



Building MARY ELISABETH: A T32x12

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The veils part on day fifty-two... hull and interior *finished* and ready for launch two days before our date with a trailer. I consider this to have been roughly a month *behind* optimal building time, for three of us working about 6 hours a day.

Anke and I met Andy while cruising the prototype for TRILOBYTE (*T16x4*). He wanted a live-aboard size vessel for use as a remote subsistence platform, able to carry gear, supplies and an endless stream of ‘hunting buddies.’ He liked the space, carrying capacity and ease of construction of these barge hulls, and was excited about building one for himself.

MARY ELISABETH is a *T32x12*, which is to say she’s built after the Triloboat formula with a length of 32 feet and a beam of 12 feet. At the designed water line of one foot draft she’ll displace 17,000+ lbs. (acceptable draft ranges from 6" to 1'6" for max loading capacity of 26,500lbs).

Andy designed his own interior, which sleeps and feeds eight (2 double berths under the forward deck, 4 and 5 feet wide, respectively, with ‘lounging’ headroom; a dinette which makes down to a 5 foot double; a settee whose back folds up to form two 2-1/2 foot bunks – all 6-1/2 feet long). A large galley (full size sink and wood range), a desk, and a head with separate, walk-in shower(!) round out the furnishings. Headroom is 6'6" along the cabin centerline.

Andy plans to rig her as a junk ketch for off-wind, 'only for fun' sailing. He's working on a hydraulic drive system fueled by a little diesel and lots of vegetable oil. He tows a humongous power skiff that doubles as a yawl boat. He plans relatively short hops with MARY ELISABETH, ranging by skiff for fishing and hunting, and spent this last year doing just that.

Andy chose to double-skin his hull, so the whole exterior consisted of 3/4" AC plywood, outboard, with a layer of 1/2" AC ply, inboard, to total 1-1/4" – A sides exposed. This was some very good looking tropical wood of unknown variety, which the local lumber supply had in stock. All exterior seams were taped (glass/epoxy), decks and bottom resin-coated with a copper powder anti-fouling mixed in below the bootstripe. Topsides were finished with latex paint. As of this writing, the finish and wood are all looking good.

We used a range of glues. 3M5200 and Sikaflex for hull joins, Weldwood for panel lamination and framing, an inexpensive polyurethane construction adhesive for interior joinery and a 3M spray adhesive for the blue foam panels. Clamping pressure and glue backup was provided by bronze ring-shank nails for the exterior, and some galvanized in the interior.

Windows are 1/4" acrylic. I had specified 3/8" outside with a 1/8" inner layer (2" separation) for insulation, but neither were available in Sitka. The 1/4" seems to be doing well enough (single layer, at this point)... no undue condensation, and Andy reports that he's warm year-round.

The circular saw is the primary power tool, but a router, small table saw, jig saw, drill and sanders all saw their share of use. Our 15 ton screw-jack was a big help.

TBoats are ordinarily one sheet of plywood wide. With a 12 foot beam, the easy thing to do is to buy 12 foot sheets for all transverse pieces. They may not be locally available, however, and cost much more than standard 8 footers (e.g., two sheets of 12' might cost twice what three sheets of 8' would). Building a Tx12 with eight footers means puzzle piecing it all together to avoid line-up of butts. If labor or site rental amount to much at all, or even if you value a month of your life, it pays to cough up the dough. The double skin option is expensive and heavy, but combines high-hull strength (won't require much support from interior furnishings) with reasonable thermal insulation and has enough beef to sink fasteners at any point.



So... it's February in Sitka, Alaska, again. We spent the first week building components in a heated (aaah!) garage that's just a *wee* bit tight for three, materials and components! Then we moved out to the ballasted front yard. The 'building jig' is just any two longish beams supported

sturdily in parallel (they don't have to be level as *TBoats* are self-rectifying). We assembled the mid- and aft bottoms from 'keyed' sub-assemblies, in our case (*with* 12 foot ply sheets, we'd just be slapping two staggered courses of ply together). The bottoms are just two big, flat rectangles of double ply. Using them as a building table, we assembled the hull sides into one long run each (ditto the bottom procedure), fitted chines and rubrail, then called it a day.

Next day, day seven for us, was the dramatic one. Eight of us (one solely an 'overseer' to back me up, as I get a little frazzled when I need to multi-task) arrived to assemble the hull. We pulled the sides off the bottoms to lie port and starboard. We fixed the three bulkheads in place with 3M and Sika goops backed by 4" bronze ring-shank spikes driven through the bottom into their floors. The diligent crew spent an hour squaring and fixing them into position (I couldn't persuade them that it wasn't necessary – the geometry is built into the hull!). One by one, we lifted the sides (this is why we need a small crowd – the sides are *heavy*) to stand on their chines in position. Glue and spikes at the bulkheads and through the bottom into the chines. Next we fit the upper panels into their notches. In four hours, we were done. The only near disaster was that our beautiful stretch of weather was coming to an abrupt end. But we got the... uh... shelter(?) up before the first drop of rain (which went to snow) dampened our ply.



We finished under and in spite of that totally lame tarp 'structure'. What the photos *don't* show is three weeks of snow, two of 4°F temperatures (glue doesn't set too well at those temps!), and dinking with tarps in 45+kt winds. Building as we were, on one of Sitka's main arteries, a near-constant stream of visitors dropped by to check us out. All of this, along with time spent forcing 8 foot ply to do a 12 footer's job, add up to about the aforementioned month off optimal.

But they also don't show the fun of throwing a boat together! Adverse conditions (if they don't drag on too long) contribute 'in the trenches' camaraderie. Weather aside, there were no surprises or challenges encountered. Construction is straightforward and robust.

The next while was spent completing the hull structure: bow and stern transoms, longitudinal bulkheads (specific to Andy's double bunk arrangement in the bow), for and aft decks and cabin deck, aft bottom.



Andy wanted a very stiff cabin deck. He chose two layers of 1/2" ply sandwiching 1 1/2" blue foam, stiffened by 2x4 framing. My only quibble is that I would've liked to see liquid polyurethane used to fill cracks and gaps (rather than spray expansion foam, which struck me as hardening too quickly to achieve real penetration). In the worst case scenario, though, in twenty years he can zip the whole deck off, if necessary, and do it again in a matter of days.



The interior is ply panel box-girder construction. Furnishings of this sort are quick to build and provide further reinforcement for the hull.



We finished up the interior and closed the hull at the forward end (the bow curve). This is the only challenging part of a *TBoat*, and may be omitted in favor of a hard 'knuckle' as at the stern. It was saved for last to allow easy entrance to the hull while building. The outer, 3/4" skin we kerfed to allow easier bending. Glue and spikes – you know the drill. Where extra clamping pressure was needed, we screwed through the two layers into 2x blocks, which were removed and plugged after the glue set.



Andy chose a tape/fillet join (vs. timber) at the aft 'knuckle'.

Tape exterior seams, resin coat, anti-fouling. 35°F. Yuk.



Toward the end, Andy sent Anke and me home for two days. When we returned, he and the boat and were spray-painted white (inside and out) and tricked out with rolled green trim.



Miscellaneous stuff notably includes the ‘greenhouse’ (large structure on the forward port cabin top – how and why it got there is too long a story, but let’s just say that Andy likes tomatoes!), the beautiful dinette table featuring charts of Southeast Alaska’s ABC islands (Andy’s chief cruising ground), the ‘scuttle’ (the acrylic-faced structure at the aft offset s’brd cabin top – it can serve as a minimal pilothouse) and the companionway stairs (designed with Andy’s Grandmother in mind, proudly octogenarian, for whom the boat is named and who spent two separate weeks aboard this year, slamming fish).

A for-hire wishbone trailer with hydraulic lifts and a nerves-of-steel driver (as opposed to mine, which are more like *flubber* for this sort of thing) backed off the afore-mentioned artery, onto the front lawn, around our strategically placed cinder-block support towers (a breath-taking 4’9” high) into perfect-the-first-time position. He elevated the jacks and called us in to dismantle the towers before I’d properly begun to wring my hands. We leapt into the lead vehicle (Andy’s \$200 pick-up) and turned incredulous heads through Sitka’s downtown, then across the McConnell Bridge (100 yds. of curved arc; stayed, narrow, *scary*) and down to the launch ramp at Sealing Cove. A can of Schlitz Beer (G’ma’s favorite) to christen her, a big party (kids *love* to slide down the inside of the bow curve, between the bunks) and Andy moved into his new home.



At present, I am working on a DIY design/construction book for *Tboat* formula variations ranging from *T16x4* to *T64x16*, due to by May of ‘08. Plans are currently available for the *T16x4*, *T24x8*, *10 and 12*, and *T32x8*, *10, 12 and 16*. Anke and I are hoping to build a *T36x8* for ourselves in the coming year, and a *T40x10* may be started soon. Please visit our site for plans, updates and larger pics from this article.

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