TCJ2O
Cornwall DJ

Sem 2 24/25
16 Pages

Final Summative Evaluation

TCJ2O Sem 2 24/25
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Preamble

The paddle has a deep and rich history in Canada. With National Canoe Day on June 26th, there's no time like the present to reacquaint yourself with the thousands of lakes and rivers this great country of ours has to offer…not to mention your spokeshave

The act of carving a canoe paddle is a great way to unleash your creativity and challenge your woodworking abilities at the bench. The process itself might appear to be sculptural, but don't be fooled: a paddle also demands symmetry, comfort and true lines that beg to be examined by the eyes and hands of admirers. Many of our students bring no prior woodworking experience, yet succeed with great results. In the end, a well-made canoe paddle can become an heirloom, but don't be afraid to also use it in the water. After all, it's a functional sculpture.

Mark Blade Thickness

With a marking gauge, scribe a line defining the blade thickness. In order to see the line better, use a pencil to darken the scribed line.

Tip Thickness

The edge of the tip should be marked a bit thicker than the edge of the rest of the blade. This will be used to help create your taper in the next step.

Taper Line

To ensure the edge of the blade is tapered consistently, draw a taper line on the edge of the blank. This taper line starts at the tip marking and runs out to the edge of the blank at the butt of the blade.

Remove Material

With a jointer or hand plane, start removing material from the blade, paying attention to the taper line. Use the bench vise to hold the shaft while you work the material to shape it.

TCJ2O Sem 2 24/25
Cornwall DJ **16** Pages

Shape to an Angle

Trim the blade edge on a 45° angle to the initial scribe line.

Check the Thickness

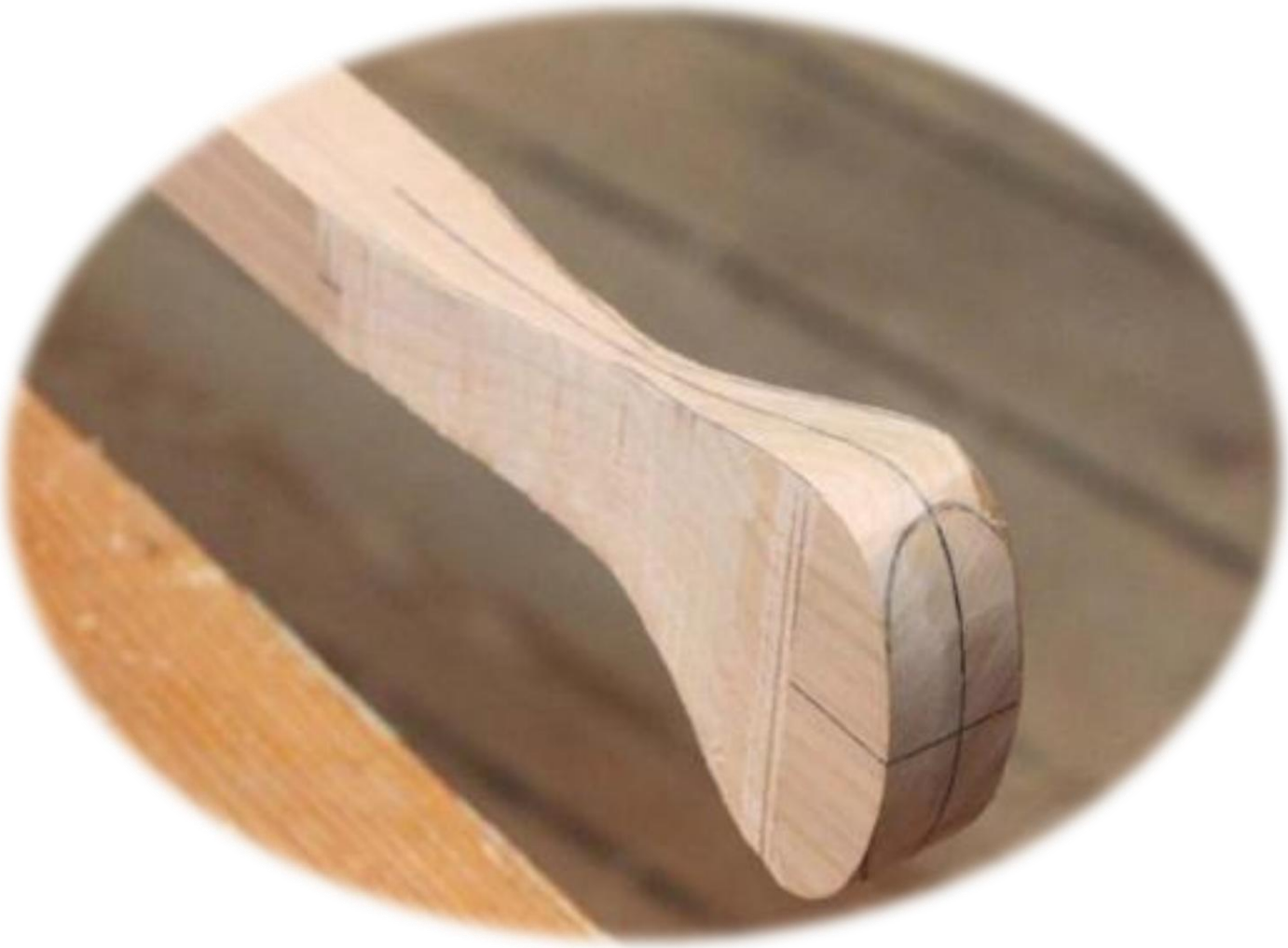
As you work on the blade, use calipers to ensure you're removing material evenly.

TCJ2O Sem 2 24/25

Cornwall DJ **16** Pages

Work to your Layout Lines

As always, layout lines will guide you as you work this 3-D object. Remember that the layout line is important to leave behind for you sanding step.



Comfort and Looks

If the handle feels comfortable and looks good, you're done shaping it. Long paddles will not be enjoyable if the grip is uncomfortable.

Mark and Work the Shaft

To keep the shaft straight and even, mark it with guidelines, then use a spokeshave or block plane to remove unwanted wood. Systematically remove “edges” until you end up with a symmetrical shaft.

Transitions

With the blade, grip and shaft complete, it will be easier to visualize what wood needs to be removed in order create a smooth transition between the three areas.

Material Selection

Given the amount of hand-carving that you'll be doing for this project, you will need to ensure that you have selected a premium, straight piece of wood without significant run-out in the grain. By purchasing 6/4 stock, you will have extra material to allow you to joint one face perfectly flat before bringing the final thickness down to 1-1/8". The preferred domestic wood species are black cherry, white ash or walnut, which combine appearance, durability and reasonable weight.

There are an almost infinite number of ways to determine overall length and the preferred shape of the paddle's blade, including copying an existing one. We recommend making your patterns from a paddle you like and making them for one half of the blade and grip so that they can be flipped on the center-line of the paddle for symmetry.

Laying Out Your Paddle

The stock should be milled to a final thickness of 1 ⅛" before you begin. Your first step in laying out the paddle is to draw what will become the center-line of your finished paddle. The placement of this line is important, as it should follow the grain, while also allowing room on either side to accommodate the width of the blade and the grip, and avoid any flaws in the stock. Using a long straight edge and pencil, draw the center-line on your board.

Using your grip and blade patterns, position them along the center-line. The length of the blade should make up approximately 45 percent of the overall length of your paddle. This means if you are making a shorter paddle than the one you took your pattern from, you may have to decrease the scale of the blade pattern, or vice versa. When you are happy with the position of the blade and grip, trace the patterns onto the board by first tracing on one side of the center-line, then flipping the pattern and tracing it on the second half. To lay out the shaft of your paddle, draw two parallel lines, each 9/16" away from the center-line, creating a shaft that will be 1-1/8" wide. Continue these lines until they are slightly overlapping both your blade and grip patterns. You can then blend the transition from shaft to blade and shaft to grip, making sure you stay symmetrical. When you are happy with the layout, it is time to cut the paddle blank out with a bandsaw. Rough edges can be cleaned up with a block plane and spokeshave.

Adding Guidelines

Blade thickness lines: Before you start carving, you'll have to draw some guidelines on your blank, starting with the blade thickness lines. The space between your thickness lines will end up being the thickness of your paddle at the edges of the blade. The thickness lines should be drawn 1/2" in from the edge of a 1-1/8" thick blank, creating two parallel lines that run 1/16" away from the center-point of the thickness of your blank. You can draw a center-line, or you can simply draw your two thickness lines, which will run down both edges, stopping at the tip of the blade.

Tip Thickness Lines: Once you have drawn your blade thickness lines, you need to add another set of parallel lines around the tip of your paddle blade. Measure out an additional 1/8" from your blade thickness lines and draw the tip thickness lines starting where the blade begins to curve into the tip and finishing in the same location on the other side.

Taper Lines: Draw your taper lines the full length of your blade, starting from the outer edge of your blade where it starts to run into the shaft, down to the tip of your blade where they will meet the tip thickness lines. Repeat these lines on the second edge of the blade creating a wedge of wood on both faces of the blade that can be removed. Using a jointer, you can remove all the wood down to this line or, with a little more elbow grease, a hand-plane can do the same job.

Carving The Blade

Begin by drawing center-lines on both faces of your paddle blade and connect these lines across the butt of the paddle.

It is important throughout the carving process to keep sighting along the blade edges to make sure they do not wander. You will also want to keep in mind that you should be working on all faces and sides alternately. Using a sharp spokeshave, chamfer the edges of each blade face at a 45˚ angle until you reach, but don't carve past the thickness lines you have drawn. Avoid the butt of the paddle in this step by pulling your spokeshave straight towards you without following the curve of the blade at the butt. When you have chamfered both edges on both faces of the blade to your thickness lines, you're ready to start thinning the rest of your blade.

Begin carving with long sweeps of the spokeshave, starting at the chamfered edge and working your way towards the center-line of the blade, being careful not to touch your blade thickness lines. Remember to lighten the cut by keeping your spokeshave skewed. Also pay attention to the direction of the grain and focus on carving the ridges off to avoid your spokeshave chattering. When you have a flat plane from the center-line to your thickness lines on all four edges of your paddle blade, you are ready to move on.

Now you can start carving away the wood at the center-line, creating an even arc from your thickness line on one edge to the thickness line on the other. You can continue to re-draw your center-line as you carve – this will help you to keep your blade faces symmetrical as you work. A good way to determine when you have taken enough wood off the blade faces of your paddle is by using a set of calipers. Divide your paddle blade into thirds from top to bottom: at the upper line your blade should be ⅝" thick and at the lower line it should be ⅜" thick. Calipers set to the appropriate thickness should pass smoothly from one side of the blade to the other at these marks, and the gradual taper should be a smooth transition down the length of the blade. When your paddle blade is finished, the lower third will be almost flat from one thickness line to the other.

Carving the Grip

Begin by drawing center-lines around the edges and on the faces of your grip. Continue the center-line on the face around the top to meet the line on the second face. On one edge of the grip, draw a mark ⅛" out on either side of the center-line where you want your grip to be the thinnest. Draw an hourglass shape connecting what will become the thinnest part of your grip up to the top of your grip and down to the shaft. Cut the triangular sections out with a bandsaw. Add another guide on the top of your grip by drawing a football or ellipse shape– this guide will help you keep the grip symmetrical. Using either a spokeshave with the blade set out a little further than normal or a rasp if you prefer, shape the grip by rounding all the sharp corners into smooth arcs and rounding any flat sides or ridges that remain.

Carving the Shaft

The first step in rounding the shaft of your paddle is to turn the four-sided shaft into an eight-sided shaft by carving off the corners. Begin by drawing a pencil line 3/8" in from each edge on all four faces of the shaft. Using a spokeshave, carve off each of the four corners between the lines you've drawn– the cross-section of your shaft is now an eight-sided figure. For every corner you carved away you've left two new ridges, so, with long passes of the spokeshave, carve these ridges off, leaving a 32-sided figure, which is so close to being round that it only needs some sanding to finish it off.

Finishing Touches

Now that the blade, grip and shaft are carved, you'll find it easier to work on the area between the blade and the shaft and the area between the grip and the shaft by carving off any ridges, leaving smooth, rounded transitions from grip to shaft to blade.

Sand your paddle until you are satisfied that it is smooth and any carving marks have been sanded out. To finish it, start with a thinned coat of Minwax Spar Urethane, which contains UV inhibitors and will extend the life of your paddle. Cover the paddle with as many coats of urethane as you like, being careful to avoid drips.