

A C/L Semi-Scale Profile Wedell Williams Racer

By Michael D. Garmon

The classic elegance of one Golden Age racer inspired this profile C/L Stunter. It uses .40-.51 size engines and uses the most modern of moments.



Striking color schemes characterized the Golden Age racers and the Wedell was no exception. The author poses with his model of Jimmy Wedell's black and red 1933 #44 racer. All the trim was done with MonoKote.

The National Air Races held during the 1930s spawned some of the most exciting and beautiful airplane designs in the history of aviation. Notwithstanding, most of the racing planes of the era were built by small companies on a very limited budget. Their performance exceeded that of the first line military craft then in use.

Although, not as well remembered as the *Gee Bee's* and *Travel Air Mystery Ship* of the most successful of these racing planes was the Wedell Williams series of racers. Built by the Wedell Williams Air Service Corporation and powered by a Pratt & Whitney Hornet Engine, the Wedell Williams racers were flown by the top racing pilots of the era such as Jim Haizlip, Jimmy Wedell and Roscoe Turner. Although they were as fast as some of the *Gee Bee's*, the Wedell Williams was a better handling aircraft and was much safer to fly than the deadly *Bee's*.

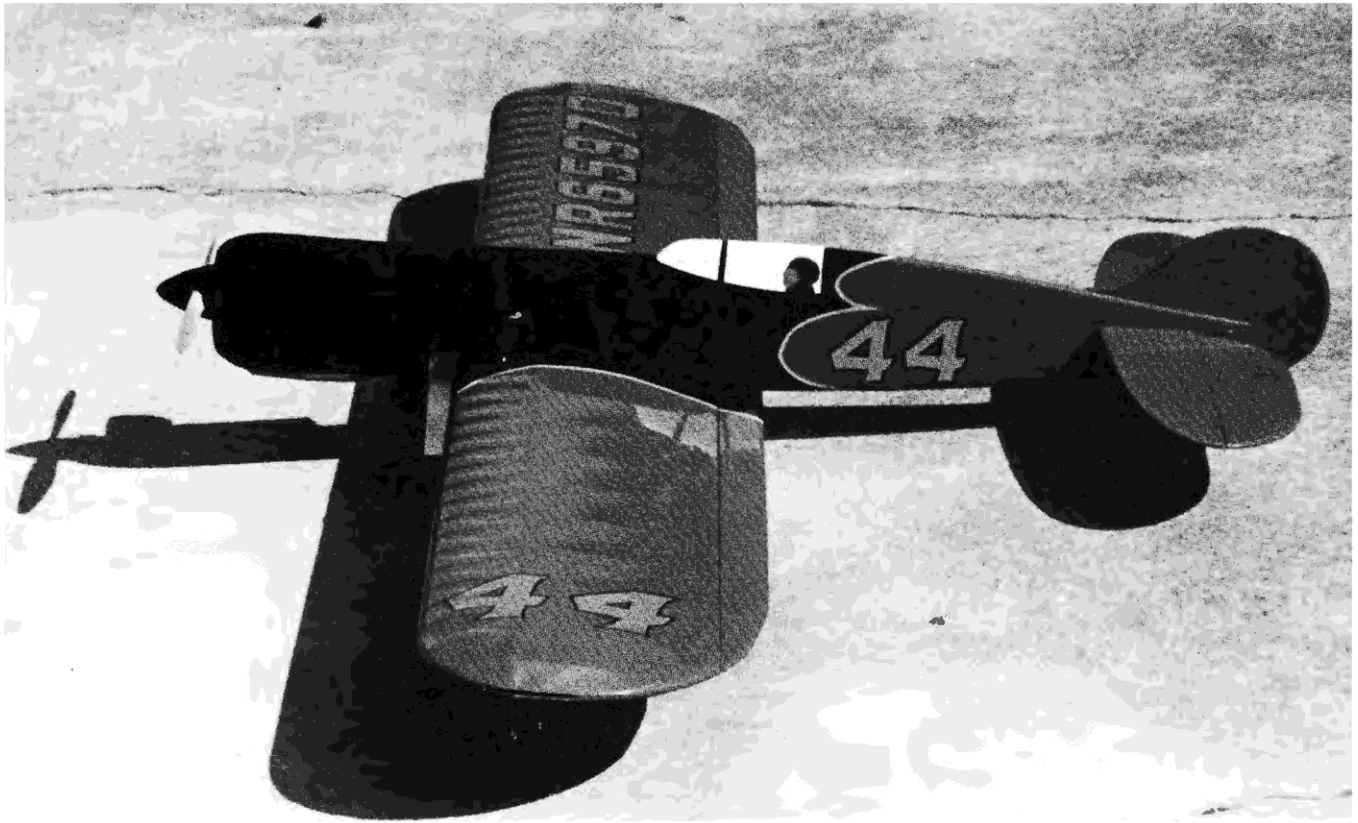
Since the Wedell Williams racers have been flown by many different pilots, there are more than one or two scale color schemes available to the model builder. My favorite is the black and red 44, as flown by Jimmy Wedell.

Looking at a three-view drawing of the Wedell Williams, I realized that due to its constant chord wing and generous fuselage side areas and long tail moments it makes an excellent subject for an easy to build semi-scale profile stunter. Designed for .40-.51 size engines, the model is 59 3/4 inches long and has 650 square inches of wing area. The design utilizes no exotic materials and does not require the expensive contest balsa.

If you want to build a Wedell Williams Stunter, I recommend you order two sets of plans and build from one set and cut the other up for patterns to speed the construction.

Construction

The fuselage is cut from one 1/2 x 6 inch balsa sheet or two 1/2 x 3 x 36-inch balsa sheets edge glued together. Epoxy the 1/2 x 9-inch maple engine mounts in place and when dry, install the right and left 1/2 inch ply doublers with epoxy. Drill holes for the engine mounting bolts and install blind nuts. Drill holes for the main landing gear mounting and then add the sheet balsa tripler to the left fuselage. Round the outer edges of the fuselage to the shape of the left side of the balsa tripler and blend in with the fuselage.



A definite touch of the Golden Age characterizes this semi-scale stunter. The airfoils and moment arms are decidedly modern, though.

Start the wing by splicing together the $\frac{1}{4} \times \frac{3}{8}$ -inch spars, the $\frac{1}{2} \times \frac{1}{2}$ -inch leading edge, the $\frac{1}{4}$ -inch square trailing edge and $1\frac{1}{2} \times \frac{1}{16}$ -inch trailing edge sheeting. When dry, mark the rib locations on spars, leading and trailing edges. Lay the bottom spar on the building board and glue ribs to spar with instant glue. Add top spar, leading edge and $\frac{1}{4}$ -inch square trailing edge and allow to dry. Using a sanding block taper the trailing edge to match the contour of the ribs. Install the $1\frac{3}{4} \times \frac{1}{16}$ -inch trailing edge sheeting and $\frac{3}{32}$ -inch vertical grain sheet balsa spar webbing. Install the $\frac{1}{4}$ -inch sheeting reinforcements to the inside edge of the two center ribs and install the $\frac{1}{8}$ -inch plywood bellcrank mount.

Install all half ribs and install the bellcrank, leadouts, flap pushrod and sheet center section with hard $\frac{1}{16}$ -inch sheet balsa. Glue on the wing tips, tip braces and tip ribs and block sand them to shape. Install leadout guides in the location on the plans or install an adjustable leadout guide. Add one ounce of weight to the outboard wing tip. Cut wing flaps from firm $\frac{1}{4}$ -inch sheet balsa and join with a crossbar of $\frac{3}{32}$ -inch music wire.

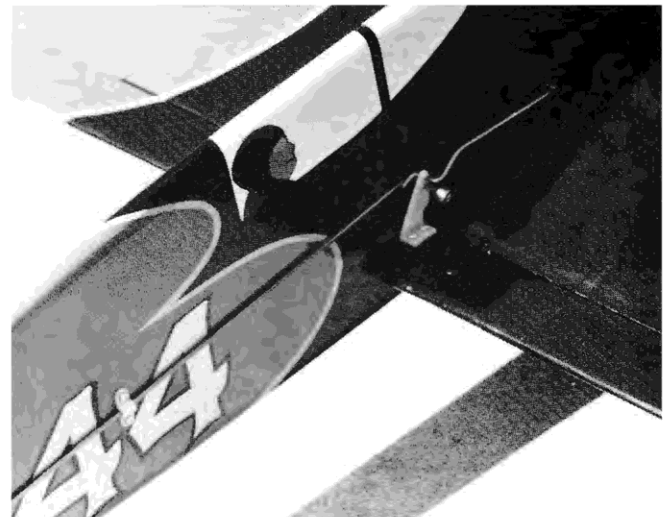
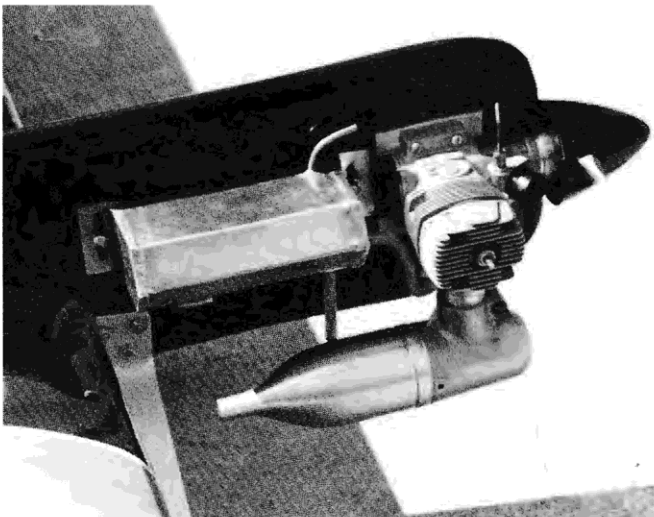
The main landing gear is made from $\frac{3}{32}$ -inch tempered sheet aluminum as shown on the plans. When bending the landing gear legs, ensure the bend has a large radius to prevent cracking.

Cut the stabilizer and elevators from firm

$\frac{1}{4} \times 3 \times 36$ -inch sheet balsa. Join the elevators together with a $\frac{3}{32}$ -inch music wire cross bar. Round all edges and hinge the elevators to the stabilizer. Cut the fin and rudder from hard $\frac{3}{16}$ -inch sheet balsa and round edges.

Assembly

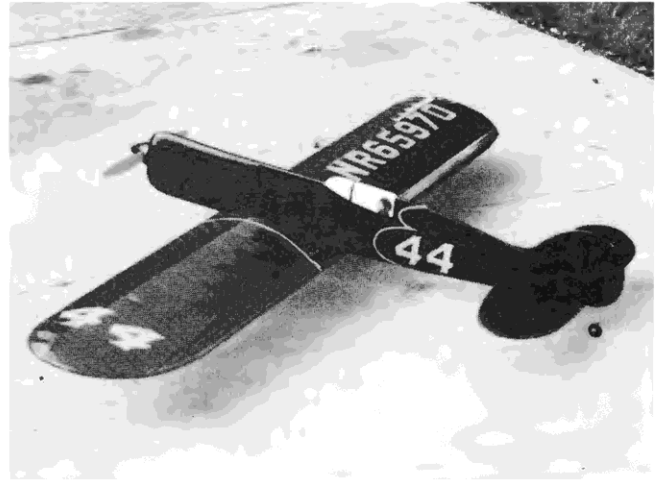
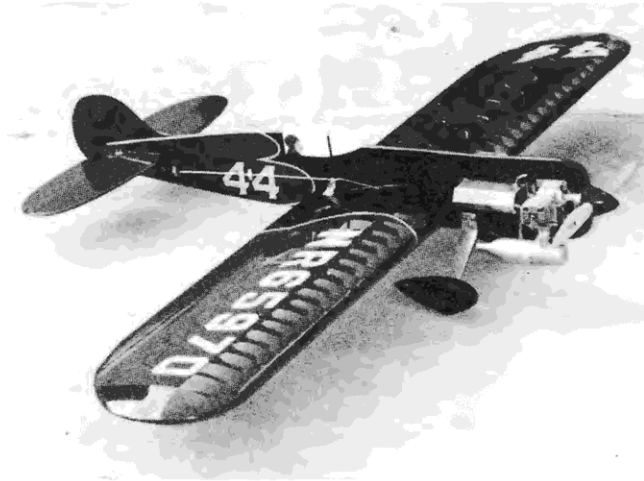
Install flaps in the fuselage wing cutout and then slide the wing into fuselage, and when satisfied with the alignment, glue it securely in place. When dry, hinge the flaps to the wing trailing edge. Slide the stabilizer and elevators into the slot in the fuselage and when satisfied with their alignment, glue in place and allow to dry. Glue scrap



A standard Stunt engine installation is shown here (above left), but with the addition of an R/C engine, and 3-line control system, the Wedell could be a good

profile scale model. Can't deny the easy access to the control system with a profile (above right). Note the nylon bracket which eliminates pushrod bowing.

Wedell Williams Racer



Screwed to the nose of the Wedell Williams is a SuperTigre .51 (above left), but a variety of engines, from the Royal .40 up to the .51, have proven they can

handle the plane. Fire engine red and black are the main colors (above right) separated by a thin golden stripe. The numbers are silver with a black outline.

balsa filler into the aft end of the stabilizer slot and glue on the fin and rudder. Install a medium Sig R/C type control horn on the flaps and elevator. Make the pushrod from $\frac{3}{32}$ -inch music wire and connect to the control horns. Install the two pushrod braces and ensure the controls operate freely. Install the main landing gear, wheels, wheel pants and adjust for proper tracking. Install $\frac{1}{16}$ -inch music wire tail wheel strut.

The original model was finished entirely

with MonoKote. If you feel you must use a painted finish, apply the paint sparingly as paint equals weight. Many builders in our club have had great success painting their fuselages with Rustoleum and using MonoKote on the flying surfaces.

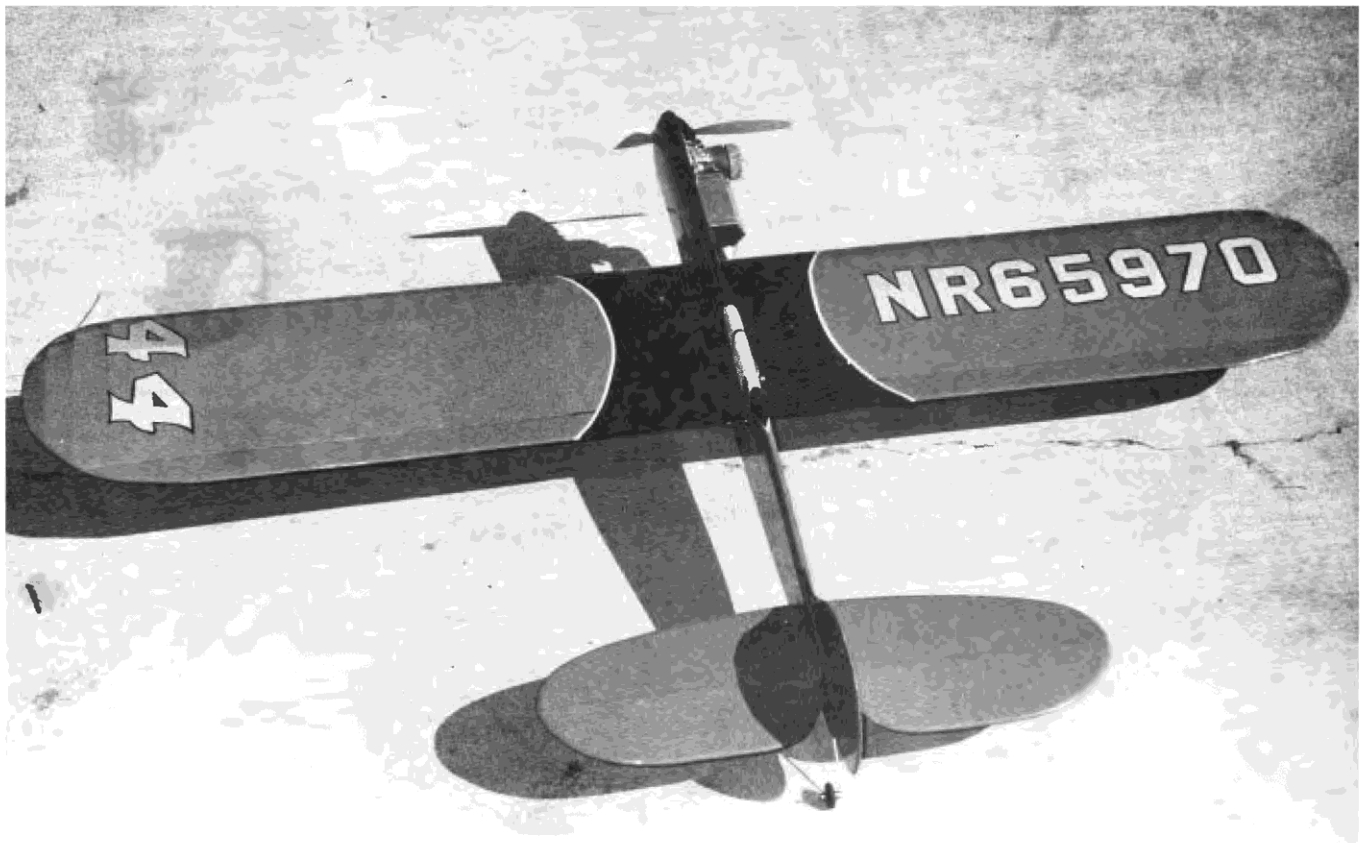
Pre-flight & flying

Inspect the airplane for warps. Check the balance of the model. It should balance $\frac{1}{2}$ inch to $\frac{1}{4}$ inch forward of the wing spar.

Inspect the control system for freedom of movement, pushrod flexing etc., test run the engine, ensuring that the tank is adjusted to provide the same engine rpm upright or inverted. After engine shut down, check all bolts, nuts and screws for tightness.

The model as presented is capable of flying the AMA Stunt pattern with ease. With the installation of a three-line bellcrank, it would make an excellent competition profile scale model.

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The Wedell racers were flown by more than one pilot so there was a variety of color schemes to choose from, besides Jimmy Wedell's #44.