

RUMPLER C-5

OUR Rumpler averaged 2 mins. and 20 secs. duration time for 8 flights in non-thermal weather (early evening calm). A few days later a high time of 4 mins. and 35 secs. was reached. This fine performance is attributed to the careful selection of model construction material and the inherent stability of the full scale design, i.e.: plenty of dihedral, sweepback, long landing gear, large-diameter propeller and moderately long nose. The only item that does not maintain true scale outline on our model is the horizontal stabilizer; however it was decided to sacrifice here, in order to attain flights of good duration. The wing area is over 210 sq. in. which also improves performance. The prototype model used an undercambered airfoil which resembles the original full scale airfoil, but a "Clark Y" type should not decrease performance too much.

Used for observation and light bombing missions in late 1917 and 1918, the Rumpler C-5 was standard equipment in the German Imperial Air Service. One fixed Spandau machine gun was mounted on the right side of the engine, while the observer was armed with a ring mounted Parabellum machine gun. Although the Rumplers performed their duties with excellence, they could not be compared to the strength and durability of the D.H. 4, nor the maneuverability of the Bristol two-seat fighter.

Before we construct this famous plane the plans must be drawn full size. In view of the fact that these are presented half size, doubling all dimensions is all that is required.

Keep the model as light as possible without impairing its structural strength. Sand all the balsa, before assembly, until all the nap on "hair" is removed. Cut the wing trailing edge to a rather sharp edge. One thick or two thin coats of dope are sufficient for good finish; added dopping just cuts duration.

Select medium hard 1/32" sheet balsa and cut out two fuselage sides. Cement the 1/16" hard strips to the inside of these sides as the plan indicates. Cut the formers at this time as well as the 3/32" medium hard bottom crossbraces. Join the fuselage sides at the rear and insert the former and crossbrace at station

"E." The landing gear can be bent while this is drying. Install former "C" and then hard nose piece "A," being sure to cut out for the nose plug. The remaining formers and crossbraces can be now installed. Bind the landing gear to crossbraces with fine thread and cement well. Cover the fuselage top from station "E" forward with 1/32" medium balsa, and when dry cut out the cockpits. The ring mount is also 1/32" sheet (note the grain direction). Add the 1/16" medium strips to the turtle-deck and the soft balsa block to the bottom of the cowl. Carve the latter to shape when dry. A fairly hard balsa nose block is now carved to shape. It should be remembered that the nose block must be removable; therefore cement a plug to this that will fit the hole previously cut in the 1/8" sheet nose piece, "A." Sand the fuselage lightly and cover the open frame with fine Jap tissue. (We used white.) Clear dope once.

The rudder is cut from 1/32" sheet balsa—note the grain direction. Lay out

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the stabilizer directly on the plan using the material specified, and cement all joints well. Make this structure in one section. Sand the frame and cover both sides with red fine Jap tissue, using dope as the adhesive. Pin the stabilizer to the workbench and water-spray lightly. When dry apply one coat of clear dope and remove when thoroughly dry. Repeat this procedure for the other side. Cement in place on the fuselage and add the fin and rudder.

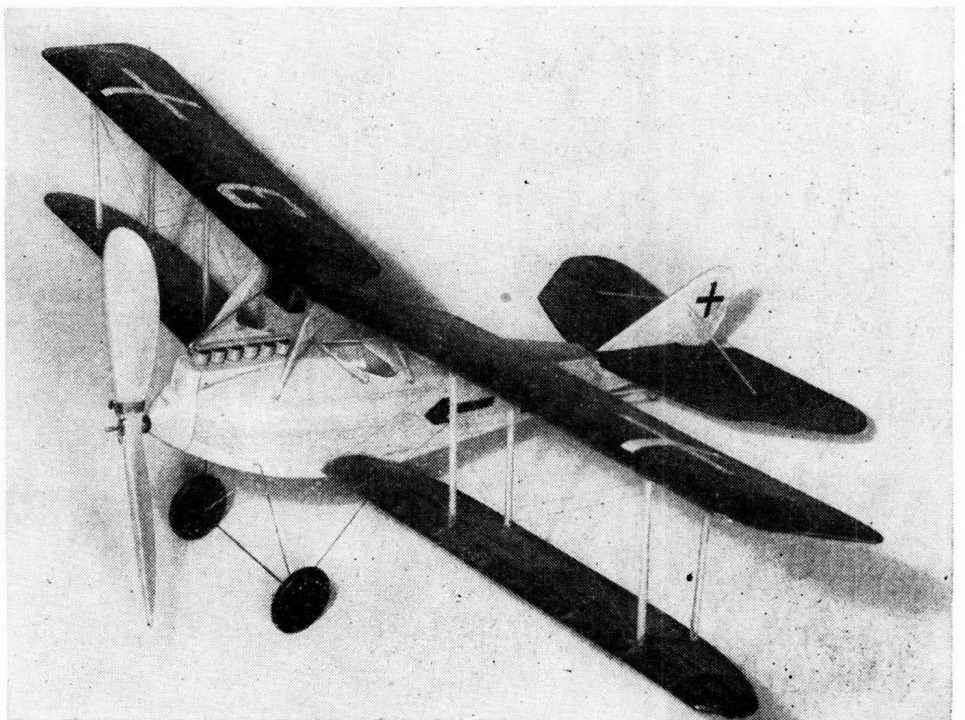
Both wings are made with right and left panels. First lay the trailing edge on the workbench, blocked up to the proper angle, and pin the ribs in place. Attach the spars, followed by the leading edge. Add the wingtip and cement all joints firmly. Sand the structure with fine sandpaper and cover with red tissue. It is suggested that the bottom of the wings be covered first, to make sure the tissue is well attached to the rib under-chamber. When completed, pin the wings to the workbench and water and dope in the same manner as the stabilizer. Join the two upper wing panels with the required dihedral.

Cement the lower wing panels to the fuselage, checking for the correct amount of dihedral and incidence. Cut the cabane and interplane struts from balsa and sand smooth. Mount the struts in place on the fuselage and lower wing. Now the upper wing can be firmly cemented in place to the correct angle of incidence. Add the 1/16" square tail struts.

Rigging wires not only give the model that "ancient look" but add considerably to the model's strength. Using fine grey silk thread, the best method is to sew the thread on right through the struts and wings. When this operation is completed a drop of cement should be applied at the thread joints.

The crosses and red arrow can now be added along with the serial numbers. We found *Trim-Film* to be ideal for these items.

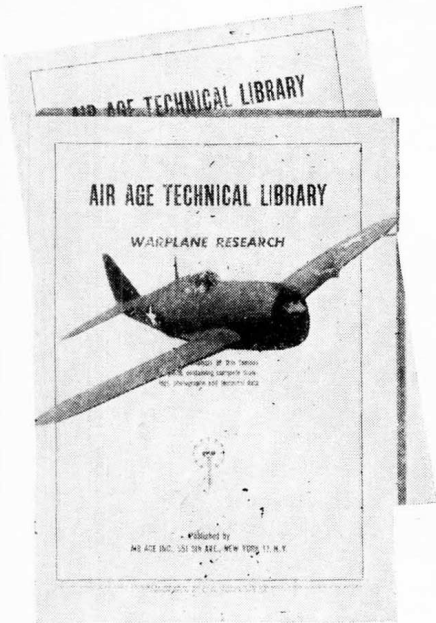
It seems that carving propellers is one job that the average modeler dislikes. This, quite frankly, surprises us because in view of the fact that the propeller often determines the success or failure of a rub-



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ber job, and is one of the very important items in this phase of model building, we feel that more time and interest should be spent on this item. Well, nevertheless, here goes—select a relatively hard, quarter grained block of balsa of the correct size and draw the top view on the wood, following the dimensions given on the plans. Cut this out with a coping saw and repeat the procedure for the side view. Carving can now begin by starting on the rear face of the blade. About 3/16" under camber should be cut in and then the forward surface can be carved. Sandpaper well and round off the sharp corners to give the blades a pleasing shape. Do not remove too much from the blade area because every cubic millimeter counts, in view of the restricted diameter. Several coats of dope with intermittent sandings will provide an adequate finish. A Jasco ratchet-type free-wheeler can be used if you are satisfied with a moderate rate of climb of long duration; however, if you expect to pack in the rubber for a sky-rocket climb, use a more substantial free-wheeling mechanism. Be sure the free-wheeler is foolproof as the propeller will tend to spin the plane in, unless it free-wheels properly.

Small face bushings should be fitted in both ends of the nose block as well as the propeller hub for the utmost efficiency. Slight down and right-thrust are the required adjustments. Bend the shaft from music wire and sheath the rubber hook with tubing to prevent it from cutting the rubber. A very fine rubber band stretched from the forward landing gear struts around the nose block will hold the block in place on the model.

The engine details can now be added using very soft scrap balsa; soft balsa is also used for the dummy radiator.

Make certain the model balances at the point shown on the plan, before test-gliding. If during these tests the model dives or stalls, weight can be added to remedy this condition. Our Rumpler was slightly tail heavy, but a few more coats of dope on the propeller and nose block brought the model to trim. A climb and glide to the right is preferred in order to keep away from that "old devil torque." Keep the rubber well lubricated and free from dirt. A drop of oil on the ball bearing washer helps matters. The model Rumpler C-5 is not an "all-weather flier," so don't take her out in a gale! In calm weather you will find your model a super performing bi-plane, if built with lightness and accuracy.