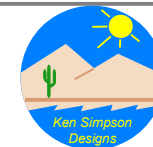


BASIC COROPLAST HULLS

FOUR + HULLS, most single occupant designs.
Choose the one that suites your needs.

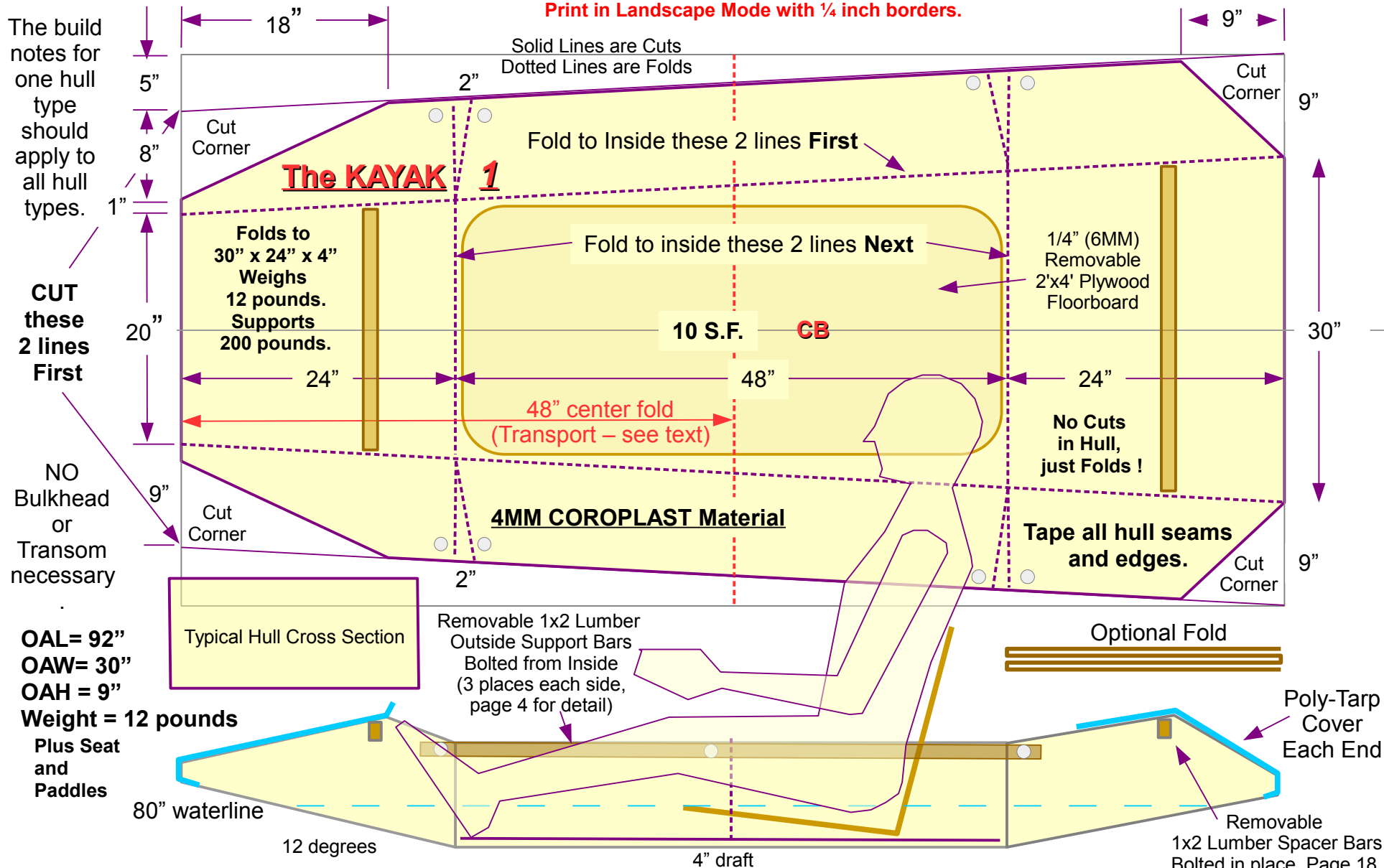
Quick Assembly, Folds Up to a Small Package.
Light Weight, Supports 215. Easy to Set-Up, and
Easy to Paddle. Fits in any vehicle !



Drawn 01-20-2014

Rev. 06-17-2014

Print in Landscape Mode with 1/4 inch borders.



The build notes for one hull type should apply to all hull types.

CUT these 2 lines First

NO Bulkhead or Transom necessary

OAL = 92"
OAW = 30"
OAH = 9"
Weight = 12 pounds
Plus Seat and Paddles

Typical Hull Cross Section

Removable 1x2 Lumber Outside Support Bars Bolted from Inside (3 places each side, page 4 for detail)

Optional Fold

Poly-Tarp Cover Each End

Removable 1x2 Lumber Spacer Bars Bolted in place. Page 18.

Note: The "wedge" shape is designed to place the maximum buoyancy where the maximum load will be, your butt !

a ken simpson design

PortableBoatPlans.com

Page 1 of 32

This is an experimental design drawn up by an untrained amateur. The Designer accepts no liability for any loss, harm or damage sustained during construction or use. Builders may use these plans to construct a small quantity of boats for their own use only. Commercial manufacturers must ask the Designer for permission.

General Notes

The design of The CORO-BOATS is my desire to provide safe, lightweight, and affordable boat designs for the masses. These designs includes a stable beam & good freeboard, are easy to build, low in cost, and have safety buoyancy.

To have strength and yet be lightweight, the plans use some non-traditional materials for assembly , specifically the 4MM "Coroplast" material, and the unique construction process incorporated by the designer.

This provides a durable, yet truly portable finished boat, and the building process is easily mastered by the home handyman and amateur boat builder.

As a result, only hand tools, utility knife, a power drill and a large carpenters square, scissors, a tape measure and a 2x4 are all that will be required throughout the assembly process.

Use only the materials specified on the plans. Any others may cause premature failure.

Certainly, minor changes in design are encouraged, to provide a 'custom' boat to satisfy a builders specific needs. We do not make changes to the drawings.

This would be up to the individual builder, and their responsibility. Also, it is very important that none of the basic design parameters be drastically modified, as this may adversely affect overall boat safety or performance.

Seating choice is also up to the builder. I have folding seat plans available for free on the website.

These are a few of the many that I have detailed, but they are a good representation of what can be done with a single sheet of Coroplast plastic. Each is capable of transporting its builder into the wonderful world of boating, and each can serve a different purpose. Weather used just for exercise, fishing or transport, they can provide endless pleasure on the water.

Any questions or comments regarding the construction and/or design of this project will be responded to in a timely fashion.

Thank you for your interest, and for purchasing these plans, and good luck with your project.

And don't forget to visit www.PortableBoatPlans.Com for new designs and updates.

Each of the following designs is unique, and the method of construction can vary. Please read these instructions completely, and use them as a guide in building your dreamboat.

Good luck with the project, and always practice safe boating !

Happy Boating !

www.PortableBoatPlans.com

Ken Simpson , Designer

Due to the structure of these boats, they are unsinkable ! But that doesn't mean you are. So, always wear a Personal Flotation Device (PFD) when boating.

This is an experimental design drawn up by an untrained amateur. The Designer accepts no liability for any loss or damage sustained during construction or use. Builders may use these plans to construct small numbers of boats freely for their own use. Commercial manufacturers must ask the designer to negotiate permission.

It is very important that you personalize the boat of your choice. Size does matter, and you want to be comfortable when out paddling on the water. But remember, although Coroplast requires no finish, it does require some occasional maintenance, like washing and inspection for possible damage.

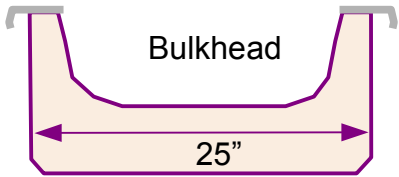
PLEASE READ THE PLANS THOROUGHLY PRIOR TO STARTING CONSTRUCTION.

Basic Hull List of Materials (as of 6/2014)

4'x8' Coroplast, 4 MM (any color)	\$ 25
Roll of Scotch Tough Duct Tape, No Residue	\$ 10
4'x4' ACX Plywood, ¼ inch (6 MM) thick	\$ 12
5' x 9' Poly-Tarp material	\$ 6
Paint or Varnish for wood items	\$ 9
<u>1 x 2 x 8' Framing Lumber (4)</u>	<u>\$ 8</u>
Approx.Total =	\$ 70

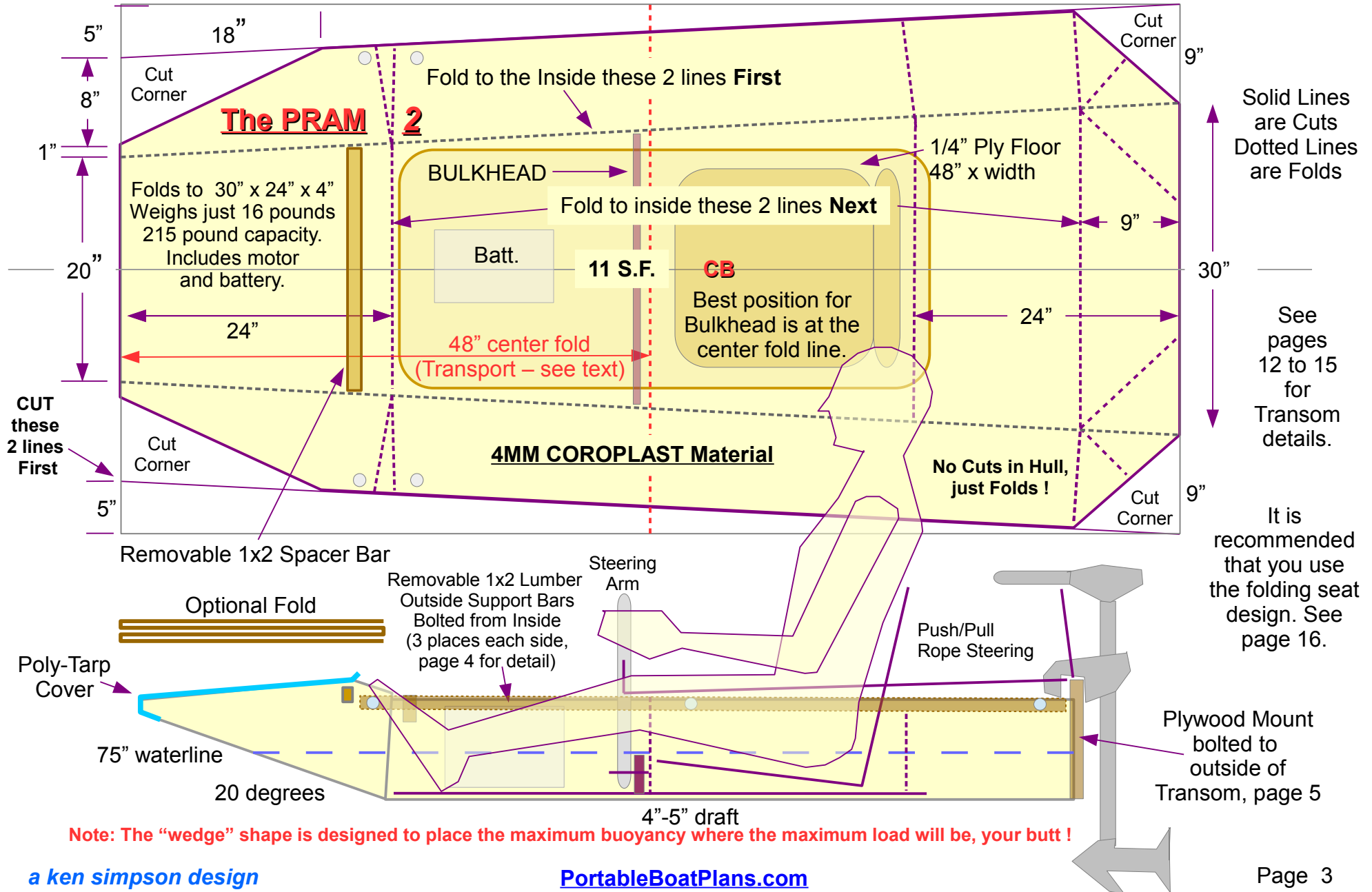
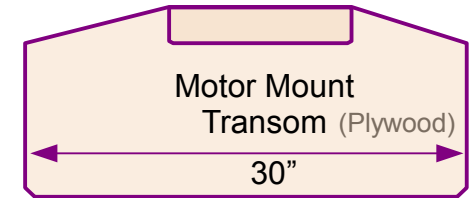
NOTE: All of the designs shown use common assembly methods and materials. The difference is in the type of hulls presented, their capacity and utility. Choose wisely.

4mm Coroplast can be purchased at your local Sign Company.



Motorized Version

Similar to The KAYAK, with transom modifications, to accept a trolling motor.



It may be necessary to add a strip of wood along each forward edge for rigidity.

REAL BASIC HULL

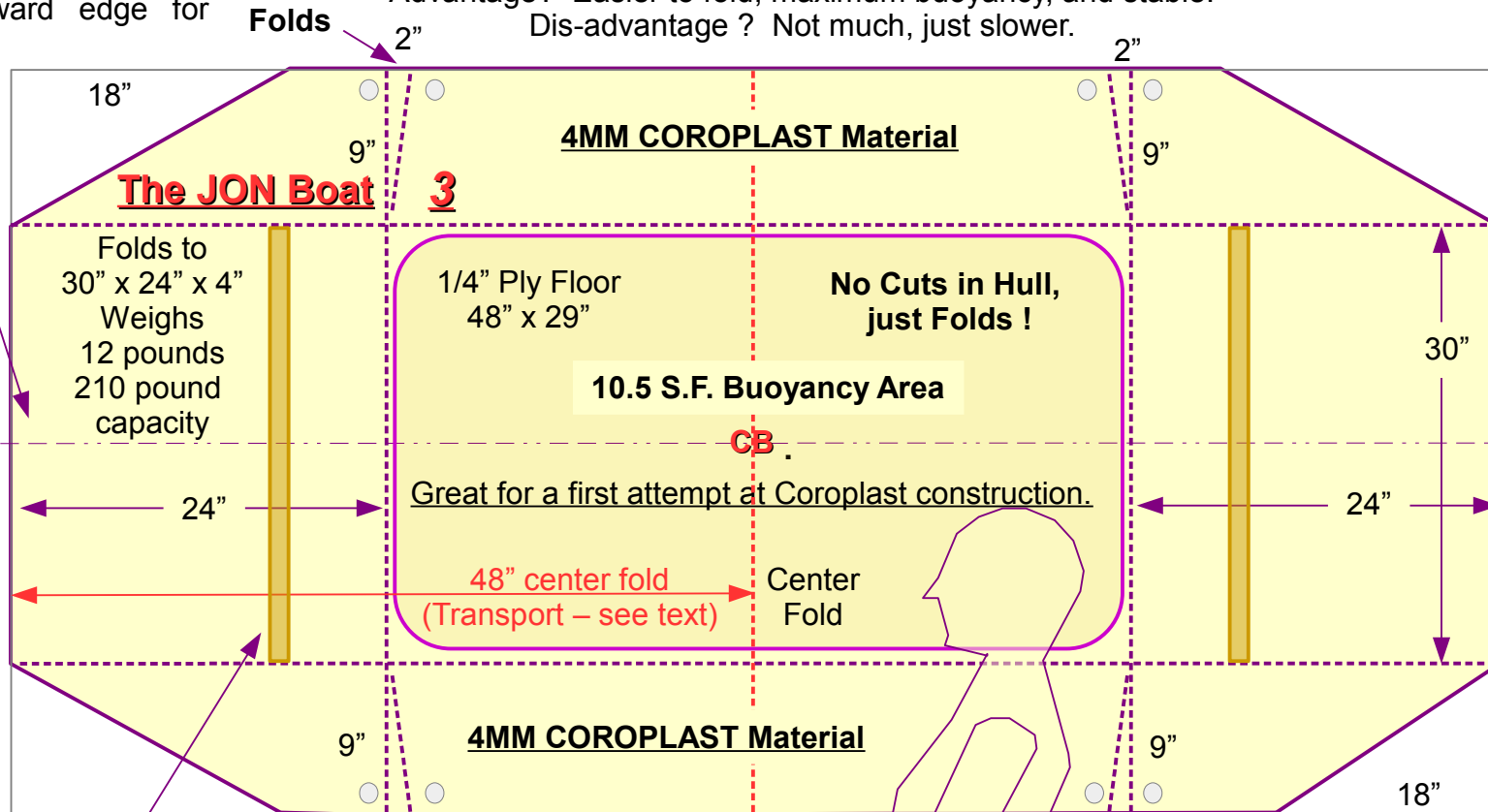
Solid Lines are Cuts
Dotted Lines are Folds

Advantage? Easier to fold, maximum buoyancy, and stable.
Dis-advantage? Not much, just slower.

Note the option of different materials for the Side Support Bars.

Poly-Tarp is the plastic tarp material available in small sizes at your local hardware store.

Tough-Tape all edges of the hull prior to applying Tarp.



A FUN boat for all ages!

No Bulkhead or Transom necessary.

Removable 1x2 Spacer Bars
Optional Fold

Removable 1x2 Lumber
Outside Support Bars
Bolted from Inside
(3 places each side)

Makes a great paddle boat, for kids of all ages.

Poly-Tarp Covers

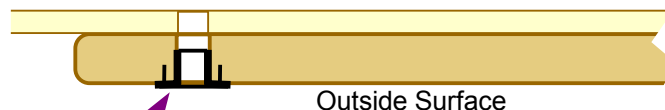
The poly-tarp cover should be pulled tight and taped securely in place.

72" waterline

4 inch draft max.

15 degrees each end

Tape the PolyTarp covers in place. Insure they are tight when the hull is open.



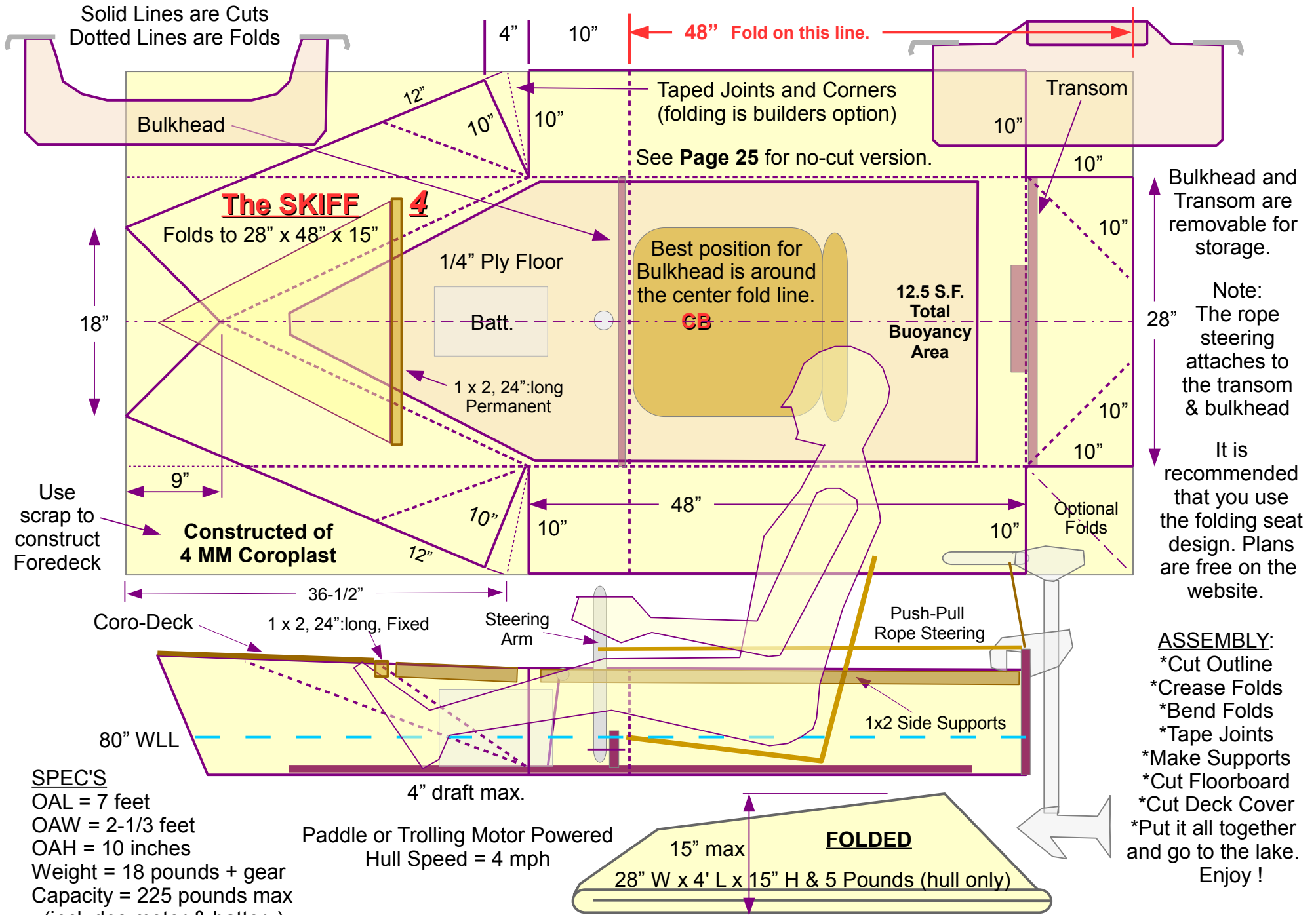
Top view of Side Support Bar

Removable 1x2 lumber spacer bars, bolted each end, for rigidity. See Page 18

FOLDING COROPLAST HULL

Maximum Water Line Length, and Maximum Freeboard for a Powered 1 Sheet Boat that is Stable and Comfortable.

4/12/2014



SPEC'S

OAL = 7 feet
OAW = 2-1/3 feet
OAH = 10 inches
Weight = 18 pounds + gear
Capacity = 225 pounds max
(includes motor & battery)

a ken simpson design

PortableBoatPlans.com

ASSEMBLY:
*Cut Outline
*Crease Folds
*Bend Folds
*Tape Joints
*Make Supports
*Cut Floorboard
*Cut Deck Cover
*Put it all together and go to the lake.
Enjoy !

FOLDING COROPLAST HULLS

PHOTO ASSEMBLY

I chose to build the more complex **SKIFF**, as shown, but the assembly process would be similar for any of the other designs presented.



Basic layout materials for the Coroplast sheet.

Note the bend at the 48 inch mark. I needed to fold the sheet in half, to fit in my PT Cruiser. It is also the bending point for the folded hull.

When marking the Coroplast sheet, do not step or kneel on it, as this may leave a lasting impression.

Note also the time stamps on the photos. It took less than $\frac{1}{2}$ hour to layout and cut the hull form.



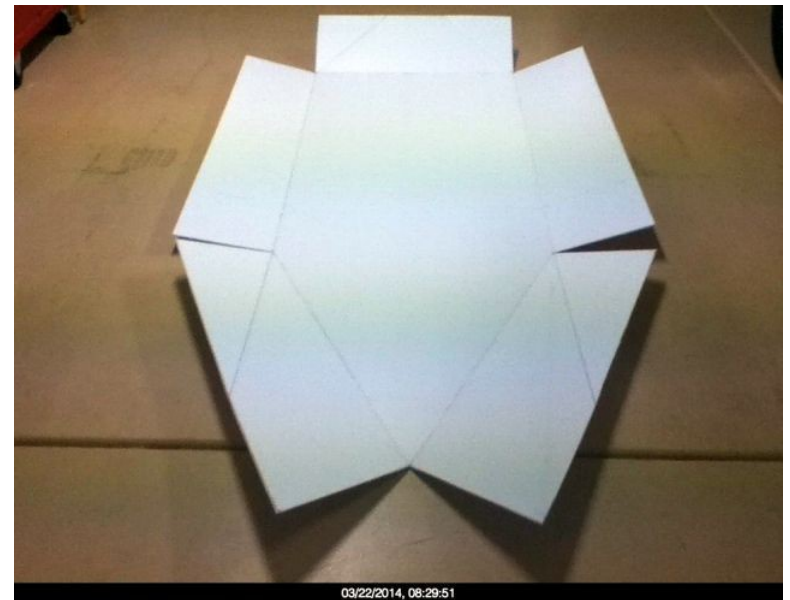
Close-up showing intersecting pencil lines.



Use a sharp utility knife to make cuts.

Use a metal straightedge to support the knife edge when cutting, as shown at left.

Also, when cutting, always place a strip of cardboard beneath the Coroplast. This prevents the knife from cutting into a hard surface below, and dulling it prematurely.



Hull form cut to shape.

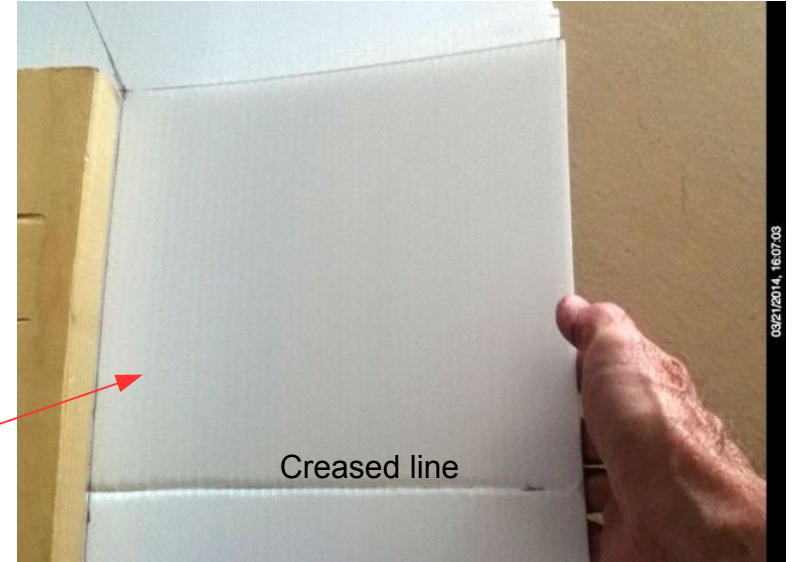
FOLDING COROPLAST HULLS

PHOTO ASSEMBLY

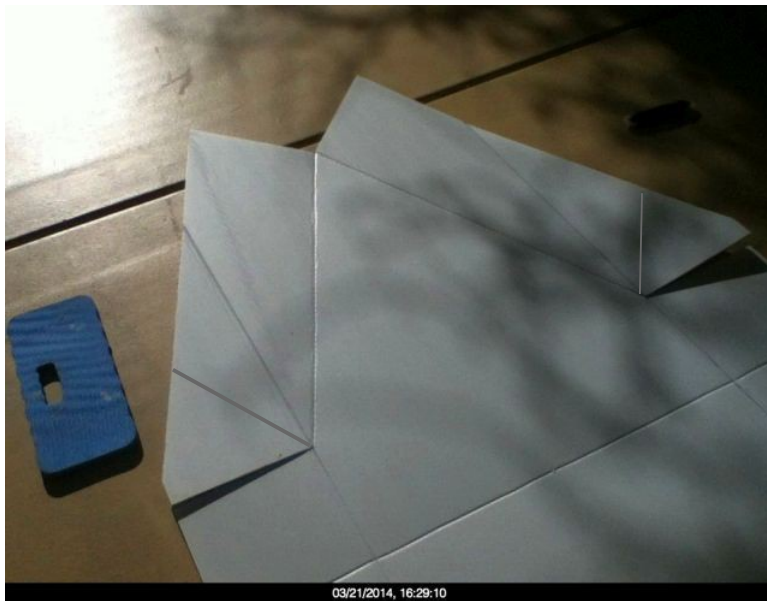


Creasing tool and 2x3 straightedge support.

It is critical that all folds be creased prior to bending. I used a screen assembly tool, which works quite well, but any dull edge tool should work. Use a straightedge to keep the tool on the marked line while pressing down. When bending, be sure to keep the panels flat, and bend evenly along the panel length.



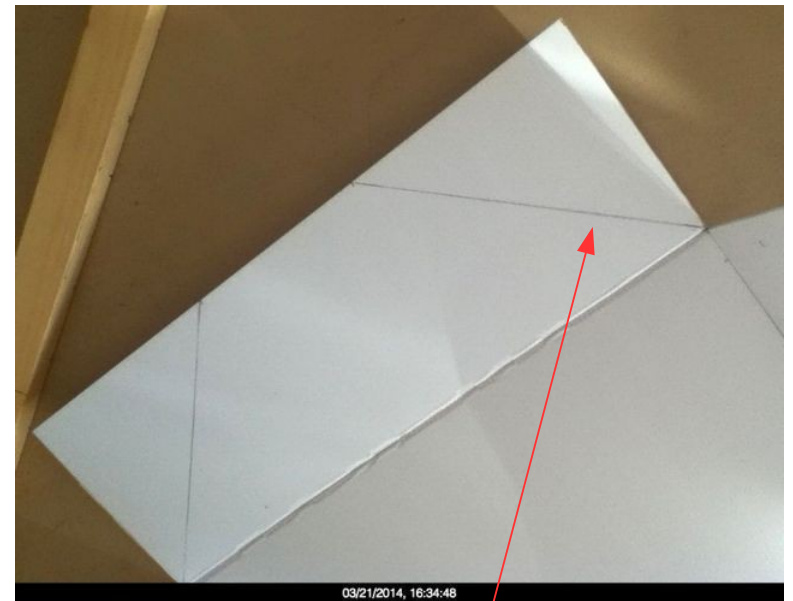
Bending up a side panel.



Bow panels creased, ready for bending.

Take your time creasing and bending the panels. It is easy to bend unevenly, and creating a bend line where you don't want one. It is best if two people perform this task. One holding the panels down with the 2x3, and the other bending them up evenly.

Note that it is a little over 1 hour since the start of the process.



Transom bent up, corner folds need to be creased.

FOLDING COROPLAST HULLS

PHOTO ASSEMBLY

Folding the seams requires that you bend them 180 degrees, and flatten the seam as best you can, without crushing the material.

Once all the hull seams are folded, you can start the taping process.

**Use only
SCOTCH TOUGH DUCT
TAPE, NO RESIDUE
type.
It is the best for
Maximum
Weatherability !**



Hull temporarily taped together, checking folds.



Notice panel form, and general hull shape.

See sketches, text and photo on next page for more taping information.



Bow seam holding tape.

I started by taping the outside of the transom panel to the side panels. This gives the hull some form. Next I taped each side panel center seam, on the outside, and finally the outside of the bow.

All seams will have at least double tape application, and some triple tape, like the bow and stern.

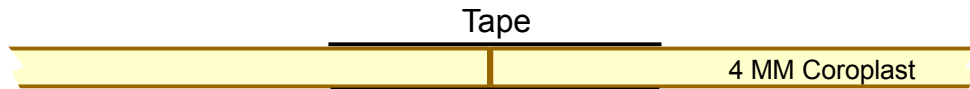


Inside bow triple taped seam.

FOLDING COROPLAST HULLS

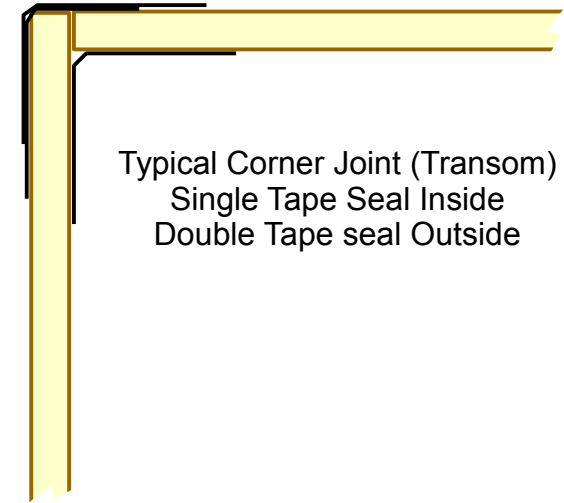
ASSEMBLY

All taped seams are described as follows: All seams have a single tape seal, spanning the gap between two panels, on both sides. Most will have an additional tape seal as reinforcement. Some, like the bow, will have a triple taped seam on the outside, for strength and durability. The simple sketches below should explain these variations. The samples are considered minimum tape requirements.



Typical Butt Joint (Side Panels)
Single Taped Seam
Inside and Outside
(actual size)

Refer to page 29 for folding corner details.



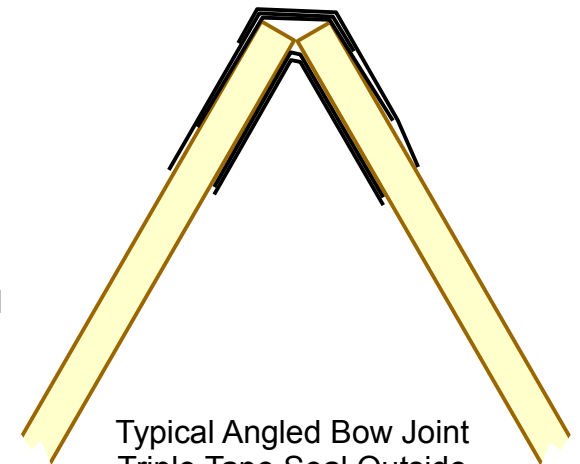
Typical Corner Joint (Transom)
Single Tape Seal Inside
Double Tape seal Outside



Basic materials and tools needed to properly mark, cut, crease, form and tape the Coroplast hull.

- *Scotch Tough Duct Tape, No Residue type.
 - *Dark Pencil
 - *Utility Knife
 - *Scissors
 - *Creasing Tool
also
- A good straightedge and a measuring tape.

All work should be performed on a clean, dry flat surface.



Typical Angled Bow Joint
Triple Tape Seal Outside
Double Seal Inside

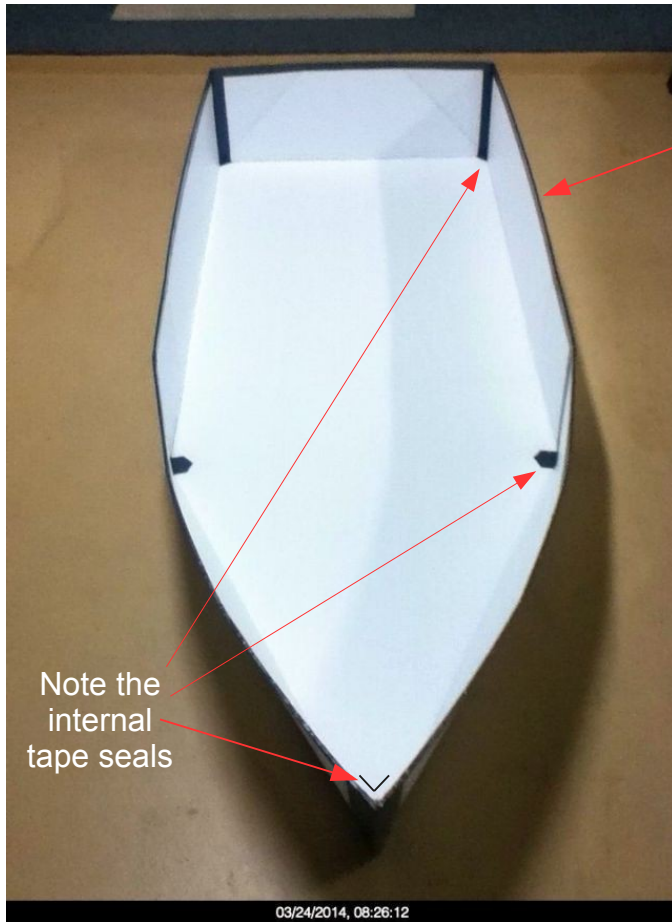
Basic Hull List of Materials (as of 6/2014)

4'x8' Coroplast, 4 MM (any color)	\$ 25
Roll of Scotch Tough Duct Tape, No Residue	\$ 10
4'x4' ACX Plywood, 1/4 inch (6 MM) thick	\$ 12
5' x 9' Poly-Tarp material	\$ 6
Paint or Varnish for wood items	\$ 9
1 x 2 x 8' Framing Lumber (4)	\$ 8
Approx. Total =	\$ 70

'Coroplast' can be purchased at your local Sign Company.

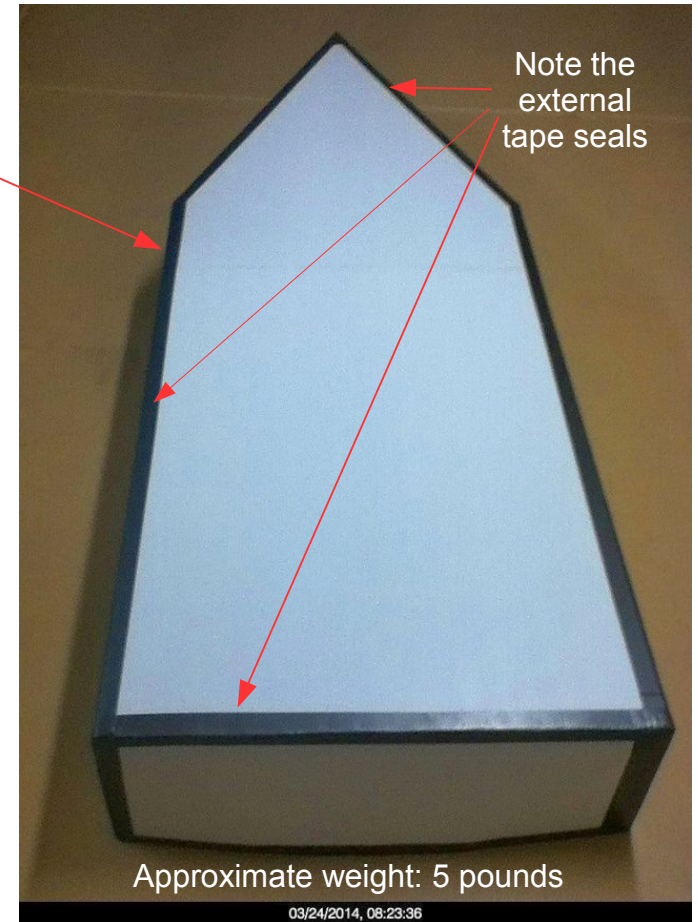
FOLDING COROPLAST HULLS

ASSEMBLY

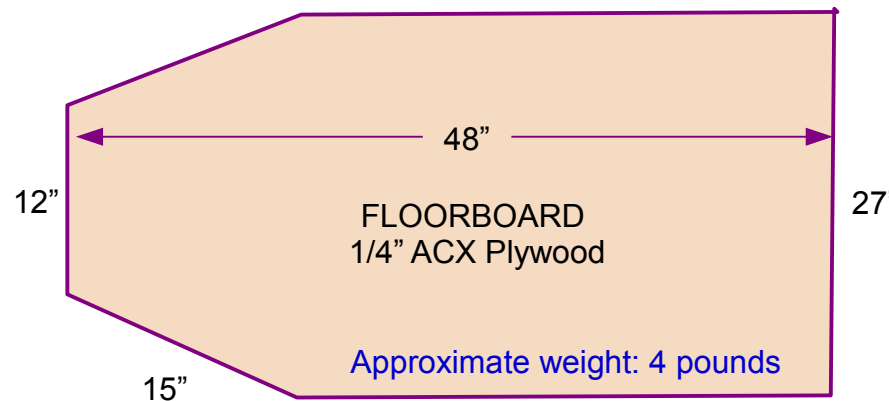


It is important that all seams and edges be taped. This includes the top edges of the side panels, as shown at left, and all the bottom seams and edges, as shown at right. The tape not only seals cut edges, but it protects the outside corners from minor abrasion. Remember, if a taped edge gets damaged or the tape is compromised, it is easy to remove and replace the damaged area with fresh tape. I always carry a partial roll in the boat with me, just as a precaution.

As you can see, this completes the basic hull assembly. **Do not step in it** until you have the 1/4" plywood floor inserted, and then only on the floor. At this point the hull should weigh under 5 pounds ! And, it is somewhat flimsy, with little torsional rigidity. This will improve once the floor is in place, and the bulkhead, poly-deck and transom are in place.



Depending on how you use the Skiff, paddle or trolling motor, determines where you place the Floorboard in the hull. The seat should be placed to the back of the floorboard, with plenty of room for your feet to rest on the plywood. Move it back and forth, until you find the right balancing location, where the hull is level in the water. Mark it's location on the hull, so you remember where to place it next time.



Round and sand all corners and edges. Complete with a waterproof finish, with a color of your choice.

See page 27 for larger floorboard

FOLDING COROPLAST HULLS

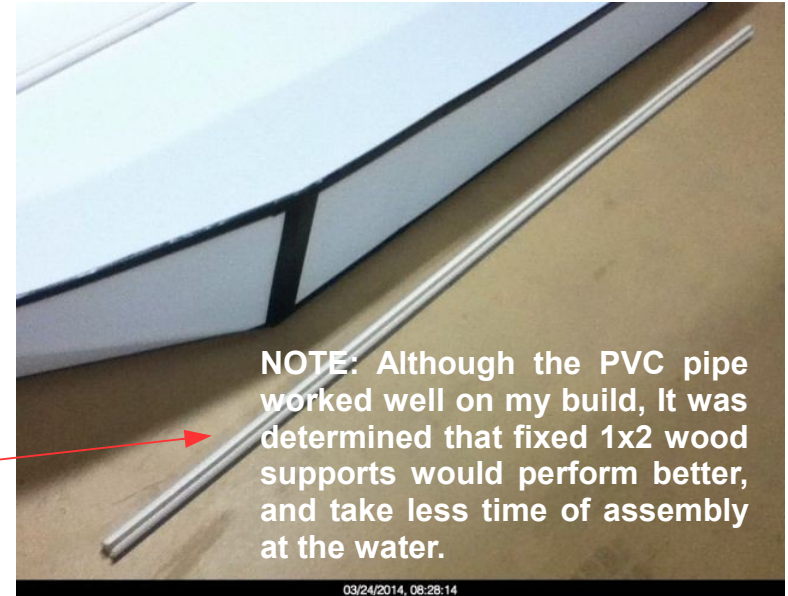
ASSEMBLY

The next step is to construct the 2 side supports. Depending on the hull chosen, these can be made of either 1x2 Lumber, for the KAYAK, PRAM and JON BOAT, or 1" O.D. PVC water pipe, for the SKIFF. The primary difference is that the first 3 hulls all have straight gunwales (top of the side panels). The Skiff has a curved gunwale, requiring a material that can bend to conform, which the PVC Pipe does.

If you use the 1x2 lumber, each side will need to be about 4-1/2 feet long, with bolt holes about 1-1/2" from each end. The purpose of these supports is to hold the side panels together, bolted through, and to provide side stiffness. Refer to pages 1, 3, 4 & 5 for visual information.

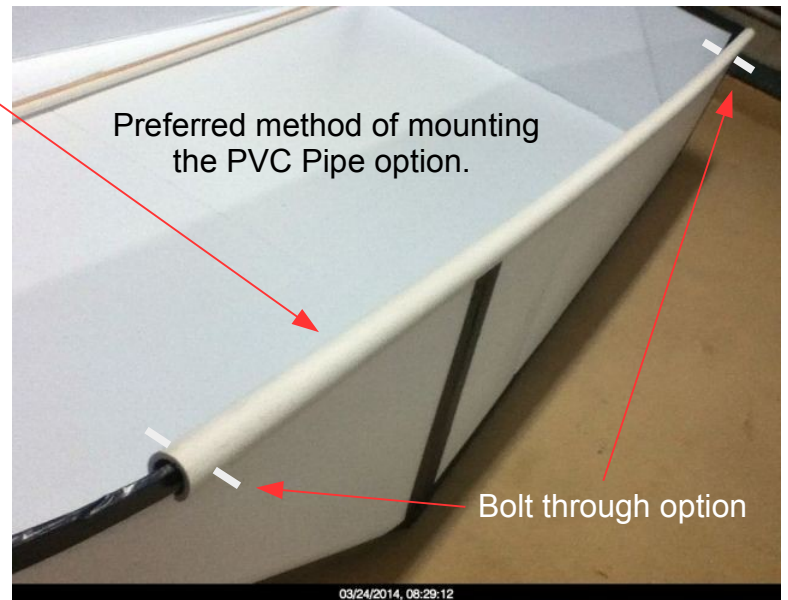
The SKIFF supports need to be 5 feet long, which is a standard 10' pipe cut in half. The next step is to cut a 1/4" slot the entire length of the 5' pipe, as show in the photo on the right. This may not be easy. I loosely clamped the pipe to my workbench and used a thin, carbide tipped blade, in my small circular saw. Two passes and the slot was cut. This could also be cut using a 1/4" router bit, but the setup would be more complicated.

Once the slots are cut, file the slot edges smooth, so they do not upset the taped edged of the side panels. Next, starting at the transom end, press the support onto the side panel as shown at right. Note how the side panel bows out as the support is pressed in position. This will be amplified once the forward bulkhead is in place. These can be bolted in place, just like the 1x2's. I chose to also hold them down with small top extensions to the Transom and Bulkhead assemblies. See photos below for detail.

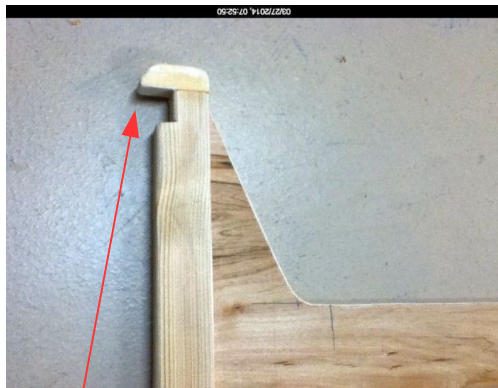


PVC Pipe Side Supports.

1x2 Lumber on outside is an option.



Bolt-through is best for hull security.



Bulkhead Extension Option

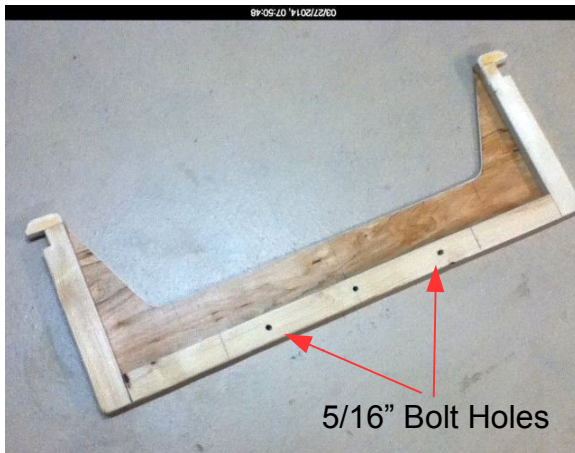
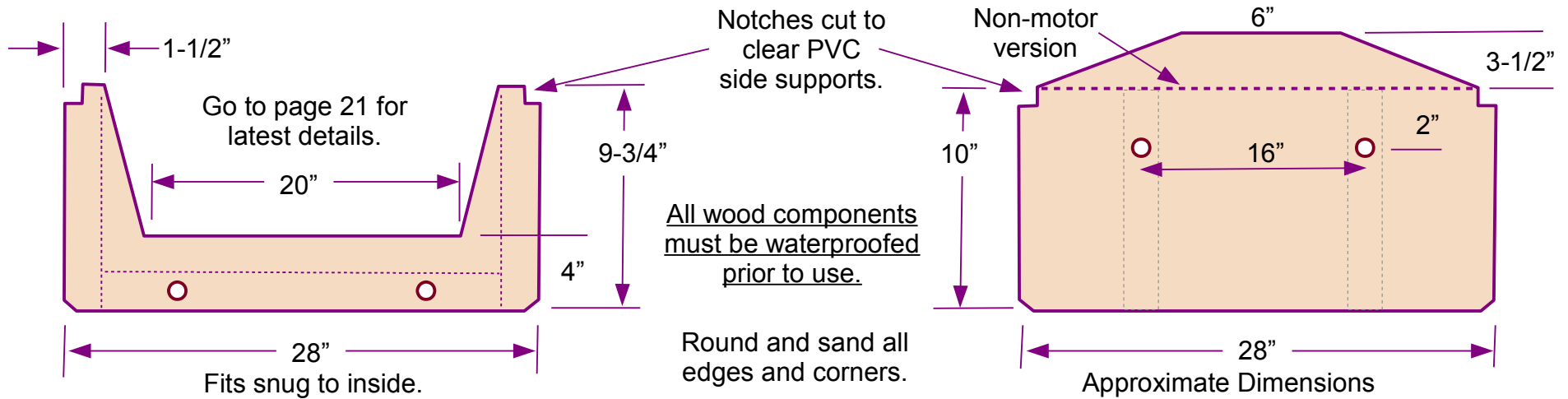


Transom Extension Option

FOLDING COROPLAST HULLS

ASSEMBLY

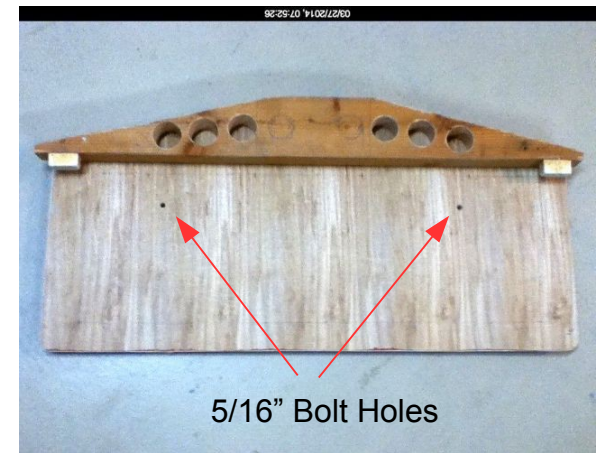
The Bulkhead and Transom both can be made from 5 or 6 MM plywood, with 1x2 side supports, as shown in photos. The transom needs a 2x4 top support, only if you are going to use a Trolling Motor for propulsion. Below are the basic sketches of each.



Bulkhead with 1x2 supports
Approximate weight: 2 pounds



Transom (back) with 1x2 vertical supports spaced 16" apart

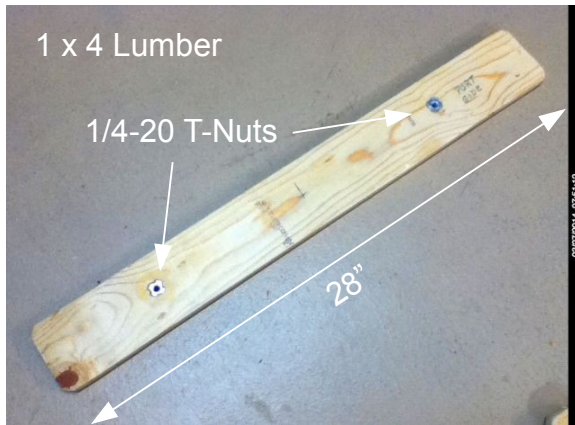


Transom (inside) with 2x4 motor mount.
Approximate weight: 3 pounds

NOTE: The photos show that there is a lot of individual options in constructing these components. The Transom is held in place, on the outside of the hull, by through bolting it to an internal 1x4 Support Bar (see next page). The Bulkhead is bolted to the lower front of the folding seat, for a fixed location and rigidity. If you use a different seat you should bolt the Bulkhead to the top of the hull side panels, once you determine the best balance location. This is a trial and error process, based on your weight and position in the boat. The important thing is to provide torsional and side panel rigidity for the hull. The Coroplast material is very flexible, and must be supported, as shown, with the addition of a rigid floorboard and side panel supports.

FOLDING COROPLAST HULLS

ASSEMBLY



Transom Internal Support Bar
T-Nuts spaced 16" apart, on center.

The Transom Support Bar serves two purposes; It adds necessary form to the rear panel when used as a paddle boat, and clamps the transom when used as a motor boat.

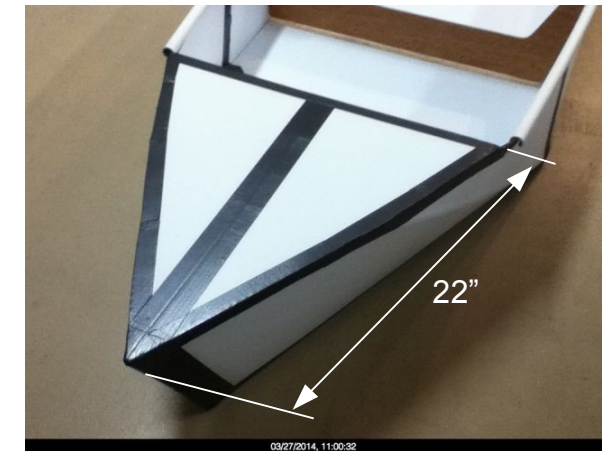
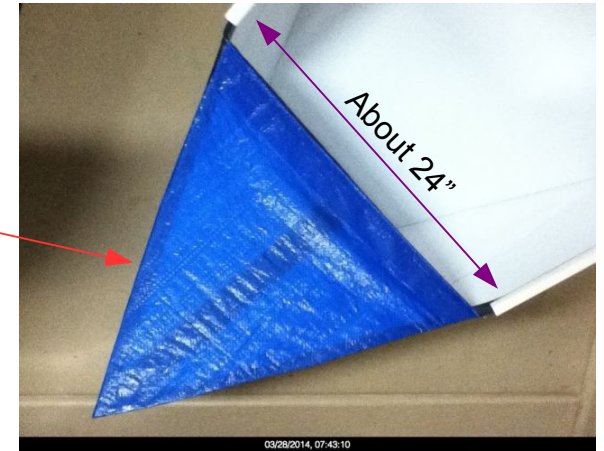
The drilling of the bolt holes in the support bar and transom should be done at the same time, for proper alignment. The T-Nuts should be glued in place, on the side of the support bar facing inside the hull.



There are options when enclosing the ends of the hull. However, for the Kayak, Pram and Jon Boat, it is necessary to use the Poly-Tarp material, as shown at right, because it is very flexible and will fold-in when the hull is stored. It is important that it be pulled tight to the spacer bar, and taped in place, to maintain the hull shape. The dimensions are approximate, as you can modify to suite your needs. BUT remember, the need for the cover is critical to maintain hull shape and stiffness.

The bow Foredeck for the SKIFF can be made of the same material, or can be constructed from the 2 scrap pieces left over from cutting the bow shape, page 5. Tape them together, and cut to size, as shown at right, and below. Make sure you tape the corners to the hull panels very securely, as they will take a lot of stress under use. It bears repeating; too much tape is better than too little tape !

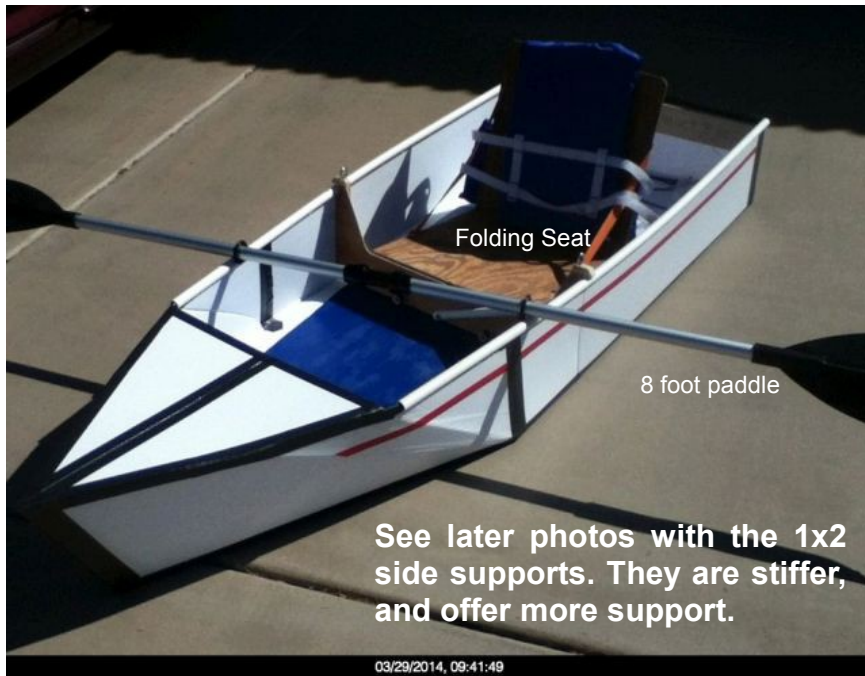
Approximate finished weight: less than 15 pounds. Includes floorboard and seat.



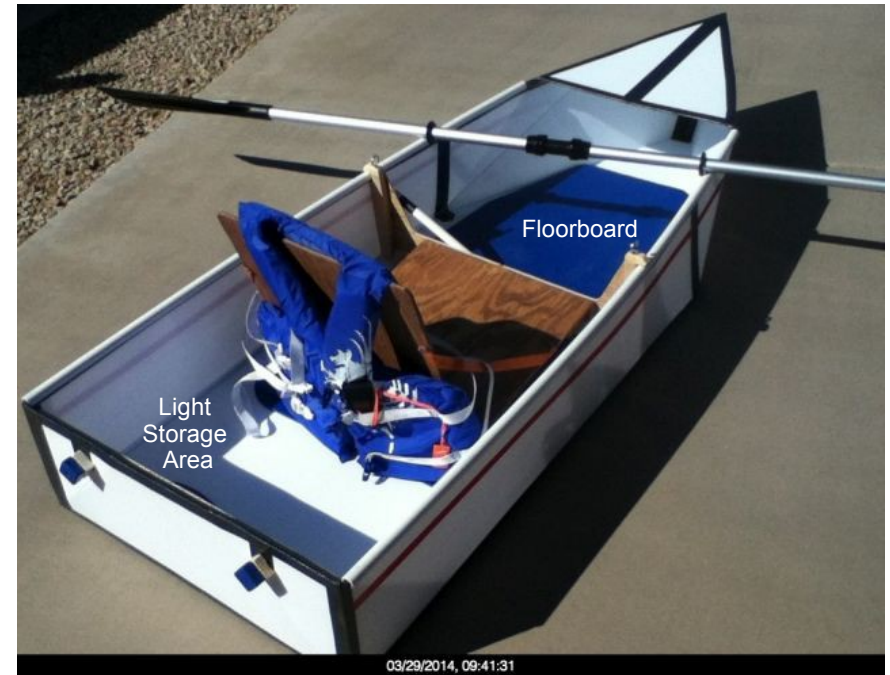
FOLDING COROPLAST HULLS

ASSEMBLY

FULLY ASSEMBLED, PADDLE VERSION



VIEW FROM AFT , SEATING AND LEG ROOM

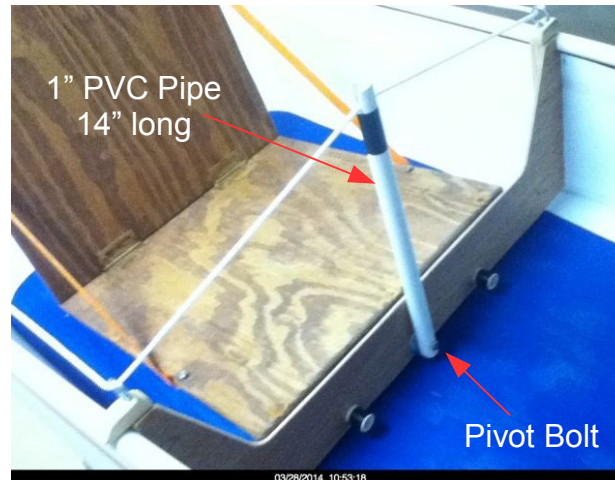


ROPE STEERING, TROLLING MOTOR POWERED

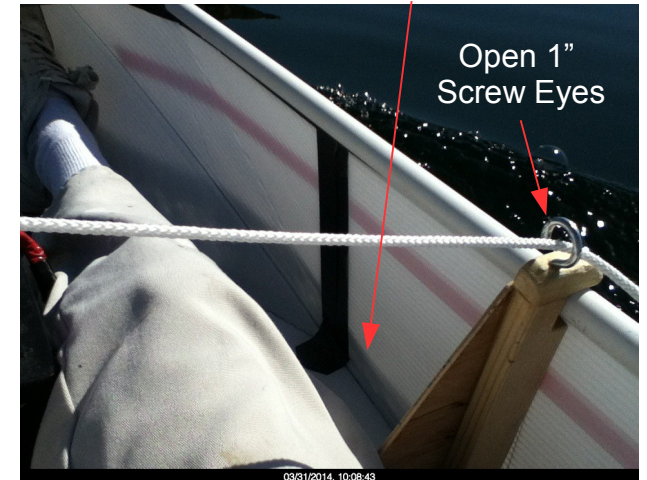
1/4" Nylon Rope, from Motor to Tiller



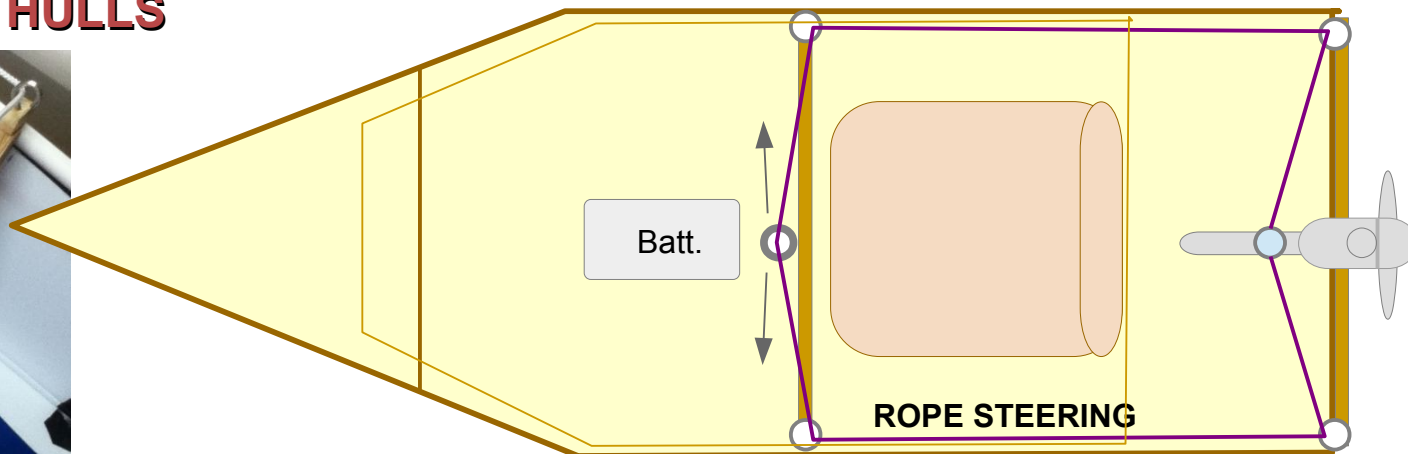
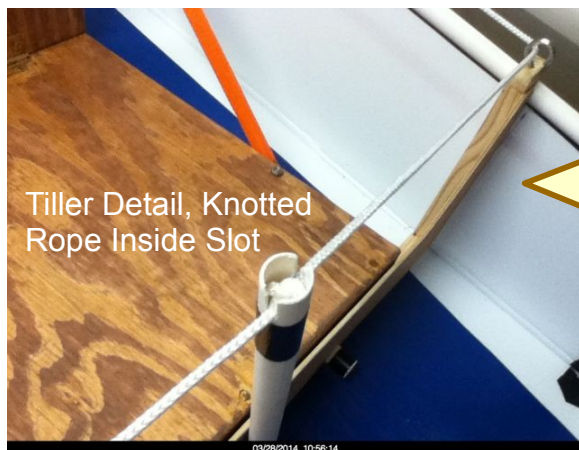
Detail of Tiller Assembly



Under Power, Note Low Waterline



FOLDING COROPLAST HULLS



These Coroplast Hulls are the latest designs utilizing this tough material. All are constructed in much the same way. Each has its attributes, and faults, but all are durable, safe, and fun to build and operate. Depending on the builder's needs, changes to the internal layout, seating and steering can be modified to suite. The in-water performance is stable and comfortable, with a maximum speed of about 4 mph under power. Keep the seating low in the hull for best balance and stability. The paddle versions will wander slightly from side to side, but within reason. Pay attention to the maximum load capacities, and do not overload the hull, as it could deform. Taped seams should be checked each time the boat is used, for safety. It is relatively easy to replace torn or worn tape, and should be done when noticed. Always carry some spare tape with you in the boat. And always wear a PFD when in the boat, and promote on-water safety. Happy Boating !

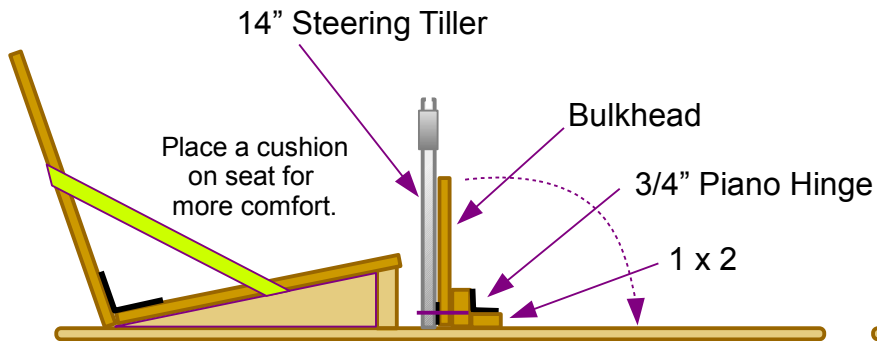
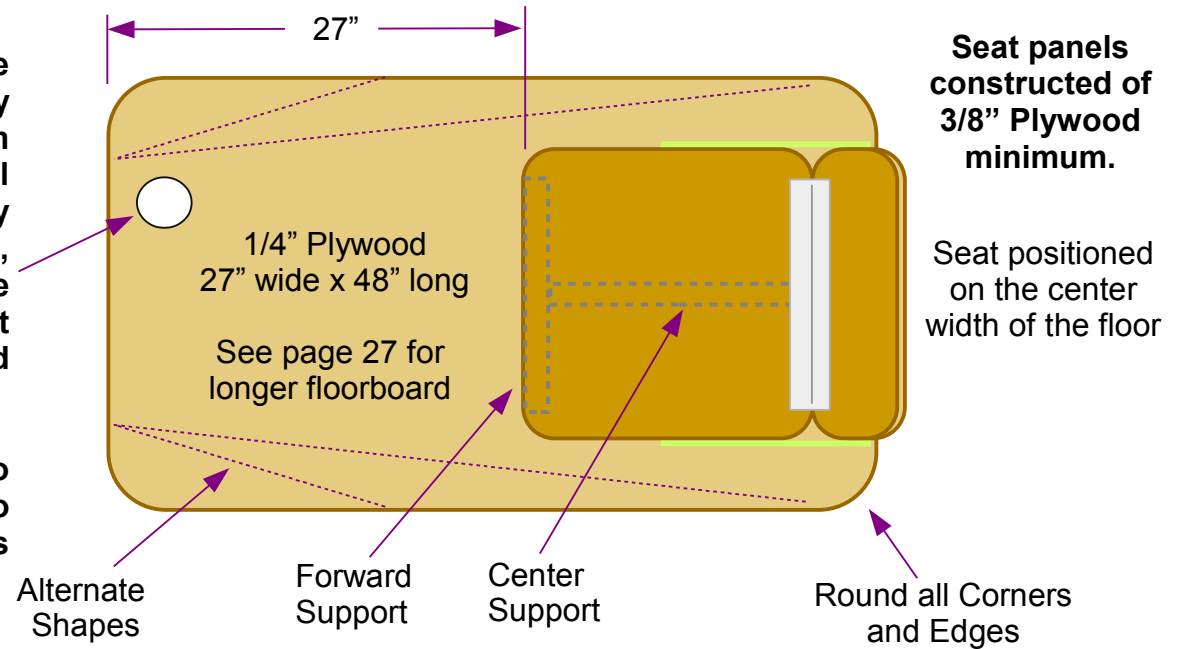
FOLDING COROPLAST HULLS

MODIFICATIONS

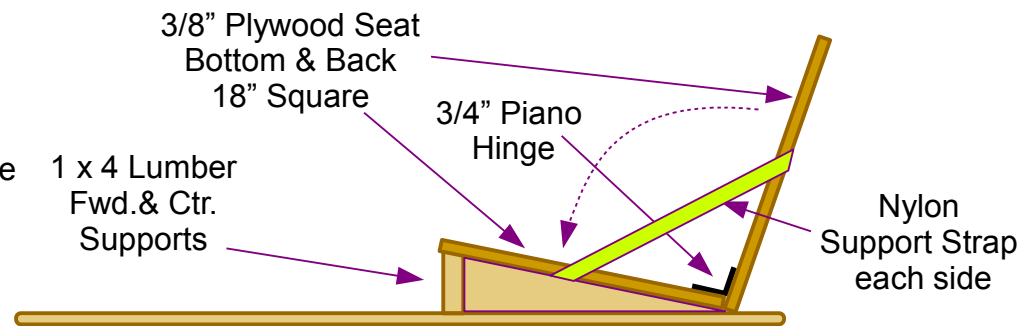
In an attempt to “keep things simple”, I have re-designed the interior of the hulls, to include a unified floor, seat and bulkhead assembly. This will keep weight down, lessens the number of components to assemble, and insure hull safety and rigidity. The outline shape of the floorboard is different for each design, but the overall functional concept is the same. Where specified, the bulkhead must be installed for hull torsional rigidity.

These modifications are suggested to simplify the hull assembly process at the water. You may have other ideas, and you should implement them to satisfy your needs. Take care in material selection, and overall weight. For example, by adding 1x2's on each top edge of the floorboard, many lightening holes could be made in the floorboard to reduce overall weight, and yet maintain floor rigidity. The same treatment could be applied to the seat assembly.

In contrast, changes to the hull should be kept to a minimum. The only exception is if you wish to fold some of the seams, rather than cut them, as described.



The Bulkhead assembly / Steering assembly should be placed just forward of the Seat assembly, as shown. Secure the Piano Style Hinge to a 1x2 mounted on the floorboard, as shown, using 3/4" flat head screws.

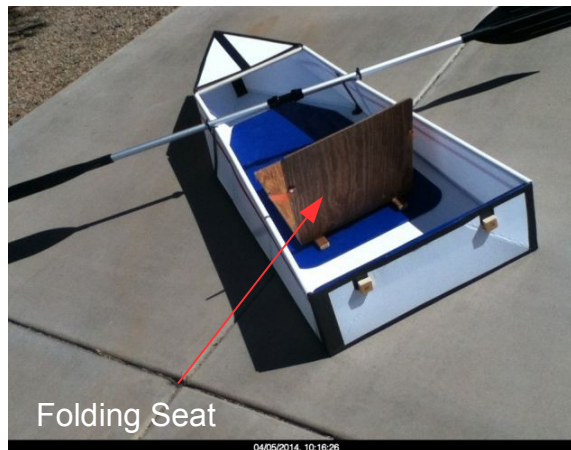
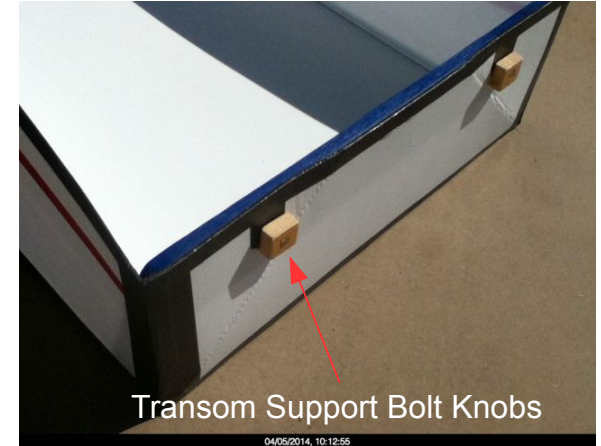
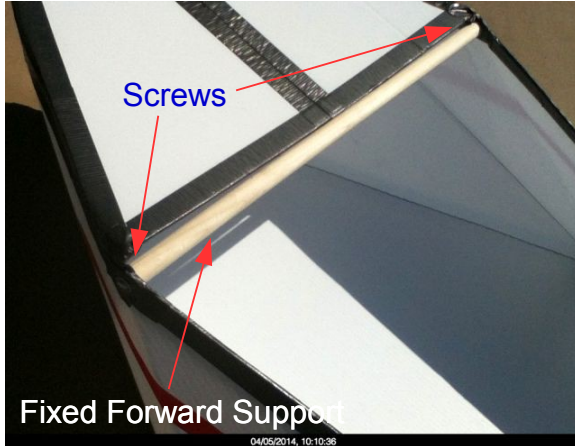


Glue & screw the Forward and Center supports in place. Glue & screw the Seat Bottom to the supports, and the rear edge flush to the floor, as shown. The Back of the Seat should be hinged to the Seat Bottom, and should touch the floorboard when in the open position, as shown.

To insure the hull is properly balanced on the water (level) when occupied, it may be necessary to move the whole floorboard assembly forward, or backward. Make sure the front of the floorboard will not interfere with the insides of the hull, so cut to fit..

FOLDING COROPLAST HULLS

ADDITIONAL PHOTOS



ASSEMBLY KNOBS

This drawing defines a typical assembly bolt-knob, usually used to connect 2 hull modules together. However, variations of this design are also commonly used to clamp sub-assemblies together, such as the Transom Support Bar to Motor Mount, and Side Support Bars to Hull. For those applications, the bolt size should be 1/4-20 thread, about 2-1/2 inches long, and the Knob should be 1-1/2 inches square, still made from the same 1 x 2 stock. The center hole size should be 1/4" dia., and the 3/8" deep hole should be 9/16" in diameter.

Use this type of bolt-knob for all component to component assemblies.

ASSEMBLY BOLT - CUSTOM KNOB

1. Cut knob to 4 inch length
2. Drill 3/8" dia. hole in center
3. Drill 5/8" dia. hole 3/8" deep
4. Insert bolt into knob halfway
5. Apply quick cure epoxy to bolt shaft and head (not threads)
6. Press the bolt all the way into the knob
7. Remove excess epoxy
8. Allow to cure.
9. Paint knob color of choice

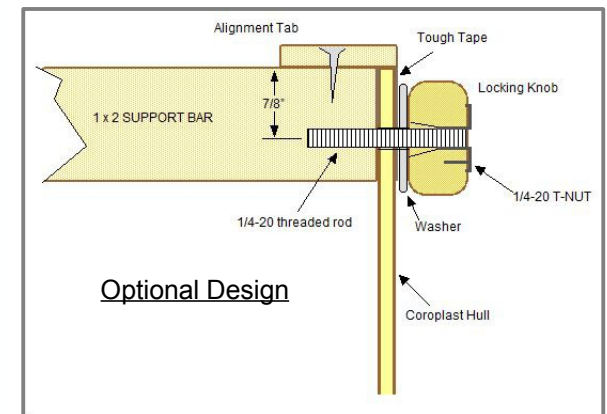
Knob Parts

Completed Knob

Epoxy washer to knob

The sketch below is one method of attaching the side-to-side Spacer Bars to the Coroplast hull side panels. These bars provide hull rigidity, and must be secured in position well. The little alignment tab can be eliminated, as it might interfere with the Tarp cover.

You can modify this design to suite your needs, but make sure you have a tight connection.



FOLDING COROPLAST HULLS

ADDITIONAL PHOTOS



These photos shows the revised position of the rope steering screw-eye on the bulkhead. By moving it inward keeps it out of harms way, and makes it easier to paddle the boat without the paddle hitting it accidentally.
NOTE: All 4 screw-eyes should be opened up to allow the 1/4" rope to be inserted. Use 2 vice grips to perform this operation, and file smooth any ridges created.

It is important that the optional motor be situated on the center of the transom motor mount as shown, for balance and easy steering. I created a double loop wire ring, made out of a wire hanger, around the motor steering shaft, on which to attach the rope steering. The ends of the rope should be knotted to a spring clip for easy assembly, and dis-assembly, shown below.



See page 22 for revised side clamp.



Any type of spring clip will do.

FOLDING COROPLAST HULLS

ADDITIONAL PHOTOS

After a few voyages with the SKIFF, I realized that it was a better power boat than a paddle boat, no surprise. The slightly higher side panels, which provide good freeboard for a loaded hull, were not as friendly when paddling, as it was necessary to hold the paddles higher to prevent them from hitting the PVC side supports. This being said, the boat still made good forward progress, although a bit uncomfortable. As a consequence, I have made the paddle versions of these hulls 9 inches high, which also provides a little more buoyancy. The KAYAK and JON BOAT should both be comfortable paddlers.



Clamp in lowered position



Clamp secured over the pipe



Low profile paddle clearance

You will note that I modified the method of clamping the PVC side rails in place. The new method lowers the profile of the bulkhead assembly, thereby allowing more comfortable paddle position. The new pivoting wire clamps were made from bending heavy-duty coat hanger wire to shape, and do a good job of snapping over the PVC pipe, and holding it in place.

Use your imagination to create a secure method of insuring the PVC side supports do not come loose during use.

Note: Some of the photos are out of date. Refer to the improved 1x2 side supports.



Back on land after more in-water testing for stability and balance.

These hulls can, and should, be modified to suite your boating style. However, do not make radical changes to the basic hull shape. Remember, the Coroplast material is tough, but flimsy, so pay particular attention to making sure the assembled structure is as rigid as can be, and that all the components are well secured together. You do not want this to un-fold while in the water. Always check the tape seals before, during and after a cruise, and repair as necessary. Happy Boating !



Assembled Skiff fits in my PT Cruiser with passenger seat folded down.

FOLDING COROPLAST HULLS ADDITIONAL ON-WATER PHOTOS



FOLDING COROPLAST HULLS

ADDITIONAL PHOTOS



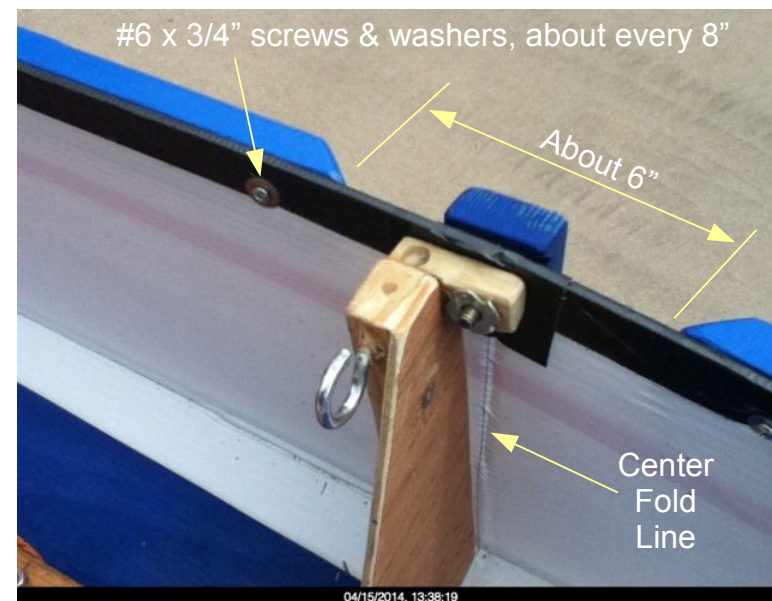
These photos show the detail of the 1x2 side supports. I would suggest the use of these 1x2's for most applications. They are removable for all versions. They can be permanently mounted, as shown, for the SKIFF design only, because it does not fold flat like the others. A 6" gap between the forward supports and the rear supports is required at the fold line.



Further, by attaching the center bulkhead to the side panels, eliminates the need for additional support. A horizontal 1x1, 2 inches long was glued and screwed to the cutout at the top of the bulkhead, as shown below. A 1/4" T-Nut was installed inside, and 2 new Bolt-Knobs were made to clamp it all together, through the tape reinforced side panels. Using this method provides good side support and rigidity, while allowing some flex at the center fold line, necessary for folding, storage and transport. Note: For the versions that utilize the full length removable side supports, no bulkhead is used, or required, only the spacer bars.



I have found that the bulkhead positioned at the center fold line, is the best location for hull balance. You may have to shift your seat, depending on your weight, fore or aft a little for final trim. It varies if you are motoring, or just paddling. But, it is important to balance the boat level for best performance !



FOLDING COROPLAST HULLS

OPTIONAL CANOPY

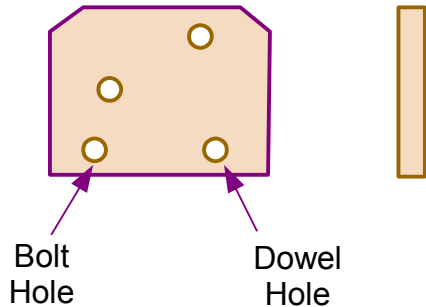
See photos next page

Can be made larger or longer, depending on your needs. Keep the material selection simple and lightweight.

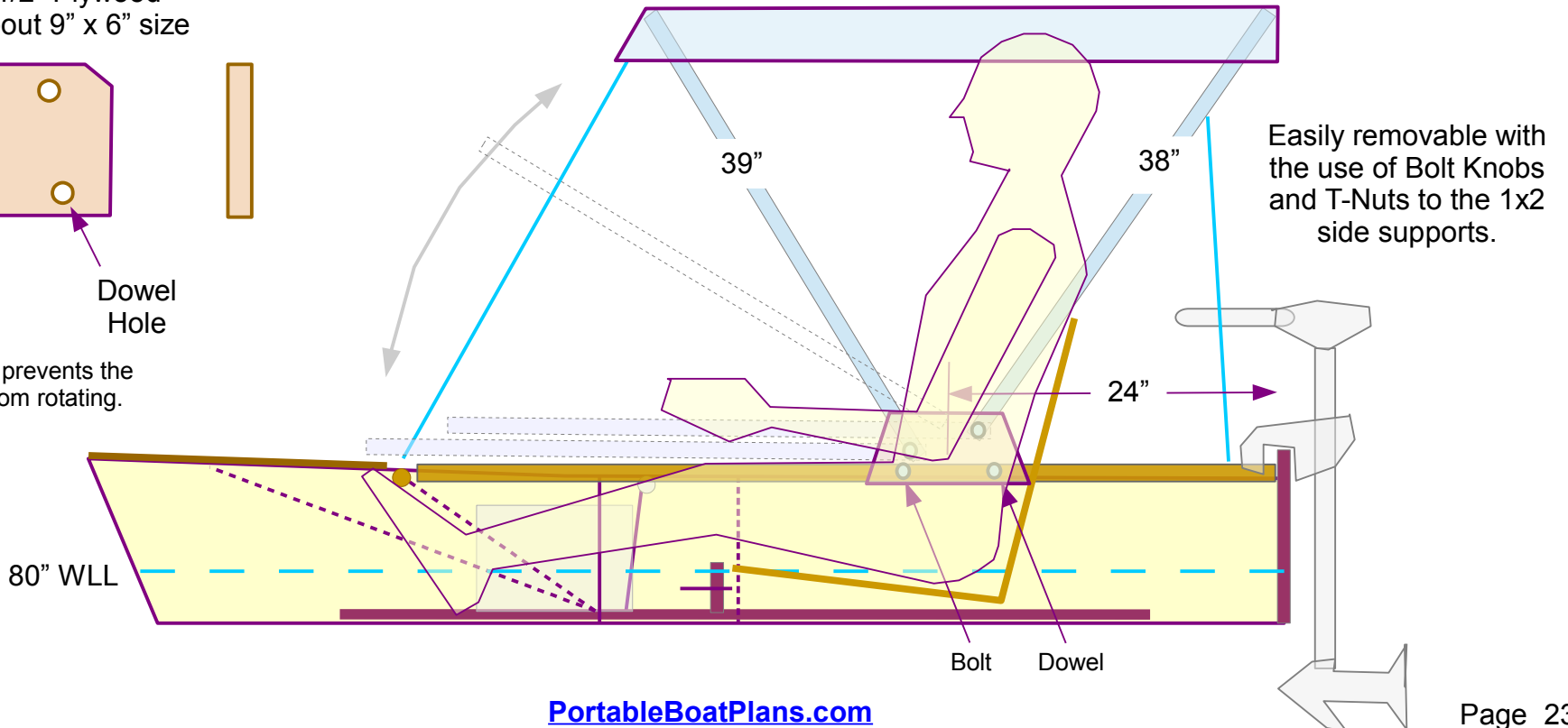


Canopy Bow Supports (2)

1/2" Plywood
About 9" x 6" size



The dowel prevents the support from rotating.



FOLDING COROPLAST HULLS

OPTIONAL CANOPY



Canopy collapsed forward



Canopy fully erected

This is but one of many designs possible. The actual size and support method is dependent on your specific needs. The cost of this design is less than \$12, using 3/4" thin wall PVC pipe and a low cost tarp material.



Bungee
Cord Hold
Downs

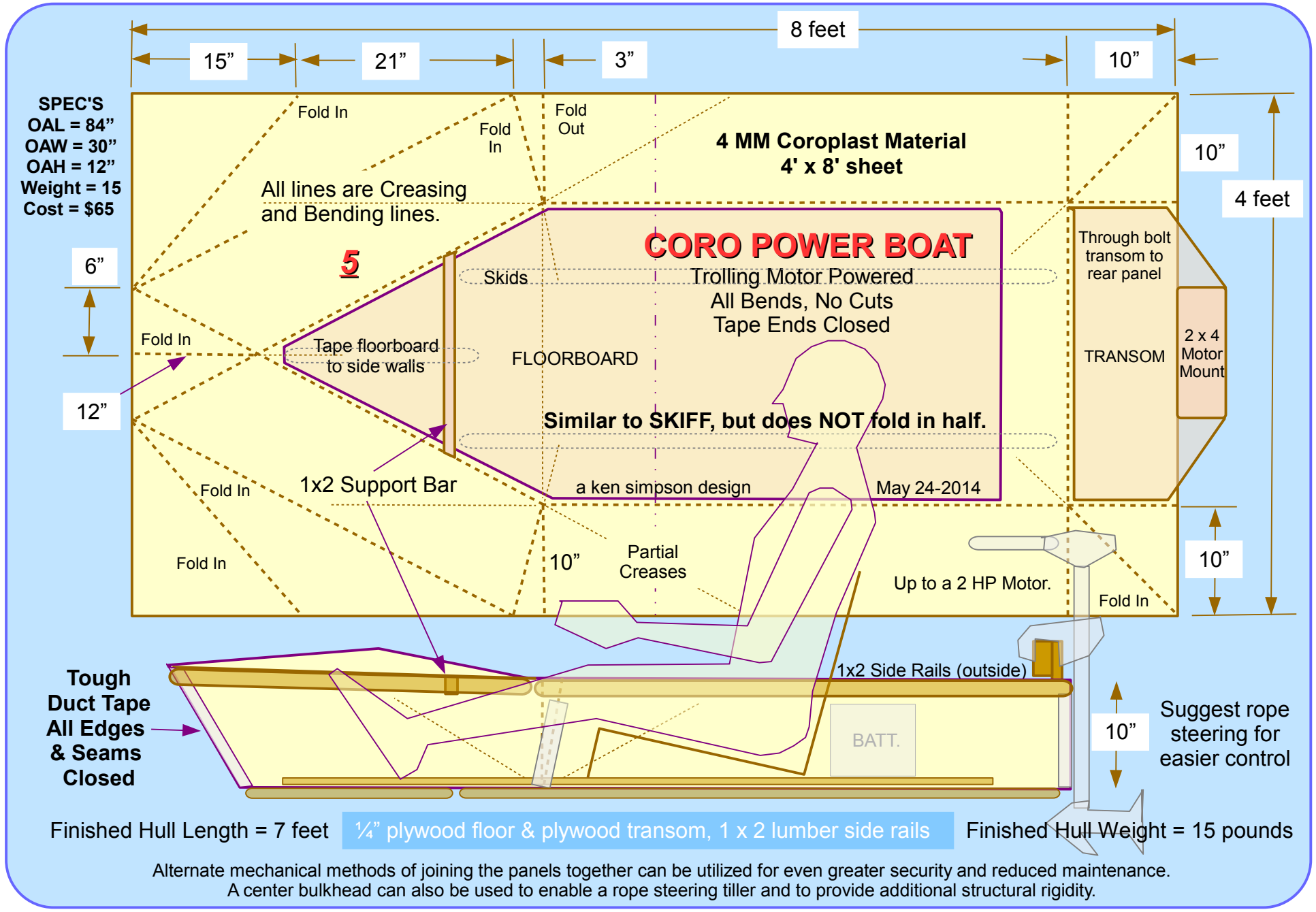
Nylon Cord
Forward
Stay

Canopy support detail



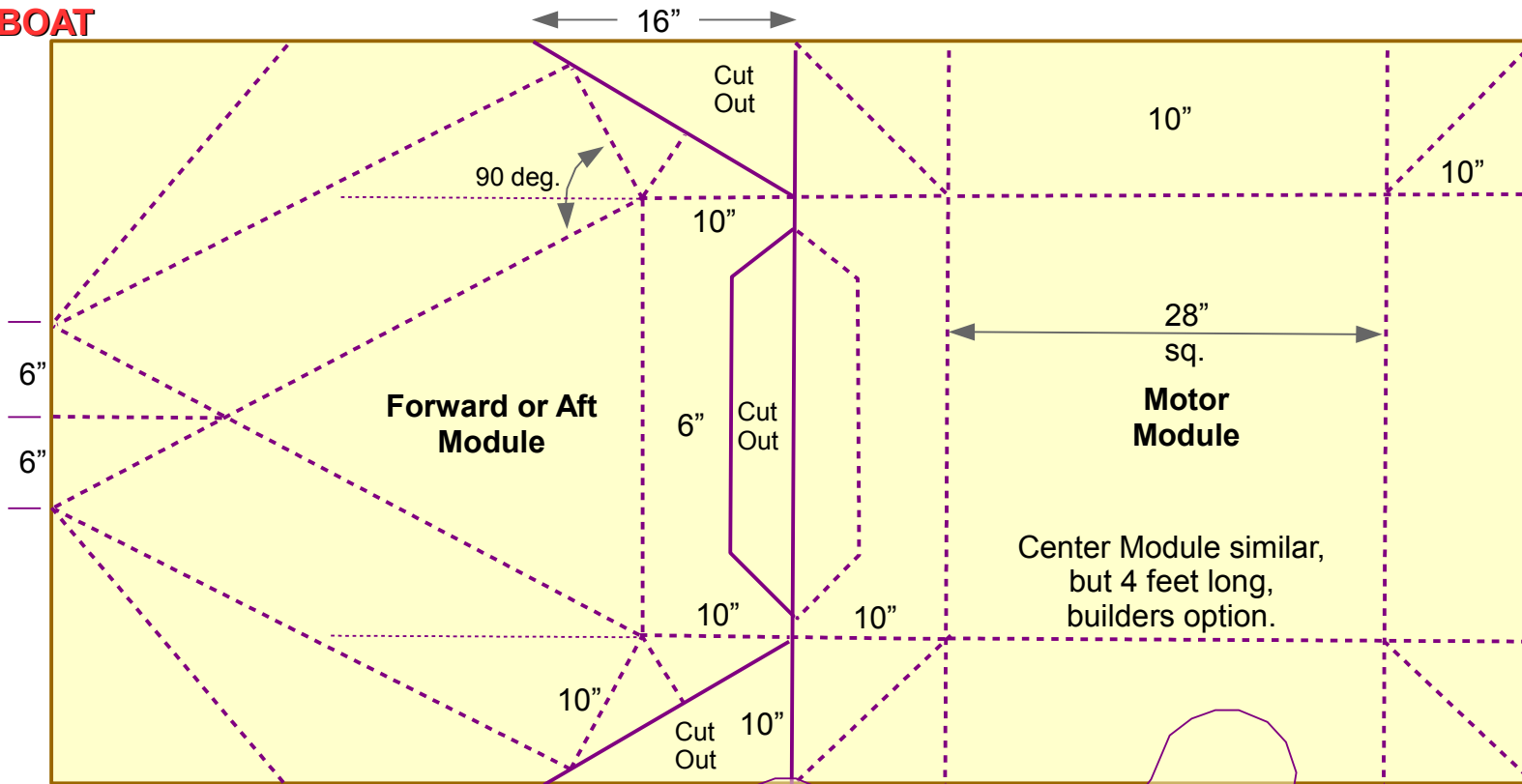
Canopy top taped to frame

This is a Non-Fold-Up design. It should fit in all Trucks and SUV's, and some hatchbacks, like my PT Cruiser.



Alternate mechanical methods of joining the panels together can be utilized for even greater security and reduced maintenance. A center bulkhead can also be used to enable a rope steering tiller and to provide additional structural rigidity.

CORO BOAT



Requires 2 sheets of 4mmCoroplast

Constructed similar to the Power Boat.

15" 48" This module is for the Elongated or Canoe hulls.

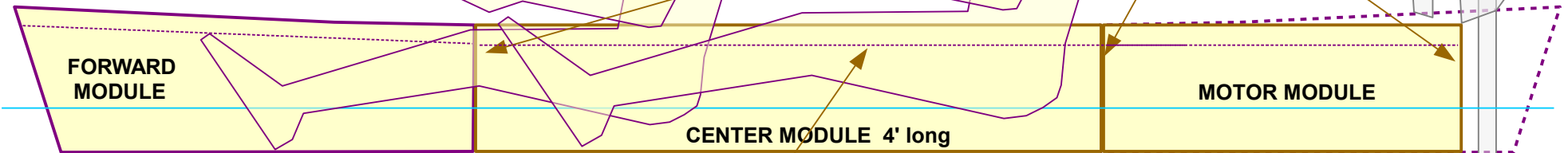
ELONGATED CORO BOAT

2 Occupants
OAL = 10 feet

Tape floorboard to side panels.

1/2 inch Plywood Bulkheads used to reinforce bolt together assembly.

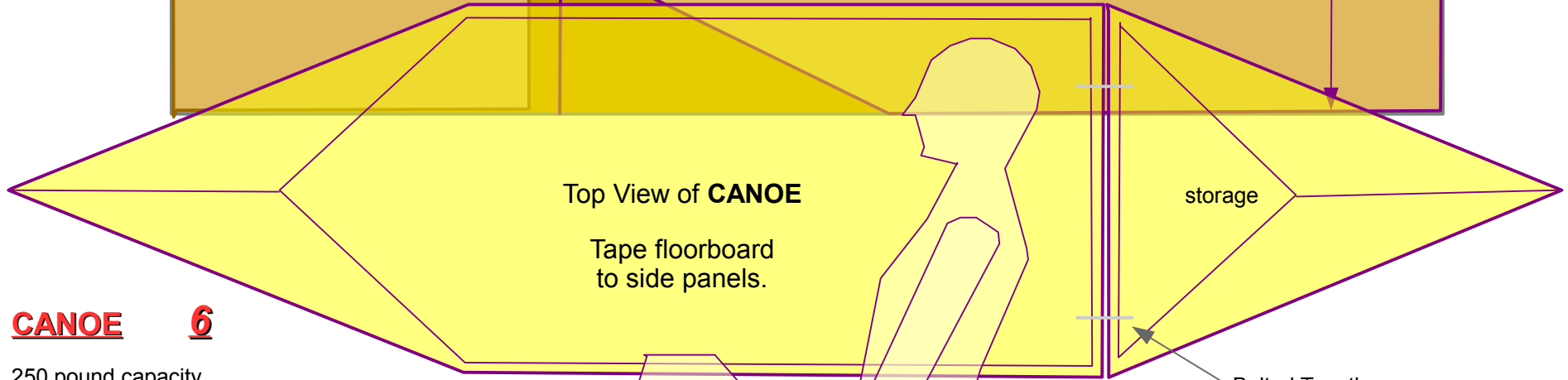
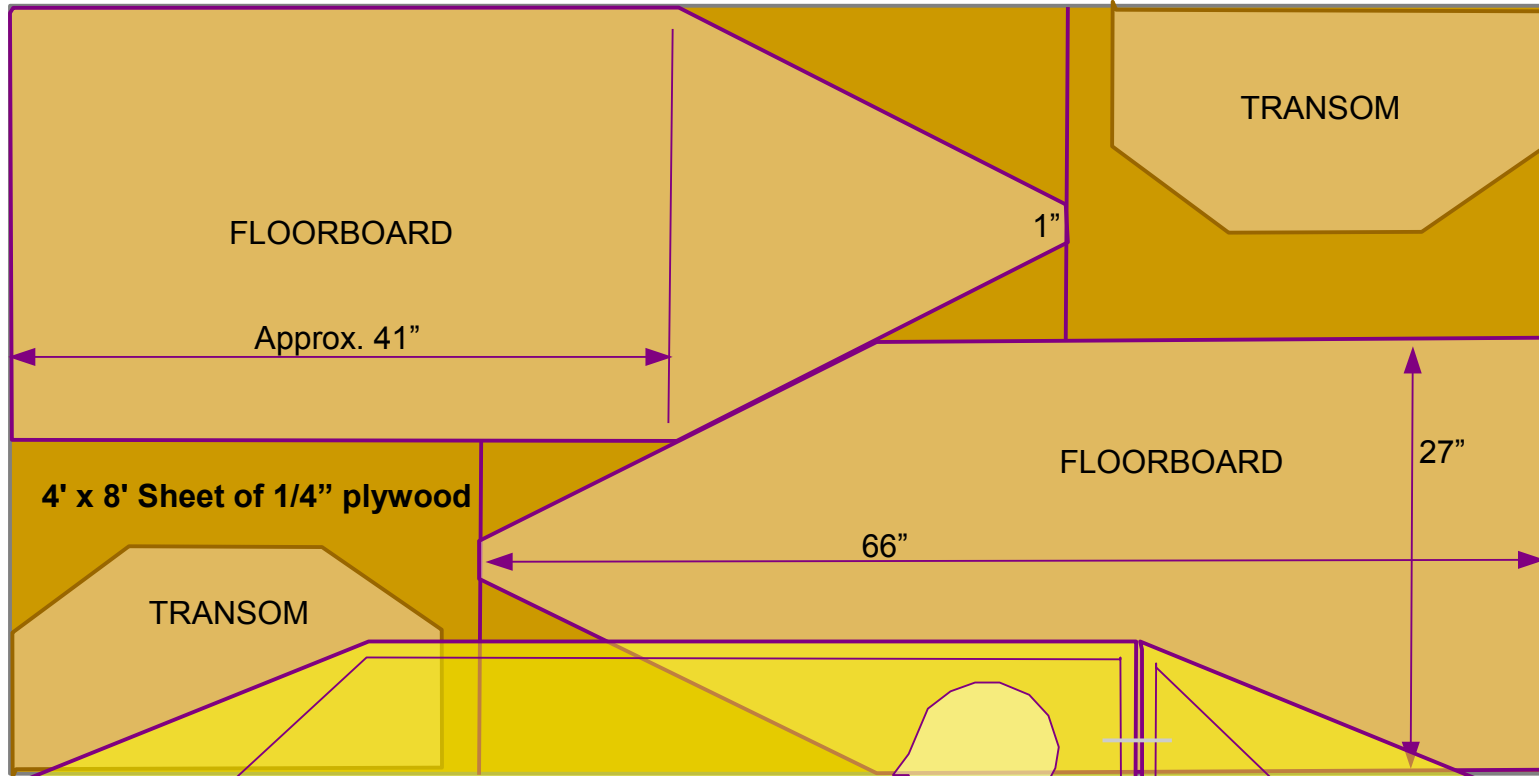
Plywood Transom



NOT TO SCALE

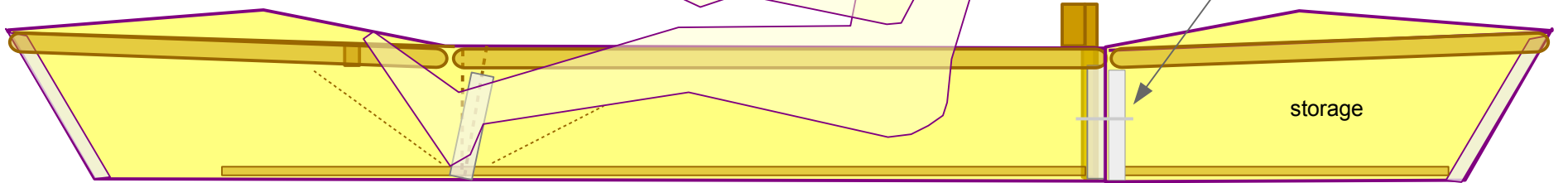
1 x 2 rubrails on all modules

**Method of getting two (2) same size Long Floorboards &
Transoms out of one (1) sheet of 1/4" 4 x 8 plywood.**



CANOE 6

250 pound capacity



Standard Coro Power Boat

2 Module, 9-3/4 foot long CANOE

Additional Aft Module (P 26)

CORO POWER-SAILBOAT

Apply forward stops for Leeboards, and kick-up bungee for Rudder

I would prefer a slightly larger sail, 6 x 8, but this is about all you can get with an 8' mast.

6' x 6' SAIL

Note: the center of the Leeboards should be slightly ahead of the CP of the sail, for good tracking.

8' PVC Pipe
1-1/2" Dia.
MAST

CP

CP = Center of Pressure

Bond floorboard to bottom & side panels.
(see page 30)

Plywood Deck Support

Consider rope or offset rudder for steering .

Pivot Point

Flip-Up Tiller

15"

Leeboard Stop

Mast Step

18"

8"

18" Min.

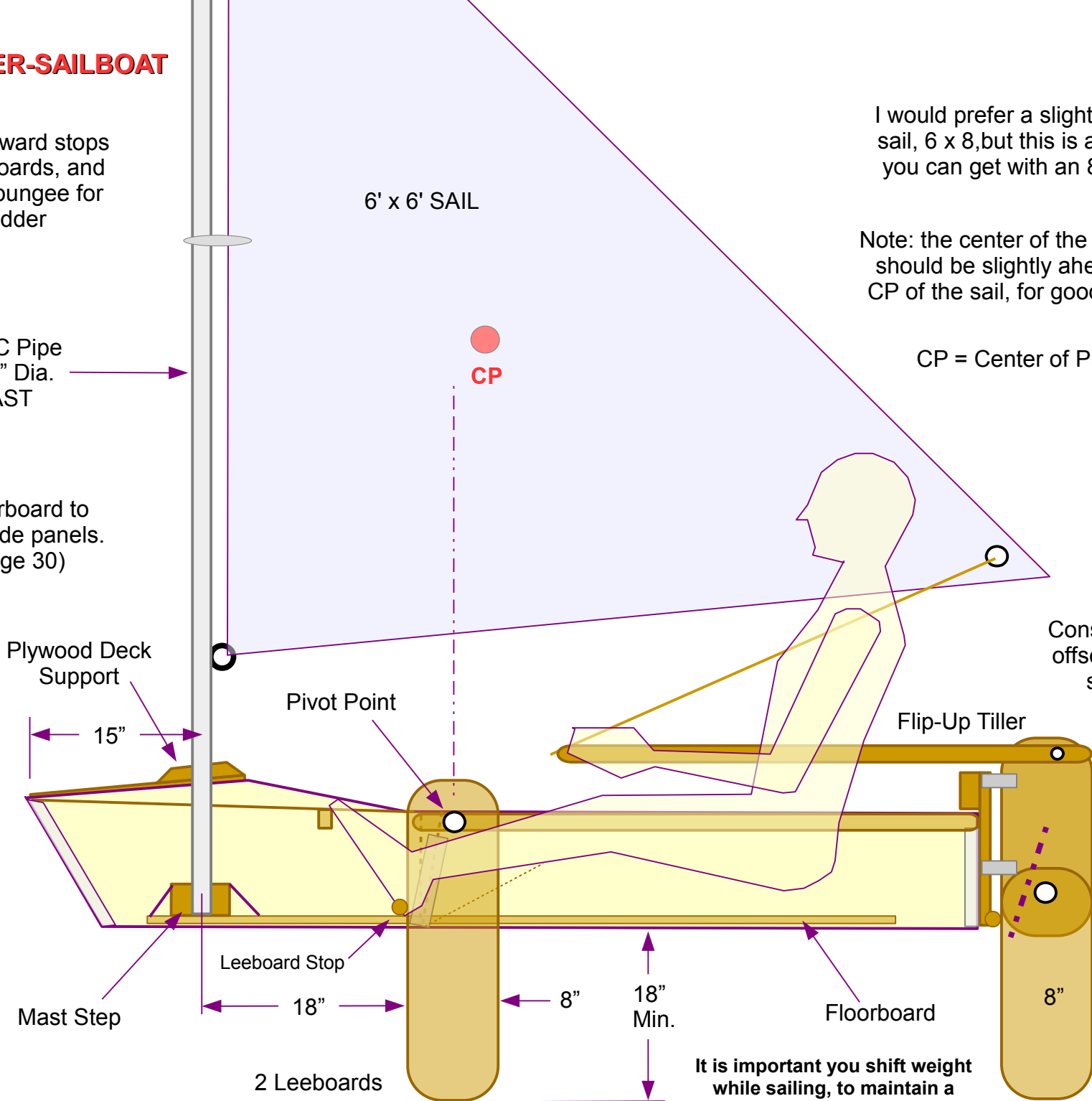
Floorboard

8"

Simple Kick-Up Rudder

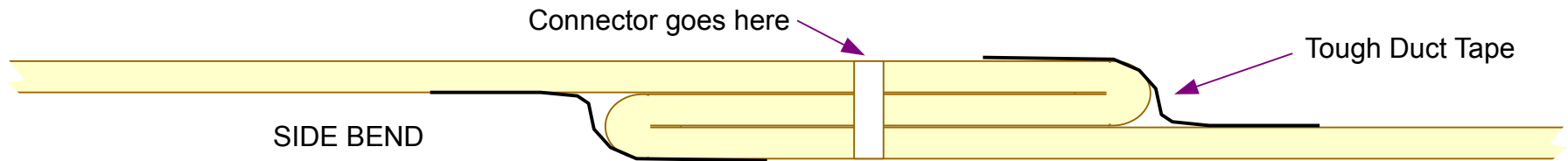
2 Leeboards

It is important you shift weight while sailing, to maintain a safe, upright condition.



CORO BOAT

These are typical double bends of the Coroplast material, found at some corners and side folds.

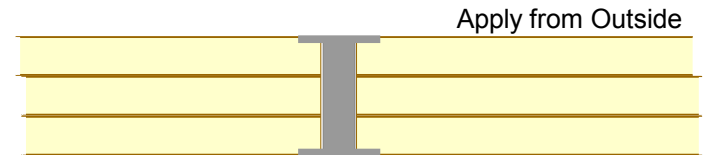


These are the most difficult bends, and require much attention. It is best to compress the bend as much as possible, to produce a sharp bend, see attached photos. In both examples, it is necessary to fasten the folded panels together, with connectors, for structural integrity. This can be done many different ways, as noted.

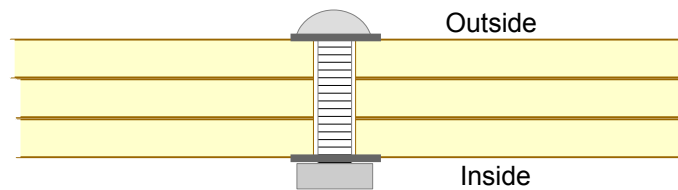
Most of the methods require the drilling of holes through the folded assembly, as shown.

The Tough Duct Tape should be applied after the panel folds are mechanically secured together.

The 3 examples shown at right are probably the most popular, but use whichever method you think will be best for your build. Do not over tighten the connectors, or over compress the layers of Coroplast, as this could cause premature material failure.

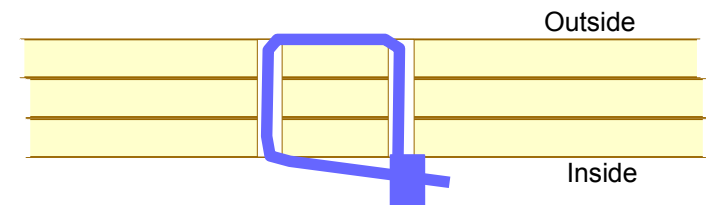


Aluminum Pop Rivet

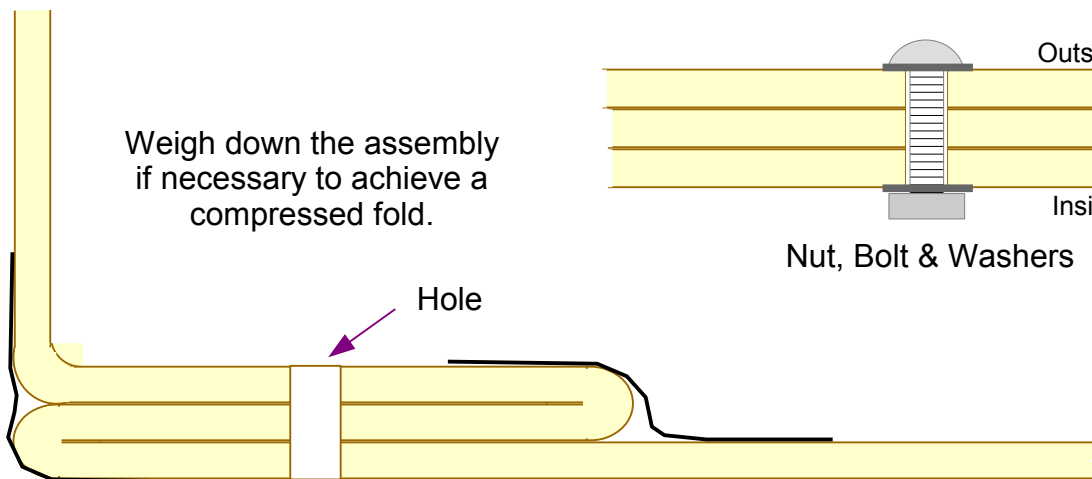


Nut, Bolt & Washers

Seal all holes with Silicone & Tough Duct Tape after assembly.



Nylon Cable Ties



CORNER BEND

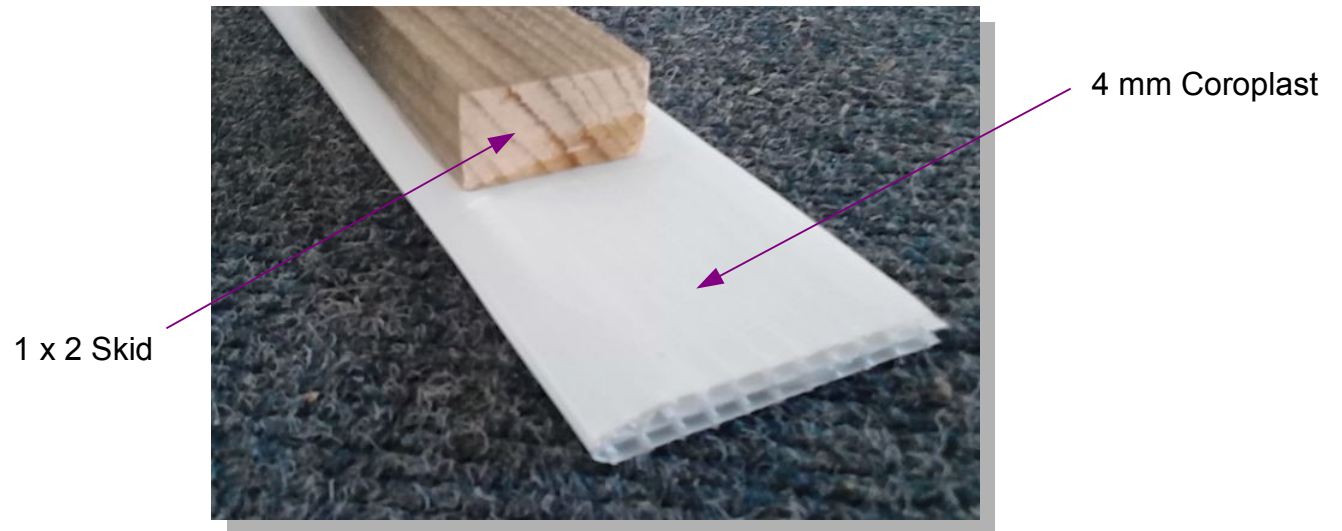
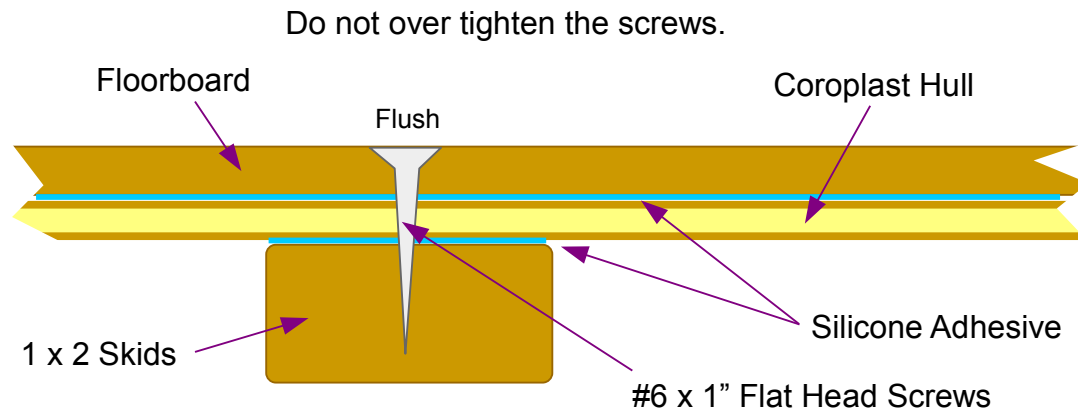
Bonding the layers together would be ideal, but there are very few adhesives that bond well to the Coroplast material. See the next page.

Refer to build photos on next page for more detail.

Optional Skids to Hull Bottom Assembly



I have tried many adhesives, and found that 100% Silicone works the best. You must allow at least 24 hours of curing time. And remember, nothing else will stick to a surface or edge that has silicone on it. So, use it only inside the folds, and do not let it extrude out. It will also bond bare wood to the Coroplast, with the help of a mechanical connection (screws), and it is completely waterproof. Use protective gloves when applying, and do not inhale the fumes, as they are toxic.



This is a test of the bonding of the 1 x 2 skid lumber to the Coroplast, and the panel folded over and bonded to itself, using the 100% Silicone adhesive. Repeated attempts to separate or peel the items apart by hand was unsuccessful. It is important that the Coroplast be wiped clean prior to bonding, preferably with an alcohol based cleaner.

The sole intent of these plans is to provide as much information about Coroplast construction as is practical. The result is a combination of assembly processes, and the development of a half dozen different hull designs. Choose the combination that best suites your individual requirements.

