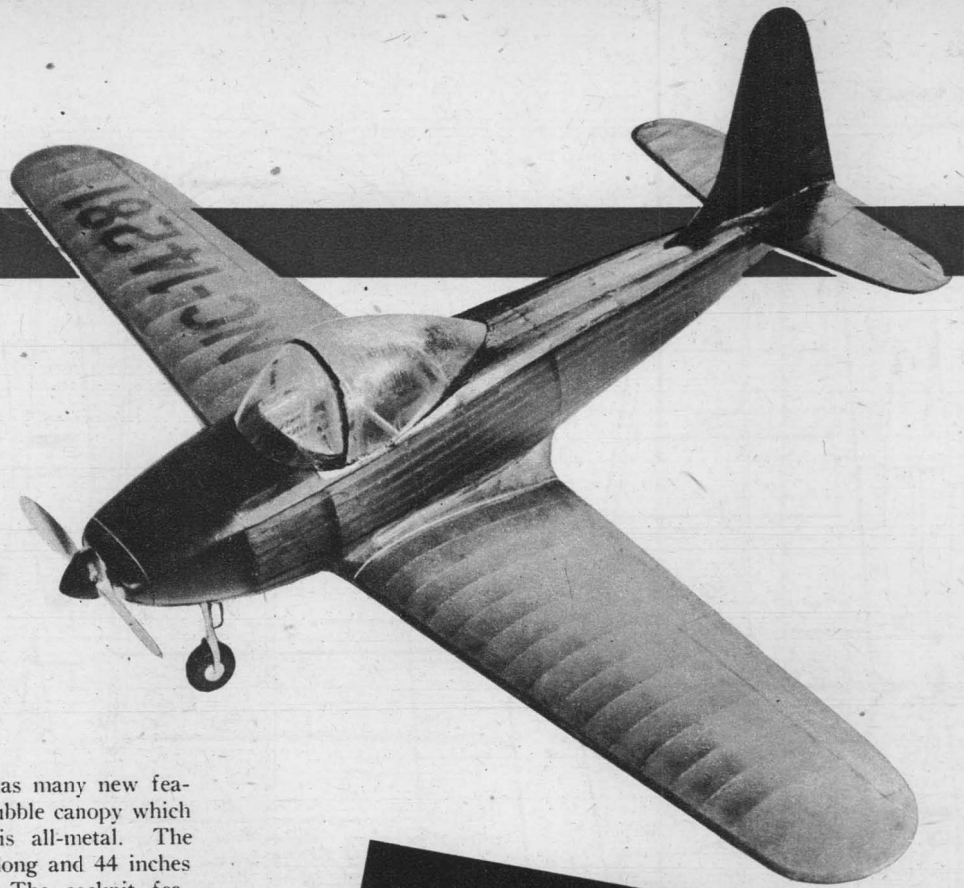


# ENSIGN

by **JAMES NOONAN**

*Scientific Leader A.M.A.*



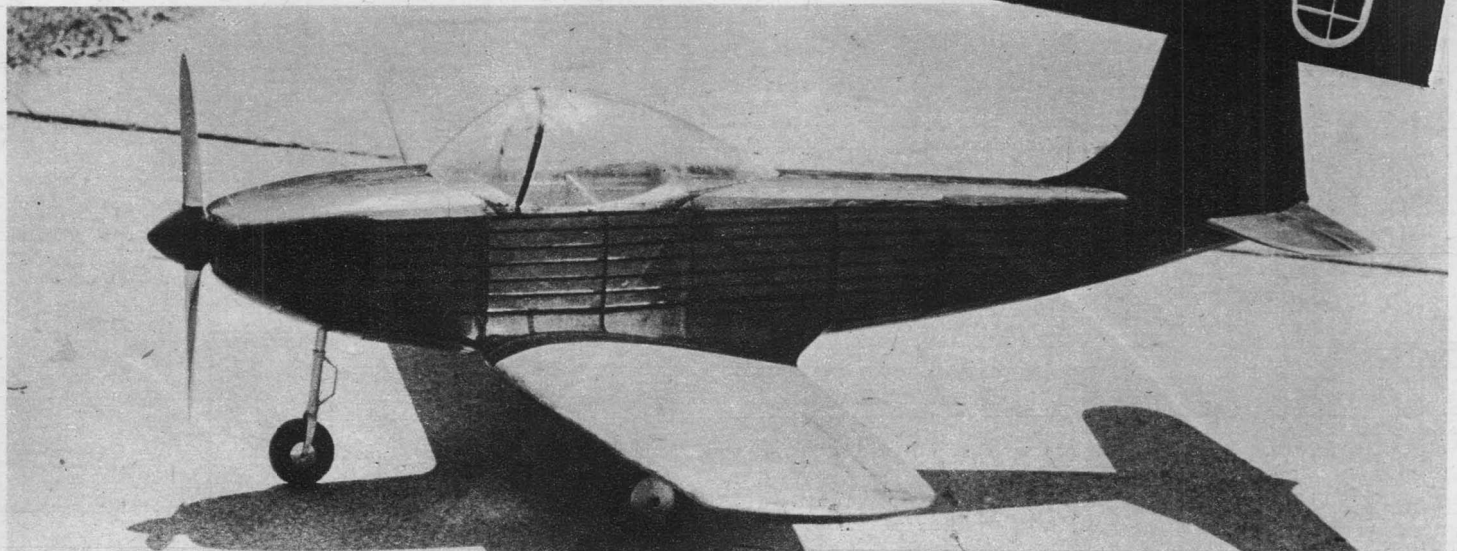
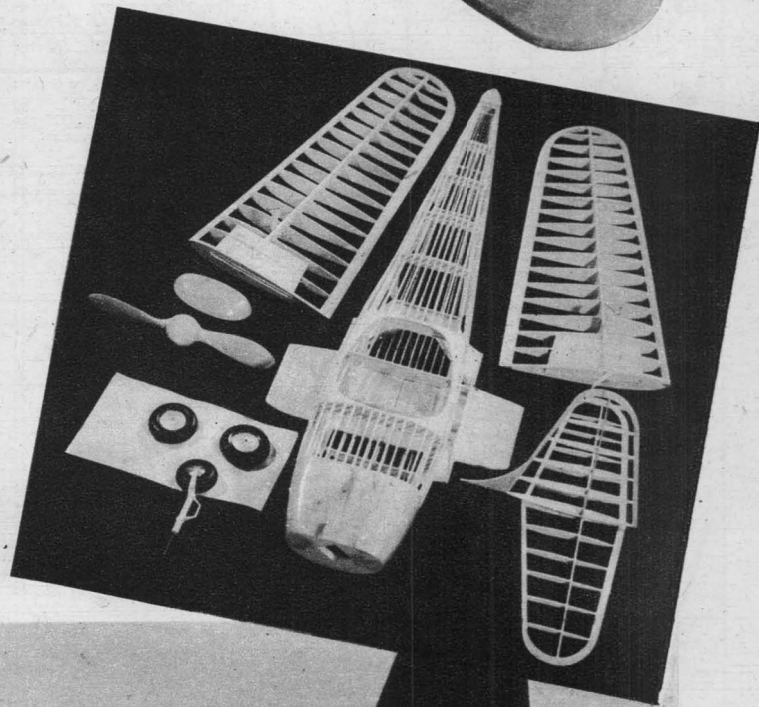
**THIS FLYING SCALE MODEL OF THE ENSIGN  
RIVALS ITS BIG BROTHER IN APPEARANCE**

**N**EWEST of postwar lightplanes, the Ensign has many new features, the most striking being the enormous bubble canopy which gives unparalleled visibility. Construction is all-metal. The wing span is 33 feet and the fuselage is 22 feet long and 44 inches wide. Ailerons are Frise-type, self-balancing. The cockpit features an adjustable side-by-side seat, with optional dual controls. Upholstery is all leather, in blue or red. A full set of instruments is standard equipment. Self starter, generator, 12-volt battery, radio, muffler, and cabin heater are available as extras. Landing gear is of the fixed tricycle type, equipped with differential hydraulic brakes operated from the rudder control foot pedals. The front wheel will caster 35° in either direction and is fitted with a hydraulic shock strut. Rear shocks are cantilever type.

The Ensign is powered with an 85-hp Continental, with fuel injector. A 25-gal. tank is provided; it weighs 1,000 lbs. empty, 1,550 lbs. loaded. Cruising speed is 112 mph for 500 miles. Maximum speed is 125 mph. It stalls at 50 mph, lands at 50 mph, climbs at 700 ft. per minute to its service ceiling of 14,000 feet.

The manufacturer claims it is spin-proof and stall-proof. Its price (Feb. 1946) was \$3,495.00 flyaway Long Beach, California.

The author wishes to express thanks to Mr. Gerald Adler, of All-American Aircraft, for his co-operation in furnishing accurate scale drawings, photos, and data which made this exact reproduction possible.



● Construction simplicity is one of the features of this rubber-powered model. It can also be made into a gas-powered free flight or control-line job.

# IMPORTANT ANNOUNCEMENT

Every reader of this magazine will want to watch out for the forthcoming SHADOW ANNUAL.

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# The SHADOW Annual

PUBLISHED BY  
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## Ensign

**Construction:** Note that the plans are laid out in  $\frac{1}{4}$  inch squares to facilitate the plotting of curves, when drawing full-size layouts. The model shown has a span of 39 inches and it may be scaled to any size to suit any type of power. A double size (78" span) would give slow, realistic free flight if powered by a Bullet or a "23." (We used 8 strands of prewar  $\frac{1}{4}$ " brown rubber to obtain slow flight in the 39" model.)

Build two basic fuselage sides, one on top of the other, and assemble them as shown on the top view. Add bulkheads, and  $\frac{1}{16}$ " sq. hard stringers. Cut and cement the wing tongues and after adding the lower portions of bulkheads 4 and 5, cement a  $\frac{1}{8}$ " thick rib "A" to each wing butt. Soft balsa blocks are fitted to form the fillets as shown on the drawings and photos.

Carve the noseblock (2 pieces) roughly to shape and cement in place on the fuselage; to it fits the grille block, cut from  $\frac{1}{4}$ " hard sheet, using template No. 1. Carve and sand to exact contour. Note that only a hole for the rubber motor is provided, to keep plenty of weight forward. A model using this set-up gives almost perfect balance when finished. The fuselage is covered with G.M. silkspan; work carefully to get a smooth contour at the wing fillet.

Make the canopy over a balsa form. Celluloid may be dipped in cello mold; Plexiglass may be formed in boiling water, or, as we did, .010 celluloid can be slit to overlap and held tightly in place with sheet rubber, then cooked in boiling water, cooled, trimmed, and cemented in place.

Stabilizer and rudder are of conventional construction. Sand, cover, and cement in place on the fuselage before doping. Mounting of nose, wheel, propeller, and motor needs no special instruction except that they must be carefully constructed and mounted.

The wing spar is shown in the front view. Cut it carefully of quarter-sawed sheet wood. Cut all ribs, tips, leading, and trailing edges. Assuming that your wing layout is drawn on tracing paper, a right and left hand panel can be assembled by merely turning the paper. Build the box around the wing tongues in the fuselage; remove and cement into the wing structure, mounting the wings to check for correct alignment. Sand the framework and cover with G.M. silkspan. Apply numerals and control outlines.

The rear landing struts are built as shown in front and side views. Note that considerable shock travel is afforded by their shape which differs slightly from the original. Anchor them securely to the main spars.

Assemble the entire model and check thoroughly for alignment, balance and faulty workmanship. After making any necessary corrections, give all parts two light coats of clear dope, and two of silver. The top color may be red or blue. All other detail is black.

For flight tests, select a spot which will allow a take-off on a smooth surface (a road or runway) and flight and landing over a grassy field. When the model balances at about  $\frac{1}{2}$  back of the leading edge, begin short taxiing runs until it barely lifts off. Make any necessary corrections and keep increasing the number of turns until full flight is obtained. Use the same procedure if gas power is used.



## CARL GOLDBERG'S LATEST SENSATIONAL MODEL

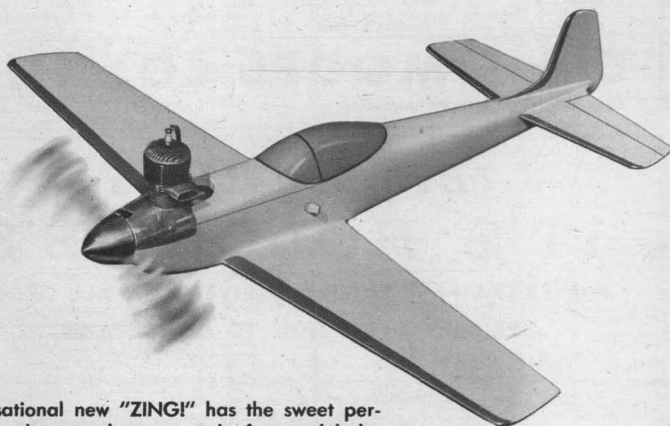


Carl Goldberg

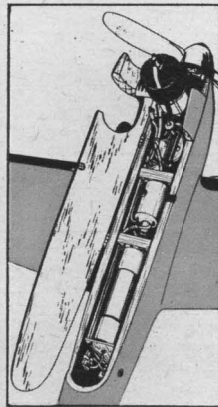
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