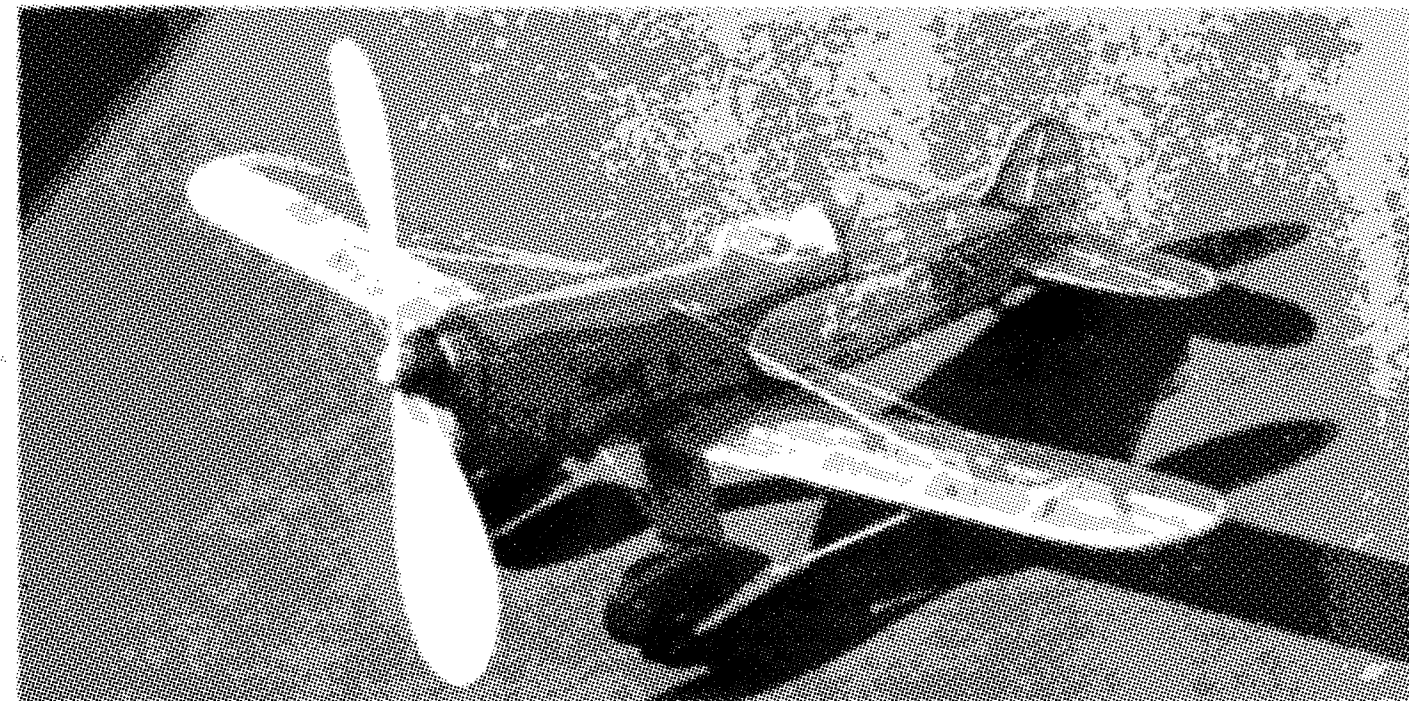


CIRRUS 349 CU. IN. POWERED WEDELL-WILLIAMS MODEL 22 "WEE WILL-JR" Walt Mooney 6-6-84



PEANUT "Wee Will Jr."

By WALT MOONEY... With a long nose, large horizontal tail surface, and long landing gear (for propeller clearance, this aircraft had lots of prerequisites for becoming a successful scale model.

This is a Peanut Scale model of the 1931-32 Cirrus 349 cu. in. powered racing plane. The early thirties saw the emergence of aerodynamically clean wire-braced monoplane racers powered with in-line aircooled engines. Wee Will Jr. is typical of this class. Because of the circumstances of its design, maybe evolution is a better term. It was designed somewhat differently, then remodeled by crash and rebuilt in the configuration modeled. Wee Will Jr. has features which inspire a Peanut Scale design. These include a long nose, and a relatively large horizontal tail, as well as a long landing gear so a long propeller can clear the ground for R.O.G. takeoffs.

A five-view of the real airplane, also known as "Model 22," is available from R.S. Hirsch, 8439 Dale St., Buena Park, Ca. 90620. Mr. Hirsch has 300 racing airplane drawings for sale and his brochure costs only \$1.50. It is an excellent source of information, and inspiration. (Hirsch sold all of his material to Repla-Tech International, 48500 McKenzie Hwy., Vida, Oregon 97488.)

Over several years, Wee Will Jr. was powered with two successive Cirrus engines and a Menasco. Our model is of the airplane with the 349 cu. in. Cirrus, because it had a propeller spinner and more clearance for a rubber motor under the cowl. The color scheme was two-tone blue, with a medium and a light blue, and white numbers and lettering. A white pin stripe separates the color line.

Well, let's make this cute little thing. Start by cutting out all the sheetwood parts. It always seems to go faster if all the

parts are cut out first and then the structure is assembled, rather than cutting out the parts as the structure needs them for assembly. (That may not actually be the case, but it seems so).

The tail outlines, wing tips, and outsides of the wheel pants are cut from 1/16 sheet balsa. Two nose block parts, two nose plug parts, two landing gear struts, four wheelplant centers, and the front top former, as well as the two sub-ribs, are cut from 1/8 sheet for you can cut twice as many of each and laminate them for thickness using 1/16th sheet). Body formers are 1/32. The piece of the fuselage side framing that goes just above the wing is cut from 1/16. All parts are balsa.

Build two fuselage side frames (they are shown hatched in the side view), directly over the plans. Straight pins are excellent for locating the longerons, but do not poke them through the 1/16 squares, which are liable to split and will at least be weakened.

While the side frames are drying, build the wings and tails, also directly over the plan. The wing tips should be raised off the plane of the paper by 3/16 of an inch at their extreme outer end. They should be flush with the top of the leading edges and down at the plane of the plan at the trailing edge. Cement the sub-ribs to the outside of the two centermost ribs to provide a mounting place for the landing gear struts. Wing spars are cemented into the rib notches. The forward spar is bent slightly down to meet the tip. The rear spar, which is 1/16 by 1/8, on edge, will be about half above the tip and will be tapered down to match the tip thickness at

its outboard end.

The vertical tail outline must be shimmed up off the plane of the plan by about the thickness of a file card so as to be symmetrical with the 3/32nd thick spar and ribs. Or you can simply make it directly over the plans out of 1/16 thick parts like the horizontal tail.

Take the fuselage side frames from the plans and separate them, using a piece of thin razor blade. Now assemble a fuselage box by adding top and bottom cross braces at each of the fuselage frame up-rights. Now add the fuselage top formers. When this is dry, add the top decking and the top and side stringers. To keep the stringers thin and still not have them sag too much when the model is covered, use very hard balsa or model railroad basswood for stringers. The stringers should be 1/32 by 1/16 installed on edge. They are sanded thinner towards the rear and installed flush with the tail post. (The three bottom stringers are installed after the wing is installed on the fuselage.) Now using an Uber Skiver, with a sharp new blade, cut out all the top fuselage frame cross pieces that would interfere with the rubber motor. (That is all of them, by the way.)

Remove the wing assembly from the plan and sand the leading and trailing edges to the airfoil contour. With the center section pinned down to the work board cut about 1/32 of an inch out of the spars adjacent to the inside or one of the center ribs and cut the leading and trailing edges just outboard of the rib. Raise that wing tip about 3/4 of an inch and cement the cut ends of the spars and edges to-

gether again. Once this dihedral joint is dry, do likewise to the other side of the wing assembly.

Now lightly assemble the components of the model and check that the surfaces appear to be lined up correctly. It is easy to spy misalignments at this point, and lots easier to fix them before the model is covered.

Now is the time to complete the cowl sides and bottom and to fit the nose plug into the fuselage frame and to carve the noseblock and cowl to contour.

Carve and sand the wheel pants and landing gear struts to contour and test fit them together and in location on the sub-ribs of the wing.

Once you are satisfied with the bare bones assembly, carefully disassemble the components, and cover them with tissue. The fuselage can be completely covered with light blue tissue, except for the bottom, which can only be completed after everything else is covered and assembled. Then add the bottom fuselage formers (which are simply short spacers for the stringers), and add the three bottom stringers. The dark blue part of the fuselage is double covered with darker tissue over the light blue. The landing gear legs and wheel pants are covered with dark tissue also.

Propeller installation follows standard procedures using a nylon thrust button and a plastic six-inch diameter propeller as supplied by "Peck-Polymers." A short length of 1/16 dia. aluminum tubing is used for a rear motor peg. The propeller spinner is carved from balsa, split and fitted to the prop.

Two-pound test monofilament fishing leader is used to simulate the wing and tail brace wires. With the modern Cyanoacrylate adhesives (super glues), it is a simple matter to poke a hole in the right place and insert the monofilament holding it in place with a small drop of adhesive.

Unfortunately, Wedell-Williams used a windshield that wasn't a simple wrap-around, so that to be exactly scale in this area requires a male mold and a vacuum-formed windshield. (A simpler wrapped around shape won't detract too much from the model's appearance, however.)

Control surface outlines, and cowl details are simply drawn in with felt pen.

The sign on the fuselage side is another thing that is really required to make this model look good, and unfortunately the letters are only 14 point at the correct scale. So make a couple of decals.

First get some blank decal paper. Model shops that specialize in quality plastic models carry "Microscale decals," or "Scale Master" decals will probably have some blank decal sheets. Second, get a sheet of white Helvetica medium 14 Pt. rub-on lettering. Third, get some white correction fluid, and fourth, you'll need a can of spray-on clear gloss lacquer.

Now using a fine nib pen and the correction fluid, draw the arrow with the triangle and wings on a piece of blank decal paper. Then carefully rub on the white lettering for WEDELL WILLIAMS above

and AIR SERVICE CORP. below the arrow. Now carefully give the whole sign a very light coat of lacquer. After this dries, you can hit it with another heavier coat of lacquer. When this is dry, it can be used just like any other decal.

I suspect that the arrow should point forward on both sides of the model, but I only had pictures of the right side of the real airplane, and I made both decals alike and got them on the model before I realized the possible mistake.

Flying the Wee Will Jr. is similar to most other Peanuts. Right and down thrust was built into the model, which turned out not to need any thrust adjustment, so the built-in adjustment had to be removed! The model should balance about halfway between the front and the rear spar.