PLANNING (part2)

This time around, we are going to focus on planning. Certainly, the cliché is " measure twice cut once", but when you really get down to it that is an extraordinary understatement. Hopefully, this will help you get ready for your build.

So, to add some light suspense let me give you a little background on the build. I was first introduced to Andy Sizemore in mid-October, we had just closed on our house in south Florida, and were not even unpacked. It happened that the garage was completely full. So thankfully my wife had a trip planned to visit her family for a few weeks, so I commandeered our den for a work space. Had we taken more time to plan it would have worked out with less stress but we got it completed and Andy seems to be thrilled with his purchase.

Work Space
We built "Windwalker" in our den of literally 13ft wide by 13 ft long. It was extremely tight, and we spent some of our time between tasks rearranging the space. It's certainly doable, but I wouldn't make a production shop out of that space.

Tools
Here is the list of items we used to build the balloon.
Double Needle Lockstitch sewing machine with reverse
SIngle Needle Zig Zag sewing machine
Scissors
1 5ft aluminium rule
Box cutters
Rotary fabric cutter
Sharpies
Masking tape
Swage tool
Micrometre/Calliper
Adjustable wrench
Scale and Load meter
Diagonal Cutters
Flexible tape measure
Electrical tape
Wax marker
2 8ft folding tables
1 6 ft folding table
3 6ft wooden dowels 1" dia
2 1x 6 x 4 ft pine boards
2 sheets of 4x8 ¼" plywood
¾" wood screws
19 contractor garbage bags

A few notes to consider, keep in mind that some of these tips may seem primitive, but they are reasonably cheap and space saving especially if you are only building 1 balloon.

Most of your planning really revolves around time management. We did the construction in this order for efficiency.

Design Confirmation
Contact FAA and Submit AW Application (not needed for Part 103)

Order Materials
Print Patterns and construction checklist
Build cables
Cut Centering and Vent lines
Assemble Cutting Table
Cut Panels (All 16 gores of each panel at once for example Panel A we laid out 16 sheets of fabric traced the pattern and cut all of them at one time with the rotary cutter.) so on and so forth
Install X's
Install N number
Assemble Parachute
Assemble each Gore by sewing panel J to K all 16 panels, then I to J, H to I etc (we keep each completed gore in a trash bag separately marked by letter)
Mark the gores vertically as we assemble the gores we mark the vertical edges every 3 ft so that we can keep track of alignment in envelope assembly. It's very easy to get off track or have slight differences from one person to another or even in yourself after several hours of sewing. The marks just give you a quick sanity check and reduce the distance you would need to destitch if you are off.
Envelope Assembly - Then we join panels right to left on drawing 5 this allows us to start at the bottom and to keep the least possible amount of fabric in the arm of the machine until the final closing. We also sew all internal and external loops and Velcro as its built. It saves a lot of fighting fabric in the machine.
Final Assembly- Tie in the parachute, install the cables and skirt
Cold Inflation and Rigging -

As we are building we keep a table with the checklist. 1 step 1 initial. It's easy to lose track of what is done and what isn't when you are working on it for several hours at a time.

We called the FAA to follow-up on scheduling the inspection just as the Final Assembly was happening. Depending on your Designee or MIDO resources and schedule you may need to do this earlier or later.

In closing, spending some time planning your build and understanding what are all of the steps that need to happen before you order the first component.