CALIDRIS

Genus of many Common Sandpipers seen on our coast

-Dave Farrington

- Some Specs & An Overall View
- Calidris' Design and a Bit of History
- Design Process: All Boats are a Compromise!
- Construction Notes (and a few engineering thoughts)
- Some Things I Have Learned

Some Specs & An Overall View

Specs
- Specs: 32' LOA 30'11" LWL 8½' Beam 30" Draft 6200# Disp.
- Power: 150 HP Yanmar Diesel - 4 cylinder / 2.75Ω displace / Common Rail Turbo
- 22 Knots WOT 15 Knots cruise 17"x17" 3 Blade Prop
- Strip Planked Western Red Cedar. Sheathed with Dynel and Silver-tip epoxy

Design
- Calidris was designed by Doug Hylan - Hylan and Brown Boatbuilders, Brooklin Maine
- Designed to my requirements

Build
- Not a traditional build: Common modern approach for a one-off design → light & strip
- Kittery Point Yacht Yard installed engine & Shafts. I did the rest.
- Construction started 11 years ago. Dreaming started at least 5 before that!
- Hoping to launch this Summer ☺

Dave
- I am an amateur - this is a weekend Project
- Professionally I am an engineer and work full time
- Have been playing in wood shops since I was little with my father

Design : A Bit of History

- Two themes in Doug Hylan's designs
  - Local working boats and their history
  - Old designs + modern construction = smaller engine = less noise, stink...
- Calidris' design is marriage of 3 design elements
  1. 1950's Classic Beals Island Lobster boats
     - Long & Lean - classic down east
     - Modern Lobster boats beamier for larger capacity
  2. Torpedo Stern from 1920's lobster boats
     - William Frost of Beals Island
     - Rounded stern: won't snag lines? Hull Efficency? Low wake (rum running) ...
     - Hard to build and keep water-tight
  3. Raised Deck / Broken Sheer / Upright pilot house - 1920's Power Yachts
     - Greater volume below decks
     - High bow good in a seaway (but will blow off down wind)
     - License to use lots of bronze hardware
     - Styling gave way to swept-back/ Streamlined post-Depression

Design Process: All Boats Are A Compromise

* Honest discussion about you will really use the boat
  - A Laser is more fun for teenagers than a Marsh Cat
  - You can't fish from a barrel-backed runabout
  - Most dinghies really don't sail well

- Calidris is a day boat
  - We are not into cruising (not going to Tahiti...)
  - Mostly cockpit - lunch for 5, luxurious for 2 or 3
  - Wheel house to get out of the rain. - cabin heat!!!
  - Head, but no galley (lunch comes on board in a cooler)
  - V-berth: nap after lunch
- This use model drove many design decisions
- Contact the designer to customize a stock design
- If you design the boat yourself, you will probably be very disappointed

Construction Notes : Engineering Thoughts

- I decided NOT to ~~loft~~ : CAD design : CNC molds
- Hull built upside-down over CNC cut section molds
- Stem is stacked plywood lamination - also CNC cut
- Structure
  - Big Box truss for torsional stability
  - Round bottom forward transitions to hard chine aft
  - Keel built like studded wall - 2 part foam filling internal spaces
- Planking: 3/4" x 1 1/2" Western Red Cedar - square edged
  - : Bronze Ring nails to ~~stitch~~ align strips
  - Seams filled with thickened epoxy
- Sheathing: 3 layers Dynel in System 3 Silver Tip low viscosity epoxy
  - 2 layers inside
- Deck: 1/2" Okume plywood with 1 layer Xynde in Silver tip
- Most curved members are laminated
- Moldings : Bead board are shop-made

Stuff I Have Learned

- Safety : power tools - trip hazards - lifting - epoxy hygiene - noise - dust
- Build fixtures & tools to help with awkward tasks
- Knee pads !!!
- Fairing : 9" Sander with soft pad at low speed, then long boards
- Measure big batches of epoxy by weight not volume
- Raptor plastic nails : you can plane & sand them
- Have several cordless drills
- I try to have a clear plan before I come to the shop
  - Have a few tasks ready to go in case you get stuck
- Don't get overwhelmed by the whole project
  - This is just a series of smaller projects
  - But you do need to do them in the right order...