



SAN DIEGO SHIP MODELERS GUILD

Introduction to Planking

Alex Roel / completed November 2020

Kit: Nautical Research Guild

Length: 16" (64' 0")

Scale: 1/4"=1' 1:48

Height: 4³/₄" (19' 0")

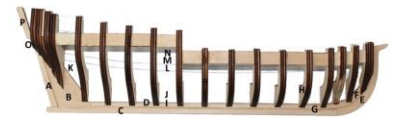
Build No. 3 Introduction to Planking

SDSMG's Mike Lonnecker (and Nautical Research Guild director) suggested that the SDSMG's next Community Build project be a hull planking kit then in development by the NRG. This idea was adopted and eleven Guild members signed up for the project, myself included.

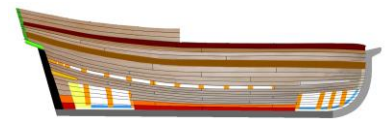
Purchased kit from the NRG for \$52.00.

Started: December 10, 2019

Completed: November 18, 2020



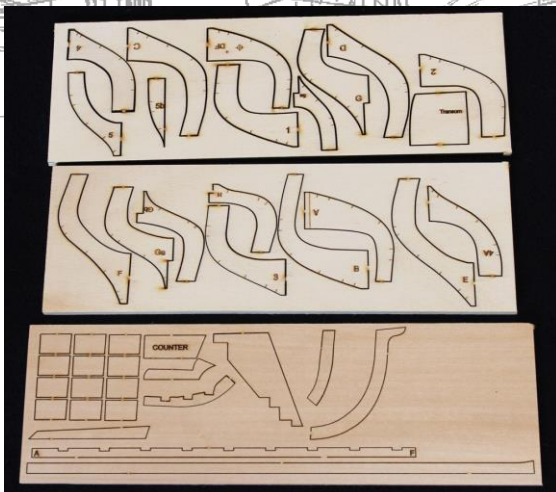
planking framework



structural elements



finished example



kit parts



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Background

This kit was developed by the Nautical Research Guild (NRG) as a service to members to illustrate the basics of planking a hull.

Designed primarily by NRG director Toni Levine, the kit was made available to NRG members for sale in November 2019, and is supported by a 72-page manual and an online build log:

<https://modelshipworld.com/topic/21980-half-hull-planking-project/>

In October 2019 Toni made a preview presentation of the new kit at the NRG Conference in New Bedford MA. During the conference Toni also held a hands-on workshop demonstrating planking techniques utilizing the kit.



Toni Levine at workshop at 2019 NRG Conference



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Build Notes

⚓ *Affixed kit plan to 3/16" foam backboard as the working platform for the build.*

⚓ *Removed the laser-cut keel pieces and sanded all charred edges. Positioned the various keel pieces on the plan, then cut and sanded for tight fits.*

⚓ *Carved and sanded the rabbet in the joint between the keel and keelson; did the same for the stem and stemson, the rabbet changing from a 45° bevel along the keel to a 90° mortise at both the stem and stern. The transition from bevel to mortise at the stem needed extra attention.*

⚓ *I noticed that I was too aggressive while sanding the rabbet on the keel's transition to the stem: when the adjoining parts are pieced together that area is noticeably larger than the rest of the rabbet. Deferred further action on this until I see how the garboard strake looks when planks are fitted to the area in question.*

⚓ *Started to plumb and glue the frames to the keelson. The slots for the frames on the keelson need to be deepened. I placed the bottom edge of each frame just above (nearly touching) the rabbet for a smooth frame/rabbet transition of the garboard strake.*

⚓ *Marked the wale's top and bottom with a mechanical square on each frame as it was set in place.*

⚓ *Defining the topline of the frames (where the caprail will rest) with a*



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mechanical square and chart tape quickly revealed that frame #2 was improperly seated in the keelson. I used isopropyl alcohol to remove it, and then reglued the frame properly seated.

⚓ *Sanded all frame tops to the topline as marked using a Dremel sanding attachment and a flexible sanding stick.*

⚓ *Faired the hull in a rough fashion and then applied chart tape to check results: furred out three frames in order to bring them to the proper depth and did a final sanding to make the hull fair.*

⚓ *Trimmed the counter and installed it. Looking at the instructions and the online build I decided to remove this counter and make another one... two. Third time was, I hope, the charm.*

⚓ *Marked the upper and lower lines of the wale width (9/32" stem to stern) in ink on the faired frame edges after laying them out in chart tape (this differed somewhat from the original wale marks made earlier.) Considered when to install the wale (now or after all the lower planking is complete.)*

⚓ *Following a question from Ed Torrence about the rabbet I took another look at the instructions in the online build and realized that I had not finished the rabbet. Starting at the fore part of the deadwood the rabbet on the keel is a 45 angle: what I finally deduced was that the rabbet on the aft portion of the keel should be simple mortise, which I then did.*



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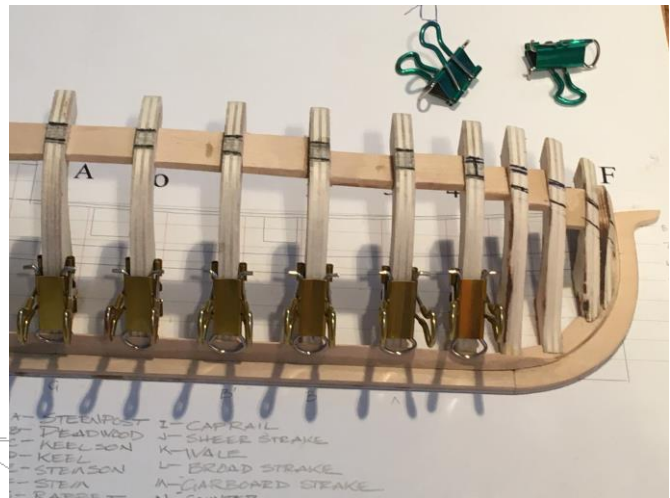
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⚓ *Marked, cut, and planked the garboard strake.*

⚓ *Marked, cut, and planked the broad strake.*



⚓ *Chuck Seiler pointed out the oddity of the kit's instructions describing the wale's aft end finishing at the counter (black strake, left, using photo from online build to illustrate) as opposed to a bit higher and extending back as the lowest strake on transom (green highlight.) This argument persuaded me to ensure the aft end of the wale extended to the transom.*





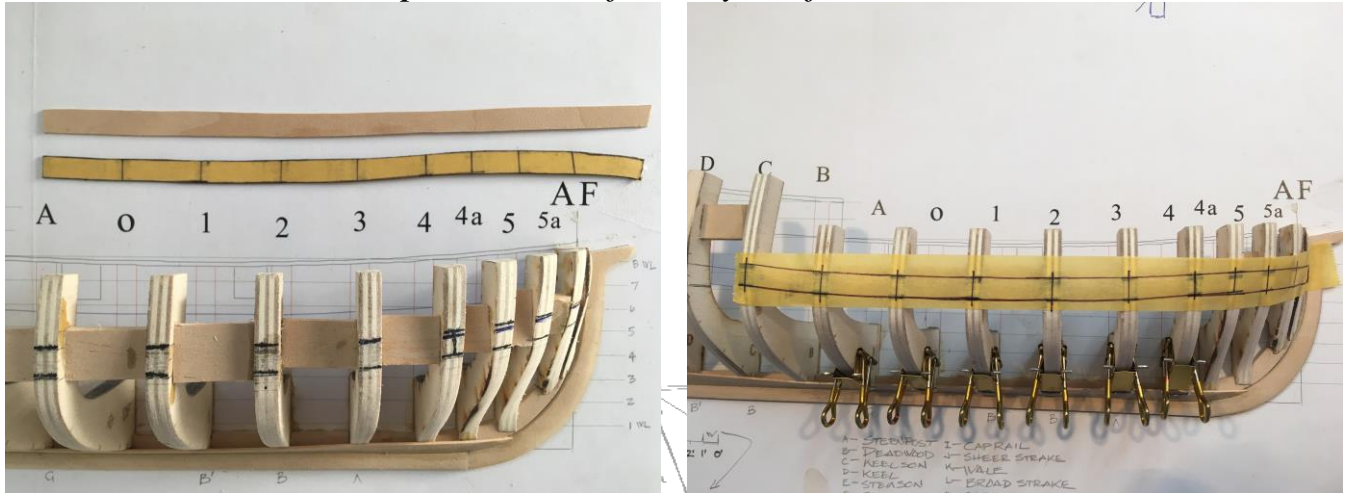
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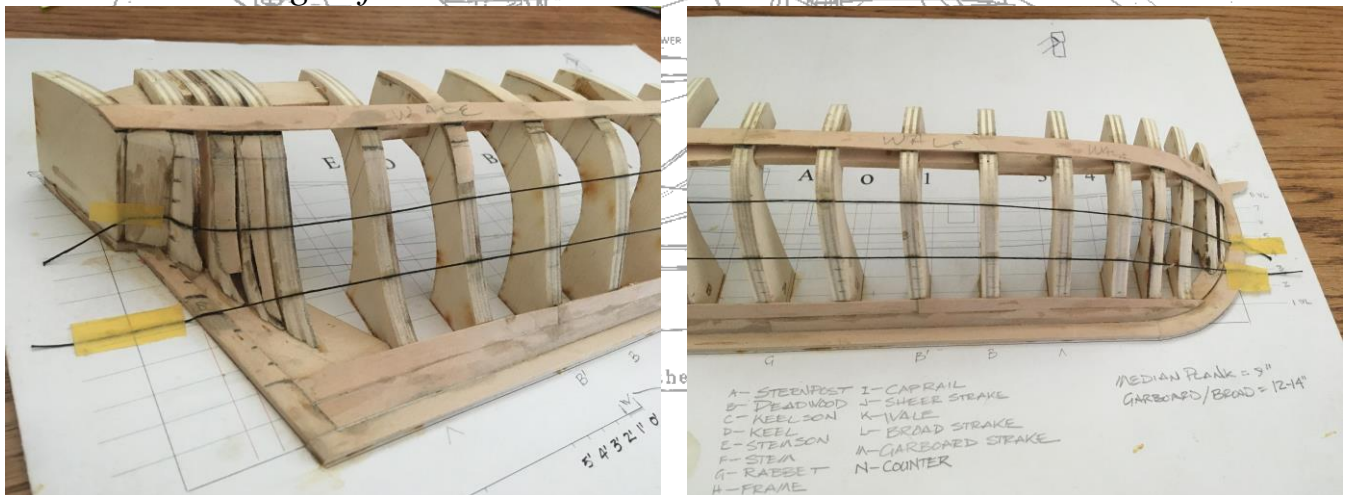
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 *Marked, cut, and planked the first layer of the wale.*



 *Laid out three planking belts between the top edge of the broad strake and the lower edge of the wale.*



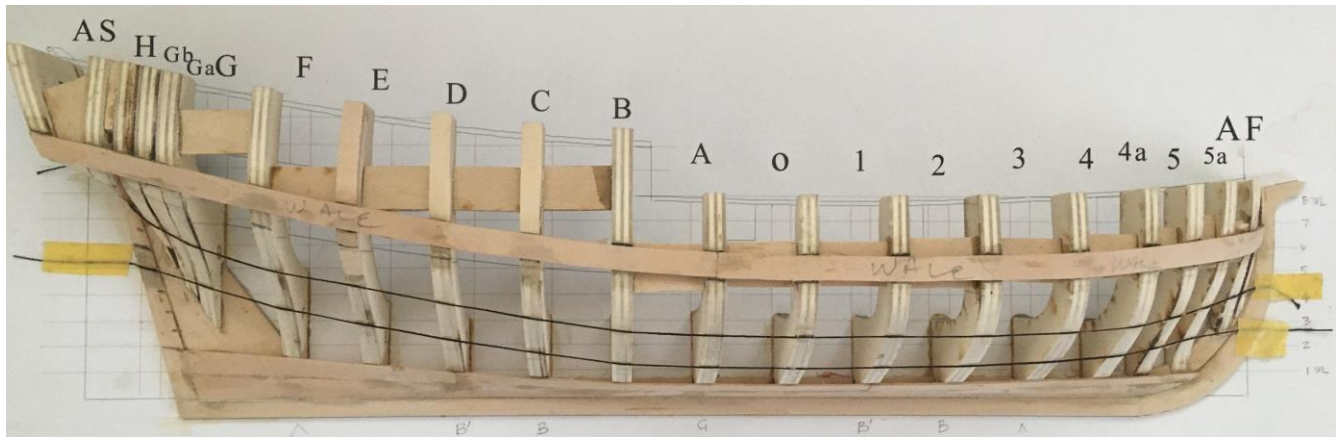


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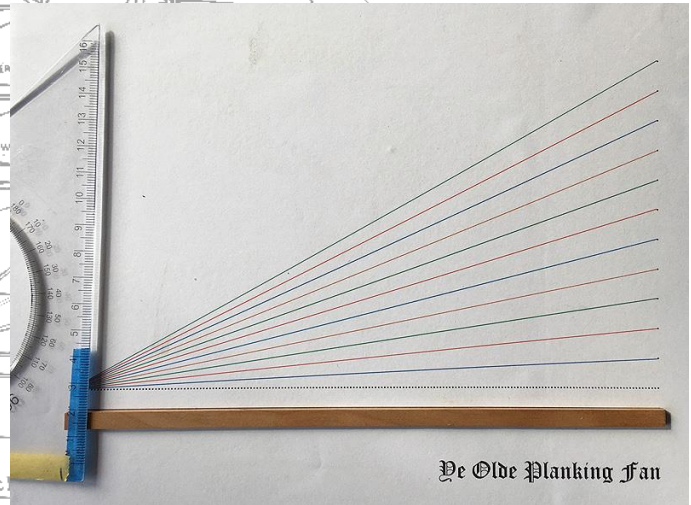
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⚓ *Marked, cut, and planked four strakes on the lower belt.*

⚓ *"Ye Olde Planking Fan" supplied to the Community Build by Chuck Seiler proved to be a very useful tool for quickly making tie strips.*

⚓ *Marked, cut, and installed stealer between the middle and lower belts.*





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⚓ *Marked, cut, and planked four strakes on the middle belt.*



⚓ *Marked, cut, and planked four strakes on the top belt.*

⚓ *Laid out two planking belts between the top edge of the wale and the caprail.*

⚓ *Marked, cut, and planked four strakes on the lower belt.*

⚓ *Marked fore and aft cutouts on lower hull and removed planking from*



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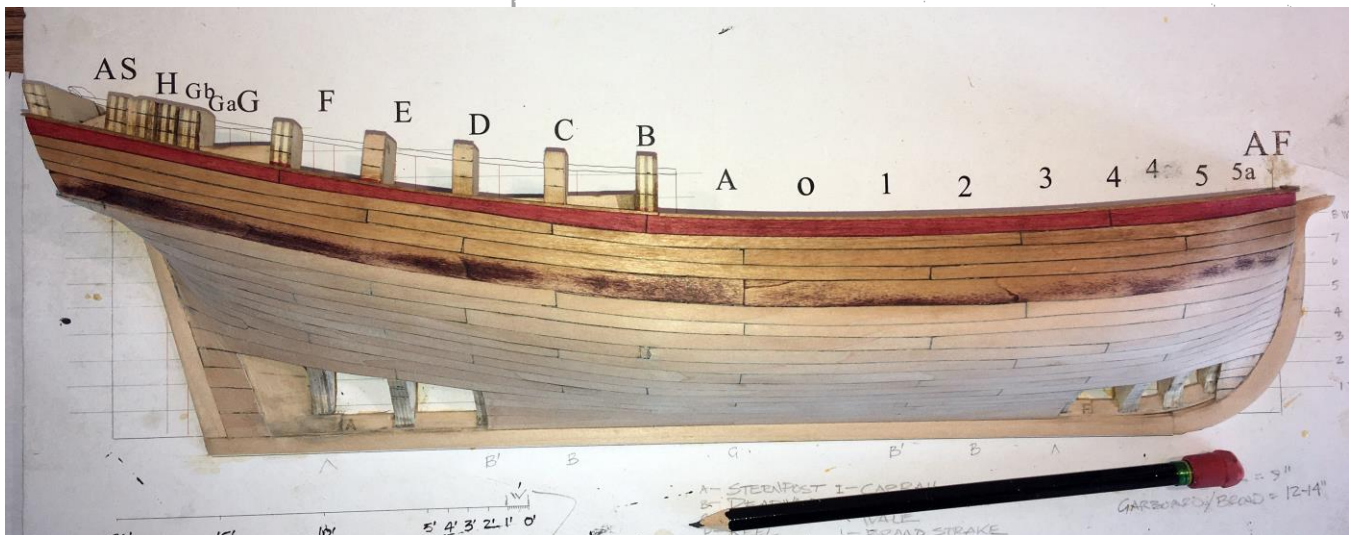
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them to reveal interior structural elements.

⚓ *Planked counter.*

⚓ *Stained and painted (burgundy) planksheer preparatory to installing caprail.*



⚓ *Made and stained caprail and trim extending aft to transom; added atop the lower belt.*

⚓ *Marked, cut, and planked three strakes on the top belt.*

⚓ *Planked transom.*

⚓ *Made and installed trim for transom and quarterdeck step.*

⚓ *Made and installed rail for the quarterdeck.*



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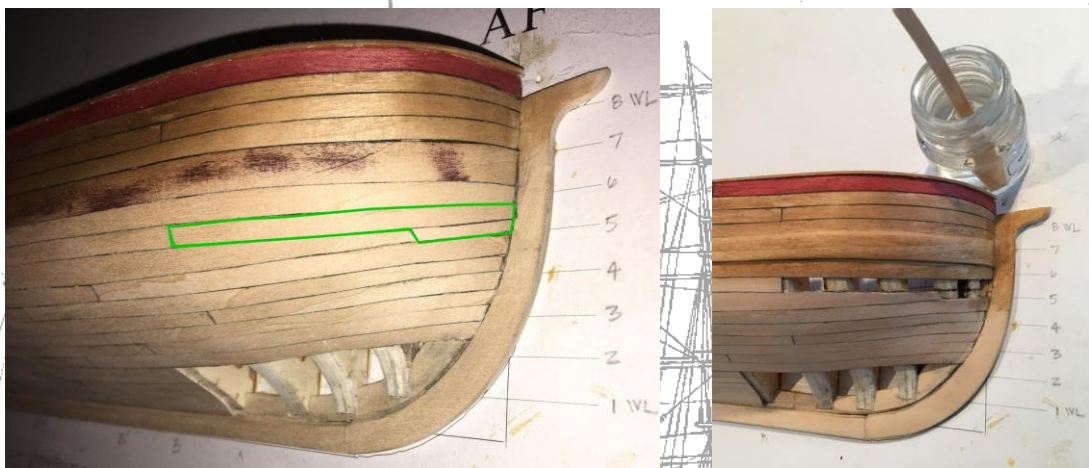
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⚓ *Marked, cut and installed second layer of wale.*

⚓ *Reviewing the kit instructions revealed that the step to add a drop plank towards the bow was completely omitted while planking. This key structural element should be illustrated on this model: examining the bow planking a passable pair of adjacent planks were identified to create a half-drop plank.*



⚓ *Removed an aft plank that had fractured during bending it and an amidships plank that had been sanded through. Decided to leave these planks off to add visual interest to the model and let additional frames show through.*





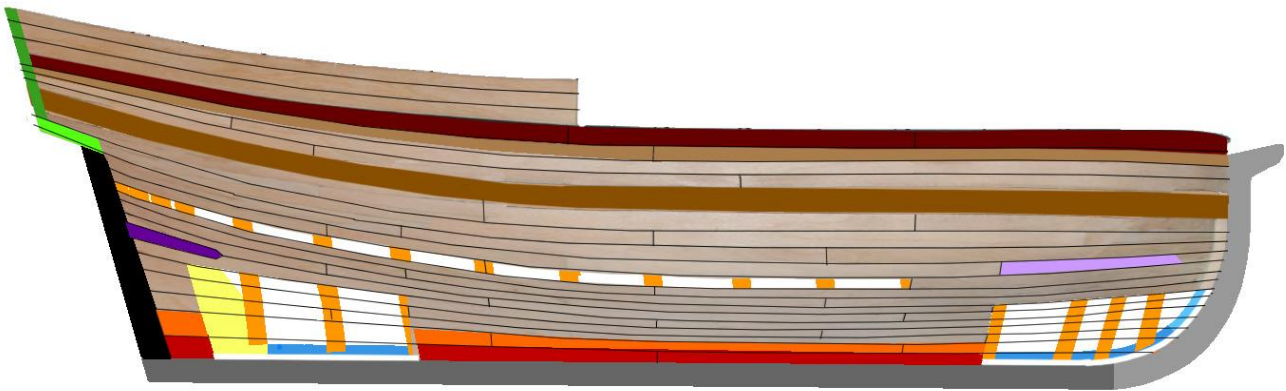
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- 🚢 *Removed model from backboard.*
- 🚢 *Stained interior surfaces of bulkheads.*
- 🚢 *Gave a final light sanding (#P600) and staining to hull.*
- 🚢 *Painted structural elements using key colors:*



- transom (green)
- counter (light green)
- sternpost (black)
- deadwood (pale yellow)
- keel (grey)
- keelson (teal blue)
- stem (light grey)
- stemson (light blue)
- rabbet (white)
- planksheer (burgundy)
- sheer strake (tan)
- wale (brown)
- drop plank (lavender)
- stealer (purple)
- broad strake (orange)
- garboard strake (red)
- bulkhead / frame (ochre)

- 🚢 *Created the effect of continuing the caulk lines between the cutaway planks by using black thread stretched taut side to side of each cutaway.*



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⚓ Created an 11"x17" background using Photoshop to be affixed to a new backboard. The artwork displays a generic sheer plan of a sailing vessel and a color-coded key to identify all painted structural elements (as noted above.)

⚓ Had the artwork printed at Staples.

⚓ Spread Titebond III extremely thin (using a metal kitchen spatula) to the foam backboard and laid the artwork on that. Struggled to lay the artwork flat without rippling and bubbles: after drying the foam backboard curved severely rendering it unusable. Having used this technique successfully before on the PHANTOM, I then recalled that the artwork for that was glued to a wood backboard, not foam. Found a suitable piece of Medium-Density Fiberboard (MDF) for a backboard for this build.

⚓ Had the artwork reprinted at Staples on slightly heavier stock.

⚓ Spread Titebond III extremely thin (using a metal kitchen spatula) to the MDF backboard. Laid artwork flat and smoothed quickly from center eliminating bubbles and ripples.

⚓ Applied two coats of clear matte spray fixative over entire surface of artwork.

SAIL PLAN of the BARK SEAR of INDIA

⚓ Glued model to backboard.

⚓ Glued Basswood paint chips to color-coded key on backboard artwork.



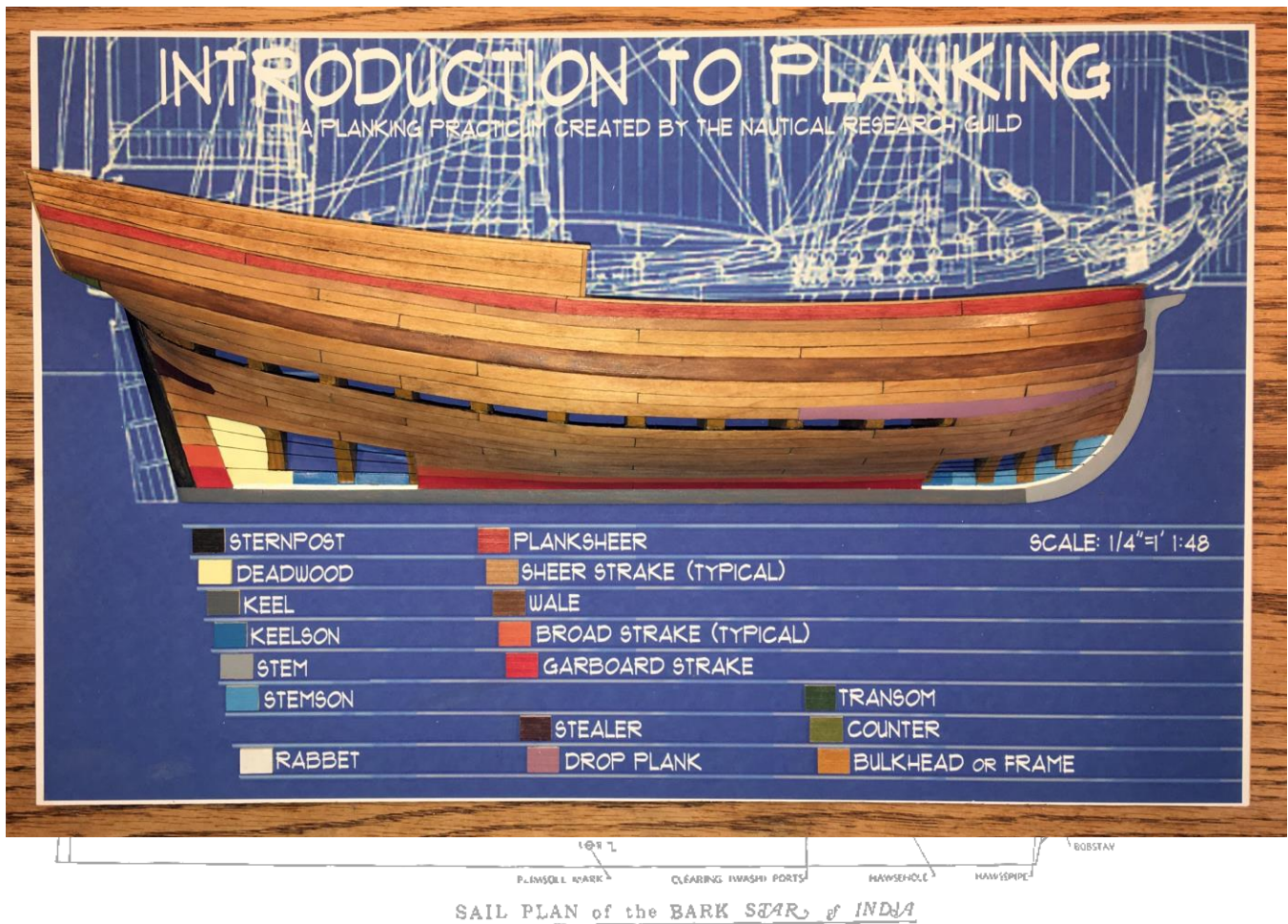
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Completed Build (*November 18, 2020*)





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Materials Used

Model

- ⚓ Plywood (frames)
- ⚓ Basswood (planking and keel)
- ⚓ Foam board (3/16")
- ⚓ Titebond II glue
- ⚓ Minwax #210B "Golden Oak" stain (hull)
- ⚓ Model Master #1742 "Dark Tan" enamel (key structure)
- ⚓ Model Master #1764 "Euro Dark Green" enamel (key structure)
- ⚓ Model Master #1768 "Flat White" enamel (key structure)
- ⚓ Model Master #2009 "British Crimson" enamel (key structure)
- ⚓ Model Master #2111 "Italian Dark Brown" enamel (key structure)
- ⚓ Testors #1114 "Yellow" enamel (key structure)
- ⚓ Testors #1111 "Dark Blue" enamel (key structure)
- ⚓ Testors #1149 "Flat Black" enamel (key structure)
- ⚓ Testors #1150 "Flat Red" enamel (key structure)
- ⚓ Testors #1162 "Flat Blue" enamel (key structure)
- ⚓ Testors #1163 "Flat Gray" enamel (key structure)
- ⚓ Testors #1166 "Flat Brown" enamel (key structure)



Display Board

- ⚓ Foam board (3/16")
- ⚓ MDF board
- ⚓ Photoshop artwork
- ⚓ Titebond III glue
- ⚓ Krylon #K01309 "Matte UV-Resistant Clear" spray acrylic



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Lessons Learned

⚓ *I found that the art of planking is definitely a learning experience: the more I planked the better I became. While it sounds obvious, there really is no substitute to “doing”. Keeping my desire to “do it perfectly” in check (especially early on) allowed me to progress as each plank was laid down.*

⚓ *It’s important to be sure planks are clamped tightly both to the frames and to adjoining planks; it’s far too easy to fail to snug a butt-joint and leave a gap.*

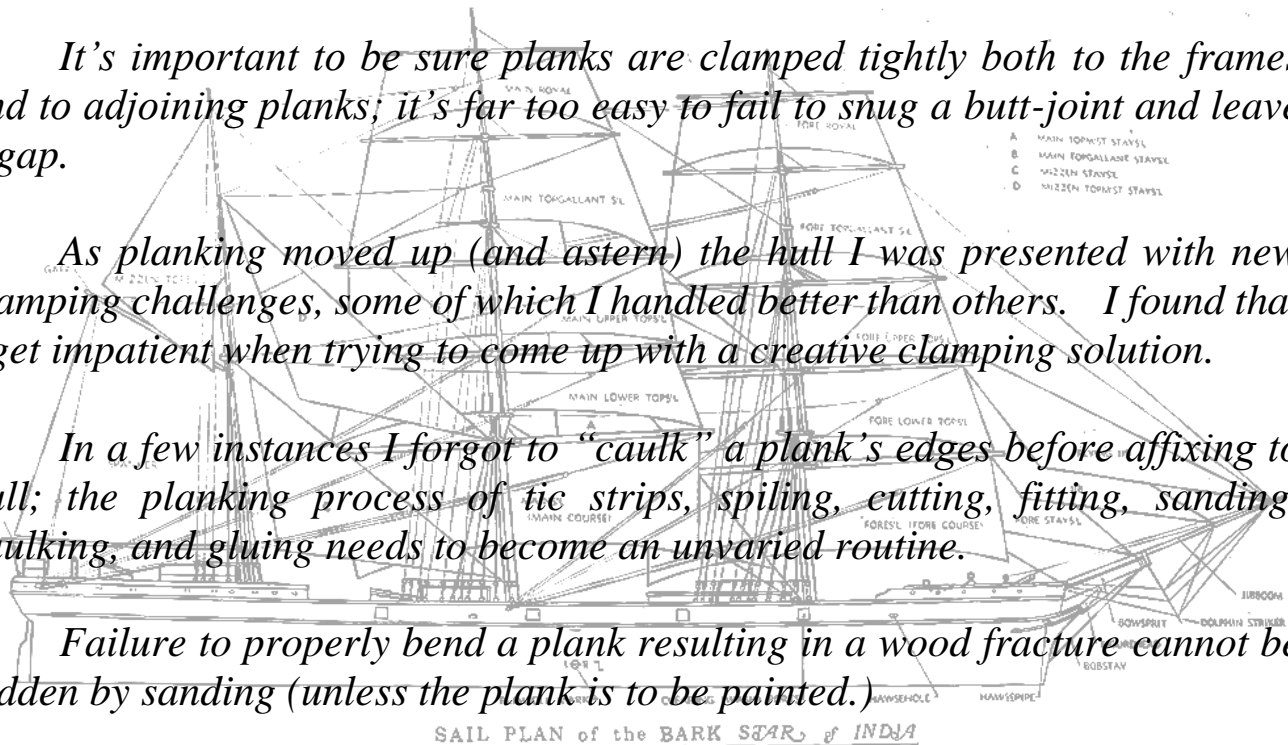
⚓ *As planking moved up (and astern) the hull I was presented with new clamping challenges, some of which I handled better than others. I found that I get impatient when trying to come up with a creative clamping solution.*

⚓ *In a few instances I forgot to “caulk” a plank’s edges before affixing to hull; the planking process of tie strips, spiling, cutting, fitting, sanding, caulking, and gluing needs to become an unvaried routine.*

⚓ *Failure to properly bend a plank resulting in a wood fracture cannot be hidden by sanding (unless the plank is to be painted.)*



⚓ *Despite a warning from Chuck Seiler about (over)sanding the hull while planking progressed, I failed to heed his advice and consequently sanded one end of a plank to less than paper width. Save sanding until planking complete.*





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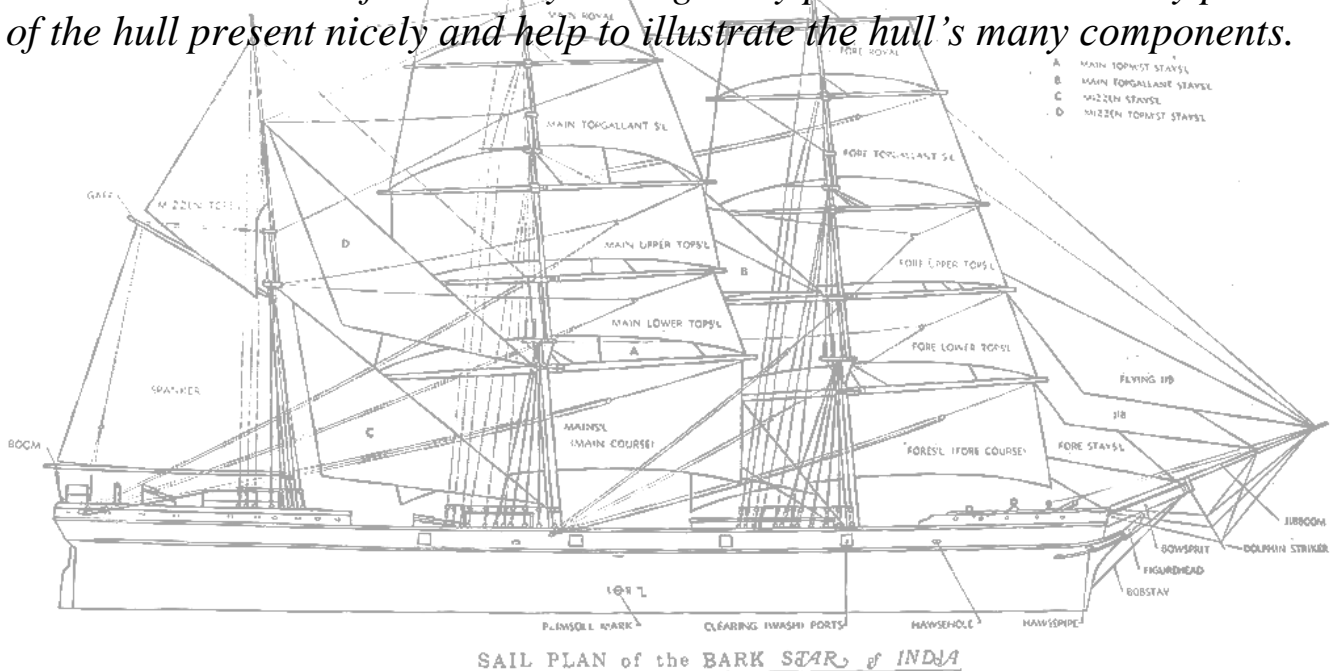
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Regrets and Delights

⚓ *Delight: The process of planking did become clearer and easier as I progressed, plank by plank. This is proving to be a very useful exercise in developing skills.*

⚓ *Delight: I'm glad I took the plunge and proceeded with exposing structural elements of the hull by cutting away planks. The cut-away portions of the hull present nicely and help to illustrate the hull's many components.*





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Plaque

Decided against a separate plaque for this build instead simply incorporating the name and scale in the background artwork.

