

Old NC 20961 strutting her stuff—nothing prettier than a well-designed biplane in the air. Good performance equals fun, and fun is what it's all about.

# FIELD & BENCH

## STERLING'S WACO S.R.E. KIT—K&B .40 R/C ENGINE

**BY JOHN KIKER . . . Sterling Models' famous Golden Age biplane is up to their usual fine kit standards, thus a happy project that is moved about in good style by a K&B 40 R/C engine.**

• All "Field and Bench" reviews are of necessity generally very much alike. This one, on Sterling's Waco, will not be an exception to standard *Model Airplane News* (*M.A.N.*) practices. Despite this fact, those of you like myself who are on the long side of 50 years of age and like biplanes should read on—especially if you grew up around an old airport, where the Waco was considered an elite member of the private airplanes. You younger modelers will one day also reach 50, so you may want to purchase your kit now, save this issue of *M.A.N.*, then, when you reach my age, enjoy building and flying the Waco SRE as I have.

Starting in the late 1930's and early 1940's, my life revolved around flying. To fly a Waco was every beginning pilot's

dream, and certainly I was no exception! I flew several models of the Waco, but never had an opportunity to fly the SRE. When the late Ed Manulkin came out with a kit of the model, I knew I had to at least partially fulfill my dream, by building and flying his R/C version of the real one. Furthermore, I decided I just had to do a "Field and Bench" for *M.A.N.* Two phone calls were made, one to Walt and the other to Ed, with the end result being approval for the review and, shortly thereafter, the arrival of the kit.

A quick assessment of the plans and contents of the kit revealed that it was of the typical build-up construction and materials found in all of Sterling's R/C models.

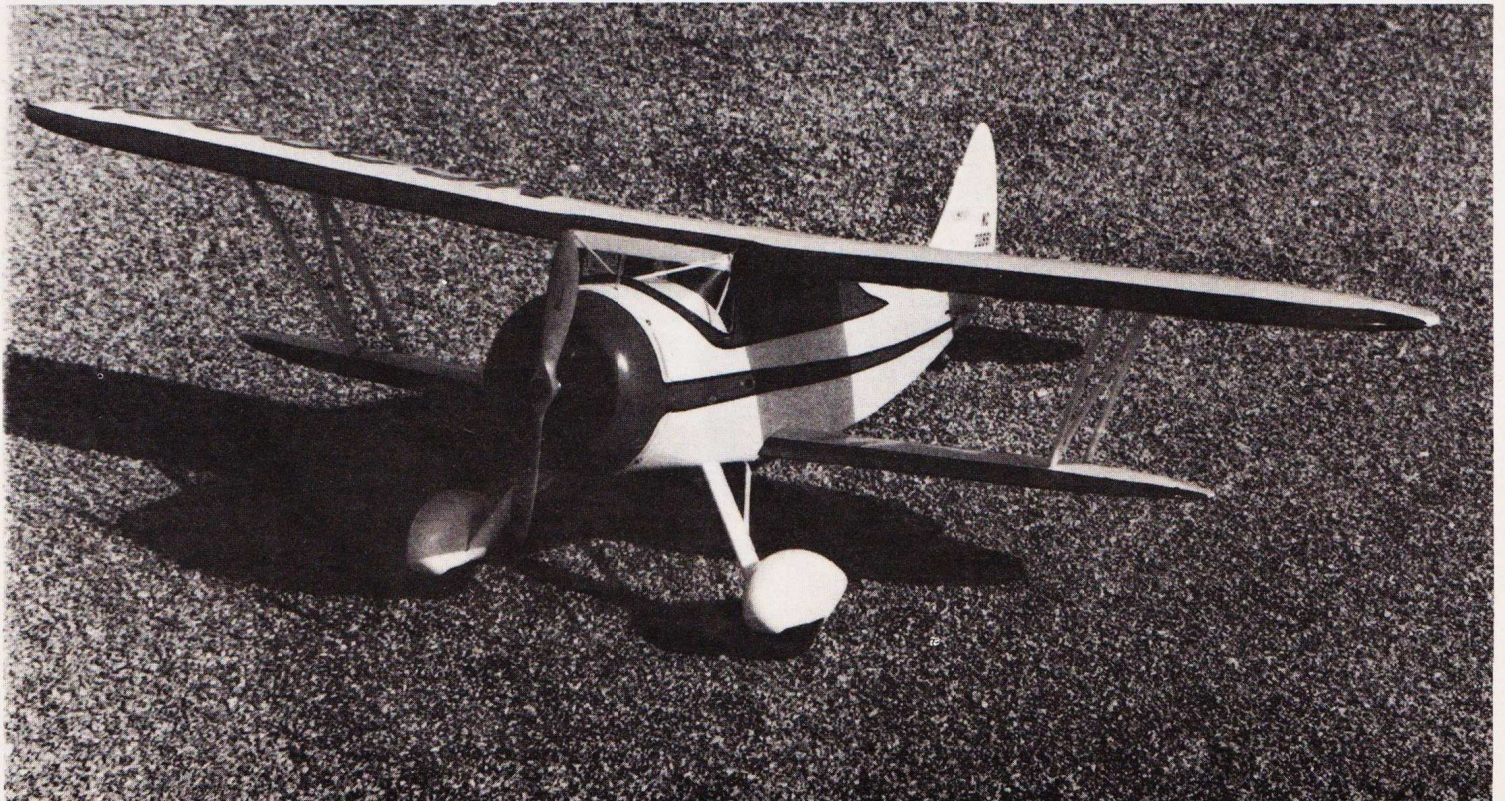
The balsa was of good quality with one

or two minor exceptions. The ABS plastic model wheel pants and cowl were excellent. The hardware package, i.e., motor mounts, screws, nuts, bolts, hinges, push rods, etc., was complete and of good quality. The plywood parts, however, were not up to par. This problem has been corrected in the later run of kits. The plans were, in general, detailed and easy to follow. A nice final touch was inclusion of the beautiful Waco decals.

Construction of the model was not very difficult, although it was obviously designed for the experienced builder. Because of this fact, I will not go into a detailed discussion of the construction, but limit my comments to some areas that may be helpful. This, along with the



The Waco S.R.E. at rest on the tarmac—Waco manufactured more custom-built biplanes than any other aircraft mfr., to suit the individual tastes of the pilots.



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photographs, will complete the story.

It seems appropriate here to make a few general comments. The first is that the die cutting and accuracy of parts were very good. Construction time was held to a minimum by the use of a variety of glues like Five-Minute Epoxy, cyanoacrylates (Jet & Hot Stuff), Titebond, and Fifteen-Minute Epoxy. The fuselage is built on a crutch and goes together quickly. Goldberg's "Jet" was used here, both for structure as well as to act like a clamp. One should pre-drill holes in the plywood parts for landing gear, "J" bolts and wing hold-downs before assembling. The "J" bolts were a little short, and required using a Dremel tool to route a little of the wood away for the nuts. Be certain, also, that the engine mounts are put in before all the stringers are installed and the nose covered with sheet balsa.

Finally, before covering, temporarily mount the radio gear and install push rods for the elevator and rudder.

The wings can best be built on a large board, one the full size of the plan sheet.

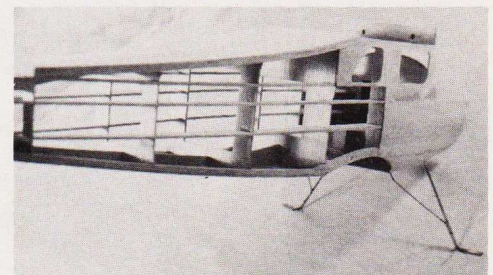
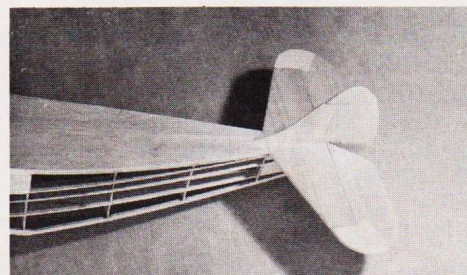
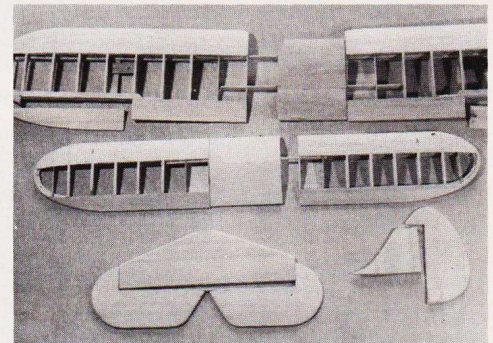
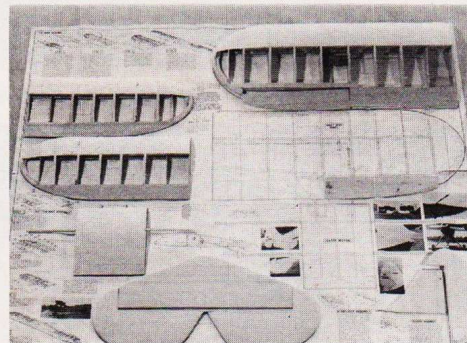
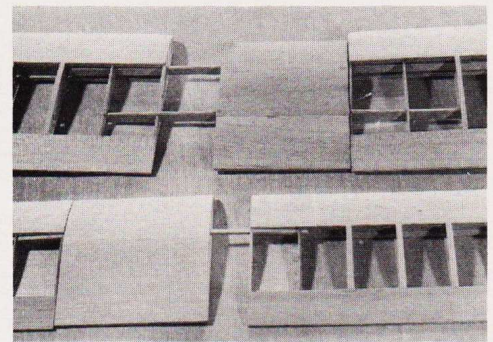
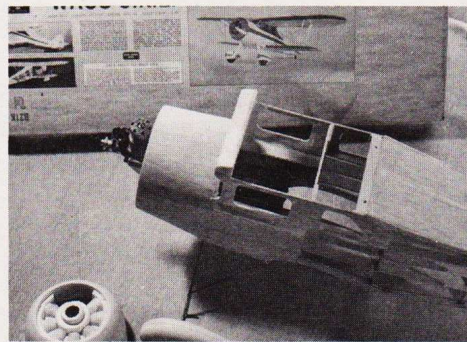
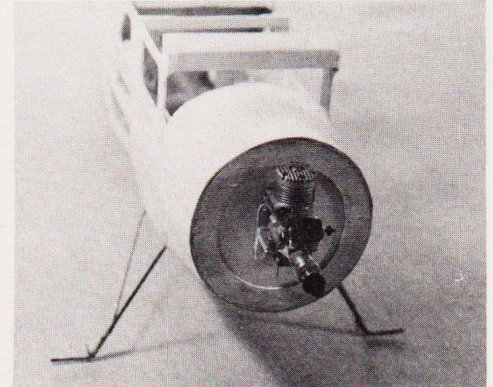
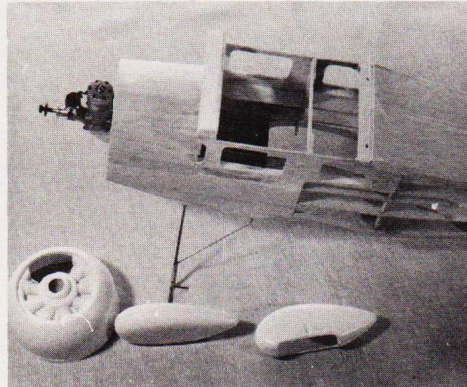
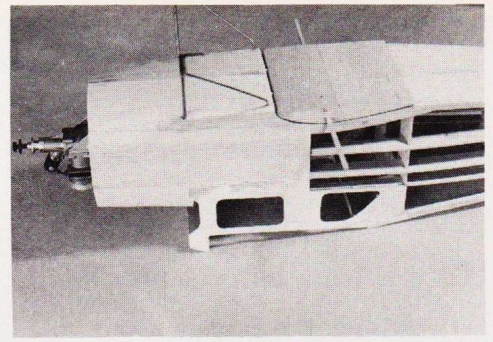
This way, all four wing panels and two center sections can be built at one time. There are a lot of parts in the wing, but with Jet or Hot Stuff and Titebond, they go together very quickly.

The tail surfaces require little comment; sand them well and prehinge before installing on the fuselage. This saves time and makes the job easier. Now with all the major components completed, it is time to fit everything together. Then the engine is installed, the cowl and wheel parts fitted and the wing struts are built and fitted. My Waco fitted together perfectly, which was a tribute to the accuracy of the plans and parts.

The plane called for a K&B 40 R/C engine. Anyone who has ever owned a K&B 40, knows this is an excellent engine. I have a number of them, and think that it is one of the best sport engines on the market. Naturally, I used one; however, there are many good 40's on the market, so it is really a matter of personal preference.

The full-scale Waco had a set of controllable cowl flaps on the bottom of the fuselage to provide adequate cooling, and I cut a slot in the bottom of the model's cowling,  $\frac{1}{4}$ " wide x  $2\frac{1}{2}$ " long, and two small slots even with the cylinder-head that were  $\frac{1}{4}$ " wide x  $1\frac{1}{2}$ " long. These don't detract from the looks, yet they keep the engine cool, which is a must.

It was now time to finish the model, and I elected the shortcut covering method of using Solarfilm and MonoKote. Any type of finish chosen should be aimed at keeping the tail light; I was to learn this during the first flight. The model looked good when finished, and its white and red color scheme shown really appealed to me. The red trim was epoxy. With some effort on the part of the builder to add some details,



Excellent collection of construction photos that take one through every step of detailed kit assembly.

this plane should be a fine contender for Stand-off Scale contests.

The day for the first flight test was beautiful. My good friend Owen Morris was called to take the photographs, as were a few of the other club members who had

asked to see it fly. The first flight was uneventful except for a slightly aft C.G., which made the model touchy in pitch. The first landing got a little exciting. A couple of ounces of lead on the firewall, and the



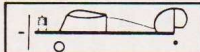
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Specifications	
ENGINE	COX TD 049-051
RADIO	2 Channel
WING	Foam, no sheeting required
FUSELAGE	Plywood & AA Grade balsa
SPAN	36" Area 200 sq. in.
WEIGHT	20-25 oz. (No. 106)

**KIT INCLUDES:** Machine-cut parts including fuselage balsa; motor mount, hardware, landing gear; formed ASA plastic cowl and canopy; full-size plans. Suggested kit list price \$31.95.

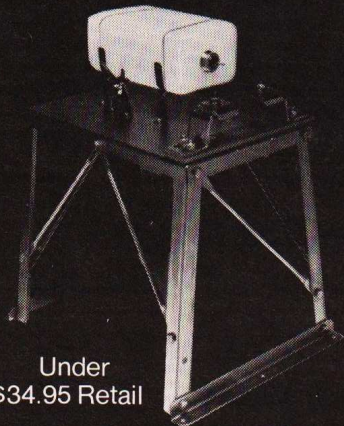
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machine to fly. The model, K&B engine, and my very old World Engines radio all functioned perfectly. What more could one ask? My dream of flying a Waco SRE had been fulfilled with Sterling's model R/C version. ■

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