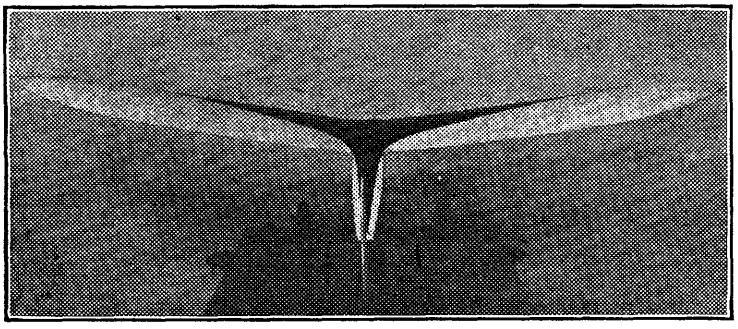
Light in weight, and smartly streamlined, Ray Heit's swanky petrol plane is built for speed—as you can easily see in this rear-view shot. The wing area of "Scram," by the way, is six square feet.



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A NIFTY SEVEN-FOOT JOB

Considering its hair-trigger temper on the getaway, this super-speed model had only one logical name. So that's why its designer christened it as he did—"Scram." Quite light in weight and easy to construct, "Scram" is equally light and easy in its effect on the pocketbook of the modeler who plans to construct the craft. What more, then, need we say? Except to urge you to—

Try Our
Gas-Powered "Scram"

By Ray Heit

DESIGNED exclusively for short motor run flights, *Scram I* was first flown in the Nationals at Detroit last year. She placed eighth, which was really good considering that the ship had been completed just prior to the big meet and was neither test-flown nor adjusted when the limited motor run event took place.

And someone was *most* favorably impressed with the model's potentialities, for he, she, or it, quietly appropriated *Scram I* and very nicely saved me the trouble of taking it back home again. Following the Nationals, *Scram II* was built from the same plans. And now, with all bugs exterminated, she is a striking model of unique and advanced design and performs excellently.

With her seven-foot span, *Scram II* has six square feet of wing area. Complete for flight, she weighs three pounds. The engine used in the author's model is a Brown Jr., but any other 1/5 h.p. motor of similar type will "do the trick."

Scram utilizes its low thrust line to full advantage in that during a glide, the low center of gravity is of extreme value in lengthening the distance covered.

Fuselage Construction

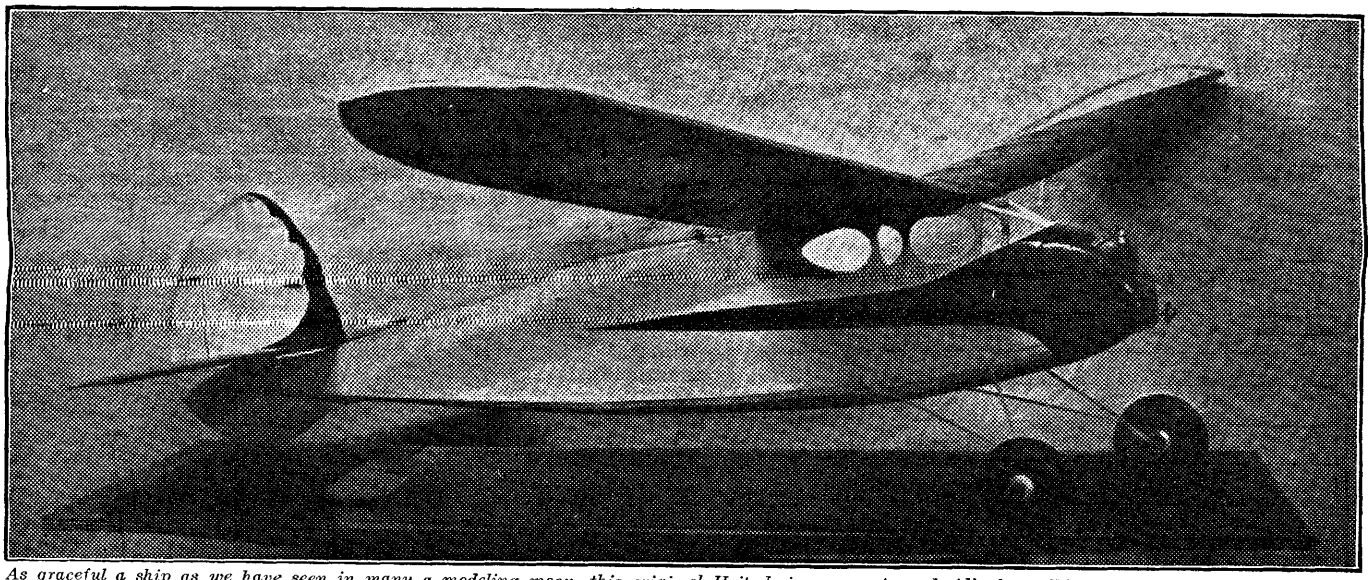
SCALE up the plans to six times their present size. Do this on wrapping paper, drawing paper, or common cardboard. If you're not particularly adept in the use of drawing instruments, you can have the drawings photostatically enlarged for quite low cost. Be sure to caution the photostat man, however, that the sixtime "blow-up" is *exact*.

By hammering nails along the longeron outlines on the plans, build up a fuselage jig. Do not hammer the nails through the longerons themselves or you'll weaken them. Space the nails evenly with regard to the curve of the longerons.

Using ¼" sq. balsa, fit the longerons into the jig. Next assemble in their respective places all the upright members and diagonal braces, and glue them securely into place. Let the structure dry for an hour or so, then remove it from the jig and repeat the operation for the remaining half of the fuselage.

In gluing the two halves of the fuselage together, the tail ends should be glued first, followed by placing the cross members according to the plans. Square the fuselage by frequent checking; that is, by placing the fuselage on a board and using a right triangle against the side.

Cut out the fire wall (Plate 1) and formers Nos. 1, 2, 3, 4, 5, and 6. Glue them in place as shown on plan. Space and cement six stringers of ⅛" balsa evenly along the



As graceful a ship as we have seen in many a modeling moon, this original Heit design presents a decidingly striking appearance. And its red-and-cream color combination makes it an easy craft to follow, regardless of the color of the sky on flying days. The bottom edge of the rudder, by the way, serves as a tail skid. It's protected against wear by a short length of wire.

Bill of Materials

(Complete plans will be found on the following pages)
All wood, unless otherwise specified, is balsa

Fuselage: Ten pieces ¼" by ¼" by 48" for fuselage longerons and cross-members;
Six pieces ¼" by ⅛" by 48" for fuselage stringers;
One piece ⅛" by 2" by 18" for window fillets and formers;
One piece ¼" by 3½" by 6" for plywood fire wall (spruce);
Two pieces ⅜" by 3½" by 6" for cowl blocks.

Wing: Three pieces ¼" by ¼" by 40" for leading edge;
Three pieces ¼" by 1¼" by 40" for main spar;
Three pieces ¼" by ½" by 40" for rear spar;
Three pieces ⅛" by 1" by 40" for trailing edge;
Three pieces ⅛" by ¼" by 40" for auxiliary spar;
Twenty-four pieces 1/16" by 1¾" by 12" for ribs;
Twenty-four pieces ¼" by 1/32" by 10" for capstrips;
Five pieces 1/32" by 2" by 40" for sheet covering.
Stabilizer: Two pieces 3/16" by 3/16" by 15" for leading edge;
One piece ⅛" by 2" by 18" for sheet outline;
Four pieces ⅛" by ½" by 36" for ribs and spars.

Rudder: One piece 3/16" by 3/16" by 12" for leading edge;
One piece ⅛" by 2" by 8" for sheet outline;
One piece ⅛" by ½" by 36" for spars and ribs.

Miscellaneous: Six feet ⅛" steel wire for landing gear;
Twelve inches celluloid ½" wide for windows;
Two 4½" airwheels;
Copper wire for hinges;
Twenty-four inches dural angle ½" by ½" for motor mounts;
Music wire; rivets, covering material, dope, cement, etc.

formers. The stringers should be brought to the rear of the fuselage to form a "cluster" shaped according to the contour of the tail post.

The window fillets are cut from ⅛" sheet balsa and glued in place. It is not advisable to glue the celluloid windows on until the ship has been covered and painted.

Landing Gear and Motor Mount

THE landing gear, of ⅛" steel wire, is made in two halves and soldered together at the junction of the axle. Run the wires across the inside of the fuselage, and cement and tie them in place with thread.

The motor mounts are ½" by ½" dural angle, cut to size as shown on Plate 1 and riveted together. Two mounts are needed—one right and one left. Engine mounting holes should be drilled according to the engine you plan to use. The mounts are secured to the fire wall by four bolts.

Make cowl blocks from ⅜" sheet and cement against the firewall. Leave the top open for motor cooling and adjustment, of course, although the bottom may be closed in if desired.

In making the wings, the spars are the first interest. Use ¼" by 1¼" stock for main spars, and ¼" by ½" for rear spars. Splice them as shown in the isometric drawing on Plate 2. Cover the sides of the splice with 1/16" sheet for added strength.

Cut twenty-four ribs from 1/16" sheet. Lay the spliced wing spar on the plans and glue in the ribs on one-half of the wing. Then place the other half of the spar on the paper and put in the remaining ribs. Insert the trailing edge in the slots provided, and glue in place.

The leading edge is also installed in a similar manner. Cut the wingtip pieces from ⅛" sheet, glue them together, and attach them to the wing.

With 1/32" sheet, cover the center section on both sides and tips and leading edge on the upper side. Glue capstrips ¼" by 1/32" over the tops of the ribs. Sand all the sheet balsa to make a good base for smooth covering.

Tail Construction

LEADING edges of the tail surfaces are 3/16" by 3/16". The trailing edges and tips are cut from ⅛" sheet. The spars are ⅛" by ½".

First pin down the leading and trailing edges, using spacer blocks underneath them to help procure the proper contour. These blocks should be 5/32" for the leading edge and 3/16" for the trailing edge. They enable you to finish the tail ribs to a close and more accurate streamlined section without plotting the ribs individually. When the leading and trailing edges are in place, glue in the spars.

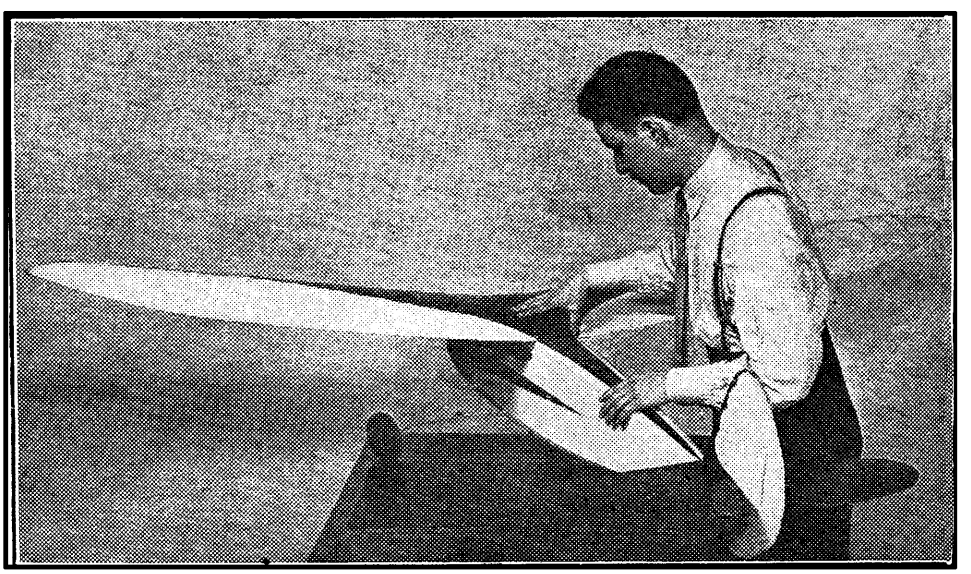
The ribs are ⅛" by ½" rectangular pieces cut to the sizes shown on the plans and cemented in place. They are sanded to a streamlined section after the framework is assembled. The lower part of the rudder should be covered with soft steel wire to act as a tail skid. The rudder flap hinges are of soft copper wire pushed into the wood, bent, and glued in place.

Install the motor ignition system and make a battery box according to the drawing. The battery contacts are cut from thin sheet brass. A spring to hold the batteries tight against the contacts can be made from music wire wound in spring fashion and soldered to the battery connection. Cement the battery box between formers Nos. 1 and 2. The wire spring should be in front of the box so as to absorb the momentum of the battery in the event of a crackup.

The covering may be either silk or bamboo paper. The designer's *Scram II* is covered with bamboo paper. Before applying, remove all dried cement that might spoil the covering job. Use glue to secure the covering in place.

Dope all surfaces with three coats of clear and two of colored dope. Choose colors that are most effective at a distance—red, yellow, orange, or blue. The original ship is red and cream.

(Continued on page 79)



Fellows, here's Designer Ray Heit himself, giving "Scram" a prideful once-over. Ray, you know, has been in the modeling game about ten years—he started almost on the same line with Flying Aces! *He's attended the Nationals twice and expects to fly "Scram" there this year. He boasts a whole roomful (almost) of medals, trophies, certificates, and other prizes that he has won.*

Try Our Gas-Powered "Scram"

(Continued from page 43)

FLYING

FOR test flights it is best to avoid windy days because of the ship's light wing-loading. Glide the ship until you are satisfied with its characteristics. Start the motor—and be sure to set your timer—then watch the remarkable speed in which the ship hops off (hence the name *Scram.)*

Good luck to you all—and I'm hoping to see a stack of *Scrams* at the Nationals next month. If you should run into any fog while building the ship, don't hesitate to write me in c/o FLYING ACES.