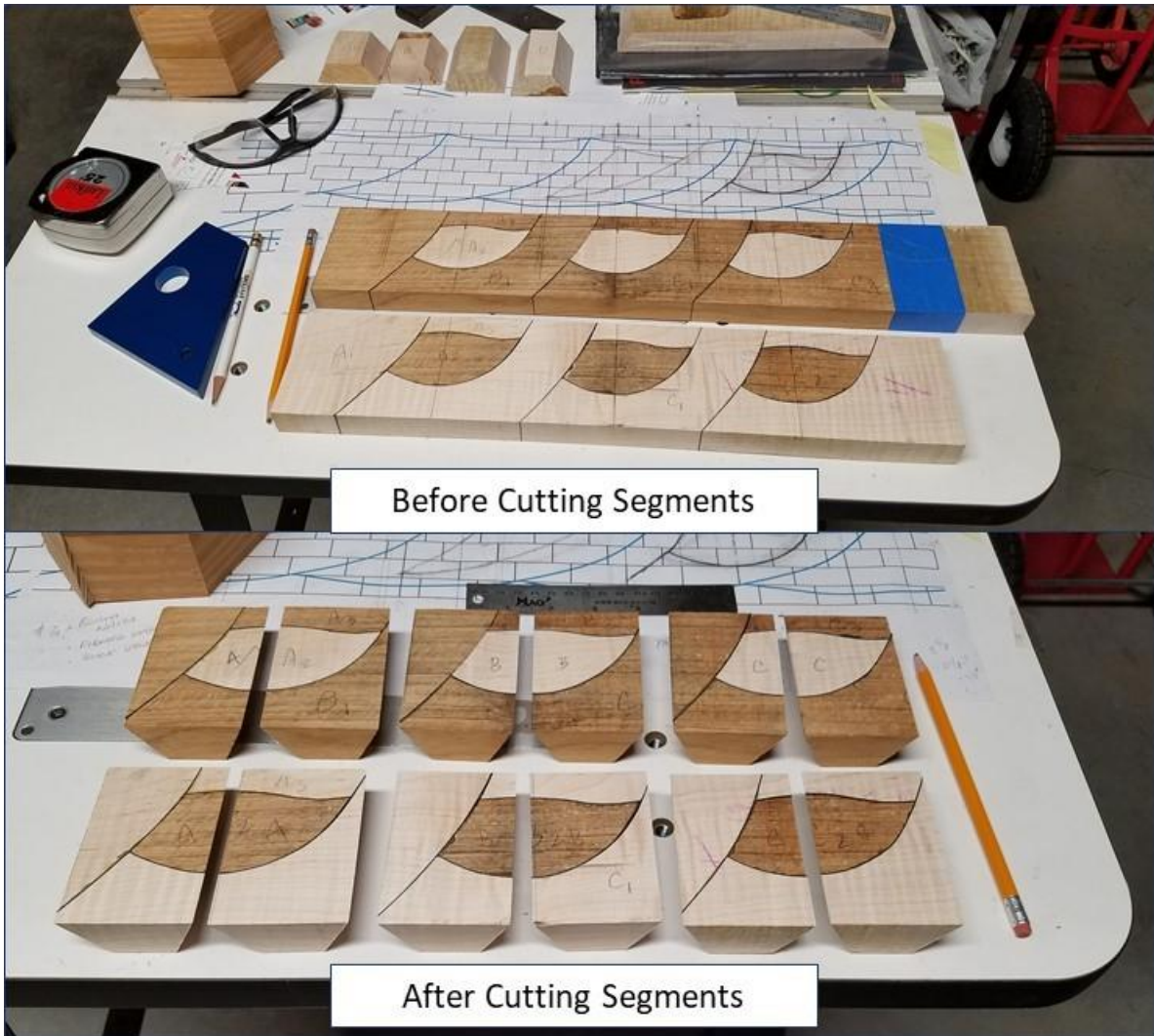


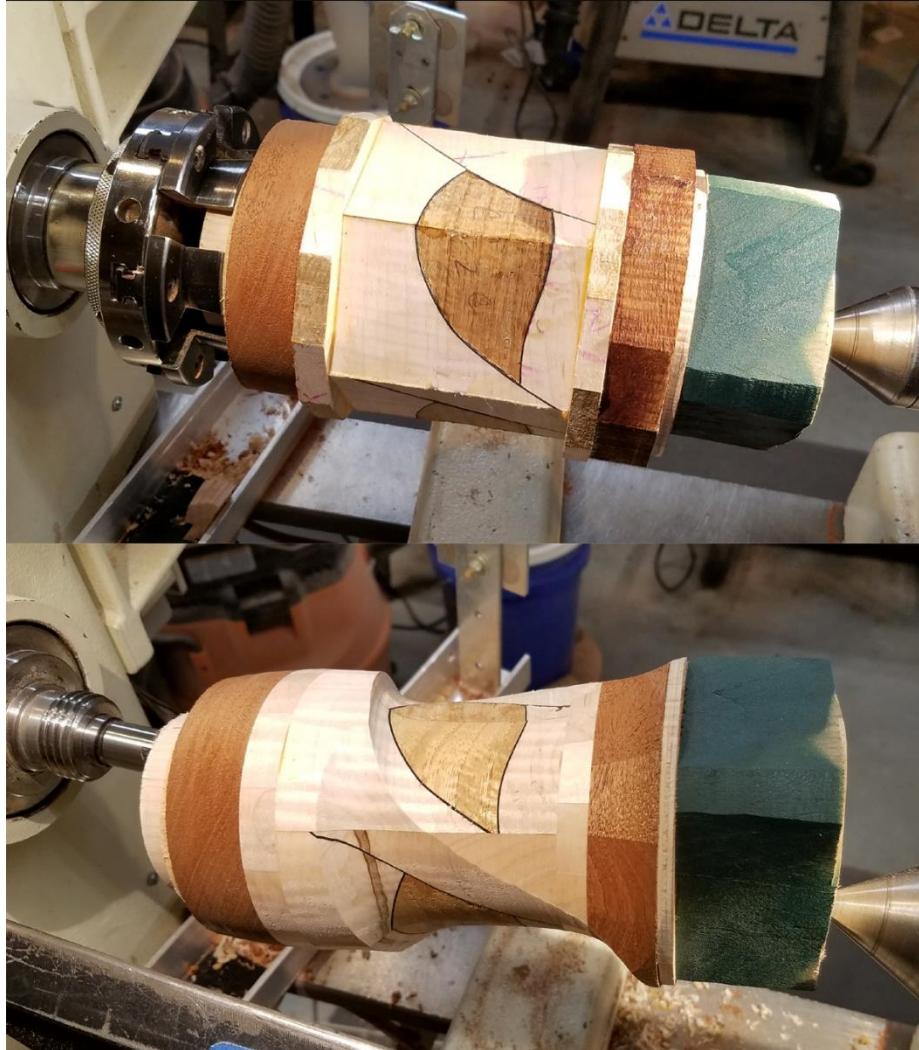
**Turning Twisted Segmented Flags**  
**Brian Horais (AAW Member 50641)**



This 6-inch tall twisted turning was made from figured maple with a mahogany top and bottom. The flags are made from Burma Narpa with black veneer outlines. A three-point offset turning method was used to generate the twist which follows the flag's curve. Maintaining the flag pattern while turning away surface material was achieved by matching angles where the stave patterns met.



The sequence of images above shows the process for creating the repeating design in 2-D and then cutting the segment staves. Because the design was made for integration in a twisted off-axis turning, a profile of the twist was included in the design layout shown at the top of the image. This design used 12 segments for the top and bottom rings, with six stave segments for the repeating patterns in the middle of the turning. The pattern repeats three times to match the three surfaces generated with the 120 degree offset in the twist axes. Note the shape of the flag pattern shown in the top right side of the layout drawing. This was the final pattern that evolved after a number of attempts to get a matching pattern as the surface material was turned away. To achieve matching patterns, the stave segments were cut at a location on the flag to maintain equal (but mirrored) angles.



The top image shows the glued-up segment stack before turning. When glued up, the pattern matches very nicely with sufficient material at the edges of the flag. The bottom image shows the twisted surfaces turned off-center. Note how the pattern was designed to follow the curve of the twisted edge that was generated with the three-point off-axis turning method that was used. You can also see how the edge of the flag was clipped off slightly. This occurred because there was not enough material provided to the side of the flag edge in the stave segment.

These results have been promising, so now the 'wheels are turning' to create more designs that utilize this approach.

A handwritten signature in black ink, appearing to read "G. J. ...".