PROJECTS by CARVEWRIGHT™

PROJECT ADVANCED DIFFICULTY

A More Elegant Box

The way the top of this box is made, with the dome top standing high, sets it apart. This project comes in two flavors, plain and fancy. The boxes are sized (8" x 14" and 7" tall) to fit two rows of 4x6 recipe cards. But, this project is mostly about how it to do it. When you finish this project, you should be able to modify this design or create your own. All the how-to is included, and you can extract the "Domed Top" pattern to use for your own boxes. I prefer using the table saw for the rabbits and dadoes etc, but I have included utilities to have your machine do that, if your wish.

Both boxes are the same except that one has patterns added. You already own all the patterns except the "Domed Top". Adding patterns to the various areas can be tricky, but I will cover that after the carving of what we have here.

The Materials List is not all inclusive. Because of it's length, I skipped "givens". If you are uncomfortable non–thru cuts on your table saw which requires removing the blade guard and splitter, load the "InsideFB" (front & back) and the "InsideE" (ends) mpc's. If you are experienced with cabinet work and wish to use your table saw for the rabbits and dadoes, load the "Inside_Setup_Block" mpc. The top insert is a deep carve. To make it easier on your machine I recommend using the "top_insert_pass1" mpc, but this is optional. (It can be run in Draft mode.)

Step 1 carving

The three 7" wide boards should be the same width as shown. Mark the upper right corner of the front of each board top, front, back, and ends. You can start with either the

Materials List

Project Files

- back_blank.mpc
- back_patterns.mpc
- ends_blank.mpc
- ends_patterns.mpc
- front_blank.mpc
- front_patterns.mpc
- top_insert_blank .mpc
- top_insert_patterns .mpc
- top_insert_ pass1.mpc
- InsideFB.mpc
- InsideE.mpc
- Inside_Setup_Block.mpc

Boards:

For Each Box

- (1) ¾ x 22 x 9 (top)
- (2) ¾ x 23 x 7 (front & back)
- (1) ¾ x 25 x 7 (ends)
- (1) $^1/_8$ plywood 13 ¾ x 7 ¾
- Optional: (1) ¾ x 13 x 7 for table saw set-up guide

Materials:

- sanding mop 6" 220grit
- 2 band clamps
- 2 full sheets 180 grit sand-paper
- 2 brass hinges (each box)
- I brass hasp (each box)
- (1) 6" piece brass chain & (2) $^1/_2$" #6 round head brass screws (each box)

Hand Tools:

- fine saw

Power Tools:

- miter Saw & table saw
- quarter sheet sander with 180 and 220 sandpaper

plain or the fancy box. Which ever you decide, open all the "Blank" or "Patterns" mpc's to your designer. I don't think all will fit on your card at once, but at least upload the "Top_Insert" and what ever else will fit. Use "Best" or "Optimal" mode. The board for the top must be flat—no bow—because it is a two sided carve and it is imperative that it tracks correctly. You might want to go to option 7 and measure the length, flip the board and measure it again to check the tracking. I had to make a sled the do these two boxes because I couldn't get a piece to track correctly. If you use the pass1 mpc to pre carve the top, flip it back over when it is done, and start the final carve on the back again. Remember, two sided carves always start on the back. The front side will require the $^1/_8$" cutting bit. The finished carve should look like this:


or


Leave the $^1/_8$" cutting bit in the machine and load another board. All pieces require the cutting bit, so just leave it in after each carve. Then put the carving bit in when told to. You know the drill. This just saves a step. When you finish board fronts, you should have this:



or



If you are using the machine to do your cuts on the back (inside of the box), load the front, back, and ends boards with the top of the board at the top, nearest the keyboard. Because of variations in board width and machine calibration, I referenced everything to the top edge. You will only need the $^1/_8$" cutting bit. Use the appropriate mpc's. If you are using the table saw, you can measure, or load the 13" x 7" board and use that mpc to create a set-up guide. Cut the ends off the set-up block to leave a 6" piece.



<u>Step 2</u> preparing the pieces

Cut the top insert loose using a fine saw, cutting across the grain tabs first then cut with the grain. This minimizes chip out. Sand the tab nubbins off without unstraightening the edges. Down the road, you will be trimming about $^1/_8$" off all top insert edges, but we have to start with a good rectangle. Now mop everything well. Swing your miter saw over to 45°. Now miter the front, back, and ends, using the guide lines made with the cutting bit. Best to use the center of the line on the hump. Hold the pieces face to face to check that they are the same length, Norm taught me a trick for micro trimming a cut. Pull the miter saw down (not running) and hold the cut tightly against the blade, Hold the piece in place and lift the blade. Start the saw





and bring the blade down and you will remove about the width of the saw tooth set. You might need this trick again later in the project. When all the pieces are mitered, if you are using the table saw to do the rabbit for the top and the dado for the bottom, this is where we do it. The advantage of doing it here is that you have avoided possible chip-out from the miter cuts. Remove the blade guard and splitter from your saw. Holding the set-up guide with the arrow down (top to the table) and facing the fence, raise/lower the blade to just fit in the guide's rabbit. Now hold the guide against the blade and move

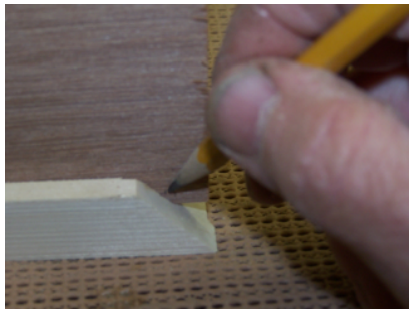
the fence to just touch the guide. Or set the blade $^1/_4$" high and the outside of the blade $^3/_8$" from the fence. Now run the front, back and ends thru with the top on the table and the inside (back) against the fence. Always try to keep the "waste" side between the fence and blade so if the board moves, the damage is to the waste side and not the keep side.

Lay the guide flat on the table with the arrow down and pointing to the fence and blade. Raise the blade so it just fits under the lip of the guide block rabbit, hold the guide against the blade and move the fence to just touch the guide. Or, set the blade to $^3/_8$" high, and the outside of the blade $^1/_4$" from the fence. Now run the front, back, and ends thru with the inside (back) down and the top against the fence.

Move the fence back about 7" and set the guide block over the blade, still arrow down

and pointing toward the fence . Move the fence up to just touch the guide. Or set the fence about $6^3/_4$" from the blade. Now cut the dado for the bottom in the front, back, and ends. Try a piece of your $^1/_8$" plywood In the bottom dado. If it is too tight, put the guide bock back on and move the fence about $^1/_{32}$" away, so you just see a gap, and run them thru again.

Step 3 assembly



Trim the bottom to fit. Lay it in the slot of the back with one end just short of the miter cut, and mark the long end as shown. Trim it to length with your miter saw to keep it square. Do this also for the width, trimming with your table saw to keep the edges parallel. Dry fit the sides. I made these to insert in the top to base slot. They line things up some and also hold the top band clamp up. When you have it together and clamped (corners aligned correctly!) lay the top inset on the box.

Center it squarely as shown and, with a **sharp** pencil, mark where it needs to be trimmed. Cut an equal amount off each side with the table saw. A table saw will insure that the two sides are parallel. Do not remove too much—you can always take more off, but you can not put it back. Now do the same for the long way, using your miter saw to trim the ends. Loosen the top band clamp and try the top

insert in place. If you do cut the top insert too small, it can be fixed. If you have a side gap, trim both end pieces equally (reset the miter saw to 45°), and if you have an end gap, trim the front and back equally.

When the fit of everything is satisfactory, we do the glue-up. You need something like a 1" chip brush and a wet paper towel, and yellow glue. Brush some glue on the mitered ends of the back and lay it on your bench. Insert the bottom—no glue here. Wipe off any glue that got on the inside using the wet paper towel. When the box is assembled, you can not get inside to clean it up. Install the ends, and put glue on the mitered ends that are up. Install the front. Stand the box up and put a band clamp on around the bottom. You may want to set a block under each edge, because you want to center the clamp on the narrow surface at the bottom. Install the corner alignment things if you are using them, and install the top band clamp. Loosen the clamps and align the corners correctly—critical. Tighten the bottom clamp. Check for and clean-up and glue squeeze-out—last chance. Brush some glue in the rabbit for the top insert, being careful not to get any inside.

Install the top insert, being sure it is the right way around for the one with patterns. Push it down to seat it all the way around. Recheck the corner joint alignment, and tighten the top band clamp. You can use "quick clamps to close side or end gaps. Remove the corner guides so they will not get glued in.

Step 4a clean-up

When the glue is dry you do your sanding. Using a quarter sheet sander, sand the lip around the top to follow the contour of the top insert. For the top with patterns, use your free hand to hold the sander away from the patterns. You can use Minwax Stainable Wood Filler for any small gaps in the top or the mitered corners. For the plain top, be sure to hand sand with the grain after the power sanding to eliminate swirls when you stain. Sand the mitered corners. I use a Dremmel Contour Sander for a lot of this work. When it is all cleaned up, mop everything well. Use a pencil or a center punch to put a witness mark above and below the line in both hinge areas so you can tell the front from the back once you separate the top.

Step 4b remove the top.

If you used the table saw to do your rabbits and dadoes, go back to that saw, the guard and splitter should still be removed. Put the bottom of the box next to the blade, and raise the blade until it misses cutting thru by about $^1/_8$". Now position the box, still on it's side, with the bottom toward the fence and the cut for the top centered on the blade. We don't cut all the way thru because if

the top moves in, it will leave saw marks. Cut all 4 sides, rolling the box toward you. Now you have to finish cutting the top loose with a hand saw. I used a more aggressive saw on the box where the machine did the inside work, because you have to cut thru $^1/_4$" of wood, but only $^1/_8$" for the table saw version. Saw one corner at a time. Carefully sand the sawn ridge almost to the clean cut area.

Tape 2 full sheets of 180 grit sandpaper to a large **flat** area. You can use your work bench, saw table, or some good $^{3}/_{4}$" plywood. Finish sanding the top and the box with this. I advise against using a Sand-Flee for this because it tends to round the corners, and we want to maintain a flat joint where the top meets the box. You can use this or a Sand-Flee to sand the bottom flat.

Step 5 finishing.

I am not going to tell you how to finish this project, because finishing is a personal preference thing; and besides, if you are experienced enough to do this project, you are as good if not better at finishing than I am. I will, however give you an important tip. Take a couple of about 8" x 10" pieces of junk $^{1}/_{2}$" or thicker plywood/ OSB and drive 4 8D nails all the way thru 1" in from each corner. You can set you wet project on this with no marks. And you can safely pick it up and move it around with this base.

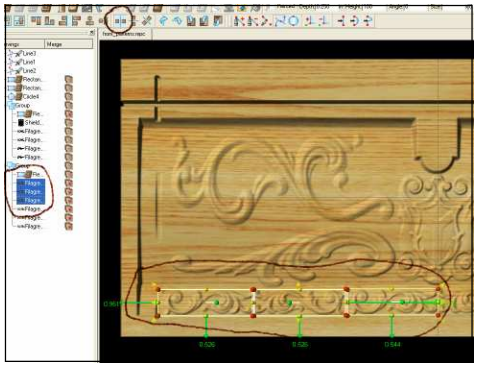
Step 6 final assembly

Tape the top in place with masking tape, and lay the box on it's front to install the hinges. Then lay it on it's back to install the clasp. When the hinges and clasp are installed, set the box upright and open it. About the middle of the inside of the left wall of the top, drive a small brass screw thru an end link of the brass chain. Leave it about $^{1}/_{8}$" out so the chain can move. Put a screw in the other end link and hold the top leaning back just a little. Mark, with the screw, about $^{1}/_{2}$" down, on the inside of the box left wall where the chain is tight. Drive that screw in the same as the other. You might want to put small felt feet under the corners of the box.

Decorating the plain box.

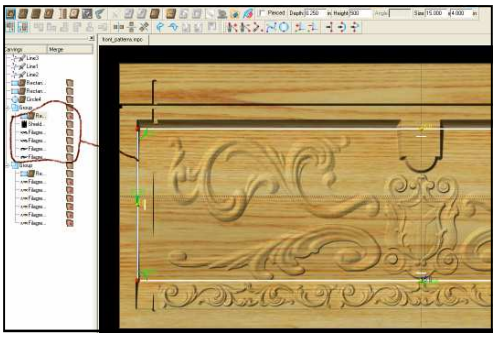
This can be tricky, because we have three different types of areas where we want to put patterns, and we will want the patterns to merge smoothly while following the contour of the box.

This area is the simplest because the you are adding patterns to a shaped carved area, but the patterns do not overlap each other. I like to arrange and group my patterns in a logical order so they are easy to find and ma-

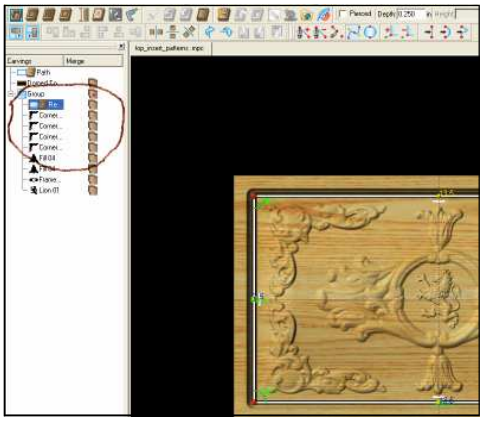


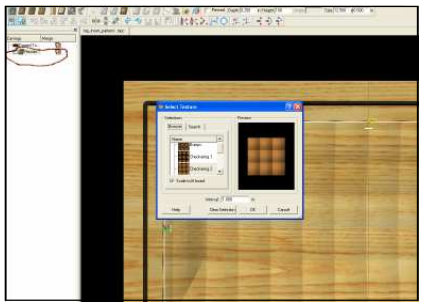
nipulate. Put a pattern, in this case a Filigree, in the area and size it by a corner to fit the in the area vertically. Make the pattern additive. Copy it and paste it twice. Place them end to end just touching, and flip he middle one horizontally. Now select all three, and you can stretch all three to fit the area from one end to the middle line. Then mirror the three selected pattern, and you have symmetrical decoration all across the bottom.

This area is a "vertical dome" carved area. Here we want the patterns to merge smoothly and not show thru each other. If we made the patterns additive, they would be lumpy where they merge instead of blending. The solution is to make the area additive. I fined that the patterns are not as pronounced this way, so you may want to magnify them to maybe 500.



For the top, we are putting patterns on top of a pattern. Make a rectangle the same shape as the "Domed Top" pattern and make it a carved area about half the depth of the underlying pattern. Make the new rectangle a group, make the group additive, and add your pattern to the rectangle and drag them into the group under the rectangle. Again, you will probably want to magnify them.





The back is done similarly. Overlay the reversed "Domed T op" pattern with a carved out rectangle and apply a texture to it, then make it additive.

Sleds

If you plan to make more of these boxes, sleds can save you money and a lot of trouble. As I mentioned earlier, I had to use a sled to make these tops because the boards I was using had a slight bow. On my first try, the back of the top insert was about $^1/_4$" off from the front; switching to a sled, they were dead on. With sleds you can use shorter pieces and more easily maneuver around knots. Chose not to stay under the rollers when using a sled.

For the top insert, you can use a base of $^1/_4$" hard board or plywood. Cut it a little bigger than needed, and trim the finished product. Use $^3/_4$" wide strips of 7 ply $^3/_4$" plywood glued on edge for the two long sides and 4" x 9" 1" (actually $^3/_4$") pine for the end blocks, glued 15" apart. I just use masking tape along the ends to hold the piece in place.

Because I make a lot of these boxes, I decided to make an adjustable sled for the front/back and ends. Use a $^1/_4$" hard board base and glue 4" x 7" blocks 18" apart. Cut 1" x 7" blocks that can be taped in place for the 16" pieces.

Designed by Clint's Custom Carving

RESOURCES...

There are numerous resources for the CarveWright/ CompuCarve owner to make their experience with these machines much more enjoyable.

Every owner should join the CarveWright User Forum (http://forum.carvewright.com/index.php) where fellow users share their experiences and knowledge with these machines 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.