

# 1/4 SCALE SPACEWALKER

78-INCH SPAN HOMEBUILT IS IDEAL  
FOR THOSE WHO'D RATHER BUILD A  
SLIGHTLY SMALLER SPACEWALKER

BY EMIL AGOSTA

DRY RIDGE MODELS  
59 McCURRY ROAD  
WEAVERVILLE, NC 28787  
(704) 658-2663

call it the affordable Spacewalker because its size dictates standard radio, glow-engine, wood sizes and hobby shop items.

This 1/4 scale Spacewalker isn't the usual giant scale model one might expect to see at a Fly In. It's relatively diminutive in comparison, but it's not exactly a peashooter either.

Its specifications are:

Wingspan:	78 inches
Weight:	8.5 ounces
Chord:	13.5
Wing Loading:	18.60 ounces/sq.ft.
Wing Area:	1,053 sq.in.
Airfoil:	4419
Power:	O.S. Max .46 SF

The wing loading is fairly respectable. For expediency, a 1200 MA airborne pack was cannibalized from a hangared big bird, but a 550 to 800 MA pack would have been preferred. It's easily transportable, and field-assembles quickly with two nylon bolts. It's a real cutie, reminiscent of the racers of the Golden Era during the 1930s. It took top honors in Stand Off Scale and Sport Plane at the Blue Ridge Mall Show in Hendersonville, North Carolina, hosted by the Western North Carolina R/C Society. *Who said beauty is only skin deep?*

While this project is not intended for the rank beginner, it is a pretty safe bet as a transition scale model from simple scale, like its predecessors, the J-3 Kitten and the J-4 Sportster. (See *Scale R/C Modeler* December 1987.)

The enthusiasm of your writer's early youth in aviation quickly came to mind while watching the full-scale bird being developed and constructed from its inception. At that time, the R/C J-4 was being readied for flight testing, and the 1/4 scale Spacewalker had to wait its turn at the drafting table.

A word about power: Like the lightly loaded 10-foot J-4 (powered by a .61 O.S. Max SF), the Spacewalker was not immune to skepticism from the doubting Thomases. It was mistaken for a 12-pounder with an engine much larger than the O.S. Max .46 SF.

This engine swings a big 12x6 prop. Remember when these props were used only on .60 engines? The weight-per-hp ratio makes for a very easy-performing airplane.

The 4419 airfoil is fairly thick, and it provides the Spacewalker with a slow and graceful flying scale wing. The force distribution also does not deviate from the full-scale bird's specifications. They include three degrees of positive incidence in the wing, and minus two degrees of incidence in the stabilizer.

Lightness and structural integrity were the criteria. Dario's admonishment about airplanes being designed to fly, not to crash was kept in mind while developing the working drawings.

The wood rack had enough balsa to get started. The el cheapo Taiwan table saw contributed much in cutting balsa down to size. Frugality is imperative with today's balsa prices. A cursory examination of the drawing will show conventional construction. For the most part, scale layout was followed with the exception of the one-piece wing which fits nicely into a compact hatchback. The ribs lay flat on the bench; ditto for the wing spars. Nice and easy. The curved areas of the tail feathers are laminates of 1/16 x 1/4 balsa strips. Very light and strong.

Caution: Tail bracing cables are functional!

Fiberglass cowls and wheel pants are available from Fiberglass Master.

Finish is butyrate dope over Solartex. The builder's experience in covering and

finishing may dictate alternative methods and materials. It is suggested that the model be cleaned with Prepsol, and primed with nitrate dope before painting.

The dummy engine was constructed "a la fudge" and it has fooled a few modelers. The aluminum exhaust stacks and pipes look authentic. The K&S tubing must be annealed by applying heat and quenching in cold water before bending. This process ensures a nice smooth radius, free of kinks. They are assembled with epoxy glue and touched up with aluminum paint, to resemble welds. It is worth the effort. The plans and instructions tell it all.

Unfortunately, Williams Bros. doesn't manufacture injection-molded Continental engine cylinders. Balsa U.S.A.'s vacuum-formed cylinders require more assembly time, and are not as sturdy by far, but they fudge out pretty nicely.

Okay. Let's go flying. But where? It took more than two months to locate a suitable flying site which would accommodate a model with wheel pants. It was felt that the Spacewalker must fly with its pants on, completely suited up for Sunday Meetin', just like "big sister." No pants on, no flying!

In these parts of Western North Carolina, flat land is mighty scarce, and if it does exist, it's usually farmed. Luckily, a member from the Blue Ridge R/C Club from down in Greer, South Carolina, arranged a flying date for us so, after an hour-and-a-half drive, the field was located.

The runway grass was ideally short, with a large, beautiful lake on one approach, and tall trees on the other. A small boat was available.

After some picture taking, (exalted editor say, "One must take pix before fly-





There are several existing full-scale Spacewalkers, and more of them still are under construction. Photo documentation for them is available, as well as glass cowls and wheel pants. See text for details.

Emil Agosta's 1/4 scale Spacewalker is ideal for those modelers who prefer a smaller aircraft because of their particular size limitations.







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ing,") and the usual ground checks, the Spacewalker was fueled up with the whole 12 ounces. The engine did not start up with the usual two-cycle whine, but sounded rather like a cheap, noisy house fan. With the stock muffler completely inside the cowl, the noise level was astonishingly low. The needle valve has to be tweaked *very slowly* to avoid over-leaning. Since the engine had been run in on only one tankful of fuel, the mixture was left a little on the rich side. The cowl openings and porting provided sufficient cooling.

Carter Pounders, our R/C honcho, escorted the glimmering slinky maiden out to the runway, and gently turned her into the wind, facing the lake. (At this point, I wondered how well the little kicker on the small aluminum boat would turn over.) My fears diminished as she bore down the runway and gently lifted off on her own.

It really looked like Jesse, himself, was at the controls of the full-scale bird. The engine sounded as if it were running inside a stove pipe. Eerie! Some slight gurgling could be heard on a fly-by. It was grooving well, though slowly. The hammerhead turns were realistic and the loops were large and lazy, with no playing of the throttle.

On the second flight, the idle was set on the low side because *this* baby doll doesn't want to come down. After a couple of passes, she settled down on the runway and taxied up to the pit area.

You know the feeling. It's a wonderful kind of a high — mixed with relief — after that long wait, and months of planning and building. Satisfaction always feels good when you see *your* new bird flying just like the *big* bird.

Some hints for you "changeneers." Since the beginning of aviation, pilots

**The plans also include instructions for making a clipped wing version, even as Jesse himself has done.**

have done some strange things to their flying machines in order to get them to fly better. Some of the stuff really worked. (Logic and engineering know-how may have reigned.) Some pilots even got their pictures in the papers, complete with a nice eulogy in the obituary.

Modelers, of course, don't run the same risk, but the finagle factor can be a sorry temptation, and "Murphy's Law" sometimes becomes involved in the

finagling process.

Now, the Spacewalker was not initially designed as an acrobatic airplane, but some owner/pilots who steadfastly uphold the tradition of the "Finagle Corps" will finagle to achieve acrobatic performance, until "death do part them from their flying machines."

Designer Jesse Anglin alluded to this enigma, and proceeded to make changes, in the interest of safe finagling, for sake of the acrobatic-minded.

If you're a follower or devotee of the Finagle Corps, and are bent on finagling the 1/4 scale Spacewalker, so be it. Like Jesse, you may want to saw off two bays from each wing panel, or simply build a short wing, but remember, with this clipping job, the size of the spar caps must be increased to 1/8 or 1/4.

Good luck, and happy landings, to long-wingers and clipped-wingers alike.

Want *your very own* Spacewalker?

Contact: Emil Agosta, Dry Ridge Models, 59 McCurry Road, Weaverville, NC 28787, (704) 658-2663

Rolled plans are \$30 ppd (Instructions and Spacewalker logos included).

Glass cowls and wheel pants are available from: Fiberglass Master, Rt. 1, Box 530, Goodview, VA 24095.

Photo documentation available. ●

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