The whole fascination of Peanut Scale is summed up in this photo of the author's P-9. The secret to success is getting detail without added weight.

BOULTON & PAUL P-9...BONUS PEANUT

By ED. F. H E VIM .. .Peanut Scales are great... Biplane Peanut Scales are even greater ... As we've had a bonus crop of 13 inchers this season, we figured it was time to double up. Plans on next two pages.

• In 1918, Boulton & Paul, LTD. of Norwich, England, produced a small squarish two-seater biplane powered with the reliable 90 hp. RAF IA engine. Designated P-6, it was one of the earliest examples of an airplane built specifically for full scale aerodynamic research, particularly for investigation of the characteristics of airfoil sections. The single aircraft constructed was later used extensively by the Boulton & Paul sales division.

After the Armistice, the RAF IA engine was sold surplus, as was the comparable Curtiss OX-S engine in this country. The Boulton *&* Paul P-9 was basically a slightly enlarged P-ťf designed to utilize the surplus engine, with sales to the civilian market. Several P-9's were built in 1919-1920. However, it was in competition with many cheap surplus military aircraft and sales were not. up to expectations. With 3 hours of fuel aboard, the P-9 could climb to 5000 feet in 8 1/2 minutes. It had a maximum ceiling of 14,000 ft., a top speed of 104 mph, and weighed 1770 lbs., fully loaded. In 1921, two P-9's were entered in the Kings Cup Race around England. One of these, G-EASJ, piloted by Mr. C. T. Holmes, is the subject of this article.

Construction of the P-9 is not difficult, but like all bi-planes, two wings adds up to more work and extra care in alignment than a monoplane. The fuselage is a square structure with 1/16 square longerons. Make both sides to gether.

Note that lightweight 1/16 sheet is used in the nose, at the lower wing and stab supports, and also for the rear peg support. Don't worry about the nose sheeting, as it is more useful there than a blob of clay. Before separating the sides, drill through two 1/16 holes for the lower wing spar stubs, a hole for the rear peg, and cut in the slot for the stab. Vertical members are 1/16 square forward of the rear cockpit and 1/16 X 1/32 aft. Top formers are of 1/32 sheet with one 1/16 square stringer on top to rear of baggage compartment. Install the five rear stringers of 1/16 x 1/32 before covering the forward decking with bond paper.

To simulate the plywood dashboards,

The pleasing lines of the Boulton & Paul P-9 are all evident in this photo, which first appeared in an earlier issue of Model Builder. Author tells how to use rub-off lettering on tissue.

Rudder's eye view of the cockpit. Exhaust pipes bent from aluminum tubing.

we overlayed the two balsa dash formers with very thin mahogany veneer from a cigar wrapper. As a bonus, you can light D/T fuses with the left over cigar! Look through your old mode! mags for certain Tatone ads illustrating an instrument panel. Cut out some of the little instruments and glue to dash (that's cheating! wen}. The eight engine cylinders are made from soft balsa dowel wrapped with thread for the fins. The long exhaust pipes may be made from balsa, aluminum tube, or styrene tube and painted with Floquil Rust. The tail skid is a sliver of bamboo.

Cut a form out of Strathmore board, or other scrap, upon which to form the rudder laminations. Remainder of the rudder and the stab is constructed from 1/16 sq., 1/16 x 1/32 and 1/16 x 1/8 comer pieces, as indicated. Cover both with Japanese tissue. Apply the 'G' on the rudder prior to glueing it in place.

Use straight 1/16 Birch dowel for the wing leading edges. Saves much sanding and is virtually tree proof. Make six ribs of 1/16 sheet for the wing strut locations and the lower wing root; all others are of 1/32 sheet. Let the lower wing leading edges extend inboard 3/32. A second short length of dowel is inlayed between the first two lower ribs and directly below a short length of 1/16 sq, balsa. These two stubs project into the two holes previously drilled in the fuselage sides and should give an incidence angle of plus 2 degrees. If not, enlarge the front hole. Note that the rear spars have been eliminated as seen in the photos. Install the lower wings first, then, use two card-board spacers cut to fit between the wings to hold the upper wing in position. Install the cabane struts first, and when set, add the outboard struts.

The plans used originally came from a 1922 magazine and show the lower wing cutout as seen in the photos. Actual photos acquired later show that the lower wing trailing edge is straight to the fuselage, and this correction is shown on the plans.

Wing struts are of basswood, streamlined, and colored with Minwax Light Oak stain. Front and rear cabane struts are medium balsa with the diagonal strut being a piece of 1/16 O.D. aluminum tube epoxied in place after the top wing is installed. Aileron and tail hinge lines may be drawn in with a felt pen. Rigging was done with gray thread, but monofilament line will do as well.

Installing the landing gear last makes it easier to block up the wings for the proper incidence and dihedral. Make two vees of balsa or basswood and a speader bar of 1/32 ply. Fill in the bottom of the vee and cut in a vertical slot to guide the 1/32 wire axle as it springs up. Epoxy the axle to the spreader at the center only. The wheels were heat formed, using old wooden kit wheels as a mold. This requires four pieces glued together with tubing axles potted in.

So far, we have been unable to positively determine the original color scheme for this ship. Ours was covered all over with yellow tissue.

After shrinking the paper with alcohol, apply one coat of 50/50 nitrate dope. The registration letters may be cut from black tissue or you may use Letraset dry transfer letters. Fuselage letters are 1/2 inch (48 point), while the rudder "G" is 1 inch (96 point) high. If using dry transfers, place the backing sheet under the letter and rub on a smooth surface until the letter is *99%* loose, then apply. You only have one chance with this method as there is no way to move a letter once applied, however, it does save trying to rub through to the other side of the fuselage to release the transfer! When in place spray the letters lightly with Krylon Clear Matte finish to set the edges. Photos show that there are no markings on the top or bottom wing as used on later aircraft.

Any six inch plastic prop may be used for flight, or you may carve a balsa prop from a 6 X 1 3/8 x 1/2 inch blank. We are now flying with a Williams Brothers plastic prop, which js giving the best performance to date. Use a 1/32 wire shaft and include a simple flip-over free wheeler as shown in the photo. Although very stable in flight this plane likes a lot of power and room in which to fly. We would recommend outdoor flying only!