

Plane Makers Floats Project Information

We will be making two plane makers floats similar in design to the Clark & Williams floats sold by Lie-Nielsen Toolworks.

Making the blade

1. Mark the blade patterns on to a batten to work out the cutting sequence and minimize waste.
2. Transfer the patterns to a bar of 1/8 x 1 inch or 3/16 x 1 inch O-1 tool steel and cut it out with a hacksaw.
3. Drill the holes for the rivets and clean up the saw cuts with a belt grinder and metal working files.
4. Mark the teeth on the blade and start cutting them with a double extra slim taper file. If you are going to use the plane makers float without hardening the steel, finish the teeth, otherwise leave a 1/32 flat on the top of the teeth that will be removed after hardening. The spacing of the teeth are not critical but the tops of the teeth are.
5. Harden the tool steel by heating it to about 1500F and then quiche the steel in vegetable oil. At this point the steel will be very hard and very brittle.
6. Temper the blade to a Rockwell C hardness of 50/52 at 700F for 1 hour.
7. While waiting for the blade to temper , work on the handle.
8. After the steel has cooled, clean up the blade and finish the teeth.
9. Fit the handle to the blade either using epoxy and rivets, just epoxy or just rivets. After the epoxy has cured, a final sanding and apply your choice of your finish to the handle.

Making the Handle

You can bring wood of your choice or use wood that will be provided. The handle blanks should be 1 inch + 1/16 / - 0 wide by 5/8 to 3/4 high and at least 12 inch long but not longer that 3 or 4 feet. If the handle blanks are too long or too short they will be difficult to work with. Each handle will be 5 to 6 inches long.

1. If you are going to rivet the blade to the handle, mark and drill the two holes for the rivets.
2. Mark the slot for the blade and the bevels
3. With a saw rough, cut the slot for the blade. Use an edge float to finish the slot.
4. Cut bevels on the handle with a spoke shave or a block plane.
5. Sand the handle with medium sand paper.

Required Equipment:

- Eye protection
- Hearing protection

Optional Tools

The boat shop has all the tools you will need to finish your plane makers floats but in limited numbers. Here are some tools that you might want to bring.

Back-saw, dozuki or hand saw	Block plane or spoke shave
Metal working vise mounted to a board	12 inch hacksaw with 18TPI blades
Scribe	Welding gloves
Tongs, vice grips or channel lock pliers	Sand paper for finishing the handles
Sand paper for cleanup of the blades	Pencil or pen
Metal files with handles	Drill bits
Straight edge, 6 to 12 inches long	Machinist square
Clamps	Loupe or magnifying glass
Cutting oil	Heavy duty degreaser
Marking gauge	

You may bring a lunch or go out to eat as your preference.