



Voyager Stand Up Paddleboard Manual



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Fiberglass Supply
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Note to Builder

Thank you for purchasing the Voyager Paddleboard Kit. I hope you have as much fun building and paddling this paddleboard as I have had.

Please take some time to read through this manual before beginning to build the board. At the end of this manual there are some links to videos on YouTube that show how to fiberglass and time lapse videos of different phases of this board being built. Also included in your kit is the System Three Epoxy Book. All great references

The manual is laid out by days, which are generally dictated by how long it takes the epoxy to cure. So if you do a step in the morning you may be able to do two days in one.

The challenge with any manual is that it can't cover everything and it is a balancing act to provide the right amount of information, too little and it is too difficult to build the board, too much and the manual would scare you away; so if you have any questions while building the board or before getting started please feel free to contact me, matthew@fiberglassupply.com or by phone 509.493.3464. I also welcome suggestions on how to improve the manual.

When you finish please send us pictures of your board and of you out using it.

Thanks,

Matthew Weaver

Day 1 Check Parts and Glue Panels Together

Parts

Bottom 3 pieces, two in front one for the rear

Top two pieces one forward one aft

Sides 5 pieces, two pieces for each side and the transom piece

Stringers and Shear Clamps 8 pieces, 6 pieces with a beveled scarf on one end to be glued together and 2 pieces with square ends

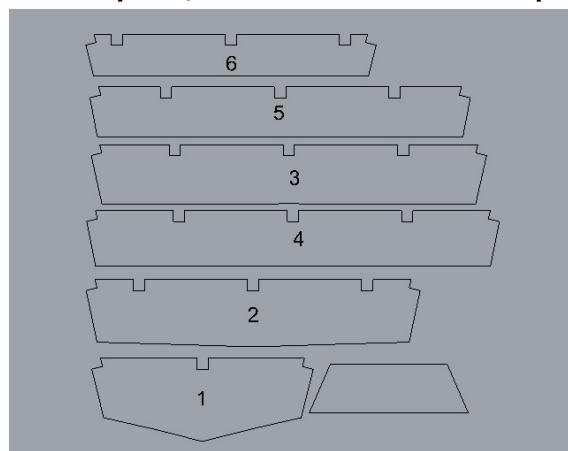
6 Bulkheads

Foam Block to mount fin box into

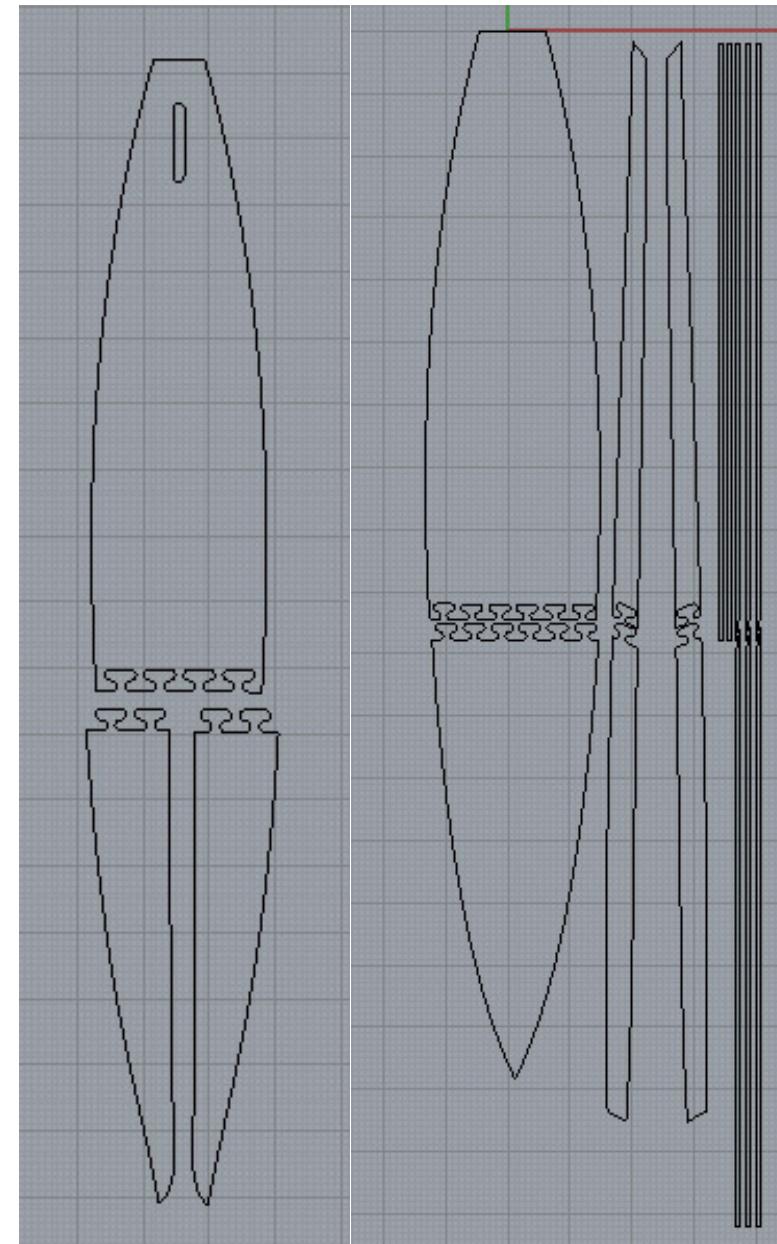
Fin

Fin Box

Deck pad, 11" x 60" or two pieces 11" x 30"



Bulkheads and Transom



Bottom Pieces

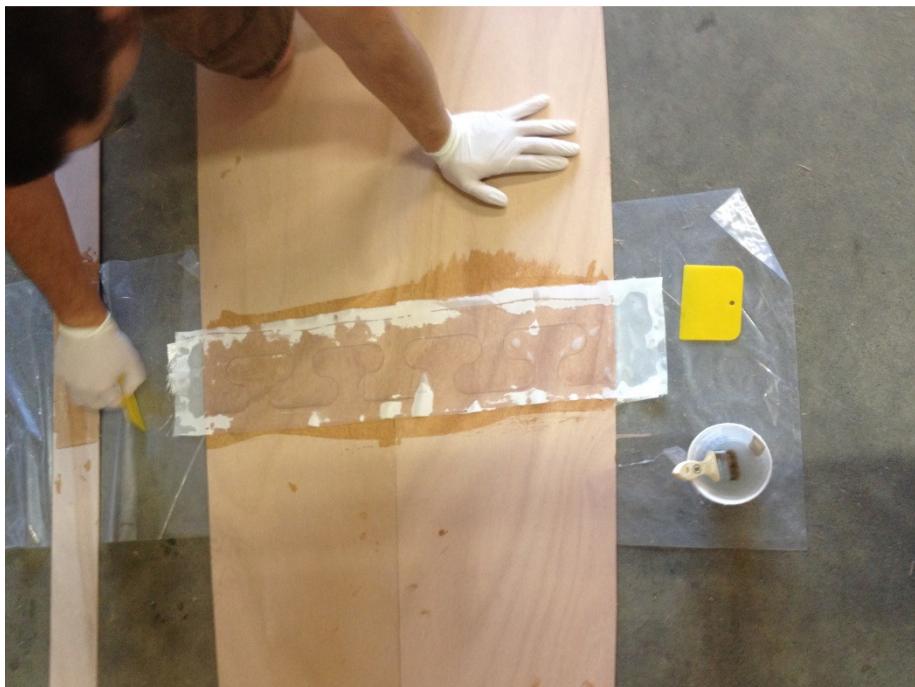
Top, Sides, Stringers and Shear Clamp Pieces

Supplies

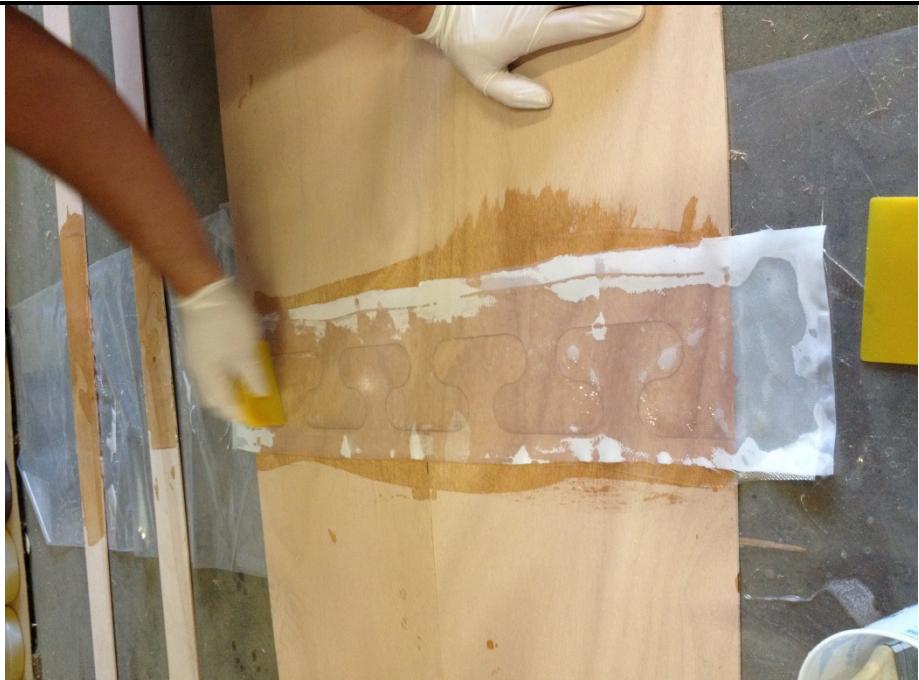
4oz Fiberglass Cloth on Roll 10 yards
8 oz container of Wood Flour
5- 16 oz graduated mixing cups
2 rolls of wire
12 yards of 2" 6 oz Fiberglass Tape
1 yard of 4" wide fiberglass Tape for joining the side panels
2 yards of 6" wide fiberglass tape for joining top and bottom panel joints
2- 7in Foam Roller covers
5- Tongue Depressors
2- 3" Brushes
2-6" Plastic Spreaders/Squeegees
3-Quarts Silvertip Epoxy
1 Quart Slow Hardener
1 Pint Slow Hardener
4 tubes Gel Magic Epoxy



Test fit panels together with puzzle joints and make sure everything aligns correctly. The corners should line up and create continuous curves, if not flip one half of the part over and check the fit. The puzzle joints can be snug carefully tapping them in place with a mallet can help.



Mix up small batches (3-6oz) of epoxy and apply the fiberglass tape to the INSIDE of the of the joint. Use plastic sheeting or wax paper to keep the panels from sticking the the surface underneath of it. Use weights to hold the joints in place, if need be you can put plastic or wax paper over the joint and put weight directly on top of it.



A finished joint will look like the one above, once the resin cures trim off the excess resin and glass with a razor knife or saw and sand so that the curve of the panel remains fair.

Day 2 Stitch Board Together and Tab

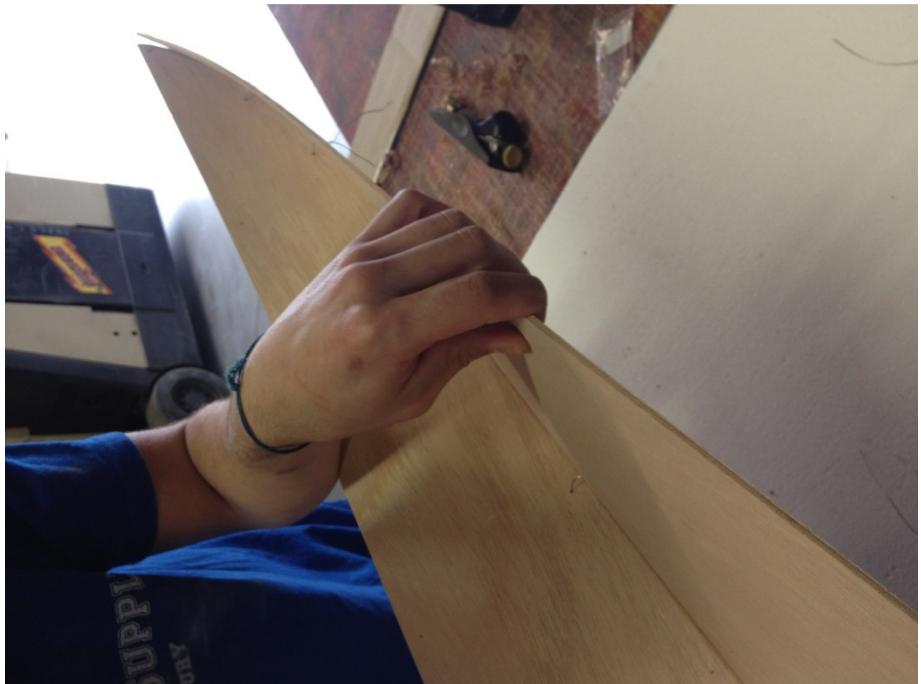
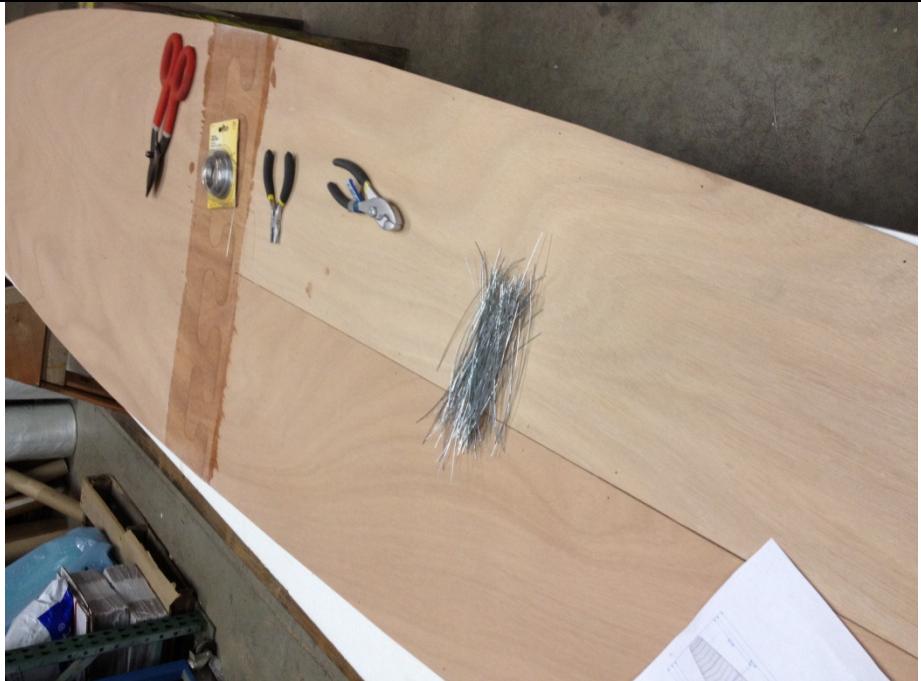
This boat is designed to go together quickly. First you'll drill holes at 6" intervals through both panels around the perimeter of the bottom panel and bow sections. Near the bow you may



drill the holes closer together. Drill the holes about $\frac{3}{8}$ " from the edge on the bottom panel and about .25" from the edge on the side panels. The side panels only need holes on the bottom edge and at the ends. The top edge DOES NOT need holes. Drill the holes on the side panels as you stitch them in place.

Before begining the stitching using a sanding block or block plane bevel the inside edges of the bow section.





Stitch the keel section together, keeping the stitches tight enough to bring the panels together but not tight yet.

Stitch the side panels to the bottom panel, again keeping the stitches loose.

Stitch the bulkheads and transom in place.

Begin tightening up the stitches carefully. Check the alignment of the panels and bulkheads as you tighten it up. Bottom panel should extend to the outside edge of the side panels. If the side panels slip in toward the center of the board use thumb tacks to help hold the shape out.

This step can be done upside down or right side up. If it has been done upside down flip the board over and into the cradles. Check the board for square. This can be done visually by sighting down the board, the tops of the bulkheads should be parallel, if not first check that the bulkheads are not twisted, then wedge up one side or the other until they become parallel. Alternatively you can use a level to



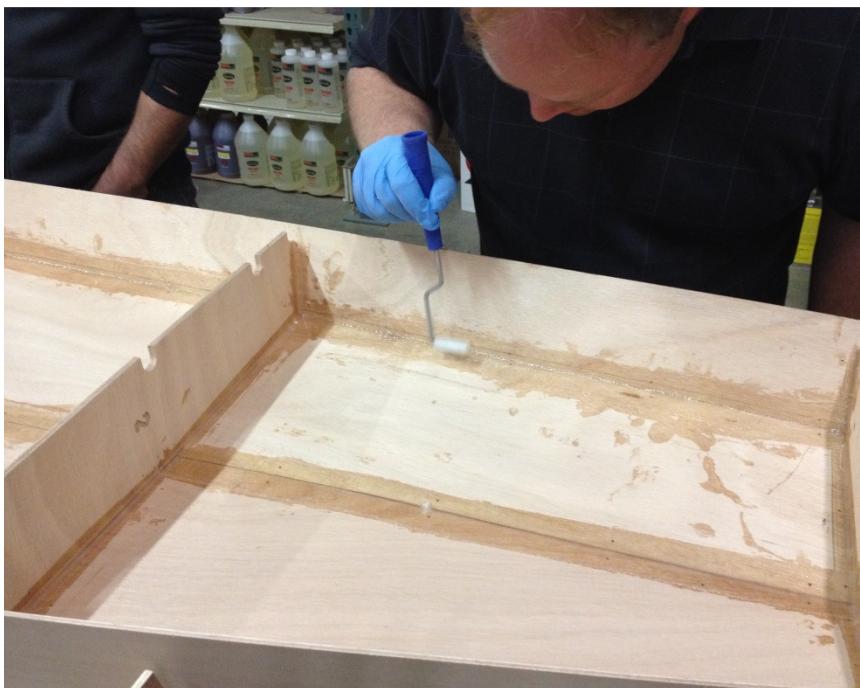
Note stitches through bottom and bulkhead to hold the panel in place

check (make sure your work surface is level) for twist. Another method is to measure from the bow to the outside corners of a chosen bulkhead, if the measurement is the same on both sides the board shouldn't be twisted.



Bulkhead locations can be determined by the bulkhead number and bottom width. The bottom panel should extend about 3mm past each end of the bulkhead.

Bulkheads are numbered 1-6 starting at the forwardmost bulkhead.



Once all stitched together and level carefully tab between the stitches with Gel Magic. These tabs should be small so that when you go over them tomorrow they will be buried and not get in the way.

Allow the tabbing to cure and then remove the stitches.

Day 3 Tape Seams and Fillet Joints

Cut lengths of 2" tape to cover the seams where the sides meet the bottoms, at the keel and bow, and transom joints.

It generally works best to do the next two steps a section at a time.

Mix up a small amount of epoxy, 6 to 9 oz.

Apply a fillet of gel magic to a section.

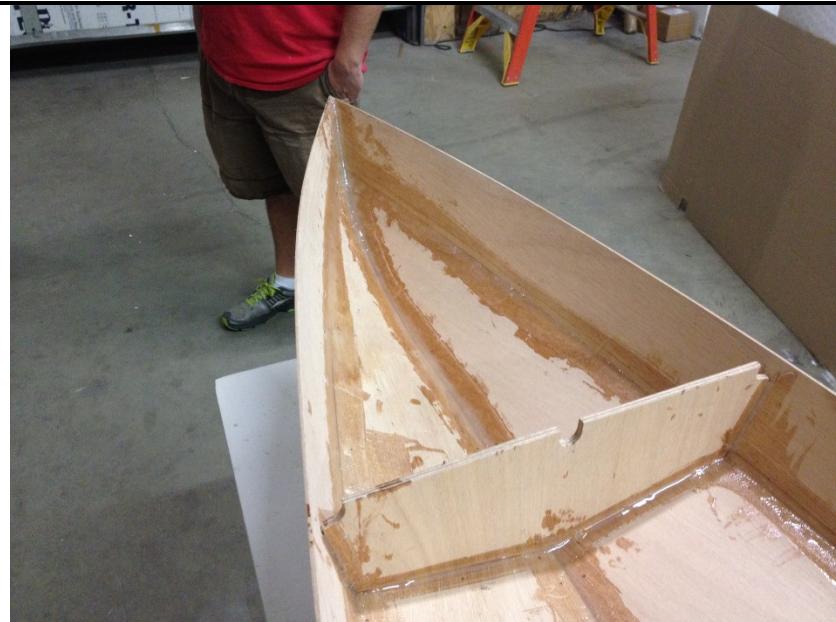
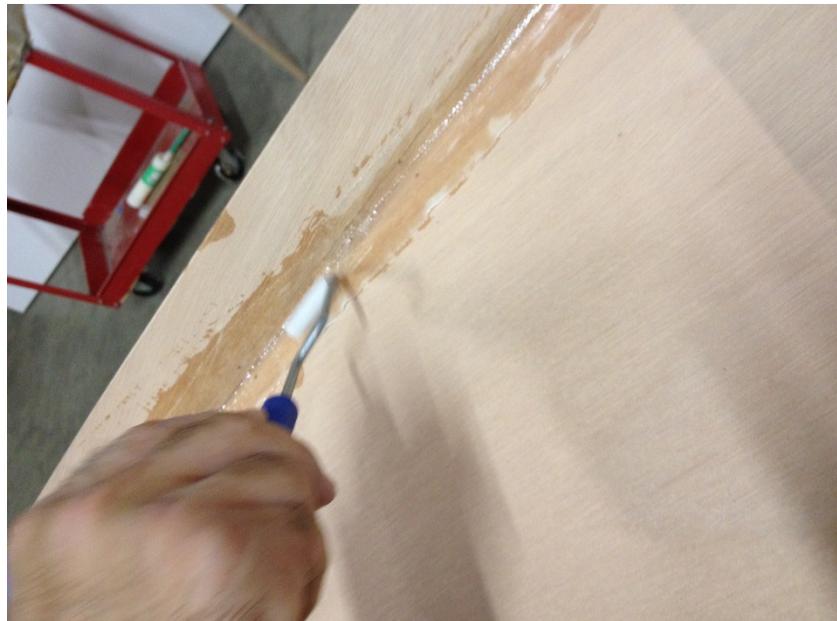
Wet out the fiberglass tape on a separate surface

Apply the fiberglass tape over the section that has just been filleted. Work out any airbubbles by using the brush to push the glass in place.

Repeat until all the seams have been covered.

Make sure to apply fillets with gel Magic to all the joints. There should be glass tape over all the seams and the joints where the bulkheads cross the panels should have fillets.

Allow to cure. Clean up any errant strands or messes when the epoxy is has a cheddar cheese consistency.



Note

how glass tape is on the seams and there are resin fillets along the bulkheads

Install Fin box into block by thickening some epoxy with wood flour and pressing box into block. Clean off excess squeeze out.

It would be a good idea at this point to use some of the excess epoxy to precoat the stringers and shear clamps.



Note Fin Block at back of board.

Day 4 Install Fin Box and Coat Inside of Board

Thicken about 3 ounces of epoxy with wood flour and glue fin box/block into place align box flange with cutout in bottom of board.
Optionally you may glass over the the block on the inside of the board.

Coat inside of board with epoxy.

If you haven't done so yet, glue stringers and shear clamps together. You need three long pieces and 2-8' pieces.



Day 5 Install Sheer Clamps and Stringers



Install the sheer clamps, dry fit the clamps to the sides and trim the pieces in the bow so that they meet in a nice joint. Using gel magic bond them in place. You may want to precoat them with epoxy before bonding them in place.

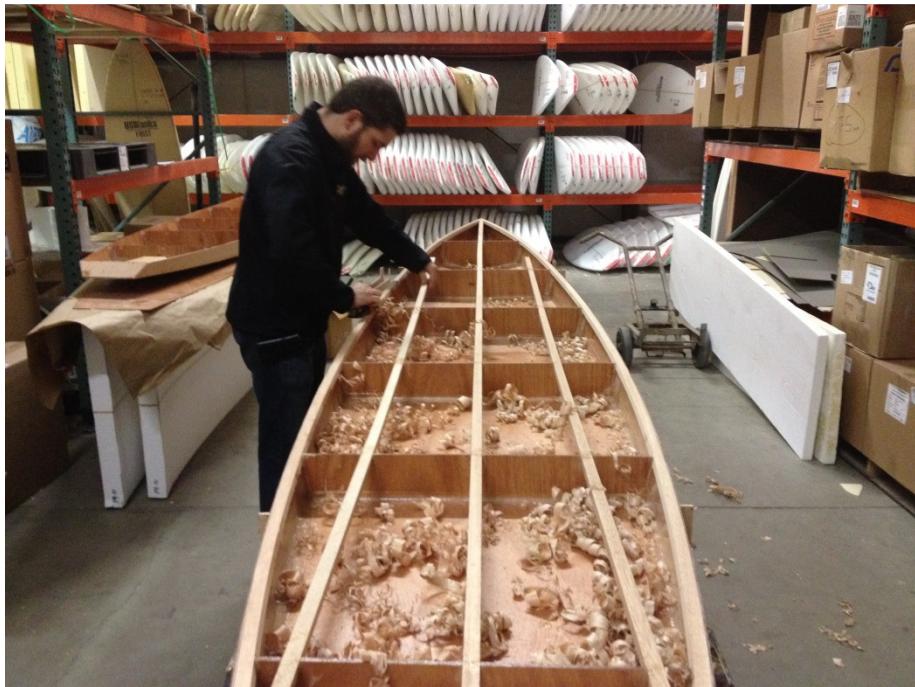
After they are bonded in place fit the deck stringers and glue in place using Gel Magic to bond them where they intersect with the bulkheads. The center stringer should extend from the bow to the stern. It may be necessary use weights to hold the stringers down against the bulkheads.

Optionally you may bond the stringers and shear clamps in place at the same time, as shown in the photos. If so bond in the shear clamps first and hold in place with clamps then bond the stringers to the bulkheads and use weights to hold them down against the bulkheads.





The clamps shown are made from PVC pipe slit and then cut into 1" wide pieces.



Day 6 Plane Stringers and Install Deck

After the glue has cured use a block plane to remove excess material on the stringers and sheer clamps to bring them level with the bulhead tops. Make sure to remove shavings from paddleboard

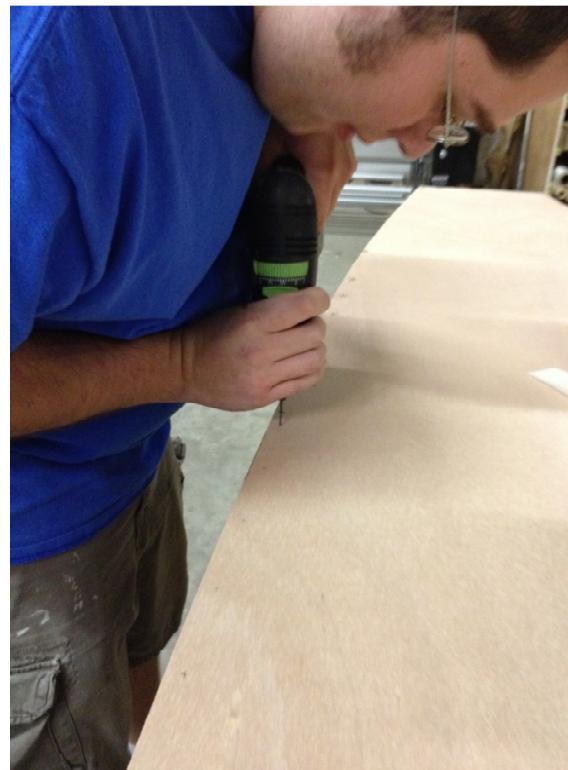
Dry fit the deck in place. If the deck extends past the edge that is OK. Mark and predrill for the nails around the perimeter of the deck. Center on 3" Centers.



Plane stringers and sheer clamps flush with bulkhead tops.

Nailing is optional, the deck can be clamped in place with tape, straps, or weight while it cures.

Once happy with the fit, apply Gel Magic the tops of the bulkheads , stringers and sheer clamps and nail or clamp the deck in place. It is a good idea to put weights on it as well.



Pre-drilling for nails around deck perimeter.



Day 7 Prepare for Glassing and Glass Bottom

Using a sander round over and fair the corners and joints and prepare the paddleboard for glassing. At this point just sand the bottom and the sides. If the deck sticks out past the sides trim it flush but don't round the deck to side joint yet.

Glass the bottom by rolling the glass out over the bottom of the board and trimming it so that

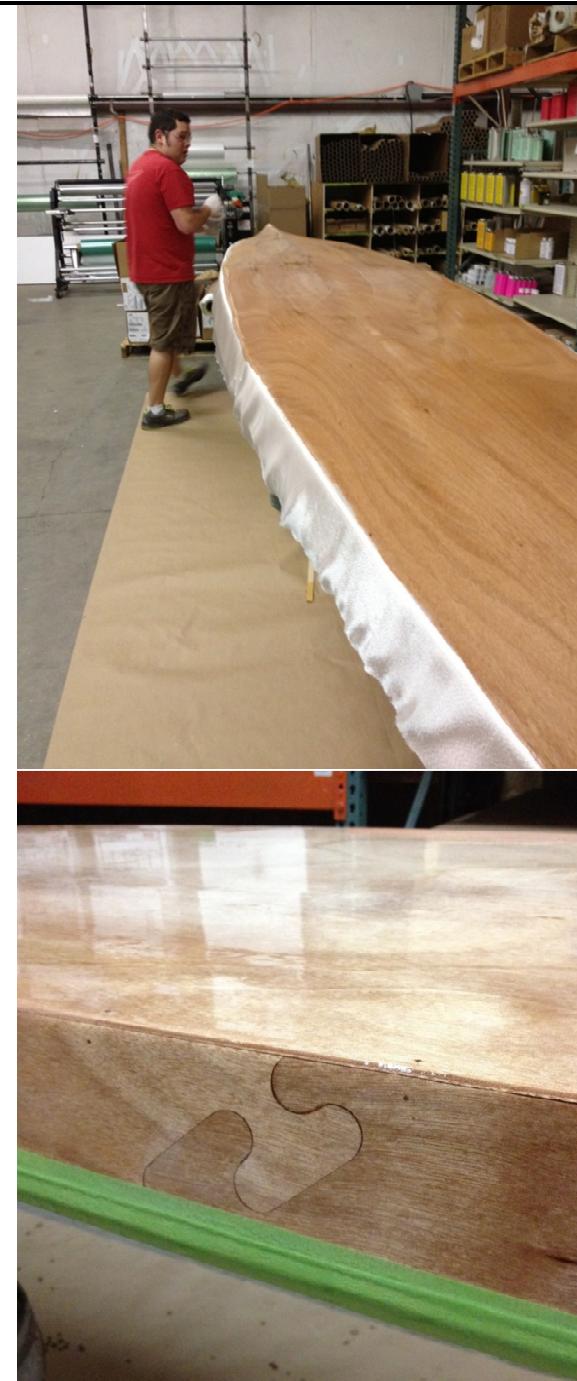
it extends about 1-2 inches past the deck of the board. Make sure to place masking tape over the opening of the fin box.

Mix up 12oz of epoxy and spread the epoxy over the board with a spreader or with a roller. Use the squeegee/spreader to work the epoxy



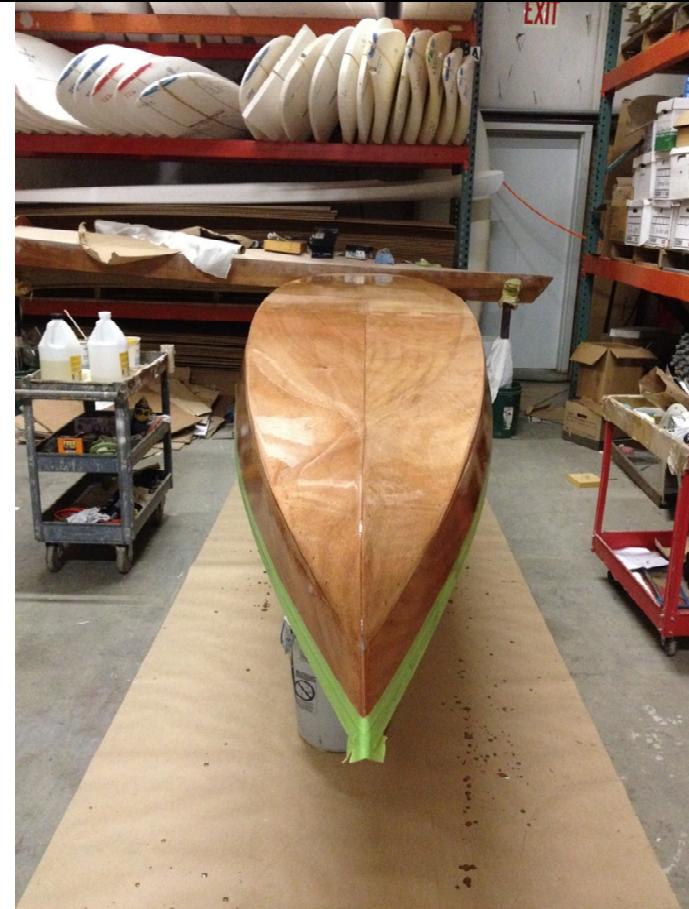
into the cloth and to remove air bubbles. Using the roller or a brush carefully work epoxy down the sides of the board, again use the squeegee to remove excess resin and air bubbles. When

done the cloth should have an even texture with no runs, drips, puddles, or air bubbles. Mix up more epoxy as needed, taking care as you finish to not mix up too much.



Day 8 Fill Coat Bottom

Allow to cure and trim the excess flush with the deck using a razor knife. Tape off 1.5" from the deck and then apply a fill coat of resin using resin and a brush or roller. The fill coat should go on thin.





Bottom after fill coat. Note round how edge of board is sanded with a round over, this helps the glass make the wrap over the edge of without puckering up and creating air bubbles.

Day 9 & 10 Glass Deck and Fill Coat

After the bottom cures pull the tape and flip the board over. Round over the deck edge either with a router and roundover bit or by hand (with a sander or block plane).

Tape off the side of the board along the tape line you left when you did the fill coat on the bottom. Roll out the deck and trim it so that it goes past the tape line a little ways. Mix up epoxy and glass the deck just like the bottom. The deck should take less resin. Once the deck cures to a cheddar cheese consistency trim with a razor blade along the tape line and remove the excess fiberglass.

Tape off just past where the fiberglass ends and apply a fill coat of resin to the deck.



Note vent plug that is about 1 foot from nose.

Day 11 Sand and Finish

After the resin cures thoroughly sand the entire board taking care not to sand into the fiberglass (you will in some spots and that's OK, but the

less you sand into it the better). Start with 80 grit and work up to 180 grit or 220.

Install the vent along the stringer by drilling a 5/8" hole and bonding the vent in place with epoxy. I find that about 1/3 of the way from bow is a good location.

If you are going to paint the board, now is the time to primer it and paint it. If you are going to finish it clear with paint or varnish then find the spots where you sanded into the glass and give them a very thin coat of epoxy, you can use a propane torch or heat gun to help thin the epoxy on the surface and spread it. After it cures very carefully sand it to match the rest of the board. Then apply varnish or clear paint as desired. If you are using varnish mark out where the traction pad is going to go and don't varnish over that area.

After the finish is applied mark where you want to place the traction pads, using a razor knife you can cut round corners in them or whatever design you want. Then remove the paper from

the adhesive and bond in place. A good location for the pads is with the front edge located 78" from the bow.

The fin box opening should have sanded open during sanding but if not just take a razor knife and cut open the opening. There is a plastic tab in the middle that should come out.

Removing the tab will reveal a slot. On the fin there is a screw and a tab. Slide the tab into the opening and move it to the rear of the box. Slide the pin in the front of the fin into the slot and forward bring the back of the fin down into the box and then slide the tab up under the hole in the fin and insert the screw through the fin and into the tab, tighten until snug taking care to not over tighten the screw. Start with the fin centered in the box. Moving the fin forward should make the board turn easier and moving it aft should cause the board to track straighter, once you get out on the board you can adjust it as you see fit.



Fun Stuff

You can add graphics to your board a number of ways.

Fabric inlays, Hawaiian fabrics, batiks, etc are a fun and easy way to add a graphic. Before glassing mask off the area to apply the fabric and wet it out with the epoxy, as it cure trim off the excess and remove the masking leaving the fabric glued to the board. After glassing use sharpie brand poster paint pens (WATER BASED) to apply pinstriping around the graphic. Varnish or paint over the paint pen.

Drawings, Poster paint pens by sharpie come in oil based and water based, use only the WATER BASED pens, to draw on the board or paint. Drew Brophy has a video that you can purchase and some you tube videos on doing paint pen artwork. Seal it with varnish or with clear paint.

Screen printing, we've screened designs directly onto the glass before varnishing, Micheals arts and crafts carries speedball screen printing kits, use the waterbased airdry t-shirt ink.

There are other ways to add graphics, the sky is the limit.....



Artwork Done with Paint Pen

Resources:

Books:

"Kayaks You Can Build" by Ted Moores

"Devlin's Boat Building; How to Build Any Boat the Stitch and Glue Way" by Samuel Devlin

Internet Videos

Glassing Video

<http://www.youtube.com/watch?v=qsupx-IXOzU>

Time Lapse Videos of this paddleboard being built:

Stitching

http://www.youtube.com/watch?v=zVx_ogB3EW0

Tab Fillet Tape

<http://www.youtube.com/watch?v=F7dYiMPTMHY>

Coating

<http://www.youtube.com/watch?v=1SfzGfa2-iw>

Installing Sheer Clamp and Stringers

<http://www.youtube.com/watch?v=goPKJH295ZM>

Sand and Laminate Bottom

<http://www.youtube.com/watch?v=adGQXj6ZhIY>

Fill Coat

<http://www.youtube.com/watch?v=vlrTeEA36as>

Sanding and Graphics

<http://www.youtube.com/watch?v=pUGnqDJicmQ>

Our Youtube Channel

<http://www.youtube.com/user/fiberglasssupply>