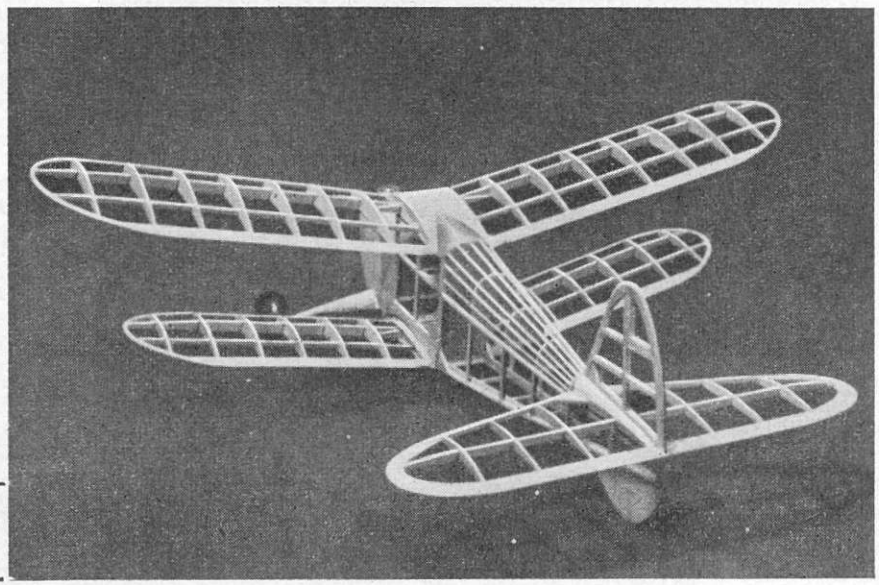
A 30 INCH SPAN SPORT BIPLANE FOR ENGINES UP TO 1·3c.c.

DESIGNED BY VIC SMEED

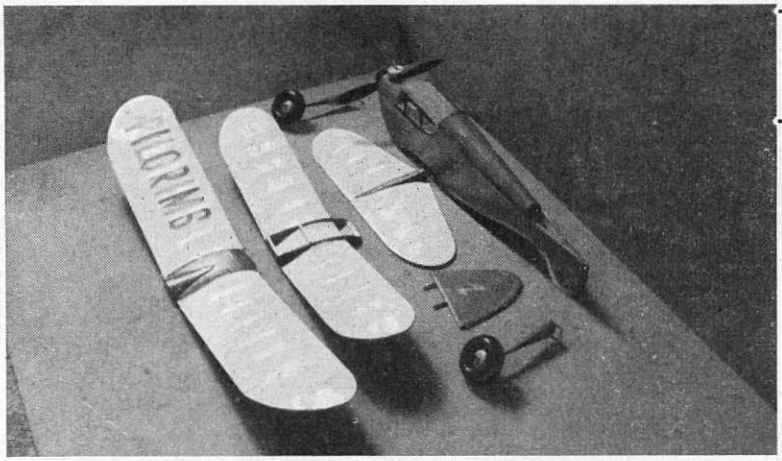
Coquette

COQUETTE was designed to be a rugged little biplane, simple, but good-looking, that would supply hours of enjoyment to the chap who flies for fun rather than for pots. It appears that only about 20 per cent. of this country's aeromodelling population are interested in a climb resembling that of a she-angel resisting the improper advances of Lucifer —most builders aren't particularly contest-minded, but want rather realism and a model that won't give them a two-mile trot each time it takes the air. The vertical ascent and super-floating descent were not major considerations in this design, and the result is a docile, easily-trimmed job that will still turn in ratios of 3 or 4 : 1 in late evening air. The ruggedness and simplicity are there, too, and good looks are only a question of taste after all. All round, Coquette is a job that can be undertaken with confidence by anyone who has produced one successful power model, and it was in fact designed to be within the scope of the relative beginner who wishes to break away from the normal monoplane lay-out. The following notes are written with this type of builder in view, and more experienced modellers are asked to excuse the somewhat lengthy treatment of some of the phases of the construction. Biplanes have been long neglected, due, in all probability, to the apparent tediousness of constructing a second wing and exaggerated difficulties in flight trim. Well, a biplane has to have two wings, and since they have to be made, any tediousness should be attacked in the design. Coquette's wings are simple to a degree, and if all the ribs are cut at one time and the wings built together, stage by stage, the extra work just isn't noticed. As for trimming troubles—four different biplanes (petrol and rubber) by the designer have required no change whatsoever from the original drawings, and Coquette, the first diesel-powered one, needed only one pinch of shot at the tail.

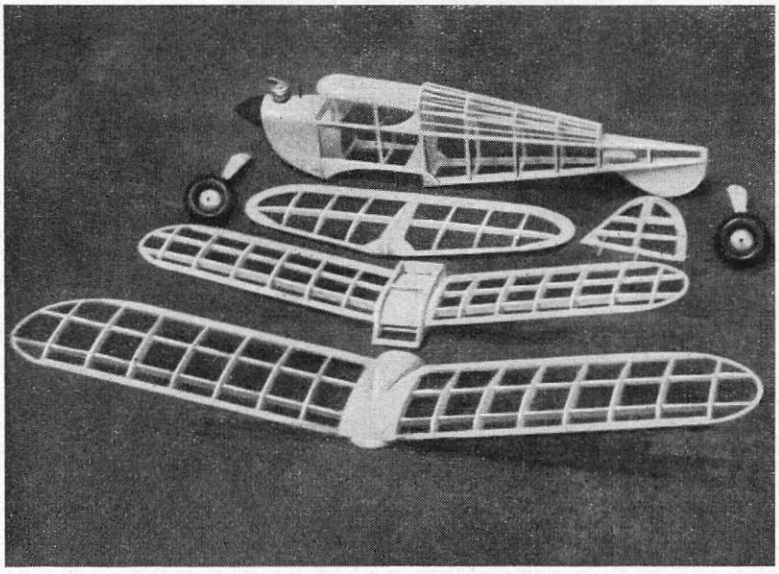
In view of the popularity of the E.D. " Bee ", the model was designed round this motor, using the normal upright mounting. Inversion would improve the looks immeasurably, and there is ample room within the cowling for this type of installation. Motors of ·6 c.c. upwards may be used, and the model seems quite capable of handling anything up to the Mills 1·3. It should be stressed that no larger motor than the Bee has been tried (the writer's second model, nylon covered, has a Mills ·75) but there is no reason to think that a little more power would produce viciousness. The climb with a

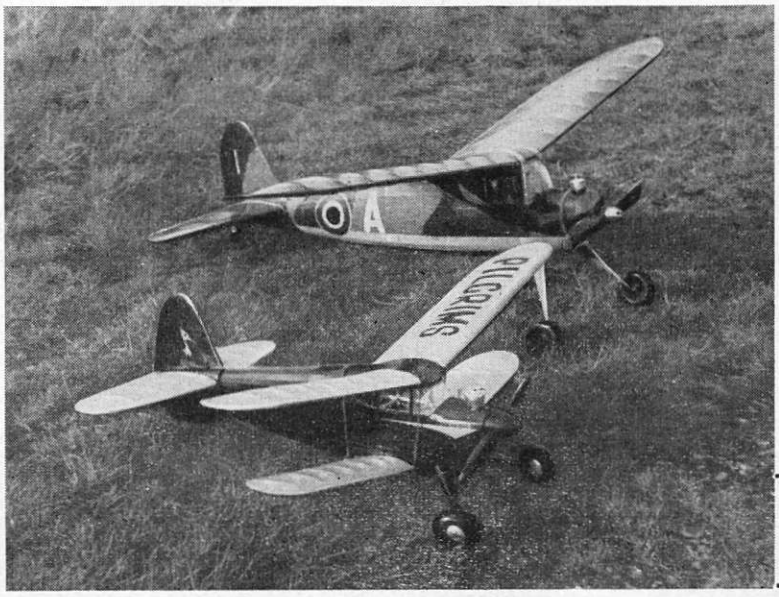


Simple yet robust construction, coupled with pleasing outlines serve to make 'Coquette' an ideal model for those inexperienced in power flying.



Ease of transport has been carefully watched by designer Smeed, so much so that the whole model packs comfortably into a box measuring 30"×6"×5"





Bee using an 8×4 ins. plastic prop is in the order of 400–500 feet per minute. With a wooden 8×4 ins. this rate is almost doubled, with no change of trim. The glide is pleasingly flat—the model's size makes it appear to scud along, but in actual fact the speed is low. Long, scalish take-offs and cushy landings result from the arrangement of the landing gear, which gives a ground attitude approaching the flying position. The original has landed in all sorts of terrain and has never once turned on its back. Among other advantages are the modest outlay required—a maximum of 12s. 6d., including dopes, but excluding wheels, motor, and prop.—and the fact that the whole job will pack in a box measuring only 30×6×5 ins.

In general, the structure is very straightforward, but intending builders should be careful to pick only medium balsa throughout, with the exception of the fuselage longerons and spacers, which should be hard. The same degree of strength could obviously be achieved by harder, smaller sections, but the large, medium-strength components offer more cementing area, easier work, and a greater resistance to warping. By careful grading of material the model could be built down to under 9 ozs. without sacrificing material strength. This would naturally boost performance, though the original flew very nicely at 11½ ozs., a weight which was achieved deliberately as being as heavy a model as would probably be produced by other builders. Of the 11½ ozs. almost an ounce is accounted for in dope; the model lends itself to a nice finish and doesn't set out to be a duration job, so why not bring it to a good gloss? With ailerons etc. marked in, and with civilian registration, it would bear some resemblance to such delightful machines as the Avro Commodore and the cabin Wacos of the mid '30s.

For anyone who really cannot face the prospect of two wings, the designer is "cautiously optimistic" as to results using the upper wing only. The lower wing attachment panels should be built into the fuselage and an extra rib added to each side of the upper wing, increasing the span to 33½ ins. The same construction should be used otherwise.

Fully detailed building instructions are available with the plan.

'Coquette' is shown here under the wing of her big sister 'Ethereal Lady'. The Pilgrims insignia on her wings may well betoken many a weary pilgrimage by her fortunate builders recovering the model from its record flights.

A 30" SPAN SPORT BIPLANE

COQUETTE

DESIGNED BY
V.E. SMEED

3/-

ALL WOODS ARE MED. BALSA UNLESS OTHERWISE STATED.

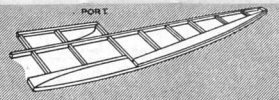
IMPROVEMENT IN APPEARANCE MAY BE BROUGHT ABOUT BY INVERSION OF MOTOR.

DATA.

SPAN (UPPER) ---- 30"
(LOWER) ---- 24"
WING AREA ------ 210 SQ INS
FOR .75 - 1·3 CC ENGINES
ALL UP WEIGHT ---- 11½ OZS
DECOLAGE ------- +4°

MATERIALS REQUIRED.

SHEET.
1 SHEET OF 4½" x 1"x ¾" MED BALSA.
STRIP.
2 STRIPS OF 1/16" x 3" x 36" MED BALSA
1 " " 1/8" x 3" x 36" " "
1 " " 1/32" x 3" x 18" " "
1 " " 1" x ½" x 4" " "
3 " " 3/16" x 3/16" x 36" " "
2 STRIPS OF 3/16" x ½" x 36" MED BALSA.
2 " " ½" x 1/8" x 36" " "
3 " " ¼" x 1/8" x 36" " "
3 " " 1/8" x 1/16" x 36" " "
6 " " 1/8" x 1/8" x 36" HARD.
24" OF 14 SWG PIANO WIRE. 14 SWG TUBING.
8" x 4" x 3" SCRAP BALSA, CELLULOID.
6" x 1/8 DOWEL, FIBRE TUBE, BEARERS ETC.



FUSELAGE CONSTRUCTION.

1. CUT LOWER WING MOUNT SIDE PANELS CUT ON SEPARATE LINE & LIGHTLY CEMENT.
2. BUILD SIDES IN NORMAL WAY, BUILDING IN SIDE PANELS.
3. SEPARATE SIDES, ADD STIFFENERS & GUSSETS.
4. ASSEMBLE SIDES WITH F.2 & F.3. COMPLETE IN NORMAL WAY.
5. ADD BEARERS & SOFT ¼" SHEET SIDE PLATES & F.1. MOUNT ¼" O TUBES & INSERT ⅜" COWLING FLOOR SAND TO SHAPE.
6. INSTAL MOTOR COVER TOP COWL WITH 1/16" SHEET, CUTTING ADEQUATE APERTURES FOR ENGINE OPERATION.