SAILING MANUAL

www.corsairmarine.com

CORSAIR™ MARINE INTERNATIONAL

Sailing manual applicable to

This manual has been compiled to help you to operate your craft with safety and enjoyment. It contains details of the craft; the equipment supplied or fitted; its systems, and information on its operation and maintenance. Please read it carefully and familiarize yourself with the craft before using it.

If this is your first craft, or you are changing to a type of craft you are not familiar with, for your own comfort or safety, please ensure that you obtain handling and operating experience before assuming command of the craft. Your dealer or national sailing federation or yacht club will be pleased to advise you of local sailing schools or competent instructors.

PLEASE KEEP THIS MANUAL IN SECURE PLACE, AND PASS ON TO THE NEW OWNER WHEN YOU SELL THE CRAFT

Model: _____

Hull Number: _____

Owner1: _____ Owner2: _____ Owner3: _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

Built by:

Corsair Marine International

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GENERAL

This manual contains important information about the safe operation and maintenance of your Corsair built Pulse 600. Read it carefully, become familiar with the procedures described and follow the recommendations to help make your sailing enjoyable and trouble-free.

Corsair trimarans are designed and built as high performance cruising trimarans, which when used as intended, with their enormous stability and unsinkability, are among the safest and fastest trimarans afloat.

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.

Check the weather forecast; know into what weather you might be sailing.

OUTBOARD MOTOR

The recommended motor size is between 2 – 4HP long shaft.

There is a number of eco-friendly '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, Corsair 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 but should always be tilted up when sailing.

The dagger board should always be down when motoring to prevent any sideways movement. If not, the boat will have a hovercraft like motion with wide skidding turns. With the board down, handling is excellent.

TRAILERING

CAUTION

Measure and know the overall height on the trailer. Care should be taken to avoid all low, overhead obstacles.

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

The total towing weight can vary considerably depending on options and can be determined exactly by using a weighbridge. Check 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 Corsair is a relatively light boat for towing, but it still has considerable windage. For easy, stable towing, the trailer should be balanced to have 5 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 weight. If necessary, a simple change like shifting the gas tank or outboard forward can make a considerable difference to trailer behavior.

Trailer lights are fitted either on special brackets or as a separate light bar on the boat's transom. They are thus independent from the trailer, and the wiring 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 and then connected to the towing vehicle. Independent wiring avoid the frequent breakdowns that occur with wiring through the trailer 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 tied to one side, the poptop or hatch is secured, and the boat is tied down to the trailer. There should 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.

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

Should the mast extend back past the trailer lights by more than the legal amount, the appropriate warning flag should be tied on the back. The mast can be positioned far enough forward to eliminate any excessive over, however this may not be possible if the towing vehicle is a 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.

RIGGING

This procedure has been developed from over hundreds of launchings around the world and has proven to be safe and easy. Don't be disheartened if it takes you longer the first few times. This is not a race. After a few launchings this process will become easier as you are more familiar with your boat and your confidence builds.

Two people can have a Pulse 600 rigged and launched in around 20 minutes.

DANGER

Before starting to rig, check to see that there are no power lines for the mast not to touch while being raise or while being moved to the ramp

Recommended setup 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 which saves stowing them, and then finding a bow line.

2. Undo the trailer winch hook, and pull some slack so the hook will pass over the bow roller. Leave it lying on the foredeck.

3. Place the mast raising pole on the foredeck for use.

   Climb into the cockpit via the transom. Ensure the trailer is still coupled to the car or the back of the trailer has been chocked.

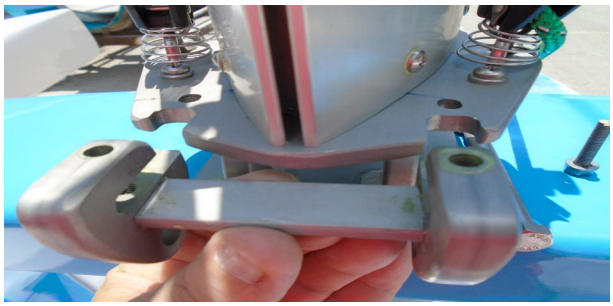
4. Move fwd alongside the mast undoing the mast ties (at each end) and the rigging ties as you go.

5. Lift the forward end of the mast and walk aft, rolling the mast on the aft mast roller while checking that the rigging wires do not catch. Stop once the mast foot is over the pivot brackets.

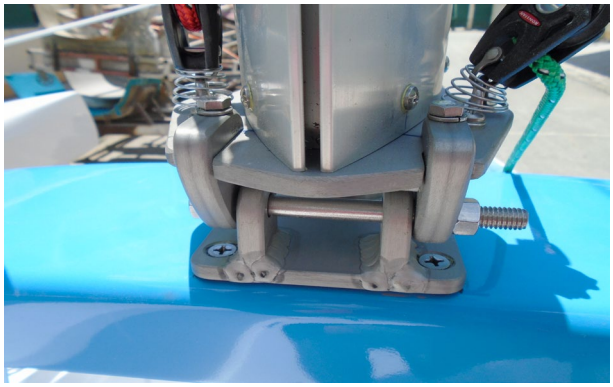
Shroud attachment

The mast yoke now needs to be fitted to the mast foot using the through pin (mast raising bracket can also be fitted prior to rolling mast back or be left on the foot prior to de-rigging). Another alternative is to attach the mast raising bracket to the deck first, then fit the mast to it.

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



Mast raising bracket ready to be installed



Mast raising bracket after installation to mast base

7. Fit the mast raising wires these are led form the eye around 8' up the front of the mast to the aluminum side anchors (aligned with the mast pivot point).

Mast raising supports

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

8. Position the mast raising pole on the mast in the raising 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.

Additional side lines can then be fitted from the end to the raising wire anchors to stabilize pole sideways.

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.

Trailer winch raising procedure

WARNING

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 point, stop and check that nothing has fouled. Do not proceed until any obstruction is clear.

9.a Take the trailer winch line hook and pull it back over the pole and connect it to the spinnaker halyard (after it has been unhooked from the mast). Winch line should extend at least 2' aft of the raising fork.

Check to see that the spinnaker halyard is securely tied off at the cleat on the side of the mast.

Mainsheet attached used to raise mast.

10.a The mast is now winched up, checking again for power lines.

Check to see that all rigging wires are clear and have not snagged anywhere. Raising wires should initially be slightly loose and tighten slightly on the way up.

11.a Once the mast is fully up, connect forestay. For initial rigging mast rake should be set to around 3.5° to 4.5°. 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.

12.a Once forestay is connected, slacken off the trailer winch, disconnect the spinnaker halyard, and return it to the mast. Remove raising pole, mast yoke, rewind the winch and reconnect hook to the bow eye.

Leave mast raising wires attached to the mast as these are still required for support until after the float are unfolded and shroud properly tensioned.

Mainsheet raising procedure

CAUTION

The shrouds must always be connected to the floats. Otherwise there is a danger that the mast could topple forward with over-winching

9.b Take the mainsheet purchase system and connect it to the spinnaker halyard just forward of the mast raising pole fork. Attach the block with the tail to the bow pad eye.

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

10.b The mast is now winched up, checking again for power lines.

Check to see that all rigging wires are clear and have not snagged anywhere. Raising wires should initially be slightly loose and tighten slightly on the way up.

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

CAUTION

The Pulse 600 mast can be raised with the floats folded or unfolded. When pulling up the mast it is important that the sheet runs through the cleat to prevent accident dropage. When walking away from the sheet tie off the tail to prevent accidental release.

NOTE

The mainsail on the Pulse 600 is set up with a floating tack so before hoisting the mainsail attach the Cunningham into position on mast. (Shackle attachment onto saddle at the base of mast)

Mast on way up and being held from going sideways by raising wires

BOOM AND SAIL SET UP

The pulse 600 has incorporated the furling boom system, for ease of operation when rigging and de rigging.

BOOM SET UP

The boom is connected on to a shaft that passes through the mast with the furling handle attached to the fwd side of the mast. The handle is locked into position by a retractable hand piece which will slide out when you need to furl the main sail.

Once you have connected the boom onto mast. Attach the adjustable boom topper onto the rotating SS bracket on the out board end of boom.

This will allow the boom to stay in a horizontal position.

Attach the mainsheet system to the dux strop that the outhaul is connected to. This will help keep the boom stationary when you are hoisting the mainsail.

HOISTING MAINSAIL

When hoisting the mainsail for the first time. You can unfold and layout in the cockpit and nets, Load the mainsail battens and set to the required tension.

Attach the main halyard to the head of sail and attach the outhaul line shackle to the clew on foot of the sail.

Tie a small lashing line onto the ring that is on the shaft on boom end and allow 250mm of lashing to the tack point on sail.

This will act as a safety strop for when you decide to furl the mainsail and disconnect the Cunningham hook.

When hoisting the mainsail, make sure you are headed to the wind direction. Reducing the wind pressure in sail will make hoisting possible

Once you have everything connected in place and facing in the right direction you are ready to hoist the mainsail. Make sure you have a little slack in the

outhaul line boom topper and mainsheet. If these lines are tight they will create friction loads when hoisting and make it impossible to hoist to max height.

Hoist mainsail to max height by feeding the head of sail into the sail track cut out 150mm on mast just above boom connection. Once you have max hoist lock off halyard using the camcleat and horn cleat on mast, attach the Cunningham hook to the tack and apply a little tension.

The amount of Cunningham tension will vary on how strong the breeze is and what angle of sailing you are doing.

Adjust the outhaul and mainsheet to the desired tension and keep the boom topper slack. You do not want any tension on this line when mainsheet tension is applied.

FURLING MAINSAIL.

The Pulse 600 mainsail furling system is quick and user friendly for anyone.

When you are ready to Furl, depower the Pulse by heading up into the breeze.

Make sure the boom topper is attached to the rotating SS bracket on boom end and the boom is set at a horizontal position, move the mainsheet from the outboard strop to the rotating SS bracket.

Release the Cunningham from the tack on the sail.

Have one hand holding the furling handle ready to wind up, and the other hand holding and controlling the main halyard rate of bringing the sail down.

When the main halyard is unlocked you can ease the halyard in your hand and wind the sail up onto boom with your other hand. As you furl keep an eye on the sail so that the mainsail is not being distorted by the battens not running parallel with the boom. If there is any distortion and the battens are not aligned correctly it may require the angle of boom to be adjusted either up or down.

Quickly lock the halyard off and make the adjustment on boom topper. You may need to raise the mainsail again to refurl the main sail correctly.

Roller furled mainsail

SETTING UP THE JIB

The pulse 600 jib has a furling jib using a Harken furler which is attached to the bottom Forstay end. The jib sail has a zipper luff that the halyard runs on the inside of the luff. Once the Forstay is in positioned you can connect and hoist the jib sail.

Attach the halyard to the top of Jib and pull the trace line down, as the jib goes up wrap the zipper luff around the forstay wire and do up as the jib is being hoisted. Once you have mx hoist un do the trace line and connect the jib halyard to the 3;1 purchase system that is attached at the top of Furling drum. Allow 250 to 300mm of purchase.

Once the halyard is tied off apply tension on the purchase system to set the desired luff tension on jib. Once set, wrap the zipper luff around the purchase system and clip off. The drum on furler should be pre loaded with the furling line and once the jib has been hoisted can be furled. It is advisable to furl once the jib sheets have been attached to the foot of jib sail. The furling line runs along the stb side of deck up to a cam cleat mounted on the side of rind frames.

Tie a small lashing line onto the ring that is on the shaft on boom end and allow 250mm of lashing to the tack point on sail.

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The amount of Cunningham tension will vary on how strong the breeze is and what angle of sailing you are doing.

Adjust the outhaul and mainsheet to the desired tension and keep the boom topper slack. You do not want any tension on this line when mainsheet tension is applied.

JIB SHEETS

Jib sheets are a 2:1 endless line, this allows the flexibility to sheet sitting out on the floats. Attach the Ronstan 2:1 blocks to the saddle position on main ring frame and the Ronstan friction rings onto clew of sail. You are now ready to run the sheet lines. Once the sheet lines are set you can furl the jib.

The furling line is located on the Starboard side. Once the luff tension is set and the jib sheets connected you can now furl the jib by pulling on the line.

When the jib is furled make sure the line is cleated off (located on side of ring frame).

This will prevent the jib from unfurling prematurely.

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 their rigs enough.

Synthetic Rigging used on the cap shrouds will stretch a little internally but will settle after a few sails. The wing section masts that are used on Corsair Trimarans required some pre-bend. The amount of pre-bend is achieved by tightening the diamond wires.

The Pulse 600 mast has a pre-bend amount of 35mm, this can be checked by running a messenger line from the hound area (forestay lug) to the center of boom shaft along the aft face of mast. 35mm gap will roughly be around the speader location.

For good windward performance the forestay must be tight and thus cannot be emphasized too much

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. Loose rigging will also greatly affect the performance of your Corsair.

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 Corsair 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. The Pulse 600 has a roller furling boom fitted. Release the handle from the locking socket on the mast allowing the handle to roll freely. The main will automatically unroll from the boom however if the halyard tension becomes too tight unrolling a few turns in advance will help ease the load.

Once the main is fully hoisted, attach the Cunningham and pull tension until the majority of wrinkles have been removed from the luff. The topping lift can now be eased.

The mainsheet should now be moved from the furling dogbone at the end of the mast to the mainsheet strop. At this stage you should also attach the mast rotation control to the boom and pull tight until the mast section is pointing into the direction of the apparent wind. All these controls are connected using snap shackles or quick fitting hooks and are very easy to attach when setting up.

All Corsair models sail and tack easily under mainsail alone. If you have 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 and this won't allow you to go too fast particularly in crowded waters or if there is minimal visibility.

The correct technique for sailing mainsail only is to sheet it free to avoid choking the boat. The traveler 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 7 - 8 knots in 10 to 15 knots of wind. If you find boat speed is less, then the problem is an over-sheeted main or trying to point too high.

There is a technique involved in sailing main only, and 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.

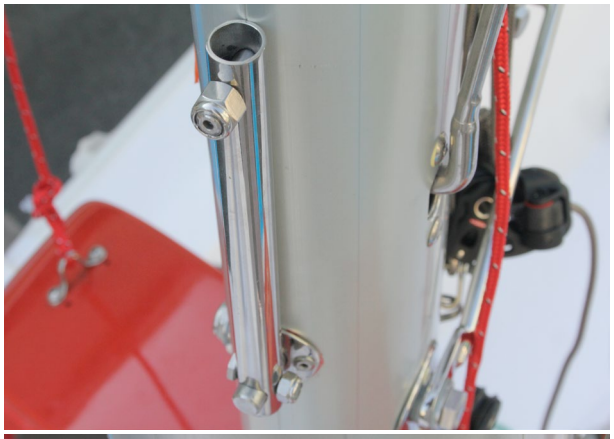
You can now release the jib furler line and pull on the leeward jib sheet. Now you're sailing!

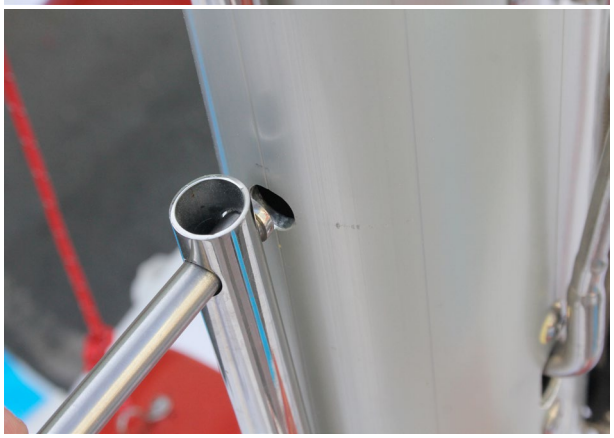
Corsair trimarans are sailed like any other yacht, the most notable differences being the response, lightness of the helm and the low angle of heel. This ranges from an average of 5° to 10° to a maximum of about 15°.

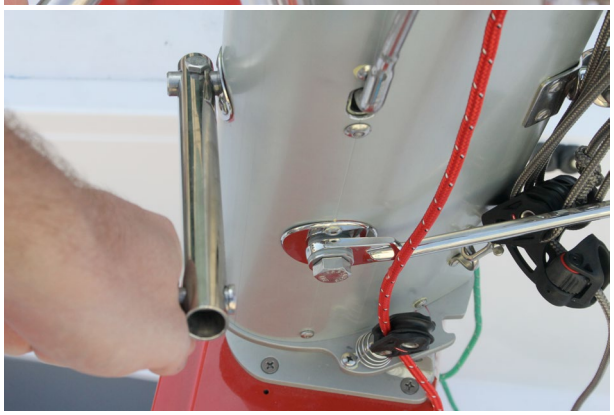
Pointing ability is excellent but care must be taken not to over sheet or try to point too high. Just a few less degrees pointing, with sheets slackened slightly, can see the boat speed jump from 10 or 12 knots to 12 or 14 knots.

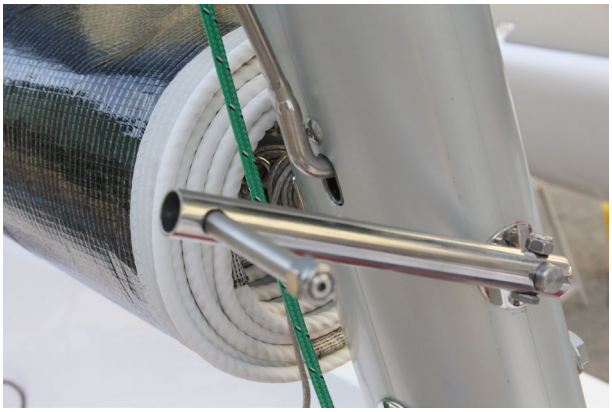
To reef, first point the boat into the wind depowering the main. Disconnect the cunningham eye tackle. The topping lift should also now be used to lift the back of the boom a couple of inches above horizontal.

Now release the outhaul from the clew, separating the mainsail from the boom entirely. Go forward and after releasing the main halyard pull the luff of the main down untill the Cunningham can be hooked into the reef attachment. Now lock off the main halyard. Go to the back of the boom and reattach the outhaul to the new reef position. The sail is now fitted in it's reefing position. The excess sail can be roiled up by hand and then zipped away in the foot of the sail which has been designed to house this extra sail while reefing. You can now apply Cunningham and outhaul tension as needed. Reefing is complete.

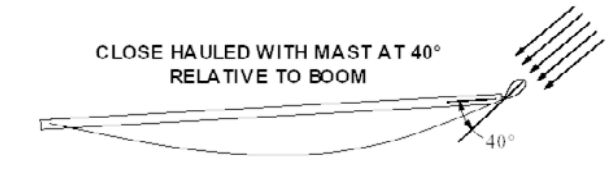








Roller furler handle



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.

Achieving the right amount of rotation will improve your speed and mainsail shape by pulling the apparent breeze through the slot efficiently. The amount of rotation will vary between 35° to 90° degrees.

Apparent breeze

Mast rotation

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 the boom. This acts as more of a preventer than a positive control. The mast will naturally rotate in s position generally in line with the apparent breeze. The control line will prevent the mast from over rotating. 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.

WINDWARD PERFORMANCE

All corsair models 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 as a mono hull 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 is much greater.

One thing to avoid is over sheeting the headsail, while pulling this very tightly 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 the 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 very slightly, pointing slightly higher, while trying to maintain the same boat speed.

The mainsail traveler should be pulled to the center of boom in light to moderate winds and as the wind increases, moved outboard slightly and more mainsheet tension applied. In very strong winds the mainsheet should be pulled on as tightly as possible. A tight mainsheet helps keep the forestay straight for good pointing ability.

If the jib is back winding the main, open the slot by moving the traveler a little more to center. Keeping an open slot between jib and main is crucial to good windward performance as any back winding of the main will choke the boat. Equally as important, the jib must be relatively flat with no hook in the leach and not over sheeted.

If set up and sailed correctly, a Corsair trimaran will match the windward ability of the best mono hull racers that are

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 Corsair is one of the best.

Achieving good windward performance can be very satisfying but it does depend on a lot of factors being right!

REACHING

When reaching, it is vital that the mainsail be let out far enough. A common mistake is to sheet it in too tightly resulting in 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 on them 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 tightly. They should always be flowing aft.

All sails trimmed to work together

SPINNAKER

The spinnaker is a very easy sail to use on a trimaran, due to the wide beam and level sailing. The spinnaker thus becomes a very practical and safe sail for family sailing with very few control problems. All Corsair models use an asymmetric spinnaker which are the easiest to use, and the fastest if used correctly.

The asymmetric spinnaker can be launched from the leeward wing net, or furled from a top down furler, and the sheets led back to blocks on the aft beams near the floats for general all round performance. For better pointing ability, particularly when tacking downwind, a closer sheeting angle is better, and the ideal position will vary depending on spinnaker. A block on a movable strap around the aft beam gives plenty of options in this regard.

The tack line is led from a pad eyeat the end of the sprit back along the main deck to a cleat on the deck at the aft end. 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.

Alternatively if a top down furler is used the furler drum shall be shackled to the bowsprit pad eye and the furled sail shall be led back into the main hull. Prior to reaching your mark hoist the spinnaker being sure to

apply plenty of halyard tension, this is critical to the furling ability of the sail. Hoisting the sail furled is a very easy and safe exercise. Now that the sail is hoisted and you have rounded your mark you can release the furler lines and pull on the sheet, the sail will very quickly unfurl and you are now sailing under spinnaker.

Depending on wind conditions and points of sail you may choose to sail with the jib furled or unfurled. If the jib begins to flog it should be furled quickly to avoid any permanent damage to the sail.

Sailing with spinnaker

SPINNAKER JIBING

The asymmetric spinnaker can be jibed either through the slot between the forestay and spinnaker tack or around the outside. With 'inside' jibing the sheets are run between the spinnaker tack and the forestay. 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 using a continuous one piece sheet. The advantage is that the sail does not have to fit through a narrow slot between spinnaker and forestay.

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 pulled in to pull the spinnaker through the slot and around while also releasing the old sheet.

The 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 be disappointed with downwind performance -unless you take note of what is said here. The asymmetric cannot match a full symmetric spinnaker straight downwind because of the smaller, flatter area and a restricted ability to project to windward. The major advantage is considerably easier handling and superior reaching performance.

A rotating mast is very efficient and can achieve a very large performance increase over fixed masts making downwind tacking a possibility.

The basic technique/rule is to sail downwind while keeping the apparent wind at about 90°, trimming the sails so

they are not stalling or luffing. 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 exhilarating. So try it! Flying the jib inside the spinnaker may also help improve performance.

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. Reduce sail early as follows:

    a. Main should be reefed to reef points when wind reaches 20 knots.

    b. In 30 knots main furl main to 3rd batten.

Other variations of the above are possible depending on the circumstances. Experienced and alert racing crews can delay reefing to even well 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.

Sometimes when running downwind, it is better to drop the main and run under jib only. Corsair trimarans can go to windward and tack while sailing under either jib or mainsail alone.

2. When winds are strong and gusty, and the boat is being sailed hard, crews should always have the sheet of the largest sail, be it the mainsail, jib, or spinnaker in hand, ready for quick release.

    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, then just reef until you are comfortable.

    When reaching, it is better to bear away downwind than round up. The boat will slow down and 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 luff up is while hard on the wind. Do not bear away in this case, feathering the 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 happens for the best comfort. If sailing for speed then 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 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. However, this is sailing on the limit so don't push your luck unless prepared for a ducking.

3. 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.

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

5. Always listen to the latest weather forecast before you set out on any sailing trip.

6. Always leave yourself a large safety margin, be it while sailing or simply motoring around.

7. Always carry full safety gear, including life jackets

    as required by your country's Coast Guard and local regulations.

For safety, always wear a life jacket when sailing hard. Always keep the sheet in hand ready for instant release

DANGER

Never leave the sheets unattended if un-reefed and the wind is exceeding 20+ knots.

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 comfortably exceeded.

SAILING HINTS

Corsair trimarans have several unique sailing features, one of these being the ability to make continuous 360° 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 indefinitely. This can be a handy tactic on starting lines!

A simple way of heaving 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 as per normal but let the main right out. Pull the main on slightly and you will begin moving. Pull the main on and you will go faster, let it out and you will go slower. 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 fast 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 affectively 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 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.

When spinnaker running before 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 caused downwind should the bow dig in. The solution is to drop the mainsail, which virtually eliminates this risk.

The limit for racers with modern rigs will always be nose diving, though this is hard to do with a Pulse 600 design due to its 'high volume, reverse bows' .

Crew position is extremely important on the Pulse. As crew weight can account for up to 30% of the total boat weight. Upwind in light airs the skipper and crew should be as far foreward as possible and sitting in the center hull or even on the leeward nets. At the wind increases the weight should be gradually moved aft and to windward.

The boat should be heeled to leeward (crew on leeward side) when sailing to windward in light winds, just as with a mono. This keeps the sails in a more efficient shape.

BEACHING

One major multihull advantage is the ability to come right into a beach. You can raise the daggerboard and rudder and pull the Pulse600 in far enough so that the boat cannot move around in the waves.

RETRIEVING TO TRAILER

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

The floats can be folded before arriving at the ramp for reduced beam or after the boat has been pulled from the water. Prior to folding, as with all rotating masts, the mast raising wires must fitted.

Before folding, first check to see that 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. Attack the beam locking strops. Now fold the second side.

WARNING

Take great care while folded in wind 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 of bigger designs resulting in a roll over

Locking Strop

Raise and remove the dagger board and rudder. You are now ready for the trailer.

Back the trailer down into the water until the water reaches the forward inward bend of the trailer but not 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.

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

If motoring onto the trailer, leave the dagger board 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 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 aft and fwd mast support and the trailer lights.

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. Leave the topping lift on to take the weight and disconnect boom from the mast. Lay it down in the cockpit and fit the sail cover/bag. Disconnect the topping lift and reconnect to the mast.

To lower the mast, ensure the spinnaker halyard is secured to the horn cleat on the mast side. Release the trailer winch hook (or attach mainsheet blocks), pass it over the bow and hook to the spinnaker 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, otherwise when lowering the mast any loose stays will tend to fall away over the boat. 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 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.

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

Disconnect mast from the step and walk the mast forward until the mast can be mounted on the fwd mast mount.

Secure the mast to the fwd and aft mast support. All rigging wires and stays should now be secured to the mast. This is to prevent them from rubbing on the deck which will quickly wear through any gel coat 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

Do not use elastic cord type ties on the mast with hooks as they can be dangerous by whipping back and causing eye damage.

Rudder should be removed and stored. Should local regulations not permit the rudder case 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 the Pulse 600 like all Corsair models can be quite safely lifted in and out by the usual dockside lift.

Slings can be used around the complete folded craft, the best bearing areas for the slings being the beam areas.

MARINA DOCKING

For marina docking, the shrouds are released from the floats 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.

One problem with marina docking is 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.

One of the best and recent solutions for long term marina docking is a dock liner, which surrounds the boat with sterilized water, preventing growth.

SAFETY

The modern trimaran with its enormous stability and unsinkability is a very safe craft and has now established an excellent safety record. However, this safety is dependent on the operator and how the craft is handled.

The major hazard to be avoided is capsizing. This is rare with well sailed multihulls but can occasionally occur with racers pushing it to the limit. Sail too fast for the conditions and the risk of capsizing is higher.

In general, the risk factor will only begin to increase when boat speed exceeds 15 knots while reaching or about 10 knots windward. When sailed for the conditions, or with safety in mind, Corsairs are the safest craft afloat.

UNSINKABILITY

This is the ultimate safety feature for any boat. All

Corsair models are unsinkable being constructed

almost completely in foam/glass with multiple watertight compartments. With no heavy keel, it is therefore immune from sinking, even with all watertight compartments flooded.

There are 9 watertight compartments, including:

- Floats
- Forward collision compartment
- Storage locker
- Under cockpit floor
- The four beams

CAPSIZE

Capsize is always a possibility even if a remote one and should it ever occur, stay calm and make sure all crew are accounted for. Anything stored within the storage locker will remain dry and undamaged

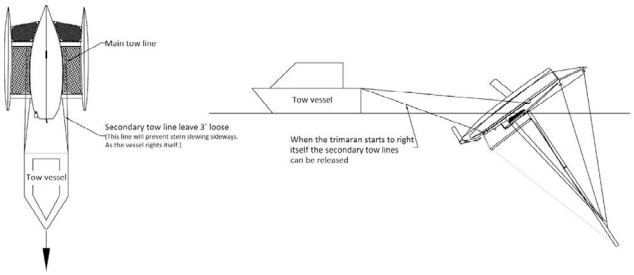
RIGHTING

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. Depending whether the stern or bow is lower in the water will determine where you attach your tow line bridle, so make sure you choose the end that is floating highest.

You may need to use a second bridle line and attach this to the beams that are closest to the tow vessel (see Dia). These lines will prevent the vessel slewing off line as you right the vessel. As you begin to right your vessel you will need to ease these lines.

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 go under). If this fails, try towing the other direction. Some controlled flooding may also be required. Towing sideways will not work.

Righting your vessel using the following folding system is as follows:



Righting Procedure

PERSONAL RESPONSIBILITY

There have been exhaustive efforts to minimize the risk of personal injury, loss, or any other form of damage, while operating a Corsair built trimaran but obviously it is impossible to completely eliminate every risk. Deck gear 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, groundings at speed can cause eventual dagger board 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 obviously 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.

SAFETY IN GENERAL

Capsize matters can be depressing but to put it in perspective, a capsize is simply very difficult to do. 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 being prepared to let the sheets go.

When 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. Cruisers shouldn't even use the spinnaker in over 20 knots. Under main and jib you can still reach 15 knots, with complete comfort and safety.

Fortunately it is very hard to capsize a Corsair 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 - just like any car.

TECHNICAL NOTES

WINCH LINE

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

SPRING RETAINING CLIPS

The spring retaining clips as 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 any doubts exist on their use then a cotter pin or circular ring should be used instead and a few of these are usually included in the toolbox. However, these rings or 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.

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 Teflon grease.

HOISTING MAINSAIL

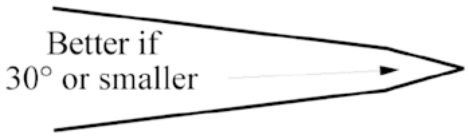
If you find this is tight going up or down (a not uncommon problem with full batten boltrope mains) there are now some spray-on silicon compounds that can help. Remember to also check that the mainsail foot outhaul is slackened off.

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.

RUDDER/DAGGERBOARD HUM

This is not an uncommon occurrence due to the difficulty in getting perfectly fair foils in a production environment, and even carefully handmade foils can develop a hum. This can be reduced or eliminated with a little fine tuning by filling or sanding the trailing edge of the foil concerned.



COMPRESSION PADS

These are fitted to the ends of the beams on all Corsair models to eliminate any gap or movement between the beam ends and the raised pads in the hull.

Do not remove, as this would cause the high compression loads in this area to be directed through

the upper folding struts which are not strong enough for such loads. They are designed for folding loads only and end mounting points may fail.

This would not cause a serious beam problem as the beams then simply move inboard to bear against the hull again.

FLOAT/BEAM VENTS

The floats are vented through micro cowl vents fitted to the float transoms. These are to prevent a buildup of air pressure inside the floats on hot days that could be enough to open up the hull to deck join.

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

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Should the float be inverted as in a capsize, then the

RUST

Many grades of stainless steel will get an occasional brown stain 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 which is a more expensive grade but actually slightly weaker, does not. All three grades can be used on your Pulse 600, depending on the application. To avoid this staining, 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 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.

MAINTENANCE

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 floats for any water. Sails should always be rolled up or folded (the same way as you receive them) – dried first it 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 gel coat finish will eventually begin to fade. Polishing your Corsair Trimaran once a year will maintain the gel coat shine and strengthen the gel coat surface.

MAST

- Masthead sheaves should turn freely and clevis or pivot pins should not be worn or show signs of distortion.
- 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 sign of distortion.
- All other stay attachments to mast should be checked for distortion or corrosion.

HULL

- Check bow pad eyes and saddles for any movement.
- Check all chain plates for any signs of movement.
- Check deck to hull joints where visible for any de-lamination or cracking in joint.
- Check wing nets, particularly eyelets for wear.

Wing nets should be replaced every three or four years. The taped edges are usually the first to fail and sometimes just redoing these will extend the net life. Replacement nets can be purchased from Corsair Marine by contacting the factory or your local dealer.

- Check rudder case for any sign of stress cracks particularly at lower end.
- Check dagger board around bottom edges of hull for any stress cracks.
- Check leading and trialing edges of dagger board for any de-lamination.
- Check control lines for wear and replace if necessary.
- Check hull area around lower folding strut brackets for any sign of damage/cracking.

STANDING RIGGING

- All stays should be checked for broken strands or corrosion, particularly at end stages. 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 which further fatigues the wire.

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

BEAMS

- Check all beam joint flanges for any sign of de-lamination or cracking. It is not uncommon to find hairline cracks in the gel coat surface in high load areas, but continue to monitor.

WARNING

(Any de-lamination or cracking in beam flanges 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 any movement or 'softness' under foot, or if 'oil canning' or ripping of the top beam surface can be observed while sailing. This must be inspected and repaired immediately as this could be a serious fault.

- Check that 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 or nuts are properly fitted.

- Check hull and beam brackets for any looseness or cracking.

- Check all folding struts have plastic bushes at pivot points

- Check nuts and bolts are tight in the beams and floats locations. There are 4 bolts on top of beam pad and 2 bolts on the inside of floats. Access to this area through the inspection hatch.

- Check that floats do not bear directly on to the main hull. There should be a minimum 1/8" gap.

TRAILER

- Check trailer winch line for wear.

- Check all trailer supports bear evenly against hulls.

- Trailer should be regularly cleaned and oiled.

- Check wheel bearing 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.

For most up to date
Dealer Contact Information
please go to our official website at
www.corsairmarine.com

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