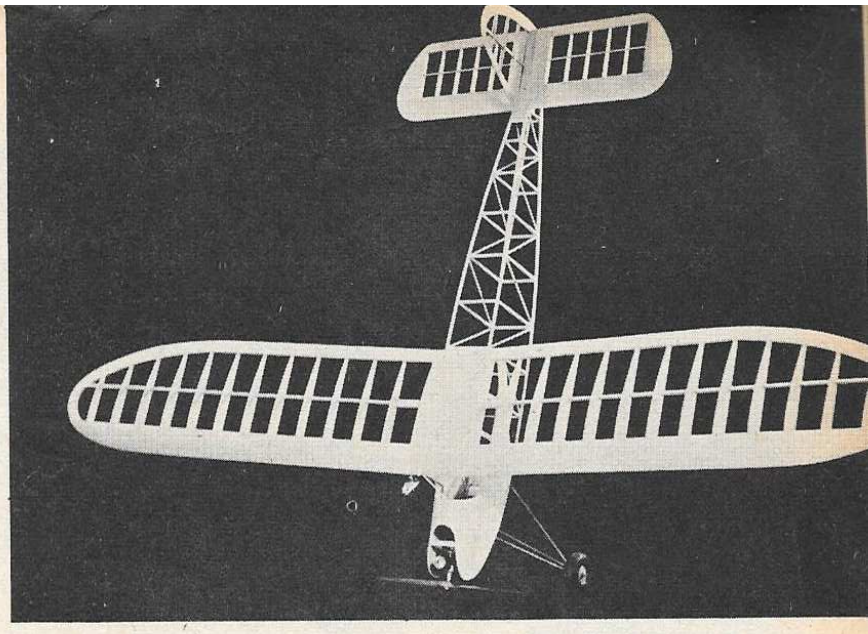
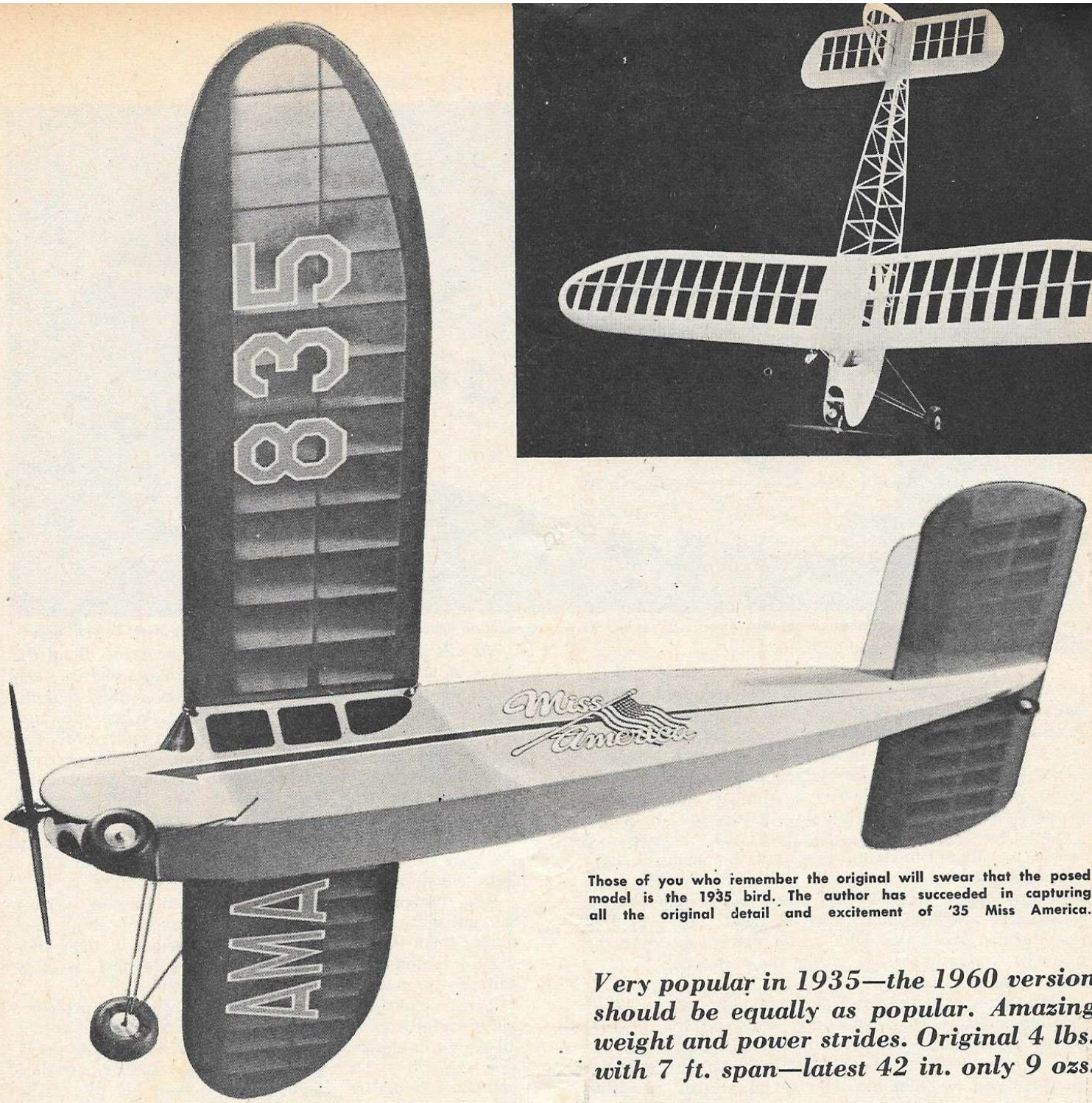




Those of you who remember the original will swear that the posed model is the 1935 bird. The author has succeeded in capturing all the original detail and excitement of '35 Miss America.

Very popular in 1935—the 1960 version should be equally as popular. Amazing weight and power strides. Original 4 lbs. with 7 ft. span—latest 42 in. only 9 ozs.

Miss America 1960

by JOE WAGNER

► Franklin D. Roosevelt had been president for only two years, and had just signed the Social Security Bill. . . The country was in the depths of the depression. . . The dirigible "Macon" crashed into the Pacific, and Will Rogers and Wiley Post were killed in the crash of their plane in Alaska. . . Sir Malcolm Campbell set a new automobile speed record of 301 mph in his "Bluebird". . . Huey Long was assassinated. . . Jim Braddock won the World's Heavyweight Boxing Championship from Max Baer. . . People were humming the latest song hits: "I'm In The Mood For Love", "Blue Moon", and "Sunny Side Of The Street". . . And from farmers' pastures and school athletic grounds and small airports all over the country a brand new sound was arising: the soul-stirring roar that was the song of the first gas model airplanes!

The first practical gas-powered model to be flown in the United States—designed and built by Maxwell Bassett and powered by a hand-made Brown .60—had only appeared in 1932; yet by 1935 a few far-sighted manufacturers were already making kits for these newfangled contraptions. One of them was the Scientific Model Airplane Company of Newark, N.J. Founded in 1928, by '35 they had an excellent line of scale rubber-powered models, such as Monocoupes, Gee Bees, and Wacos; plus a complete stock of the new miracle model-building material: Balsa Wood! —and then they introduced their first gas model airplane kits: Herb Greenberg's "Red Zephyr" and Frank Zaic's "Miss America".

The "Miss America" of 1935 had a wingspan of seven feet, and weighed nearly four lbs. ready to fly. The kit came complete with airwheels, a finished 14" propeller, all the necessary cement and dope, formed landing gear —plus (*Continued on next page*)

For those of you who do not remember the Miss America of the thirties we reproduce a typical Scientific ad from Model Airplane News for that period.

MISS AMERICA 1960 . . . continued

full-size plans, hardware, covering material, and enough balsa to build a dozen of today's half-A free flight models. It sold for $9.50—about the equivalent of $40.00 now—and was a magnificent flier. Powered by a Brown .60 or a "Baby Cyclone" .36 and flown on a full tank of gas, the "Miss America" soon became a familiar sight soaring through the skies on bright Sunday afternoons.

This "Miss America" in miniature was designed and built in an attempt to recapture some of the magic of those long-ago days of model flying. It is an almost perfect half-size copy of the original, and nearly all of the original construction methods have been retained. The Cox .020 provides just about the right "scale" power, and even the propeller is exactly half the size of the prototype's.

Construction:

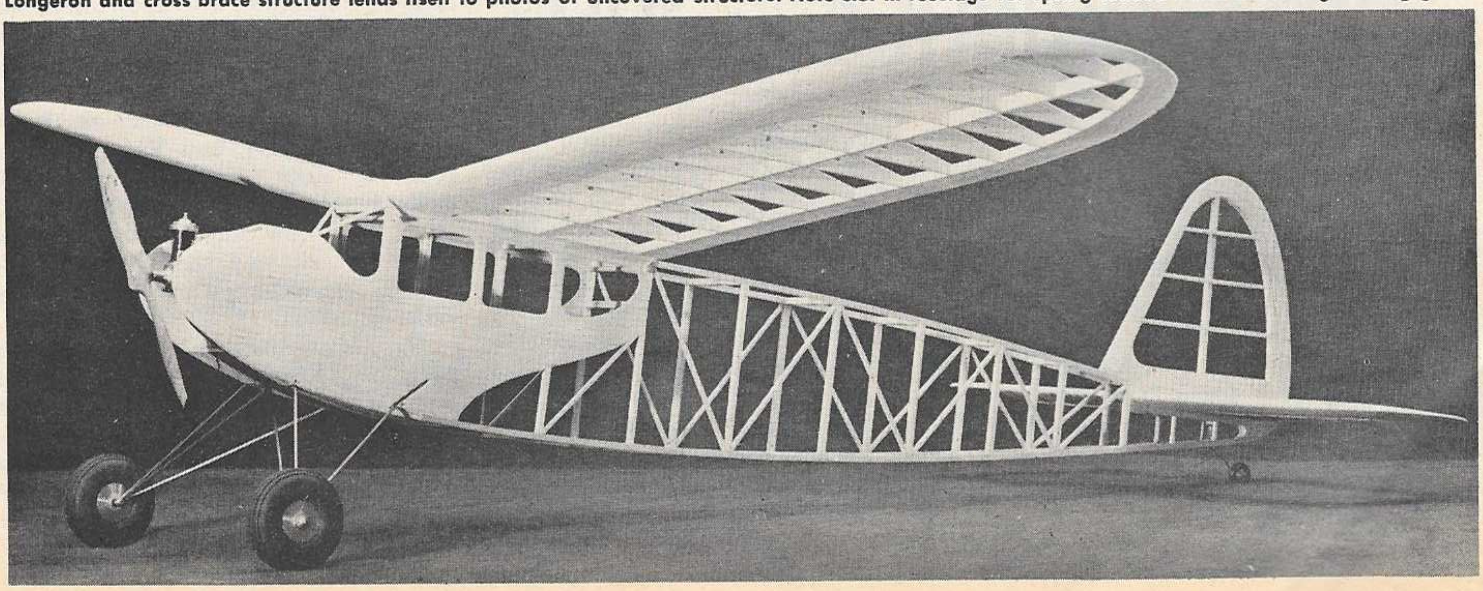
Start by tracing the fuselage front sides onto a 1/16" medium balsa. Cut out carefully and add the internal braces and doublers—making sure to build a LEFT and a RIGHT side! Next, pin these fuselage front sides over the plan—it's best to build the sides simultaneously, one atop the other—and add the longerons, uprights, and diagonals. When dry, remove from the plan and separate; then add the bulkheads and cross-members.

At this point, the landing gear must be made. Bend the wires as accurately as possible to the shapes shown, then clean thoroughly with fine sandpaper and attach temporarily to the fuselage with thread lacing. When sure that everything is properly aligned, wrap the joints with fine copper wire and solder. The gear can now be removed from the fuselage, cleaned of excess flux, and permanently laced in place with heavy thread. The shock-absorbing feature is faithfully copied from the original "Miss America". The natural spring of the wire will tend to keep the gear in the forward position, but it is best to add a light coil spring as shown for insurance.

The fuselage can be completed by thoroughly wetting the outsides of the upper nose portions, bending and gluing them firmly around the nose bulkheads, then adding the bottom and tail planking. The tail-wheel assembly can also be made and installed at this time.

Construction of the rudder should present no problem; but a useful trick in making up parts of this type is to cut all the outline pieces considerably oversize, the only precision required is at the joints. Glue these together, and then cut to exact outline shape after the assembly dries. The remaining parts are then added, allowed to dry, then the rudder is carefully sanded to a streamline shape—after which the tab is cut free and (*Continued on page* 58)

Longeron and cross brace structure lends itself to photos of uncovered structure. Note slot in fuselage for spring loaded shock absorbing landing gear.



Miss America 1960

(*Continued from page* 20)

hinged in place with soft copper wire.

When the wings are complete, they will look exactly like the wings of the original 7-foot "Miss America", but they are made using a special technique that absolutely eliminates any possibility of the wing ever warping after it is finished. First step is the *accurate* cutting out of all parts. Next, make up the trailing edges, complete with tip pieces, and notch them as shown. Now, pin the main spar down on the plan, with shims of 1/32" balsa under it to allow for the thickness of the bottom leading edge planking. Make sure the spar is square to the work table surface, then add the ribs and attach the trailing edge. Make the leading edge from quite soft 1/8" sq. balsa, as it has a rather severe bend near the tip. After attaching the leading edge and allowing the assembly to dry, the wing frame can be removed from the plan and the secondary spars added. Sand the leading edge, top and bottom, so that it blends smoothly in with the rib contour.

Cut the pieces of 1/32" balsa for the *bottom* leading edge planking, a bit oversize all around except for the end which joins the tip piece; this must be a proper fit. Now—soak the planking in water for two hours! After this, it is glued in place, but since ordinary model cement will not hold reliably to water-saturated wood, it is recommended that a "white" glue, such as "Wilhold" or "Elmer's Glue" be used.

Use plenty of pins when attaching the bottom planking—the glue having been liberally applied to all ribs as well as the spar and leading edge. Let dry at least overnight. Next, trim off the excess planking and then attach the wings together with the dihedral braces. Make sure that the wings have the same dihedral at each tip before setting aside to dry! Afterwards, take a piece of scrap 1/32" sheet balsa, and, using it as a gage to check the fit, carve and sand the top edge of the wingtip so that the top leading edge planking can be applied smoothly all the way to the end of the tip. Only cut away the areas that will actually be covered by the planking; the rest of the wingtip will be shaped during final sanding of the completed wing frame.

Now comes the tricky part. Cut one top planking piece, oversize all around, and soak in water for two hours. Pin half the wing down firmly on the building board (the other half sticking up in the air) by means of pins inserted down diagonally through the BACK of the spar. Let the leading edge and the tip extend over the edge of the board by at least 1/2 inch everywhere; but be *sure* the wing is perfectly flat, because after the top planking is attached, the wing will remain in the exact same shape as it was when pinned to the board. Be very certain not to build any warps in! Make *sure* to pin the panel FLAT!

Now the wet, top planking can be applied, again using lots of glue and pins, especially along the leading edge. The tip area may be a bit tricky since there is a slight compound curve; but with a little patience and a half-dozen spring clothes pins, it can be readily made to fit smoothly into place. Check by feeling to make sure that the planking is contacting the ribs tightly all along the span; add a pin or two in any doubtful spots. Now, let this assembly dry overnight before moving it!

The same procedure is carried out with the other wing panel. Finally the center ribs are added and then the center planking (top and bottom) then the wing is finish-sanded smooth all over and is now ready to cover. Before covering, though—just check the strength of the uncovered framework! The whole reason for the rather involved method of construction given above is that balsa wood expands appreciably when really saturated with water, and then shrinks just like tissue as it dries. This shrinkage "pre-stresses" the wing structure and provides a powerful anti-warping force.

The stabilizer is made up by first cutting out and assembling the spars, ribs, trailing edge, and tips. This assembly cannot be pinned down flat to the board, since it has a symmetrical airfoil, so care is necessary to keep the structure straight. Next, the top and bottom planking are applied—soaking wet—and after drying overnight, the front planking edge is trimmed and sanded straight and flush with the front spars. Now add the leading edge and the center planking. When thoroughly dry, sand to the section shown, so that the stabilizer will fit the fuselage precisely. Finally, the trim tabs are cut free and hinged with soft wire.

Cement the rudder in position on the stabilizer, using the fuselage as a jig to insure correct fit and alignment. Make sure the rudder is perfectly straight with the fuselage centerline! Now, cover all the components with lightweight Silkspan or Jap tissue, then dope as desired; preferably using Aerogloss since it needs no additional fuel-proofing. Our model was finished exactly like the original "Miss America": red wings and stabilizer; gray fuselage and fin. The trim is likewise a duplicate of the 1935 model—we had to make our own decals for this. After painting is complete the wing hold-down dowels are added, then the windshield and side windows. Cement the stabilizer-rudder assembly carefully in position. Now, a Cox .020 and a pair of 2" wheels are all that are needed and the model is finished. Because of the long tail of this airplane and the light weight of the Cox engine, it is quite possible that the model will turn out a little tail-heavy—on our ship we compensated for this by using a fairly heavy pair of wheels and making a steel spinner for the engine. If additional nose weight

Miss America

(*Continued from page* 58)

is needed, lead shot can be cemented at the bottom rear of the firewall. Our model, ready to fly, weighed exactly nine ounces.

Flying the "Miss America" is no problem. If it has been accurately built according to the plans and instructions, and balanced exactly at the point shown, all that remains is to fire up the engine and let the model go! Owing to the limited power used on a model of this size, adjustments are not at all critical and the trim tabs may be set to make the model fly just about any way you may happen to want. We fly our "Miss America" on a full tank of fuel, just like the original, and we would consider it sacrilege to install a dethermalizer. After all, in 1935 we built model airplanes to stay up—not to come down!