

Blazer Marine, Whiplash Sport Hydro

Thank you for choosing to build the Whiplash Sport Hydro. We have spent over 12 years perfecting this design, and finally we are making it available to the world. We are excited to release the plans/kits to everyone so you can experience the pride that comes from building your own hydroplane. If you have questions during the building process, feel free to email me and I will get back with you in a timely manner. Take your time, do things to the best of your ability and you will have an outstanding hydro!

Best Wishes!

Building Supplies:

- Sander / Sand paper
- CA glue with accelerator
- Epoxy, West System; 105 resin with 206 hardener or MAS Medium Epoxy.
- Several Spring Clamps & weights

STEP #1: Look at the directions and get familiar with the layout. Get a good idea what the boat will look like before you make any cuts, or glue anything together.

STEP #2:

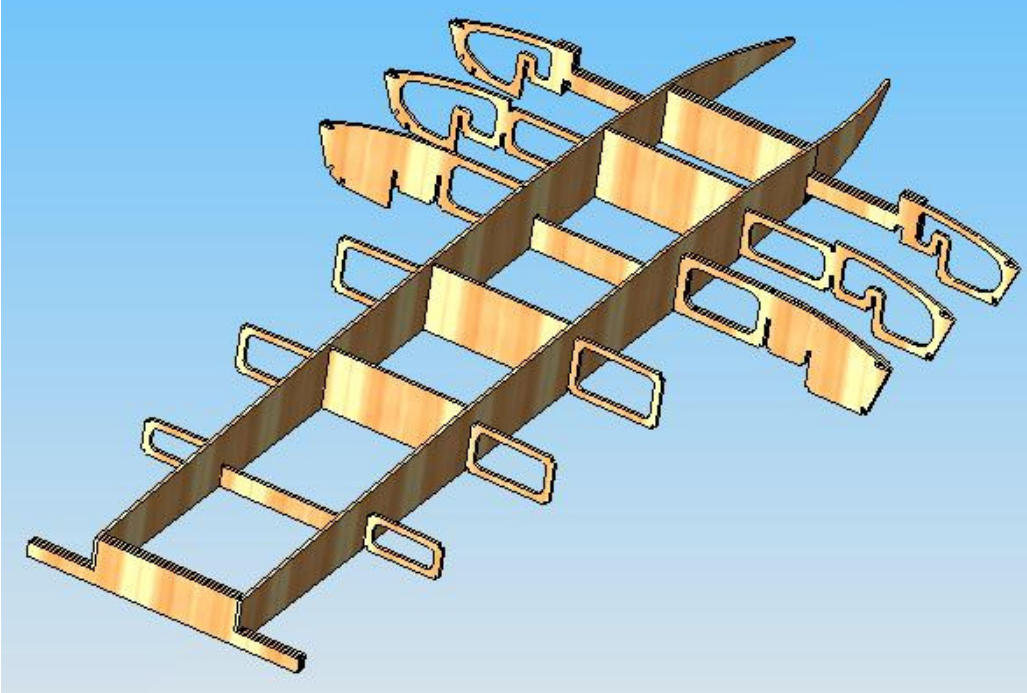
From the transom to the sponsons, the boat is completely flat. I simply like to use a flat surface as my building jig. The sponsons will overhang the flat surface so that the bottom of the boat rests flush. To ensure the boat remains square, I cut some 5" wide pieces and fit them in-between the engine walls. This forces the boat to remain square thru out the entire building process.



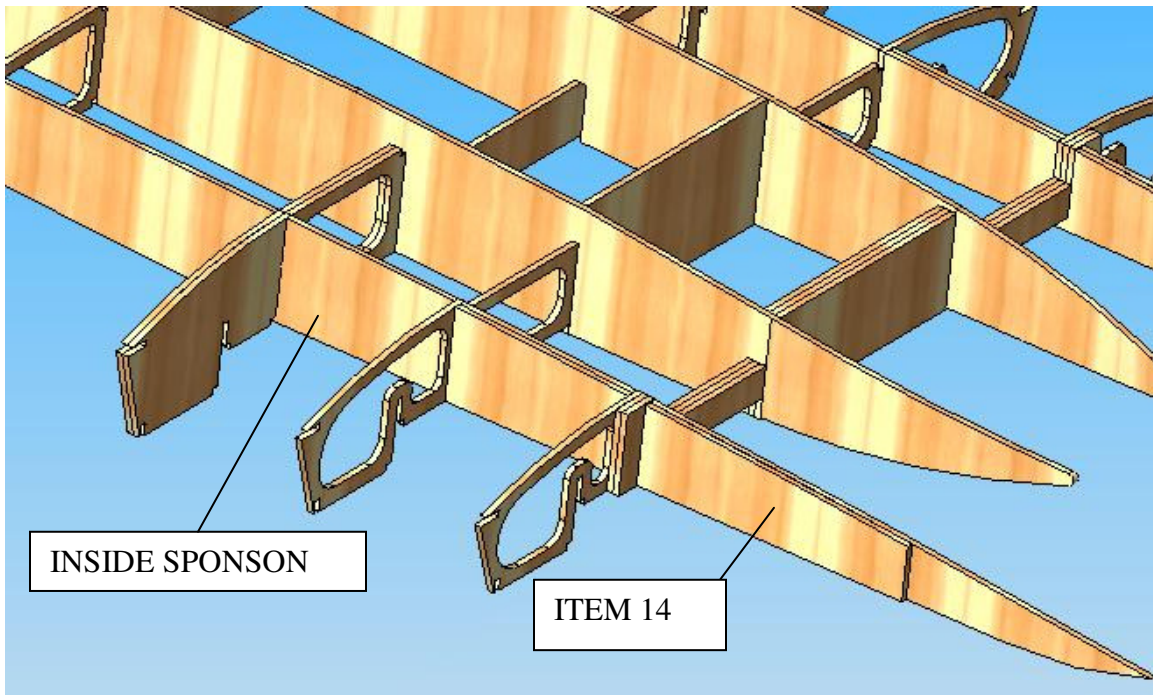
Step #3: There are a couple frames that need to be glued together for more strength. As you can see from step #3, you cut out (3) transoms, (3) #7 frames (2 do not have the sponson shape), and half of #5 frame. Use epoxy, or CA to glue the frames together.

On frame #5, glue the half frame on the right side of the piece, facing the front. The right side of the boat has flat ride pads and the left has a slight dihedral angle with a non trip angle. Mark the parts R or L for future reference.

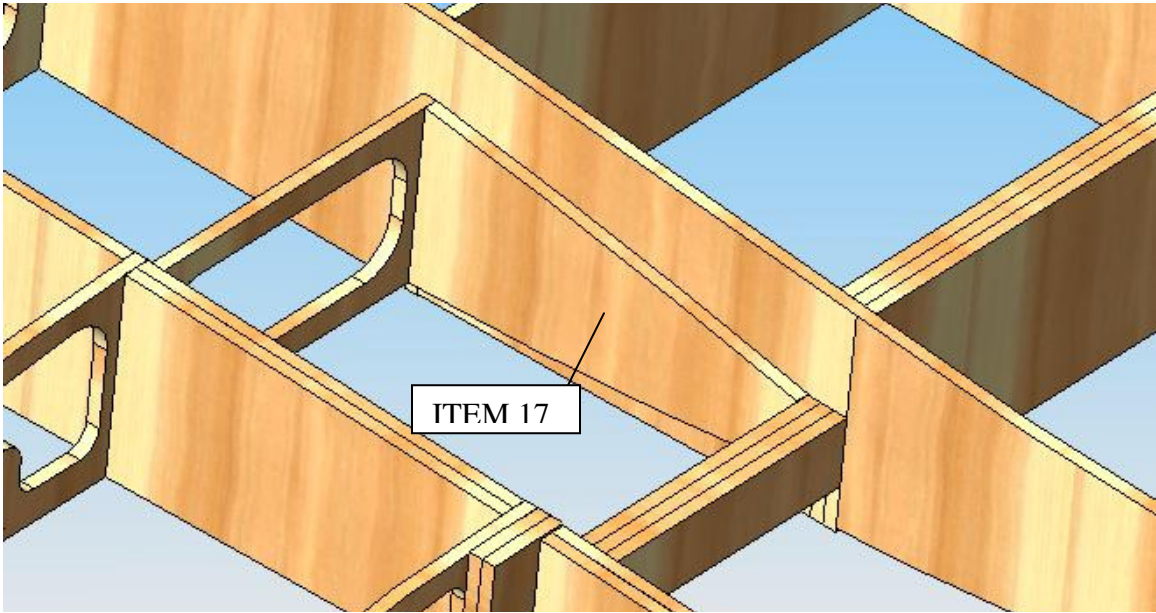
Step #4: Test-fit all of the frames together. If some frames do not match up, sand them until they do. All of the frames must rest flush on the jig or flat surface. Determine where the boat sits on the jig best, and draw a perpendicular line where the transom is. You will use this line as a reference guide during the building process. Measure the distance from each tip of the boat to your table. Be sure these dimensions are the same. The boat is fairly symmetrical, the only difference being the sponsons. Measure different points of the boat to make sure both dimensions are the same. Once you are sure the boat is square and true, start to tack the frames together using CA. Just apply a couple of drops at each joint. Do not glue the entire joint with CA. (we will come back later and use epoxy on all of the joints).



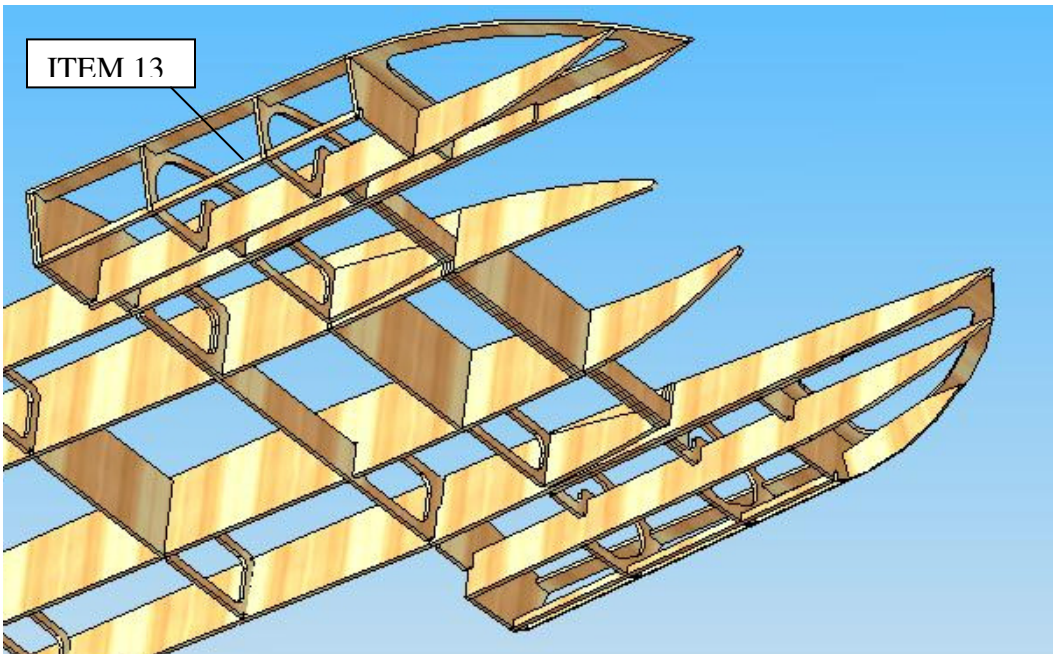
Step #5: To strengthen the inside sponson, items 14 must be glued to both inside sponsons. The two inside sponson frames are not the same. Test fit the frames before doing any gluing.

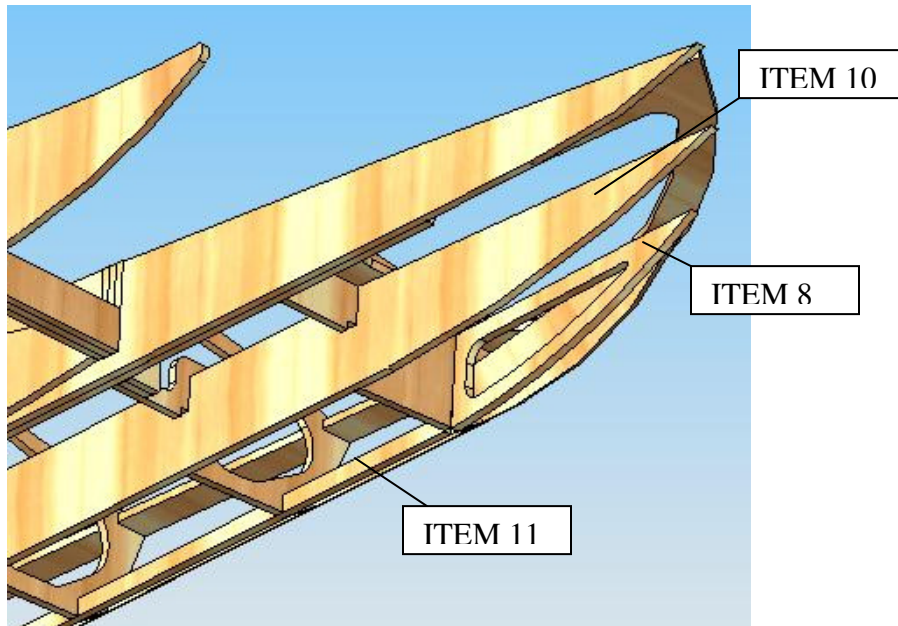


Step #6: Glue the (4) reinforcing flats (item 17) in place. These will also form the shape of the bottom skin, and the top skin.



Step #7: Glue the remaining sponson parts in place. Be careful these pieces are straight. I usually clamp a straight edge to the flats to ensure they are straight prior to gluing.



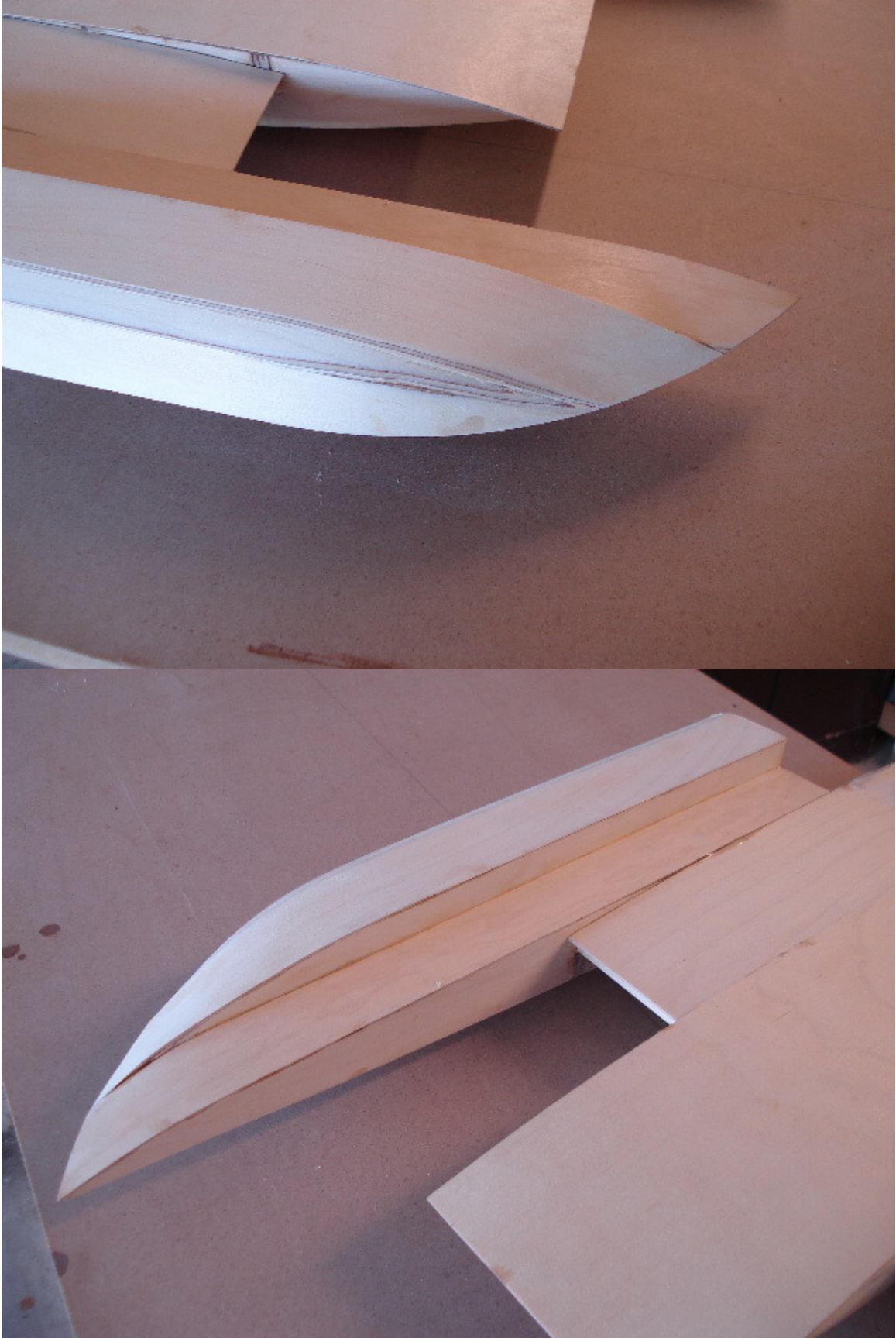


Step #8: In order to get a maximum gluing surface without adding too much weight, add 1/8"x1/8" basswood (or spruce) sticks to all of the places where skin will be added. This essentially doubles the gluing surface.

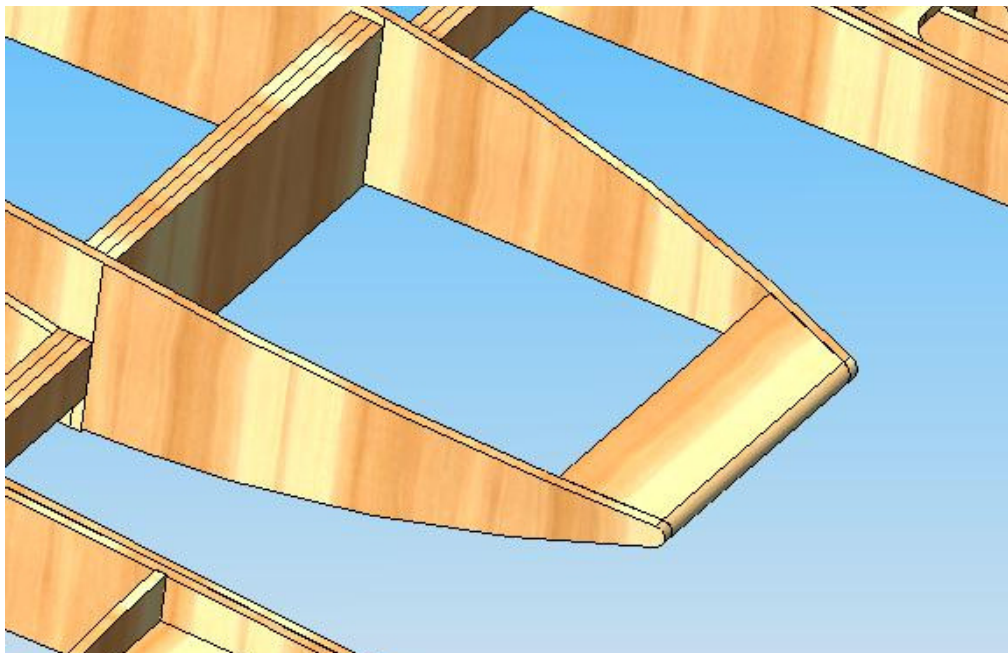
Step #9: The nose of the boat tapers-in a little for aesthetic reasons. Included with the kit is a nose template. Tack this in place to form the shape of the nose. Gluing the bottom of the boat in place is a very critical step. The bottom sheet must be cut with a razor knife so the bottom is allowed to bend up. Lay a straight edge in line with the nose of the bottom sheet. Cut the sheet up to frame #5. Take your time, make sure everything is laying on the jig / flat surface correctly and tack the bottom skin to the frames using CA.



Step #10: The sponson skins need to be glued on in a sequence. The first piece of skin to put on is the outermost piece. Sand the side of the sponson frames so that the skin lays flat on all of the edges. A table top belt sander works great for this. The second piece of skin to tack on is the inner piece. Simply cut the shape and tack in place. The third piece to tack on is the ride pad. Cut this piece a bit larger so you can sand-to-fit after it is tacked on. The ride pads should be parallel.



Step #11: After the bottom skin is tacked in place, reinforcements must be added to the nose, transom, and radiobox. I usually use $\frac{3}{4}$ " triangle stock for the transom and radiobox, and oak for the nose.





Step #12: Since people will use different engines, rudders, mounts etc. placement will vary. The center of gravity on this boat is not as critical as most boats. As long as you put the radio box in it's compartment, and put the engine in its area, you will be ok. All hardware should be secured using blind nuts.

- When you mount the engine, position the engine high enough so the carburetor clears the deck. You will have to grind a notch in the engine rail. Be sure to make the notch with large radii. Angle the engine so the shaft goes thru the boat just in front of the radio box.
- Mount the rudder on the left side of the boat, place the strut in the center of the boat, and mount the turn fin so that the inner edge is in line with the outside edge of the ride pad. The turn fin should be mounted vertical (the turn fin should have a hook on it). The turnfin is extremely important with this boat. Use the turnfin drawing detailed in these plans, or order one from me.

- To install the stuffing box, glue an 1 1/32" diameter tube in the boat. The actual stuffing box should be a 5/16" brass tube, which slides inside the 1 1/32" diameter tube. The stuffing box should then be soldered to the 1 1/32" dia tube. The reason for this is to be able to replace the stuffing box easily when repair is needed.

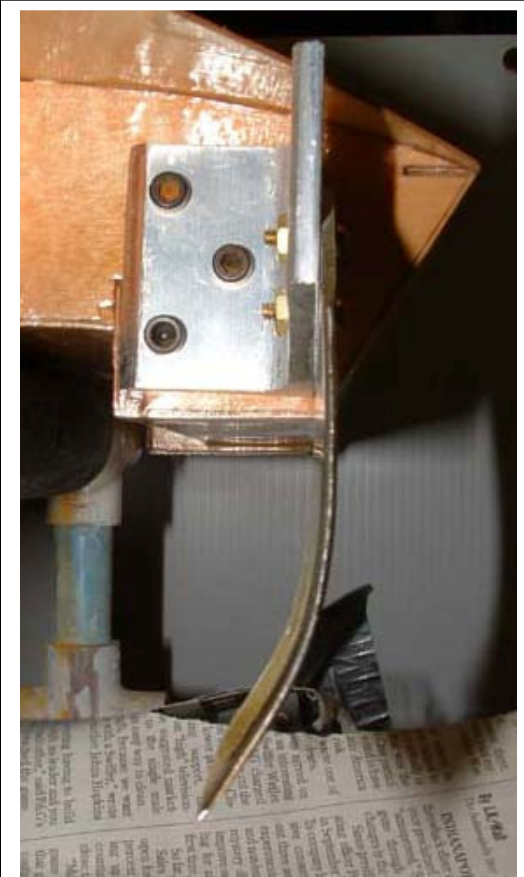


Stuffing Box



Strut and Rudder configuration.

3/4" hardwood triangles should be added to strengthen the transom. Modifications must be made to the left triangle to make room for the blind nuts.



Turn Fin

Step #13: After all of the blind nuts and reinforcements are installed, the inside of the boat must be sealed with Epoxy. I recommend using West System epoxy or MAS Epoxy, but you can use any high end epoxy. Do not use cheap epoxy! You can seal the inside of the boat, and put the deck on in the same step. If you do this, be sure to use slow setting epoxy and don't forget to add your floatation. If you seal the inside of the boat first, then glue the decks on; be sure to sand the shine off the dried epoxy before applying new epoxy.

Step #14: Aesthetically, the most important part of the boat is the deck. Once you cut your decks out of 1/16" birch, considerable planning must be done to figure out a way to hold down the deck while the glue dries. Install floatation in the boat, using pink insulation foam for the sponsons, and pool noodles for the rest of the hull. Remember, gasoline will eat the insulation foam so don't put it where gas can get to it. Apply a heavy coat of epoxy to the inside deck as well as the frames. Place the deck on the frames and secure it using anything you can think of to keep the deck on the frames. Check yourself many times to make sure the boat is resting on the jig, and the deck is lying nicely on the frames. Once the glue dries, the boat will be very rigid.

Once the deck dries, sand it smooth to finish it off. A piece of 3/4" wood must be added to the front of the deck to make the beginning of the deck more streamlined.



Step #15: The radio box can be done several ways. Be sure everything is securely mounted, using a standard servo for throttle and a hi torque for steering.



My Setup:

- Position the strut so that the bottom is 1” from the bottom of the boat, flat to a touch positive (rear of the strut pointing up).
- IV bag as a fuel tank in front of the radio box, under the left side of the deck.
- 60/90 Speedmaster rudder with no extension, cut ½” below the inlet
- Speedmaster round bottom strut
- ¼” flexible shaft.
- Full Mod Zenoah 260 engine.
- M&D style pipe with 90 degree header
- RC Speedworld engine mounts or Hyperrrtorque.
- ABC 2716/2 prop (stock)

A little history

I built the first boat in two weeks, working on it every night after work. I was interested in going to the IMPBA SAW event only three weeks away, so I had start moving! Even though the boat didn't have paint, I went to Huntsville, Alabama not expecting much since it was an untested new boat. The first couple of times we threw it in, it stalled. We later found out that water was getting into the carburetor. After fixing that problem, we threw it in and off it went. Using a Propshop 6518/3 to start with, the boat showed no signs of blowing off, and was actually nailed down a little too much. We brought it back in, changed the strut setting a tad and all was fixed. I would estimate that the speeds were in the mid 60's. We tried a lot of props that weekend, each one giving the boat a little different attitude. Using a modified Octura 2170, we were able to get it up to 71mph but we weren't done yet. Matthew Waldron from M&D Designs told me to change out motors, put a different prop on (CMDI modified 2170), and change rudders. After a couple of runs getting some setup bugs out, we eventually hit a top speed of a little over 83mph, with a two way official IMPBA record of 81.274 mph. Needless to say, we were extremely happy!

In November of 2005, we set a new IMPBA Oval record, and had several passes over 85mph! Fast pass was 89mph.

In 2008, the boat won three National Championships and lowered the oval record time.

Good luck with your new boat, I am excited to hear from you!

Brian Blazer

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