CORO-CRUISER Family

A Working Design and Some Ideas.

Jan 2013
12 Pages
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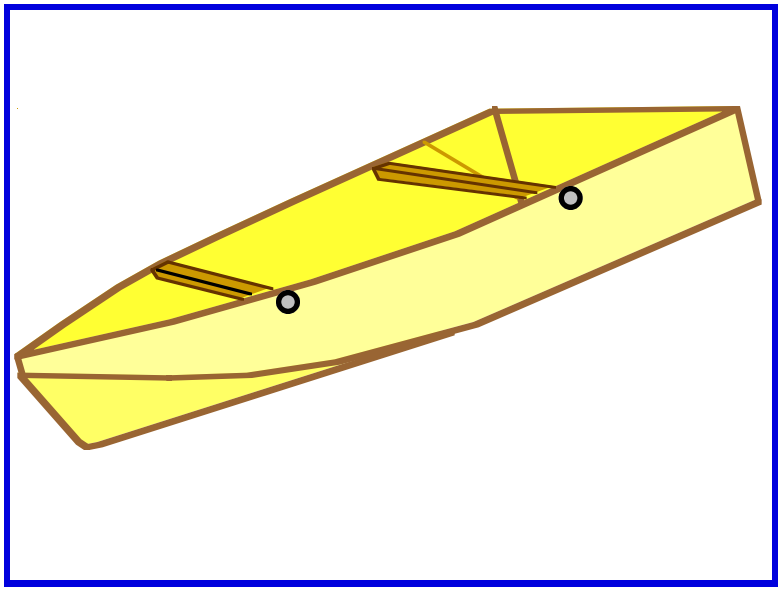
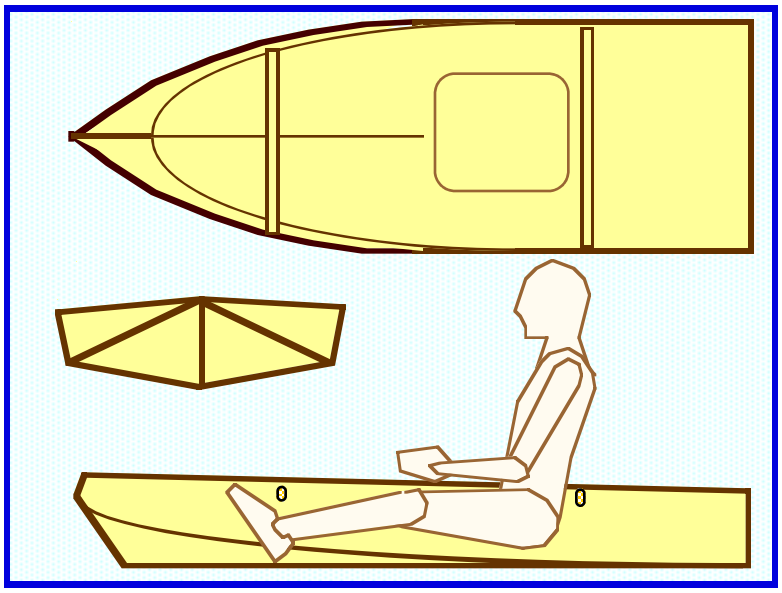
Print in Landscape Mode

There are a few Coroplast boat designs detailed within this plan. Each has it benefits and weaknesses, but all are easy to paddle, very water friendly, easy to make, very portable, and above all, affordable (usually less than $50).

The first is a small Cruiser, easily capable of carrying a 200 pound load. Its primary features are that it is only 7 feet long, with a 30 inch beam, and weighs only 15 pounds. It can easily be lifted and stored by anyone. The other designs are extensions of this basic design, that combine good water efficiency, and some can accomodate up to 2 occupants.

The Sailboat version is probably the most complex, as it combines several technologies into a very small package.





Each boat is built from the same 4' x 8' x 4 mm Coroplast sheet material. The construction methods are also the same. The only difference is the final shape of the hulls.
As you can see from the sketches, they all provide sufficient buoyancy and load capacity for such a small craft, and each displays different water characteristics. They all make a great boat for a camper or fisherman.
The CANOE, a good example, has excellent water performance, but limited capacity. It is best suited for the person that is going to paddle continuously, for exercise or exploration. The low building cost allows you to make one for each family member.
Each design is limited by the material used, and must not be subjected to harsh conditions or rough use.

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 avialable 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.

Happy Boating !

www.PortableBoatPlans.com

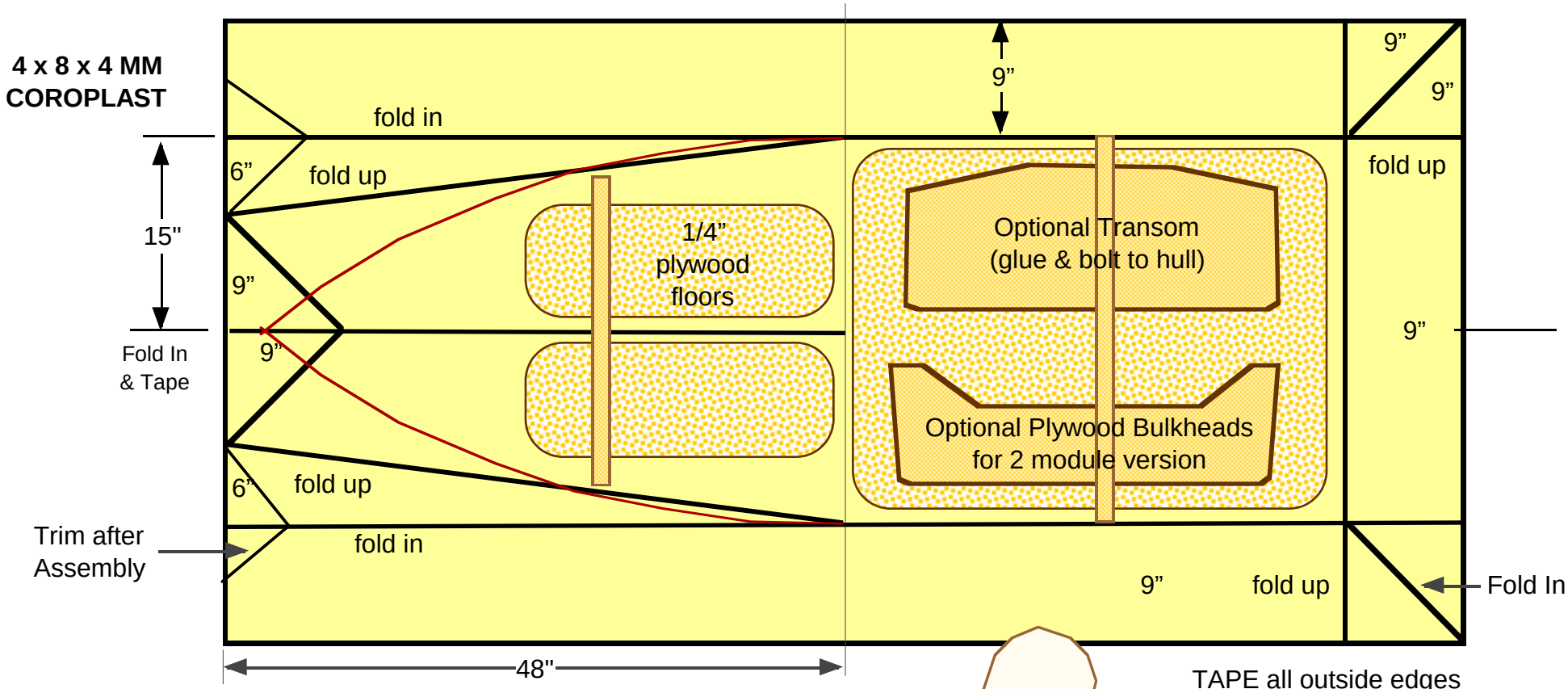
Ken Simpson , Designer

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

The CoroCruiser

LAYOUT DRAWING

NO CUT DESIGN !



If the folds are too difficult, cut out the fold areas and assemble with Scotch Waterproof Tough Tape

Tape or Bolt together. The choice is yours.
Tape all seams and edges.

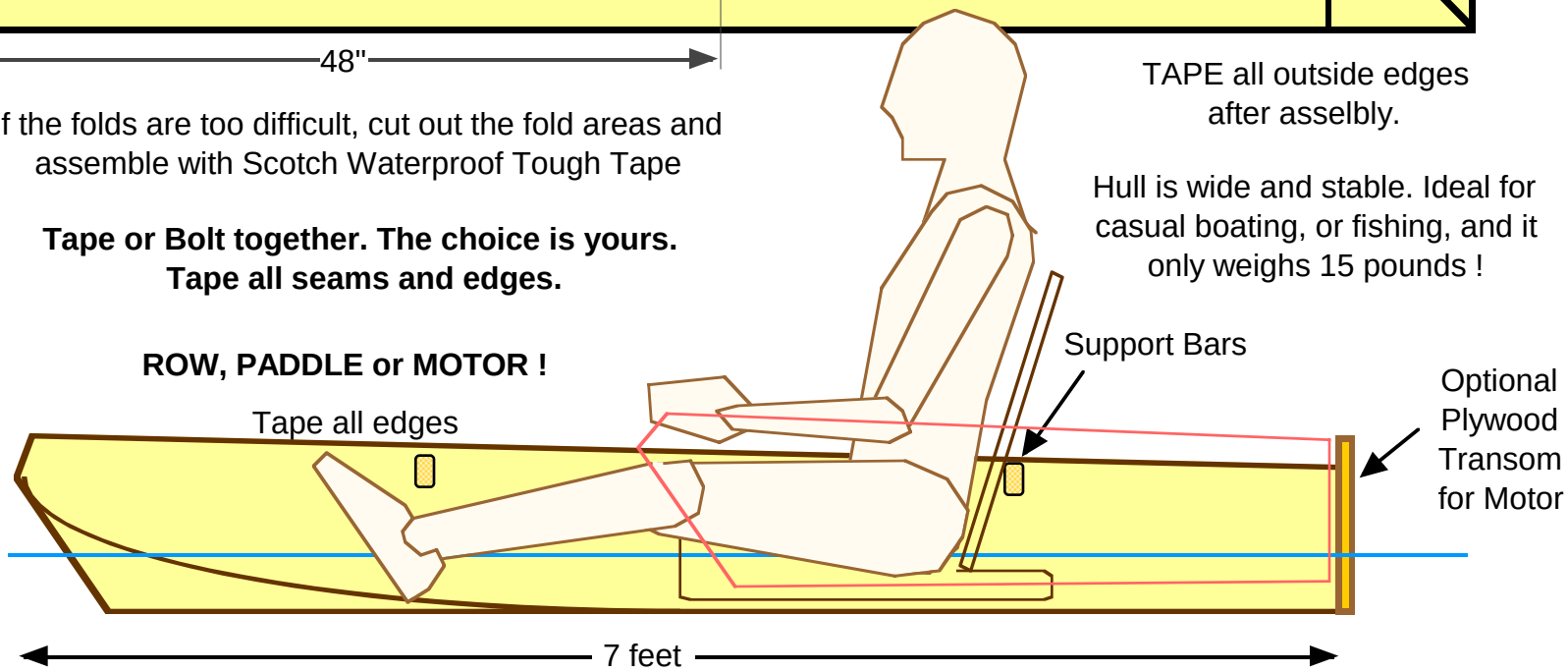
ROW, PADDLE or MOTOR !

TAPE all outside edges after asselbly.

Hull is wide and stable. Ideal for casual boating, or fishing, and it only weighs 15 pounds !

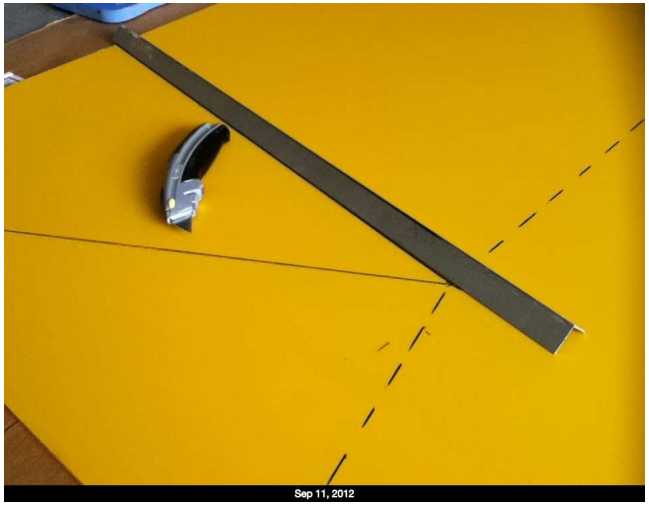
OAL = 84”
OAW = 30”
OAH = 9”
WLL = 80”
Max Cap. = 220 lbs.
Draft = 4.5” Max

Coroplast is available at your local Sign Company.



These are typical photos of the preparation, marking, creasing, cutting and folding of the Coroplast sheet material.

4' x 8' x 4MM Sheet Coroplast



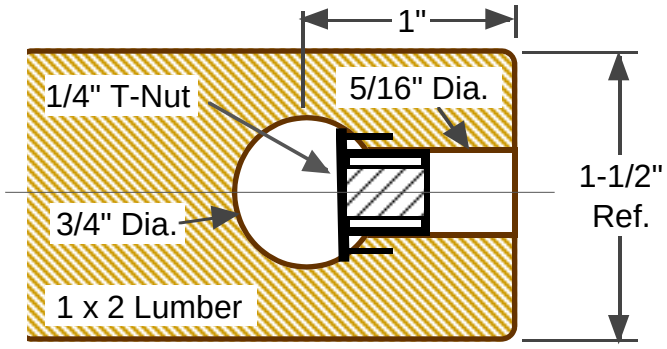
Mark & Score, No Cutting

Hold & Crease

Bend to Form

Scotch TOUGH TAPE No Residue Type

Typical Tape & Supports



Support Bar, End Detail - Cross Section

Make the 4 Knobs by drilling a 1/4" hole in the center of a 1x2x2. Epoxy a 2" long 1/4-20 Bolt into the block. Allow to cure, then paint them color of your choice.

This is just a n example of the bolt together process, not an actual hull.

All exposed edges must have a tape seal, to prevent water from entering any of the corrugated cells. These cells are what provide the natural buoyancy of Coroplast hulls.

Bolting the folded panels of the hull is one way to hold them together, and can easily be dis-assembled.

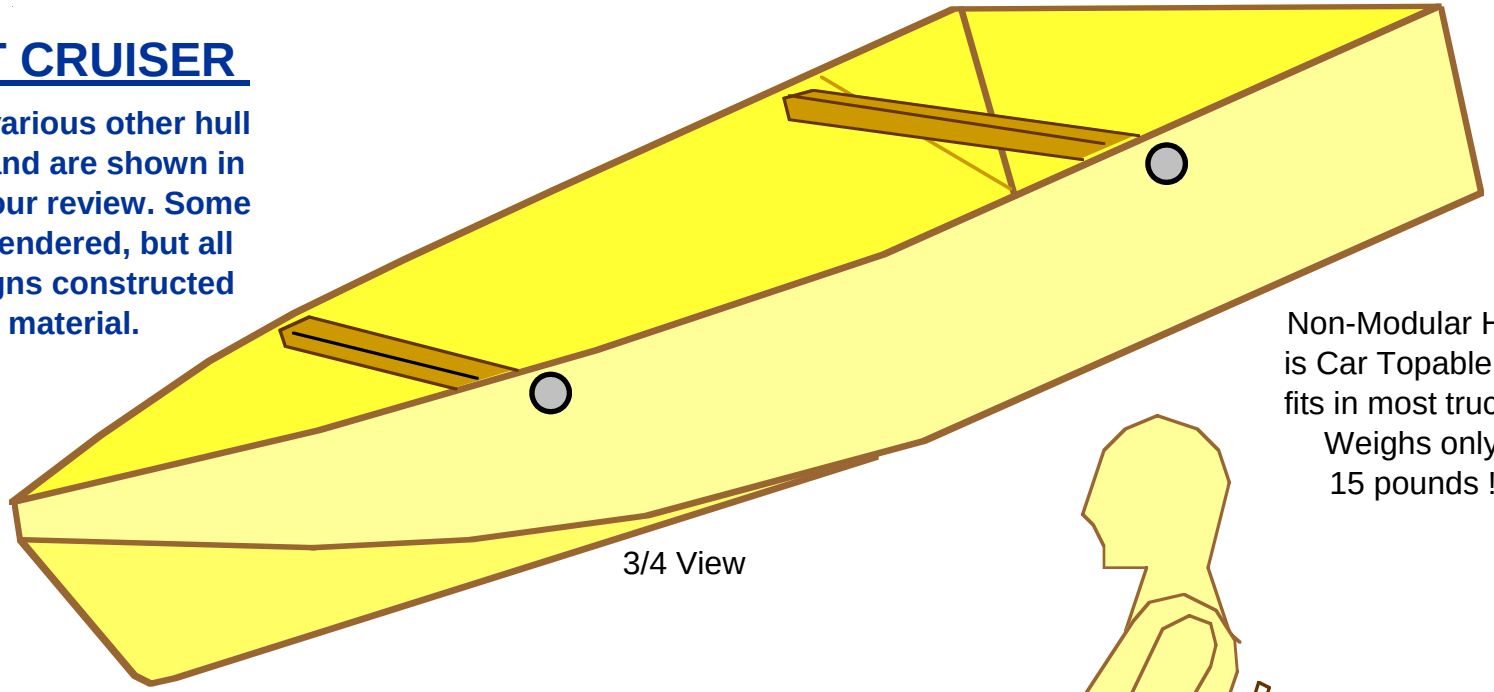
To be able to fold the Coroplast properly, it is necessary to first "crease" the plastic along the fold lines.

Any dull pointed object will work, like the tip of a phillips screwdriver.

Always bend the material carefully, taking caution not to bend it in the wrong place.

The COROPLAST CRUISER

From this simple design, various other hull types can be developed, and are shown in the following pages, for your review. Some are detailed, others just rendered, but all are functioning hull designs constructed from the Coroplast material.

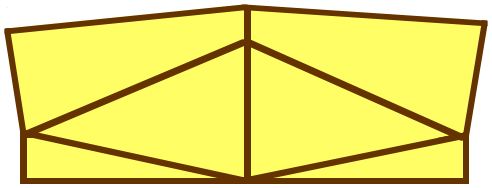


3/4 View

Non-Modular Hull is Car Topable, or fits in most trucks. Weighs only 15 pounds !

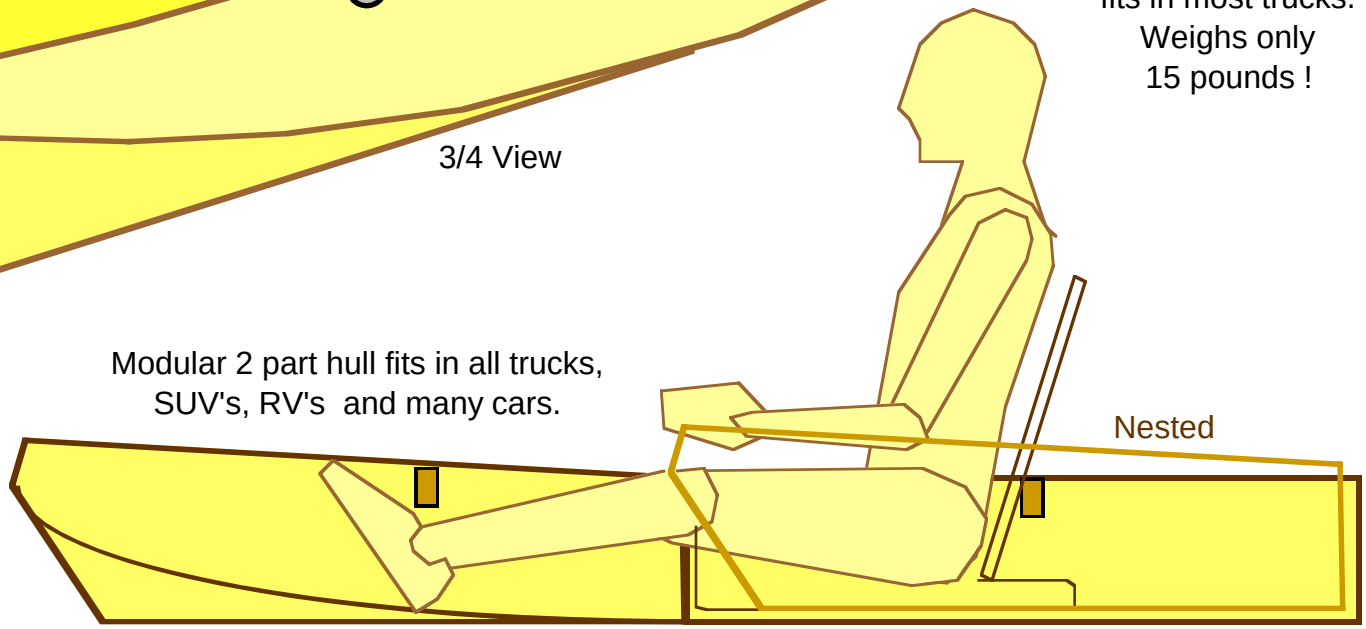
4 x 8 x 4 MM COROPLAST

Good water entry form, with flat stern for maximum buoyancy.



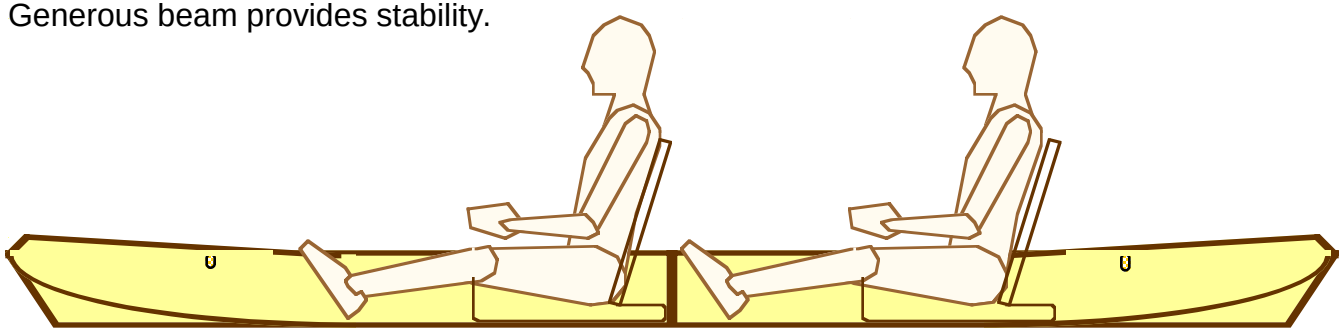
Front View

Modular 2 part hull fits in all trucks, SUV's, RV's and many cars.

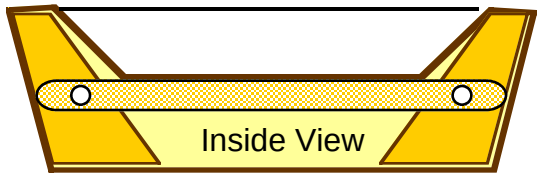


The Modular CoroCruiser (fits in most cars)

Generous beam provides stability.



Two CoroCruisers bolted together to form a 14 foot Canoe ! Hull speed 7 mph.



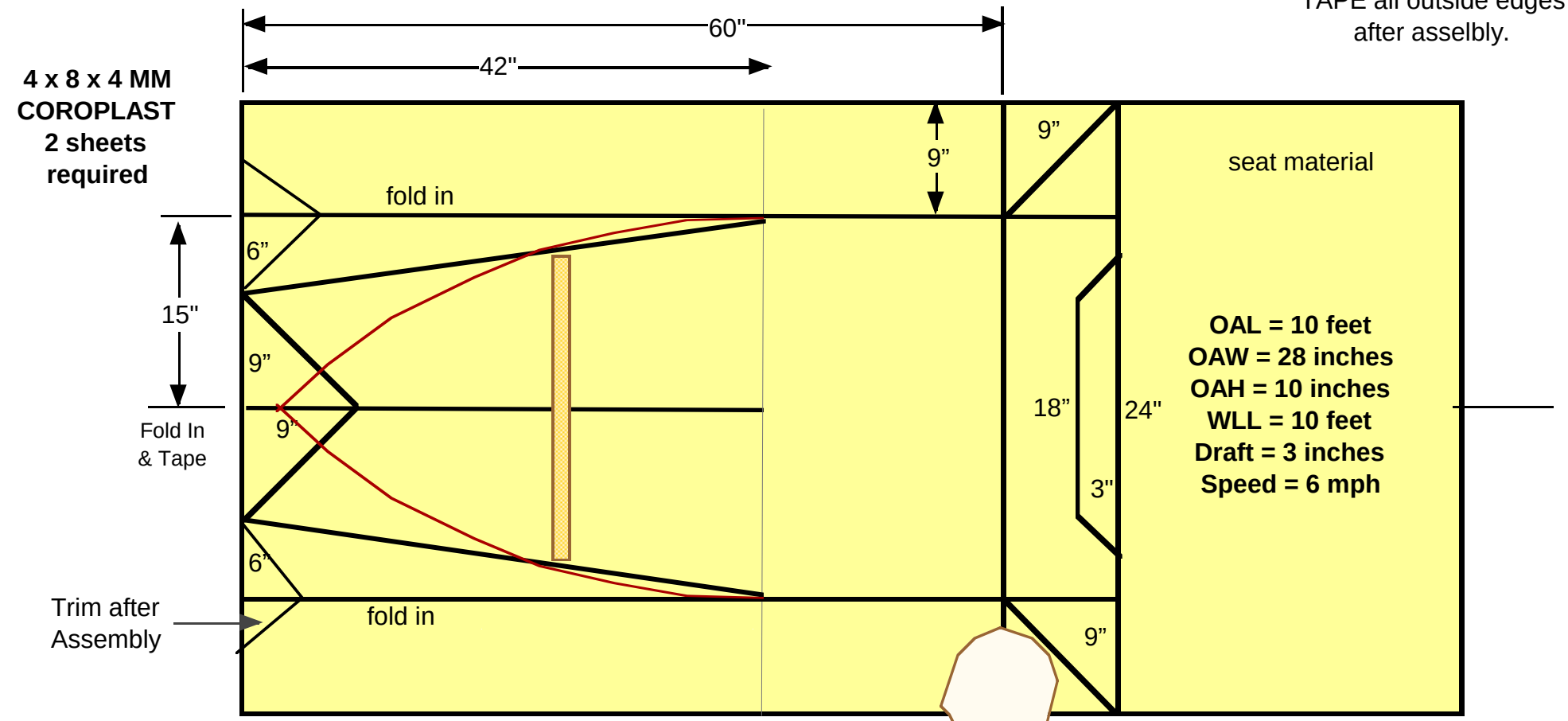
Typical Bulkhead Supports

The 2 Module 10' CANOE

This can also be a single hull utility boat by extending the transom to the end of the sheet.

TAPE all outside edges after asselbly.

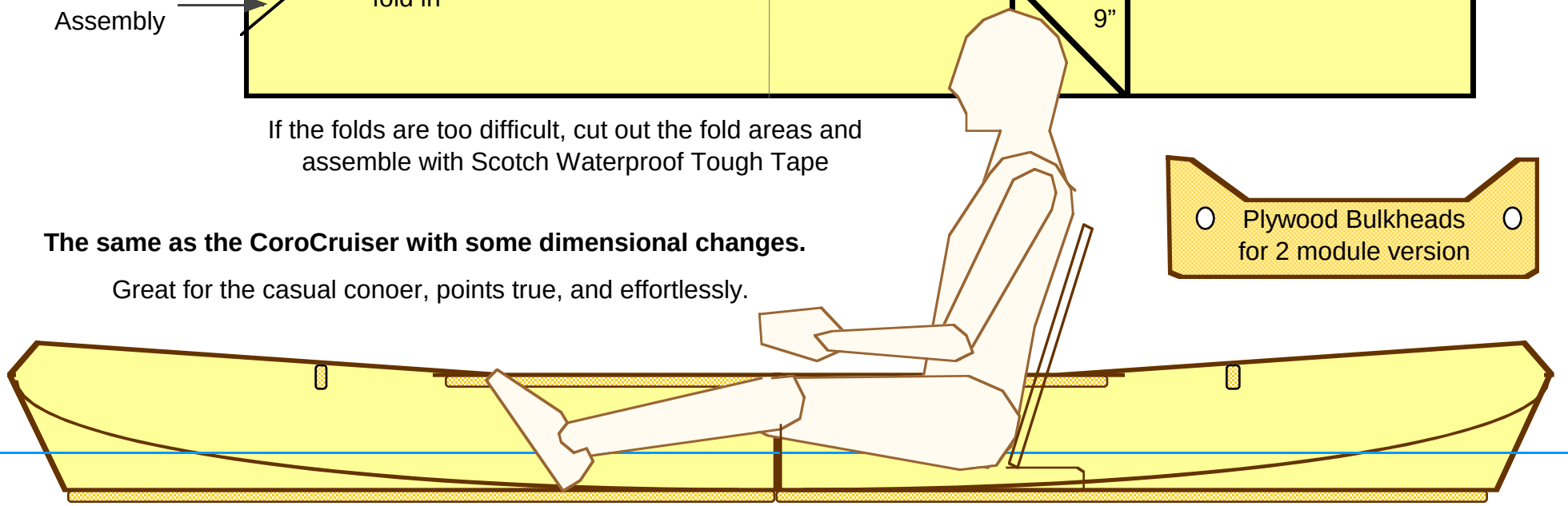
4 x 8 x 4 MM COROPLAST 2 sheets required



If the folds are too difficult, cut out the fold areas and assemble with Scotch Waterproof Tough Tape

The same as the CoroCruiser with some dimensional changes.

Great for the casual conoer, points true, and effortlessly.

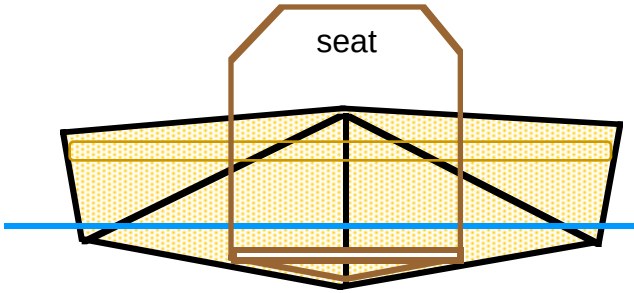


ONE SHEET FOLDING CANOE

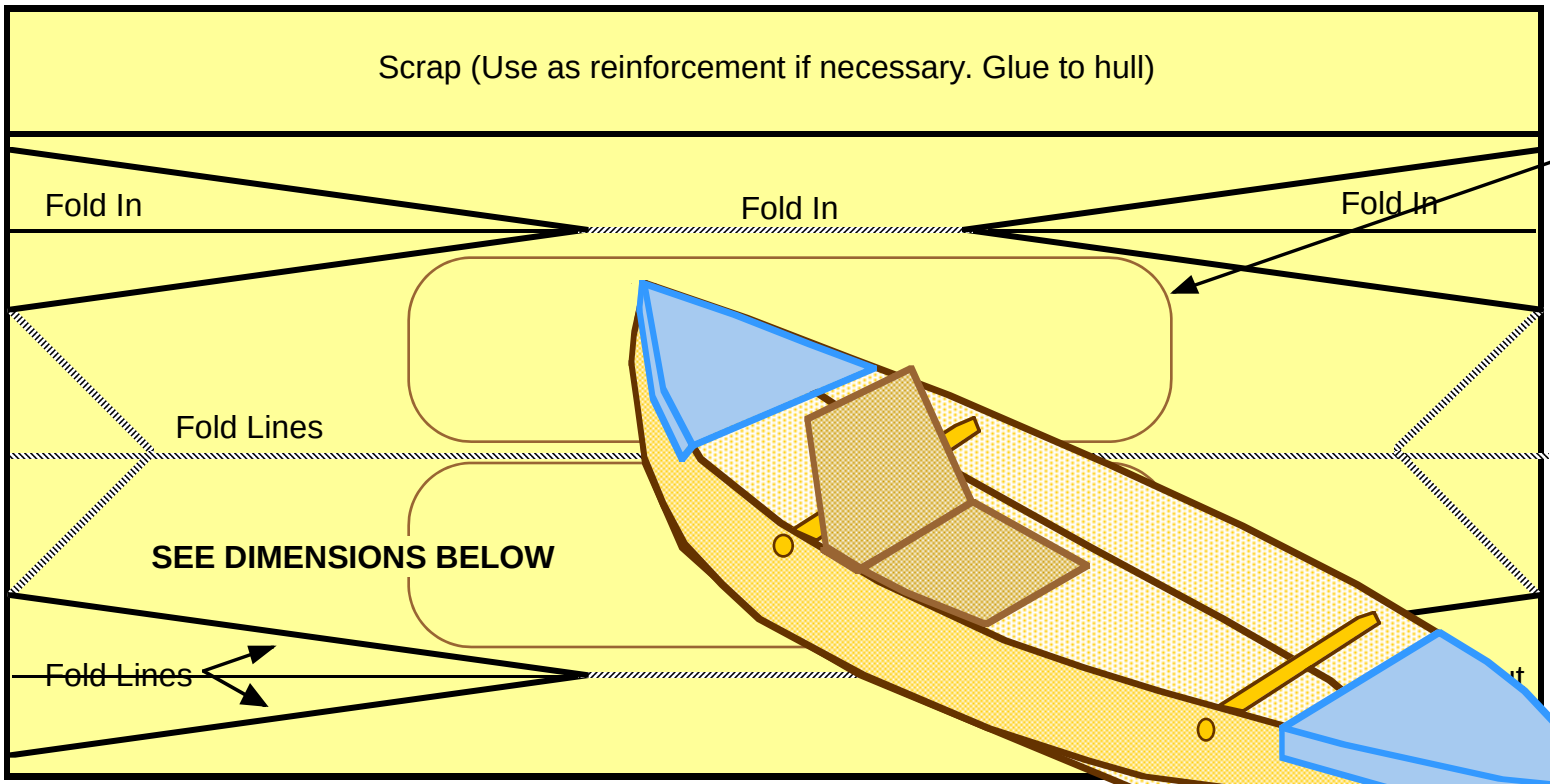
2nd Gen.

4 MM COROPLAST Material

Easy to cut, easy to tape and easy to set-up and paddle. Weighs only 15 pounds !



Efficient water-entry hull design.



Removable Plywood Floor Panels

Bend in half to 28" wide 12" thick 4 feet long for transport.

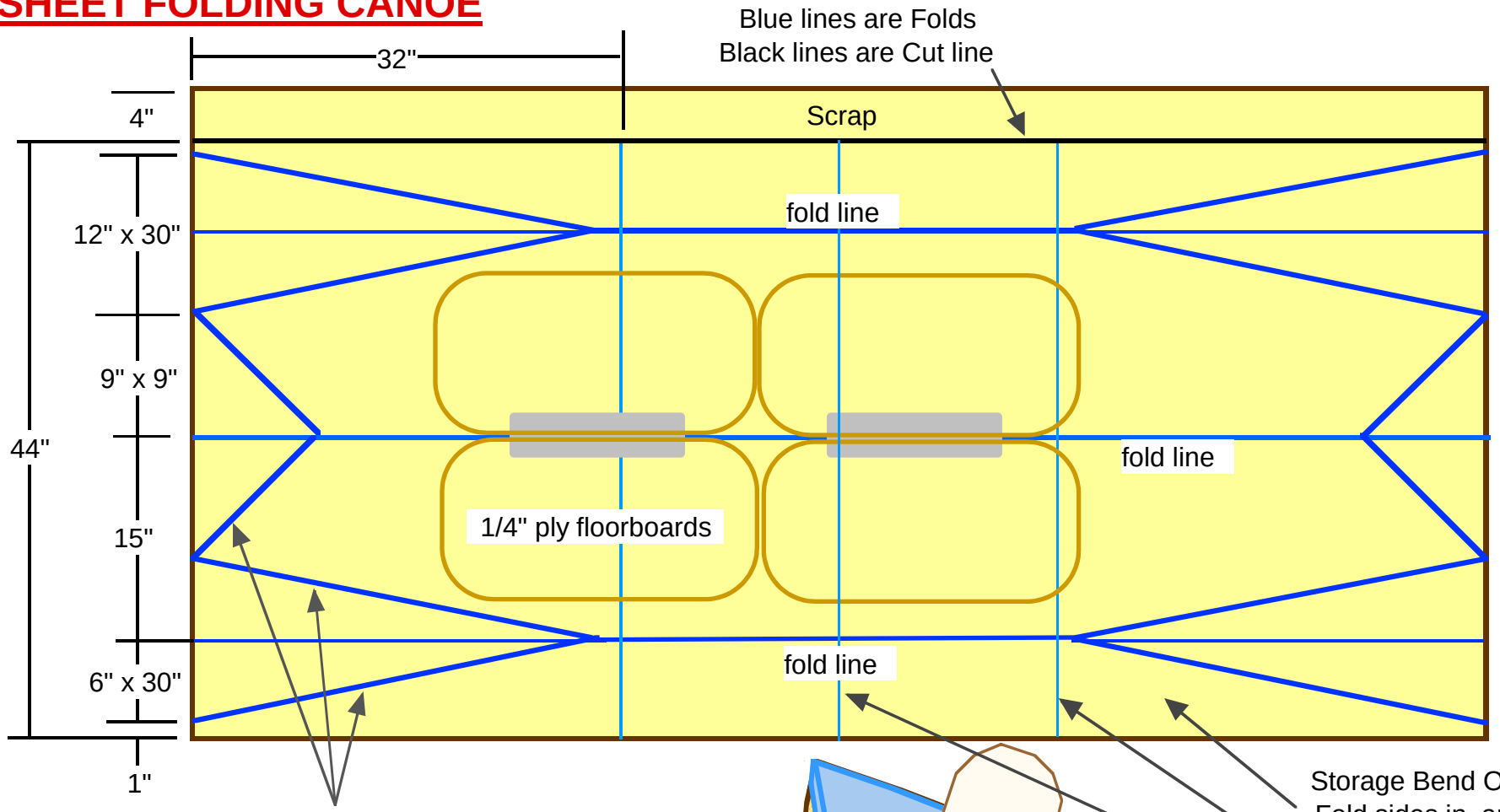
Use Scotch Waterproof Tough Tape on all seams and exposed edges.

Build as a take-apart folding hull, or build non-folding, glued together and rigid.

a ken simpson design

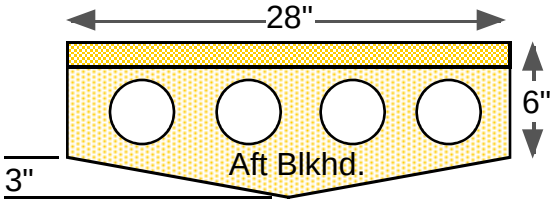
Nov. 2012

ONE SHEET FOLDING CANOE



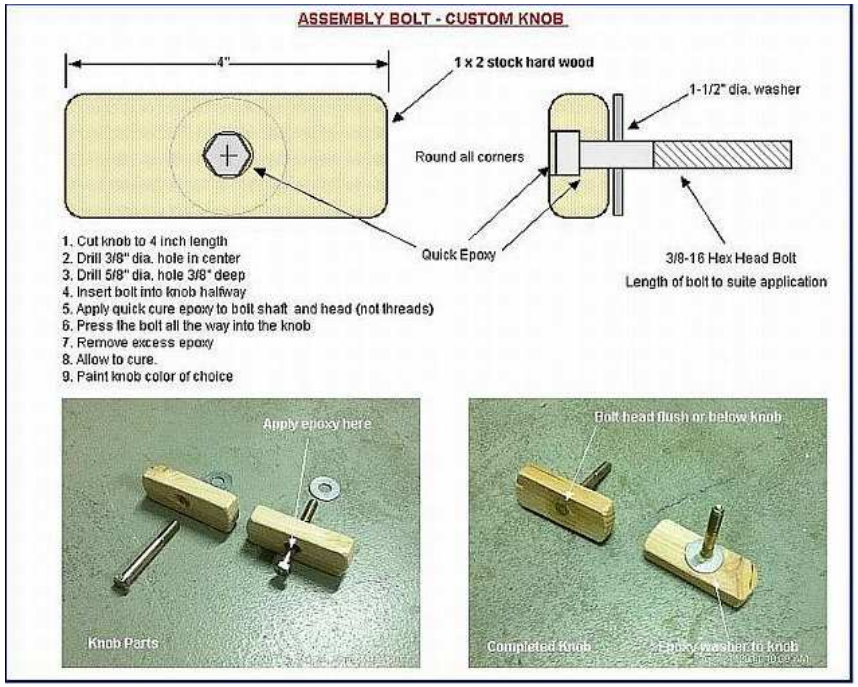
Note: All bow folds can be cut out to minimize stiffness, but Waterproof Tape must be used to seal all seams.

Storage Bend Options:
Fold sides in, and fold in half down center.
Tri-Fold on 32" lines, or Bi-Fold on Center



4 x 8 x 4 MM COROPLAST

Quick-Set Epoxy is recommended to secure the T-NUT.



INTERIOR & EXTERIOR

I tried many adhesives, and this works the best. It can be messy, so take care in applying only to the surfaces to be bonded. You can paint over it, after it cures. Read instructions on container.

WATERPROOF & WEATHERPROOF

Does a good job of bonding the Coroplast panels together, or to a wood panel or frame.

Will harden over time, so do not rely on its initial flexibility.

Take care in applying, and clean up excess immediately. Wear protective gloves when applying, it really sticks well to fingers.

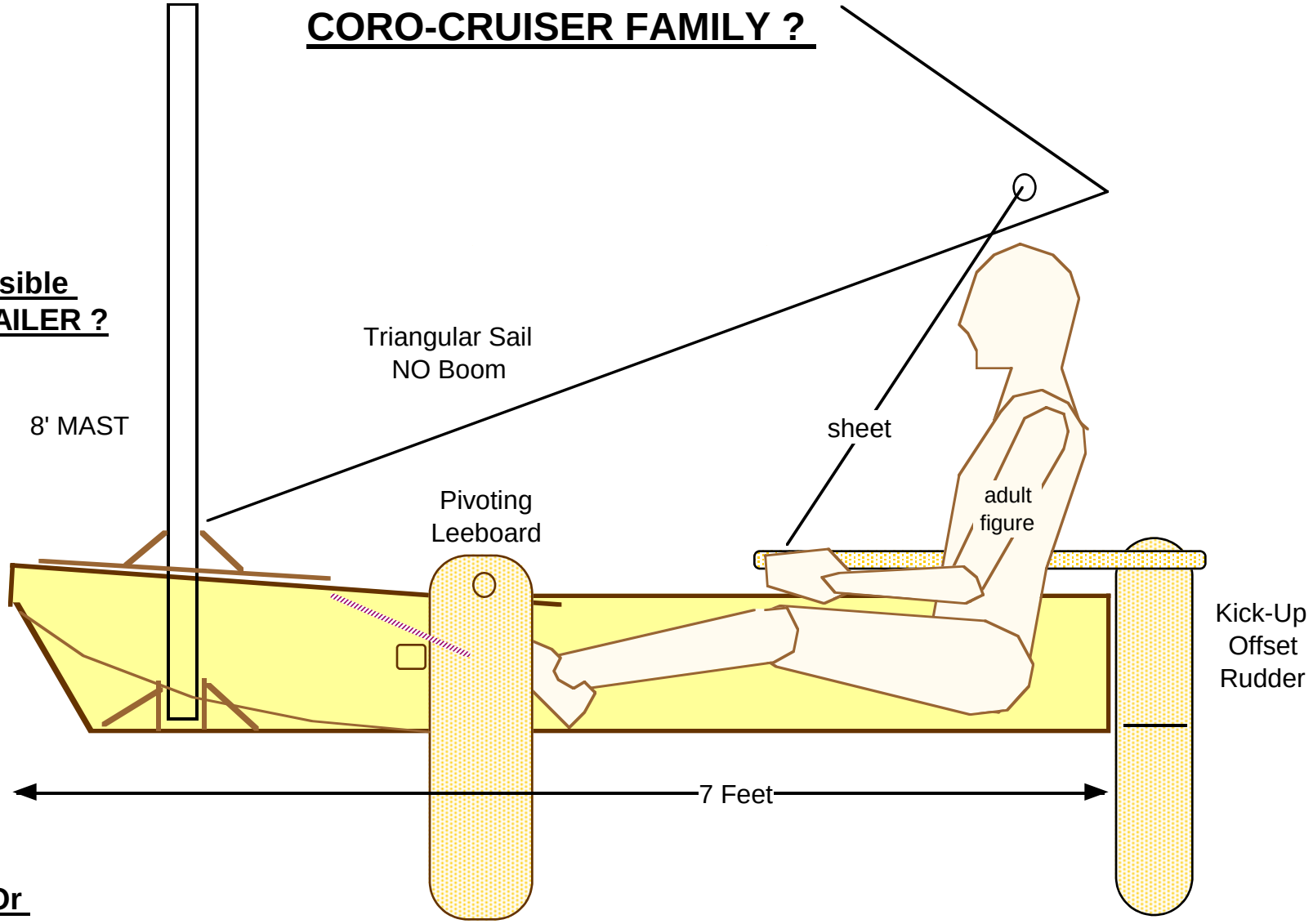
Ken

These are photos of alternate materials or fabrication. The photo at upper left is of the method used to reinforce and secure the 2 hull modules together. At lower left is the Assembly bolt detail. This is used in all modular hulls, and provides ease of assembly, yet structural rigidity. Alweys keep the bolt location well above the water line, usually vertically centered on the bulkhead

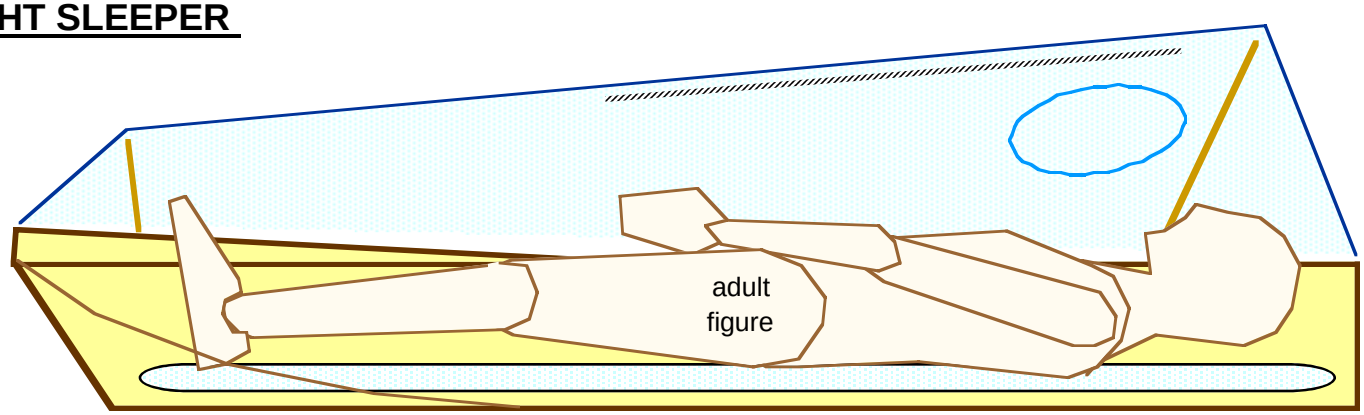
The photo above is of Liquid Nails, Heavy Duty Waterproof Adhesive. It can be used for bonding Coroplast to itself, or to wood framing members. It is recommended you use latex gloves when working with this adhesive, as it likes to stick to fingers. To provide a thin smooth joint, apply the adhesive in a bead, and flatten out with a putty knife. Otherwise the glued joint will be thick.

CORO-CRUISER FAMILY ?

Possible
DAY SAILER ?



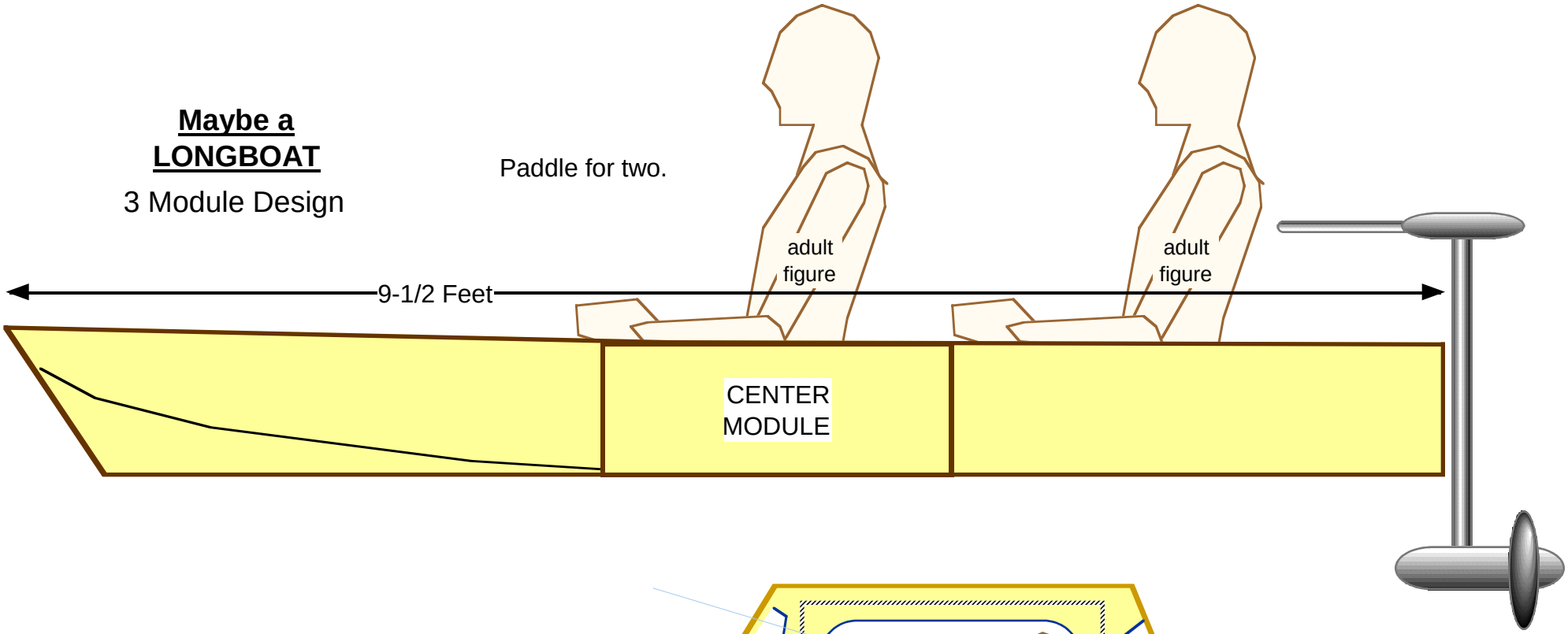
Or
OVERNIGHT SLEEPER



Maybe a
LONGBOAT

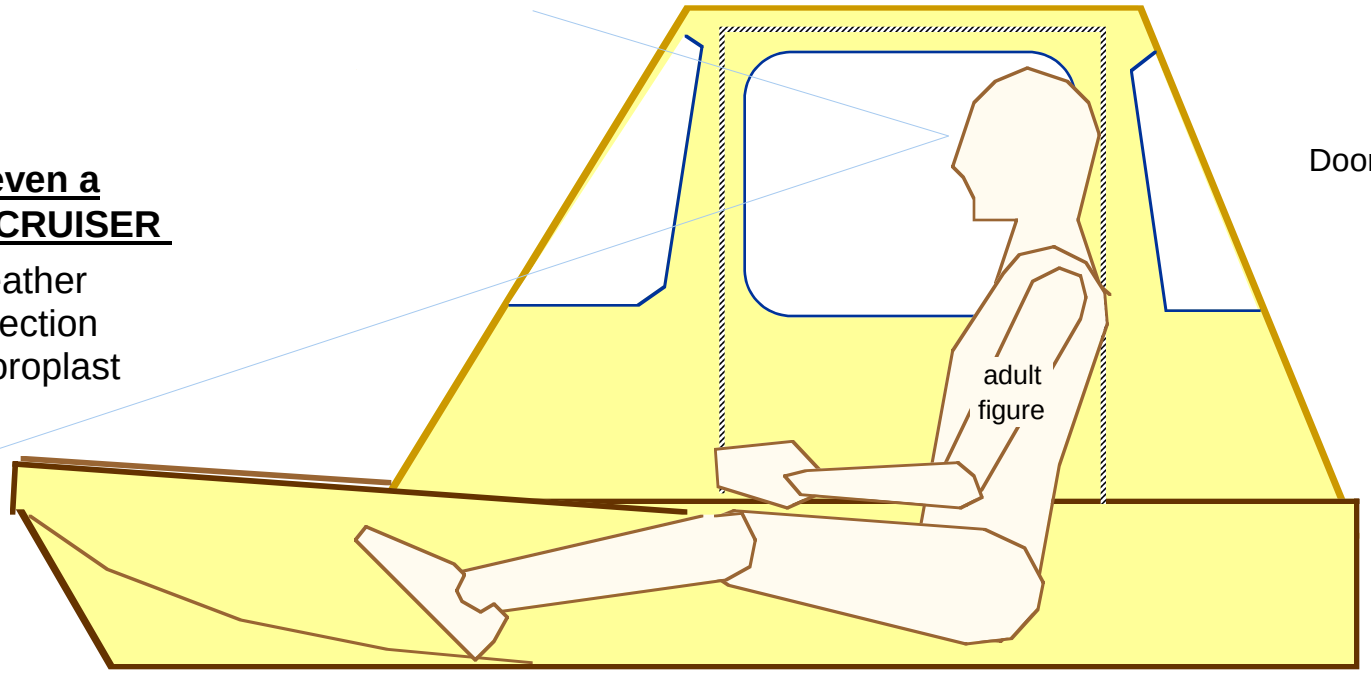
3 Module Design

Paddle for two.



Or even a
CABIN CRUISER

Weather
Protection
All Coroplast



Doors fold open

Motor
or
Row

WHAT'S YOUR IDEA ?