

Photos by Bill Lovins

# FARMAN SPORT

By BILL LOVINS & JEFF JOHNSON . . . Here's a Peanut that flies as good as it looks. This 1922 Farman Sport has flown for 30 seconds.

• One evening, Jeff and I were looking through my collection of model magazines in order to find an interesting peanut subject. Nothing particular, just something different. Jeff came across a three-view drawing of this 1922 FARMAN biplane by Col. H.G. Bowers, circa 1979. After a little measurement, I realized that the wing area was over 83.5 square inches. Definitely different and with great potential for contest work. Jeff agreed to draw up the plans and I could build from them. The only deviation from scale is the addition of a little dihedral, slight stretching of the landing gear and the usual (needed) increase in rudder and stabilizer area. On my model, I took the liberty of changing the exhaust pipe configuration of the six-cylinder Anzani engine also.

An unusual aspect of the model is the utilization of a nearly scale airfoil which seems to work just fine. Although this

model may appeal to the contest flyer, it should present no problem to anyone who has built a few models. As the construction is rather simple, only a few comments need to be made about the various sub-assemblies.

**Wings:** There is a lot of wood in the wings, so careful selection is necessary. The leading edge must be made of extremely light stock. The ribs are light and the trailing edge should be medium. The spar should be made of hard stock and glued strongly in place. The rib spacing is scale and half of the ribs could be omitted for a lighter indoor model.

**Rudder and Stabilizer:** Construct from light stock and glue securely. Don't forget about the scalloped trailing edges.

**Fuselage:** Use fairly hard stripwood for the longerons and uprights as you will probably be using strong motors. The sheeting can be very light and also the noseblock onto which the six 3/4-scale

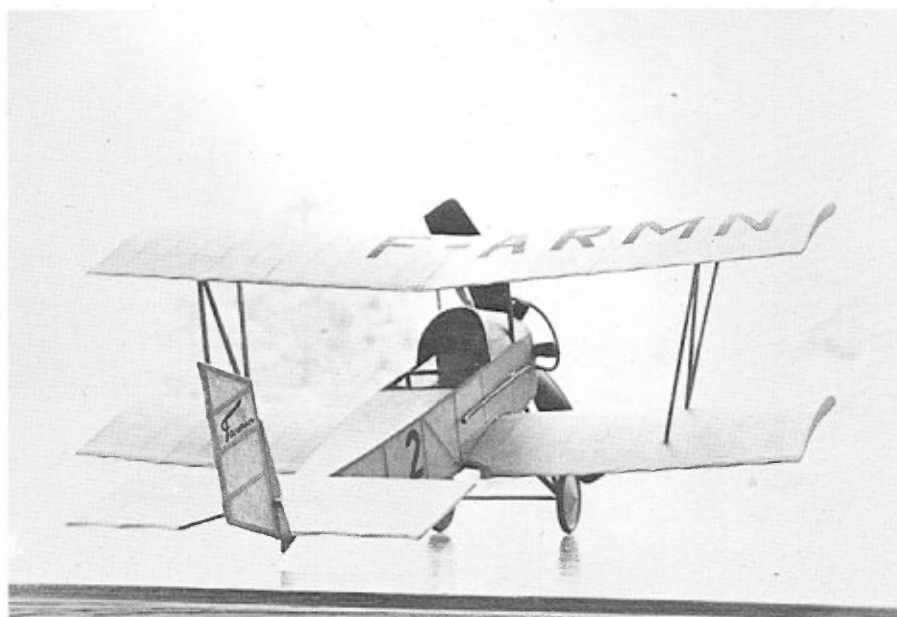
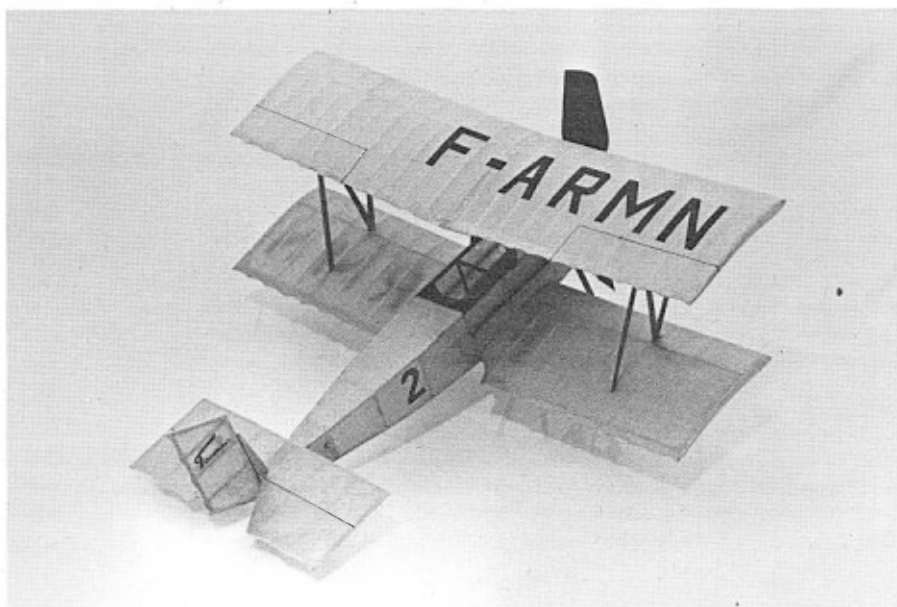
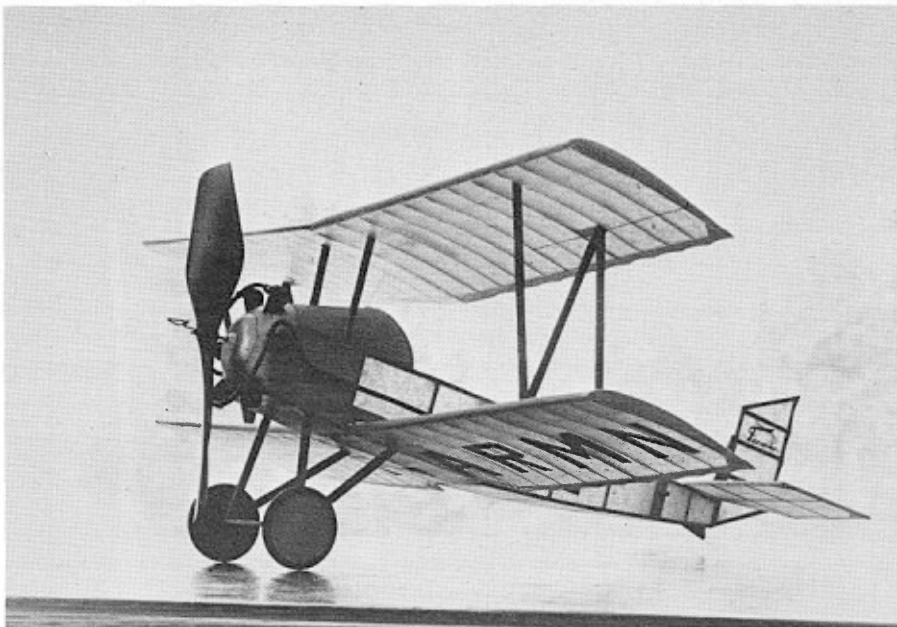
Williams Brothers cylinders attach can be medium since it must be hollowed out. The nose plug and key are made of very hard stock. Construct the fuselage framework first, then shape the cylinder housing from semi-square to round. The nose plug and key should be tack glued in place during the shaping. Hollow the cylinder housing and tack glue it to the fuselage framework. Using a piece of 1/32-diameter music wire and the front-view drawing, push the wire through the cylinder housing to mark the two horizontal cylinder positions. Next, mark the four remaining cylinder positions. Then, using the eyeball technique, begin to open up the 1/32 holes with a drill bit and a small round file. It's not difficult, just slow. Once this step is completed, the hardest part is over. Remove the nose plug and key and glue in the cylinders, using a 50/50 mixture of plastic model cement and wood model cement (cellulose type), Testors works well. If the cylinders fit exceptionally well, Hot Stuff or another C/A adhesive (used carefully) will also be adequate.

The cylinders and exhaust pipes must be glued very solidly so they don't break off when the model does an unexpected nose dive. The aluminum tube exhaust pipes are formed with flexible wire inside so that the tubing does not collapse when bent. Once bent, remove the wire. Removal is facilitated by lubricating the wire with common hand soap.

**Covering:** Cover the sub-assemblies with cream-colored tissue. The cylinder housing can be painted to resemble aluminum or brass and exhaust pipes, black. The cockpit interior is black and I attached three simulated gauges to the rear of F-2. For covering, I use white glue and water. Jig all surfaces while drying so no warps appear. Shrink tissue with water mist and re-jig. Once thoroughly dry, the wing, rudder and stabilizer trailing edges can be scalloped. Use a juice can wrapped with 220 grit sandpaper.

**Assembly:** Attach the lower wing to the fuselage with plenty of glue. Tack glue the stabilizer in place, making sure that the lower wing and stabilizer are at 0° with the thrust line. Next assemble the "N" struts that connect the top and bottom wings. Sand to a streamlined shape and be sure to use hard wood. Cement the lower parts of the "N" struts to the fifth ribs in from the tips of the lower wing. Use a jig to cant out each strut assembly 1/2-inch. Next lay the top wing onto the struts. Trim the front or rear of each strut to give the top wing 1/16- to 3/32-inch positive incidence (as compared to bottom wing). Once the angle is correct, glue the tops of the struts to the bottoms of the fourth ribs in from the tips of the top wing. Tack glue the rudder to the stabilizer. It is important to tack glue the stabilizer and rudder since they may need to be removed later for trimming. Complete the nose plug assembly by using the prop and bearing of your choice. Insert a 12-inch loop of 1/8-wide rubber into the fuselage. This will be good for test flying. Balance the model as shown by adding weight to the nose or tail of the model (as needed).

**Flying:** Begin flying with reduced turns in the motor (150 to 200) and hand launch the model from a low level. Observe flight pattern. Trim for a 25-foot circle to the left with good climb and no stalling tendency. Do not warp any surfaces to correct undesired flight pattern. Instead, use paper or acetate trim tabs on the rudder and stabilizer. You may find that your model is banking too hard. If this occurs, you can add a trim tab (pointing downward) to the upper left wing tip, thus holding up that tip in flight. Rudder and stabilizer can be relocated to change trim, thus enabling you to remove the paper trim tabs. Good luck with your FARMAN "SPORT." Jeff and I live at an elevation of 7522 feet and a 25- to 30-second peanut is a pretty good one. So far the Sport shows signs of being a good-flying biplane. Jeff intends to build another with an eye toward far better indoor performance. We would be interested in hearing from anyone who tries the Farman Sport. Contact: Bill Lovins, P.O. Box 3974, Estes Park, Colorado 80517.



Delightful Farman makes a great Peanut Scale subject. Wing rib spacing is scale, and airfoil is very close to scale. You can omit half the ribs if you desire a lighter indoor model.