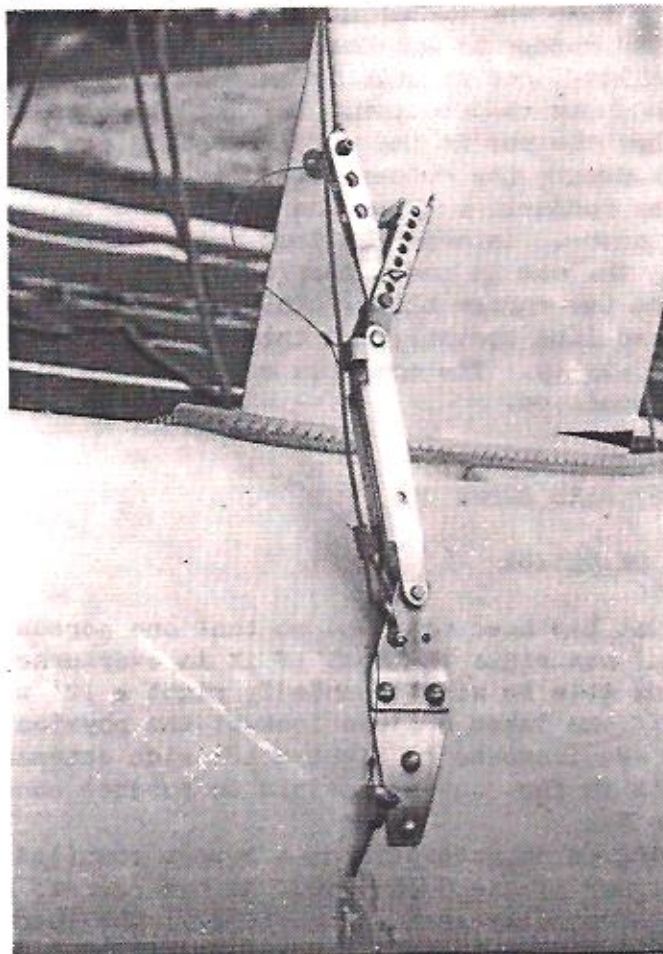


Each daggerboard has a dark marking on it at its trailing edge, designating when the bottom of the board is flush with the keel of the hull. This mark must be just above the deck in order for the board not to protrude through the keel. See illustration #16, for a view of a daggerboard properly in place with the black mark exposed.



16

#### TILLER CROSSBAR INSTALLATION

The tiller crossbar has a port and a starboard side to it and each is designated with a "P" and "S", and these designations are located on the end of each side of the crossbar. Insert the proper end into each tiller swivel and secure the crossbar using the provided quick release pins.

#### RUDDER OPERATION

Super Cat rudders are equipped with a kick up release system, so that one need not worry about harming the rudders in the event of running aground. When the rudders are in the up and locked position, they can be lowered in one of two ways: 1) they can be

pushed down by hand, or 2) they can be lowered by using the lines in the tiller.

There is a delrin fitting with two holes in it, in the end of each tiller. Coming out of these two holes are two lines. The top line is red and the bottom line is blue. To lower a rudder, pull on the red line and the rudder will kick down slightly, then pull on the blue line and release the red line and the rudder will go all the way down. Be sure the rudder locks in place when pulling the blue line. If the rudder is not locked in place, it will work its way up during sailing, and it will be necessary to pull on the blue line again to lock the rudder down. Pulling the blue line lowers the rudder so that the cam in the rudder casting can lock into the rudder blade and secure the rudder down.

To raise the rudders, pull on the red line until a rudder comes up and locks in place. In order to lock a rudder in place in the raised position, the cam in the rudder casting needs to be in the lower cut away on the rudder blade. This can be accomplished by pulling on the red line abruptly and then releasing it before the blade is all the way up. The momentum of the blade will carry it up into the locked position.

#### RIGHTING AN OVERTURNED SUPER CAT

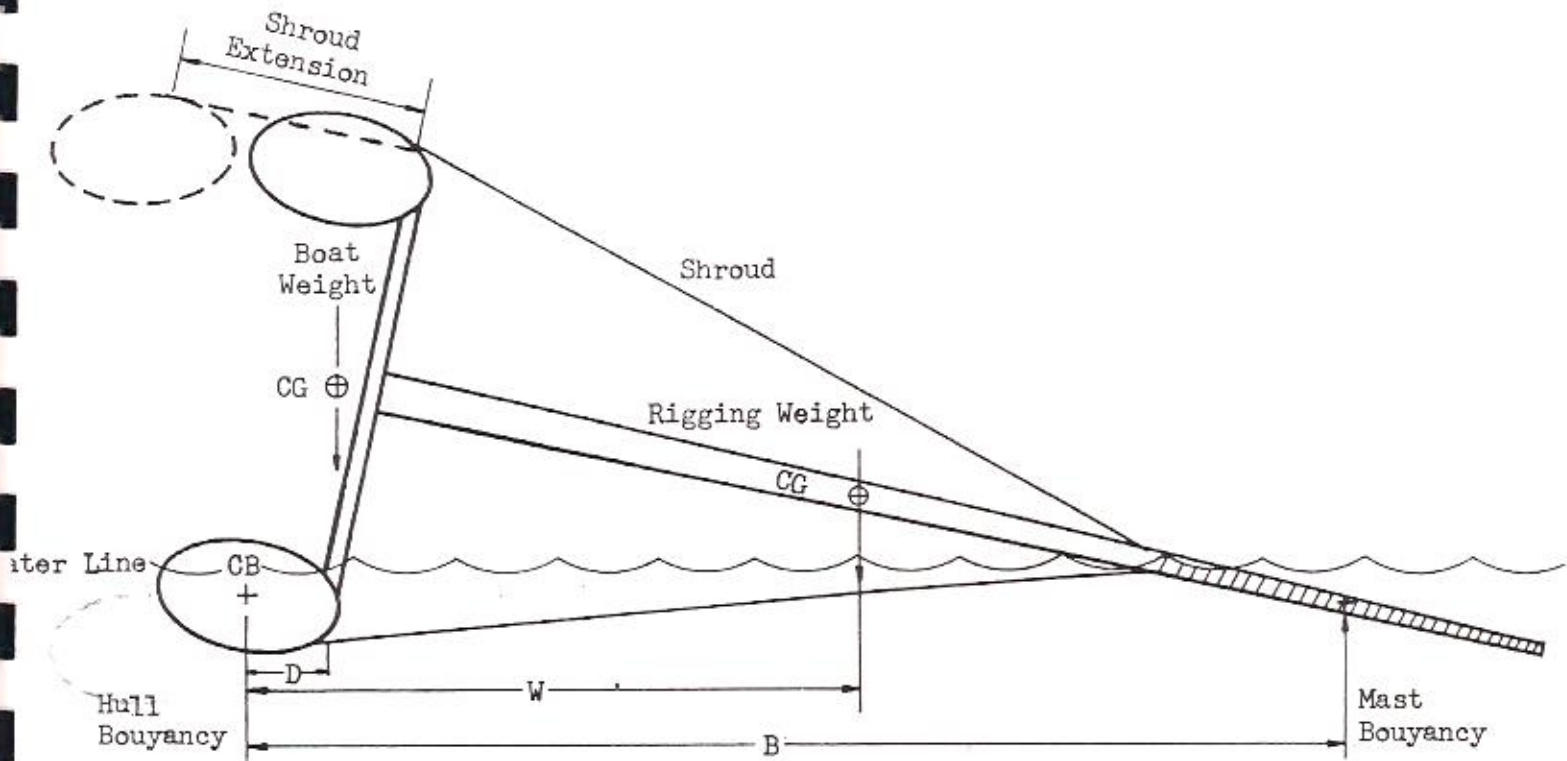
##### CHARACTERISTICS OF DESIGN

The Super Cat has been designed so that one person of average weight (165 lbs.) can right the boat if it is overturned. To some, the idea of being able to single handedly right a 12' wide catamaran seems absurd. If one takes a close look at the physical parameters surrounding the requirements to right a 12' wide catamaran, he will notice that it is in fact quite feasible to produce enough leverage to right a Super Cat.

The following is an excerpt from a report compiled by Bill Roberts, co-designer of the Super Cat. In his report, Bill outlines and explains both verbally and mathematically, the specific design characteristics that make the Super Cat "rightable" by one person.

Surprisingly enough, these safety criteria did set the design of some of the major parts of their boat, like the mast's maximum allowable weight, and its minimum volume per unit length. Most catamarans are designed with mast of insufficient volume per unit length and this lets the boat go turtle in a turnover. In the sketch below, it can be seen that the submerged mast volume times its leverage must be equal to or greater than all the other torques which are trying to turtle the boat, or it will indeed go turtle.





OVERTURNED CATAMARAN

In detail, the equation becomes:

$$\text{Boat weight} \times D + \text{Rig weight} \times W = \text{Mast Bouyancy} \times B.$$

Using the above equation, Mast Bouyancy can be solved for, which will allow the boat to float steady state on its side.

Using the above equations and the "no turtle" requirement, the Super Cat mast was designed. The resulting section is the most streamlined mast available with a fineness ratio of nearly 2.0. Also, once the hull weight, mast weight, and turn over steady state position are known, a shroud extension length for one person righting can be determined. On the 12 foot beam Super Cat, this extension is 21".

#### DEVICE BUILT INTO THE SIDESTAY

The Super Cat has been equipped with a special tension lever located on each of the main chainplates. This lever performs two specific functions, one of which is putting tension on the rigging for a "tight rig," while under sail. The other reason, is that in the event one turns a Super Cat over, this lever can be released and the shroud extended so that the boat can be righted. See illustration #2 for a view of the righting levers, both locked and released.

#### RIGHTING TECHNIQUE

The moment you turn a Super Cat over the first thing to do is jump off the boat into the water. If the wind is blowing hard, the trampoline will act as a sail. So, you should be sure the boat does not float away from you.

Once you are holding onto the boat in the water, pull the daggerboard on the hull in the water, until it is fully extended. Now, sit on the end of the daggerboard with your feet in the water. This will cause the boat to round up into the wind, and the mast and top side of the trampoline will be into the wind. It is very important that the mast be facing into the wind before you attempt to right the Super Cat.

If the wind is blowing hard enough (twenty knots +) you probably will not have to use the special righting feature. Simple take hold of the righting line, on the hull up in the air, located at the intersection of the forward main beam and the hull, stand on the end of the lower daggerboard and pull. If this process fails to work, climb up the ladder on the underside of the trampoline, walk on the trampoline center lacing around to the other side of the trampoline, to the mast base, and stand on the mast base. Reach up and pull the necessary pins to extend the shroud. Climb back down the ladder, onto the end of the daggerboard, and pull on the righting line.

Once the boat is righted, climb back on and secure the shroud back into the lever. Push the lever back into its tension position, and continue sailing.

#### THE DO'S AND DON'TS

- Do not remain on the top hull when the boat is turned over.
- Do not attempt to right the boat unless the mast is facing the wind.
- Do not leave the jib sheet cleated when righting the boat.



- Do leave the main sheet cleated, but make sure the two sets of blocks are at least three feet (3') apart.
- Do let the traveler line and consequently the traveler car to its fully extended position.

#### TRAILERING A SUPER CAT

#### LOWERING THE SAILS

#### THE JIB

To lower the Super Cat sails, face the bows into the wind and lower the jib first. Locate the jib halyard line, and tie it to the thimble in the jib halyard. Untie the jib luff tensioner, if you have tied it, and release it from the clam cleat on the luff of the jib. Remove the jib tack shackle, unsnap the strap on the luff, begin to unzip the luff, and lower the sail. When the sail is completely lowered, remove the halyard shackle from the head of the jib, and secure the line portion of the halyard to the shackle. Tie the halyard line to the forestay bridal loosely, as you may need to use it when lowering the Super Cat mast.

#### THE MAINSAIL

To lower the mainsail, remove the mainsheet blocks and the boom from the clew plate of the mainsail, by removing the quick release pin holding them on the sail. It may be necessary to push upward on the boom to ease tension on the pin, in order to remove the pin. Go forward and remove the boom from the mast, and untie it from the mast rotation limiter. Ease the cunningham and remove it from the grommet in the sail. Lift up on the foot slightly and remove the slug from the sail track so that the internal halyard is exposed. Take the line portion of the halyard in hand and pull on it to release the halyard from its lock. Take hold of the wire portion of the halyard with your fingers and pull it away from its lock and begin to lower the sail. If anything should get hung up, pull of the halyard to raise the sail, and begin the procedure again.

#### LOADING THE SUPER CAT ON THE TRAILER

To successfully load the Super Cat on its trailer, it is not necessary to back the axle of your trailer into the water. Telescope the trailer to its twelve foot width, and back it down to the water so that the tires are barely touching the water. Lift the bows and pull the boat up on the trailer slightly. Take the line from the winch and tie it around the front beam in the center. Crank the winch slowly and the boat will load on the trailer.