

BLASTVALVE

BY RICK JONES

Open Content Balloon Plans



New balloons from the factory are pretty slick these days, and everything's been done for you. All that's left is to fly them. They cost real money though, and if dough is in short supply, or you're the type that likes to do it yourself, a new option may be tempting.

There is a certain undeniable appeal to building your own aircraft and compared to airplanes a balloon is a very approachable project. But where to start? What will you need? Where do you get it?

While there are many competing vendors promoting sets of plans to build an airplane yourself, there haven't been many for balloons. So the first step was working up a set of plans for a complex project you'd never tried before. This led some to copy published Aerostar patterns, and then over a decade ago Bob LeDoux's Balloon Builders Journal included a spreadsheet that calculated gore dimensions. This has been popular in the experimental balloon building community, but still requires making key decisions a newcomer may be unprepared for.

The only commercial option for buying plans has been from Boland Balloon. Offered in many sizes, a number of homebuilders have used these to construct the distinctive egg-shaped balloons.

The group of experimental balloonists is a fun and enthusiastic crowd. Every spring they hold a small rally in New England to meet, fly, share ideas, and hatch schemes. The past 3 years this has been hosted by Dan Nachbar in Amherst, Massachusetts. It's worth the trip just to see the quasi-rigid hot air blimp that's become his passion.

The event is called XLTA for eXperimental Lighter Than Air, and includes everything from cloudhoppers to personal blimps. Learning from the other participants is as much fun as the flying itself.

One of the sessions I sat in on at last

year's XLTA gathering was entitled "Open Content Balloon Plans." The idea is similar to open source software such as Linux or Open Office. Open Content allows the copying and modifying of the information by anyone. Anybody can publish enhancements, and it's all free. Wikipedia is a well known Open Content project.

Turns out that Dan secured a grant from the Wolf Aviation Fund to get an Open Content Balloon project started. Paul Stumpf was recruited for his experience building balloons to draw up the plans. The meeting was a sharing of ideas among experienced builders to decide what kind of balloon would be best and which options to include.

Complete directions for constructing an envelope would be the finished product. To keep it reasonable for first time amateur builders they wanted a single, straightforward design of modest size. Gore patterns, assembly instructions, a materials list, and where to buy fabric and parts would all be included.

By having a fixed pattern materials can be clearly specified right down to part numbers, greatly simplifying the process and avoiding choosing unsuitable parts.

Major Design Features:

- 54,000 cubic foot envelope
- 16 gores
- 13 horizontal panels
- Parachute top
- French-felled seams
- Fabric cut with straight edges

It's a popular size for a two-person balloon that allows lots of options for colorful designs. You'd either need to pick up a used basket, build one yourself, or maybe add basket plans to the Open Content project.

A design of this type could even lend itself to vendors selling components to speed



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The above balloons are examples of homebuilts that led to the development of the Open Content Balloon Plans. Left to right the balloons were built by Russ Klowan, Cumberland, RI; Morgan Calderini, Providence, RI; Steve Goodyear of West Kingston, RI; Michael Bollea, Farmington, CT.

construction. Imagine how ordering completed cables, pre-cut panels, or even a complete parts kit could move things along. Crazy? Maybe, but it's common for airplanes.

Paul Stumpf is well suited to the project. He's been building and repairing balloons for 34 years. In addition to his repair station and balloon accessories business, he helps people build experimental and ultralight balloons in his shop. Stumpf's website features a half dozen completed balloons of similar design to the Open Concept plans. Showing his creative roots, he's guided several Rhode Island School of Design students who built balloons as art projects.

Dan Nachbar's experience designing and building his next generation airship are covered in the March/April 2007 issue of *Ballooning*.

Where the Project Stands:

- Website is online
- Plans listed as "Draft Version" at press time, hope to have complete by the time this reaches you

- Drawings and dimensions for all panels, top, skirt, and cables are online
- Includes lots of details: size of needles and thread to use, fabric buying conventions, how long to make the crown line
- Materials list and vendors still incomplete
- Explains basics like 'what's a loadtape?'
- Some steps still need more detailed directions

There is also a delightful blog on the website that tells the story of first time builder Kevin Herschman who built an envelope with help from Nachbar and Stumpf for \$2,000 in 22 days.

The plans as currently published, taken in conjunction with the blog and the advice in the *Balloon Builder's Journal*, represent the most complete work of its kind and should be sufficient to the task.

If you're an experienced builder, perhaps you'd like to take up the challenge of sharing your knowledge explaining one of the steps in more detail, or adding plans for a new option or feature. They're actively encouraging people who write material to



The tow men behind the Open Content concept = top; Paul Stumpf in snowy Vermont and (bottom) Dan Nachbar, Amherst, Massachusetts. Nachbar photo by Janice Doyama

send it to them for inclusion on the site, or to publish it themselves. According to Nachbar “We are hoping these plans are a ‘seed crystal’ i.e. the beginning of the story, not the end.”

If you’ve always dreamed of building your own balloon this could be the chance you’ve been waiting for. There’s a tremendous amount of support in the experimental community. Check out the plans on the website, and join us May 16-18, 2008 for the 4th Annual Amherst Experimental Balloon, Hopper, Chariot, and Airship Gathering known as XLTA Amherst. There’s a lot of skill in the group, the enthusiasm is contagious.

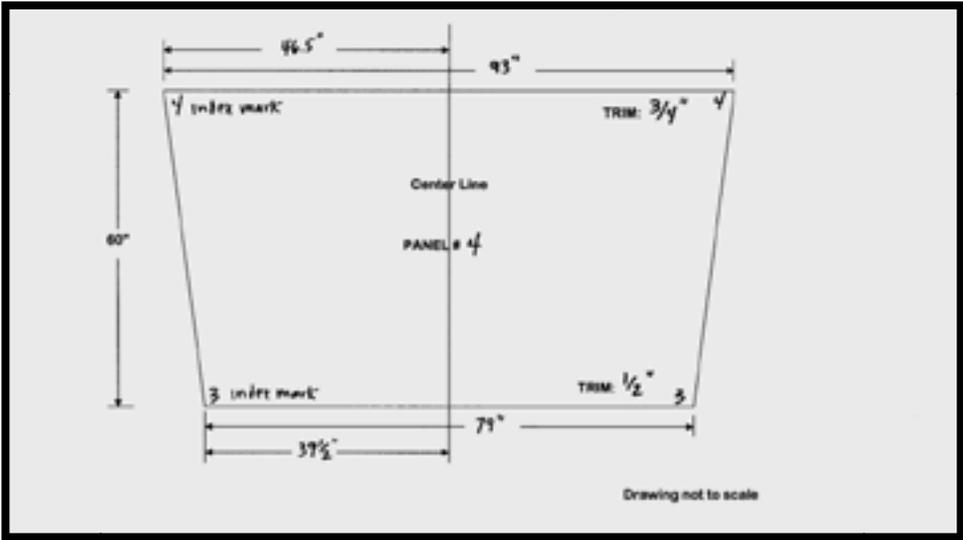
As Nachbar concludes on the site: “...building and flying your own aircraft can be one of life’s truly wonderful experiences. It certainly has been for me. So quit stalling and take the plunge.”

I look forward to seeing Open Content balloons flying the open skies soon. There’s still time to be one of the first. 



www.xlta.org/plans/
www.stumpfballoons.com
www.proaxis.com/~bobledoux/

- Upcoming Events:
- May 16-18, 2008 XLTA Amherst. Amherst, MA. Advance registration required.
 - August 1-3, 2008 XLTA Seattle. Seattle, WA.
 - Details for both at www.xlta.org



These are examples of the type of detailed drawings that are included in the Open Content Plans. Above: Panel #4 of a 16 gore, 13 panel 54,000 cuft envelope. Below: the complete envelope.

