

Compatible with the Current Version of



Copyright: Silverback Woodworking LLC. 2019

**Welcome** to this episode of NextWave Automation monthly project. This month's project we are going to make an attractive Flag themed edge grain cutting board. It has 8 glue ups, 4 operations, and two-sided machining. This project has 3 parts. It has union with stars, and the stripes. This would make a wonderful, personalize gift for many occasions, like weddings, anniversaries, or just a personalize gift for that favorite chef.

The samples were made using Walnut, Cherry and Hard Maple however, you might use woods of your own choosing. We recommend using any suitable hardwood.

The Instructions, crv. files and videos are found on Nextwave's Automation Website [nextwaveautomation.com](http://nextwaveautomation.com). This project is aimed at the woodworker with moderate skills. You will need access to the current version of V-Carve with updates, the tools are listed below.

The main topics today are:

- Project Materials
- Designing
- Machining
- Finishing and Assembly

**Project material list for Flag Cutting Board:**



**The basic materials** you will need for this project are:

1. 5 - Walnut  $\frac{3}{4}$ " x  $1\frac{5}{8}$ " x 24"
2. 11 - Cherry  $\frac{3}{4}$ " x  $1\frac{5}{8}$ " x 24"
3. 11 - Hard Maple  $\frac{3}{4}$ " x  $1\frac{5}{8}$ " x 24"
4. Mineral oil for cutting boards
5. Epoxy and colorants for epoxy
6. Shellac

#### Project Tool List:

**Tools** that you will need for this project are:

1. 60° v-carve bit
2. 1/2" ball nose bit
3. 1/8" up spiral bit

#### Project CNC Files:

- flag2.crv

#### Video Files: [found on nextwaveautomation.com](http://nextwaveautomation.com)

- Flag Cutting board designing.mp4
- Flag Cutting board blank building.mp4
- Flag Cutting board Machining.mp4
- Flag Cutting board finishing.mp4

#### Creating the Tap Files:

With the V-Carve software, open the project CNC files. Carefully review all the toolpaths and make necessary changes to suit your tools and machine. The toolpaths are currently set with tool, feeds and speeds that were used in designing the original project. Be sure to review them for your machine. Edit the tools and change the settings to fit you own machine and requirements. It is very important to recalculate all toolpaths after making any changes. Once having made the necessary recalculations for your own machine and tools, reset the preview, and then preview all toolpaths, again, to visually verify the project outcome. Create the tap files for your machine by using the correct post processor. Once satisfied with your settings, save the tool paths using the appropriate post processor for your machine. Check tool paths by air cutting the project or use rigid foam board to run a sample tool path. Now you're ready to make your own **Flag Cutting Board!**

#### Material and prep

To prep the material of this particular project you will need to assemble:

- 1) Edge glue 5 pieces of Walnut together.



- 2) Edge glue 11 pieces of Cherry together.
- 3) Edge glue 11 pieces of Hard Maple together.

Figure 1

#### Gluing union and stripes



Figure 2

Take all of the blanks and cut them into  $1 \frac{3}{8}$  strips. After cutting you should have 7 Walnut, 7 Cherry and 6 Hard Maple strips, these are the union and endgrain stripes for the flag. Figure 2.

#### Bottom Stripes

Alternate starting with the Cherry glue 3 Cherry and 3 Hard Maple endgrain strips together for the bottom stripes.

#### Top Stripes

Alternate starting with the Cherry glue 4 Cherry and 3 Hard Maple endgrain strips together for the top stripes.

#### Union (star field)



Figure 3

Glue 7 Walnut endgrain strips together for the Union (star field) Figure 3.

#### Gluing the Union and Stripes together



Figure 4

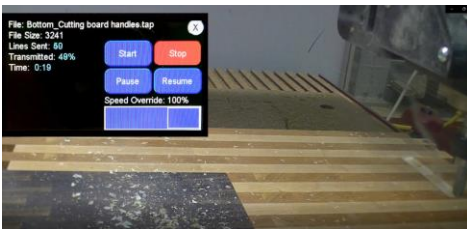
Square the top block and the union block where they meet. Take the bottom block, top block and union block and glue together as shown in Figure 4. Make sure the union is  $7 \frac{3}{4}$ " long.

#### Step 1

Set up file prep first you will have to go to [nextwaveautomation.com](http://nextwaveautomation.com) then go to projects and go to golf ball setter and download the files for this project. After you've downloaded the files you should have seven files golf setter back, golf setter front, golf setter trough, golf setter bottom, golf setter side, and golf setter parts. Now you will open each file and save the tool tap file for that file in the appropriate post processor for your machine. Make sure you save all these tool tap file as unique filenames so you don't get confused of what file goes to what part. Again, I can't stress enough to make sure you save all of your tool paths in the correct post processor.

#### Step 2 (Bottom) Handle groove and text

4. Now mount this blank on the spoil board. Machine the bottom side first. First install a 1/2" ball nose bit, and run the bottom cutting board handles tap file. Install the 60° v-carve bit, and run the bottom quick engrave tap files. Seal the top with shellac this will seal the cutting board so there is no migration of the epoxy when we fill the stars and lettering.



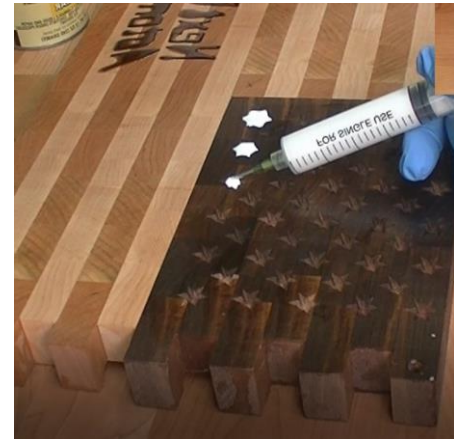
#### Step 3 (Top) Stars and Logo

In this step we are going to do the top, Stars and Logo. Secure the blank to the spoil board. Remember to locate off of the lower right corner of the union (star field) On my machine the center of the flag was .5 inches to the right x+ and .3885 inches up y+ from the lower right of the union. These where the dimensions for my machine yours may differ. We are going to do the stars first. Install your 60° v-carve bit, and run stars tap file. Install your 1/8" up cut spiral bit, and the Nextwave Lettering [pocket tap] file.

#### Step 4 Filling the Stars and Logo



In this step we will be filling the lettering and the stars with epoxy. Follow the instructions for the epoxy the you use. Mix one batch for the white stars and one batch for the letters. Color is your choice. I use a large syringe to fill the depressions of the carvings. Try to fill just enough but not too much. Allow to set for the prescribed time by the manufacture.



#### Step 5 Sanding and Finishing



Sand through the grits of sandpaper to get a 320 grit finish. Dust off the surface and I apply a coat of Crystalac finish hand rubbed in. After the finish is thoroughly dry I wet sand to 400 grit. Now apply Mineral oil until it will absorb no more. Buff and install the feet. Sign your project and now we are done

For this project we used Crystalac Finishes. Hope you've had fun building this project. Till next project keep on

carving.



Please support all of our sponsors, NextWave Automation, KenCraft Company for wood supply, CrystaLac finishes, and Silverback Woodworking.

Rick Frazier

#### Our Sponsors



Terms of Use: This Project and artwork is provided on the understanding that it will only be used by private individuals. You may use the designs to carve parts for sale but the Files and/or Vectors, Components or Toolpaths within them (or any derivatives) may not be converted to other formats, sold to, or shared with anyone else. This project was created by Rick Frazier and is Copyright 2019 – Silverback Woodworking LLC.