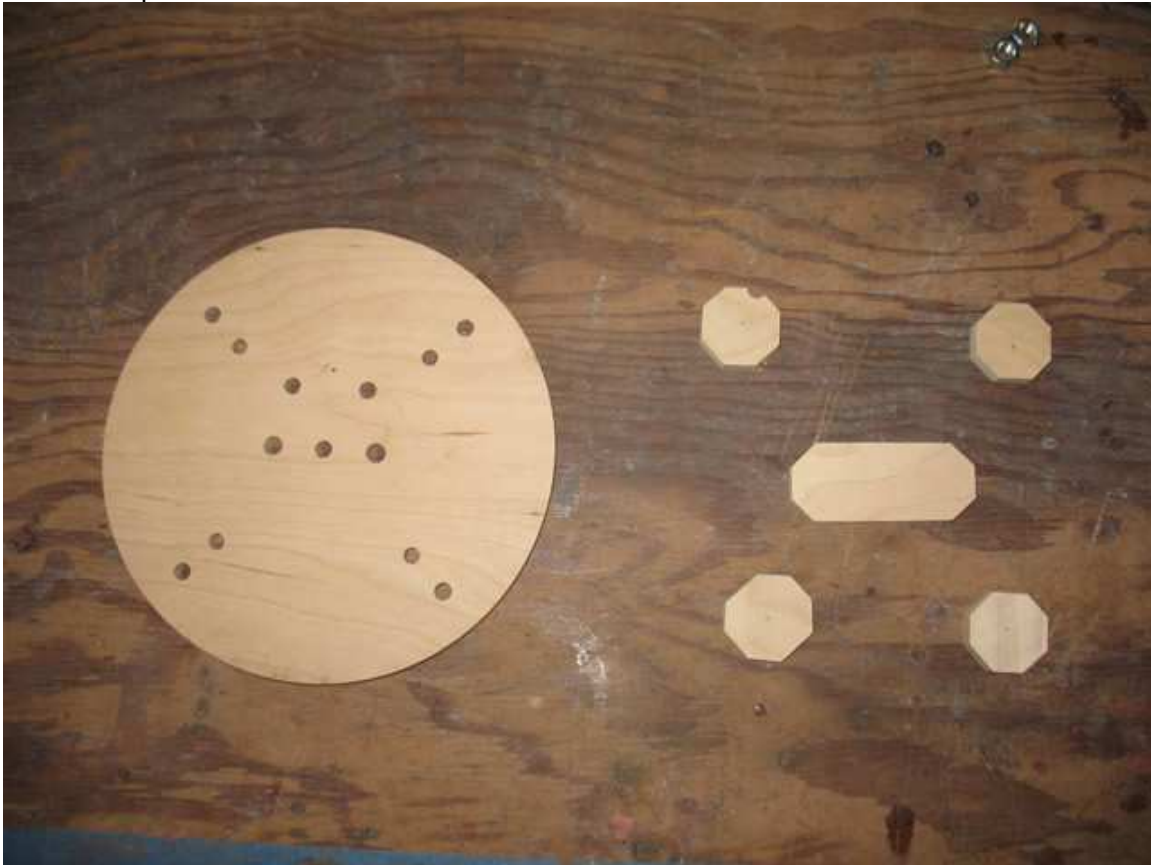


Building the AV-Bay

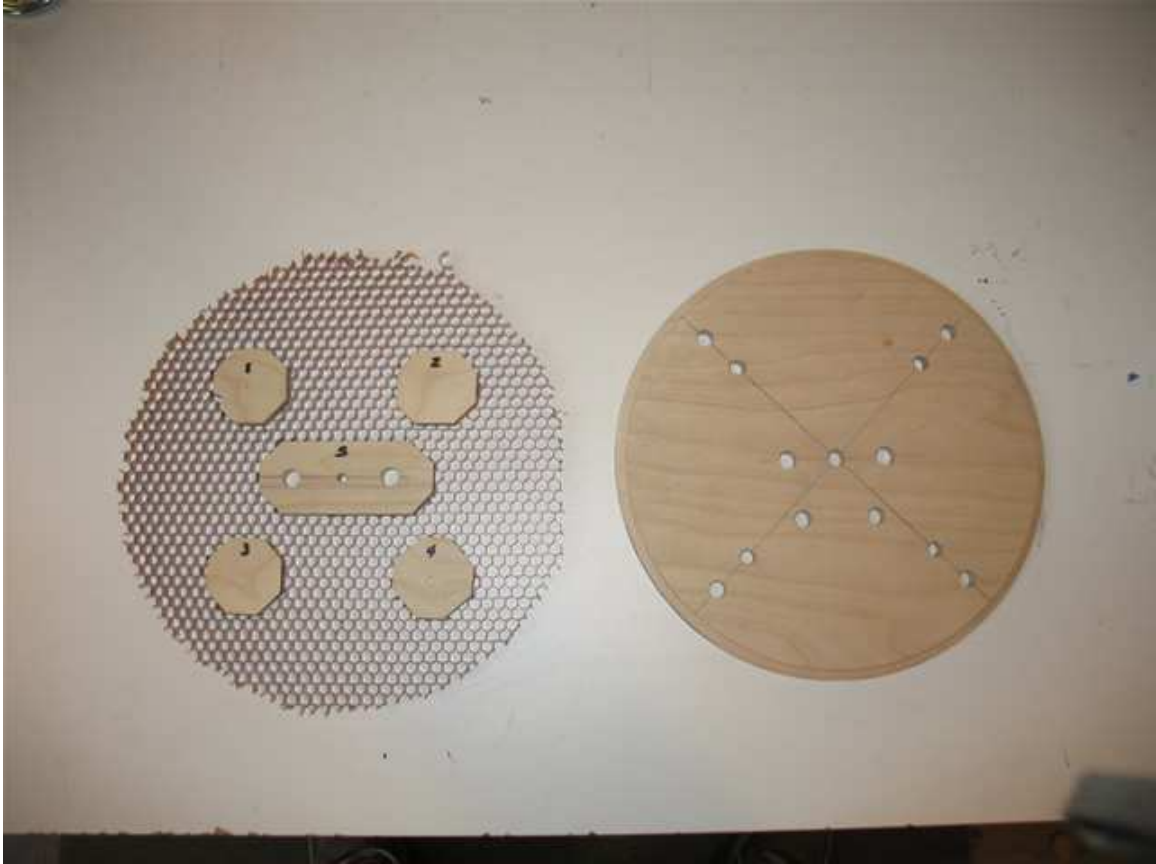
The AV-Bay is a simple and conventional design having a 7.5" phenolic coupler and two end caps. The AV-Bay is completely removable from the rocket. For flight it is attached to the upper airframe with 6 4-40 countersunk machine screws. What might be a bit different about my AV Bay design is:

- Coupler is reinforced with a couple of wraps of carbon to strengthen it
- Uses four threaded rods for extra strength and support
- Composite end caps to save weight
- Caps Mounts inside the end of the coupler against a ply shoulder with a silicone gasket

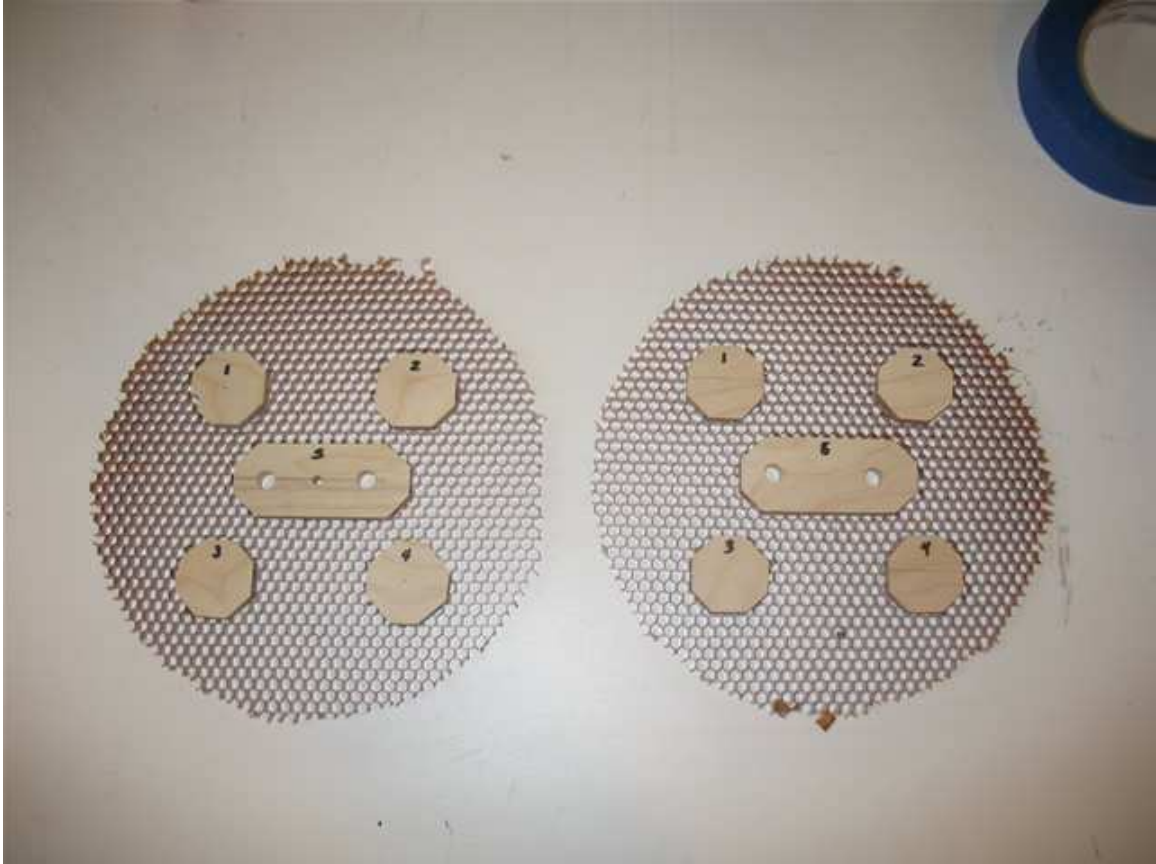
On to the pictorial...



This shows the original end cap from the Patriot but with the threaded rod holes moved toward the center about $\frac{3}{4}$ ". I also drilled for a 5/15 U-bolt which is stronger than the original $\frac{1}{4}$ ". Shown to the right are the hard points that will be laminated into the honeycomb.



After cutting the honeycomb and inserting the hardpoints here is what we have. The holes for the U-bold and the 1/8" router pivot pin hole are pre-drilled. After layup I will clamp the plywood to the composite cap for final drilling. This assures the holes are evenly matched.



Of course I need two end caps!



After cutting and fussing here are the caps ready to go. Construction method is identical to the centering rings. Refer to that for technique.



I fill the edges of the end caps with Aeropoxy Lite.



The coupler is lined with two layers of 3K twill. I "balloon bagged" it to make sure I had a tight bond to the coupler inside.



After trimming the carbon off the ends I make two plywood rings and glue these inside on each end. I CA a silicon gasket on the shoulder for the rings to seat onto. This helps seal the Av-bay against ejection gases. Using a shoulder allows the end caps to fit flush inside the end of the coupler. The plywood also allows the use of T-nuts for the 6 4-40 machine screws that will attach the Av-bay to the upper airframe. And finally it gives more support for the sheer pins between the couple and the bottom airframe.



Here is the completed AV-bay with the end-cap installed. Later I'll add the charge cups and build the electronics sled.

Next up – let's bob a nosecone to make the boat-tail.