



## The FOUND .... "CENTENNIAL 100" .... BROTHERS

By WALT MOONEY . . . This aircraft comes under the classification of one that appears to have been designed with the model builder in mind. It does consistent 1-minute outdoor flights, and has a 92 sec. top.

• This is the most recent version of a Utility Bush Plane, built by Found Brothers Aircraft Company, in Canada. The prototype was first flown on April 8, 1967. The three-view from which this model was developed was found in the 1968 issue of, "The Observers Book of Aircraft", by William Green, published by Frederick Warne & Co. Ltd.

Although the Centennial 100 does not have a super-low aspect-ratio configuration like the Lacey, and the Fike, it is in all other respects an excellent design for Peanut Scale. It is a cantilever high-wing monoplane with dihedral in the outer panels. It has adequate horizontal and vertical tail area. It has a simple landing gear. It has a slab-sided, rectangular cross-section fuselage almost from the very front to the aft end.

All of the above configurational characteristics make it easily represented, using very conventional model building techniques. In fact, almost all the information necessary

to construct the model will be found on the plan, and there is no need to replace it. However, since flying it in a couple of contests, there are a couple of comments that may be of help.

Keep it light; this one weighs half an ounce in flying trim, and it can undoubtedly be built lighter, especially if you intend to fly it indoors. We covered it with white tissue and used red and black tissue trim. Obviously, using condenser paper and felt pen trim coloring will save some weight. Making the tail without the diagonals will save weight at both ends, because the model shown required a little clay in the nose for balance.

Note that the top cowl was carved and hollowed from a solid block of balsa. Because of the flat cowl top and relatively sharply rounded corners, this is an easy way to do it. Wrapping it, using one-thirty-second sheet, will be lighter, but will require a former at the nose and at the position of the instrument panel.

The formers will have to be relieved to allow clearance for the nose hook and rubber motor. If you elect to follow the plans and hollow the top cowl, make it as thin as possible along the top center line for rubber clearance. On a few occasions, the rubber has knotted up at the front and produced a premature power failure. This produces an interesting flight if it works loose prior to landing and the motor starts again, but isn't so good if you are limited to 3 or 4 officials. It makes little difference if there are unlimited officials, as there are in several of the California contests during the year. Nevertheless, eliminate the possibility of this problem as much as possible; a consistent performing model is easier to understand.

The model as built had an eighth-of-an-inch of washout at the tip of each outer wing panel. It required a thirty-second thick shim of down-thrust to eliminate a tendency to loop under the high power at the beginning of the flight.

Originally, the model in the photos was built without any provision for propeller freewheeling. At the December 1977 Flightmasters contest, it put in ten consecutive flights of more than sixty seconds. The best flight was 92 seconds. The glide in all cases was a spiral dive to the right because of the stopped propeller (a great dethermalizer). It has since been modified for freewheeling and the glide is much better.

Let's talk a little bit about tools for making Peanuts. Everyone is aware of the requirement for sharp cutting equipment such as razor blades, and the Uber Skiver knife, and for



The overall design of the Centennial 100 makes it an excellent Peanut Scale subject. How about that scale dihedral set-up!?

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straight pins, and wax paper or plastic wrap to protect the plans. There are some other tools worth mentioning, for instance:

**Pliers.** These should be a long-nosed version with a side cutter. For this tool, it is worthwhile to spend enough money to get a high quality plier. Cheap pliers are a pain. The cutting edges may be too soft to cut music wire and deteriorate rapidly into a series of notches. The ends may bend or twist and prevent you from making accurate wire bends. While it takes practice to make precise and accurate bends in piano wire, probably the biggest handicap faced by a beginning modeler is having a poor quality long-nose plier to use, or even trying to get along with a common pair of mechanics pliers.

**Drills.** Regular wood drills are almost useless for making holes in balsa wood. Standard metal drills are somewhat better, especially in sizes less than about an eighth-of-an-inch in diameter. For making larger holes in thin sheet balsa, the best hole maker is a metal tube with its end sharpened. Brass tubing is available in most model shops in a large number of sizes. A sharp edge can be put on the end of a piece of tubing by cutting around the inside with a steel knife. This edge on the tube won't last for very many holes, but usually there are only a few holes required in any model, so touching up the edge each time it is used is not much bother. Hole-making technique requires backing the balsa sheet with a soft wood plank or several layers of paper, and then pushing the tube through the sheet with a twisting motion. Extremely neat holes are the result.

Some special tools are available that can make Peanut building and flying more enjoyable, and possibly cheaper. Two of these are available from Jim Jones, 36631 Ledgestone, Mt. Clemens, MI 48043.

The first is a truly superb "Adjustable Balsa Stripper". This tool is a piece of art that can strip sheet balsa of any thickness up to one-eighth, in widths up to one-eighth. It adjusts to sheet thickness automatically, and has a micrometer readout that will precisely measure strip widths. Each division on the scale is 0.010 inch, and you can read it closer than that.

Price is \$10.80, including insurance and postage. It is a great buy for a serious builder of Peanuts, or other indoor models. I like it. It works great.

The second item from the same source, and for the same price, is a rubber stripper that will allow you to make your own special rubber strip widths, starting with one-quarter flat. With it, you can optimize your rubber motor for the model and conditions under which you are flying. This also is a quality tool.

These two tools by Jim Jones are obviously well thought out, and produced by a true craftsman.

Good tools make modeling easier and more enjoyable. ●