

Introduction (Part 1)

Welcome to the introduction of this 11 part series. A few notes which will guide each of you throughout the process.

1. Risk and Decision making - Aviation involves inherent risk, whether you are new or have 60 plus years the absolute best advice I can give you for safety of yourself and others is to understand the risk, the impact of the risk and to always leave yourself a "bolt hole" or a way out. Every decision you make whether it be during flight or during construction should have at least some understanding of risk. The pilots and mechanics with the longest and successful careers have learned and mastered split second decision making with risk in mind. There are 10s of thousands of examples of chain of events that lead to disaster. The key is recognizing and breaking that chain.
2. Mentorship - If you are new to any process it's always a best practice to find at least one mentor to guide you and bounce ideas. This does not mean they should do it for you, it just means you have a support network.
3. Pilotage - There plenty of rules that the FAA governs various operations. While some of those do not require you to have an authority issued license, we definitely encourage you to seek training to learn from the hundreds of years of experience with other aviators. Certainly, pioneers didn't have this luxury please for your safety and the goodwill of the sport do seek training and guidance. It is an easy way to reduce your risk profile and most pilots are willing to share knowledge at no charge.
4. Technical Data, Design and intellectual property- I am publishing my own intellectual property as open source under the following conditions which you agree to when you download or use the files.

By downloading you agree that you will follow the laws of the country you intend to build and operate the aircraft. You acknowledge that you are accepting fully responsibility and liability for the experimental aircraft you construct. The plans do NOT have a type certificate. Finally, you agree that you will not use the drawings for commercial purposes to sell kits or manufacture balloons to resell. These drawings are shared for private individual use only.

Now that the lawyer stuff is complete let's get down to business.

Here are the topics we plan to cover weekly(or monthly in the Newsletter).

Planning
Design
Tools
Materials selection / cost
Cutting
Sewing
Mechanicals
Rigging
Test inflation's/flights
Certification

Finally let's remember that there are tons of people who have tons of opinions on how to do different tasks. Let's try to focus on the topic. Keep comments constructive and informative. And most of all have fun.

So, first things first here is the process that I follow.

1. Find a mentor.
2. Define your requirements.
3. Plan and document how you will meet the requirements

4. Estimate resources
5. Communicate Intentions to local authority
6. Begin construction
7. Final assembly
8. Inspection
9. Certification
10. Test flight programs

As you'll see I have left the materials and notes section blank because those are meant for the builder to add as you select and construct the aircraft. I will post an complete Bill of Materials separately from the balloon we just finished. And yes of course including the suppliers and cost.

In case you are wondering the cost of materials for the envelope only was about \$4700. Conceptual drawing to completion was about 90 days including FAA inspection Actual construction time was about 100 labor hours including test inflation and adjustment time.

It is NOT a type certificated balloon, but it does have an FAA Certificate of Airworthiness.

It can be flown with its current registration and Airworthiness Certificate outside if the US provided that the civil aviation authority provides written approval. Most countries with a bilateral agreement with the FAA will all allow it no problem.

I do not know if it can be transfered via export certificate as I have never had a reason to try but, will happy work with your Civil Authority if they have questions.

So here is the good stuff on the envelope

16 gore

42.6ft (13.1M) diameter

Weight: 79lbs (36kg)

Gross take off weight @ISA sealevel 750lbs (341kg)

Volume: 38,200cuft (1081cuM)

Primary Connection: 4pt Delta Link 12-24" square or circle

Height 39.4 feet (12.1M)

Mouth opening 10ft (3.1M)

Vent opening 15.6ft (4.8M)