STINSON SR-3

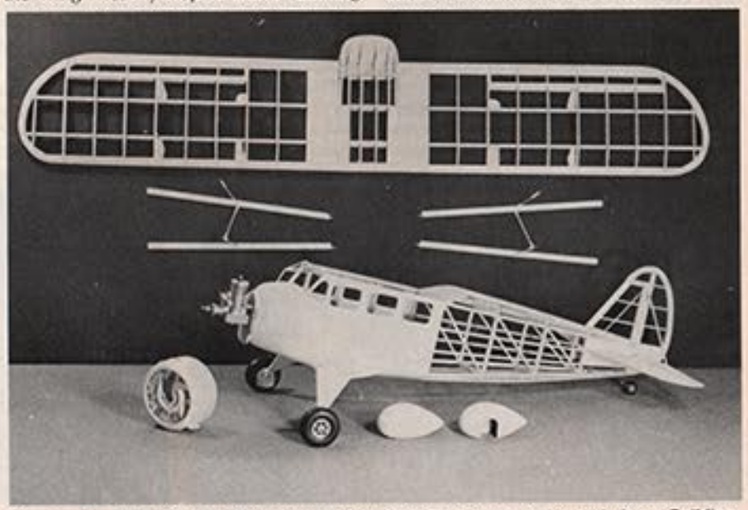
By TED SCHREYER... A lifelong dream of building and flying a replica of a plane of his youth led the writer to this scale R/C project. Power is from an O.S. .10, with rudder and elevator control. Plans are available.

• The Stinson SR-3 is like an unlisted phone; it's there, but only a few people know it. Here's the story. In the summer of '42, I was an airport orphan, as both parents were off learning to fly Piper Cubs. One of the instructors took pity on me and asked if I would ride in the big black and silver Stinson as an observer while he and his student were busy with the instrument lesson. Wow!

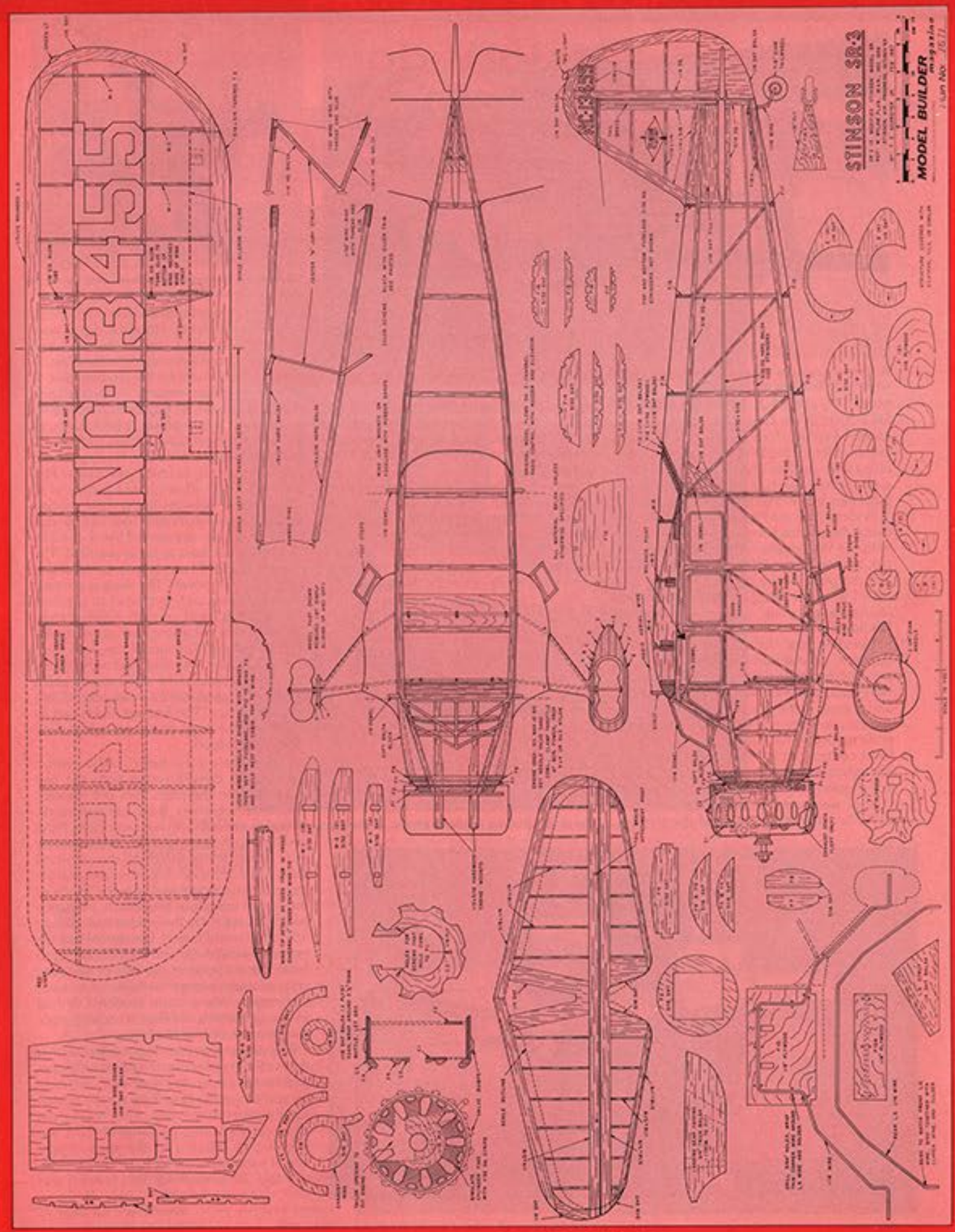
Martin College Advanced Aviation was lettered on the cabin door, and the interior was big and roomy with leather upholstery and a smell like a taxi cab; cigarette smoke, sweat, metal, and fabric, and gasoline fumes. Even belted in I swam around in the rear seat while the pilot and student sat up ahead and discussed the pending instrument lesson.

The student wore green goggles which allowed him to see everything inside the cabin, but the front and sides of the windshield had red celluloid covering so the net effect was a black view of everything outside. When that big silver prop started swinging around in front of the sunflecked windshield and the Lycoming 215 caught with a roar and blowing exhaust smoke, it was only the beginning. As we taxied out, the whole airplane rattled and bounced as the wheels crunched on the gravel. Then came the check and run-up at the end of the runway, and with a roar we went bounding and thumping down the runway, tail up and swaying around until suddenly the only sounds were the throbbing of the engine and the whistle of the wind, and we were leaving the green grass and brown farm fields far below. I watched the underside of the wing—heavily doped fabric—denting in and out as the big plane hit thermals and "air pockets." I made eight flights that summer in NC13455 and another similar SR-3, NC13482, painted red and blue.

In the October/November 1963 issue of *Air Progress* there is a fine story about the Stinson aircraft line. Listed is the Stinson



Construction of the Stinson SR-3 is simple, based on classic construction techniques. Building this scale model is straightforward, and a two-channel radio is all that's needed for control.



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Author prepares to board a Stinson way back in '42; it was this experience that led him to the design and building of this model.

Model SR, and SR-2, and an SR-4, but no SR-3. Also, in the December 1959 issue of *Model Airplane News* there is a William Wylam plan of the Stinson Model SR, and along with another Wylam plan of the SR-5 and a whole batch of photos of the SR-3s that I flew in, I worked up a plan for the SR-3. Evidently it was a modified Model SR, because the photos show a lot of differences with the Wylam plan of the SR. For example, the top of the SR-3 windshield is flat, and the point where the side of the windshield joins the wing is back of the wing leading edge, there is no wing-mounted landing light (NC13482 had a light in the left landing gear fairing), cowl bumps are different, aileron horns in a different location, rudder shape different, and both SR-3s were equipped with radio aerials on the top and bottom of the fuselage.

Presented here is a 1-1/16 inch to the foot scale model for R/C fun flying and maybe a local contest or two. The model flies well enough to go free flight if you've got a good-sized open flying field. Rudder and elevator control were used on the model, and the O.S. Max .10 R/C engine had the throttle clamped at about 60% power to provide realistic flights. Ailerons were built into the model, for appearance sake, but were non-operable, and have been left off the plan for that reason.

This is a model that one should find enjoyable to build. The construction is not difficult, but does require time and effort to complete. I've always enjoyed building. As a kid I made hundreds of Comet, Megow, and Guillow kits, none of which lived up to expectations for smooth, long, realistic

The model Stinson in flight. Photo: R. Bates.

Author's wife, Sumi, holds the Stinson model.

Stinson SR-3 model. Clean lines, nice paint job add up to a satisfying project.

flights—so it was build and use one's imagination for the flying. However, if you want to cut construction time, here are some short cuts: 1) use foam (ugh!) for the wing, 2) duraluminum sheet for the landing gear, 3) aluminum motor mounts, or bolt engine direct to firewall, 4) buy or turn an aluminum cowl, 5) buy plastic wheel pants, 6) use soft 1/4-sheet balsa for tail surfaces, 7) build the wing directly into fuselage (same with wing struts), 8) finish with plastic film covering. But don't send me a picture of it.

The author believes flying scale models should not only externally look like the real airplane, but be constructed like it—and fly like it also—at least as far as practical. The little .10 engine fit nicely into the cowl and gave plenty of power. The wing is removable for carrying and, in case of an accident during flying, held on with rubber bands. Removing the wing also gives access to the R/C equipment. The model may look overdesigned, but it was intended to be strong and reliable same as the real Stinsons, and it is light enough to make an easy takeoff on a smooth surface. The first test flights can be made with the cowl, wheel pants, and wing struts all removed.

Construction is basic balsa wood structure—a boxy *fuselage* with the two sides built on the plan, then put together with cross members, then add bulkheads, stringers, and balsa fill here and there. Bend and bind to the plywood pieces the *landing gear* wires before installing the plywood parts. The hardwood motor mounts give the correct downthrust and absorbs much of the engine vibration. The *cowl* is a separate piece and is held to the front of the fuselage with short wood screws. Remember that the engine needs air circulation for cooling, so leave the air holes at the rear of the cowl and cut away enough of the cowl to clear the engine. Some scale models I've had with round cowls did have a cooling problem, but this one worked okay.

The *wheel pants* are constructed so that they will slip down over the plywood pieces attached to the landing gear strut, and slide up and off just as easy. Take care in epoxying the parts to the L.G. wire, having the pants on and lined up properly, and you will find a solution to the scale model wheel pants problem for future work. A rotary tool for smoothing the plywood and

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hollowing the pants is good.

The *wing* is built on the plan by sliding the ribs over the spars, then adding the notched leading and trailing edges, etc. When the wing unit is completed, you may want to use 1/32-sheet to plank the top of the wing from the fuselage out to the first rib so that the rubber bands don't dig into the covering; this like the ailerons is not shown on the plan. Steam and twist the wing slightly so that the wing tips have less angle of attack than the root (downwash) of about 1/8-inch at the trailing edge. This should be maintained after covering and doping.

Tail surfaces are shown with a separation between rudder and vertical fin, and elevator and horizontal stabilizer so that R/C control can be utilized. However, if free flight is chosen this extra construction should be eliminated to save weight. For movable surfaces, use small plastic hinges that slip into the tail surface edges.

Installation of *R/C equipment* is up to the individual builder. The battery pack and receiver were wrapped with foam rubber and stuffed into the space forward of bulkhead F10. Try to keep servos low in the fuselage for low CG.

Finishing was done by covering the model with lightweight silk, shrinking with water spray and thorough drying, then brushing on two coats of thinned clear dope, followed by two or three coats of color dope, then a top coat of glossy dope. Bare wood, such as, the cowl, should be sanded smooth, then given a coat or two of a dope/talc mix, sanded smooth again and finished with the rest of the model.

Flying should begin with some gliding tests. Take off the wheel pants, wing struts, and cowl, and make sure the model balances at the point shown on the plan, and that the flying surfaces are aligned properly, with no warps except for the washout. Use a place where the grass and weeds grow tall so as to cushion the impact, and hand glide the model, making adjustments until the glide is smooth and straight. Powered flights can be by hand launch in the beginning just to be sure the model gets airborne. Rudder and elevator are large so don't overcontrol. When you have things adjusted so the flights are under control, then add the parts you took off, recheck the balance, and use a nice paved surface for takeoffs and landings. Best of luck. •