genoa/reacher, flown from the spinnaker bow pole. A separate dedicated halyard just below the spinnaker halyard is best used for the screacher, as this allows it to be left up while furled, ready for use.

This multipurpose sail can be a perfect all-around, first choice, additional sail for cruisers, or an essential power-house for racers. It is still a developing sail in many respects, and offers some significant and worthwhile



Screacher being used to windward on F-32SR, while doing 16 knots in 8 knots of wind. Luff could be a little tighter, but very hard to do with that level of performance. A screacher is also be a great allround easy to use sail for cruisers.

advantages.

It can be used very effectively to windward in light airs, if cut for this, and for reaching in moderate airs. It thus eliminates the regular hank on genoa, while providing more sail area, and it is easier to change headsails. The jib is just dropped and the screacher unfurled when required. Sheeting can be a simple strap around the aft beam, which can be moved in and out for the correct sheeting angle.

For the best windward performance, it is very important to keep the luff tight, and many racing owners have fitted 2 to 1 halyards to keep the clutch loads lower. However, the risk of twist when hoisting can then be higher, and cruisers will usually not experience the sort of high loads that some hard racers can induce, in the search for the ultimate performance.

The screacher can be tacked easily when needed by rolling up and then unrolling on the new side.

SPINNAKER

The spinnaker is an easy sail to use on a trimaran, due to the wide beam and level sailing. It is thus a practical and safe sail for family sailing, with very



An F-33 with spinnaker, while screacher can be seen up and furled, ready for use



Asymmetric spinnaker on an F-33R. Jib can also be flown inside by racers as shown for better performance

few control problems. All Farrier designs now only use asymmetric spinnakers, which are the easiest to use, and the fastest if used correctly.

The asymmetric spinnaker can be launched from the leeward wingnet, or main hull bow, and the sheets led back to blocks on the floats near the aft beams for general all round performance, though pointing ability is limited.

CAUTION: Avoid using continuous spinnaker sheets, which can prevent the spinnaker from being released easily.

For **better pointing ability**, a closer sheeting angle is better, and a block on a movable strap around aft beam works best. The spinnaker can then be set near perfectly, without a tight foot or a loose and flapping leach.

The tack line is led from a block at end of the pole back along main deck to a cleat on the aft end of cabin roof. To set, connect tack line, sheet, and halyard. Pull on tack line until tack is at the end of pole, hoist and then sheet in.

SPINNAKER JIBING

The asymmetric spinnaker can be jibed either through inside in front of the screacher or forestay, or around the outside. With 'inside' jibing the sheets are run between the spinnaker tack and the screacher if fitted, forestay if not. Outside jibing requires the sheets to be run outside the spinnaker tack.

Inside jibing is probably the most common, as outside jibing does have the risk of a sheet going under the boat, though this is lessened by using a continuous one piece sheet, but these have safety

concerns. The advantage is that the sail does not have to fit through the narrow slot between spinnaker and screacher.

With inside jibing, the skipper should start turning slowly while the crew eases the sheet to keep the sail full. As the clew nears the slot, or the spinnaker starts to collapse, the new sheet should be quickly hauled in to pull the spinnaker through the slot and around, while also releasing the old sheet.

Outside jibing procedure is similar, with the crew waiting until the clew reaches just in front of the headstay, and then pulling in the new sheet, with the sail going around the outside.

In all cases it is very important that the skipper turns slowly, and then heads up to fill the sail before coming to the right course.

SPINNAKER SAILING DOWNWIND

On first using an asymmetric spinnaker you may find downwind performance disappointing with a fixed mast - unless you note what is said here. The asymmetric cannot match a symmetric spinnaker straight downwind because of the smaller, flatter area, and the less projection to windward. The advantage is considerably easier handling, and a superior reaching performance.

Tacking downwind does not work well with fixed masts, as mast interferes with mainsail flow, and the main is not as effective. A rotating mast is much more efficient and such boats can achieve a very large performance increase, making downwind tacking the fastest way to go.

However, the same effect can be achieved with a fixed mast by using the jib inside the spinnaker which, besides increasing area, helps smooth the flow over the mast and main with spectacular results.



Asymmetric spinnaker being used on an F-27 while winning Australian Nationals

The basic technique is to sail downwind while keeping the apparent wind at about 90° trimming the sails so they are not stalling or luffing. The jib, for instance, should be sheeted to the float just aft of the forward beam. The extra speed generated will pull the apparent wind further forward, allowing you to go deeper and deeper while maintaining a very high speed. Just keep the apparent wind at around 90°. It can be tricky to get the right angles, but if done correctly, the results can be devastating.

Flying jib inside the spinnaker may also help improve performance with a rotating mast in light winds, by smoothing and speeding up the wind flow over the mast.

SAFE SAILING RECOMMENDATIONS

DANGER

Be fully aware that it is possible to capsize any multihull and the following rules should always be observed for safe sailing

1. Always reduce sail when required as follows:

Wind Range	Maximum Sail Configuration
to 12 knots	Genoa or screacher & mainsail
12 -20 knots	Jib and mainsail
20 - 25 knots	Jib and mainsail with 1st reef
25 - 35 knots	Jib and mainsail with 2nd reef
35 - 45 knots	Jib only, or Storm jib & main 2nd reef
45 knots +	Storm jib or main only with 3rd reef

A more detailed chart for each model is on last page

The sail configurations recommended above are for standard cruising designs and have been arrived at from practical experience over many years of sailing Farrier trimarans in many differing conditions.

If necessary, all sail can be taken down and a properly set up Storm Parachute Anchor put out. This is now a well proven method for a multihull to survive even the worst off-shore storm. It appears to virtually eliminate the danger of capsize from both extreme wave action and hurricane force winds.

Other variations of the above are possible depending on the circumstances, and racing versions will need to reef earlier. Experienced and alert racing crews can also delay reefing to beyond the above limits.

A quick way to reduce sail, and achieve a very comfortable and safe motion is to simply drop the jib and sail under main only, reefed if considered necessary. This avoids the

need to tack the jib, and the fully battened main remains docile and easy to handle.

When running downwind in strong winds, it is safer to run with a headsail only. It is also still possible to go to windward and tack while sailing under either jib or mainsail alone.

Strong and gusty Winds: additional caution should be exercised in gusty winds. **Always** have the sheet of the largest sail up, be it the mainsail, genoa, or spinnaker, **in hand, ready for quick release.** Use only the camcleats provided and **never use self-tailers** as cleats in high winds - they are too difficult to release fast.

Always be ready to **release the sheets** if you feel the boat is being pressed too hard. Instruct your crew to do likewise. If concerned, reef until you are comfortable.

DANGER

Never leave the sheets unattended if unreefed and the wind is exceeding 20 knots

If being pressed while reaching then it is better to **bear away downwind** than round up. The boat will slow down, and the mast momentum from the turn is to windward, reducing heel. Round up and speed may increase surprisingly, while mast is thrown to leeward, heeling the boat more.

The only time to round up is while hard on the wind or close reaching (do not bear away in either case). Rounding up or luffing will feather sails until any gust passes by.

In general, your visual indication of being overpowered is when the leeward float is pressed far enough down to have waves regularly wash over it. If cruising with your family, then you should reef before this for the best comfort. If sailing for speed, this is not of great concern, providing the crew is vigilant, and this sort of sailing has been done for hours at very high speeds.

It is not unusual to drive the low resistance float bows



This is definitely not safe sailing with a novice crew aboard! DO NOT do this sort of thing with family or inexperienced crew on board. To be safe, always reef early.



frequently overlooked safety procedure. It is very effective. At sea a Storm Parachute anchor has the same effect.

Always carry full safety gear, including life jackets, as required by U.S. Coast Guard and local regulations.

Check Weather Forecast: Always listen to the latest weather forecast before you set out on any sailing trip.

Use Large Safety Margins: Always leave a large safety margin, be it while sailing, or just motoring around.

For safety, when sailing hard, ALWAYS keep sheet in hand ready for quick release

through waves, or even submerge the float in some circumstances. This has been found to have no adverse effect on the boat, and in fact the boat will tend to round up slightly, not slew to leeward as commonly and mistakenly believed.

Early Farrier designs used low buoyancy floats, and frequently completely submerged the leeward float, with speeds in excess of 15 knots, for quite some time, with no ill effect on the boat. However, this is sailing on the limit, and don't push your luck unless prepared for a ducking.

Beware of being caught side on, with little speed and with all sails sheeted in tight. This can happen after a tack if concentration is lost. Any strong gust in this situation can be turned into a 100% heel/capsize force, whereas if boat is moving it will tend to accelerate to absorb the gust rather than heel over and get bogged down

Thunderstorms: If caught in a severe thunderstorm, a simple safety procedure is to drop all sail and simply let the boat drift. You will lie side on to the wind which is quite safe, unless the waves are very large, in which case you should steer off downwind. Farrier designs will steer quite well from a reach to a run with no sails up in any winds over 5 knots - try it sometime. It is even possible to round up into the wind.

Anchoring in Storms: Another safety procedure in a severe storm is to simply drop all sails and anchor, and this is a

The above procedures will give a high margin of safety and should always be observed whenever safety is paramount. If absolute performance is required, and an experienced crew is aboard, the above limits can be exceeded. In some earlier sea trials full sail has been carried in over 40 knots of wind, including the spinnaker. This is not for the inexperienced however, and any skipper doing such sailing must be prepared for and accept the responsibility for the extra risks involved. It should not be done offshore.

SAILING HINTS

Farrier trimarans have several unique sailing features, one of these being the ability to make continuous 360 degree turns in the one spot. To do this, while going to windward for instance, just tack, but don't touch any of the sheets. You will continue to turn, jibe, and tack again



All Farrier designs are well tested, and very seaworthy, but don't push your luck

indefinitely. Can be a handy tactic on starting lines. Even the F-41 catamaran can do this.

A simple way of heaving to, is to just tack as above, but immediately put the helm over to turn back into the wind, with the jib sheeted on the windward side. This prevents tacking again and the boat will instead fall off. The rudder then takes over again and turns the boat back into the wind. You will then stabilize like this, just off the wind, moving forward very slightly. The helm can be lashed over and you now have a stable, barely moving work platform to do any needed repairs, stop for lunch, or just wait for someone else to catch up!

Should you ever lose the rudder, for whatever reason, don't despair. Among the repertoire of tricks is the ability to sail without the rudder. It takes a little practice to get right, and it is worth practicing sometime. Pull the rudder fully up (first making sure you have plenty of room!). Now, to go to windward, you sheet the jib or genoa as per normal but let the main right out. Pull the main on slightly and you will begin moving. Pull the main on more and you will come higher, let it out and you will go lower. Pull the main hard on and you will tack. Immediately let it right out until you stabilize on a reach, and then start pulling it in until you are going high again.

This takes a bit of practice to get it right, and for a time you will be all over the place, but after a while you should be able to work your way to windward, tacking too, just by adjusting the mainsail.

You can also sail surprisingly effectively without any

sails. The mast alone is sufficient to get steerage way downwind, and once moving you can bring her up on to a reach, even back into the wind. This can be a handy feature for coming into a ramp or dock at a greatly reduced speed.

Another feature is the ability to back up. This takes a bit of practice, but by turning into the wind, and waiting until she starts going backwards, you can control this backing for as long as you want. Just steer the rudder whichever way you want to go. Can be useful in backing off a beach, or away from a dock - just let her go back, swing around once in clear water, and then accelerate away.

The high potential speeds possible with rotating masts off the wind can be intimidating to new multihull sailors, and, if necessary, the potential speed can be reduced to a more comfortable level by reducing sail or by under rotating the mast, which depowers the mainsail. More rotation can be used as one becomes comfortable with the speeds possible.

Just remember, it is not compulsory to go fast. No one drives their car around corners on two wheels every time they take it out, and there is no need to drive a trimaran that way either.

When spinnaker running before very large seas offshore, with boat speeds of 20 knots or more, there can be a danger of pitch poling. This can be caused by pressure from the mainsail which cannot be released downwind should the bow dig in. The **solution is to drop**



Set up and sailed properly, a Farrier design is a very safe, yet very fast boat. This F-9AX is handling some very rough conditions in South Australia quite comfortably, by being well reefed



*When seeking the best performance, keep things in perspective - there will always be some boats that will be faster...
The world record setting 23m (75') trimaran B&Q and an early Farrier design - the 19' Tramp*

the mainsail, which virtually eliminates this risk. This rule only applies to racers, as cruisers should have reduced sail well before this even becomes a danger.

The limit for racers with modern rigs will always be nose diving, which is hard to do with a Farrier design, due to a characteristic 'high bow' sailing stance. The F-28, for instance, at speed, frequently has the complete center hull bow section out of the water, the waterline beginning just in front of the daggerboard. This comes from the wide flat swept up aft sections of the main hull which generate negative lift, actually sucking the stern down.

This characteristic can be maximized when needed with high speed racing downwind, by moving the crew inboard and aft to the back of the cockpit. This keeps the flat aft sections of the center hull in the water and the bows very high, by increasing the negative lift at the hull aft sections. This works most effectively on aft cockpit rotating mast boats, where the heeling component of the sails is less than the fixed mast, the drive being angled more forward.

Also important for the best performance, by minimizing wetted surface area, is to move crew weight well forward in light to moderate winds, to keep the bows down, countering the stern negative lift.

Boat should also be heeled to leeward (crew to leeward) when sailing to windward in light winds, just as with a mono. Sails will then hang in a more efficient shape.

ANCHORING

Trimarans tend to be lively at anchor, due to their light weight and shallow draft. They tend to sail from side to side, which can be annoying. This can be overcome by using a bridle setup to each float bow, using a block on the bow to lead the bridle lines aft.

When anchoring, just lay out your anchor as per normal, over the main hull bow roller. Set up the rope bridles, running through the blocks on the float bows and back to the spinnaker coaming winches. Bring the 2 bridle lines together in the center of the boat and attach to the anchor line. Let the line out further until the bridles take over the load. You will then have a well behaved boat.

In some anchorages, a small drogue or even a sturdy bucket deployed from the stern of the main hull will help keep the boat steady.

BEACHING

One major multihull advantage is the ability to come right into a beach. You can either pull in far enough so that the boat cannot move around (which can wear out your expensive bottom paint) or anchor just far enough out so that the boat remains floating in 2 or 3' of water.

RETRIEVING TO TRAILER

After sailing is finished, the jib is dropped and the mainsail is roller furled or folded. Remember to **lift the boom aft end** as required with topping lift for smooth

roller furling. Once fully rolled, you should then hold the mainsail with one hand, and **reverse wind the boom** with the other. This loosens the tightly rolled main, preventing any wrinkles, and relieves any bending force on the battens.

The floats can be folded before arriving at the ramp for reduced beam, and this also allows the float bows to be very useful step-off points, if needed. Use the secondary wider folded position on larger designs (F-32 or F-9A) if windy and there is still some distance to the ramp.

Prior to folding, with all rotating masts, **the mast raising wires must be fitted on older designs**. Later designs such as F-22 or F-32 only need raising wires to be fitted for when mast is being raised or lowered.

WARNING

Rotating masts must be supported by raising wires before disconnecting float stays or mast could fall

To fold older designs, relieve the tensioners, or release Highfield levers (if fitted) on older designs, and then disconnect stays from the float chainplates. Mast shrouds will be retained to the float by the Highfield levers, giving just enough slack to fold, while preventing the mast from falling should the mast raising wires be forgotten where required.

Later designs such as F-22 and F-32 (also F-24) will



*Highfield lever being released on an older design to give enough slack in the float shroud for folding. Mast raising wires **must always be fitted prior to releasing shrouds**.*

allow floats to be folded without disconnecting stays.

Float stays will need to be completely disconnected from the floats on older designs, and, if Highfield Levers



The advantages of a multihull with shallow draft can be easily seen. Sometimes you don't even need to anchor. Just pull up at the nearest beach - an F-27 in Guam.



Folding can be done while motoring, but be careful in high cross winds with larger designs

are not fitted, they can be secured to the mast with Velcro straps. This stops them from flopping around. An alternative is to loosely attach them to the float just in front of the aft beams. This keeps them from moving, yet allows the float to fold up.

Before folding, first check to see no one is on the side being folded, and then undo the beam bolts. The beams on the side first released may spring about 12" into the air as the last bolt is undone. Hold the top of the beam and lift upward to fold, **TAKING CARE NOT TO LET THE FLOAT SWING IN TOO FAST AGAINST THE CENTER HULL** which could damage the stops. You may have to slow it down, particularly on later designs.

WARNING:

Take great care while folded in winds of 25 knots or more. A combination of a high cross wind and a fast tight turn may be sufficient to overcome the folded stability, resulting in a rollover. Also do not fold should any float compartment be flooded.

Once folded insert the beam locking pin. If the float does not fold in fully, usual cause is the wingnet catching on the aft corner of the cabin side rail. To correct, just push the wingnet down under the cabin side rail.

Now fold the second side. You may find this initially more difficult, as the boat is heeled this way, due to the first float folded lifting that side. Crew weight on the already folded side will help by levelling the boat out more. Lift, and once again don't let the float come in too fast once it starts moving. Insert the beam locking pin.

If anything seems hard or difficult when folding, STOP and see if anything is misaligned, or snagged. A common error is to try and fold without disconnecting the stays. The beam won't budge, so remember to check this.

Raise the daggerboard and rudder, and cleat both in the up position. You are now ready for the trailer.

If there is a cross wind, then a Side Guide Rail should be fitted to the leeward side of the trailer. This prevents the boat swinging sideways and off the trailer.

Back the trailer down into the water until the water reaches the forward inward bend of the trailer side members and the float supports are just visible above water level. It should not be necessary to submerge the trailer any further than this.

Gently guide the boat into the center and pull up as far as it will go. Take care here, that it comes on straight, and avoid pulling it over the center hull side supports, as this can damage the Log paddlewheel sender unit on the bottom of the hull (gets expensive to replace).

A side line from the windward aft cleat may also be helpful in cross winds to prevent the stern swinging too far sideways.

If motoring onto the trailer, **leave the daggerboard down until the last minute** - otherwise any crosswind makes it very difficult to keep on center. Once fully on, connect the trailer winch hook, and winch on the remaining few feet.

The boat can now be pulled from the water, and when on level ground remember to check that it is fully winched on. Once out of the water there always tends to be some slack in the winch wire. **Tie an extra safety line** from the bow eye down to the winch post, ready for de-rigging.

DE-RIGGING

Remove the bow line, separate the two lines, and use as the side tie-downs. Fit the aft mast support and the trailer lights.

Remove the jib and fold. The jib sheets can be stowed in the anchor well ready for instant use next time. If possible, the jib can be stowed inside one of the floats - thus keeping it from cluttering up the main cabin.

If possible, relieve the tension on the battens, and these can be left in the loosely rolled main. Remove the roller furling handle (if fitted) and stow in the anchor well.



This is about the right position for the trailer when retrieving



The F-27 roller furling boom

Leave the topping lift on, to take the weight, and disconnect boom from the mast. Lay it down on the cabin roof to one side and fit the sail cover/bag. Disconnect the topping lift, and reconnect to the mast.

The boom/mainsail can be heavy on larger designs and hard to handle. It can be stowed in the cabin if you wish, but this takes considerable effort, as well as considerable room inside. It is much more convenient to stow it on the cabin roof, where it is protected by its bag and is ready for instant use the next time.

To lower the mast, release the jib halyard from the rope clutch, turning block and mast base block (if necessary) and **cleat it to a horn cleat on the mast side**. Release the trailer winch hook, pass it over the bow roller and hook to the jib halyard. Tension the winch until the forestay just becomes slack, allowing the pin to be removed. There is no need to slacken the turnbuckle.

Take the forestay back and secure to the mast. Remove all halyards etc. from the rope clutches and blocks as required. Wrap these around the mast to retain all stays and halyards neatly against the mast. It is important that this is done now, as otherwise any loose stays will tend to fall away over the boat when lowering the mast. It also makes subsequent rigging easier.

Fit the mast raising pole/yoke assembly, and begin lowering the mast by letting out the trailer winch line. **The raising wires must be fitted with rotating masts.** As



Trailer tie downs each side. Side stay tensioner can also be seen stored on float deck

the mast comes down, take care that the winch line meets the center of the raising pole, and that the mast is central when it reaches the aft mast support.

CAUTION: If your trailer winch does not have an automatic brake feature, **don't let go of the winch handle while lowering**. Should this happen it will start spinning very fast and could cause injury. Don't try and stop it - except by using the winch brake. **DON'T try and grab the handle** - you will just have to let the mast fall - better than a broken hand.

Once the mast is fully down, disconnect the winch hook, reconnect to the bow eye, and retension. The jib halyard is then reconnected to the mast.

Disconnect mast from the step, and lift it up to enable the wind indicator to be removed from the masthead. Walk the mast forward until it can be rested on the carrier on the pulpit. With roller furling booms, the mast can be mounted on a lift up spigot (in mast furler hole) on the pulpit.

Secure the mast to the pulpit and aft mast support. All rigging wires and stays should now be secured to the mast with the Velcro ties. This is to prevent them from rubbing on the deck which will quickly wear through any gelcoat or paint. On long trips it is also a good idea to pad between the wires and the mast, or remove the wires altogether.

CAUTION:

Avoid elastic type mast ties with hooks, as they can be dangerous. Velcro straps are much safer

Rudder should be fully up, and tied to one side. Should local regulations not permit the rudder to be left on the transom, it should be removed and stowed in the towing vehicle. If fitted, secure the pop-top down, or it could lift up during high speed towing.

Connect the trailer lights (making sure they are on the correct sides) and then check that the trailer is correctly positioned under the hull. You are now ready for the road.

LIFTING OUT

Should there be no ramp present, then all Farrier designs can be lifted in and out by the usual dockside lift, by fitting permanent **Lifting Eyes** (with substantial backing inside).

Slings can also be used around the complete folded craft, the best bearing areas for the slings being the beam areas. Other temporary lifting points are the mainsheet traveller (outer corners), shroud chainplates on the center hull (when fitted), or the beam bolt pads in the beam recesses.

MARINA DOCKING

For marina docking, the side stays are released from the floats where required and the floats folded as normal. The marina slip can then be entered and the folded boat moored as with any other craft. However, care must be taken if high cross winds are a possibility, as **folded stability is limited**. Precautions include running a line from the mast to the dock on each side, a wider folded



position, or lowering the mast in extreme conditions. Folded stability without the mast is very good, and the folded boat can actually self right up to even a 80 to 85° heel angle - but don't risk it.

One problem with marina docking is oil stains or growth on the lower float sides. This is not a major problem with short stays in a slip, but will be a nuisance over a long period.

There are several ways to overcome this, one being the use of an antifouling wax on the float sides. Thus the gelcoat finish is preserved and only an occasional wipe is needed. Antifouling paint could also be applied to the float sides but this is not attractive, it needing to be 2' 6" wide.

Another solution for long term Marina docking is a Lift or HydroHoist, which lifts the boat out of the water.



* * * * * SAFETY * * * * *

The modern trimaran with its enormous stability and unsinkability is a very safe craft, and has now established an excellent safety record.

There have now been many record breaking runs around the world, and current record is held by a trimaran at 45 days, this being an average of 26.5 knots, with the



*This is **not** a safe angle of heel - go this far and you are probably gone! This F-27 is being pulled over to test stability.*

top speeds seen being over 40 knots.

However, safety is always dependent on the operator and how the craft is handled.

The major hazard to be avoided is capsize, and a few simple rules make this virtually impossible. Capsize is rare with well sailed cruising multihulls, but can occasionally occur when racers are being pushed to the limit - just like race cars. The important factor, as with a car, is that the degree of risk is up to the driver/skipper. Drive or sail too fast for the conditions and the risk of a crash is higher. **The decision is yours.**

It is not taken away from you by a heavy keel below, making it impossible to go fast. Nobody would seriously suggest weighing down a car to prevent a roll over. Nor should a sailboat be weighed down to limit performance, just because a few may not have the maturity to sail a fast type of craft safely.

Thus, like a car, a multihull has the capability of very high speeds when desired, and the risk factor can consequently be higher. The choice is yours however, as it is **not compulsory to go fast.**

In general, the risk factor will only begin to increase when boat speed exceeds 15 knots while reaching, or about 8 knots to windward. When sailed for the conditions, or with safety in mind, Farrier designs are the safest craft afloat.

UNSINKABILITY

This is the ultimate safety feature for any boat. All Farrier designs are unsinkable, being constructed almost completely in wood/foam/glass, with many watertight compartments. With no heavy keel, they are therefore immune from sinking, even with all watertight compartments flooded. No matter what happens, you can be assured that your boat will always be there, and it will never go aground in 200' of water!

There can be up to 12 watertight compartments, depending on the builder/design, including:

Floats: three separate compartments each.

Fwd. berth: an important factor against collision

Aft. berth: considerable reserve buoyancy

The four beams: up to 170lbs buoyancy each

OFFSHORE SAILING

All Farrier designs have been designed strong enough for heavy weather sailing, and the F-27, F-28, F-9A/F-31 and the F-36 have now crossed both the Atlantic and Pacific Oceans many times, including two circumnaviga-



Even when fully flooded, a Farrier design will stay afloat easily. This F-27 was deliberately flooded in order to demonstrate its unsinkability.

tions. However, it should be noted that the trailerable folding designs are small boats for such long offshore passages, and for this reason such voyages **are not recommended** with such designs as the F-25, F-27, F-82, F-28, F-31 or F-9A.

Only the F-32, F-33, F-36, F-39, F-41 and the new F-44 are large enough to be suitable for ocean crossing, while some caution is advised with the F-32 and F-33. They are strong enough, but size is at the bottom limit.

***** WARNING *****

THE SAFETY OF ANY FARRIER DESIGN AT SEA CANNOT BE GUARANTEED AS OFFSHORE SAILING CAN BE A HAZARDOUS UNDERTAKING, WITH MANY RISKS. NUMEROUS FACTORS BEYOND THE CONTROL OF THE DESIGNER WILL AFFECT THE SAFETY OF ANY OFFSHORE VOYAGE AND ANY OWNER TAKING A FARRIER TRIMARAN OFFSHORE MUST ACCEPT FULL RESPONSIBILITY FOR ANY RISKS INVOLVED.

It is not within the scope of this manual to go into all the necessary equipment for offshore sailing, this being covered by many readily available books, and/or offshore safety regulations.

The essential items are an underwing safety gear compartment, an underwing re-entry hatch, the optional Storm jib, and a properly set up **STORM PARACHUTE ANCHOR**. The parachute anchor is a recent development for multihulls and offers a very comfortable and safe method for surviving severe storms.

CAPSIZE!

Capsize will always be a possibility with any multihull, but the chances are very remote - probably about the same as being in a car rollover. Both are easy to avoid by simply slowing down and driving to suit the conditions. One really has to be doing something very foolish to be involved in a capsize, and if one just keeps an eye on the



Push it too far and this is what may happen - a capsized F-82 - note how high it is floating, the water level being around the bottom of the beams. Even in this position it remains a relatively easy and safe boat to be on. This is about as bad as it can get on an unsinkable multihull. The other option is this:



or even worse:



weather, reefs early, and never sails on the limit with family or unskilled crew on board, then a capsize is extremely unlikely. A capsize is also less serious than a sinking, where the boat can disappear completely.

But the possibility of capsize is always going to be a factor, and should always be prepared for as follows.

SAFETY COMPARTMENT - When sailing offshore the following items should be stored in an underwing

safety compartment (accessible from underneath if cap-sized), with lanyards attached, and in watertight bags:

- ☐ EPIRB unit
- ☐ Flares
- ☐ Cutting tools
- ☐ Extra wrenches
- ☐ General tools
- ☐ Bolt Cutters
- ☐ Spare Beam Bolt Wrench
- ☐ Ropes
- ☐ VHF Hand Held Radio

Crew will then have easy access to critical safety and rescue equipment, without having to dive for it.

RE-ENTRY HATCH - If going offshore, or involved in serious coastal racing, then another essential item is a re-entry hatch to allow crew back inside the boat, where shelter is available,

as well as the full array of stores. Such hatches should be fitted just above the normal waterline, and best place is usually under the cockpit area, or just forward on the main cabin aft bulkhead.

INSIDE THE BOAT?

If caught inside a capsized multihull, there should be plenty of air, the boat is not going to sink, and there is usually no urgent need to get out. So take some time to assess the situation, as it could actually be safer inside.

Surge is the major enemy, and the first priority should be to seal all hatches, vents etc. as much as one can, secure companion way slides, and try to keep the boat dry as possible. Main pop-top or hatch will remain in place as this will try to float upwards. Battery switch should be turned off and all loose objects stored in the cabin settees, these now being above water. Surge can otherwise remove everything.

Water level while inverted will be around the bottom of the beams with the float decks being only just immersed. Level will likely rise a little more if the boat has been built and setup properly, until it will eventually stabilize, but still leaving plenty of air space.

If possible, the battery should be removed as it will discharge under water. It should be a **sealed unit** thereby eliminating the danger of acid or gas.

If offshore, the crew outside can use the re-entry hatch

to shelter inside, or if not fitted, obtain a cutting tool from the safety compartment (accessible while inverted), and cut an access hole into the hull under the cockpit storage lockers.

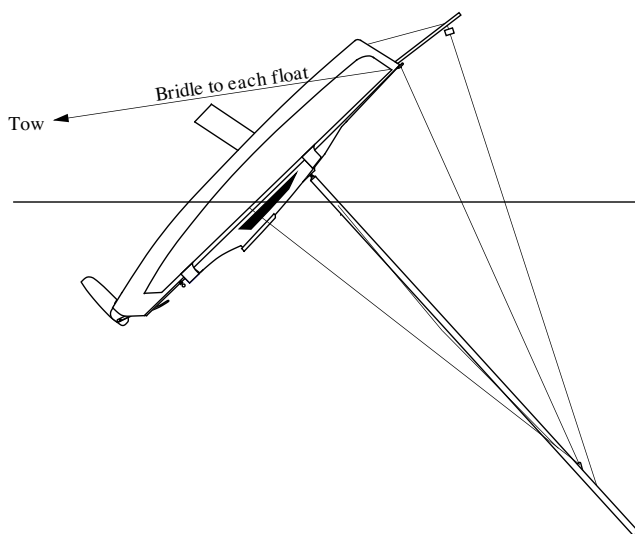
You now have a large, relatively comfortable life raft, and well stocked with provisions. Much better off than in a small liferaft with minimal provisions. In fact the record for the longest survival time adrift at sea is now held by the crew of a trimaran capsized off New Zealand in 1990. They were in such good condition when rescued that their story was first believed to be a hoax.

The same year an offshore racing monohull disappeared off Australia, taking 6 lives. Had they been on an unsinkable trimaran, the crew may have survived. Modern satellite position indicating systems now offer quick and easy location for a floating, but disabled multihull, whereas a sunken monohull has no such option.

RIGHTING

Righting at sea, unless outside help is available, is probably not a feasible option as yet. Probably better to leave the craft as is, as crew are safe, and await rescue.

When the opportunity arises, and outside assistance is available, the most successful system for any multihull, is to tow the capsized boat fore and aft, the tow line going to the aft end, in the form of a bridle. Which end depends on the boat, but the general rule is to choose the end that is floating highest. Thus as the boat begins to move, the lowest end, be it bows or stern, will begin to sink, and even more so as the water inside rushes to the sinking end. The boat should then flip back upright, bow over stern or visa versa.



If the above procedure does not work, then try flooding the end that needs to sink, or add some crew weight (ready to abandon ship once the end concerned starts to



An F-27 being successfully righted

go under). If this fails, try towing the other direction. Some controlled flooding may also be required. Towing sideways **will not work** - fore and aft is the easy and only way to do it.

Another righting method, that uses the folding system, has been tested and shown to be workable on a Farrier designed 19' Tramp in choppy conditions, and on an F-27 in smooth water. The Tramp was deliberately rolled over, the F-27 was a capsized.

The method has not been successfully tested at sea and thus should not be tried at sea, it being better to wait for assistance, as the righting action does tend to flood the inverted boat more. Not a good idea if the righting attempt doesn't work.

The F-27 capsized was caused by the spinnaker combined with a mainsail sheeted tight amidships (never do this while under spinnaker in any circumstances). Both sails were being carried in winds gusting to **35 knots**, with **NO ONE** holding the sheets. Crew was just owner and 10 year old daughter. Boat speed was over 20 knots and the capsized happened while changing from a run to a reach, and the crew were not able to release the sheets in time. **In these conditions the sheets should always be hand held without exception.** The spinnaker sheet can



The cleanup work after a capsized is considerable - So sail sensibly and don't even risk a capsized - it is easy to avoid

be easily led to the windward jib sheet winch, making this very easy to do.

After capsize both crew surfaced under the wingnets, but found plenty of space to breathe due to the high floating position. There appears to be little danger in being trapped here. They were then able to get on to the upturned boat (now a safe 19' wide raft), which was towed ashore, and righted, with little damage, the next day.

The procedure using the folding system can be seen on the Owners Page of the Farrier Marine website.

PERSONAL RESPONSIBILITY

There have been exhaustive efforts to minimize the risk of personal injury, loss, or any other form of damage, while operating a Farrier designed trimaran, but obviously it is impossible to completely eliminate every risk. Winches cannot be made trip proof, nonskid can wear and cause slipping, rigging wires can be kinked while rigging and later fatigue, lifelines can be fallen over, frequent groundings at speed can cause eventual daggerboard or rudder failure, neglect of proper maintenance can cause early failure, and lack of experience can cause accidents in congested areas, or bad conditions. Sailing can be hazardous at times, and the boat operator should accept responsibility for all such hazards

Many of these risks have been covered in this manual, but it is impossible to cover them all. Some recommended procedures may not even be the correct ones in certain situations. The operator should therefore always be vigilant against all possible safety hazards and correct or warn the crew against any possible danger immediately.



This F-22 is doing a little surfing, something most multihulls can do relatively safely, whereas monohulls have to be very careful, many having been lost in such conditions



Not so safe, this F-22 is being pressed to the limit, but it does have an experienced racing crew on board.



An F-39 motoring folded - plenty of stability here!

SAFETY IN GENERAL

Capsize should always be a concern, but a capsize is simply very difficult to do, and the capsize rate for Farrier trimarans is much less than the serious accident rate for light aircraft. Luffing up slightly, or **bearing away** (if on a reach) is usually all that is required. The risk of capsize can be virtually eliminated simply by **reducing sail according to the conditions**, and hand holding sheets.

If under spinnaker in winds of over 20 knots it should always be a matter of policy to never leave the spinnaker sheet unattended. It should be hand held, not even cleated. **Avoid continuous spinnaker sheets, and never cleat the spinnaker in self-tailing winches.** Cruisers shouldn't even use the spinnaker in over 20 knots.

Fortunately it is very hard to capsize a Farrier trimaran, but this can lead to overconfidence. Don't fall into this trap - always be aware that it is possible to capsize, and reduce speed accordingly **to suit the conditions**.



TECHNICAL NOTES

WINCH LINE

The trailer winch line should be regularly replaced. This can wear and is under a high strain when lifting the mast. A breakage here could be dangerous, and it is always advisable to stand clear of the line while lifting the mast. Also, frequently check the trailer winch line when on a long trip.

SPRING RETAINING CLIPS

CAUTION: The spring retaining clips as can be used on the Turnbuckle clevis pins should be regularly checked to ensure they will still 'clip' fit on the clevis pin. Replace if they have lost their spring and become loose, otherwise you could lose your mast.

These spring clips have been used successfully for over 20 years and are intended as a convenient 'quick rig' feature. They are not as secure as a properly fitted cotter pin, and if doubts exist on their use then a cotter pin or circular ring should be used instead, and some are usually included in the Toolbox. However these rings/pins will increase rigging time, and the final decision in this regard is for the owner.

LAUNCHING

If immersing the trailer to the bend in the frame will still not let you free the boat, be careful; a few inches more can have your boat drifting away, so have a bow line secured.

HOISTING MAINSAIL

If you find this is tight going up or down (a not uncommon problem with full batten boltrope mains), there are now some spray-on silicon compounds that can help. Remember to also check that the mainsail foot outhaul is slackened off.

BEARING AWAY

Don't forget this is a very effective and safe way of absorbing gusts while reaching in strong wind conditions, particularly under spinnaker. Rounding up tends to throw the mast to leeward (the wrong way), and can increase speed dramatically - all very exciting. However, bearing away throws mast to windward, speed falls off, and the motion feels much safer. This may sound odd, but try it sometime in lighter conditions to get confidence - it really works.

HEAVY HELM

The tiller should always be light and easy to handle, with just one hand. If not, then there is **something wrong**. Usual cause is the rudder blade has kicked back slightly. If this is not the problem then rudder may not be raked far enough forward. This can be changed by filling the pivot hole in the rudder blade and re-drilling slightly further forward (say 1/4").

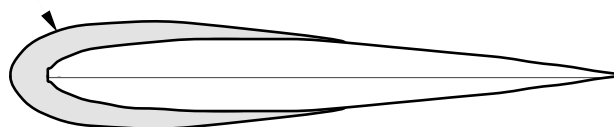
RUDDER VENTILATION

This can be a problem at very high speeds, and symptoms include a 'whoop' sound out the back, a huge rooster tail, and no steering. This normally only happens with speeds over 15 knots and fortunately the boat usually just keeps tracking straight.

The cause is air being sucked down the side of the rudder at high speeds, particularly if oversteering. Immediate cure is to waggle the rudder a little, or bring it back onto the centerline until the water flow reattaches, or slow down.

To avoid, always keep the leading edge of your rudder smooth and fair, and if it becomes a consistent problem then the best cure is to fix a horizontal 'fence' to the leading edge of the rudder about 12 to 15" up from the bottom.

Fence



This will prevent the air from travelling down the blade and retains steering control, even if the top part of the rudder has ventilated.

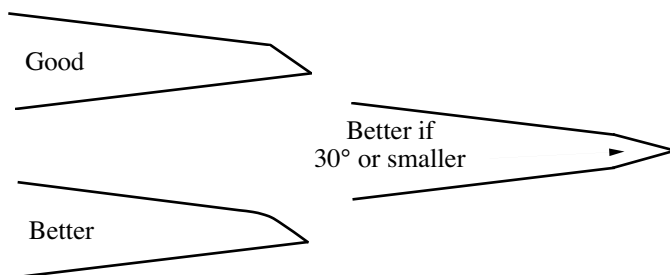


A small fence fitted to an F-22R rudder blade

RUDDER/DAGGERBOARD HUM

This is not an uncommon occurrence due to the difficulty in getting perfectly fair foils in a production environment. Even carefully hand made foils can develop a hum, the technical cause or reason being called 'shedding' which creates the sound as water leaves the rudder trailing edge.

Any humming can be reduced or eliminated with a little fine tuning by filing or sanding the trailing edge of the foil concerned as follows:

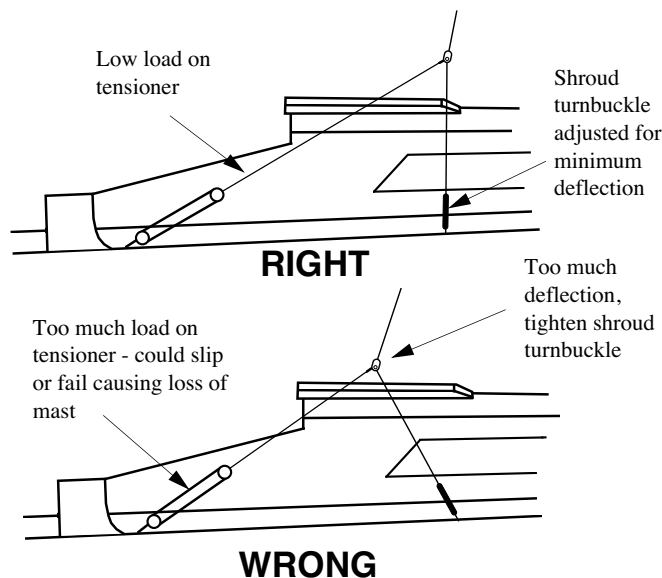


The bottom left shape is probably the easiest to achieve in practice, and the least likely to be damaged.

SHROUD OR STAY TENSIONERS

When leaving the boat for any length of time with floats extended, the shroud/stay tensioners (if used) should be let off. If not, the high tension could slowly bend the boat, due to 'creep' characteristics. This rule applies to all boats with adjustable backstays.

When initially setting up, stays with such tensioners must be adjusted to be just long enough to reach chain-plate. There will then only be a small deflection when the tensioners are applied. Avoid the shrouds being too long as the resulting large deflection will put too much load on the tensioners, and this could put the mast at risk.



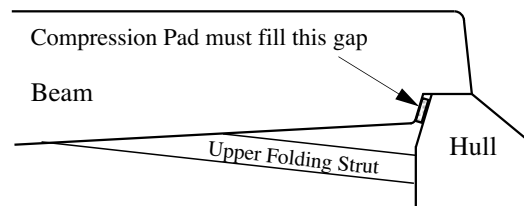
When sailing offshore, or for long periods, it is best and safest to fully tension the cap shrouds with the turnbuckles, so there is no reliance on the tensioners.

COMPRESSION PADS

These are fitted to the ends of the beams, to eliminate any gap or movement between the beam ends and the pads in the hull.

Do not omit or remove these pads, as this would cause the high compression loads in this area to be directed through the Upper Folding Struts, which are not designed to be strong enough for such loads. They are designed for folding loads only, and the end mounts may

fail.



This would not cause a serious beam problem as the beams then simply move inboard to bear against the hull again. The boat is not threatened structurally. However, repairing an U.F.S. mounting point is difficult and expensive.

The plastic compression pads should be full width of the beam and bear evenly against both beam and hull to avoid any point loading. These pads should be checked periodically and adjusted or replaced if necessary.

BEAM BOLTS

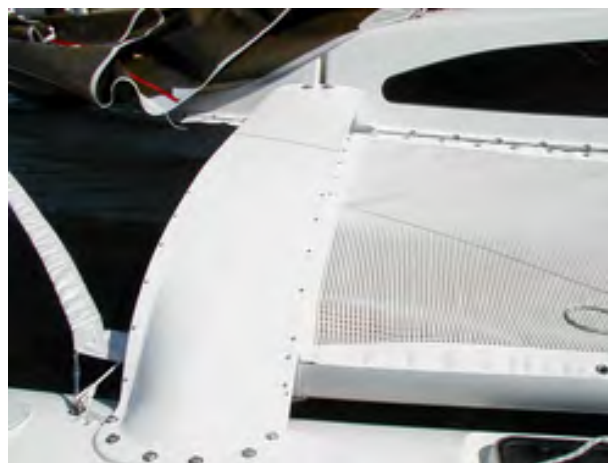
These should always be in place and tightened before going sailing. Otherwise the Upper Folding Struts can again be overloaded as above, due to the beam inner end being forced up slightly by sailing loads.

It is also possible, but unlikely, for a Beam bolt to gall and seize in a bolt pad, which can prevent you from folding up the boat. If this happens, then you can still fold up the boat by simply releasing the bolt pad nuts from inside, or cutting off the Beam bolt head. To avoid this, keep the threads well lubricated with a Teflon grease.

WINGNETS

Take care not to step near the inner ends of the nets on the sides next to beams where lashing cannot be used in order to allow easy folding. Your foot may go through this gap. This area can be lashed if you wish, but should you forget to undo when folding, the eyelets in the nets will be pulled out.

Beams have been improved on later designs such as F-22, F-32 and F-33, to where their join flanges cover this gap, making it much harder to step through.



Wingnet gap and lashing to beam is completely covered on this F-33, making the nets safer. But still take care.

BIMINI TOP STORAGE

A bimini top can be very useful, due to its ability to shade the cockpit. For storage, it can be hung over the stern and tied to the pushpit.

FLOAT/BEAM VENTS

The floats should be vented through spring loaded vents just aft of the forward beams, or the latest method is to use micro cowl vents high on the float transoms, and covering a small 1/16" vent hole. These vents are to prevent a build up of air pressure inside the floats on hot days, that could be enough to open up join seams.

The watertight bulkheads at the forward beam and Shroud chainplate bulkheads should also have very small holes near the top to allow venting throughout the float. Should the float ever be holed then these should be well above the flooded waterline, or at worst, only allow a very small amount of water through.

Should the float be inverted as in a capsize, then the airlock formed above these vents would prevent any significant flooding.

All beams need draining/venting, and this is best done through a hole in the bottom of the beam inside the floats, draining via a tube extending down into the float when needed. Should water appear from these then the source of the leak in the beams should be investigated, and repaired.

In the case of capsize, these tubes are well above the float's flooded waterline, which will prevent any water entering, and consequent loss of beam buoyancy.

RUST

Many grades of stainless steel will get an occasional brown stain in saltwater, that can look like rust. The grade used on most marine fittings is Type 304 or 303, and both of these will show this. Type 316, a more expensive grade, but actually slightly weaker, does not. All three

grades can be used, depending on the application. To avoid this staining, use 316 as much as possible and always wash your boat down with fresh water after every outing. The brown stains will not appear if the salt is washed off.

CLEANING FLOATS

These can be extended for cleaning, if wished, while boat is on the trailer. Float supports must first be dropped down, and the boat then rocked one way. The 'high side' float can then be extended. Let the boat lean the other way and the remaining float can be extended. You will need to support the floats in some way once extended.

CLEAN BOAT HINT

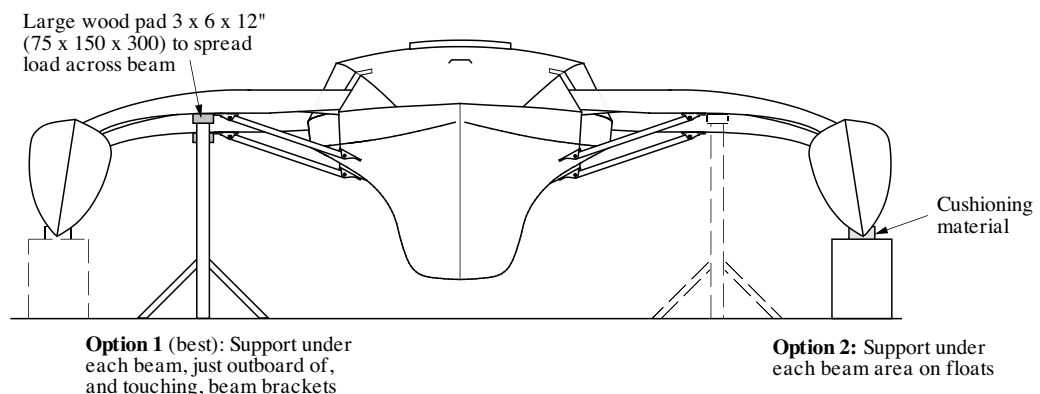
If you are having problems with un-house trained birds on your boat, just leave a dummy, but lifelike, snake in the cockpit floor. Works well.

COLLISION

Any boat that has had a significant fore and aft collision on the float bow, or the folded beams have hit a low bridge, should always be thoroughly checked. No boat can be made collision proof, and hidden damage can result.

The complete float should always be checked after an impact, not just the bow area. A heavy fore and aft collision can actually propagate throughout the float, and has even generated cracks around the aft deck inspection hatch flanges for instance. In one case, a float hull had a vertical fracture in the aft beam area from a severe bow collision.

The beams should also be carefully checked if they have received any significant sharp impact. Being carbon fiber, they can be cracked or damaged from sharp impacts, and areas to check are around the lower folding



SUPPORT FOR MAINTENANCE

When necessary, the craft can be supported for short periods as detailed above for anti-fouling or other maintenance work.

strut brackets, and just inboard from the float. Even if no damage is found, continue to monitor for cracks over a period of time.

A particular area to check for delamination on F-31s, after a fore and aft collision, is the forward Beam Bulkhead to hull taping around the hull brackets and down into the hull.

This is a known collision failure point and is due to the bow diagonal wire brace (F-31 only) directing shock loads into the forward beam structure, and any cracks in the Beam Bulkhead to hull area should be investigated and repaired.

Damage here may not be visible initially, but it may grow to eventually fail later, so continue to monitor. The boat still holds together should this tape delaminate, but obviously sailing should cease until it is repaired.

Such fore and aft collisions on the F-31 also tend to try and lift up the beam bolt pad - so also check this area in the beam recess for cracking.

More details on this and other things to watch are in the Beam Care Bulletin on Farrier Marine's Owners Page at:

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

HURRICANE SURVIVAL

Hurricanes frequently cause damage to many boats, and on one occasion capsized a folded F-27. The owner had left it on a mooring, and being worried about possible damage from other boats breaking their moorings nearby felt it best to fold her up to reduce the 'target' profile. However this considerably reduces stability, and as stated earlier, this is limited while folded. As a result, no doubt while swinging sideways, the gale force winds blew the F-27 on its side.

The best procedure in such a situation is to get the boat out of the water, and trailer it inland away from harm - the perfect solution and used by most owners. If there is not time for this, then leave the floats extended, and pump water into each float and the main hull to weigh her down. Also remove the wing and bow nets. These don't have much windage, but it is surprising how much it can be in such winds. Lowering the mast will also reduce windage. Your boat is then as safe as anything can be in a hurricane.

SYNTHETIC RIGGING OPTIONS

Ultra low stretch synthetic lines are now acceptable alternatives for bow pole bobstay, or side lines, instead of wire. Can also replace the wire diagonal braces as used on the F-9A/F-31.

Synthetic rigging with deadeyes replacing turnbuckles is now also recommended for all rotating masts, and best current choice appears to be Dynex Dux.

FOLDING ASSISTANCE

Unfolding (extending floats) on the larger designs with low profile (shorter) beams such as F-32/F-33 can be easily done by two, but one person may find it difficult. Unfolding the second side can also be much harder on a



very light boat, as the boat will have heeled towards the extended float, meaning the folded float will have to be moved upwards when initially folding. This will improve for most as the boat is loaded with cruising gear, but racers kept light will continue to see this problem

To make it easier, a simple 4 : 1 block and tackle, with a strong shock cord can be used as shown above between beam end and pad eye in cockpit center to assist in extending floats by pulling beam end in and down.

Folding (bringing floats in) is easier and can be done by one person. However, float will speed up and gain momentum as it comes into main hull, and may impact heavily on the stops.

To prevent this happening, rig up tackle and shock cord at the correct length to start slowing float down from about half way in. For this, shock cord (relaxed) will need to be about 400mm/16" long, and tackle about 800mm/32" long. Mark correct length once known.

F-41 and F-44



The F-41 and F-44 have not received much mention in this manual, mainly because they handle very similarly to the trimarans so everything in this manual (other than folding) also applies to both cats. There have also been no issues or problems of any note.



Trailerability opens up many distant cruising grounds. Peter Hackett's F-27 at Butterfly Bay, Hook Island, Whitsundays, Australia. Crew underwater somewhere. Such protected areas have dedicated moorings in fragile reef areas, and good communication skills on board will be needed to pull the buoy up on deck with boathook. Secure directly or to a bridle as described earlier.



Larry Woods singlehanding his F-82 - sailing a good trimaran can be very easy, and safe.

SPECIFICATIONS

*The following specifications may vary depending on options, and or design changes
Approx. weight is the bare weight, with empty tanks and with all loose items removed
Load Carrying Capacity will vary depending on built weight*

F-22

L.O.A.....	22' 10"	(6.96m)
B.O.A.....	18' 1"	(5.51m)
Folded beam.....	8' 2 1/2"	(2.5m)
Draft (board up).....	12"	(0.31m)
Draft (board down).....	4' 11"	(1.51m)
Sail area (main & jib).....	325sqft	(30.2sm)
Mast Height.....	31'	(9.4m)
Approx. bare weight	1400lbs	(640kg)
<i>(plus or minus 220lbs/100kg depending on model)</i>		
Load Capacity	1100lb	(500kg)
Height on trailer.....	8' 8"	(2.64m)
Approx. wind capsize force (main & jib): 30 knots		

F-22R

L.O.A.....	22' 10"	(6.96m)
B.O.A.....	18' 1"	(5.51m)
Folded beam.....	8' 2 1/2"	(2.5m)
<i>(plus or minus 220lbs/100kg depending on model)</i>		
Draft (board up).....	12"	(0.31m)
Draft (board down).....	4' 11"	(1.51m)
Sail area (main & jib).....	386sqft	(35.9sm)
Mast Height.....	35' 1"	(10.7m)
Approx. bare weight	1100lbs	(500kg)
<i>(plus or minus 220lbs/100kg depending on model)</i>		
Load Capacity	970lb	(440kg)
Approx. wind capsize force (main & jib): 26 knots		

F-25A

L.O.A.....	25' 6"	(7.77m)
L.W.L.....	24' 6"	(7.46m)
Beam.....	19'	(5.8m)
Folded Beam.....	8' 2 1/2"	(2.5m)
Draft Hull only	1'	(0.31m)
Draft C/board down	4' 10"	(1.48m)
Sail Area (Main and Jib)	367sq.ft.	(34sm)
Mast length.....	32' 4"	(9.85m)
Mast height above water.....	36' 4"	(11.1m)
Approx. Weight	1900lb	(8600kg)
Load Capacity	1200lb	(546kg)
Height on trailer	9' 8"	(2.95m)
Approx. Towing Weight.....	2800lb	(1270kg)
Auxiliary Power.....	4-8HP Outboard	
Approx. wind capsize force (main & jib): 33 knots		

F-25C (kit boat)

L.O.A.....	26' 6"	(8.1m)
L.W.L.....	24' 6"	(7.46m)
Beam.....	19'	(5.8m)
Folded Beam.....	8' 2 1/2"	(2.5m)
Draft Hull only	1'	(0.3m)
Draft D/board down	4' 7"	(1.4m)
Sail Area (Main and Jib)	440sqft. (	40.7sm)
Mast length.....	36'	(11m)
Mast height above water.....	40' 4"	(12.32m)
Approx. Weight	1600lb	(730kg)
Load Capacity	1500lb	(818kg)

F-25C continued

Height on trailer	9' 8"	(2.95m)
Approx. Towing Weight.....	2200lb	(1000kg)
Auxiliary Power.....	4-8HP Outboard	
Approx. wind capsize force (main & jib): 28 knots		

F-82A

L.O.A.....	26' 11"	(8.2m)
L.W.L.....	24' 6"	(7.46m)
Beam.....	19' 6"	(5.95m)
Folded Beam.....	8' 2 1/2"	(2.5m)
Draft Hull only	1'	(0.3m)
Draft D/board down	4' 7"	(1.4m)
Sail Area (Main and Jib)	408sq.ft.	(37.8sm)
Mast length.....	34'	(10.36m)
Mast height above water.....	38' 7"	(11.78m)
Approx. Weight	1700lb	(770kg)
Load Capacity	1400lb	(636kg)
Height on trailer	9' 10"	(3.0m)
Approx. Towing Weight.....	2500lb	(1140kg)
Auxiliary Power.....	4-8HP Outboard	
Approx. wind capsize force (main & jib): 33 knots		

F-82R

L.O.A.....	26' 11"	(8.2m)
L.W.L.....	24' 6"	(7.46m)
Beam.....	19' 6"	(5.95m)
Folded Beam.....	8' 2 1/2"	(2.5m)
Draft Hull only	1'	(0.3m)
Draft D/board down	4' 7"	(1.4m)
Sail Area (Main and Jib)	430sq.ft.	(39.8sm)
Mast length.....	36'	(11m)
Mast height above water.....	40' 7"	(12.38m)
Approx. Weight	1500lb	(680kg)
Load Capacity	1600lb	(727kg)
Height on trailer	9' 10"	(3.0m)
Approx. Towing Weight.....	2400lb	(1100kg)
Auxiliary Power.....	4-8HP Outboard	
Approx. wind capsize force (main & jib): 31 knots		

F-85SR

L.O.A.....	27' 10"	(8.5m)
L.W.L.....	26'	(7.92m)
Beam.....	19' 8"	(6m)
Folded Beam.....	8' 2 1/2"	(2.5m)
Draft Hull only	1'	(0.3m)
Draft D/board down	6' 1"	(1.88m)
Sail Area (Main and Jib)	461sq.ft.	(42.8sm)
Std. Mast length	37'	(11.3m)
A 12.6m (41' 3") mast is optional		
Std. Mast height above water.....	41' 7"	(12.68m)
Approx. Weight	1400lb	(636kg)
Load Capacity	1600lb	(727kg)
Height on trailer	9' 10"	(3.0m)
Approx. Towing Weight.....	2300lb	(1050kg)
Auxiliary Power.....	4-8HP Outboard	
Approx. wind capsize force (main & jib): 26 knots		

F-9A

L.O.A.....	30' 10"	(9.4m)
L.W.L.....	30'	(9.15m)
Beam	22' 5"	(6.84m)
Folded beam	8' 2 1/2"	(2.5m)
Draft Hull only	1' 4"	(0.41m)
Draft d/board down.....	5' 6"	(1.67m)
Sail Area (Main and Jib)	599sq.ft.	(55.4sm)
Mast length.....	40'	(12.2m)
Mast height above water.....	44' 10"	(13.67m)
Approx. Weight	3000lb	(1350kg)
Load Capacity	2450lb	(1114kg)
Height on trailer	11' 6"	(3.5m)
Approx. Towing Weight.....	4500lb	(2050kg)
Auxiliary Power.....	8-15HP	Outboard
Approx. wind capsize force (main & jib): 34 knots		

F-9AX

L.O.A.....	30' 10"	(9.4m)
L.W.L.....	30'	(9.15m)
Beam	23' 1"	(7.04m)
Folded beam	9' 6"	(2.89m)
Draft Hull only	1' 4"	(0.41m)
Draft d/board down.....	5' 6"	(1.67m)
Sail Area (Main and Jib)	599sq. ft.	(55.4sm)
Mast length.....	40'	(12.2m)
Mast height above water.....	44' 10"	(13.67m)
Approx. Weight	3100lb	(1410kg)
Load Capacity	2850lb	(1295kg)
Height on trailer	11' 6"	(3.5m)
Approx. Towing Weight.....	4600lb	(2090kg)
Auxiliary Power.....	8-15HP	Outboard
Approx. wind capsize force (main & jib): 35 knots		

F-9R

L.O.A.....	30' 10"	(9.4m)
L.W.L.....	30'	(9.15m)
Beam	22' 5"	(6.84m)
Folded beam	8' 2 1/2"	(2.5m)
Draft Hull only	1' 4"	(0.41m)
Draft d/board down.....	5' 6"	(1.67m)
Sail Area (Main and Jib)	647sq.ft.	(60sq.m.)
Mast length.....	42' 6"	(12.95m)
Mast height above water.....	47' 4"	(14.43m)
Approx. Bare Weight	2750lb	(1250kg)
Load Capacity	2700lb	(1227kg)
Height on trailer	11' 6"	(3.5m)
Approx. Towing Weight.....	4250lb	(1932kg)
Approx. wind capsize force (main & jib) 31 knots		

F-32A

L.O.A.....	32' 3"	(9.83m)
L.W.L.....	31'	(9.45m)
Beam	23'	(7.0m)
Folded beam	8' 2 1/2"	(2.5m)
Draft Hull only	1' 5"	(0.42m)
Draft d/board down.....	5' 10"	(1.78m)
Sail Area (Main and Jib)	638sq.ft	(59.2sm)
Mast length.....	43.3'	(13.2m)
Mast height above water.....	48' 7"	(14.8m)
Approx. Weight	3300lb	(1500kg)
Load Capacity	2600lb	(1180kg)

Height on trailer	11' 2"	(3.4m)
Approx. Towing Weight.....	4800lb	(2200kg)
Auxiliary Power.....	8 -15HP	Outboard
Approx. wind capsize force (main & jib): 33 knots		

F-32AX

L.O.A.....	32' 3"	(9.83m)
L.W.L.....	31'	(9.45m)
Beam	23' 4"	(7.1m)
Folded beam	9' 7"	(2.92m)
Draft Hull only	1' 5"	(0.42m)
Draft d/board down.....	5' 10"	(1.78m)
Sail Area (Main and Jib)	638sq.ft	(59.2sm)
Mast length.....	43.3'	(13.2m)
Mast height above water.....	48' 7"	(14.8m)
Approx. Weight	3400lb	(1550kg)
Load Capacity	3000lb	(1360kg)
Height on trailer	11' 2"	(3.4m)
Approx. Towing Weight.....	4900lb	(2230kg)
Auxiliary Power.....	9 -18HP	
Approx. wind capsize force (main & jib): 34 knots		

F-32R

L.O.A.....	32' 3"	(9.83m)
L.W.L.....	31'	(9.45m)
Beam	23'	(7.0m)
Folded beam	8' 2 1/2"	(2.5m)
Draft Hull only	1' 5"	(0.42m)
Draft d/board down.....	5' 10"	(1.78m)
Sail Area (Main and Jib)	682sq.ft	(63.3sm)
Mast length.....	46'	(14m)
Mast height above water.....	51' 2"	(15.6m)
Approx. Weight	2800lb	(1270kg)
Load Capacity	3100lb	(1410kg)
Height on trailer	11' 2"	(3.4m)
Approx. Towing Weight.....	4300lb	(1950kg)
Auxiliary Power.....	9 -18HP	
Approx. wind capsize force (main & jib): 29 knots		

F-32SR

L.O.A.....	32' 11"	(10.03m)
L.W.L.....	31' 10"	(9.69m)
Beam	23' 3"	(7.07m)
Beam (F-32SRX).....	23' 10"	(7.27m)
Folded beam	8' 4 1/2"	(2.55m)
Folded beam (F-32SRX).....	9' 8"	(2.95m)
Draft Hull only	1' 4"	(0.4m)
Draft d/board down.....	7' 1"	(2.16m)
Sail Area (Main and Jib)	806sq.ft	(74.85sm)
Mast length.....	50'	(15.24m)
Mast height above water.....	55' 7"	(16.95m)
Approx. Weight	2600lb	(1181kg)
<i>Will depend on material - all carbon boats will be lighter</i>		
Load Capacity	3000lb	(1360kg)
Height on trailer	11' 9"	(3.58m)
Approx. Towing Weight.....	4100lb	(1850kg)
Auxiliary Power.....	9 -15HP	
Approx. wind capsize force (main & jib): 20 knots		

F-33

L.O.A.....	33'	(10.06m)
L.W.L.....	31' 4"	(9.55m)
Beam	23' 5"	(7.14m)
Folded beam	9' 6"	(2.9m)
Draft Hull only	1' 5"	(0.42m)
Draft d/board down.....	5' 11"	(1.8m)
Sail Area (Main and Jib)	673sq.ft	(62.6sm)
Mast length.....	44.8'	(13.62m)
Mast height above water.....	49' 11"	(15.22m)
Approx. Weight	3500lb	(1590kg)
Load Capacity	3200lb	(1450kg)
Height on trailer	11' 5"	(3.48m)
Approx. Towing Weight.....	5000lb	(2270kg)
Auxiliary Power.....	9 - 20HP	
Approx. wind capsize force (main & jib): 32 knots		

F-33R

L.O.A.....	33'	(10.06m)
L.W.L.....	31' 4"	(9.55m)
Beam	23' 5"	(7.14m)
Folded beam	9' 6"	(2.9m)
Draft Hull only	1' 5"	(0.42m)
Draft d/board down.....	5' 11"	(1.8m)
Sail Area (Main and Jib)	717sq.ft	(66.7sm)
Mast length.....	47.2'	(14.38m)
Mast height above water.....	52' 6"	(16m)
Approx. Weight	3000lb	(1360kg)
Load Capacity	3700lb	(1680kg)
Height on trailer	11' 5"	(3.48m)
Approx. Towing Weight.....	4500lb	(2050kg)
Auxiliary Power.....	9 - 20HP	
Approx. wind capsize force (main & jib): 29 knots		

F-36

L.O.A.....	36' 10"	(11.2m)
L.W.L.....	35' 8"	(10.88m)
Beam	26' 1"	(7.95m)
Draft Hull only	1' 8"	(0.5m)
Draft d/board down.....	6' 9"	(2.07m)
Sail Area (Main and Jib)	838sq.ft.	(77.5sm)
Mast length.....	49'	(14.94m)
Mast height above water.....	54' 8"	(16.65m)
Approx. Weight	6500lb	(2740kg)
Load Capacity	3000lb	(1360kg)
Auxiliary Power.....	20-30 HP Inboard	
Approx. wind capsize force (main & jib): 37 knots		

F-39

L.O.A.....	39' 4"	(12m)
L.W.L.....	37'	(11.28m)
Beam	27' 3"	(8.33m)
Draft Hull only	1' 10"	(0.56m)
Draft d/board down.....	6' 11"	(2.11m)
Sail Area (Main and Jib)	890sq.ft.	(82.4sm)
Mast length.....	51' 7"	(15.76m)
Mast height above water.....	57' 9"	(17.6m)
Approx. Weight	7000lb	(3180kg)
Load Capacity	3500lb	(1590kg)
Auxiliary Power.....	20-30 HP Inboard	
Approx. wind capsize force (main & jib): 37 knots		

F-41

L.O.A.....	41' 8"	(12.7m)
L.W.L.....	39' 5"	(12m)
Beam	23' 1"	(7.04m)
Draft Hull only	1' 10"	(0.56m)
Draft d/board down.....	7' 4"	(2.24m)
Sail Area (Main and Jib)	916sq.ft	(85sm)
Mast length.....	54'	(16.46m)
Mast height above water.....	61' 1"	(18.62m)
Approx. Weight	12,000lb	(5450kg)
Load Capacity	5000lb	(2270kg)
Approx. wind capsize force (main & jib): 38 knots		

F-44SC

L.O.A.....	43' 11"	(13.38m)
L.W.L.....	41' 3"	(12.58m)
Beam	23' 1"	(7.04m)
Draft Hull only	1' 10"	(0.56m)
Draft d/board down.....	7' 4"	(2.24m)
Sail Area (Main and Jib)	916sq.ft	(85sm)
Mast length.....	54'	(16.46m)
Mast height above water.....	61' 1"	(18.62m)
Approx. Weight	12,000lb	(5450kg)
Load Capacity	5000lb	(2270kg)
Approx. wind capsize force (main & jib): 38 knots		

SOME EARLY DESIGNS

TRAMP/EAGLE

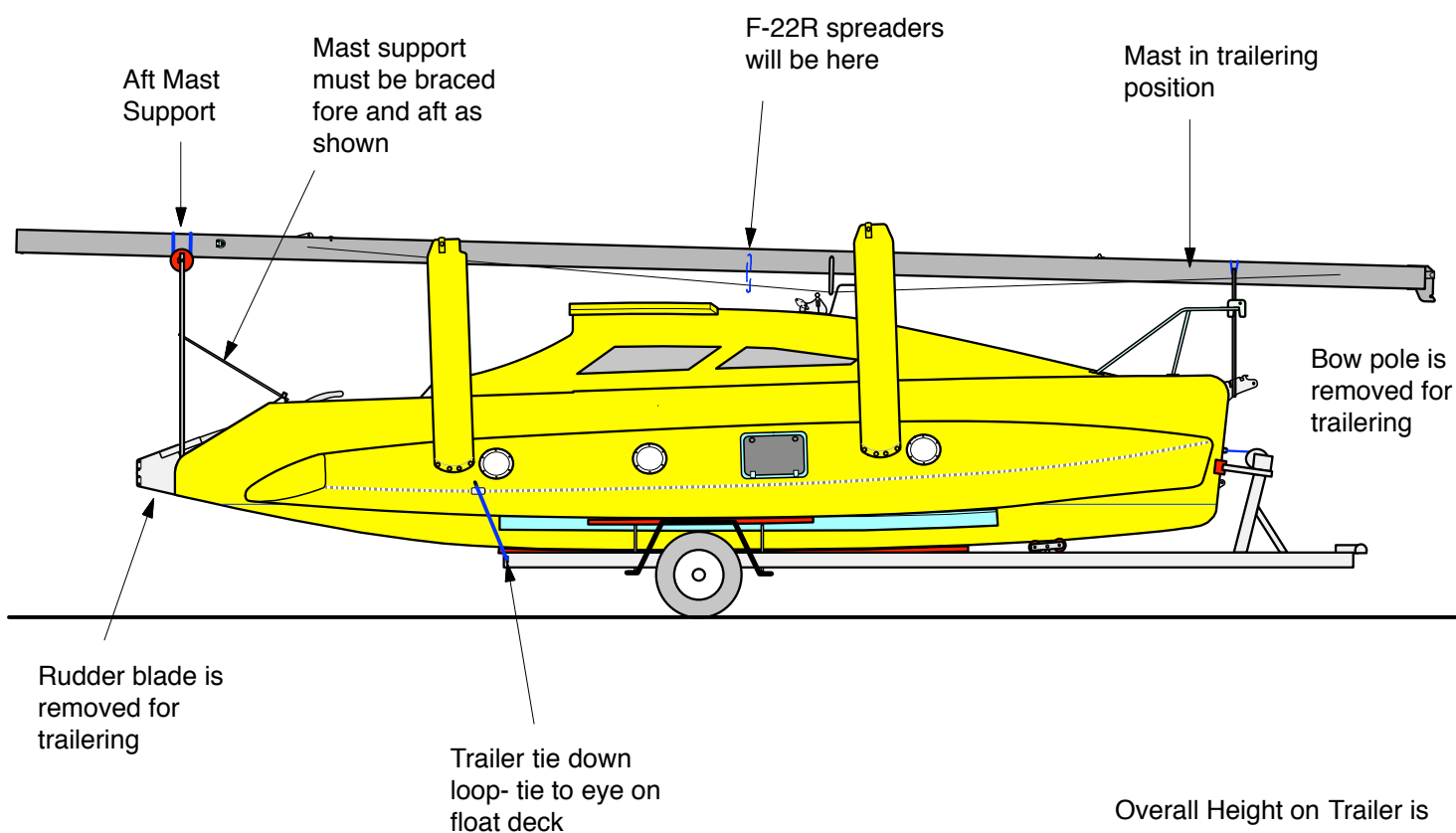
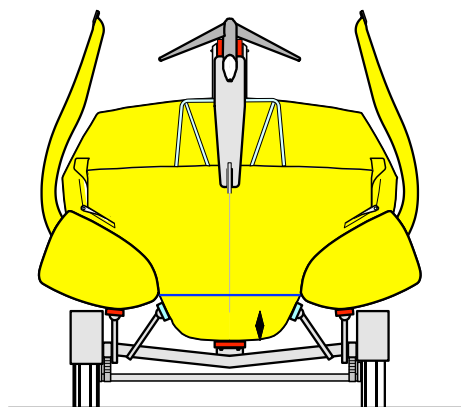
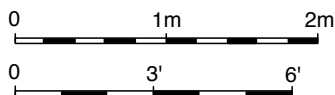
L.O.A.....	19' 6"	(5.95m)
L.W.L.....	18' 0"	(5.5m)
Beam	14' 9"	(4.5m)
Folded beam	8' 0"	(2.44m)
Draft Hull only	1' 0"	(0.30m)
Draft d/board down.....	4' 0"	(1.2m)
Sail Area (Main and Jib)	222sq.ft.	(20.7sm)
Mast length.....	28' 10"	(8.78m)
Mast height above water.....	29' 6"	(9.0m)
Approx. Weight	1210lb	(550kg)
Height on trailer	9'	(2.74m)
Auxiliary Power.....	4-6HP Outboard	

TRAILERTRI 680

L.O.A.....	22' 3"	(6.8m)
L.W.L.....	20' 5"	(6.23m)
Beam	16' 4"	(4.98m)
Folded beam	8' 0"	(2.44m)
Draft Hull only	1' 5"	(0.43m)
Draft d/board down.....	4' 3"	(1.3m)
Sail Area (Main and Jib)	239sq.ft.	(22.2sqm)
Mast length.....	26' 3"	(8.0m)
Mast height above water.....	30' 7"	(9.3m)
Approx. Weight	1500lb	(700kg)
Height on trailer	10' 6"	(3.2m)
Approx. Towing Weight.....	2400lb	(1100kg)
Auxiliary Power.....	4-6HP Outboard	

TRAILERTRI 720

L.O.A.....	23' 7"	(7.2m)
L.W.L.....	21' 8"	(6.6m)
Beam	16' 4"	(4.98m)
Folded beam	8' 0"	(2.44m)
Draft Hull only	1' 5"	(0.43m)
Draft d/board down.....	4' 3"	(1.3m)
Sail Area (Main and Jib)	277sq.ft	(25.7sqm)
Mast length.....	30' 6"	(9.32m)
Mast height above water.....	34' 10"	(10.62m)
Approx. Weight	1650lb	(750kg)
Load Capacity	1000lb	(450kg)
Height on trailer	10' 6"	(3.2m)
Approx. Towing Weight.....	2550lb	(1160kg)
Auxiliary Power.....	4-6HP Outboard	



Overall Height on Trailer is
approx. 2.6 - 2.67m
(8' 7" - 8' 9") depending on
trailer and wheel size

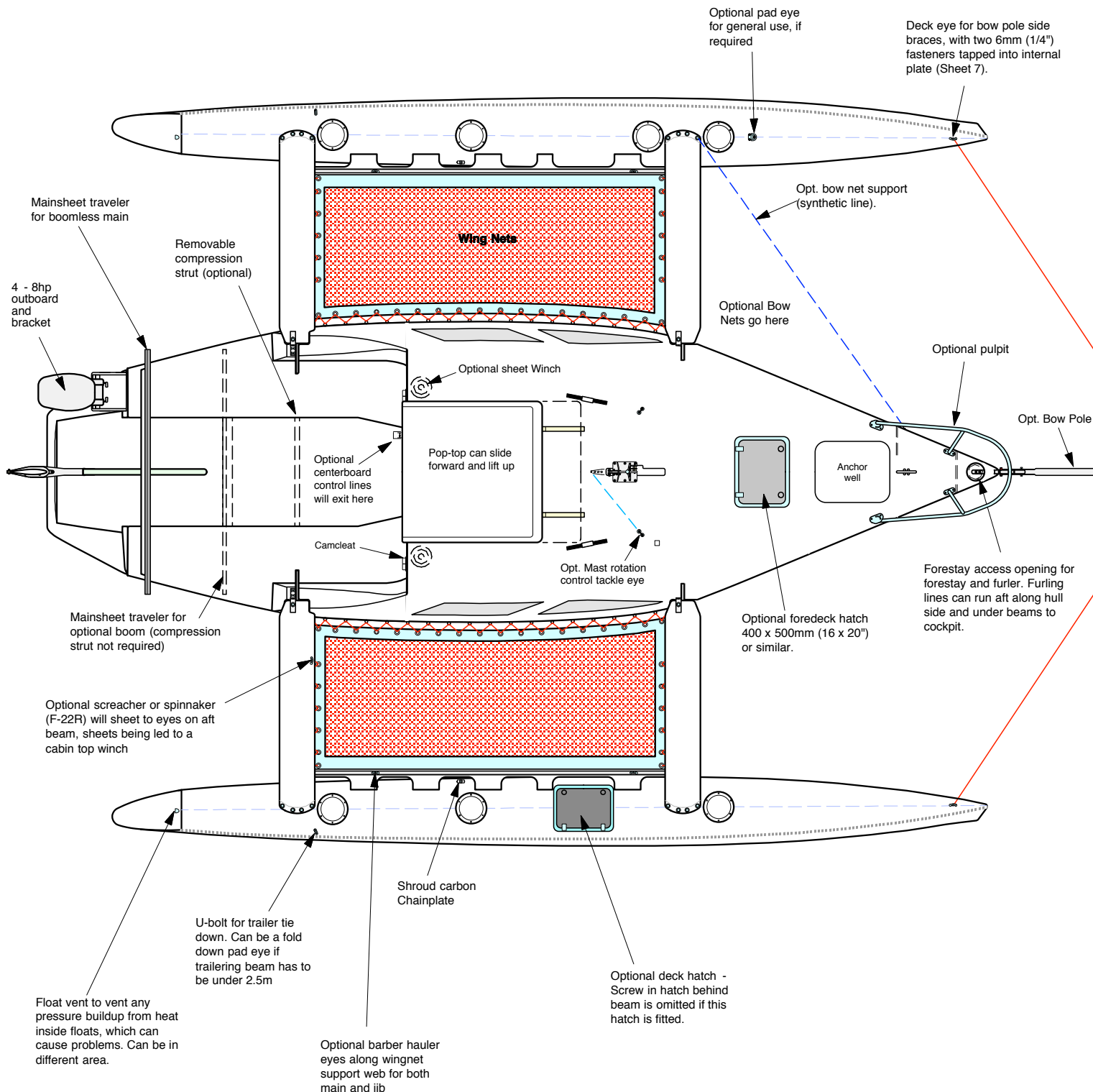
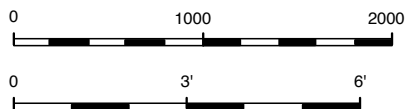
Trailer lights - Check with local regulations for correct light configuration. Tail lights are best on separate removable brackets mounted on Transom, with cable run independently over boat. Avoid trailer mounted lights - salt water soon renders them inoperative. Regulations may also require lights to be at or near the aft end of the trailer/boat.

F-22 Trailer Setup

Scale 1 : 50

Winches: It may be possible to avoid any winches on the F-22 by using 2 : 1 Jib sheeting. Alternatively, just one winch will be able to do all tasks, but two winches are optional if wished.

Halyards: these are cleated on the mast, but can be temporarily led back to the cockpit, when needed for tensioning, via a simple 'wrap around' turning block



F-22 Deck Layout

Orig. plan built boat shown

The max. tension in raising line is approx. 275kg/600lbs

Jib or spinnaker Halvyard

Tie off to actual mast at bottom NOT to anything on deck!!

NOTE: When first raising mast, block off any holes at mast base, with a sticky tape, to trap and capture any metal debris that may be inside mast. Otherwise this could fall into daggerboard case and jam daggerboard

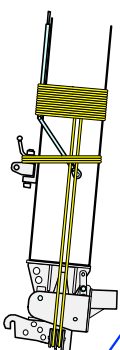
4-6mm pole to mast line, quick connector on mast end

4-6mm pole side lines from Anchor loops to stabilize pole sideways. Quick connector on bottom end.

Pole is removed, but Yoke can stay on mast foot when trailing

Mast Raising Pole

Run line to sheet winch via block attached to lashing around bow (under bow tube), or use trailer winch line if on trailer



Mast foot ready to slow on pulpit or fit to step (just slides onto pivot pin in step). Halvyard tails taken up and tied around mast

Alt Mast Support

Mast raising wires each side to stabilize mast sideways. Wires detailed on Sheet 83 of F-32 plans. Do not use line.

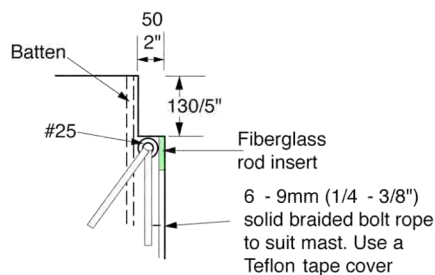
Check clearance here. Approx. 100/4" gap at gooseneck area with a 230/9" wide wing mast

Anchor loop

See also details of correct mast base and yoke setup in F-32 Fabricated Parts Book (Page 29)

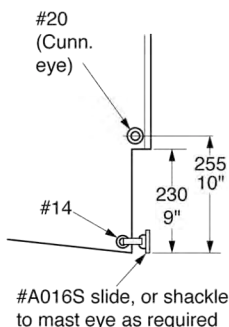
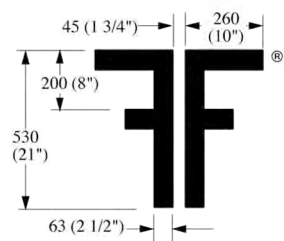
Leave mast raising wires slightly loose when first raising, to avoid unexpected tightening and possible damage. Adjust once full travel has been observed.

F-32 MAST RAISING

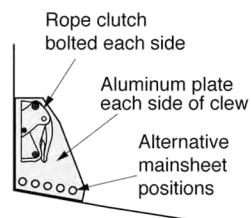


HEAD DETAIL

Bolt rope is recommended for this size boat. **Slides** must suit mast and **be extra long** (min 40mm metal) or **doubled** at head area, to prevent 'pull out'.



TACK DETAIL



CLEW DETAIL

Boomless Main Reefing

Mainsheet always stays attached to clew. Reefing line or lines are led from boom side eyes through leach reefing eyes returning down to rope clutch(s) bolted on each side of clew board. Luff is reefed with usual systems.

Mast lengths:
F-22 - 9.4m/31'
F-22R - 10.7m/35' 1"
(carbon mast)
See Sheet 57

Sail	Luff	Leach	Foot	Area	Additional Info
Mainsail	9220	9185	2845	19.95sq.m.	Main Head Width (MHW) 750/2.46'
	30.26'	30.14'	9.33'	215sq.ft	3/4 Girth Lgth (MGU) 1740/5.71' 1/2 Girth Length (MGM) 2430/7.97'
Jib	8010	6884	2940	10.2sq.m	Luff Perpendicular (JLP) 2536/8.32'
	26.28'	22.59'	9.65'	110sq.ft	MGM 1520/4.99' Max. foot round 110mm (4 3/8")
Screacher <i>or similar</i>	9320	7885	5780	23.77sq.m	Can be any open downwind multi-purpose furling sail.
	30.58'	25.87'	18.97'	256sq.ft	Max. Luff Perp. (LP) of 5100/16.73'
Boomed Mainsail	8940	9185	2810	19.50	Main Head Width (MHW) 750/2.46'
	29.33'	30.14'	9.22'	210sq.ft	3/4 Girth Lgth (MGU) 1740/5.71' 1/2 Girth Length (MGM) 2430/7.97'

NOTES:

Sailcloth weight to suit material used, and average wind strength in area sailed.

Mainsail to have 2 sets of reef points and Cunningham eye fitted. Max. 8 battens (7 with boom). Windows optional. Class emblem located and sized as shown. **DO NOT INCREASE** roach or head width as performance will not be improved to any worthwhile degree, but it will create significant handling problems.

Jib can have up to 4 leach battens placed at equal distance on leach. Windows optional.

Headsail Forestay Options:

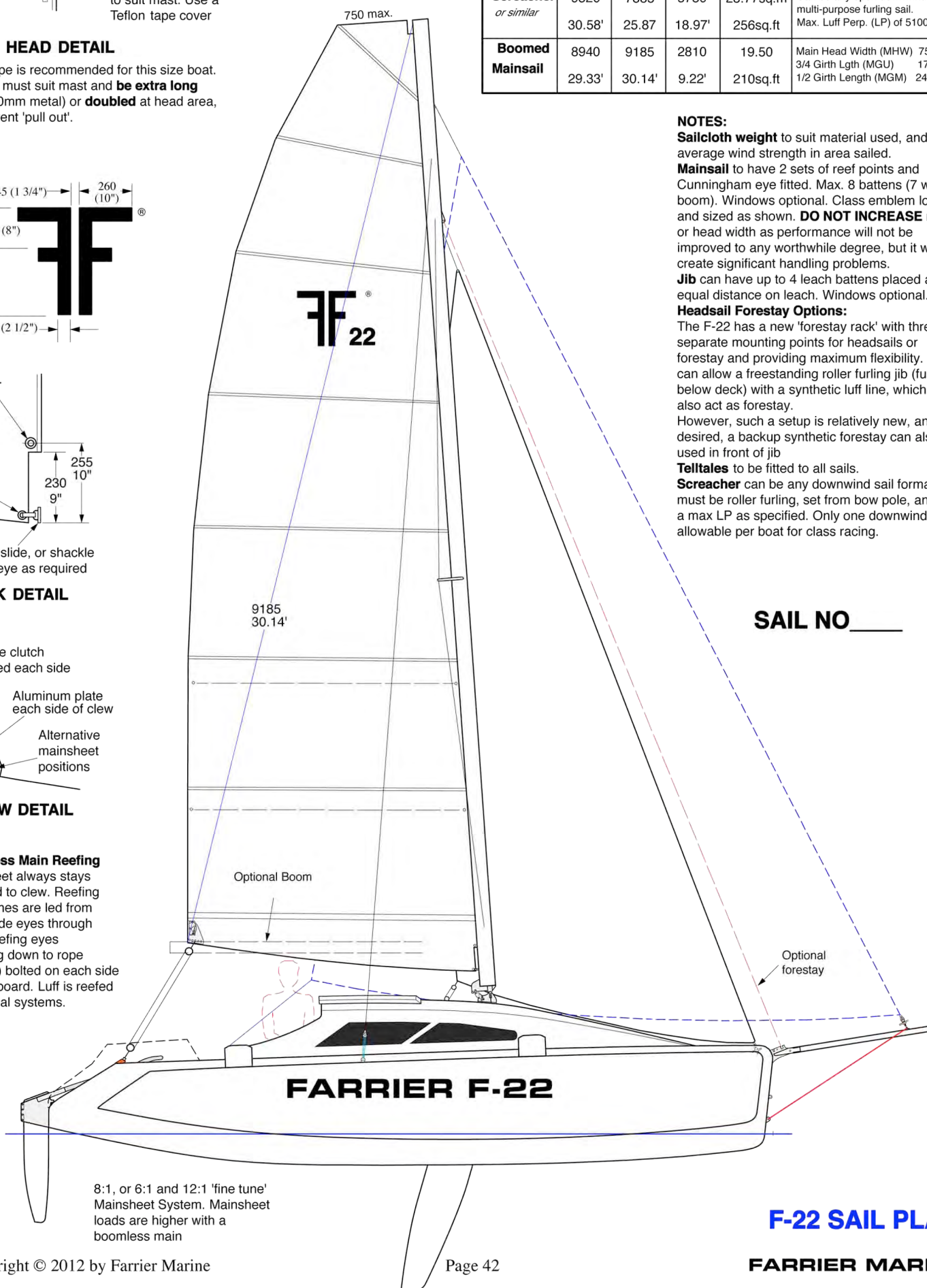
The F-22 has a new 'forestay rack' with three separate mounting points for headsails or forestay and providing maximum flexibility. These can allow a freestanding roller furling jib (furler below deck) with a synthetic luff line, which can also act as forestay.

However, such a setup is relatively new, and, if desired, a backup synthetic forestay can also be used in front of jib

Telltails to be fitted to all sails.

Screacher can be any downwind sail format, but must be roller furling, set from bow pole, and with a max LP as specified. Only one downwind sail allowable per boat for class racing.

SAIL NO _____



8:1, or 6:1 and 12:1 'fine tune' Mainsheet System. Mainsheet loads are higher with a boomless main

F-82A (cruising version) has a 600mm (2') shorter mast
 Main luff 10220 (33' 6") Jib Luff 8500 (27' 11")
 & Leach 10420 (34' 2") Jib Leach 7550 (24' 9")
 Area 25.4 sq.m. (274sq.ft.) Jib foot 3000 (9' 10")
 Area 12.4sq.m. (134 sq.ft.)

Notes:

Sailcloth weight to suit wind in area sailed. Class emblem to be located and sized as shown.

MAINSAIL

No limitation of the number or length of battens. Two sets of Reef Points, position optional. Windows are optional. Material is optional.

Main Head Width (MHW) 810 (2' 8")
 3/4 Girth Lgth (M34G) 2135 (7")
 1/2 Girth Length (M12G) 2895 (9' 6")

JIB

No limitation of number or length of battens. Windows are optional. Material is optional.

Foresail hanks to be bronze and for 6mm (1/4") wire
 Luff Perp. (JLP) 2740 (9' 0")

SCREACHER

4mm/5/32" wire or
 6mm/1/4" Kevlar luff
 Only one foot batten allowed.
 Sail must be able to roller furl with the foot batten. Batten to be no longer than 45".
 Material is not restricted.
 Luff Perp. (SRLP) 5700 (18' 8")
 Foot Roach Max.
 (SRFR) 460 (1' 6")

SPINNAKER

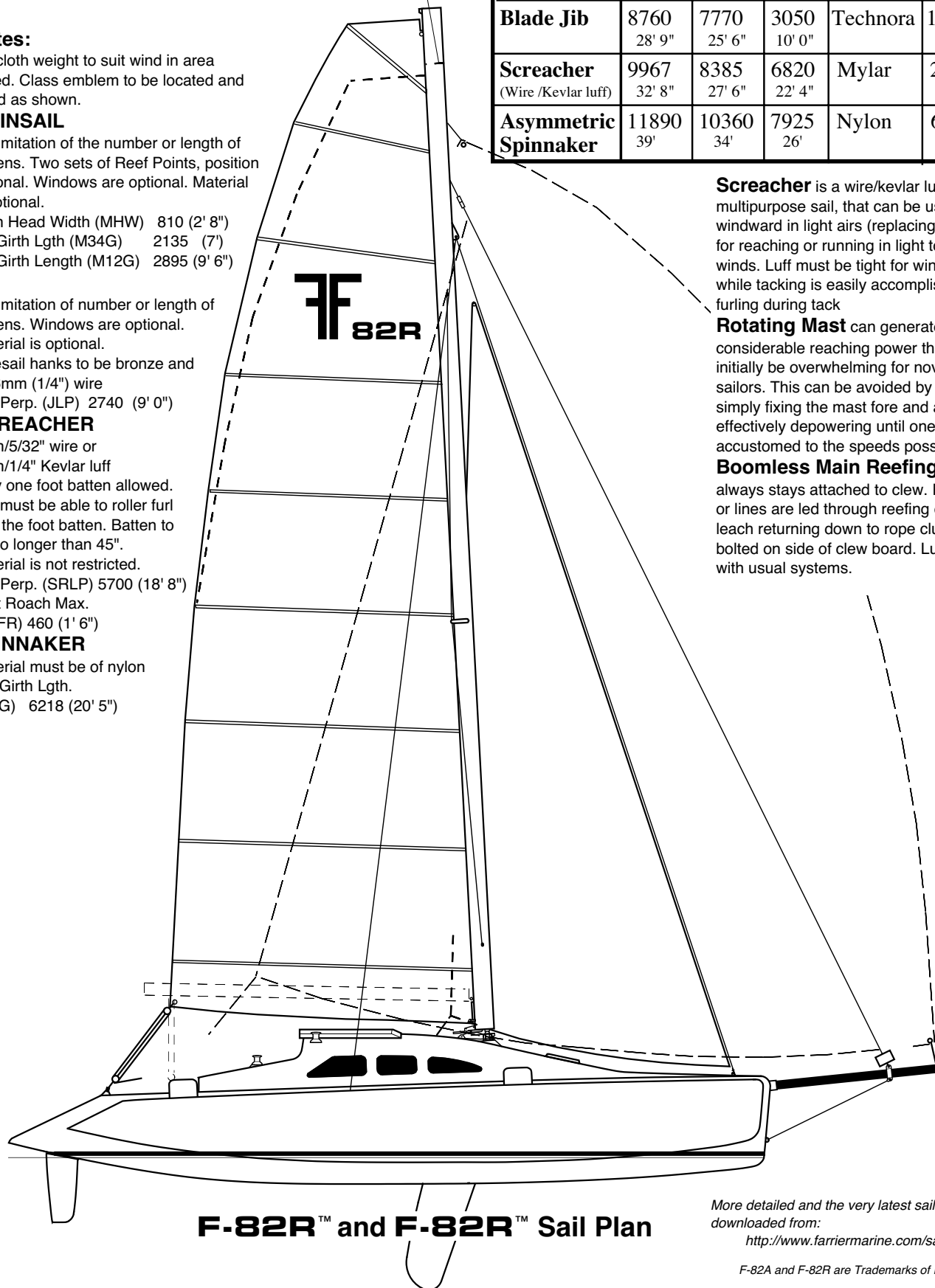
Material must be of nylon
 Mid Girth Lgth.
 (SMG) 6218 (20' 5")

Sail	Luff	Leach	Foot	Material	Area
Mainsail	10820 35' 6"	11000 36' 1"	3300 10' 10"	Technora	26.9sq.m. 291sq.ft.
Blade Jib	8760 28' 9"	7770 25' 6"	3050 10' 0"	Technora	12.9sq.m. 139sq.ft.
Screacher (Wire /Kevlar luff)	9967 32' 8"	8385 27' 6"	6820 22' 4"	Mylar	29.7sq.m. 321sq.ft.
Asymmetric Spinnaker	11890 39'	10360 34'	7925 26'	Nylon	64.2sq.m. 694sq. ft.

Screacher is a wire/kevlar luff furling multipurpose sail, that can be used to windward in light airs (replacing genoa) and for reaching or running in light to heavy winds. Luff must be tight for windward use, while tacking is easily accomplished by furling during tack

Rotating Mast can generate considerable reaching power that can initially be overwhelming for novice multihull sailors. This can be avoided by reefing or simply fixing the mast fore and aft, effectively depowering until one becomes accustomed to the speeds possible.

Boomless Main Reefing Mainsheet always stays attached to clew. Reefing line or lines are led through reefing eyes on leach returning down to rope clutch(s) bolted on side of clew board. Luff is reefed with usual systems.



F-82R™ and F-82R™ Sail Plan

More detailed and the very latest sail plans can be downloaded from:

<http://www.farriermarine.com/sails.html>

F-82A and F-82R are Trademarks of Ian Farrier

Mast height from waterline

F-32 - 14.8m/48' 7"

F-32R - 15.6m/51' 2" (Carbon mast only)

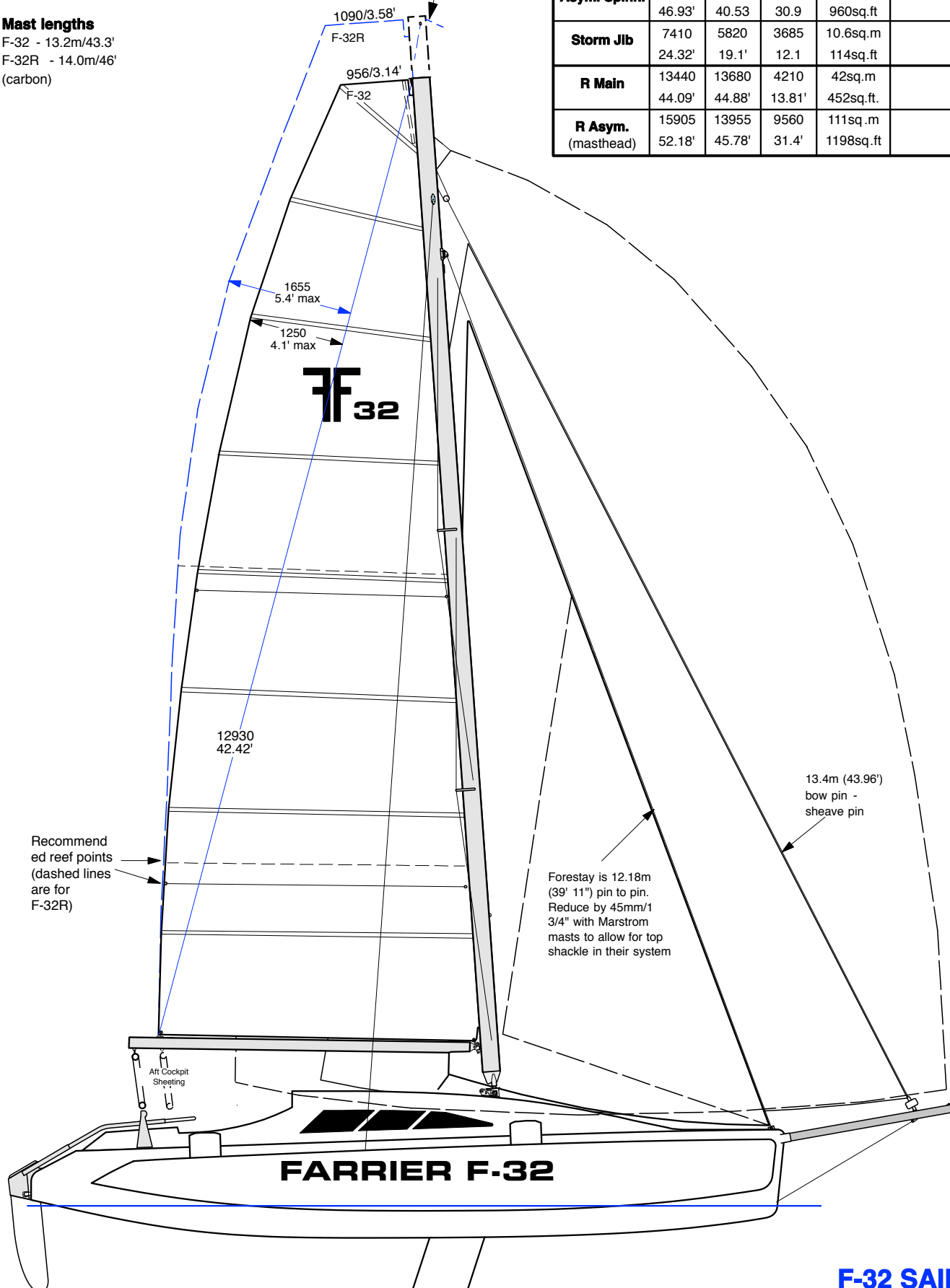
Mast lengths

F-32 - 13.2m/43.3'

F-32R - 14.0m/46' (carbon)

Masthead spinnaker or Code 0 optional on F-32R (Code 0 may need extra side stays)

Sail	Luff	Leach	Foot	Area	Additional Info
Mainsail	12640	12930	4210	37.9sq.m.	
	41.46	42.42'	13.81'	408sq.ft	
Jib	11235	9860	4250	21.3sq.m	Max. foot round 155mm (6")
	36.86'	32.35'	13.94	230sq.ft	
Screacher	12580	11120	7690	43.88sq.m	Max. foot round 310mm (12")
	41.27'	36.5'	25.23'	473sq.ft	
Asym. Spinn.	14305	12355	9410	89sq.m	
	46.93'	40.53	30.9	960sq.ft	
Storm Jib	7410	5820	3685	10.6sq.m	
	24.32'	19.1'	12.1	114sq.ft	
R Main	13440	13680	4210	42sq.m	
	44.09'	44.88'	13.81'	452sq.ft.	
R Asym. (masthead)	15905	13955	9560	111sq.m	
	52.18'	45.78'	31.4'	1198sq.ft	



F-32 SAIL PLAN

Mast Height From Water

F-33 - 15.22m (49' 11")

F-33R - 15.98m (52' 5")

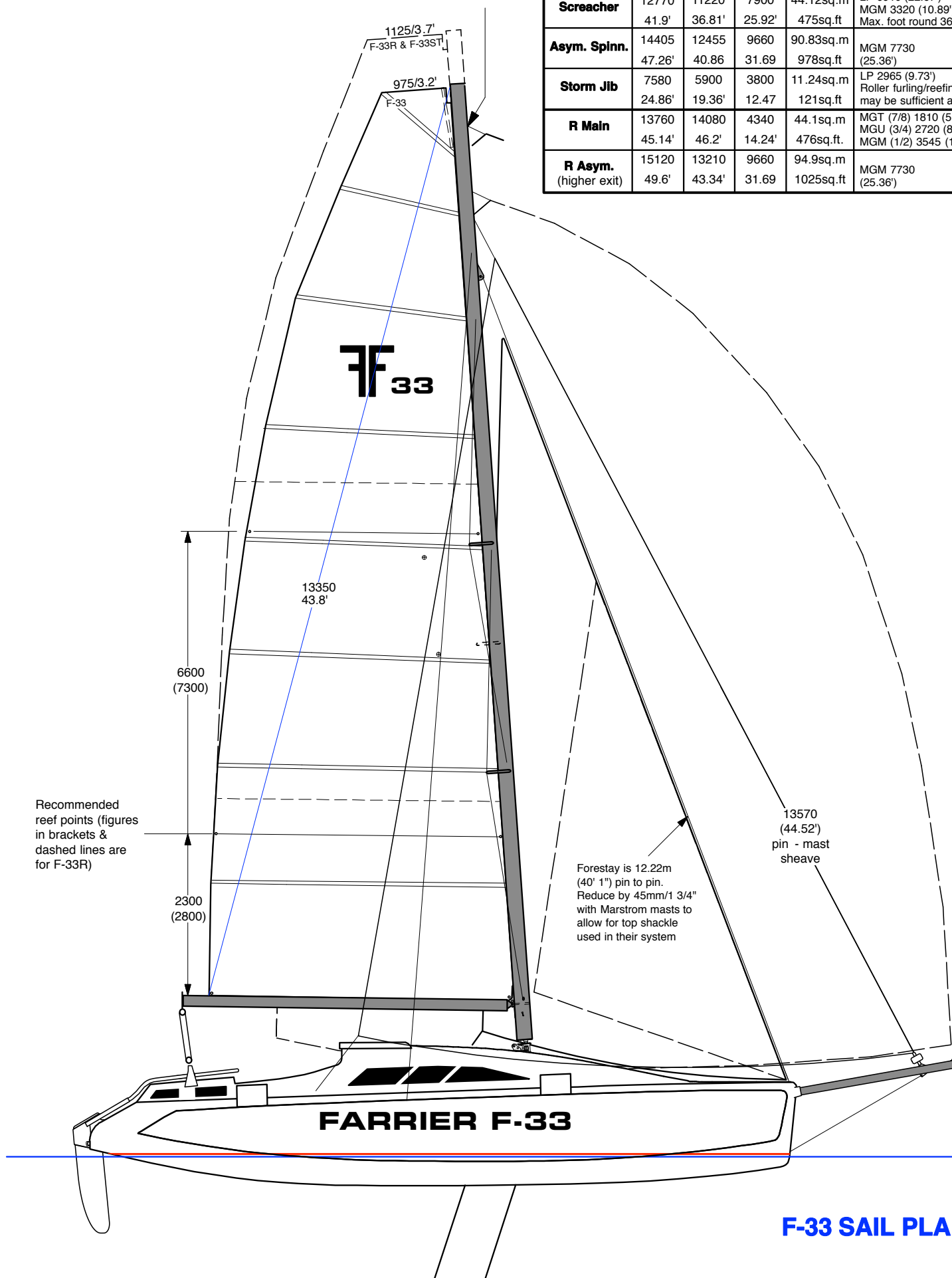
Carbon mast
and F-33R
spinnaker exit

Sail	Luff	Leach	Foot	Area	Additional Info
Mainsail	13000	13350	4340	40.03sq.m.	MGT (7/8) 1660 (5.44')
	42.65	43.8'	14.24'	432sq.ft	MGU (3/4) 2520 (8.27')
Jib	11265	9830	4370	22.33sq.m	LP 3965 (13')
	36.96'	32.25'	14.35	240sq.ft	MGM 2470 (8.1')
Screacher	12770	11220	7900	44.12sq.m	LP 6910 (22.67')
	41.9'	36.81'	25.92'	475sq.ft	MGM 3320 (10.89')
Asym. Spinn.	14405	12455	9660	90.83sq.m	LP 6910 (22.67')
	47.26'	40.86	31.69	978sq.ft	MGM 7730 (25.36')
Storm Jib	7580	5900	3800	11.24sq.m	LP 2965 (9.73')
	24.86'	19.36'	12.47	121sq.ft	Roller furling/reefing jib may be sufficient alone
R Main	13760	14080	4340	44.1sq.m	MGT (7/8) 1810 (5.94')
	45.14'	46.2'	14.24'	476sq.ft.	MGU (3/4) 2720 (8.92')
R Asym. (higher exit)	15120	13210	9660	94.9sq.m	MGT (7/8) 1810 (5.94')
	49.6'	43.34'	31.69	1025sq.ft	MGM 7730 (25.36')

Recommended
reef points (figures
in brackets &
dashed lines are
for F-33R)

Forestay is 12.22m
(40' 1") pin to pin.
Reduce by 45mm/1 3/4"
with Marstrom masts to
allow for top shackle
used in their system

13570
(44.52')
pin - mast
sheave



F-33 SAIL PLAN

NOTES:

Sailcloth wgt. may be varied to suit material, and average wind strength in area sailed. Mylar may be used for all sails.

All sails are to be fitted with telltales.

Batten Car/track system is recommended for mainsail luff.

Mainsail battens to be angled as shown for easy roller furling if fitted (requires bolt rope).

Mainsail to have 3 sets of reefpoints.

Max. Mainsail roach is 1760 (69") located 60 to 65% up leach.

Mainsail to have Cunningham eye fitted.

Class emblem to be located and sized as shown.

Jib to have 4 leach battens placed at equal distance on leach, unless roller furling.

Screecher is roller furling wire luff genoa set from bow pole (Screecher eliminates traditional genoa and awkward sail changes. It is also used to windward in light airs).

Square Top
Main is
optional

1100/43"

F[®]
36

1750
(69")
max.
Roach

Roller furling
Storm Jib option

Roller Furler

Sail	Luff	Leach	Foot	Wgt.	Area
Mainsail	13740 45' 1"	14370 47' 2"	5080 16' 8"	400gm 9.5oz	51.5sq. m. 555sq.ft.
Jib	13230 43' 5"	11810 38' 9"	4420 14' 6"	400gm 9.5oz	26.6sq.m. 286sq.ft.
Screecher	14450 47' 5"	12160 39' 11"	9630 31' 7"	270gm 6.5oz	61.7sq.m. 664sq.ft.
Asymmetric Spinnaker	15160 49' 9"	12950 42' 6"	10660 35'	50gm N 1.25oz N	136sq.m. 1460sq.ft.
	7mm 9/32" Wire luff	JC 6600/21' 8"		70gm/1.5oz (opt. for Cruising boats)	
Storm Jib	8330 27' 4"	7260 23' 10"	3120 10' 3"	450gm 11oz	11.3sq.m. 122sq.ft.

Max. foot round: Jib 150mm (6"),
Screecher 600mm (24")

Jib luff may need shortening to suit
furler if used.

A self-tacking jib is optional with
centerboard version, specifications
being identical to jib except: Leach
11951 (39' 3"), Foot 3652 (12'), Area
23.2sq.m. (250sq.ft.). Can have positive
roach of up to 300mm (12") with 4 leach
battens.

If used, storm jib will require 1000mm
(40") tack pennant. May also be roller
furling wire luff (7mm 9/32" wire) set
from chainplate in foredeck.

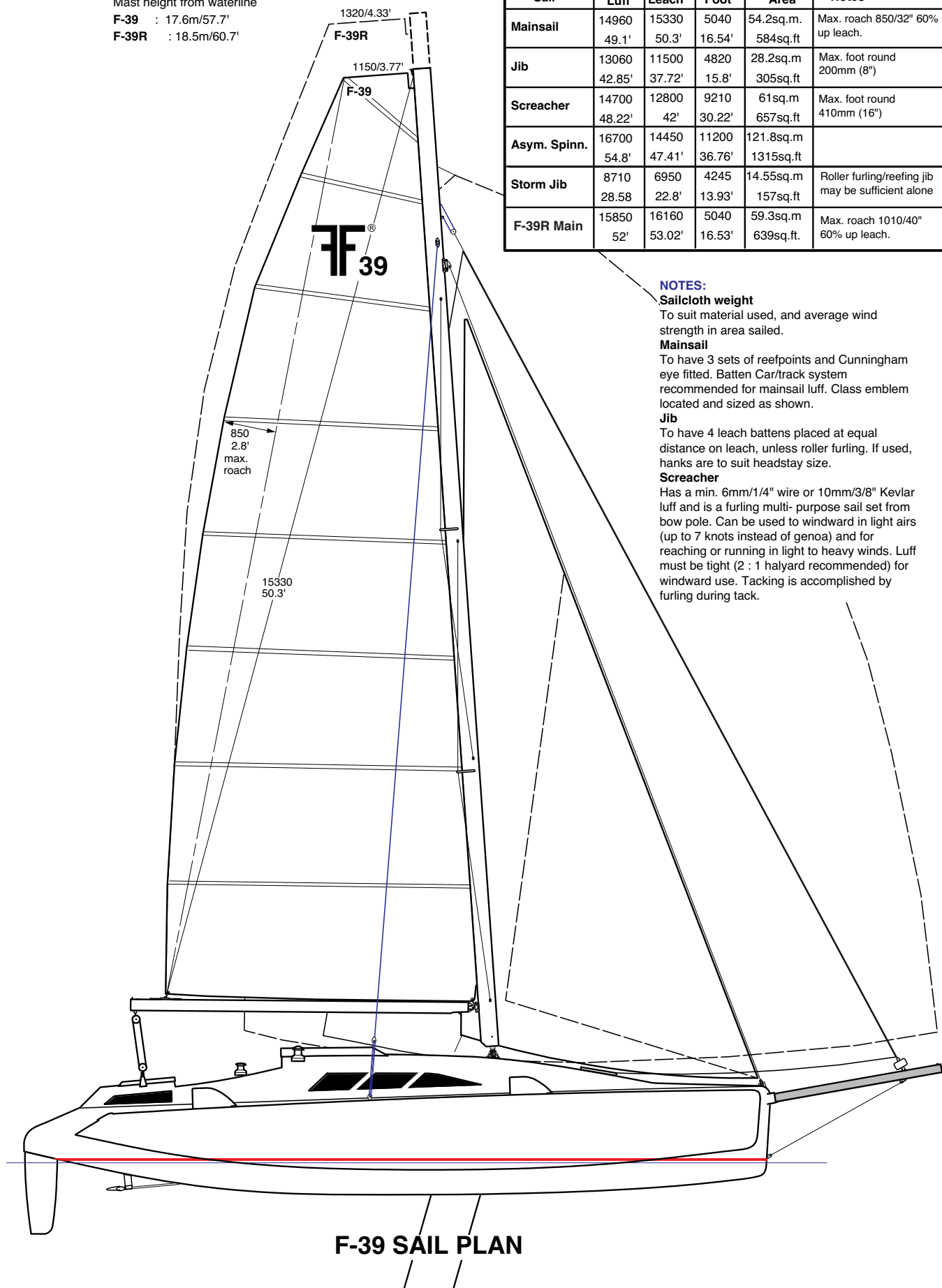
F-36™ Sail Plan

F-36 is a Trademark of Ian Farrier

Mast height from waterline

F-39 : 17.6m/57.7'

F-39R : 18.5m/60.7'



F-39 SAIL PLAN

Mast height from waterline
is 18.62m/61' 1"

Sail	Luff	Leach	Foot	Area	Notes
Mainsail	15190	15545	5330	60sq.m.	Max. roach 940/37" 60% up leach.
	49' 10"	51'	17' 6"	646sq.ft	
Jib	12825	11610	4090	25sq.m	Max. foot round 250mm (10")
	42' 1"	38' 1"	13' 5"	270sq.ft	
Screacher	15285	12945	10160	64.9sq.m	Max. foot round 380mm (15")
	50' 2"	42' 6"	33' 4"	700sq.ft	
Asym. Spinn.	17295	14865	11690	148.2sq.m	
	56' 9"	48' 9"	38' 4"	1595sq.ft	
Optional Sails (may not be required depending on boat setup and use)					
Storm Jib	8560	7440	3405	12.7sq.m	Roller furling/reefing jib may be sufficient alone
	28' 1"	24' 5"	11' 2"	136sq.ft	
Genoa	12825	10970	5870	33.5sq.m	For serious racing. Max. foot round 435mm (17")
	42' 1"	36'	19' 3"	361sq.ft.	

NOTES:

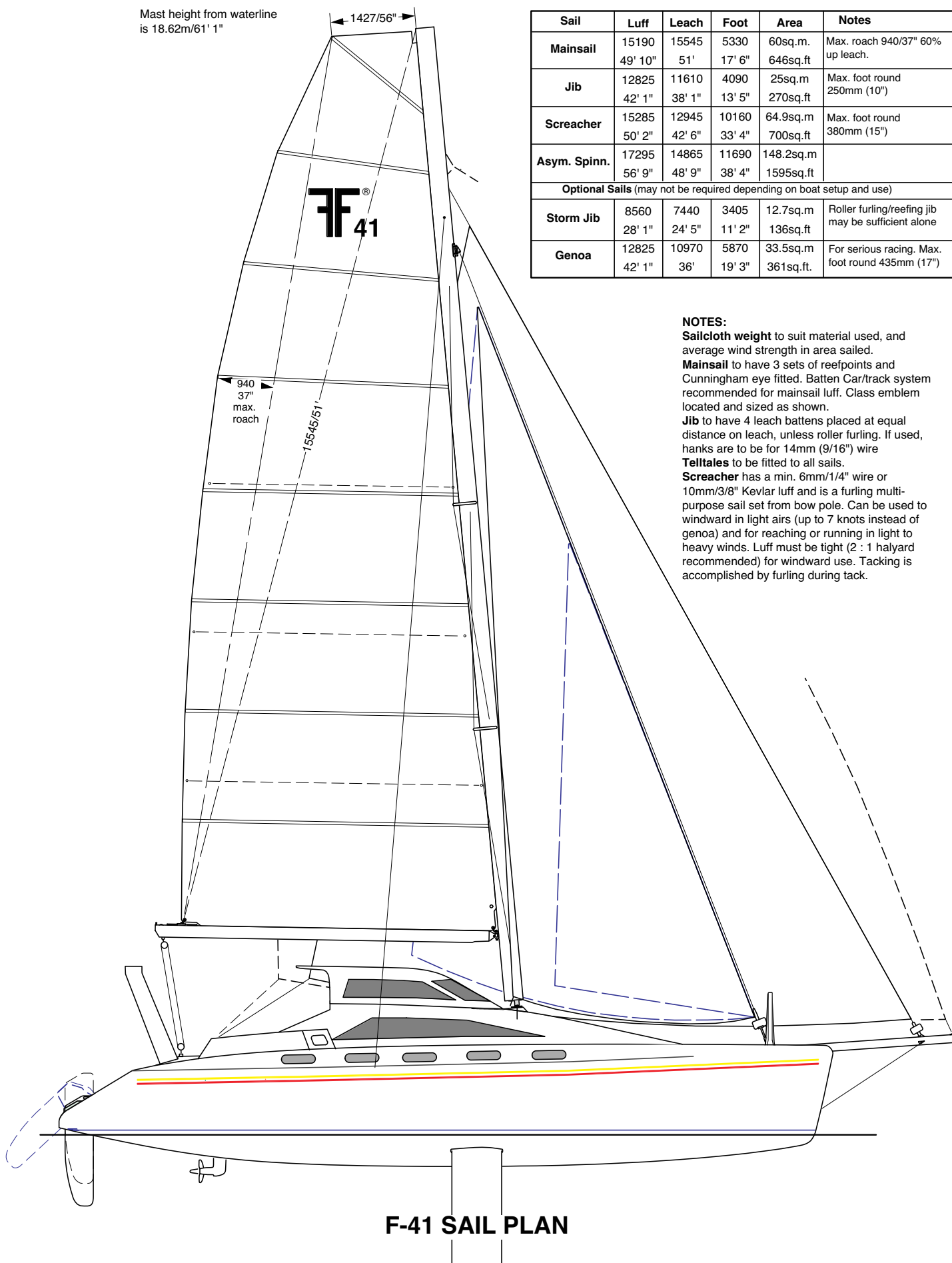
Sailcloth weight to suit material used, and average wind strength in area sailed.

Mainsail to have 3 sets of reefpoints and Cunningham eye fitted. Batten Car/track system recommended for mainsail luff. Class emblem located and sized as shown.

Jib to have 4 leach battens placed at equal distance on leach, unless roller furling. If used, hanks are to be for 14mm (9/16") wire

Telltails to be fitted to all sails.

Screacher has a min. 6mm/1/4" wire or 10mm/3/8" Kevlar luff and is a furling multi-purpose sail set from bow pole. Can be used to windward in light airs (up to 7 knots instead of genoa) and for reaching or running in light to heavy winds. Luff must be tight (2 : 1 halyard recommended) for windward use. Tacking is accomplished by furling during tack.



F-41 SAIL PLAN

MAINTENANCE & SAFETY CHECKLIST

For continued safe and enjoyable operation, it is essential that regular maintenance be carried out. Trimarans are actually more like aircraft in many aspects, and it is important to conduct regular maintenance and safety checks to locate any potential problems before they become serious.

The following Maintenance Safety Checklist has thus been developed and it is strongly recommended that a full check be undertaken every 6 months.

In general, after every sail, the complete boat and trailer should always be thoroughly washed down with fresh water. This is very important to keep that new look, and to prevent rust taking hold on the trailer. Particularly wash out the brakes and suspension area of the trailer. Regularly check the bilges of the center hull and the floats for any water.

Sails should always be rolled up or folded (the same way as you receive them) - dried first if wet.

If possible, keep your boat under cover, as this will ensure the finish keeps its gloss for the life of the boat. Even the best gelcoat finish will eventually begin to fade.

MAST

- ☐ Masthead sheaves should turn freely, and clevis or pivot pins should not be worn or show signs of distortion.
- ☐ Spinnaker halyard and Jib halyard sheaves should turn freely, and clevis or pivot pins should not be worn or show signs of distortion.
- ☐ Forestay tab/nose should be checked for any cracks or signs of distortion
- ☐ All other stay attachments to mast should be checked for distortion or corrosion.
- ☐ Mast step should be checked for any distortion or cracks
- ☐ Mast step sheaves should turn freely, and clevis or pivot pins should not be worn or show signs of distortion.
- ☐ Boom gooseneck pins should be checked for any signs of wear or distortion

RUNNING RIGGING

- ☐ All halyards should be checked for broken strands or wear, particularly where they enter the

mast when sails are up, and where rope clutches engage. A sleeve over rope tail at clutch area can prolong life and give better clutch holding power

- ☐ Spinnaker halyard should have any worn area at the top cut out and the halyard retied or spliced to the snap shackle.

STANDING RIGGING

- ☐ All stays should be checked for broken strands or corrosion, particularly at end swages. If any stays are badly kinked, replacement should be considered.

Stainless steel is prone to fatigue, and in a trailer boat it is not uncommon to get kinks in the stays while rigging or de-rigging. This fatigues the wire, and it is recommended that all stays be replaced after 3 to 5 years.

- ☐ Check all turnbuckles for corrosion, and that locking rings or pins are in place, and work correctly.

- ☐ Synthetic stays should be closely checked for any broken strands or wear areas.

Synthetics are still relatively new and replacement is thus recommended after 3 - 5 years.

- ☐ Check all deadeyes and lashings are still in good condition

HULLS

- ☐ Check bow U-bolt and spinnaker eye for any movement.

- ☐ Check all chainplates for any signs of movement

- ☐ Check wing nets, particularly eyelets for wear.

Wingnets should be replaced every three or four years. Taped edges are usually the first to fail, and sometimes just redoing these will extend the net life. If replacing nets, avoid any close weave fabrics as these can trap wind underneath, creating unwanted lift. Bow nets, in particular, should always be a very open weave.

- ☐ Check rudder case for any sign of stress cracks, or corrosion, particularly at lower end. Rudder blade should swing up and down easily in case, but without any slop.

- ☐ Check rudder blade or shaft around bottom edge of rudder case for any stress cracks. Replace if necessary
- ☐ Check leading and trailing edges of rudder blade for any delamination or splitting.
- ☐ Check rudder control lines for wear, and replace pull down line if fitted every year
- ☐ Check daggerboard around bottom edge of hull for any stress cracks
- ☐ Check leading and trailing edges of daggerboard for any delamination
- ☐ Check control lines for wear and replace if necessary
- ☐ Check traveller welds for any cracking
- ☐ Check Hull area around Lower Folding Strut brackets for any signs of damage/cracking
- ☐ Check all deck fittings for any cracks or wear.

BEAMS

- ☐ Check **all beam join flanges** for any signs of delamination or cracking.

SERIOUS WARNING

*Any delamination or cracking in beam flanges or glue joins should be regarded as **serious** and must be repaired without delay. Otherwise a small crack can grow until it can cause failure.*

- ☐ Check top surface of beams for movement or 'softness' under foot, or if 'oil canning' or rippling of the top beam surface can be observed while sailing. Must be inspected and repaired immediately as this could be a serious fault.
- ☐ Check that plastic compression pads remain on inner ends of beams and that they bear against deck/hull when floats are extended. Also check around this area for any signs of damage or cracking, on both deck/hull and beam.
- ☐ Lightly grease beam bolt threads with a teflon grease

FOLDING SYSTEM

- ☐ Check all pivot pins for corrosion, and that circlips, cotter pins, or nuts are properly fitted.
- ☐ Check hull and beam brackets for any looseness or cracking.

IMPORTANT: **DO NOT** try to remove, tighten or loosen lower folding strut beam bracket bolts. These are epoxy glued into the beam and are not removable.

- ☐ Check all folding struts have plastic bushes at pivot points, and that there are no major cracks in welds (these welds are not structurally important, and small cracks are not significant - these resulting from flex during folding)
- ☐ Check locking pins (for when floats are retracted) and brackets for excessive wear. Rubber stop should be replaced if worn excessively.
- ☐ Check that floats do not bear directly on to the main hull. There should be a bumper on the hull side, or a minimum 1/8" gap.

TRAILER

- ☐ Check Trailer winch line for wear

CAUTION

When raising the mast by using the winch there is considerable tension on the jib halyard and winch line. Be doubly careful when checking these for wear as failure of either one could result in severe injury.

- ☐ Check all trailer supports bear evenly against hulls
- ☐ Trailer should be regularly cleaned and oiled
- ☐ Check wheel bearings for wear
- ☐ Check operation of brakes.

Any defects or problems found during this check should be remedied immediately.

This Checklist is intended as a guide only and may not cover every potential problem. Owner should always check every aspect of boat on a regular basis.

Fire Precautions

1. The craft when in service shall be fitted with a fire extinguisher of 10A/68B capacity (or as required by local regulations)

located _____
and _____

2. It is the responsibility of the owner to:

- have the fire fighting equipment checked at specified intervals,
- replace the equipment should it be damaged or discharged with a device of equal or greater capacity,
- inform crew members of the location and operation of the extinguisher and location of escape hatches.
- ensure the equipment is readily accessible when the craft is occupied.

CAUTION

Never:

- obstruct passageways to exits and hatches;
- obstruct portable fire equipment;
- leave the craft unattended when cooking appliances are in use;
- use gas lights in the craft;
- modify any of the craft systems without professional advice;
- fill any fuel tank when machinery is running or when the cooking appliance is in use;
- refuel outboard motor portable tank on board the craft;
- smoke when handling fuel

DETAILED WIND CAPSIZE FIGURES AND SAFE SAILING RECOMMENDATIONS

The wind capsize figures given in table below are the theoretical wind speeds required to lift the center hull in the worst possible condition, which is side on with sails sheeted in tight - something that should never be allowed to happen.

These figures are based on calculation combined with

many years of sailing trials and testing in all conditions.

While every care has been taken, this table should only be regarded as a general guide, and it always remains the skipper's responsibility to ensure the boat is sailed safely and sail is reduced appropriately for the conditions.

Model	Sail Combination	Wind Capsize Speed in Knots	Recommended Wind Range For Safe Sailing
F-22	Main & Jib	30	12 to 20 knots
	Main #1 reef & Jib	34	20 to 25 knots
	Main #2 reef & Jib	37	25 to 32 knots
	Main only #2 reef	45	32 to 38 knots
	Jib only	58	38 to 45 knots
F-22R	Main & Jib	26	10 to 15 knots
	Main #1 reef & Jib	29	15 to 20 knots
	Main #2 reef & Jib	32	20 to 25 knots
	Main only #2 reef	39	25 to 32 knots
	Jib only	52	32 to 45 knots
F-82	Main & Jib	33	12 to 21 knots
	Main #1 reef & Jib	37	21 to 28 knots
	Main #2 reef & Jib	43	28 to 36 knots
	Main only #2 reef	59	36 to 45 knots
F-82R	Main & Jib	31	12 to 20 knots
	Main #1 reef & Jib	36	20 to 25 knots
	Main #2 reef & Jib	42	25 to 35 knots
	Main only #2 reef	56	35 to 45 knots
F-32A	Main & Jib	33	12 to 22 knots
	Main #1 reef & Jib	37	22 to 28 knots
	Main #2 reef & Jib	48	28 to 37 knots
	Main only #2 reef	73	37 to 48 knots
F-32R	Main & Jib	30	12 to 20 knots
	Main #1 reef & Jib	34	20 to 25 knots
	Main #2 reef & Jib	44	25 to 33 knots
	Main only #2 reef	63	33 to 42 knots
F-36	Main & Jib	37	12 to 24 knots
	Main #1 reef & Jib	42	24 to 32 knots
	Main #2 reef & Jib	52	32 to 42 knots
	Main #2 reef & S.jib	61	42 to 48 knots
F-39 * R version	Main & Jib	37 (33*)	12 to 24 knots
	Main #1 reef & Jib	41	24 to 32 knots
	Main #2 reef & Jib	46	32 to 36 knots
	Main #2 reef & S.jib	52	36 to 42 knots

Safe Sailing Procedures:

In event of a severe gust: **FREE SHEETS**

OR:

If wind is closehailed: **LUFF UP**

If wind is abeam: **FREE SHEETS**

If wind is abaft the beam: **BEAR AWAY**

If wind is astern: **USE HEADSAILS ONLY & FREE SHEETS**

The above figures apply to consistent winds, and wind capsize speed will vary depending on many factors, including sea conditions, area being sailed, boat load condition, how load or crew are distributed, wind direction and wind characteristics. The recommended safe wind speed range should be thus modified or varied when required as follows:

If winds are inconsistent, strong and gusty, reduce the recommended safe wind speed ranges by 20%.

If offshore, or in isolated areas, then reduce the recommended safe wind speed ranges by 20%.

If crew is inexperienced then reduce the recommended safe wind speed ranges by 20%.

If running directly downwind, the above safe wind speed ranges still apply. However, mainsail should be reefed early, or dropped altogether should winds exceed 30 knots and use a headsail only instead. Headsails can be easily released in strong gusts from astern. A mainsail cannot.

If boat is lightly loaded, the wind capsize figures will be lower, and extra care may be required. However a light boat also accelerates more easily, which helps absorb gusts easier.

Main plus Screacher capsize wind speeds ranges are around 10% lower than the main plus jib figures. However, the lighter cloth usually used on these light weather headsails will restrict their use to low wind speed ranges