

Uncle John's

5229 Choupique Road - Sulphur, LA 70665

Thank you for purchasing my plans. Should you have any questions while building your Jon-boat don't hesitate to email, unclejohn@unclejohns.com or call, 337-570-1486. I'm happy to help.

The single most difficult step in building your boat may well be deciding the length and width. You may increase the width of your boat simply by increasing the width of the bow plate, transom and seat units. The width measurements shown are for a boat with a bottom width of 30". If you want a boat with a 36" bottom simply add 6" to the measurements shown. The width of each separate piece should be increased equally. Lengthening the sideboards increases the length of the boat.

Because the materials required will vary with the size you build, a normal materials list has not been included . The boat may be built with a 30" bottom, from 10' to 12' long using two sheets of 1/4" plywood. And, up to 15' 8" with four sheets. The amount of fiberglass cloth and paint as will the length of the material used for the rub rails will be determined by the length of the boat. The number of screws needed will be determined by the number of clamps you have. We do not recommend building less than 10 feet. Because of the variables we are also unable estimate the weight of the finished boat or to give any ratings as to capacity, displacement or motor size.

Sheet #1 materials

Sheet #2. USCG regulations

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Sheet #4 scarf join sideboards and bottom

Sheet #5 cutting the bow plate

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NOTICE: Care should be exercised in the completion of the steps involved in constructing this boat to assure a sturdy craft. The safety of this boat is determined by the builder and user. *Uncle John's* assumes no liability for the finished project. As with any water craft, life-jackets should be worn and caution exercised in regard to weather and water conditions.

Sheet #1 materials

Plywood: The basic difference between most marine plywood and exterior plywood is that marine plywood does not contain voids. Both contain essentially the same glues. Taping the seams and edges with fiberglass will effectively seal the edges. Exterior plywood is considerably more economical and is a standard stock item at lumberyards. We have had good results with both A/C fir and B/C pine. Lauan mahogany is used by many small boat builders. Lauan is pretty, easy to work with and very economical.

Glue and fasteners: There are numerous waterproof and water resistant glues on the market. For the most part, glues, nails and screws hold the structure together prior to taping the seams with fiberglass. Once the seams are taped, the fiberglass will provide a strong waterproof joint. For this reason, the type of glue is of less importance than taping both sides of all seams and joints with fiberglass.

Fiberglass: All seams and joints should be fiberglassed inside and out for strength and to seal the edges. Epoxy resin is the best, polyester is the most economical and the easiest to obtain. Polyester resin can be found lumberyards and auto parts stores. A good source for epoxy may be found from www.raka.com.

Paint: Epoxy must be protected from sunlight or it will degrade. Painting is easy and durable. 100% acrylic exterior latex (water based) house paint works well. It is economical, fast drying and very durable. Water based paints generally stick well to epoxy where some oil based paints have adhesion problems and often require more preparation. If you wish to stain your boat and use a clear finish you should use a water or alcohol and not oil based stain. Allow the stain to dry thoroughly before applying the resin. A good marine varnish will protect the epoxy and show the beauty of the wood.

Sheet #2 USCG regulations

The following information will help you determine the size boat that best meets your needs.

The following was extracted from the USCG website,

"The maximum horsepower capacity marked on a boat must not exceed the horsepower capacity determined by the computation method discussed in paragraph (a) of this section.

(a) The maximum horsepower capacity must be computed as follows:

(1) Compute a factor by multiplying the boat length in feet by the maximum transom width in feet excluding handles and other similar fittings, attachments, and extensions. If the boat does not have a full transom, the transom width is the broadest beam in the after most quarter length of the boat.

(2) Locate horsepower capacity corresponding to the factor in Table 183.53.

(3) For a boat with a factor over 52.5, if the horsepower capacity calculated in Table 183.53 is not an exact multiple of 5, it may be raised to the next exact multiple of 5.

(4) For flat bottom hard chine boats with a factor of 52 or less, the horsepower capacity must be reduced by one horsepower capacity increment in Table 183.53.

Table 183.53--Outboard Boat Horsepower Capacity
[Compute: Factor = Boat Length X Transom Width]

If factor (nearest integer) is.....	0-35	36-39	40-42	43-45	46-52
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Horsepower Capacity is.....	3	5	7.5	10	15
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[Note: For flat bottom hard chine boats, with factor of 52 or less, reduce one capacity limit (e.g. 5 to 3)]

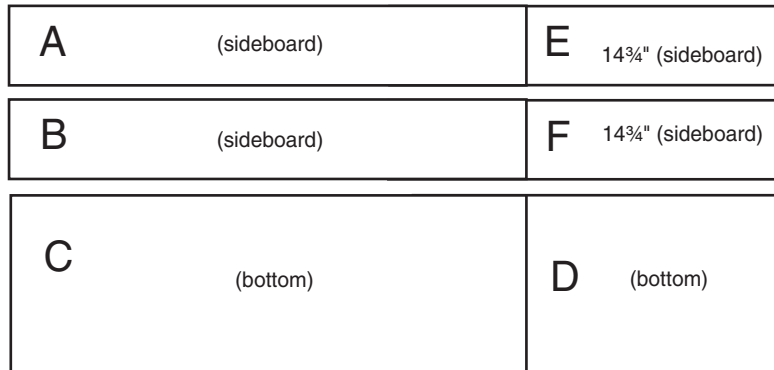
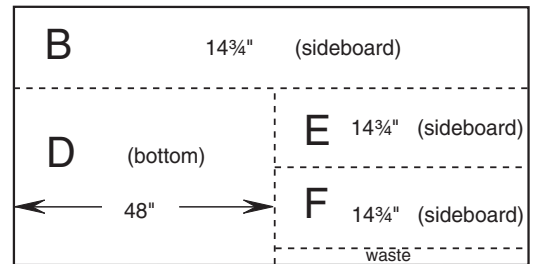
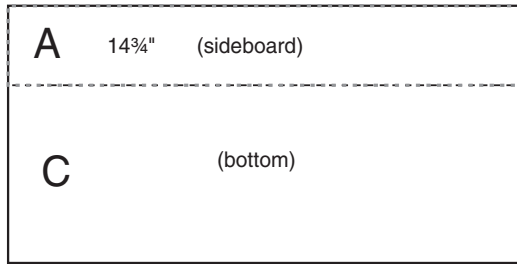
The Coast Guard formula to compute the safe load of a home built boat is as follows. Determine the amount of weight it takes to "sink" your boat. Put the boat in the water and fill it with water counting the number of gallons it takes for the gunwales to be even with the water. Water weighs eight pounds per gallon. Multiply the number of gallons by eight and you will know the total amount of weight it takes to "sink" your boat. The boat will not actually sink because wood is buoyant. The Coast Guard then recommends multiplying the total weight by a factor of .3 to determine the "maximum safe load".

the full USCG regulations may be viewed at http://www.uscgboating.org/reg/cfr/33cfr/part183/183_53.htm

Sheet #3 rip plywood to proper sizes

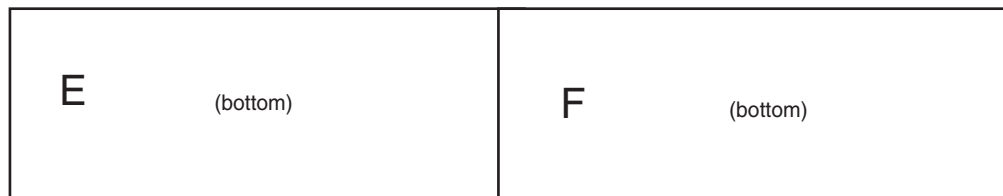
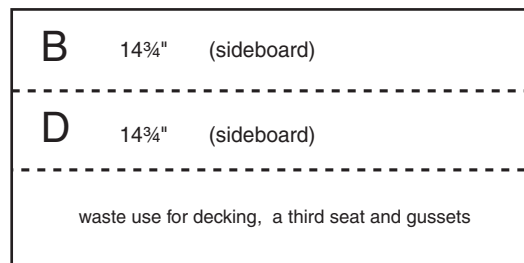
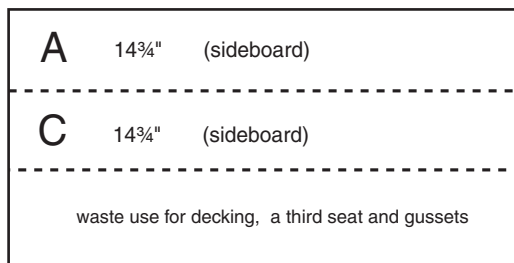
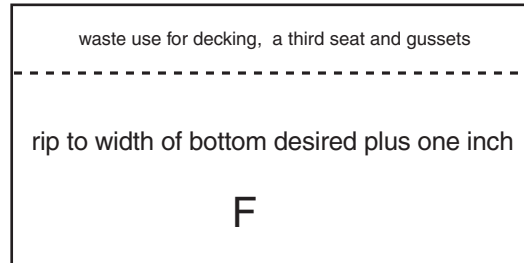
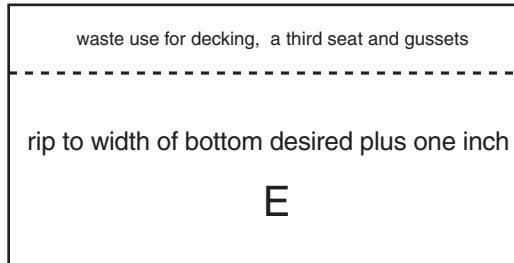
10' to 11' 7" in length with up to a 33" bottom.

Two sheets
4' x 8' x 1/4"



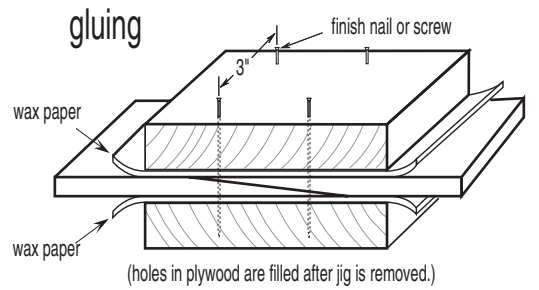
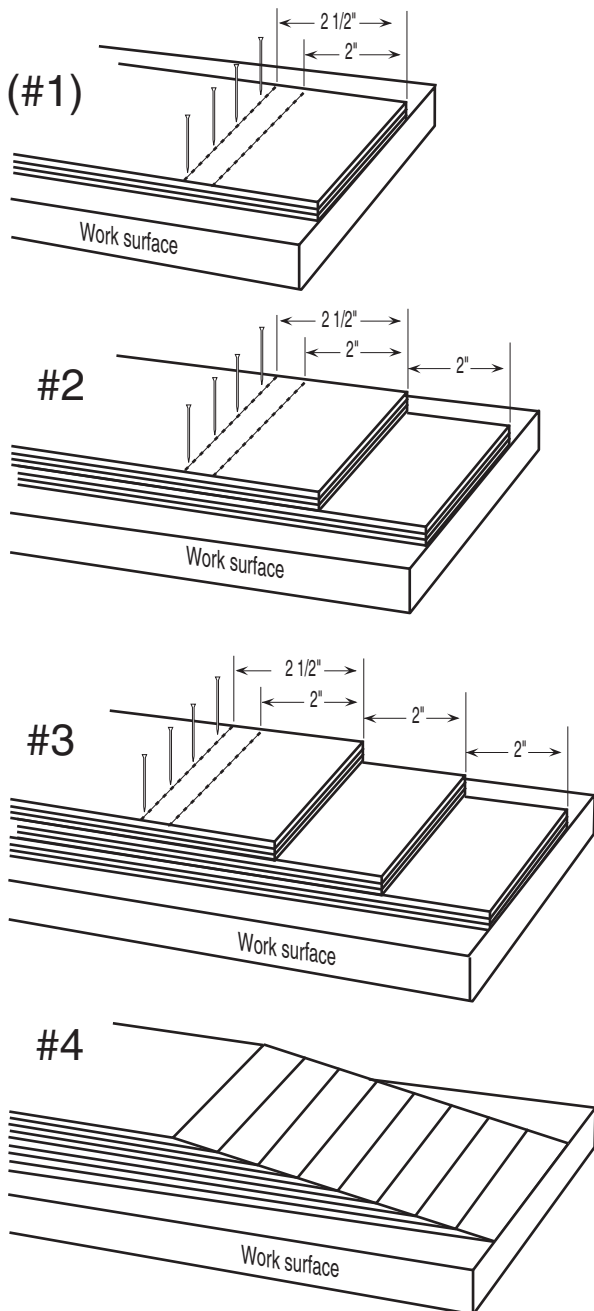
11' 6" to 15' 6" in length with up to a 48" bottom.

Four sheets
4' x 8' x 1/4"



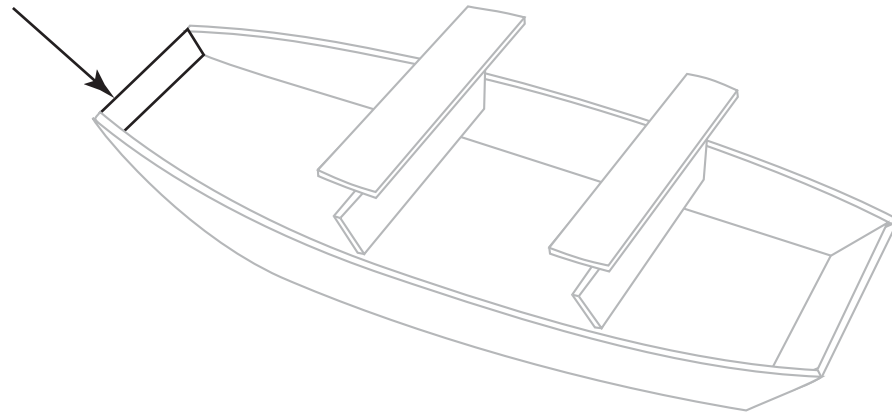
Sheet #4 scarf joining the sideboards and bottom

Scarfing plywood is surprisingly easy. The formula for scarfing is 8 to 1, using this formula will result in a joint as strong as the rest of the material. If the material is 1" thick, the scarf would be 8" long. The length of the scarf for 1/4" plywood is 2". Scarf all of the pieces of the same width at the same time. By doing them all at the same time, they will all have the same angle. Stack the pieces offsetting each from the one below by 2". A piece of scrap placed on top will aid in achieving a smooth bevel. Tacking the pieces to a flat work surface will stabilize the pieces while you are scarfing. (#1) Place the first piece on the work surface and tack it down at least two and one half inches from the end. (#2) Place the second piece on top offsetting by 2" and tack it down. The tacks should be placed so as not to be in the area that is to be worked. (#3) Continue to stack the pieces as shown. (#4) Using an electric plane, belt sander, random orbit sander or even a piece of coarse sandpaper wrapped around a piece of two by four "grind" the pieces until a smooth surface is achieved.



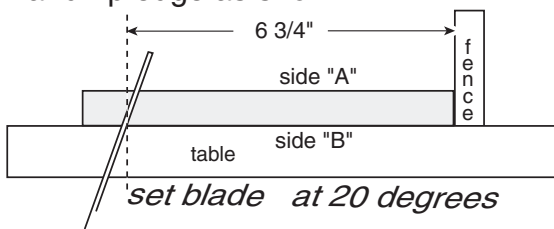
Sheet #5 cutting the bow plate

Bow Plate

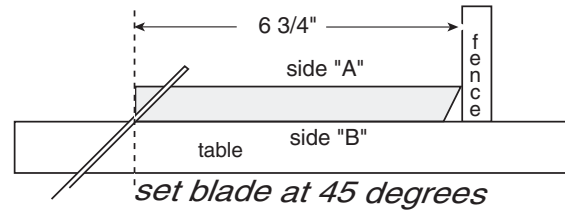


1. Rip a piece of 3/4" plywood 6 3/4" x 36"

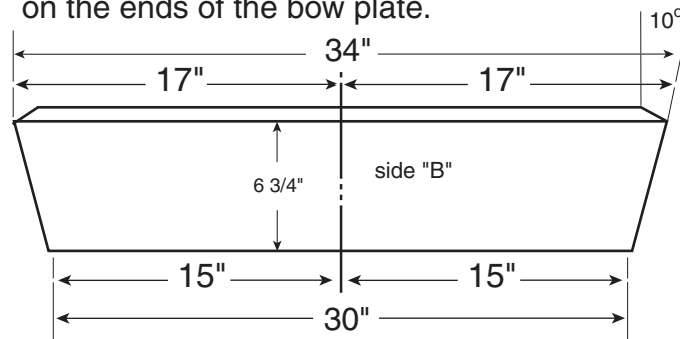
2. Set blade on table saw at 20 degrees and rip edge as shown.



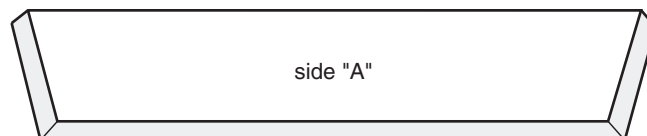
3. Set blade on table saw at 45 degrees and rip angle on opposite side.



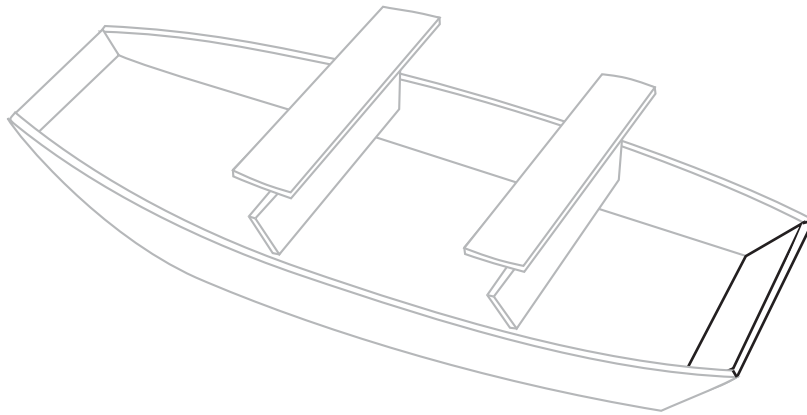
4. Place side "A" down and cut the compound angles on the ends of the bow plate.



5. When the bow plate is placed with the "A" side up, the beveled edges should face you.

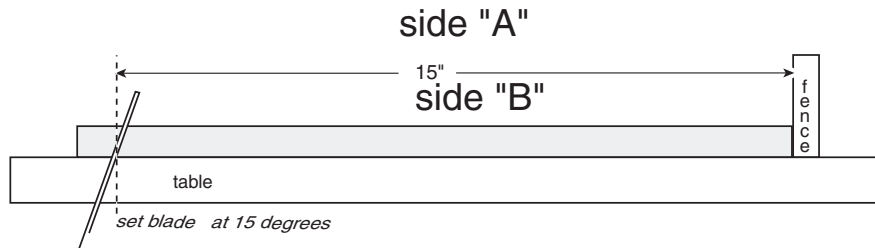


Sheet #6 cutting the transom

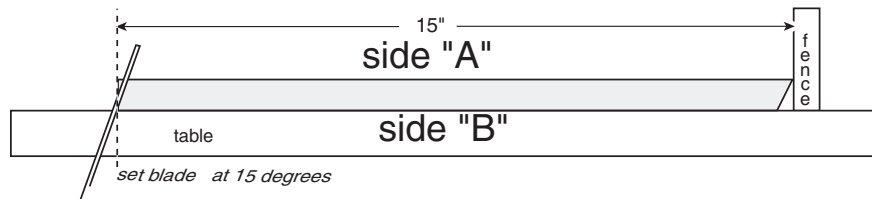


Transom

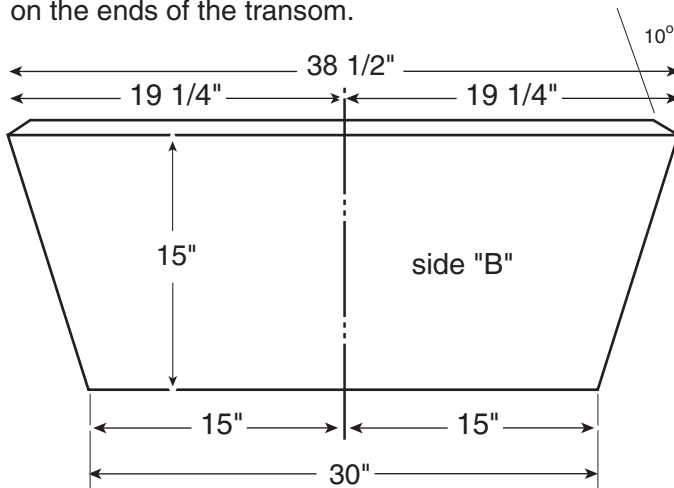
1. Set Blade on table saw at 15 degrees and rip a piece of 3/4" plywood 15" wide.



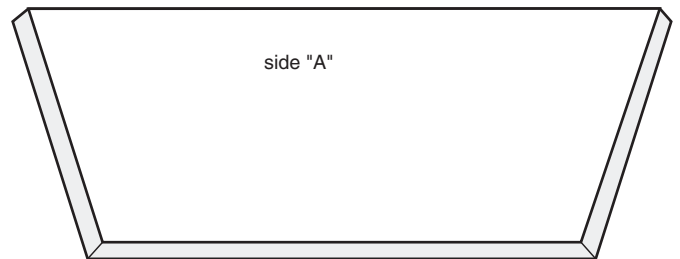
2. Turn piece and rip angle on opposite side.



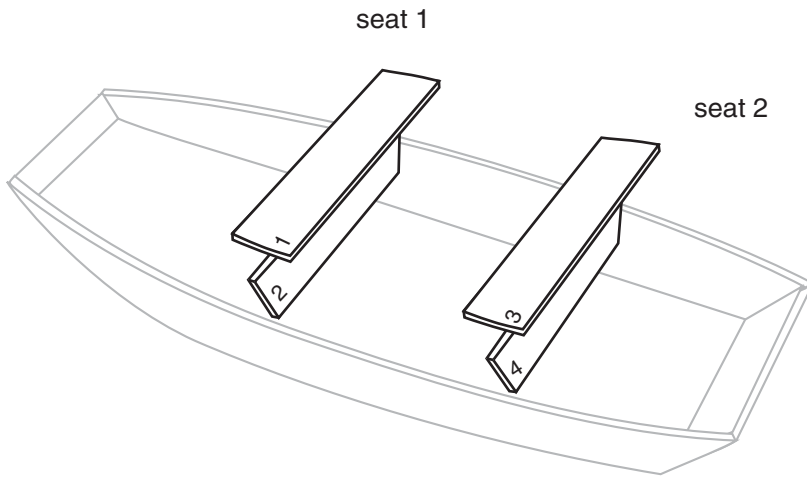
3. Place side "A" down and cut the compound angles on the ends of the transom.



4. When the transom. is placed with the "A" side up, the beveled edges should face you.

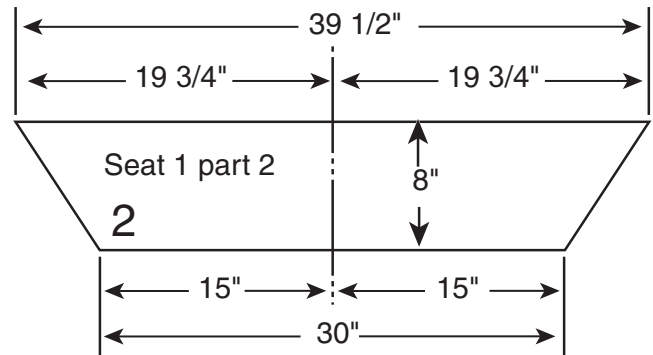
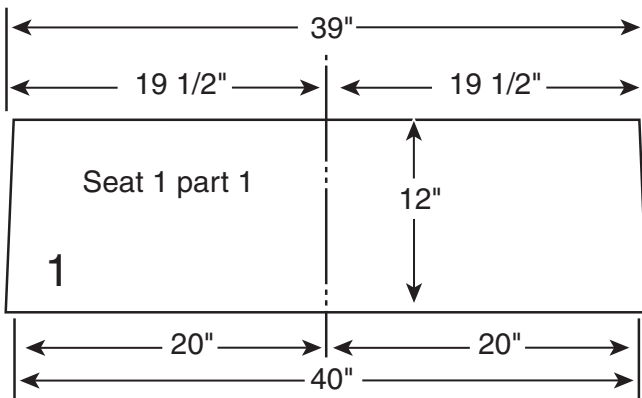


Sheet #7 cutting the seat units

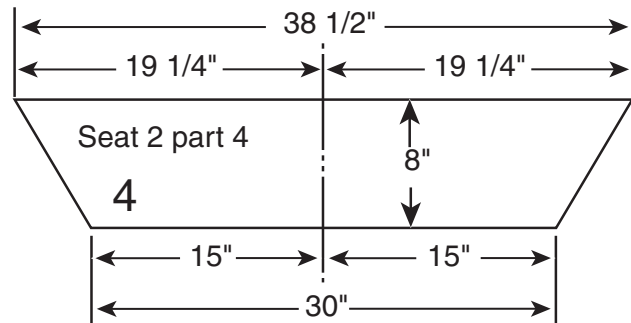
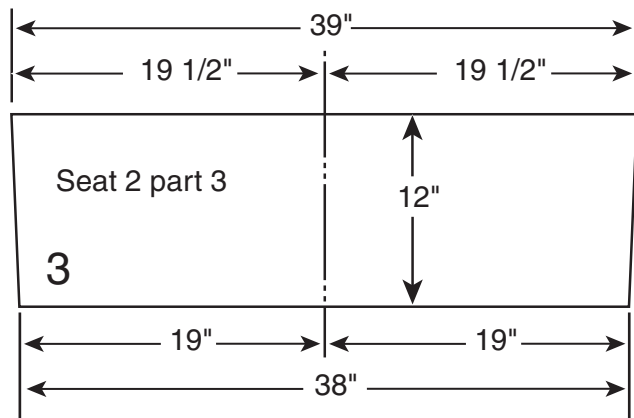


attach 3/4" x 3/4" strips to seat parts as shown. The ends of the strips on the seat tops (part 1 & 3) will need to be beveled to fit where it meets the sideboard.

seat 1

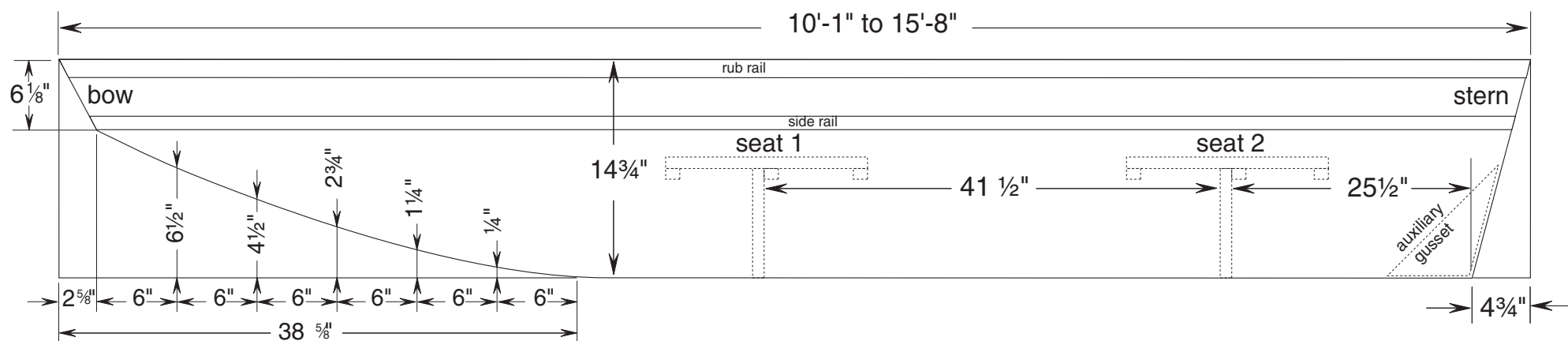


seat 2



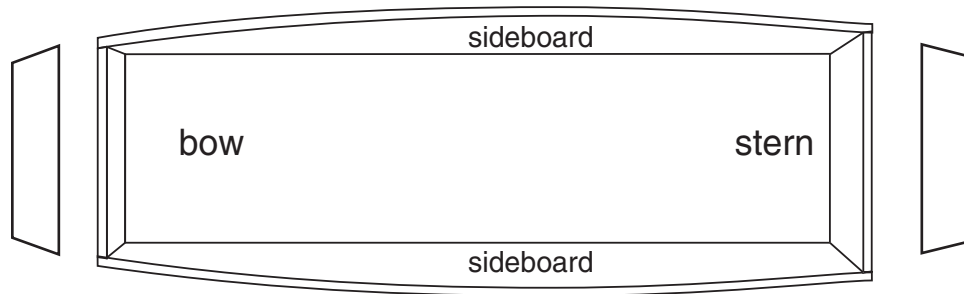
Sheet #8 lay out and cut the sideboards

The length of the sideboards determine the length of the boat. The finished boat will be 1 to 1 1/2" shorter than the length of the sideboards. Careful attention must be given when laying out the sideboards. Layout is not difficult, simply use a framing square to transfer the layout measurements onto one of the sideboards. Stack and cut both sideboards at the same time to assure identical sideboards. If you exceed 12' in length you should add a deck in the bow to strengthen the boat. Simply cut 1/4" plywood to fit and glass it in place. Should you desire to add a third seat, locate seats 1 and 2 and place the third seat between seat 1 and the bow. Should you desire to "stretch" your boat to 12', increase the distance between seats. If you increase beyond 12', use the measurements shown and add a bow deck, third seat or both depending upon total length. Because the dimension of the third seat and bow deck must be made to fit the length we have not included dimensions for the third seat or bow deck. For the most part, boats are built "to eye". It is more important for the lines of a boat to be "fair" than for exact measurements to be followed. When installing the seats you may find that shifting them a few inches will true the lines.

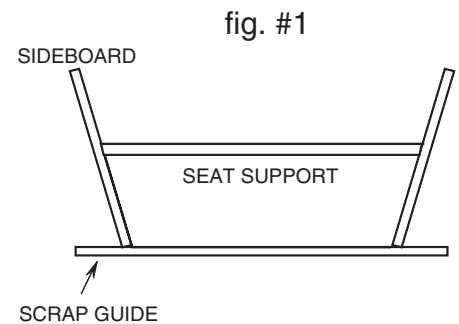
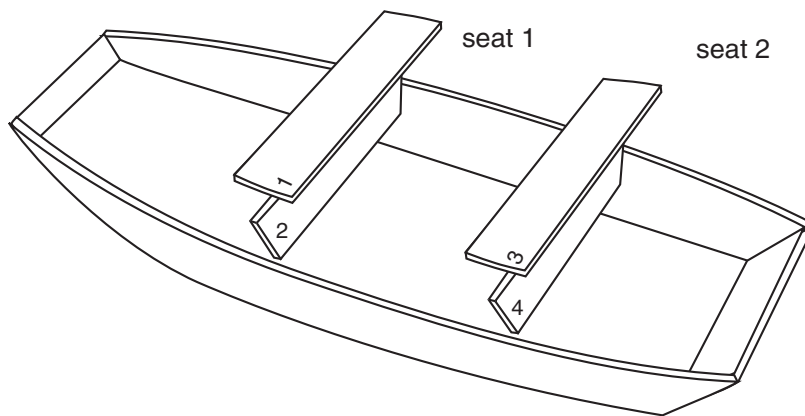


Sheet #9 attaching the sideboards, seats and rubrails

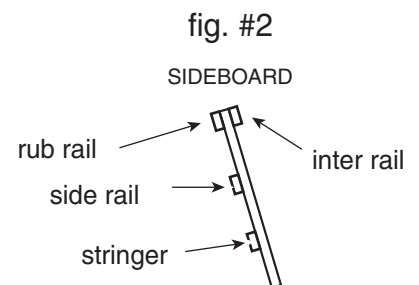
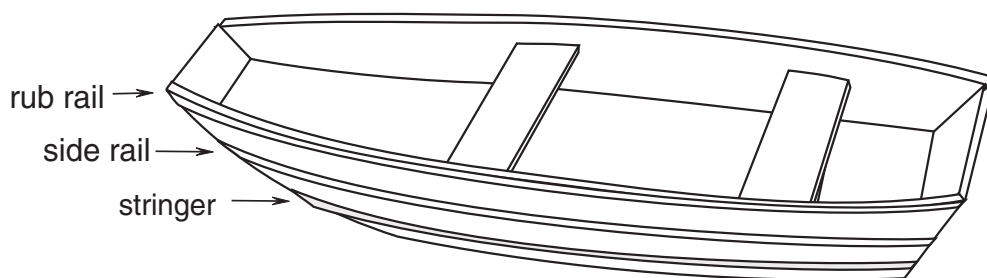
No. 1 Attach sideboards to bow and transom using both a waterproof glue and 1½" screws. The compound angles of the bow and transom will cause the sides to bow outward creating the basic shape of the boat.



No. 2 Insert center seat support first. Use a scrap guide across the bottom of the sideboards to position bottom of center seat support. as shown (fig. #1) and glue in place. A piece of rope around the boat can be used to "pull" the bottom of the side boards to the seat supports. After seat supports are in place attach seat tops.



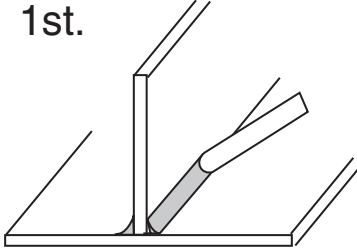
No. 3 Rip ¾" x 1¼" lumber for rubrails and ¾" x 1" for the side rails. Attach rubrails and side rails with ¾" screws. If you build you boat over 12' in length add an inter rail as shown in fig. #2 to strengthen the boat. Attaching the rails will stiffen and shape the boat. Begin at the stern and check for squareness as attaching rails. After attaching rails but prior to attaching the bottom, temporarily attach a stringer (using only screws) 2" above the bottom of the sideboards to shape the boat prior to attaching the bottom. After the bottom is attached the stringers are removed and the screw holes filled.



Sheet #10 fiberglassing the seat units

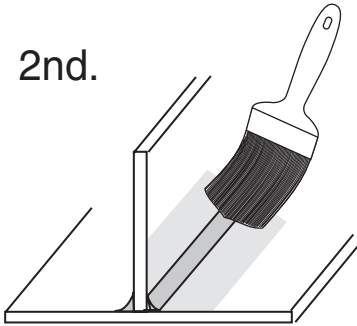
fiberglass all joints on the seat units on both sides with 3" wide 6 oz. cloth.

1st.



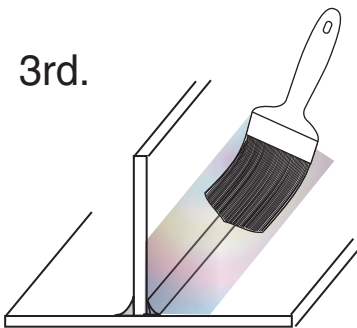
Use a tongue depressor to create a cove on the inside seams with a mixture of fiberglass resin mixed with filler or fine sawdust.

2nd.



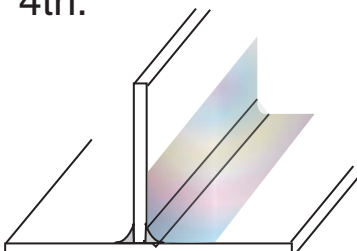
Paint resin on the area to be glassed. If you use polyester resin, for the first application, add one tablespoon of acetone to each ounce of resin, thinning the resin to increase penetration into the wood fiber and holding strength. This is not necessary when using epoxy and is only for the first coat using polyester.

3rd.



Put cloth in place and saturate with resin. When the cloth is saturated it will become virtually invisible. It is important to saturate the cloth but not to the extent to "float" the cloth off the surface. The texture of the weave may be floated with a second coat of resin. Overlap cloth by 2" where needed.

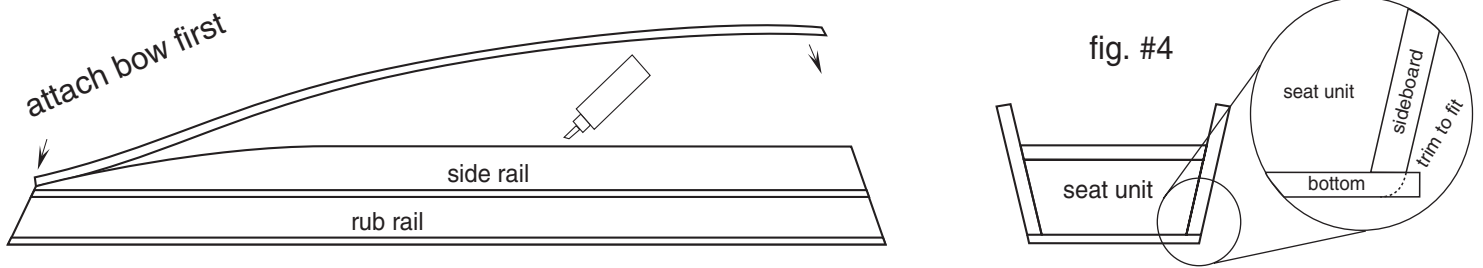
4th.



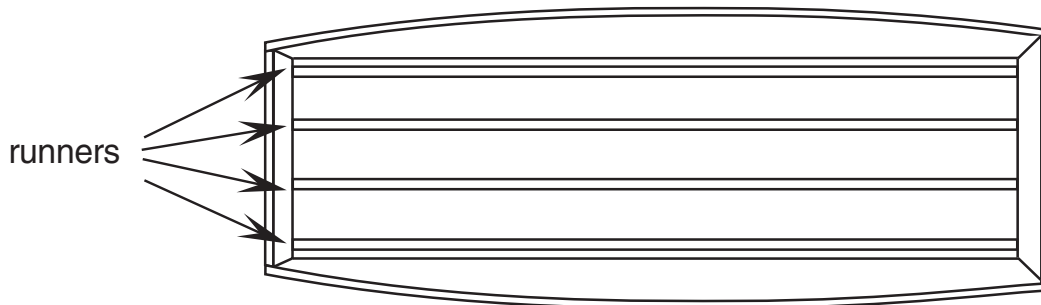
After the resin has cured, puncture any bubbles and reglass. The edges of the cloth may be feather on by sanding to blend the cloth into the wood.

Sheet #11 attaching the bottom and finishing

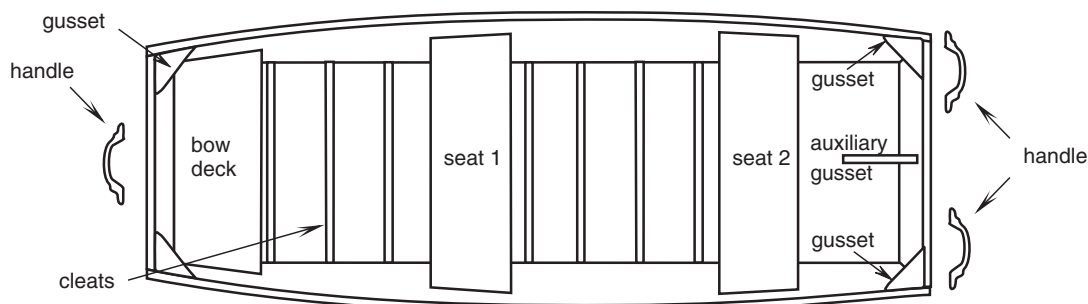
No. 1 ATTACH BOTTOM. Tack bottom in place and mark hull shape. Add 1/4" all around. Remove and cut bottom. Attach bottom starting at the bow using waterproof glue, 1" brads into sideboards where needed and 1 1/2" screws into transom and bow plate. Trim bottom flush with sideboards and ease the corner, (fig. #4). After attaching bottom, fiberglass seams on both sides. If you don't have a "perfect" joint, don't be overly concerned. The fiberglass resin will fill small voids.



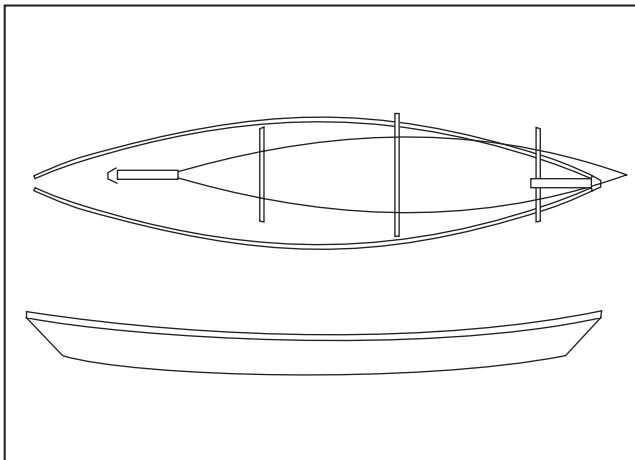
No. 2 ATTACH BOTTOM RUNNERS. Rip lumber to 3/4" x 3/4" for bottom runners. Attach to the bottom with waterproof glue and 3/4" screws, beginning at the stern and working toward the bow.



OPTIONS: Cleats can be added to stiffen the bottom. if you build your boat over 36" in width and for safer footing. This will also greatly strengthen the boat. An auxiliary gusset is necessary if a motor is to be used. If you intend to use a motor you may want to add a motor pad to thicken and reinforce the transom. An aluminum plate will prevent the motor from damaging the wooden transom. Salvage and recycling places are a good resource for 1/8 and 1/4" plate. Aluminum is easily cut with wood working tools. Handles can be added to bow and transom.

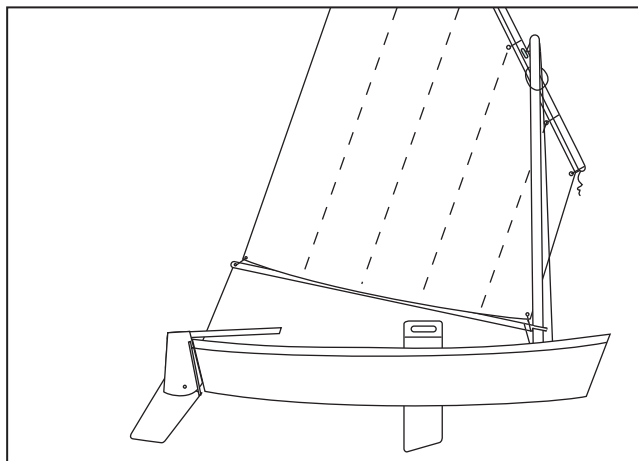


Visit our site at www.unclejohns.com to see our other boats



Cajun Pirogue

12' to 15' 7"
Beam: 31"
Displ: 250 to 350 lbs.
Kit: cypress



Skiff-10

Skiff -12

10' 7" or 11' 5"
Beam: 47"
Sail Area: 26 to 41
Displ: 500 to 700 lbs.
Kit: cypress and plywood