

# My Balsa & Glass Workshop

## Hot Air Balloons Panel Assembly Description

Updated as of 29 March 2026

When I first started making Stained Glass panels, after a couple small panels I wanted to try my hand at something larger, but not with a hundred small pieces. After some initial ideas I drew up a pattern for a single hot air balloon which turned into the panel in Figure 1 below. The panel measures 22" x 28" and only has 53 fairly large size pieces of copper foiled stained glass. This panel was given to my parents in Florida where it hung in their home for many years and now hangs in the sunroom of our North Carolina home.



Figure 1 - My Third Stained Glass Project Many Years Ago

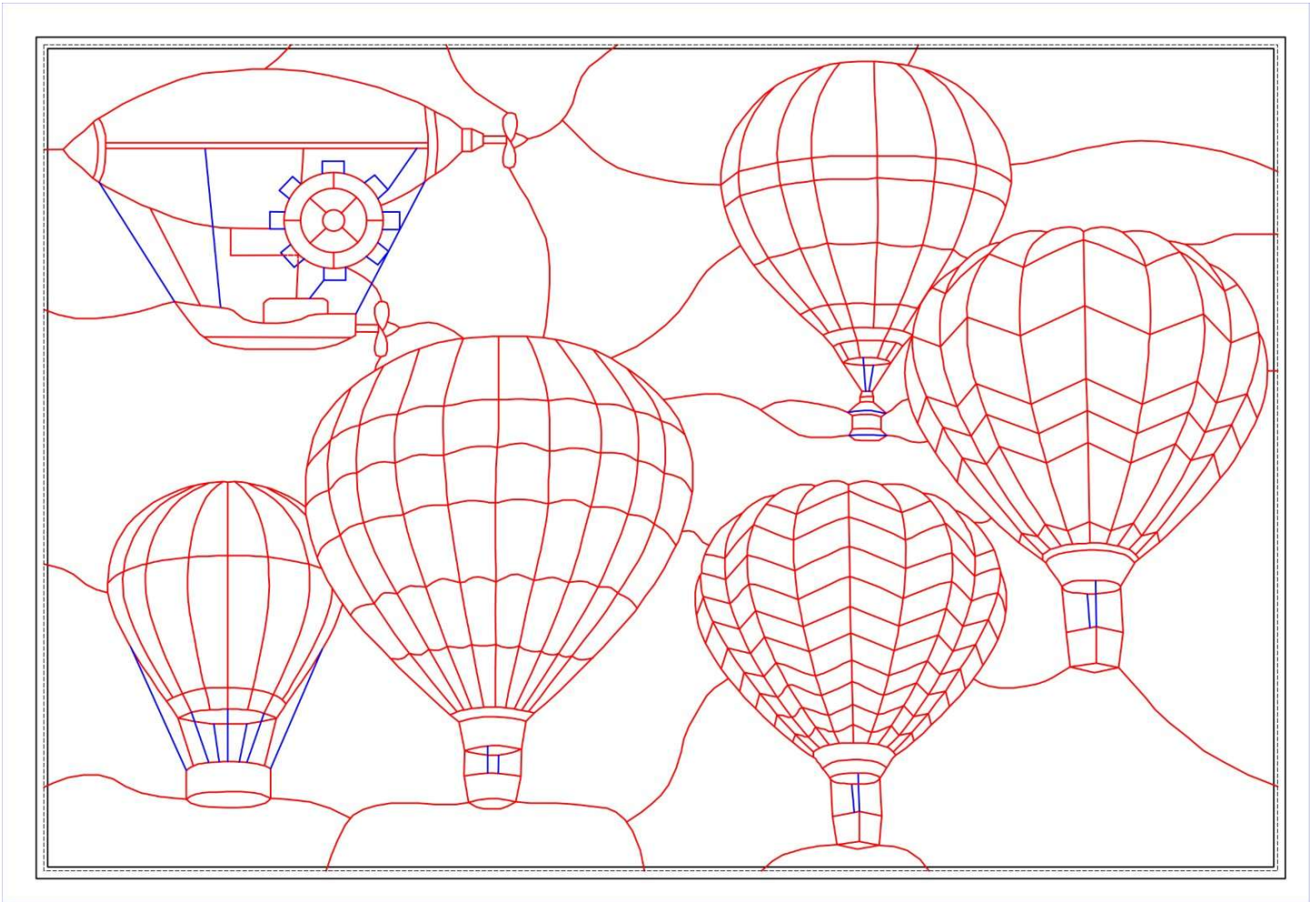
Having always liked hot air balloons because of their variety in design and colors, I wanted to come up with a new Stained Glass panel design that would have many different types of balloons participating in an event flying over a gentle rolling landscape. Something similar to that shown in Figure 2 below, but with more variance in the balloon patterns.



*Figure 2 - Example Hot Air Balloons Panel*

To start, I sized my new panel to measure 30" wide by 20" high, which allows me to have several balloons at different altitudes spread across a wide view. My next step was to work up some balloon patterns using my computer drawing program "Back To The Drawing Board". (<https://drawingboardapp.com>).

Using several images from my web search for hot air balloons, I reworked them in the drawing program so I would not have too many tiny pieces to cut, grind and copper foil. I decided to use a mix of both "vintage" and "modern" style hot air balloon patterns. In the areas where balloons overlap, I edited out the lines for the balloon in the background. Figure 3 below is my final cut at a Stained Glass pattern for my new panel. This 30"x20" panel has approximately **360** individual pieces of Stained Glass. So, I started this new and exciting project from here.



*Figure 3 - Hot Air Balloons Stained Glass Panel Pattern (Updated)*

Not all lines in this pattern are glass piece edges. I plan to use thin copper sheet, or maybe even a second layer of dark glass, to form the rectangle paddles on the large power wheel. Thin copper wire will be used for several of the lines that attach the boat to the balloon, and for some of the lines to the gondolas/baskets (as indicated by the blue lines in Figure 3). For this panel I will use the traditional "Tiffany" copper foil method to assemble the panel, which will then be framed in a Cascade 9/32" Brass U-Channel border (<https://www.anythinginstainedglass.com/finishing/zincBrassRebar.html>). I plan to use Double Glue Chip clear glass for the panel open sky pieces, and various colors of opal, wispy, and streaky glass from my glass shelf stock for the balloons.

### **Starting the Panel Assembly**

So, with all that, I started with the assembly of this new Stained Glass panel. I first took my pattern PDF file to the local FedEx store and had them print out two **full-size** patterns for me, costing me less than \$20. Figure 4 shows the full size pattern on my back center workbench with a Morton Aluminum Layout Block System (<https://www.glasscrafters.com/morton.html>) placed such that the overall panel, including the brass U-channel border is positioned to ensure the panel sides are squared and perpendicular.

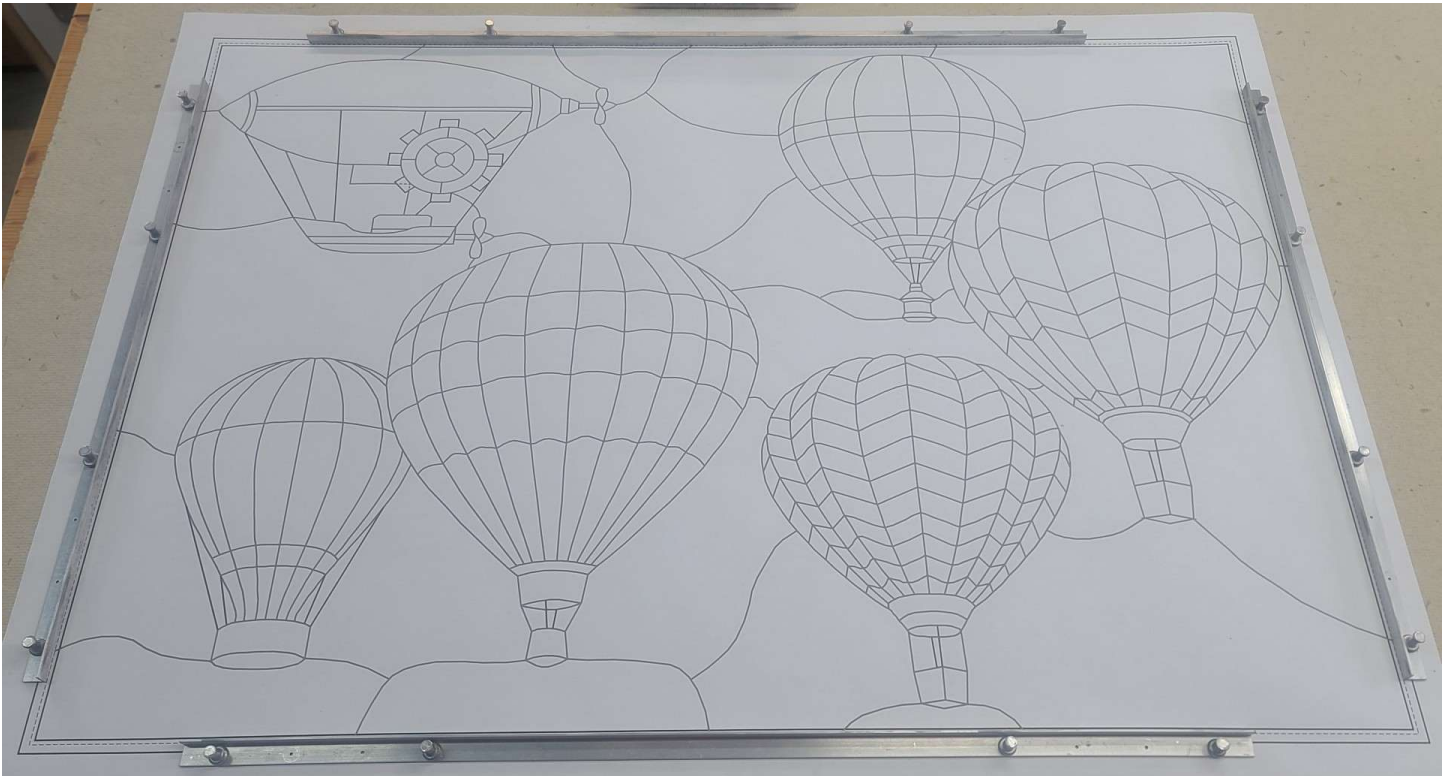


Figure 4 - Full Size Pattern on Assembly Workbench

Having everything needed, I started the panel by printing out enough pattern paper templates to keep me busy for a few days. **Note** - To make permanent pattern templates, I crop a given area of the full-size pattern PDF file such that it will fit within an 8.5"x11" sheet of paper and then print that area using 80# stock paper. This gives me a nice stiff pattern, which I then keep on file after the panel is finished. Next, I cut out each of the pattern pieces using a pair of foil pattern shears (<https://www.glasscrafters.com/pattern-shears-foiling.html>), starting at the upper left corner of the panel. Each pattern piece was then traced on a specific sheet of Stained Glass, which I hand cut using my TOYO TC-21 Custom Grip Supercutter (<https://www.anythinginstainedglass.com/tools/toyo-glass-cutters.html>). Each glass piece was then ground until I just removed the pattern line drawn on the glass piece. For this I used a Gryphon Convertible Grinder (<https://www.glasscrafters.com/convertible-glass-grinder-gryphon-twister.html>) with a 1" or 3/4" Standard 100/120 Grit Cylindrical Bit, and for the tight inside curves and corners, I use a 1/4" or 1/8" Standard Grit Grinding Pin (<https://www.anythinginstainedglass.com/tools/grinderTwofers.html>).

After the glass piece was ground to the pattern line, I placed it over the panel pattern on the workbench to verify its fit, grinding some more if needed, and once satisfied with the fit I applied copper foil to all the edges using 3/16" 1.25mil copper backed foil (<https://www.glasscrafters.com/solder-supplies.html>). While there are many different types of "Table Foiling Machines" and "Handy Foilers" for sale out there, and I've tried them, I find myself coming back to using just my fingers and a careful eye to properly align the foil along the edges to produce the same width foil lines on each side of a glass piece. I found this method is faster especially when working with small or highly curved glass pieces. **But**, for this panel I once again tried a new foiler from Techniglass called "**The Foiler**." (<https://www.anythinginstainedglass.com/metals/techniglass-the-foiler.html>) Regardless of the method used to apply copper foil, just remember to "**burnish**" all the foiled edges to ensure you have a nice squared



basket. Any changes I've made during the panel assembly have been updated in the PDF file and in the Figure 3 pattern.



Figure 6 - Preparations for Selecting Balloons Glass Colors

I continued to slowly work my way through the panel pattern pieces. Things get pretty slow in the Workshop in the early Spring due to the uptick in our home yard and garden work. And then there are the other Workshop projects also currently in work at is time. Some modifications were made to the lower portion of the rainbow colored balloon to reduce the length of the bottom narrow pieces, and to add another color to the rainbow sequence. I also increased the size of the gondola on this balloon.

As mentioned earlier, the new foiler I'm using from Techniglass called "**The Foiler**" works really nice as long as the glass piece is fairly large and does not have any tight inside curves, otherwise I resort back to my old index finger and eyes method of foiling.

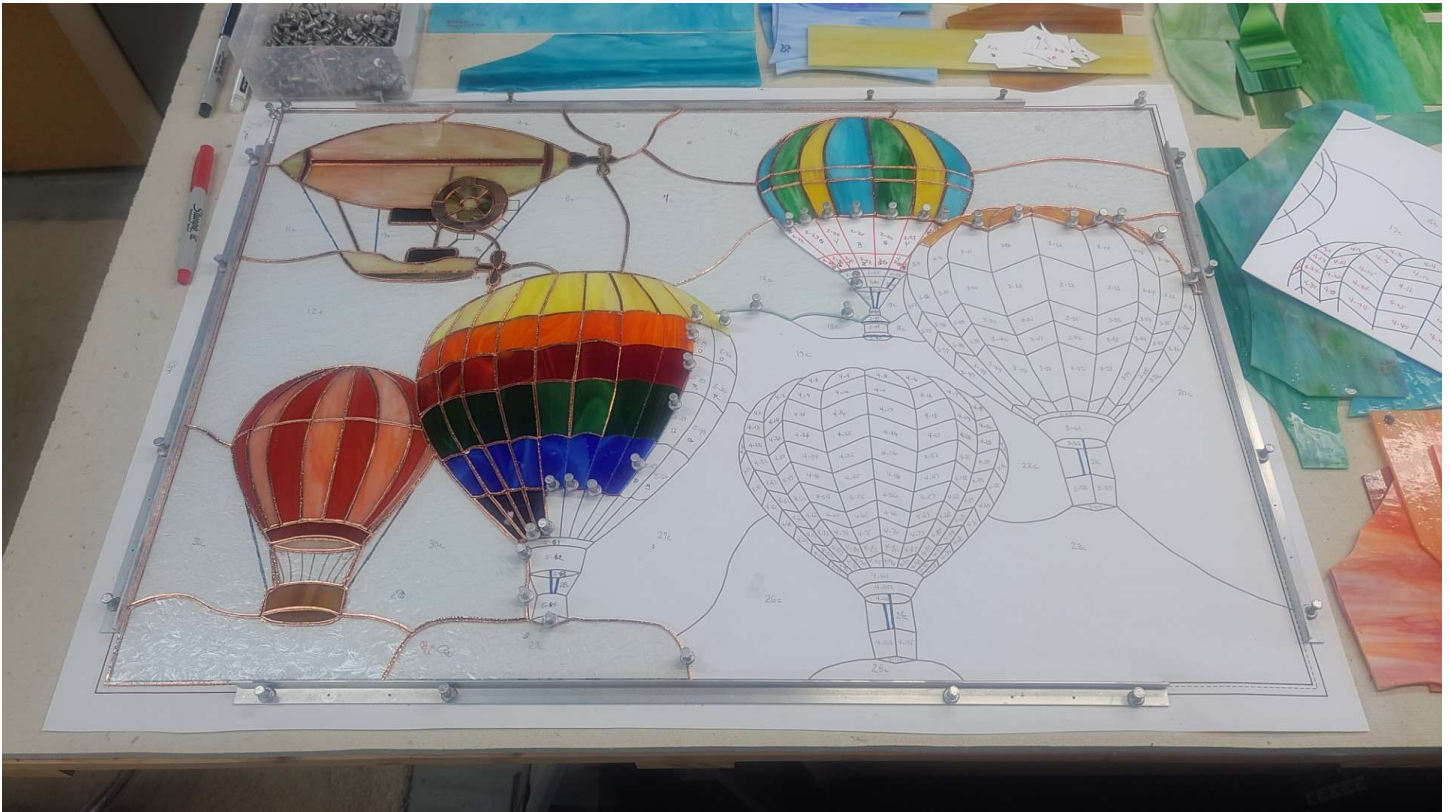


Figure 7 - Slowly Working Through the Panel Pattern Pieces

**More to come.**