Project Tutorial

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It is our pleasure to provide our customers with fun and useful projects to enjoy!

Compatible with Current Version of:

VCarve PRO
and
Aspire

Sample Carved with:
ShopBot Buddy
PRSalpha BT48

ShopBot®
www.shopbottools.com

Boat Hull Nautical Shelf
Designed for Vectric™ by Michael Tyler

The Boat Hull Nautical Shelf is an attractive way to display your small knick-knack treasures for your home or office. It is especially fitting as an addition to a Nautical Decor!

The sample's hull walls, shelves and boat tip were selectively stained. The edge trim and inside back panel were left a natural light color. The instructions outline how this was accomplished, as there is a specific order in which this is done. The two-tone wood finish on the sample is intended to resemble certain vintage wooden boats from the past. Of course, you may opt for a different type of finish, as you like. A "shabby-chic" pastel perhaps? In any case, have fun with it!

Dimensions are about:
10.25 " W x 21.5" T x 3.625" D

Main items you will need:

1) The Project Files (included):
• Boat_BACK_Panel.crv
• Boat_LEFT_Hull_Parts.crv
• Boat_RIGHT_Hull_Parts.crv
• Boat_TIP_and_TRIM.crv

2) Boards with these dimensions:

BACK:	0.75 "x 11 "x 23 "
LEFT:	0.75 "x 7 "x 23 "
RIGHT:	0.75 "x 7 "x 23 "
TIP and TRIM:	0.75 "x 9 "x 23 "

3) In addition, you may cut the 3 shelves from 0. 5"-thick stock with a table saw. Approximate dimensions are:
• **two shelves: 0.5 "x 2.625 "x 7.75 "**
• **one shelf: 0.5 "x 2.625 "x 9 "**
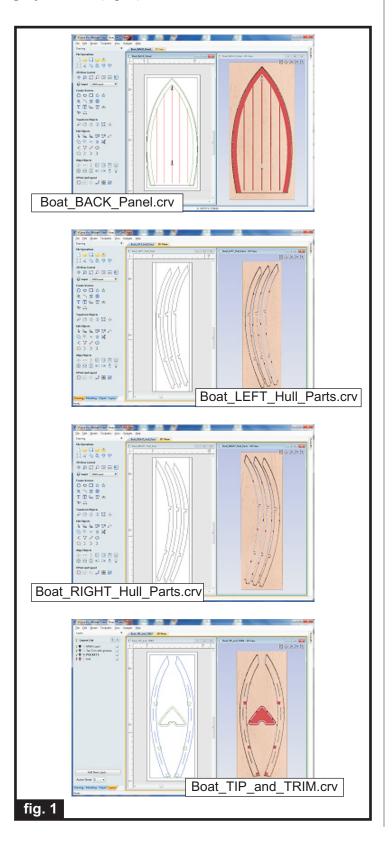
4) Sandpaper, wood glue, stain and/or paint and clear finish.

5) A Dremel-type rotary tool with assorted sanding wheels and bits to sand small details and speed up preparation for finishing.

CNC Bits used for the Sample:

0.125 " End Mill (EM)

STEP 1 - Open and Review the Project Files

Start your VCarve or Aspire software and open the project files. (fig. 1)

Boat_BACK_Panel.crv

Boat_LEFT_Hull_Parts.crv

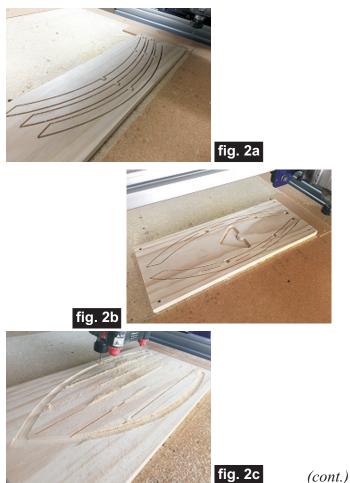Boat_RIGHT_Hull_Parts.crv

Boat_TIP_and_TRIM.crv

fig. 1

Carefully review all the toolpaths and make any necessary changes to suit your particular bits and machine. The toolpaths are currently set with feeds, speeds and pass depths that were used in creating the original sample. Please don't use them directly until you review them for your own setup.

You can edit the tools and change the settings to your own preferences and requirements. **It is very important to recalculate all toolpaths after making any edits/changes.**

Once you have recalculated for your own machine and bits, reset the preview, then preview all toolpaths again to visually verify the project outcome on-screen.

STEP 2 - Run the Project

When you are satisfied with your settings, save the toolpaths to the appropriate Post Processor for your machine. Place your material on your machine bed and proceed to run the file(s). (fig. 2a, 2b, 2c)

fig. 2a

fig. 2b

fig. 2c

(cont.)

STEP 3 - Separate Parts from Material and Sand

Separate the parts from the boards with a utility knife or hobby saw. Sand the components to remove the tabs and undesirable toolmarks. (fig. 3)

fig. 3

STEP 4 - Hull Wall Assembly and Stain Application

Stack and glue the LEFT hull parts together. Brush an even layer of wood glue onto mating surfaces. Use scraps of 0.5"-thick stock to help align the parts. Drops of CA glue or pin nailing can tack the part alignment while the glue dries. Repeat for the RIGHT hull parts. Clamp or weigh down while the glue dries. (fig. 4a, 4b, 4c):

Stack and glue parts. Use scrap wood inserted into the shelf dados to help align the parts

fig. 4a

You can use drops of CA glue or pin nailer to tack parts after alignment

fig. 4b

Weigh down or clamp while the glue dries

fig. 4c

After the glue is dry, final sand the concave and convex surfaces of both hull halves. (fig. 4d)

Sand hull surfaces

fig. 4d

Apply stain to the interior (concave) surface ONLY! Avoid glue surface areas. Allow to dry. (fig. 4e)

Apply stain to interior hull surfaces ONLY

fig. 4e

Glue the hull assemblies to the back panel. Clamp or weigh down until dry, then final sand the outer hull sides to blend with the back panel. (fig. 4f, 4g)

Glue the hull halves to the back panel

fig. 4f

Weigh down or clamp while the glue dries. After it is dry, final sand the outer hull surface to blend with the back panel.

fig. 4g

(cont.)

STEP 5 - Cut the Shelves

Cut the three shelves from 0.5"-thick stock. The dimensions shown below are approximate.(fig. 5a) Board thicknesses can vary, so you should take actual real-world dimensions from the assembled hull itself.

For example, for the real-world sample, the length was fine, but the width dimension of each shelf turned out to be 2.5" (instead of the 2.625" as in the original design layout). You can cut these using your table saw, or create your own file for the shelf rectangles if you want to use your CNC to cut them.

> **Top and Bottom Shelves**
> 0.5" thick x 2.625" wide x 7.75" long
>
> **Middle Shelf**
> 0.5" thick x 2.625" wide x 9" long

fig. 5a

I used 0.5"-thick planks from a big box store. The planks are 5.5" wide x 24" long, which made it pretty tight to fit all three shelves on one plank for CNC machining. Cutting the shelves on my table saw was quick and easy and I could cut all three from one plank, no problem. (fig. 5b)

fig. 5b

Test fit all components and make any necessary adjustments, if required. (fig. 5c)

Test fit all components

fig. 5c

STEP 6 - Final Finishing and Assembly

Apply stain to the shelves, the tip onlay and outer hull (including the backside). Use care not to drip any stain on the interior (natural) side of the back panel. (fig. 6a)

fig. 6a Stain shelves, tip and outer hull (including backside)

When dry, apply a couple clearcoats to the interior. I used Krylon clear acrylic spray. (fig. 6b)

Apply clearcoats to interior

fig. 6b

Glue the shelves, trim and tip to the hull assembly. (fig. 6c)

fig. 6c

Apply final clearcoats overall. (fig. 6d)

fig. 6d

(cont.)

IN CONCLUSION

I hope you enjoyed making your Boat Hull Nautical Shelf! It can be hung on a wall using two long screws spaced 14.75 " apart. Slip the shelf unit over the screw heads. Adjust the screws to make a snug fit against the wall. Alternatively, you can use this as a tabletop or mantle display shelf. Just delete the toolpaths for the "keyhole" mounting holes, leaving the back solid, if you wish.

Happy Carving!

Michael

(cont.)

Materials Source Page

• **3M Radial Bristle Discs from** www.mcmaster.com
(stack 3 discs at a time on your rotary tool mandrel)
     80-grit: part # 4494A19
     220-grit: part # 4494A18

Items Purchased at Home Depot™ or Lowes™

• **Rust-Oleum Traditional Cherry Stain**
• **Disposable Brushes and Paint Rags**

Krylon Clear Acrylic Spray
from WalMart™

NOTE: Direct weblinks and prices were valid at time of this writing, but can change at any time. If links don't
work, then try visiting the website's home page and do a Search for the item to get directed to a current/valid page.

Additional Resources

RESOURCES...

There are numerous resources for Vectric software owners to make their experience with their products more enjoyable. The Vectric website includes video tutorials and more, to provide a good overview of the software products and how to use them. Please visit the Support page for a complete listing of available resources for you.

Vectric Support: http://support.vectric.com/

Vectric User Forum

Every owner should join the Vectric User Forum (http://www.vectric.com/forum/) where fellow users share their experience and knowledge on a daily basis. It is a FREE service that you will surely appreciate. A handy Search Feature helps you find answers to any questions you may have. There are Gallery sections as well, where you can post and view photos of projects created with Vectric software.

IMPORTANT: Before outputting any toolpaths you should carefully check all part sizes and the material setup to make sure they are appropriate for your actual setup.You should also check and re-calculate all toolpaths with safe and appropriate settings for your material, CNC machine and tooling.

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