CARVEWRIGHT™ WOODWORKING SYSTEM

PROJECT TUTORIAL

SPECIAL **2013 Exhibition Fun Pack!**
Includes 3 Projects!

Designed for CarveWright™ by Michael Tyler
www.carvebuddy.com

We've bundled THREE fun projects in this **Special 2013 CarveWright Exposition Fun Pack** project tutorial for you to enjoy!

All the projects use the 1/16" Carving Bit and/or the 1/8" Cutting Bit to create the main components.

PROJECT BASIC DIFFICULTY

Project 1

PROJECT INTERMEDIATE DIFFICULTY

Project 2

Paleo Boxes! with fake fossil lids!

PROJECT BASIC DIFFICULTY

Project 3

Main items you will need:

PROJECT 1:
UFO Tops Project Files (included):
- 3_UFO_Tops.mpc

Material dimensions:
3 UFO Tops: 0.75" x 11" x 13"

Plus: **0.3125" (5/16") dia. dowels, 0.5" dia. wooden balls or glass marbles**

PROJECT 2:
Paleo Boxes Project Files (included):
- Drilled_Lid-and-Sides.mpc
- Plain_Lid-and-Sides.mpc
- Paleo_Fish_Fossil_Insert.mpc
- Paleo_Shell_Fossil_Insert.mpc
- Paleo_Trilo_Fossil_Insert.mpc

Material dimensions:
Lid and Sides: 0.75" x 9.2" x 25"
Each Fossil Insert: 0.625" x 6.5" x 15"
(inserts carved on 5/8"-thick particle board)
*Front & Back Panels: 0.75" x 3.25" x 8"
*Bottom Panel for Plain: 0.75" x 4.5" x 8"
*Bottom Panel for Drilled:0.75" x 3.75"x 8"
**cut these plain panels yourself -not an MPC*
Plus: **0.125" dia. dowels, #10 washers**

PROJECT 3:
Scare Box Project Files (included):
- All_Scare_Box_Parts.mpc

Material dimensions: *MDF, Ply or Wood*
All Parts: 0.5" x 11" x 19.5"

Plus: **0.25" dia. dowels, 7.5" length of coat hanger wire, string, staple gun**

Project 1 - UFO Tops

STEP 1
Start your Designer software and open the 3_UFO_Tops.mpc file. (fig. 1a)

3_UFO_Tops.mpc
2 hrs. BEST **OR** 3 hrs. OPTIMAL

fig. 1a

Upload the project file to your memory card. You may see an "Auto-Jig" warning message pop-up. (fig. 1b)

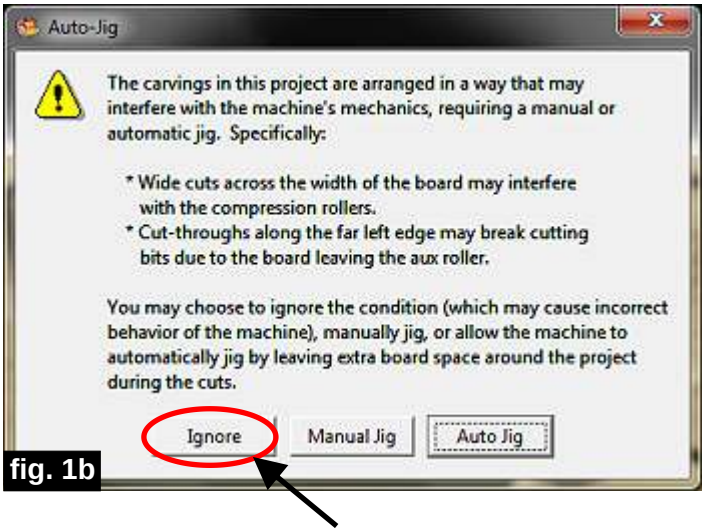

fig. 1b

You may safely click on "Ignore" because the board will be large enough that it won't cause any problems at all. Select "Best" or "Optimal" for the File Quality when uploading to the card. Insert the card into your machine and load a board that measures the appropriate dimension specified for the mpc (see page 1 for board dimensions).

Turn on your machine and proceed with the standard project setup in Step 2...

STEP 2 - Running the MPC File
You will see "Project Menu" on your LCD display. Press "1" and scroll to **3_UFO_Tops.mpc** project, then press the green ENTER button to select it. Then follow the additional prompts....

• **Stay Under Rollers** - press 1) YES

• **DO NOT RESIZE or SCALE the projects!** If prompted, always keep the original size. No scaling!

• **How To Place** - press 1) Center

• **Cut Board to Size?** - press 2) NO

• **Select Drill Bit: 1/8 " Cutting** - Press ENTER. The machine will move the bit holder to the center of the machine in preparation for the bit installation.

• **Load Bit:1/8 " Cutting** -Insert your 1/8 " cutting bit, then press the green ENTER button. (homes, etc.)

Select Cutting Bit: 1/8 " Cutting - Just press ENTER. Nothing happens - bit is already installed.

• **Select Carving Bit: 1/16 " Carving** - Press the green ENTER button. (Moves to center of machine.)

• **Load Bit: 1/16 " Carving** - Remove the 1/8 " cutting bit, and insert your 1/16 " carving bit, then press the green ENTER button. After homing and finding surface, the machine will begin the carving process.

• **After it is done carving, you will be prompted to load your 1/8 " cutting bit.** Take out the 1/16 " carving bit, then insert your 1/8 " cutting bit, then press the green ENTER button. The drills and cutouts will be performed. Your board will look something like this (fig. 2)

fig. 2

(cont.)

STEP 3 - Separate Parts and Glue Ups
Separate the pieces from the board with a utility knife or hobby saw.
(fig. 3a)

fig. 3a

Glue the top and bottom halves of the Tops together. Use scrap 5/16 "dowels to align (but don't glue in the dowels yet!).
(fig. 3b)

After the glue is dry, sand all the parts to remove fuzzies, and undesirable toolmarks.

fig. 3b

STEP 4 - Finishing
Apply stain/paint and clearcoat of your choice. Here's what I used on my UFO Tops made from Select Pine:
(fig. 4a, 4b)

- 2 coats of full-strength Bulls Eye Sealcoat (sanding between coats)
- Several light coats of grey primer spray (sanding between coats)
- Rust-Oleum Silver, Gold and Copper spray paints

fig. 4a

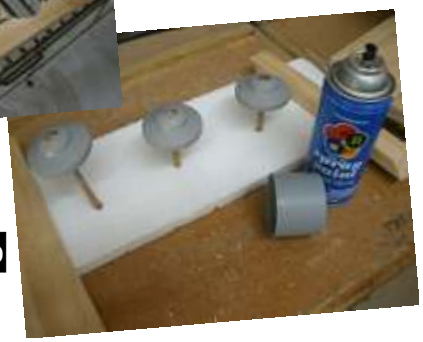
fig. 4b

STEP 5 - Final Assembly
Use quick-set epoxy to glue a 2-inch long x 0.3125 " (5/16 ") dia. dowel and marble or wooden ball into each Top. Make sure the marble (or ball) is fully seated.
(fig. 5a, 5b)

Allow the glue to set.

fig. 5a

fig. 5b

Paint the dowels with black enamel paint, if desired.
(fig. 5c)

fig. 5c

IN CONCLUSION
I hope you enjoyed making the UFO Tops! I made another set and stained them instead of painting. An important consideration is if the Tops are to be used by children, the glass marble tips can break if dropped on a hard surface (posing a possible hazard). The wooden ball tips may be a safer choice.

Project 2 - Paleo Boxes

STEP 1
Start your Designer software and open the project mpc files. NOTE: You have a choice whether to use the Drilled_Lid-and-Sides.mpc or the Plain_Lid-and-Sides.mpc for the box structure.The Plain version has a larger interior capacity and uses metal hinges instead of wooden dowels for hinges. (fig. 1a)

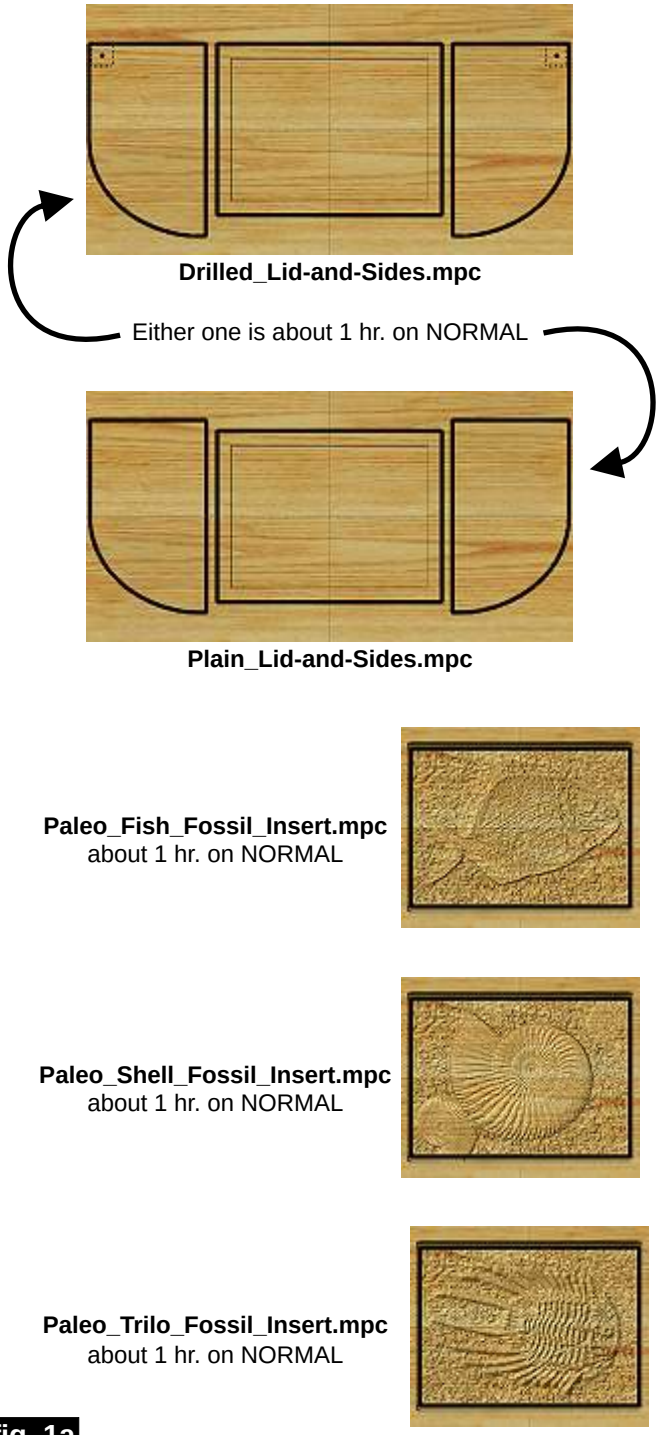

fig. 1a

Upload the project files to your memory card. You may see an "Auto-Jig" warning message pop-up. (fig. 1b)

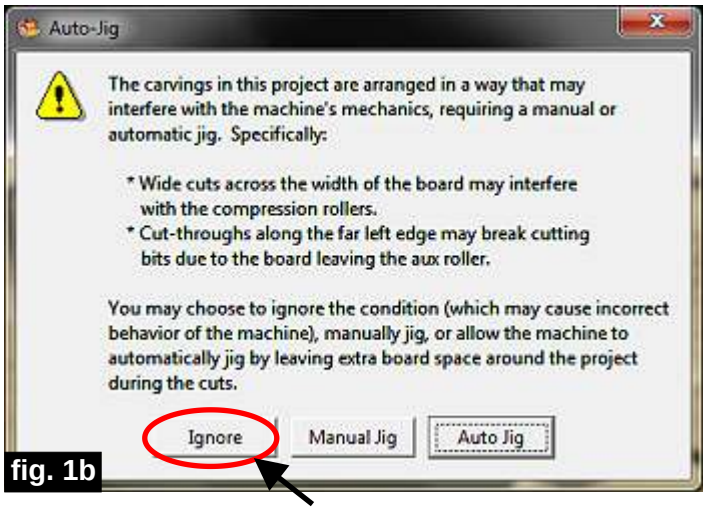

fig. 1b

You may safely click on "Ignore" because each board will be large enough that it won't cause any problems at all. Select "Normal" for the File Quality when uploading to the card. Insert the card into your machine and load material that measures the appropriate dimension specified for each mpc (see page 1 for board dimensions).

Turn on your machine and proceed with the standard project setup in Step 2...

STEP 2 - Running the MPC Files
You will see "Project Menu" on your LCD display. Press "1" and scroll to your choice of the **Lid-and-Sides.mpc** project, and press the green ENTER button to select it. Then follow the prompts....(NOTE: plain and drilled versions are same steps, but the drilled version will also prompt for Drill Bit in addition to Vector Bit...both bits are the same 1/8 " Cutting Bit)

• **Stay Under Rollers** - press 1) YES

• **DO NOT RESIZE or SCALE the projects!** If prompted, always **Keep the Original Size**. No scaling!

• **How to Place...** - press 1) Center

• **Cut Board to Size?** - press 2) NO

• **Select Drill/Vector Bit: 1/8 " Cutting** - Press the green ENTER button. The machine will move the bit holder to the center of the machine in preparation for the bit installation.

(cont.)

STEP 2 - Running the MPC Files (cont.)

• **Load Bit: 1/8 " Cutting** - Insert the 1/8 " carving bit, then press the green ENTER button. (homes, etc.)

• **Select Cutting Bit: 1/8" Cutting** -Press ENTER. The bit holder moves to center of the machine.

• **Load Bit:1/8 " Cutting** - Just press ENTER. Nothing happens - bit is already installed.

• **Select Carving Bit: 1/16 " Carving** - Press the green ENTER button. (Moves to center of machine.)

• **Load Bit: 1/16 " Carving** - Remove the 1/8 " cutting bit, and insert your 1/16 " carving bit, then press the green ENTER button. After homing and finding surface, the machine will begin the carving process.

• **After it is done carving, you will be prompted to load your 1/8 " cutting bit.** Take out the 1/16 " carving bit, then insert your 1/8 " cutting bit, then press the green ENTER button. The drills and/or vector cuts and cutouts will be performed. Your board will look something like this (fig. 2a)

Plain_Lid-and-Sides.mpc
(the drilled version looks the same but with two drill holes added)

fig. 2a

Scroll to your choice of the any or all of the **Fossil_Insert.mpc** files and press the green ENTER button to select it. Load the 5/8 "-thick particle board material, then follow the prompts as follows...

• **Stay Under Rollers** - press 1) YES

• **DO NOT RESIZE or SCALE the projects!** If prompted, always **Keep the Original Size**. No scaling!

• **How to Place...** - press 1) Center

Cut Board to Size? - press 2) NO

• **Select Cutting Bit: 1/8" Cutting** -Press ENTER. The bit holder moves to center of the machine.

• **Load Bit:1/8 " Cutting** - Insert your 1/8 " cutting bit, then press ENTER button. (homes, etc.)

• **Select Carving Bit: 1/16 " Carving** - Press the green ENTER button. (Moves to center of machine.)

• **Load Bit: 1/16 " Carving** - Remove the 1/8 " cutting bit, and insert your 1/16 " carving bit, then press the green ENTER button. After homing and finding surface, the machine will begin the carving process.

• **After it is done carving, you will be prompted to load your 1/8 " cutting bit.** Take out the 1/16 " carving bit, then insert your 1/8 " cutting bit, then press the green ENTER button. The final cutouts will be performed. When the machine is finished, remove the material and clean the machine of excess sawdust. Your boards will look something like this (fig. 2b)

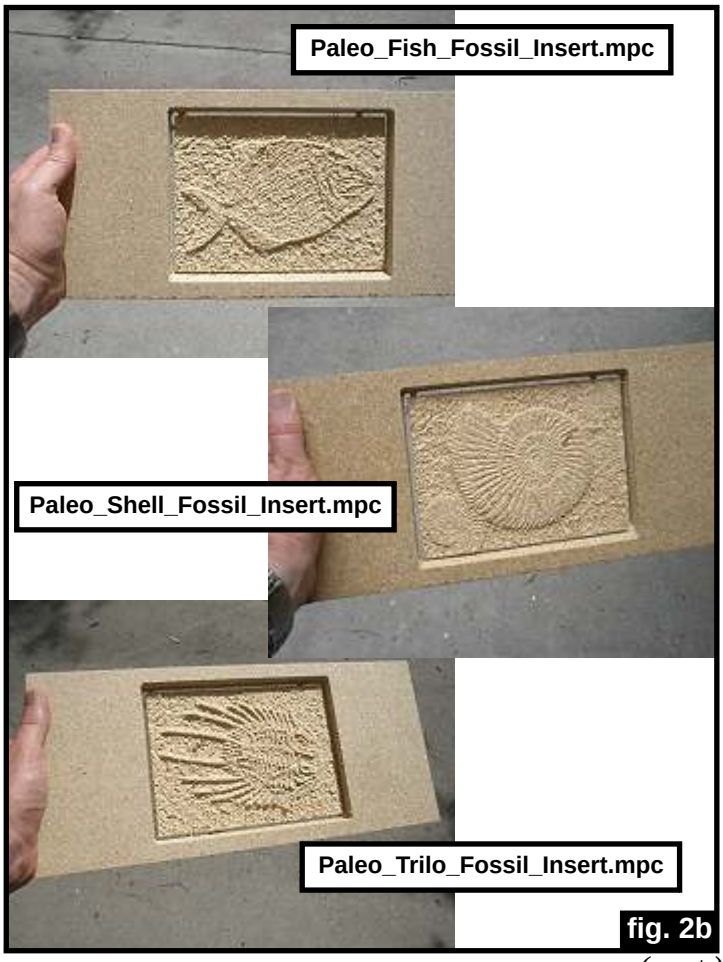

fig. 2b

(cont.)

STEP 3 - Separate Parts and Box Assembly
Separate the box lid and sides from the board with a utility knife or hobby saw. (fig. 3a)

fig. 3a

Make your front and back panels, as well as the bottom panel for each box using a suitable saw. (fig. 3b)

Front & Back Panels: 0.75" x 3.25" x 8"
Bottom Panel for Plain: 0.75" x 4.5" x 8"
Bottom Panel for Drilled: 0.75" x 3.75" x 8"

fig. 3b

Glue the sides, front, back and bottom together. Clamp until dry. (fig. 3c, 3d)

fig. 3c

fig. 3d

There is a slight difference for the box construction between the "drilled" version and the "plain" version. The back panel on the drilled version is glued 0.75" inset from the back edge of the side panels. This is to allow for the lid to clear the back panel, as it rotates on the wooden dowel hinges when opened. The "plain" box needs no clearance since it uses a conventional hinge. The back panel is glued flush with the back edge of the sides. (fig. 3e,3f)

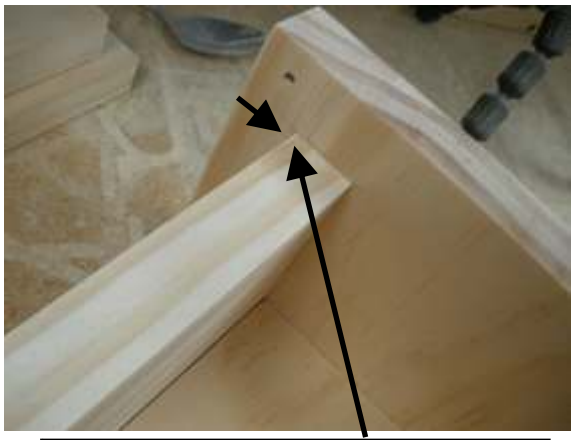

fig. 3e

The "drilled box" back panel is glued inset 0.75 " from the back edge of the sides

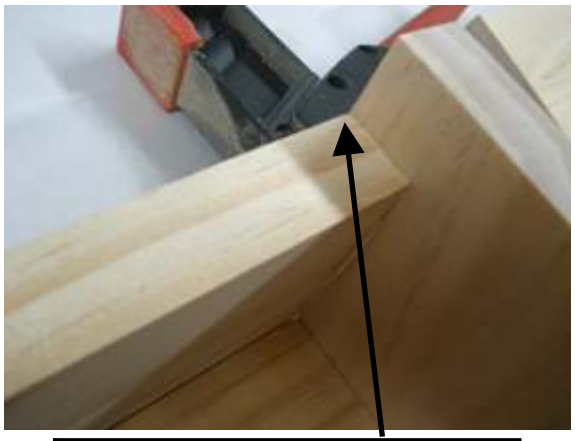

fig. 3f

The "plain box" back panel is glued flush with the back edge of the sides

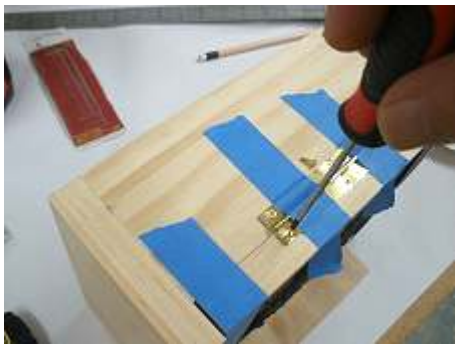

fig. 3g

After the glue dries, tape the lid securely in position and install your hinge(s) on the "plain" box. (fig. 3g)

(cont.)

STEP 3 - Separate Parts and Box Assembly (cont.)
If using the "drilled" box version, tape the lid securely in position, then place a #10 Flat Washer in the gap on each side of the lid between the side panels. (fig. 3h. 3i)

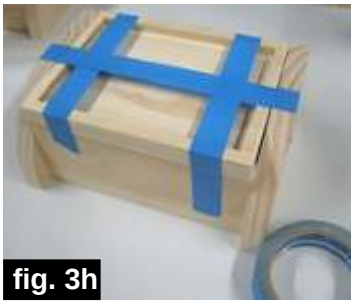
fig. 3h

fig. 3i

Using the side panel pre-drilled holes as a guide, drill a 9/64-inch diameter hole into the lid sides. Put a tape "flag" on the bit to limit the depth of the hole to about 0.375 inch (3/8-inch) into the lid itself. (fig. 3j, 3k)

fig. 3j

fig. 3k

Depending upon your choice of finish, now might be a good time to apply the finish to the box and lid. Leave the pocketed area in the lid "bare" for a more secure glue bond for the 'fossil' insert installation. I left my boxes their natural wood color with a clear topcoat.

STEP 4 - Finishing the 'Fossil' Lid Inserts
The particle board lid inserts have a fair tendency to warp during the finishing process, so I recommend NOT cutting them away from the hold-in tabs until a sealer is applied to both front and back and you are ready to apply the final finish right away.

Only minor preparation is required before applying the finish to the 'fossil' inserts. You can lightly brush off any obvious loose particles left over from the carving process. An old toothbrush or light wire brush will be fine for this.

Keep in mind that the texture is intended to remain rough and is part of the overall design effect.

Apply stain/paint and clearcoat of your choice on the 'fossil' lid inserts. Here's what I used:

• Two liberal coats of thinned BullsEye SealCoat (50/50 Sealer and Denatured alcohol) followed immediately with two liberal coats of **full-strength** BullsEye SealCoat on both front and back. (fig. 4a, 4b)

fig. 4a
Applying Thinned SealCoat

fig. 4b
Applying Full-Strength SealCoat

• Sand/brush off any stray particles, splinters or fuzzies before applying final finishes...

Fish Fossil Insert
• Sprayed on Krylon Red Oxide Primer, then lightly dabbed on black, white and brown acrylic craft paints for a darker, old look. Applied several spray coats Krylon Clear Acrylic as final topcoat. (fig. 4c, 4d)

fig. 4c

fig. 4d

Shell Fossil Insert
• Brushed on Glidden White Gripper Primer, applied diluted Amber Shellac on shells only, dabbed on white, tan and brown acrylic craft paints, then wiped on/off MinWax Ipswich Pine #221 stain to "age". Applied several spray coats Krylon Clear Acrylic as final topcoat. (fig. 4e, 4f)

fig. 4e

fig. 4f

(cont.)

STEP 4 - Finishing the 'Fossil' Lid Inserts (cont.)

Trilo Fossil Insert

• Brushed on Sculpt Nouveau Iron B paint, lightly sprayed on Tiffany Green and Vista Rust Patina, painted/dabbed Trilo with black, blue, & white acrylic craft paint, then applied thinned Sculpt Nouveau Black Smart Stain overall for an ancient appearance. Applied two spray coats of Sculpt Nouveau Smart Coat Matte Clear as the final topcoat. (fig. 4g, 4h, 4i, 4j)

fig. 4g

fig. 4h

fig. 4i

fig. 4j

STEP 5 - Insert and Lid Installation

Glue the lid insert(s) into the lid pockets and allow to dry. Clamp or weigh down if necessary. (fig. 5a, 5b)

fig. 5a

fig. 5b

After the insert glue has set, simply reinstall the lid and hinge for the "plain" box version to complete the box assembly.

For the "drilled" box version, small dowels and a couple #10 washers will be installed to serve as the hinge mechanism. Please continue with the following steps...

Cut a couple of short lengths of 0.125 inch (1/8 inch) dia. dowels and insert the dowels through a side panel, #10 flat washer and into the pre-drilled holes in the lid. Check the hinge action. Ease (sand) the back panel rear corner, if necessary, to allow smooth opening and closing of the lid. (fig. 5a, 5b)

fig. 5a

fig. 5b

Wax the end of the dowel that will rest inside the lid holes. Apply glue only to the portion of the dowel shaft that will contact the side panels and reinsert the dowels and washers. Allow glue to dry. (fig. 5c, 5d)

fig. 5c

fig. 5d

Trim/sand the excess dowel flush with the side panel surface. Apply matching finish, if desired. (fig. 5e, 5f)

fig. 5e

fig. 5f

IN CONCLUSION

This completes the Paleo Box project and I hope you enjoyed it!

Paleo Boxes!

4"x 6"x 9.5"

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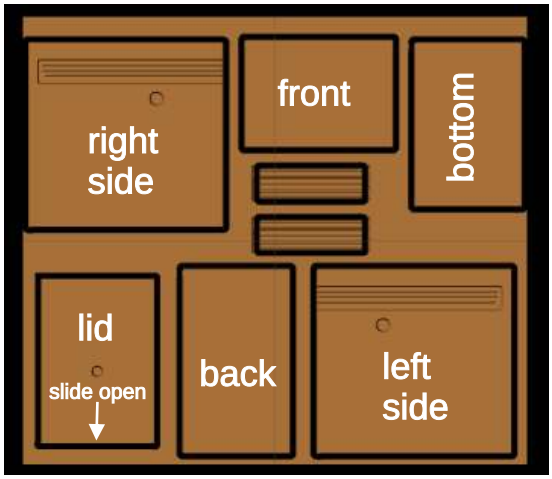
Project 3 - The Scare Box!

STEP 1
Start your Designer software and open the All_Scare_Box_Parts.mpc file. (fig. 1a)



All_Scare_Box_Parts.mpc
about 27 minutes on NORMAL

fig. 1a

Upload the project file to your memory card. You may see an "Auto-Jig" warning message pop-up. (fig. 1b)

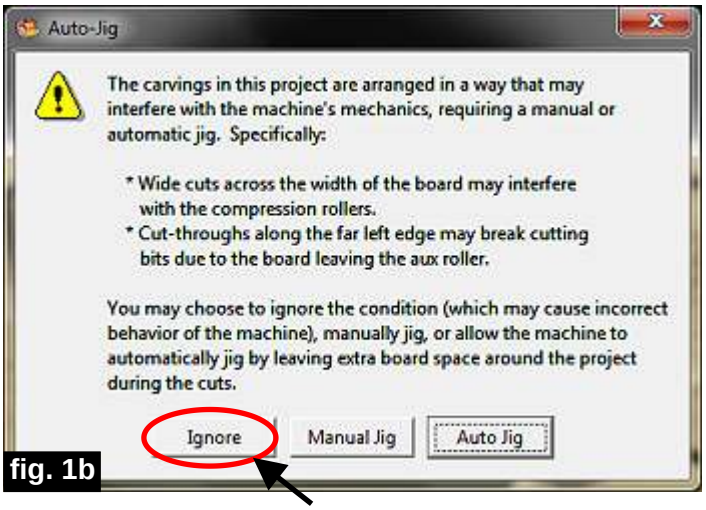


fig. 1b

You may safely click on "Ignore" because the material will be large enough that it won't cause any problems at all. Select "Best" or "Optimal" for the File Quality when uploading to the card. Insert the card into your machine and load MDF material that measures the appropriate dimension specified for the mpc (see page 1 for board dimensions).

Turn on your machine and proceed with the standard project setup in Step 2...

Before running this project, apply a strip of masking tape firmly along the bottom-lengthwise edge of the MDF material and trim flush at the ends. The tape provides a more secure "friction" for the machine's brass tracking roller. Bare MDF alone has too slick of a surface to track reliably without this tape strip. (fig. 1c)

fig. 1c

STEP 2 - Running the MPC File
You will see "Project Menu" on your LCD display. Press "1" and scroll to the **All_Scare_Box_Parts.mpc** project, and press the green ENTER button to select it. Then follow the additional prompts...

• **Stay Under Rollers** - press 1) YES

• **DO NOT RESIZE or SCALE the projects!** If prompted, always **Keep the Original Size**. No scaling!

• **How to Place...** - press 1) Center

• **Cut Board to Size?** - press 2) NO

• **Select Drill Bit: 1/8 " Cutting** - Press the green ENTER button. The machine will move the bit holder to the center of the machine in preparation for the bit installation.

• **Load Bit: 1/8 " Cutting** - Insert the 1/8 " carving bit, then press the green ENTER button. (homes, etc.)

• **Select Cutting Bit: 1/8" Cutting** -Just press ENTER. Nothing happens - bit is already installed.

• **Select Vector Bit: 1/8" Cutting** -Just press ENTER. Nothing happens - bit is already installed.

The machine will now perform all vector cuts, drills and cutouts will be performed. Clean the machine of all MDF dust thoroughly after the project run.

(cont.)

STEP 2 - Running the MPC File (cont.)
Your material will look something like this:

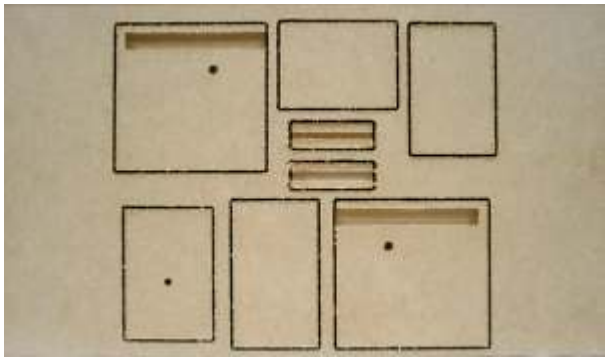


fig. 2 All_Scare_Box_Parts.mpc

STEP 3 - Separate Parts and Glue-Ups
Separate all parts from the board with a hobby saw and sand off tab remnants. (fig. 3a, 3b)

fig. 3a

fig. 3b

Glue a 0.25 inch x 3.25 inch dowel centered in the grooves of the core block halves. Clamp until dry. (fig. 3c, 3d)

fig. 3c

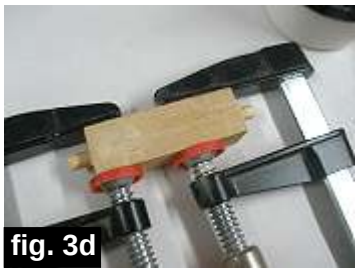


fig. 3d

Glue the front, back, bottom and the left side panel together - do NOT glue the right panel, but you can use it to help clamp the box until dry. (fig. 3e, 3f)

After the glue is dry, test fit the core block. The dowel should allow the core block to rotate freely between both side panels. Sand the dowel ends a little at a time, until the block rotates without any binding. (fig. 3g, 3h)

fig. 3g

fig. 3h

STEP 4 - Interior Core Assembly
Cut a 7.5 inch length of coat hanger wire. Drill a hole for the wire through the core block as shown. I used a bit slightly smaller than the wire diameter for a tight fit. (fig. 4a, 4b)

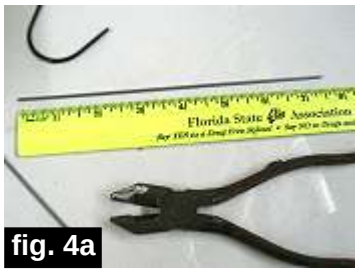


fig. 4a

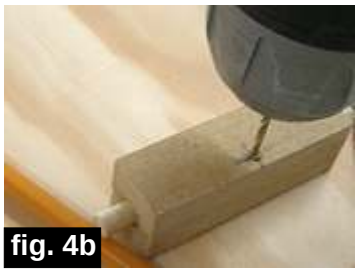


fig. 4b

Make a 90° bend in the wire about 0.75 inch from one end. Feed the wire through the hole in the block until the bend rests flat against the core block surface. (fig. 4c, 4d)

fig. 4c

fig. 4d

Secure the wire with a heavy-duty staple gun. Hammer down the staples for a “form fit”. (fig. 4e, 4f)

fig. 4e

fig. 4f

(cont.)

STEP 4 - Interior Core Assembly (cont.)
Bend the wire into a "U" shape. Test fit the core/wire assembly and re-bend the wire as required to clear the back panel as the core block rotates. (fig. 4a, 4b)

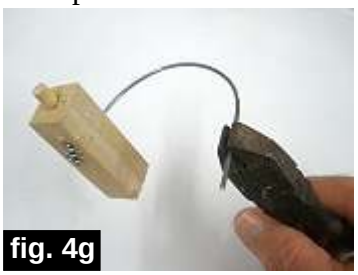


fig. 4g

fig. 4h

Staple and tie the end of a 10 inch length of string near one end of the core block. Wrap the string one full revolution around the block. (fig. 4i, 4j)

fig. 4i

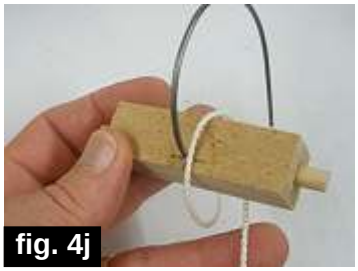


fig. 4j

Tape the string to the underside of the lid and place the core block and side panel in place to test the action of the wire as the lid slides opened and closed. (fig. 4k, 4l)

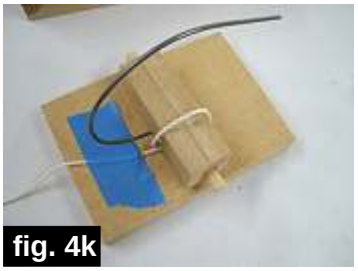


fig. 4k

fig. 4l

You will need to "tweak" the wire and string position. Change string/tape position and wire bend, as required, for smooth action. Mark the final string position then staple/knot in place and trim off excess. (fig. 4m, 4n)

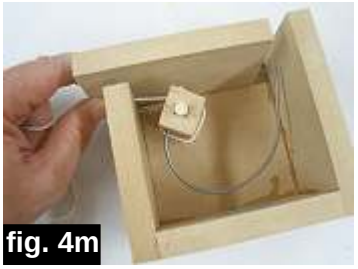


fig. 4m

fig. 4n

STEP 5 - Add Spider and Final Assembly
Time to put the "scare" in the Scare Box! Depending on spider size, you will likely need to tweak the wire some more. I ended up clipping off about an inch of the wire end to fit my spider and get proper action of the wire as the lid opened and closed. I slightly heated the wire end with a lighter to make it easier to push the soft, squishy spider body onto the wire. Use caution if using this method and remember, I didn't endorse you doing this! (fig. 5a, 5b)

fig. 5a

fig. 5b

Once satisfied with the "spider-wire" action, glue a 0.75 inch-long dowel into the lid and fasten the right side to the box, sandwiching the core block assembly and lid between both sides. You can use glue, nails or screws to affix the side. Screws allow later access to the interior of the box, if ever needed. (fig. 5c, 5d)

fig. 5c

fig. 5d

IN CONCLUSION
Applying a finish is optional and not really necessary, but I did decide to apply a silver paint (Rust-Oleum Aluminum enamel) to make it look like a metal box. Set the box anywhere people will see it - their own curiosity takes care of the rest! I think I'll take mine to the next church potluck...

the SCARE BOX
4.75" x 3.625" x 4.5"

Happy Carving!
Michael

Materials Source Page

- **3M Radial Bristle Discs from www.mcmaster.com**

(stack 3 discs at a time on your rotary tool mandrel)

80-grit: part # 4494A19
220-grit: part # 4494A18

(also available from http://www.ottofrei.com)

Items Purchased at Home Depot™

- **Glidden White Gripper Primer**

Items Purchased at Lowes™

- **Rust-Oleum Aluminum Paint**
- **1/8 " and 5/16 " diameter dowels**
- **½ "-thick MDF and 5/8 "-thick Particle Board**
- **Zinsser Bulls Eye SealCoat (wax-free shellac)**
- **Denatured Alcohol**
- **Zinsser Bulls Eye Amber Shellac**
- **Disposable Brushes and Paint Rags**
- **#10 Flat Washers**

Items Purchased at Michael's Arts & Crafts™

- **½ " diameter glass marbles (in silk plant section) and ½ " diameter wooden balls**
- **Various Acrylic Craft Paints**

Krylon Clear Gloss and Satin Acrylic
from WalMart™

Items Purchased from www.bugsnbees.com

- **Squishy Spiders Part #21075 (12-pak for about $8 inc. shipping at time of this writing)**

Metallic Paint & Finishing supplies ordered from www.sculptnouveau.com →

Additional Resources

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/forum.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.

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