

Your full size free plan!

FOCKE WULF 190

Construct this easy to build, 17 inch wingspan rubber powered free flight scale model from W.W.2

Designed by G. A. Hatton

THIS WELL-KNOWN German fighter was designed by Kurt Tank; the prototype was completed in 1938 and first flew in 1939. The engine was a B.M.W. 139, developing 1,300 h.p., and an unusual feature was the ducted spinner to assist engine cooling. The prototype F.W.190 had a civil registration. Kurt Tank named it "Wurger" (known in Britain as "Shrike" or "Butcher Bird") and development continued right up to the end of W.W. II ending with the T.A. 152.

Commence construction by cutting out all the sheet

MATERIALS REQUIRED

Medium Balsa	Medium Balsa
1 Sheet 1/32" x 3" x 18"	1 Strip 1/8" x 1/8" x 18"
1 Sheet 1/16" x 3" x 36"	1 Strip 1/8" x 1/4" x 18"
1 Sheet 3/32" x 3" x 12"	1 Strip 1/8" x 3/8" x 36"
1 Sheet 1/8" x 3" x 6"	1 Strip 1/8" x 1/2" x 18"
1 Sheet 3/8" x 3" x 12"	
1 length 18 s.w.g. piano wire. 7" dia. K-K plastic prop.	

Get Out and About—Continued from page 429

enjoyable aspect of youth hostelling. Brecon Beacons National Park contains several lovely hostels and several mountain masses such as the Black Mountains and the Brecon Beacons. The former provide a magnificent ridge walk from Storey Arms Youth Hostel to Nantllanerch Youth Hostel. The hostel at Nantllanerch is a modified farmhouse near the head of a forested valley at the foot of the Beacons. It is extremely beautiful and convenient in its position.

The Youth Hostel Association arranges holidays to cater for doing all manner of things under expert supervision; for approximately £11 os. od. you can learn to skin dive at Salcombe for a week. These holidays enable members of the Youth Hostel Association to

parts except the wing leading edge sheeting. Trace the parts on to thin paper, cut out, then lightly glue the paper templates on to the sheet. It is best to use a rubber cement such as "Cow Gum" or "Copydex" for this, so that you can peel the paper templates off easily after the parts have been cut out. Pin down the 1/8 in. x 3/8 in. basic fuselage strips (if you want to put in a larger motor, use 1/4 in. x 1/2 in. and widen the nose block, CS1 and CS2), leave the bottom strip in one piece as you cut out the motor access hole later. Pin and cement CS2 in place the 3/8 in. sheet noseblock top and the 3/8 in. x 1/4 in. rail upright.

Whilst the fuselage frame is drying, pin the leading and trailing edges of one wing panel down. Cement and pin the 3/8 in. sheet tip and 1/16 in. end rib in place, follow with all the other ribs leaving R1 until last. Use template RA to set the angle of R1, for correct dihedral and then add the 1/8 in. sq. spar. Leave this to set and continue with the fuselage construction. Before lifting the framework off the plan, pin a small piece of 1/8 in. sq. strip across the nose, connecting the top and lower longerons. The next step is to cement a 1/16 in. sheet fuselage side skin on, pin it in place, leave it to dry.

Whilst the wing and fuselage are drying, sand down the tailplane; there is no need to put an aerofoil section on it, just round off the leading and trailing edges then sand the fin and rudder smooth. By now the wing panel should be dry. Remove the pins and lift from the board. Place this to one side and remove pins from fuselage. Cut out the motor access hole in the lower longeron and cement the second side in place.

The next step is to lay down the second wing panel, using the same constructional procedure as for the first panel, but make sure you have constructed two opposite wing panels and not two the same! Now sand the first wing panel's leading and trailing edges to section, remove the pins from the fuselage and add the two nose doublers, pinning them in place while the cement dries. Remove the second wing panel from building board and sand to section as you did the first.

The wing leading edge sheeting comes next. Cut out a piece of 1/32 in. sheet slightly larger than the area to be covered, making sure it has a straight edge to join up with the wing spar. Cement it to the wing and pin and clip it at the leading edge. Repeat for the other wing. While the sheeting is drying remove the pins from fuselage. Cut out the 3/8 in. sheet noseblock (do not forget to use 1/8 in. sheet if you have the wider fuselage), then drill a hole and insert the tube for the propeller shaft; use 3-4 degrees down thrust. Next, add the 1/8 in. sheet doublers to the noseblock. Remove the clips and pins from the wing panels, then trim and sand the leading edge sheeting to finished shape.

have, for a reasonable fee, a week of an exciting pastime using good equipment and with expert instruction. A whole range of interesting activities are covered: sailing, gliding, canoeing, pony trekking, rock climbing, bird watching and many others. Most of these cost about £12 os. od. for a week which covers food, accommodation, equipment hire and practically everything except pocket money and the fares.

The Youth Hostel Association also run holidays abroad, but these, of course, are more expensive as the cost includes travelling. Some of the arranged holidays are in such countries as Germany and Switzerland. Information on adventure holidays and European holidays can be obtained from The Youth Hostels Association, Trevelyan House, St. Stephens Hill, St. Albans.

Cement the dihedral brace into CS1, then cement CS1 to one wing panel and leave to dry. Then sand the fuselage smooth and round off all the corners. Now cement the tailplane to the fuselage, making sure it is square, pin it in place.

Next, cement the other wing panel to CS1 and pin it in place, add the fin to the fuselage and again make sure it is square and lines up with the fuselage centre line. Cover the wing with lightweight tissue using 3 or 4 panels of tissue. Use any commercial tissue paste as adhesive, a good substitute is "Gripfix," and do not forget to smooth out all the wrinkles.

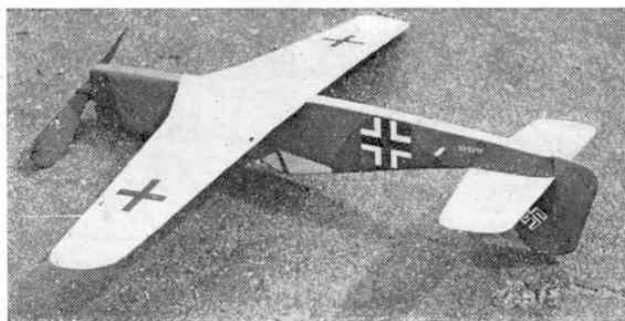
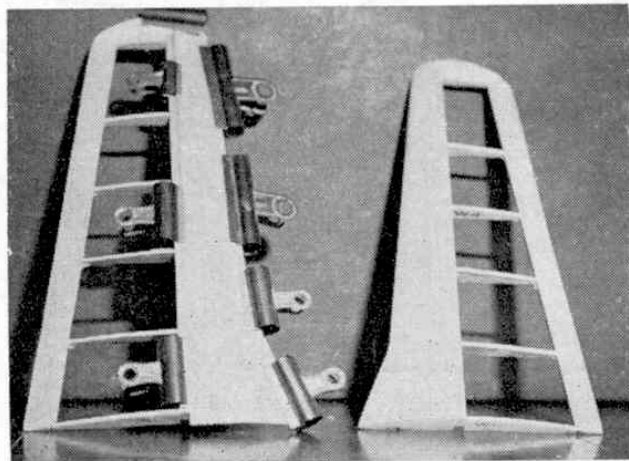
Now go back to the fuselage and remove the pins from the fin and add the soft wire hinges (wire from the florists; they use it for flower arranging). Push a pin into the back of the fin, making sure it does not break out of the side (try it first on a scrap piece of balsa). When they are in line, mark the position of the holes in the rudder and push a pin in there also. Cut the soft wires to length and cement them in place in the matching pin holes to join the fin and rudder.

Next, dope the wing, one panel at a time and when they are almost dry pin them down to the building board to prevent warping. Next, give the fuselage and tail surfaces a coat of clear dope. Unpin the wing and repeat for the other panel. When the fuselage is dry sand it down and apply another coat of dope. Repeat for the wing but use 50/50 thinned dope for the second coat. Lightly sand the fuselage and wings then glue the wing to the fuselage. Check for squareness, and add the scrap piece beneath the wing to the level of the fuselage.

When the wing is dry, colour paint the model using the paints of your choice. We used Humbrol matt colours and painted the undersides in Hellblau (light blue), the top surfaces and sides of fuselage in Swartzgrun (mid green) and Dunklegrun (dark green). Paint the colour divisions as shown in the photographs and add the transfers in the positions indicated. The rudder and underside of the nose, forward of the wing, should be painted red. Next, add the propeller shaft and the propeller. Use a 7 in. diameter propeller cut down to 5 in. diameter; do not use wooden propellers as they break easily.

The motor should be made from one strip of $\frac{1}{8}$ in.

Above, on this and opposite page. Two views of the finished model, note the camouflage pattern and simple flat sided sheet balsa fuselage. Below, this picture shows the use of paper clamps to hold the $\frac{1}{32}$ nd of an inch leading edge sheeting in place while the cement sets. Note how two opposite wing panels are constructed! At right, the finished uncovered wing and complete model. Note the undercarriage; we decided not to incorporate this in the final version as it added too much extra weight and made the model tip over on landing. Note the shorter nose also used on the prototype, this being modified in the final version shown above.



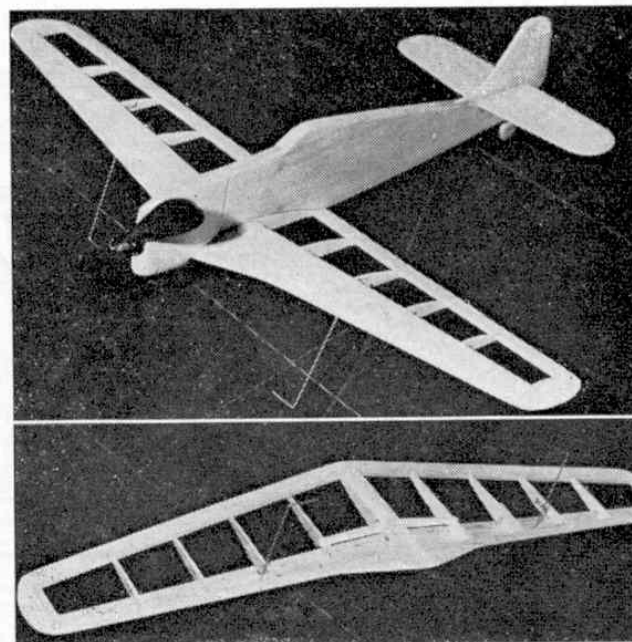
flat rubber, 36 in. long, knotted at one end and looped into four; if you have constructed the wider fuselage you can use six loops of $\frac{1}{8}$ in. flat or four loops of $\frac{1}{4}$ in. flat. Allow 18 in.-19 in. rubber length for each loop.

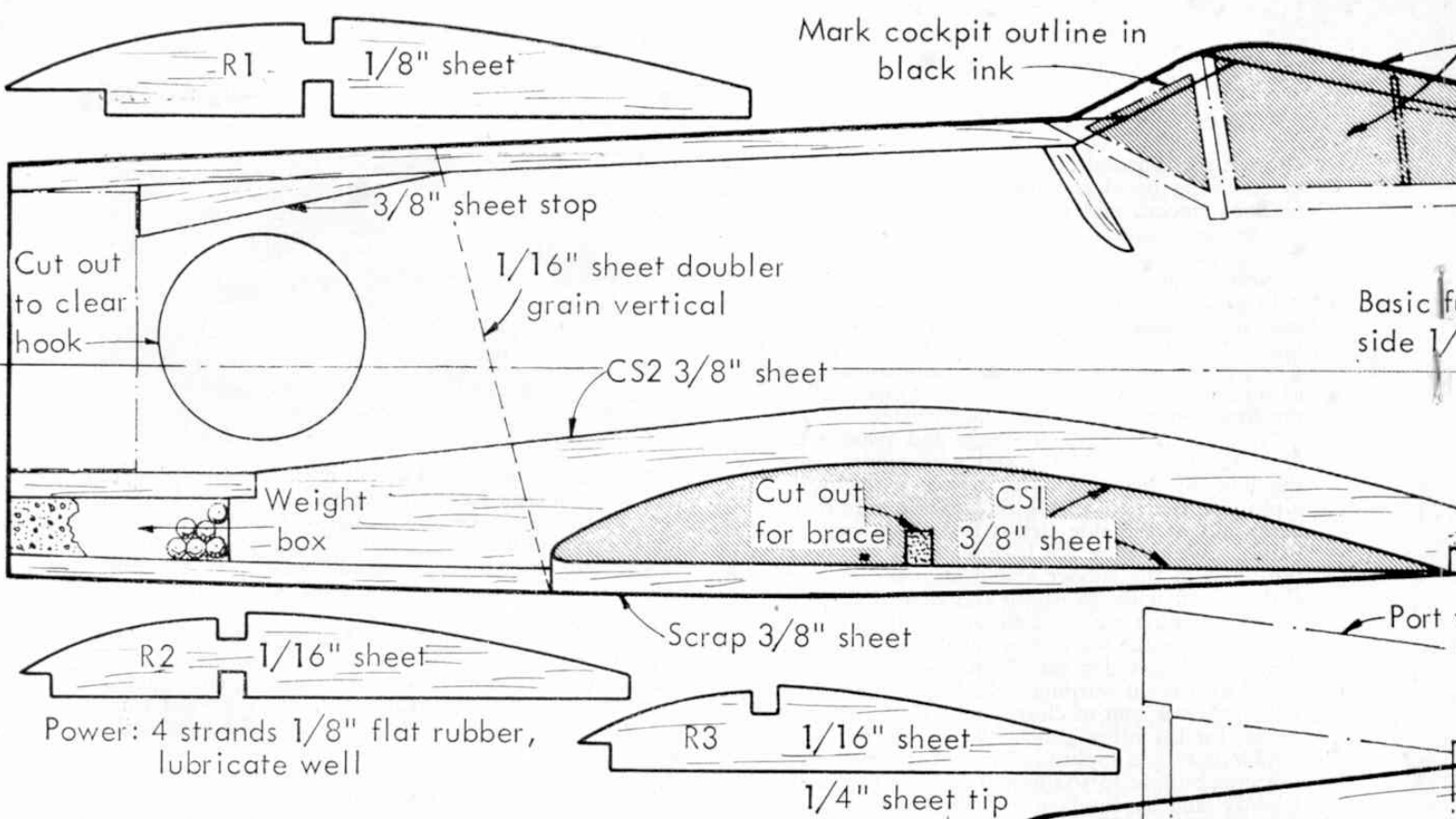
With the motor in place add weight to the nose until the model balances on the main spar position at the wing tips.

Now we come to the flying; test glide, preferably over long grass and add Plasticine to the nose or tail unit until a flat glide is obtained, from a hand launch. For the first powered flight only wind 75-100 turns on the motor. Fly with this amount of turns until a gentle turn to the right is obtained, then increase the power slowly up to a maximum of 300 turns, correcting any tendency for the model to swing to the left with slight amounts of right rudder trim.

The best method of launching the prototype appeared to be a fairly hard throw into wind, pointing the nose slightly upwards (about 10 to 15 degrees).

After many successful rubber powered flights, it was decided to modify the prototype to make it an effective catapult glider. A short length of $\frac{1}{8}$ in. diameter dowel rod was pushed into CS2 just in front of the wing leading edge, to form a notch for the catapult rubber, and about six yards of $\frac{1}{8}$ in. flat rubber looped over a stout post pushed well into the ground took care of the catapult. The prototype made several flights of up to 400 yards distance with an altitude of about 75 ft. If you wish to modify the model for catapult flying it is advisable to make a new noseblock up (adding extra weight to compensate for the loss of the propeller and to maintain the centre of gravity in the correct position).



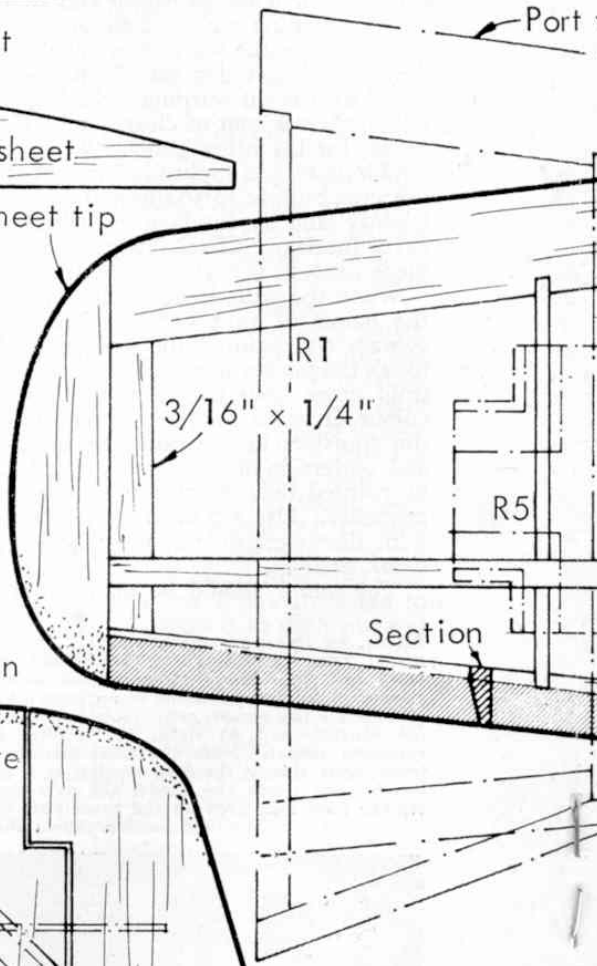
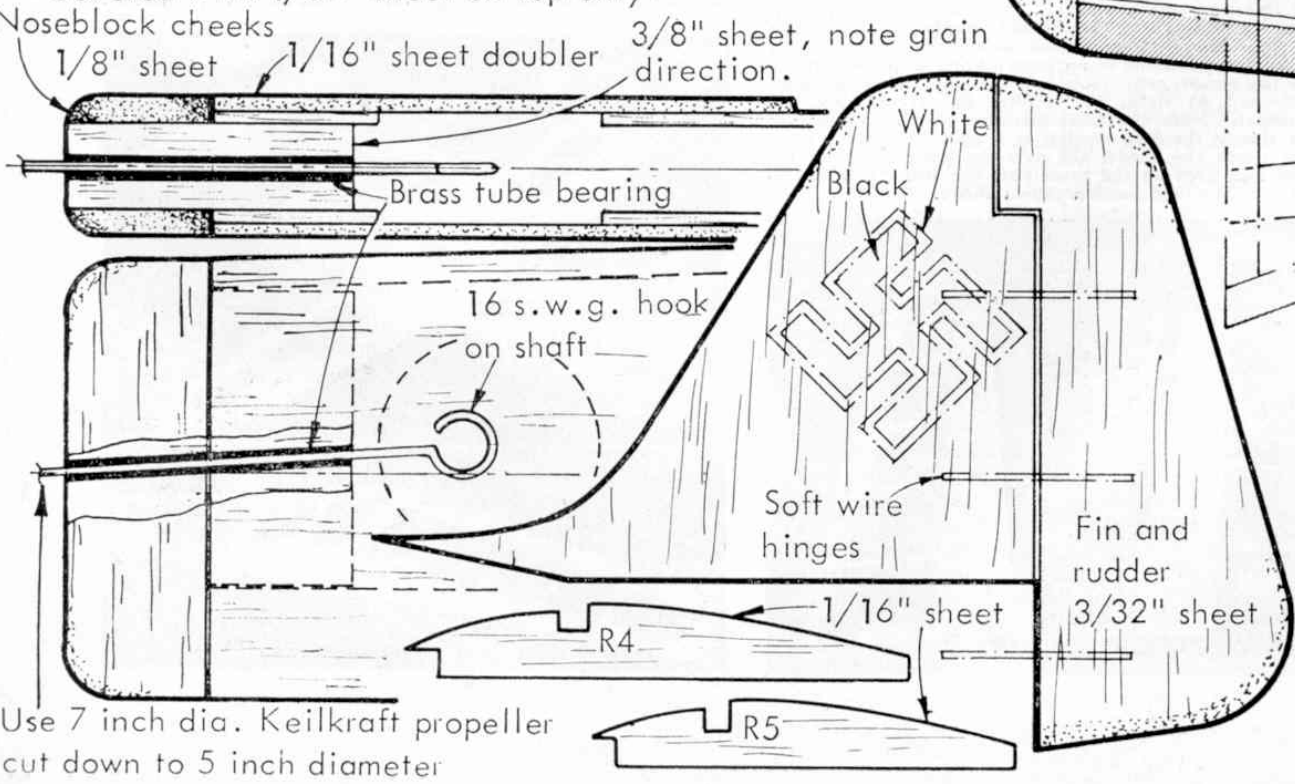


Power: 4 strands 1/8" flat rubber, lubricate well

Focke Wulf 190

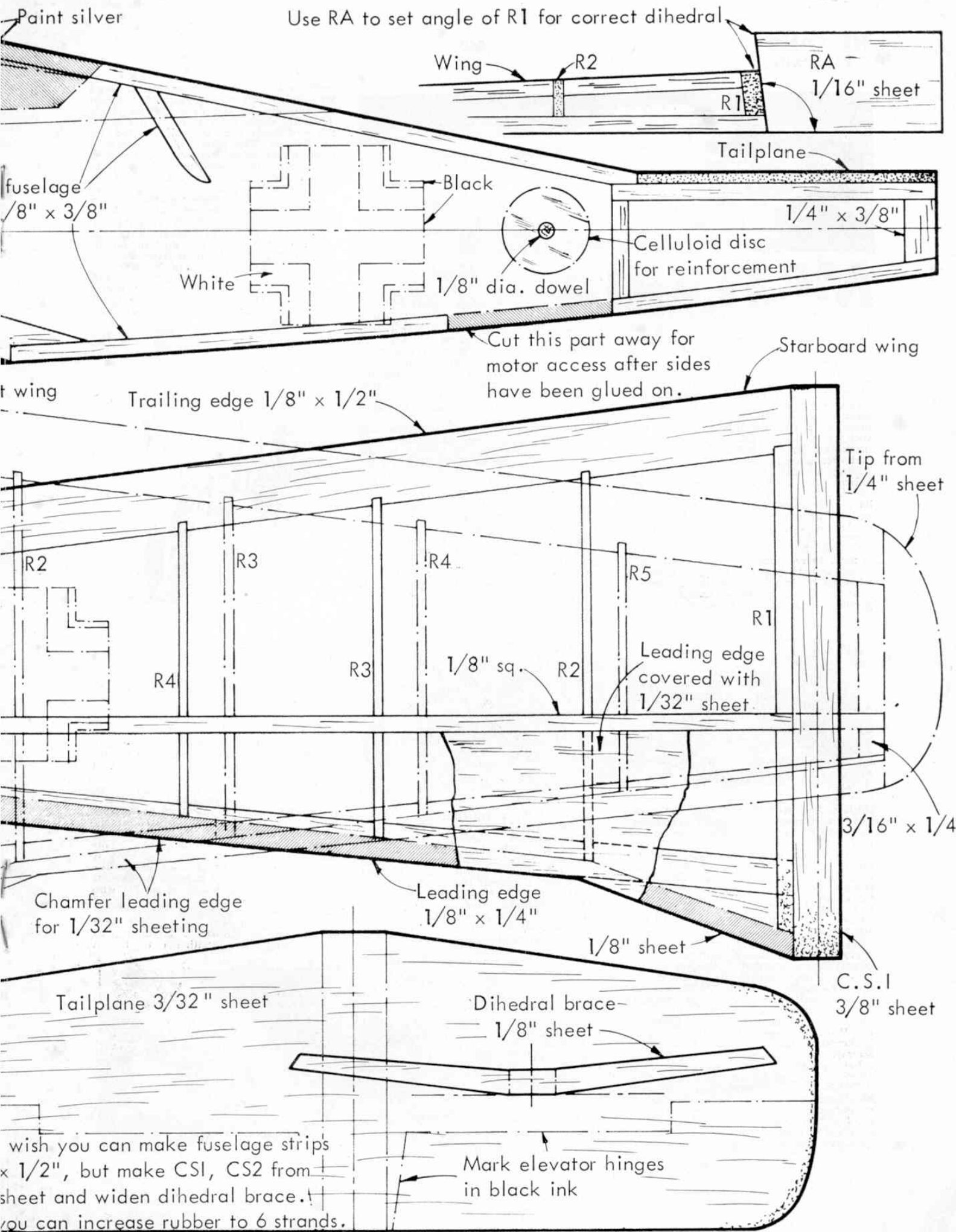
An easy to construct 17" wingspan scale rubber powered model of this famous German World War Two fighter. Designed for Meccano Magazine by G.A. Hatton.

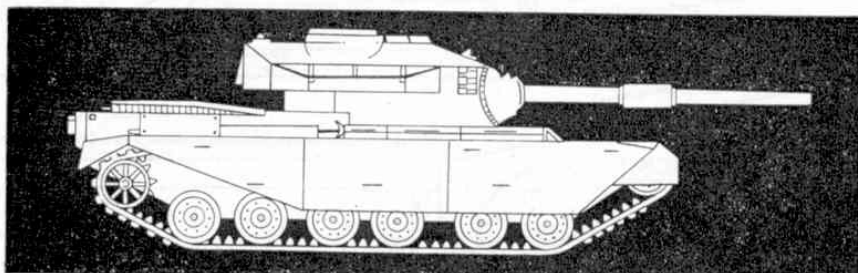
Note: Wing leading edge from spar forward covered with 1/32" sheet on top only.



Use 7 inch dia. Keilkraft propeller cut down to 5 inch diameter

If you w
1/8" x 1
1/2" she
Also you



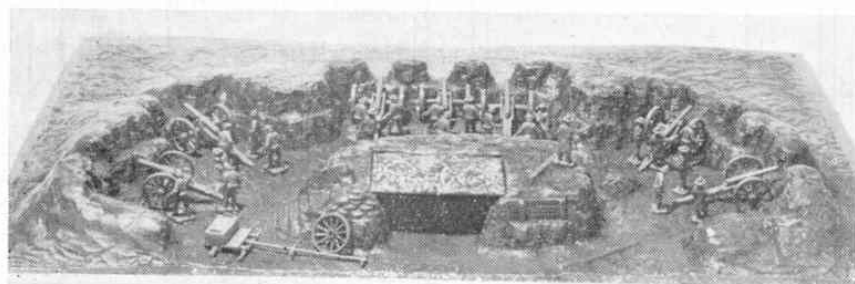


MILITARIA A REVIEW BY CHARLES GRANT

QUITE CERTAIN it is that, in this day and age, the collector of model soldiers and his close associate, the battlegamer, have never had it so good. To one who remembers the days when anyone rash enough to express an interest in miniature leaden soldiery was looked upon as being more than a little eccentric or of retarded mental development it is tremendously gratifying that such is no longer the case. Indeed the model soldier has achieved a popularity and even a respectability still mildly surprising to the "old hands" of the hobby. All sorts of commercial enterprises catering for the military enthusiast have deluged us with their products—metal and plastic figures, every sort of model kit, documentation and so on. It is proposed then, that, from time to time, we should have a kind of forum on what is new, to re-appraise already established items and if possible to give news of what might be released in the immediate future. Some of these manufacturer's products might be well known to many

they can be juggled about as the battlegamer desires to produce all sorts of different layouts, and they are extremely tough and durable into the bargain. The price of the largest size—including the two referred to—is by no means too high for what they are and is 11/1 each, plus postage and packing. Smaller pieces cost less of course.

From terrain to troops is but a step and this particular one takes us to the latest 30 mm. figures produced by the justly famous firm of NORMAN NEWTON LTD., whose showroom at 44 Dover Street, London, W.1 is a veritable 'Mecca' for all amateurs of militaria. Doubtless inspired by the repeated success of the film "Zulu" these figures—of which a selection is illustrated—represent both Zulu warriors and British troops opposing them. The 30 mm. size was for long associated with the 'continental flat' type of figure and it is only in recent years that the possibilities of the "round" in this size have been really exploited. For vigour of action



readers, but it is hoped that the comments and notes on as wide a selection as possible might be both interesting and useful.

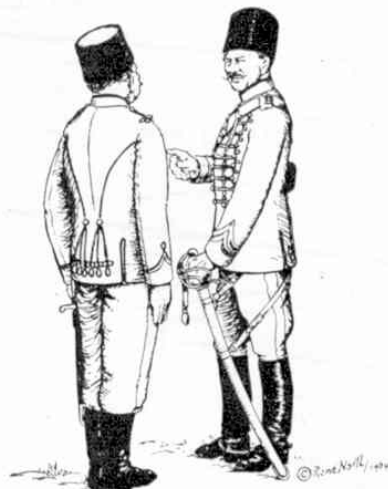
So let's get under way with what the model soldier requires before he can really get down to business. This is of course a battlefield, and we can do no better than mention the terrain pieces produced by Merberlen Ltd under the name of "BELLONA BATTLE-FIELDS". These—the pieces—come in a variety of sizes and are designed for every possible military contingency—the largest being entitled "Bellona Dioramas". They measure 16½ in. by 10 in., are constructed of hard P.V.C. and are of the greatest use for the battlegamer. The two most recent productions are illustrated. The "Fighter Dispersal Bay" can be used as a static display background for one's favourite model aircraft and I can see its being used in a battlegame involving a commando operation or a parachute 'drop'. The "Redan" can be employed in all sorts of desperate fighting—it is appropriate to any period, really, over the last couple of hundred years or more. From a purely functional point of view the advantage of such scenic pieces is obvious—

Above right, a reproduction of Rene North's Turkish Artillery "Paint Your Own Postcard". Above, the Bellona "Redan". This tough P.V.C. moulding can have a multitude of Battle Gaming uses. Below, the Bellona "Fighter Dispersal Bay"; this can be used in W.W.2 or modern battle games. These Bellona dioramas look very plastic-like when purchased, but a little careful painting with a matt enamel makes them blend into the scenery.



position and detail of moulding the ones we speak of are certainly among the best yet put out by the firm making them. They are really a joy to paint, nor is the job a difficult one, so well detailed are the figures. The price—3/1 unpainted—is most reasonable, not too great for even possibly limited pocket money to acquire as a group of such fine examples of the modelmaker's craft.

It is essential to ensure accuracy when painting miniature figures and Mr. Rene North, publisher of "NORTH'S PAINT YOUR OWN POSTCARDS" furnishes much of the necessary documentation. His cards—a specimen is reproduced—come in sets of six, are suitable for watercolouring and are complete with full uniform details. They are most useful for the collector interested in the lesser known European uniforms, and have also



Set B.43 TURKISH ARTILLERY c.1912
No.4. - Gunner (Field) and Officer (Straits)
FEZ: Probably red top.
TUNICS: Blue. Red collar and cuffs. Gold chevrons, crossbelt, shoulder-straps. Brass buttons.
BREECHES: Gunner, grey. Officer, blue with red stripe.
SWORDS: Gunner, brass fittings. Officer, all-steel, gold knot and slings.
GLOVES: White (after Sussmann and photographs)

quite a slant in favour of artillerymen of all nations, these being Mr North's own particular interest. There are some fifty different sets available (from Rene North, 15 Inverness Terrace, London W.2) and they cost about 6/- per set.

Still on the subject of documentation, the May 1968 issue of "SLINGSHOT" is at hand. This is the bi-monthly journal of the "Society of Ancients" (Editor—Mr T. A. Bath, 11 King Edward's Avenue, Southampton). This somewhat impressively sounding body is not—as the uninitiated may conceive—a group of hoary and bearded professors, but rather a lively bunch of people who devote themselves to the fighting of battles and campaigns of ancient and mediaeval times—say up to the 14th Century or so (Guns, or anything that goes 'bang' are anathema to them).

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