

# Building the Tik Tak Ten(ish) Kayak

These instructions are bare bones - there's lots of ways to build simple boats. Please don't assume by following these instructions you will learn the "right" way to build boats, or even end up with a boat you like.

## Legal Notice

- Read these instructions, build this boat, and use it at your own risk.
- Always wear a life jacket.
- Use your head - no warranties are expressed or implied.
- You are responsible for your boat, your actions, and the actions of everyone who uses it.

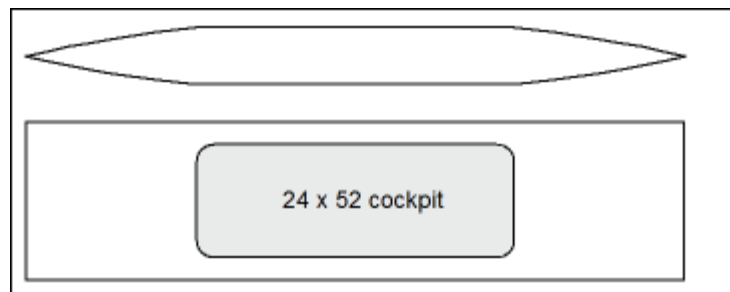
## About the Tik Tak Kayak

The Tik Tak Kayak (TTK) is designed for one or more paddlers, using double paddles, on flat, calm water. The TTK is symmetrical and can be paddled in either direction. This is not a performance boat - it's only purpose is to make it cheap and easy to get out on the water.

The sides are 10" high, giving a nice sense of security even when a paddler is seated on a throwable life preserver. The 28" width makes it very stable and an excellent play platform.

It's low profile and flat sides make it easy to store when not in use. It is lightweight and easily carried on top of a car. Several can be carried at once, either stacked or side by side.

The ten-ish foot design (116") shown here makes very good use of two sheets of plywood. It would be slightly easier to make it just eight feet long - the only difference being no butt-joints and a much smaller cockpit, making it a one-person craft. If making an eight foot version, consider making the hull panels 32" wide instead of 28" to increase displacement. An eight foot version could be as much as 38" wide and still have 10" sides - the drawback here being a 38" wide boat is uncomfortable for first timers. They can learn to adjust, but it takes time - AND it would still only hold one adult.



## Bill of Materials

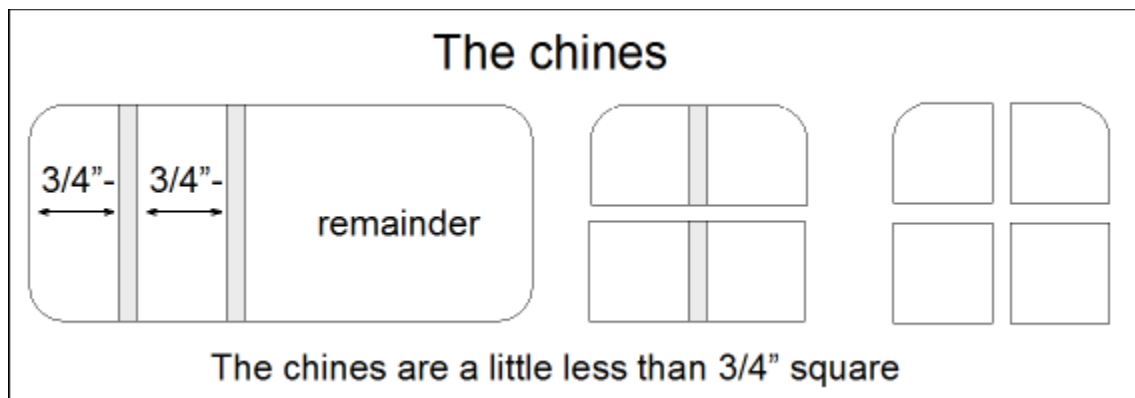
- (2) sheets of exterior grade (marine grade is better) 1/4" plywood
- (4) 1x1s, best cut from near knotless 2x material. 1x1 is nominal, actual dimensions could be as thin as 1/2x1/2
- (1) tube polyurethane construction adhesive (PL Premium is an excellent choice)
- (1) small bottle of exterior wood glue (TiteBond II or III is an excellent choice)
- (~200) #6 3/4" stainless steel screws

## Recommended Tools

- A way to make long, straight cuts - in order of preference: Circular saw with guide, table saw, saber saw + skill, even a handsaw with more skill
- Saber saw (for cutting out the hatch)
- Table saw (for cutting the stems)
- Drill with small bit for pilot holes
- Electric screwdriver
- Caulk gun (for construction glue)

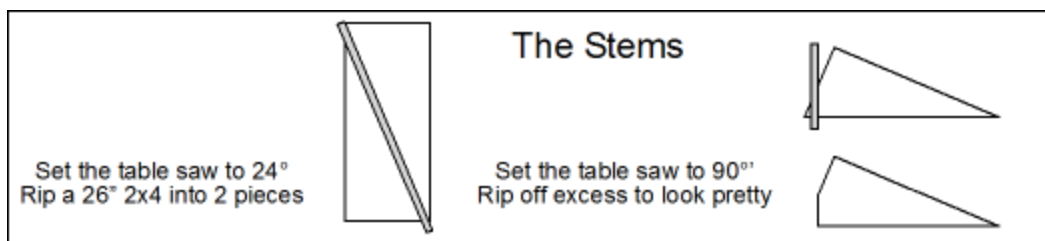
## Cutting the Chine Logs

The hardest thing is to find 1x1s to use as chine logs. Only the ends - about 36" from each end - need to be knot free. The middle part can be scarfed, knotty, or even broken (fill any gaps with glue - especially for the ones used on the bottom.) They can be exactly as long as the boat, but it is easier if they are a little longer.



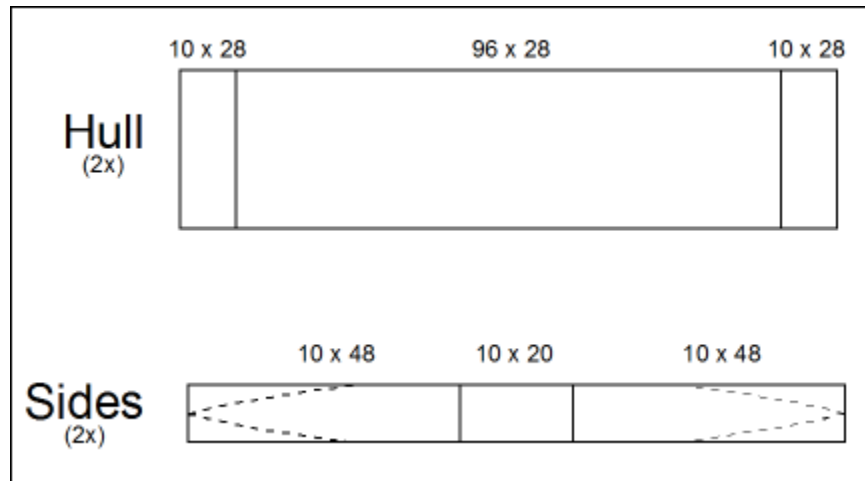
## The Stems

Stems are easy - they don't have to be knot free and can be cut from a scrap 2x4 or lumber scavenged from a construction site. Cutting them can be tricky - practice a bit first and be very, very careful.

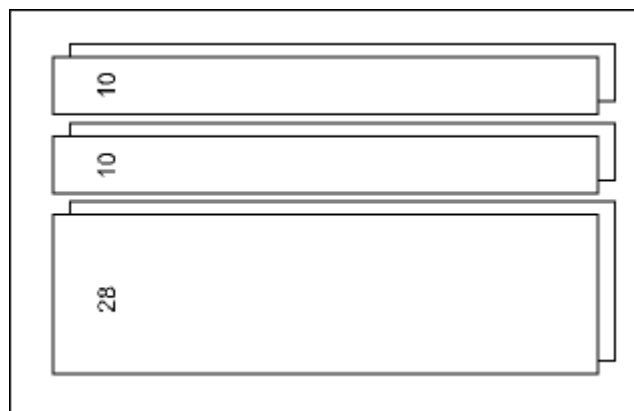


## Ripping the Ply

The goal here is to get the pieces that will make the boat. The pieces needed are as follows:

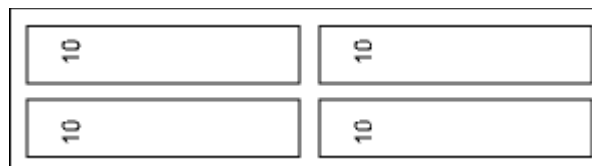


- Straight cuts are important - use a circular saw with guide, a table saw with help, or snap a line and be really careful.
- Cut both the sheets of plywood into two 10 x 96 pieces and a 28 x 96 piece.
- Dimensions are nominal - a little loss due to kerf is expected. It is more important the sides are 10" high than the hull is 28" wide.

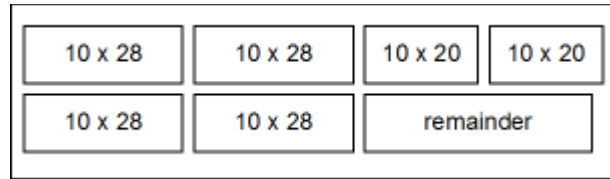


## Cutting the Sides

- Take two of the 10 x 96 pieces and cut them in half



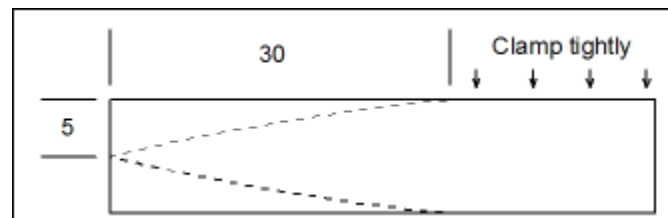
- Take the other two 10 x 96 piece and cut them into four 10 x 28 pieces and two 10 x 20 pieces. Save the remainder to use as butt-blocks.
- It is more important the bigger pieces are 28" long than the smaller pieces are exactly 20" long.
- The smaller pieces need to match in length.



- The Rule of Thumb is for butt-blocks to be 16x to 20x the width of the plywood being joined. There is not enough remainder to create the butt-blocks needed. You can either risk going with thinner butt-blocks or use scrap.

### Creating the Ends

- Take one of the 10 x 48 pieces and mark the center (width-wise) and 30" back.
- Clamp a batten (one of the chine logs works nicely) tightly at the 30" mark and several points back.
- Bend the batten to the center mark and draw the line.
- Repeat for the other side of the point



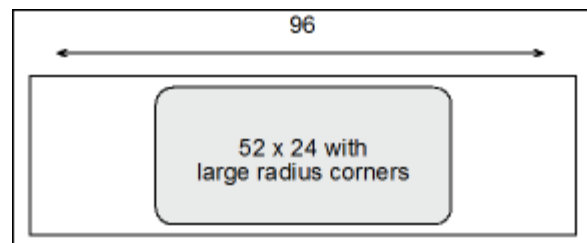
- Cut the end piece and use this as a template for the other three.

**IMPORTANT:** You don't need to be real precise in your cutting and don't worry about making all the pieces exactly match at this stage. Final shaping will come after the chine logs are attached.

- If you want to have skegs on your Tik Tak, save the cutoffs from the end pieces

### Cutting the Hatch

Hatch size and position is a personal choice. One reason for the Tik Tak Ten-ish design is to get a bigger hatch so two people can comfortably fit in the boat.



**NOTE:** Try to preserve as much of the hatch as possible when you cut it out. It will be used later.

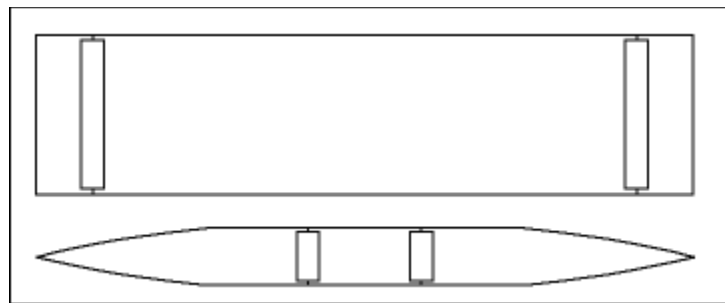
## Preparing for Assembly

Glue is Builder's Choice. I usually don't use epoxy for this as I am slightly allergic (and don't want to get worse.) For Flat-to-Flat connections (butt-joints, stems, chine logs to the sides, laminating the hatch cutout to the bottom) I use TiteBond III (TiteBond II is acceptable, too, but III is claimed to be "more waterproof.") For any joints where there might be a gap (attaching the hulls to the sides) I use PL Premium.

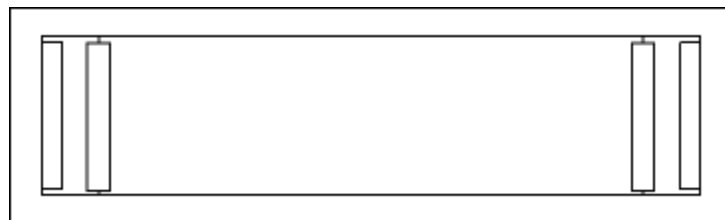
Cut the butt-blocks for joining the pieces together. They should be 4-5" wide, but can probably be as narrow as 2 1/2" or so because the bends are fairly gentle.

NOTE: there is no reason butt-joints must be used. It is perfectly reasonable to scarf, use Payson joints, or any other method of lengthening wood you prefer.

- Butt-blocks for the hull pieces are the Hull Width minus the thickness of the side plus chine log, which usually means the hull butt-blocks are ~ 26" long
- Butt-blocks for the sides are the Side Height minus the thickness of the chine log, which usually means the side butt-blocks are 8 1/2" long



Attach the stems to the bottom of the hull - centered, with the narrow edge lined up with the hull's edge.



Attach the chine logs to the sides - a good idea is to use screws every 4" on the ends and every 6-8" in the flat areas.

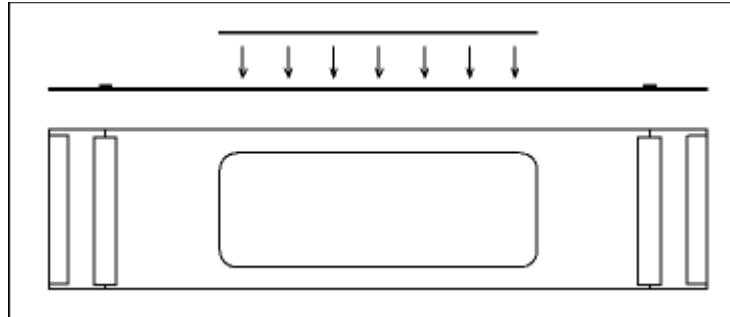
- Start in the middle and work to the ends



## Doubling the Cockpit Sole

Use the hatch cutout to double the thickness of the cockpit sole.

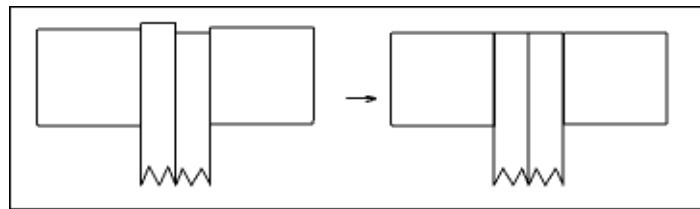
- Center the hatch cutout on the inside of the hull bottom and trace around it.
- Liberally coat the backside of the hatch cutout and the traced area with glue.
- Place the hatch cutout and apply pressure - weights, buckets of water, bags of sand, etc.



## Final Shaping for the Sides

Shape the sides into mirror images of each other.

- Clamp the sides - face to face - in the orientation that makes them match closest.
- Shape the sides so they match - use a power plane, belt sander, etc. Try not to remove too much material.
- Mark the pieces so you can keep the orientation correct during assembly. (I usually mark them Port and Starboard, Forward and Aft to minimize mistakes.)



## Initial Paint

While painting the interior \*can\* be done, after assembly, it is better to prepaint all non-gluing surfaces.

- Use 1" masking tape to mask off the edges of the inner face of the top and bottom hull pieces
- Mask off the top of the stems on the bottom piece
- Mask off the area the stems will attach on the top piece

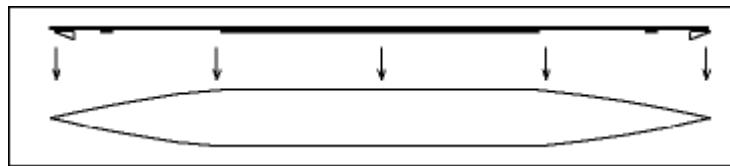


- Mask the glue surfaces of the sides.
- Paint everything as many times as practical. Any exterior paint will do.

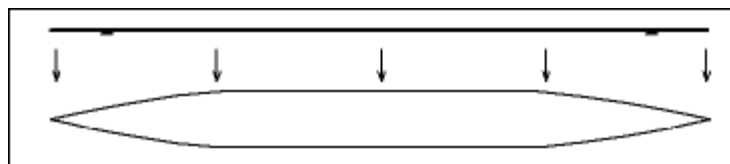
### Building the Boat

Once the glue had dried, all the holes have been filled, and - at a minimum - the inside faces of everything have been painted, and the masking tape has been removed, it is time to build the boat.

- Mark the center of the sides - top and bottom
- Mark the center of the hull pieces - left and right
- Clamp (or have someone hold) the sides upside down (remember to maintain orientation.)
- Apply a liberal amount of glue along the entire length of ONE of the side pieces
- Lower the bottom piece of the hull onto the side, aligning the centerline marks.
- Start at the middle and work out, driving a screw every 6-8" on the flat area, and every 4" on the curve at the ends.
- Repeat on other side.



- Flip the boat
- Apply a liberal amount of glue along the entire length of ONE of the side pieces
- Apply a liberal amount of glue on BOTH stems.
- Lower the top piece of the hull onto the side, aligning the centerline marks.
- Start at the middle and work out, driving a screw every 6-8" on the flat area, and every 4" on the curve at the ends.
- Repeat on other side.
- Attach the top of the hull to the stems, use screws every 4"



Paint with any exterior paint.

Using the Tik Tak Ten-ish

- Always wear your PFD
- Load like any canoe: Heaviest people in the back. Try to balance the boat as much as possible
- Throwable float cushions work great for seats
- Double paddles (like kayak paddles) work best
- This boat is intended for use on flat, calm waters.
- Always wear your PFD
- Have fun!