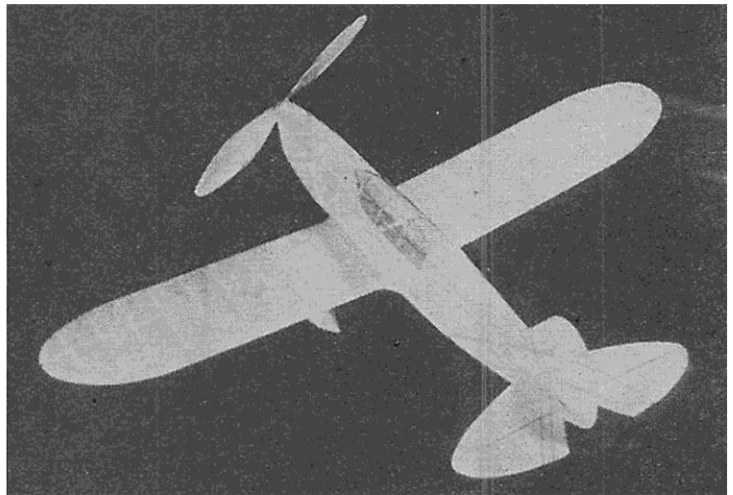


Sport Plane

by Louis Garami
and Henry Struck



THE new Brown B-3 custom-built sport plane is a remarkable performer. Its top speed of 205 m.p.h. and its landing speed of 40 m.p.h. make it one of the outstanding two-seaters of the present day. Its qualities probably come from the valuable experience gained by the Lawrence Brown Aircraft Company in the construction of the famous Brown light racing planes, among which are the well-known *Miss Los Angeles* and the *Miles & Atwood Special*. The new Menasco C-6S-4 250 h.p. Super-Buccaneer 6-cylinder supercharged engine pulls the B-3 through the air at 190 m.p.h. cruising speed, due to the plane's light construction and aerodynamically clean lines.

The full-size B-3 has a welded steel tubing fuselage, covered with fabric, and fabric-covered wing of solid wood spars and wooden ribs. Its span is 32 feet and length over-all 26 feet. Weight empty is 1,850 pounds and gross weight 2,650. Cruising range is 600 miles.

Our model is a remarkable flier and a good replica of the original.

FUSELAGE

Construction is simplified by employing four main stringers. Trace these from the top- and side-view plans and cut them from 1/16" hard balsa. Cut the formers

A fast-flying model of a speedy new two-seater.

BROWN B-3

from 1/8" soft sheet. Lay the stringers on the plans and mark the position of the formers on them. Cement bulkheads D, F, H in place. As soon as these are dry, the other

bulkheads are placed in position. Bend the rear hook of .034 piano wire and cement it securely into former H.

The auxiliary stringers of hard 1/16" square balsa are glued in place to complete the contour of the fuselage. Bend the cabin formers from 1/32" square bamboo by holding it over the gas range for a few seconds. Glue them to the cabin stringers at the proper points.

Glue two soft blocks of balsa 7/8x5/8x35/8" lightly together and carve them to the outside shape of the nose block, shown in cross section and side outline on the front and side views, after which they may be split apart and hollowed out to the approximate thickness shown by the

dotted lines on the plans. Cut a hole 3/8" square in the joined nose block and make a plug to fit. Washers with bushings inserted are used at front and rear of the nose plug to serve as bearings.

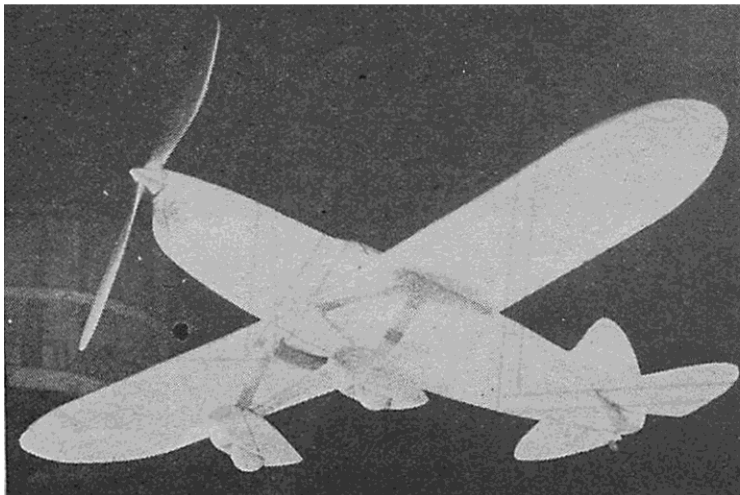
Cover the body with narrow strips of Japanese tissue, spray with water, and dope when dry. Cover the cabin with light celluloid. Because of the complex curve of the forward section of the cabin, four pieces should be used there to make a neat job.

The tail-wheel fork is attached at the proper point to the main bottom stringer and a 3/8" balsa wheel mounted in it.

TAIL GROUP

Make the tail surfaces as light as possible by using soft balsa throughout. Main spars are 1/16x1/4". Ribs are of the same material and are streamlined to the shape of the typical tail section. The outlines are cut of 1/16" sheet balsa and cemented in place. Hinge the surfaces together with soft sheet aluminum and cover with tissue.

Attach the stabilizer at zero degrees incidence to the stringer immediately above the main stringer. Spray and dope *lightly* to prevent the warping of the surfaces that might occur with a heavier application. Pin the parts to a flat surface while they are drying.



Looking down at a bottom view to get an upward slant!

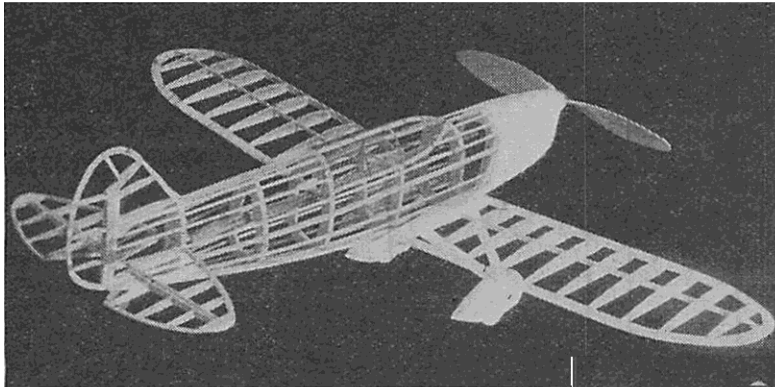
WING AND LANDING GEAR

The wing construction is light and strong. This is accomplished by using a deep spar. Cut all the ribs of 1/16" sheet, using the templates given. The spar is made of 1/8x5/16" medium balsa, tapering from the last No. 1 rib to 1/16" at the tip.

Shape the leading and trailing edges of medium balsa. Place the spar and edges upon the plan and mark the position of the ribs. Slide the ribs on the spar and attach the edges. Add the tip outline, cut from 1/16" sheet to complete the wing.

Ailerons and flaps are not necessary for a flying model. However, their location is shown on the plan for those who wish to add them for exhibition purposes. To cover the wing tip perfectly, use separate sections of tissue. The rest of the wing is covered in one piece.

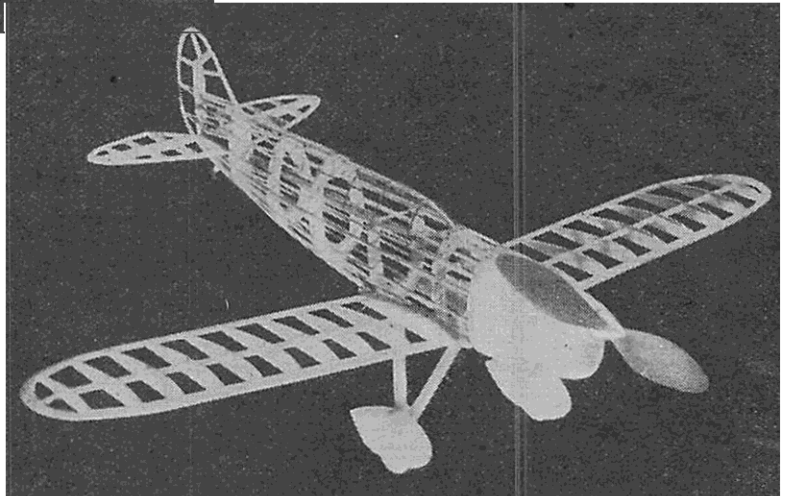
Shape the wing fillet from a soft balsa block 4 3/4 x 3/4 x 5/8". Cement the completed fillet to the wing.



These skeleton views are a guide to good workmanship.

Variations in the fuselage lines or fillet may necessitate individual fitting. Each wing tip is raised 3/4" to give proper dihedral.

The streamlined landing struts are made of 1/8x7/16" hard balsa. To make the pants, first cut out the center piece to accommodate the wheel. The wire shock absorber is glued in place before the sides are added. Carve and sandpaper to proper shape. Join the struts to form a V shape. The completed struts are attached to the fillet at the points indicated on the plans. Fasten the pants to the apex of the struts with plenty of cement.



PROPELLER AND MOTOR

Medium balsa 5/8x1x8" is used for the propeller block. Carve carefully and try to reproduce the shape of a standard metal prop. The photographs will serve as a guide. The spinner is 3/4" in diameter and made of hard balsa, with the rear cut out to fit the propeller.

The prop shaft is bent of .034 wire, passed through the nose plug, then the prop, and the end bent over and embedded in the spinner. Don't forget, however, to include two washers between the prop and plug. Six strands of 1/8" brown rubber provide ample power for this model.

FLYING

The model is a fast flier. For this reason a field of tall grass should be chosen when the first test is made. Because of the heavy nose and light tail surfaces, the center of gravity is in an excellent position and only minor adjustments may have to be made to get the model flying nicely. Use the movable tail surfaces for this purpose.

Glide the ship gently into the wind, making adjustments with the elevators until a flat glide is secured. Now put 50 turns in the motor and try a short test hop. Gradually increase the number of turns till the maximum of 250 is approached. With lubricated rubber and a winder, 500 turns may be safely stored and the flight duration consequently greatly increased.