

SAN JOAQUIN FINE WOODWORKERS ASSOCIATION

BAND SAW BOX PRESENTATION

Presented By: Roger W. McCoy
June 18, 2005

The following steps describe the process used by Roger to build band saw boxes based on the book "*Building Beautiful Boxes with Your Band Saw*" by Lois Keener Ventura published by Popular Woodworking Books:

1. Purchase a copy of Lois' book. If you can't find it for less, Roger will order it for you from the Woodworker's Book Club for \$21.00.
2. Mill wood to size. For the "Whale Play" box, Lois recommends:
 - 4/4 stock dimensioned to 6 1/4" x 53" (5 thicknesses)
 - 5/4 stock dimensioned to 6 1/4" x 42" (4 thicknesses)

Thickness, height and length of boxes can be modified to your personal taste.

3. Glue-up block.
 - Bookmatch (accordion) or experiment with different combinations,
 - Glue bottle with roller works well as there is a lot of surface to cover before clamping.
 - Hand-screw clamps work well,
 - Let block dry for 12 to 24 hours.
4. Square bottom of block to sides. You can use the jointer if the block is long enough to be safe or you can use the band saw.
5. Affix pattern to block.
 - Cut carefully along bottom line of pattern and align this with the bottom of the squared-up block.
 - Use spray adhesive to affix pattern. Roger only sprays adhesive on the back of the pattern and lets it dry for 5 to 10 minutes.
6. Cut off 1/4" off the back of the block with the band saw.

- Lois recommends a 3/16" 10 TPI blade for all cuts. Roger uses a 1/4" blade to cut off the back of the block and a 3/16" blade for all other cuts.
 - Make sure band saw is tuned up and blade is square to the table and fence.
 - Mark the back for easy reference later in the process.
 - Keep back with block
7. Cut out drawers on the band saw.
- **Make sure back is not stuck to block!!!**
 - Smooth cuts will make for less sanding and smaller gaps around drawers.
 - Be careful not to cut into body of box where cuts end.
8. Cut off backs of drawers with the band saw (1/4" thick).
9. Cut off fronts of drawers with the band saw (1/2" thick).
- Keep parts together so they don't get mixed up.
10. Draw patterns for inside of drawers.
- Because the pattern was affixed to the front of the drawer and the front of the drawer has been cut off, you need to either glue another pattern onto the drawer or manually draw the lines for the drawer inside cut-outs.
 - Roger draws the lines on manually with the following technique:
 - Reassemble the drawer parts and put them back in the block.
 - Using a square, make marks on the block that correspond to the vertical and horizontal dotted lines for the inside drawer cut-outs.
 - Remove the front of the drawers, move them to the back of the block, align them with the corresponding drawer, and insert from the back pushing the middle portion of the drawer flush with the front of the block.
 - Using your square, draw the vertical and horizontal lines for the inside drawer cut-outs based on the marks on the block.

- Use a nickel to round the inside corners of the cut-outs.
Curve needs to be big enough to easily allow the band saw cut.
 - If making several of the same boxes, you can use the drawers of the first box as patterns for the rest.

- 11. Cut out the drawer insides with the band saw.
 - Save the waste pieces for possible use as drawer pulls or to test different finishes.

- 12. Sand inside of box and inside of drawers on the oscillating sander.
 - The more sanding you do on the inside of the box, the wider the gaps will be. Try to get rid of band saw marks with a minimum of sanding.
 - The inside of the drawers just need to be smooth enough for the flocking coat.
 - Lightly sand back side of block to remove fuzz from band saw cut.
 - Lightly sand inside of back piece to remove most noticeable band saw marks, but be careful not to sand enough to affect a seamless glue line.

- 13. Glue fronts and backs onto drawers, and the back onto the block.
 - Hand screw clamps work well for both of these glue-ups(even pressure).

- 14. Sand outside of drawers on the pneumatic sander.
 - Remove all band saw marks and smooth out any uneven spots.
 - Remember that the more you sand off, the wider the gaps above the drawers on your final box.

- 15. Cut out the outside shape of the box on the band saw.
 - On some of Lois' patterns, there will be no pattern line to follow where the drawers were cut away. Freehand the pattern in and

cut outside of the line. The actual shape will be formed later on the oscillating sander.

16. Sand the outside of the box on the pneumatic sander.
 - Remove all band saw marks and get outside of box to final shape by smoothing out bumps and dips.
 - Glue lines should just about disappear.
 - Outside of box should look and feel good!!
 - Use oscillating sander to smooth drawer cut-outs on boxes like Pisces.

17. Remove pattern from box and drawers.
 - If pattern does not come off easily, dab lacquer thinner on with a rag until it loosens up.
 - Sanding off the pattern will gum up your sanding belts.

18. Lightly sand the back of drawers on the stationary belt sander to remove band saw marks.

19. Sand front of box on the stationary belt sander until drawers are flush with box front.
 - **Be very careful and use a light touch!**
 - This is a step Roger does that is not mentioned in Lois' book.

20. Sand back of box on stationary belt sander.
 - This is just a touch-up to reduce the amount of hand sanding.

21. Round-over the front and back of the box on the router table.
 - This can be 1/8" or 1/4" depending on size of the box and personal preference.
 - The round-over bit will not reach all areas on the inside of the drawer openings. Use a chisel or carving knife to shape those areas the router bit cannot reach. This includes the saw kerfs where the blade enters the box and in between the drawer openings.

22. Round-over the front of the drawers on the router table.
 - This can be 1/8" or 1/4" depending on size of drawer and personal preference.
 - Rounding-over the back of the drawers is an option (1/8").
 - Lois does not use a router for the outside of the box. She free hand shapes this with various sanding machines.

23. Hand sand all machine/chisel/knife marks until all curves flow without an edge.
 - Sand at least up through 220 grit.
 - **This is the most tedious part of the whole process!!**

24. Make the drawer pulls.
 - Lois cuts out the drawer pulls before any sanding starts. Roger doesn't start them until the box is sanded through 220 grit.
 - Drawer pulls need to be sized proportional to size of box. The pattern used for the box can be a guide.
 - Lois recommends a drawer pull 3/4" wide for a full-size pattern, but this is a "stylistic choice". You do however need enough depth to grab the drawer pull with your fingers.
 - Drawer pulls are a good use for small scrap pieces of exotic wood or you can use pieces cut from the original box (drawer inside cut-outs).
 - It's a good idea to make extra drawer pulls during this process in case one doesn't turn out well or the grain orientation doesn't look right.
 - Contrasting woods are Roger's favorite for drawer pulls.
 - Roger uses extra drawer pulls from earlier boxes for patterns.
 - Draw pattern for drawer pulls on wood.
 - Cut out drawer pull on the band saw leaving the pattern line.
 - Remove band saw marks and smooth out drawer pull on the outside curve on the stationary disk sander. **Watch your knuckles!!!**
 - Remove band saw marks on the inside curve, and sanding marks on the outside curve, on the pneumatic sander.
 - Cut drawer pulls to desired depth on the band saw.

- Draw curve of drawer pull freehand or use a pattern from a previous box.
- **The curve on some drawer pulls is the opposite of others depending on the particular box from Lois' book.**
- Consider grain orientation before deciding which part of the drawer pull will be cut off.
- Cut the drawer pull curve on the band saw staying outside of the pattern line.
- Remove band saw marks and smooth curve on the stationary disk sander. **Watch your knuckles!!!**
- Round the front edges and finalize shape on the pneumatic sander
- Hand sand drawer pulls to 220 grit.
- Insure the back side of the drawer pull is flat. Roger uses the stationary disk sander with the machine turned off.

25. Glue the drawer pulls to the drawers.

- Locate per pattern or however it pleases you.
- Quick-Grip clamps work well for this glue-up.
- Be careful of squeeze out - spread glue very thin.
- Allow to dry overnight if possible.

26. Affix brand on bottom, if applicable.

27. Sand until ready for finish.

28. Apply finish.

- Seal inside of drawers to prepare for flocking.
- Having drying racks for boxes and drawers will greatly reduce the time needed for finishing (see Roger's drying rack as a sample).

29. Flock the drawers.

- Tape off the top of the drawers with masking tape, leaving the top of the drawer divider exposed.
- Apply the flocking glue with a brush being careful to only cover areas you want flocked. Be sure to put a thick, even coat of glue or flocking will not stick.

- Spread a generous coating of flocking onto the area covered in glue. A box with a garbage bag liner works well to flock in (see Roger's flocking box as an example).
 - Allow to dry over night.
 - Gently tap out excess flocking into garbage bag liner.
 - Remove masking tape.
 - Lightly brush out any remaining excess flocking.
 - Clean any glue seepage on the top of the drawer with lacquer thinner and repair finish if needed.
30. Put feet on bottom of box.
- Roger generally uses felt pads.