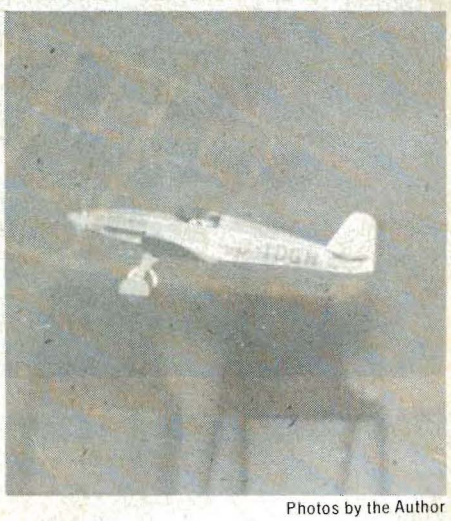
A Rubber Scale Heinkel "He-100 V8"

by Dave Katagiri

Envisioned as a fighter, the He-100 set the world speed record of 463.92 m.p.h., but fought only as a propaganda tool.



Photos by the Author

Not only did the Heinkel "He-100 V8" hold the world speed record once, but it also held it for the shortest time of any record holder. On March 30, 1939, twenty-three year old Hans Dieterie flew the "He-100" over a three km distance at a speed of 746.6 km/hr. Only a month later the "Bf-209 V1" topped the "He-100" when it sped over the course at 755.1 km/hr. The "He-100" did not reach mass production as it was passed in favor of others.

The "He-100" lends itself beautifully to the rubber powered model design. It has a large propeller diameter in comparison to its wingspan and a thin long body to allow a long motor. The model wing and tail areas are to scale as are the landing gear and propeller lengths.

Fuselage

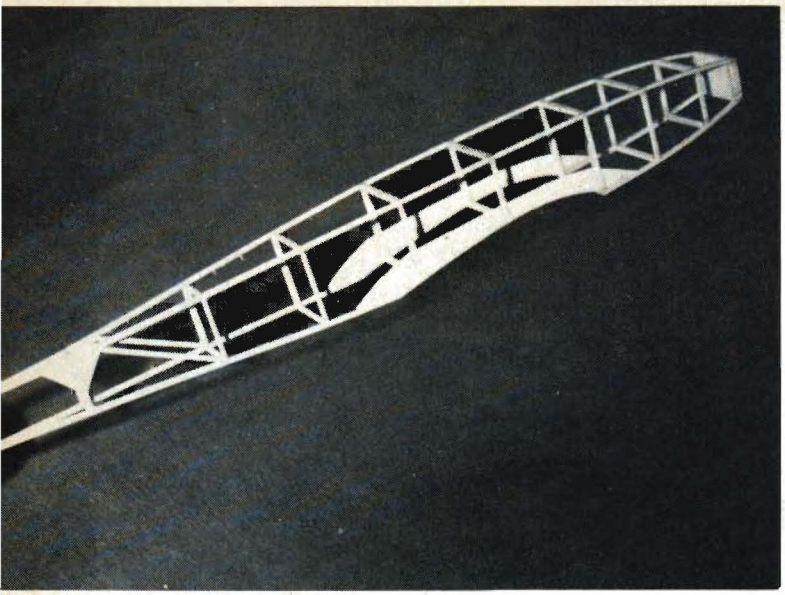
The structural core of the fuselage is a box frame on which shape is added with formers and stringers. Select 1/16" square longerons that are matched in stiffness. This will help maintain alignment of the box frame during assembly of the two sides. Note that the 1/32" sheet wing saddle reinforcements are flush to the inside surface of the fuselage side frames. This allows the tissue cover to form a smoother outer contour. It is important to use only the lightest wood for the turtle deck fairing. The "He-100" has a long tail arm, and tail heaviness can result. Complete the fuselage frame with the exception of the bottom 1/16" square stringer. It will be added after the wing is covered and installed.

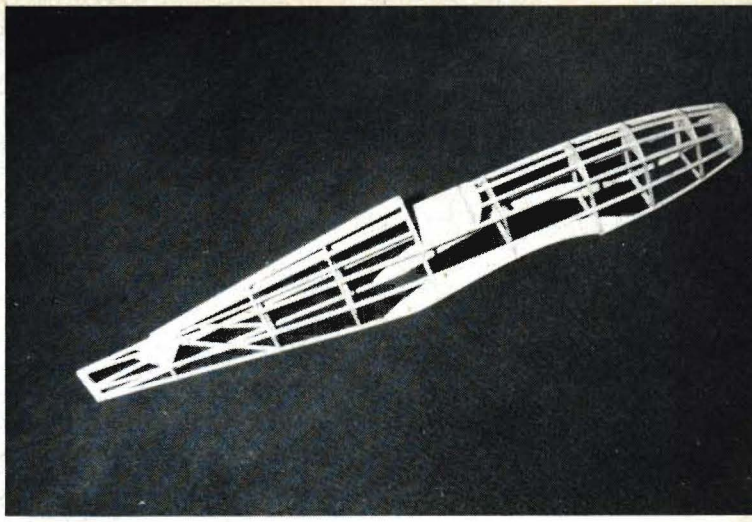
Wing and Tail

Only the wing outline structure should be assembled over the plan. The spar and false ribs will be glued after the dihedral is formed by notching and bending. Begin by pinning pre-shaped 1/16"x1/8" trailing edges on the plan. Do not glue the centerline point. Glue and pin the tip ribs, leading edge and tips in position. Then cement the remainder of the ribs in place.

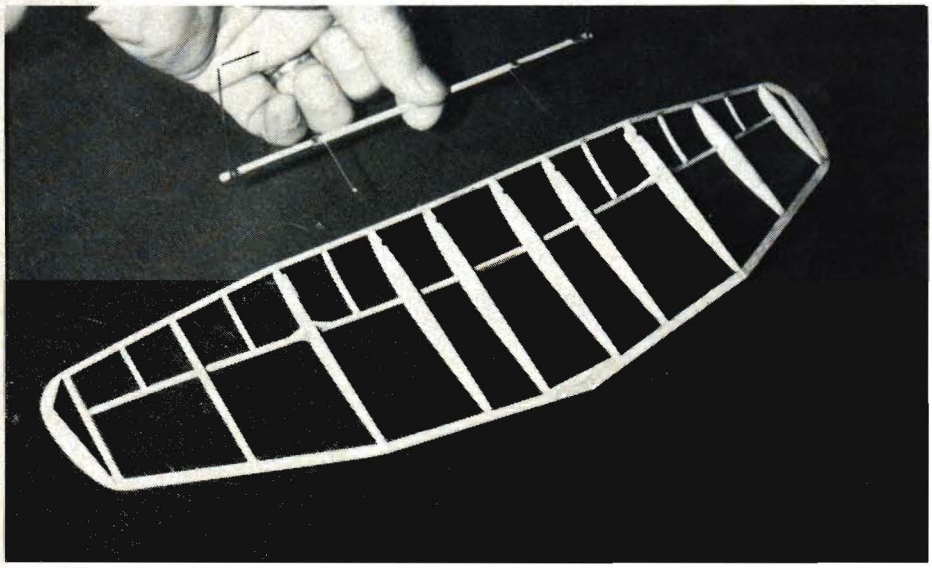
Carefully remove the wing from the plan and notch the upper part of the leading and trailing edges at the outboard dihedral breaks. Notch the underside of the leading edge at the center. Gently bend the dihedral angle at the pre-notched locations. Pin the wing to a flat surface with shims to hold the dihedral angles. Apply a spot of glue to each of the notches and fit and glue the spar, false ribs and gussets at the dihedral breaks. Wrap and glue the landing gear wires to the stub spar before the assembly is glued to the wing frame.

The tail surfaces are shown with built-up tips; however, the soak and bend method can be substituted. Use light wood for the outline. Wet the strip that forms the tip with ammonia water to soften the fi-

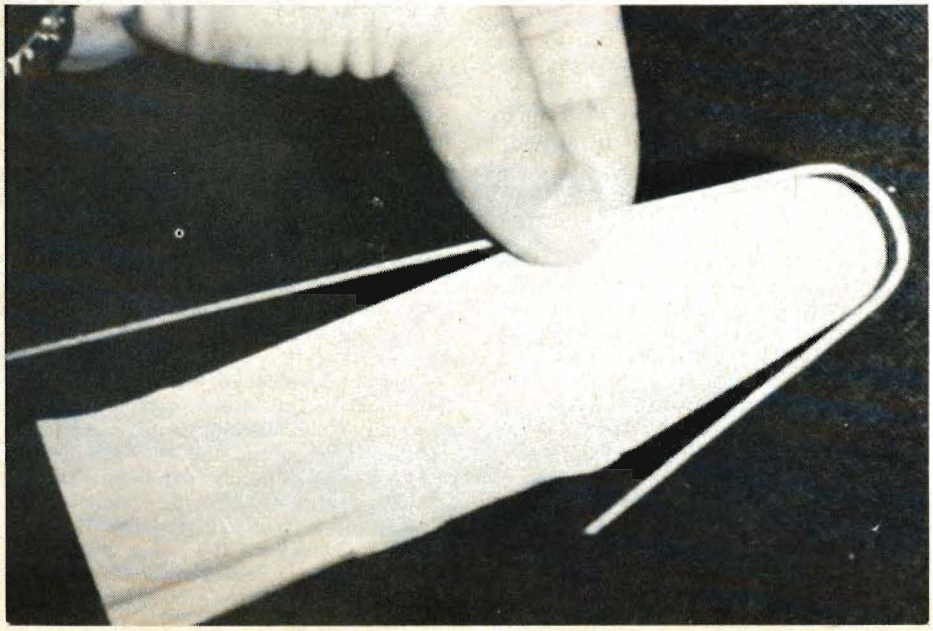




Secondary structure adds rapidly, giving the fuselage a rounder contour. **Left:** The two basic sides are built first, then joined with crosspieces.



Some nice straight stock for the wing structure please. The gear assembly here dropping into ribs. **Beneath:** Canopy framing and such problems can be solved by pre-bending while wet around template.



bers. Use an octagonal pencil and roll it over the inside edge of the strip that will become the rounded tip. Tape one end of the strip to a template and mold the strip around the tip radius. Tape the other end to hold it to the template until the tip dries.

The goal for the tail surfaces is to keep them light.

The Propeller

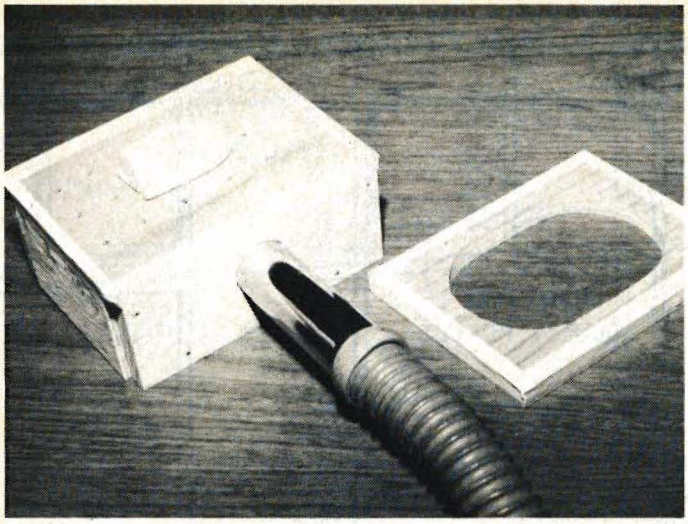
A plastic 5″ Kaysun propeller should be used during initial flight tests. The three-bladed unit is shown for scale. These three blades are formed simultaneously by wetting and taping them on a two and one-half inch diameter can. Place a blade of the plastic prop against the can to determine the angle for the wood blades. Glue the 1/8″ dia. slotted dowel to the blades. Drill the spinner and press the dowels into the holes. Place the spinner on a flat surface and check the blade tips for alignment, then cut a wedge shaped gauge which will fit under the plastic prop tip. Use this gauge to align the three wood blades. When aligned, spot glue the blades to the outside of the spinner. The pitch can be modified during flight tests by cutting through the glue and regluing.

The Canopy

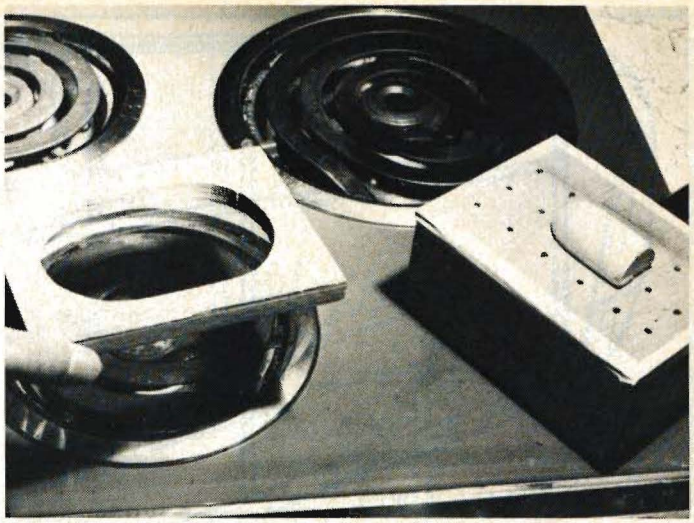
The vacuum-formed canopy on the original was made from a plastic cover from a Christmas card box. Carve a balsa form of the canopy, then glue additional height and length to the form to function as extra margin. Apply two coats of finish resin, and sand with 400 wet sandpaper. Use a strong vacuum cleaner as you heat the plastic, holding it about 3″ above a medium-hot electric burner. The plastic will begin wrinkling, and when soft enough, will smooth out and sag. At this point, place the frame over the forming box quickly while the vacuum is on.

Covering and Assembly

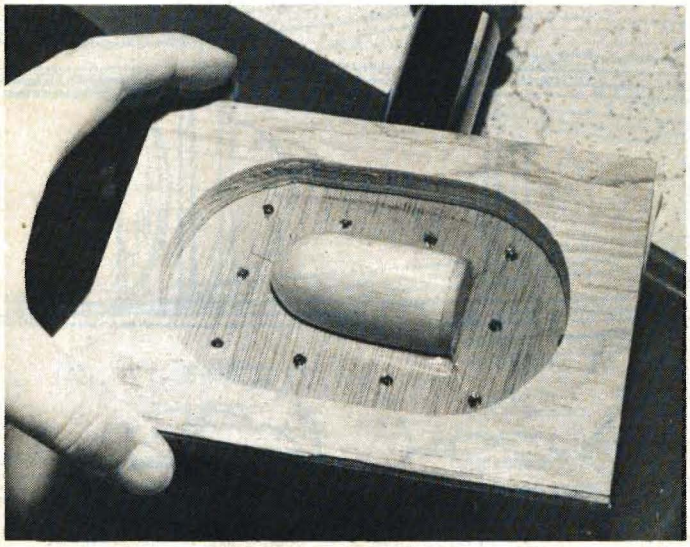
Cover the wing with the exception of the lower space between the center ribs, then the fuselage with the exception of the bottom. Tissue the stabilizer and fin. Glue the wing to the fuselage and cement the bottom 1/16″ stringer in place. Now cover

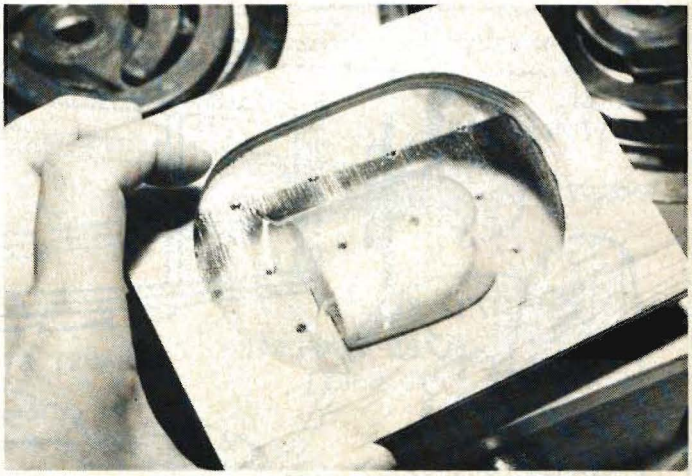


The canopy mold form seen on top. It must be smooth, wood grain filled. Your vacuum cleaner ready to draw air pressure off through drill holes.



The plastic film is warmed until it is sagging, then positioned over the canopy, in contact with the lower box. It solves many a modeling problem.





The vacuum formed canopy cools rapidly enough, seen being lifted clear. **At left:** Notice the fit of the lid to the box, try to seal it air tight.

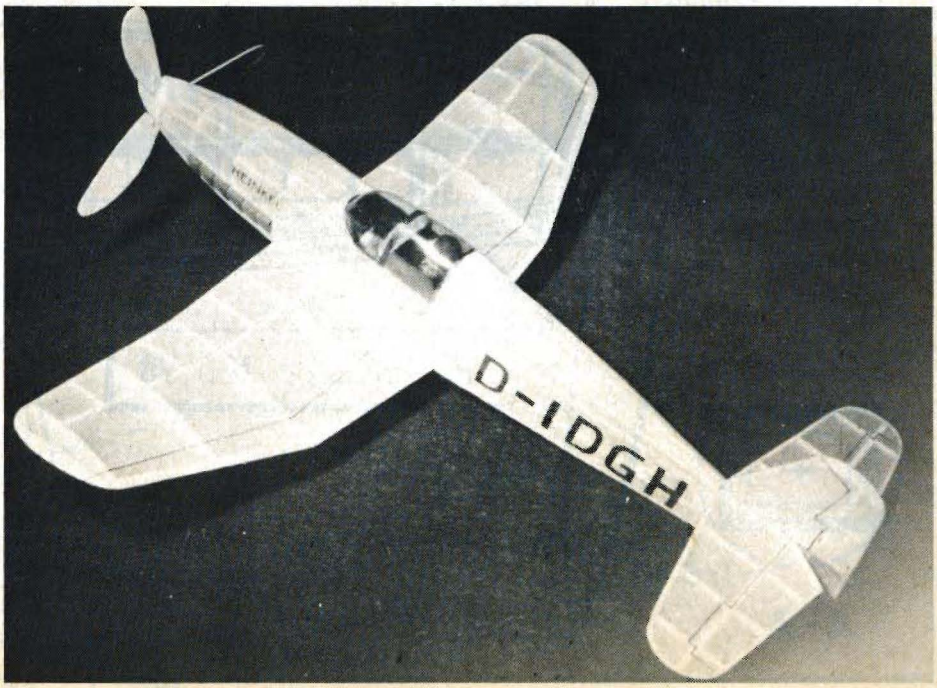
the bottom of the fuselage and wing center.

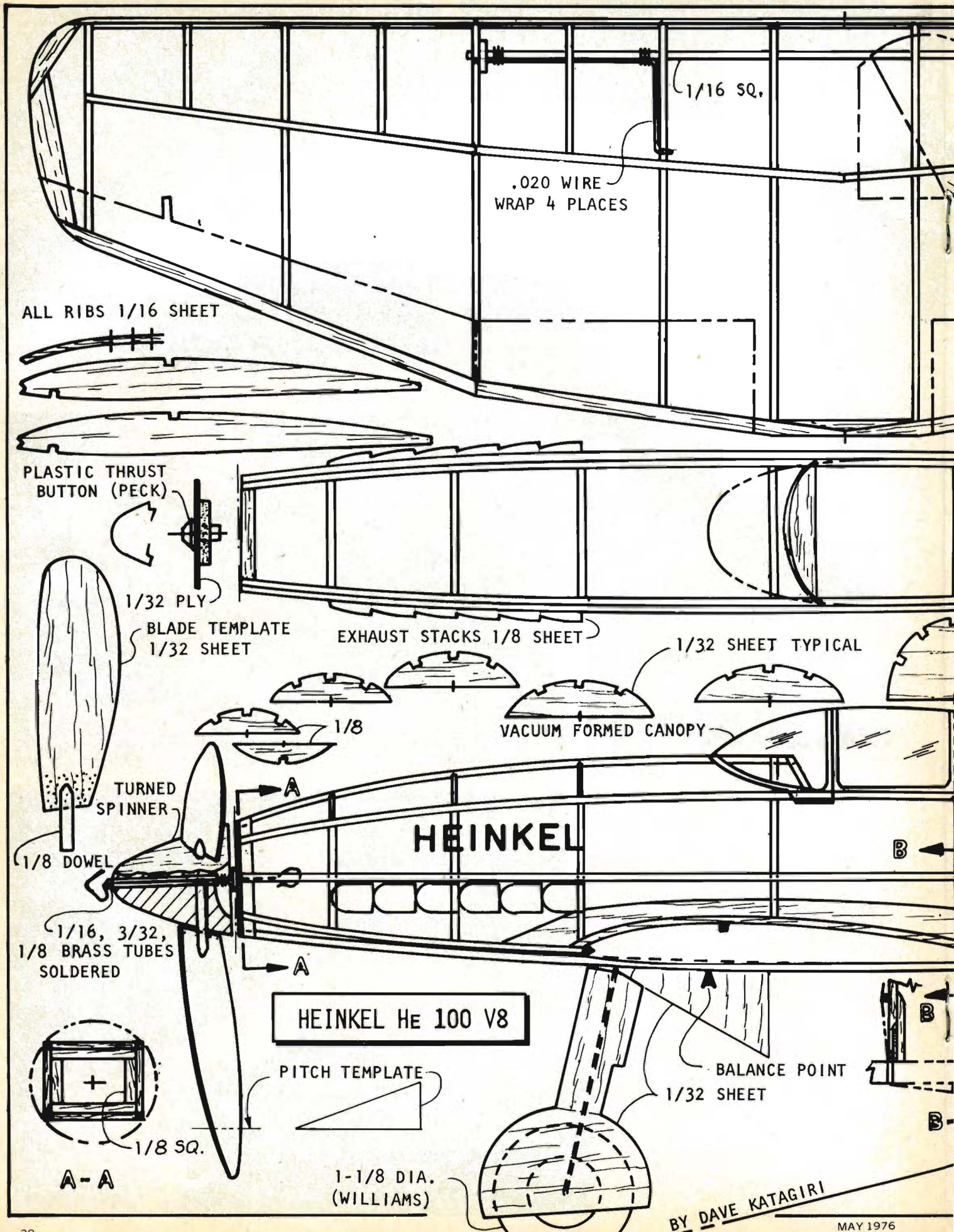
Shrink the fuselage and wing covering with a light spray of water, then clear dope the body with two coats to reduce soiling from handling. The wing on the original was not doped in order to avoid warping.

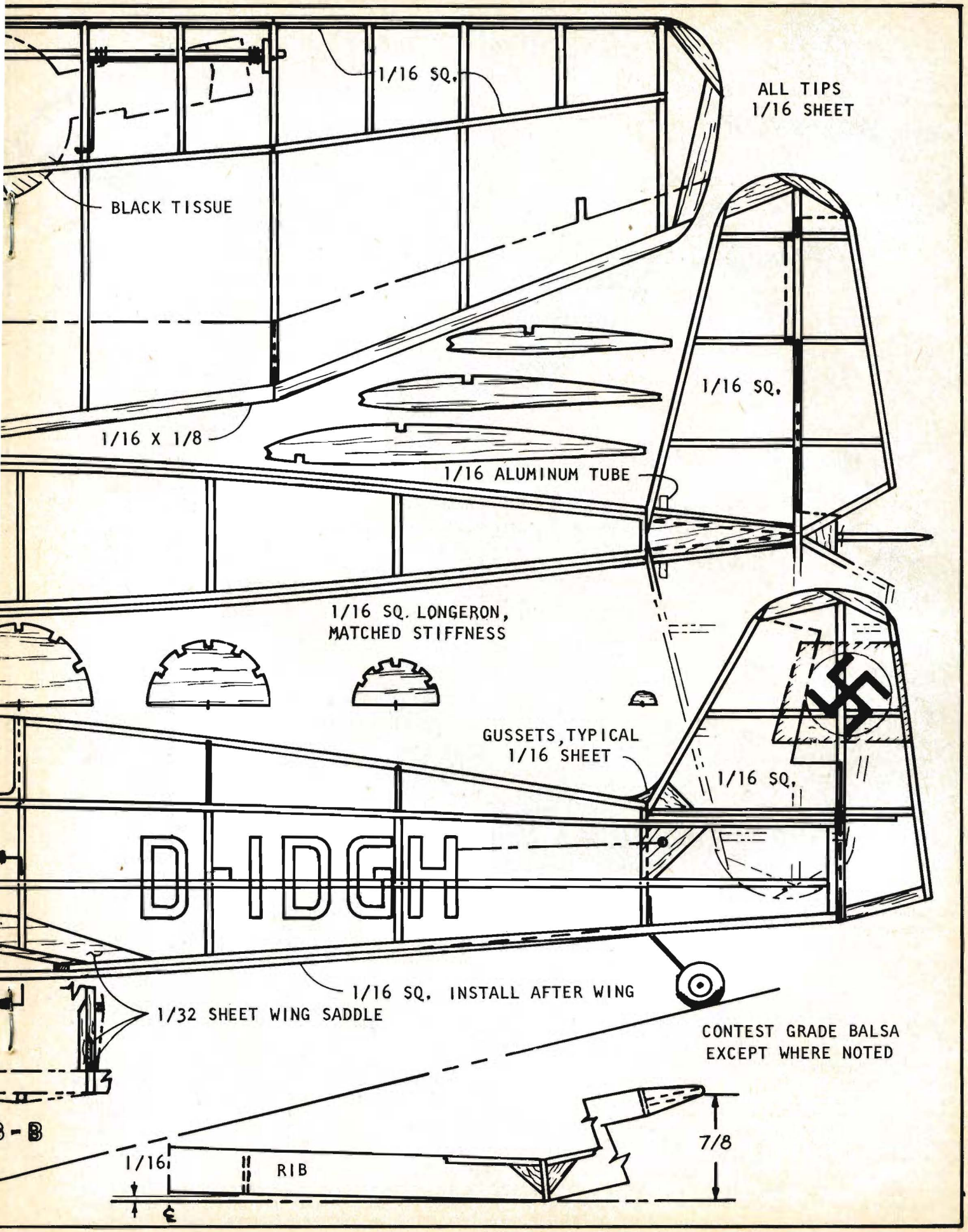
Glue the stabilizer and tack the fin spar to the aft edge of the body and a spot at the front edge of the fin. The forward end can be cut with a razor and moved for flight trim. The tail covering on the original was not shrunk in order to avoid warps.

Flying

Glide trim the model without propeller and rubber. Use clay on the nose to achieve balance as shown on the plan. Warp the wing, tail and move the fin to obtain a flat glide with a slight turn left. Remove the clay and install the rubber and propeller. With the built-in right thrust, the model should fly a left turn similar to that achieved in the initial glide test. Make remaining adjustments by thrust line changes. OK? Now go look for that "Spitfire."




1/16 SQ.
.020 WIRE
WRAP 4 PLACES
ALL RIBS 1/16 SHEET
PLASTIC THRUST
BUTTON (PECK)
1/32 PLY
BLADE TEMPLATE
1/32 SHEET
EXHAUST STACKS 1/8 SHEET
1/32 SHEET TYPICAL
1/8
VACUUM FORMED CANOPY
TURNED
SPINNER
1/8 DOWEL
A
A
B
B
B
1/16, 3/32,
1/8 BRASS TUBES
SOLDERED
HEINKEL
HEINKEL He 100 V8
PITCH TEMPLATE
BALANCE POINT
1/32 SHEET
1/8 SQ.
A-A
1-1/8 DIA.
(WILLIAMS)
BY DAVE KATAGIRI



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