

SIMPLE SIMON

By FRANK ROALES . . . Here's a quick and easy R/C model for .049-.051 glow or 05 electric power. Ace foam wings make the construction part even simpler. Practice the "biggy" maneuvers economically.

- Line it up for a fast low pass with a big loop. Rack it around and come back with an in-line axial roll, pull the nose up, climb out, roll it over and split-S out. On the way back roll it over and make a low inverted pass. Grab some altitude and when the engine quits enjoy a long flat glide home.

Fun??? You bet, and that's not all. This performance and the good manners that go with it comes in a very economical package. A couple of ounces of fuel, a Tee Dee, along with your favorite small radio, and your off and flying.

It has all the performance one could want from just two functions, with absolutely no bad habits . . . a very flat

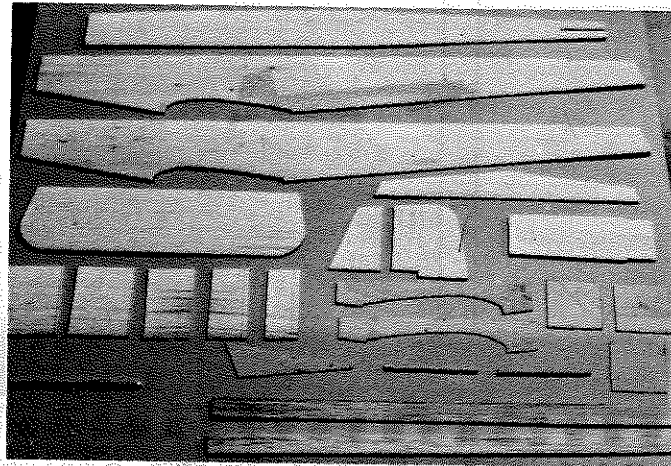
glide, and no tendency what so ever to snap when really slowed down during landing. In fact, to illustrate this point, let me tell you of an incident that happened during the early testing of "Simon."

The early version of Simon had a 36 inch straight ACE foam wing with 4 inches of dihedral. One day while out flying, I took just one too many flights on my 100 ma pack and "lost it." The elevator was full up and the ailerons were in a very slight right turn. I set the transmitter on the ground and watched Simon loop its way up to a tiny dot in the sky before the engine quit, then it set into a big right glide circle just like a free

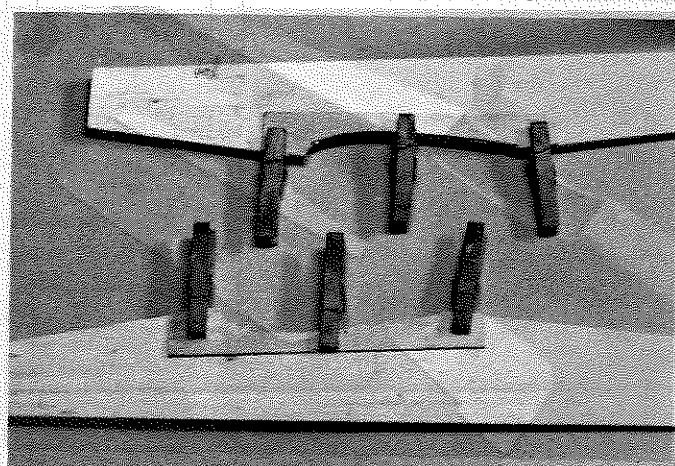
flight. After a short chase on motorcycle, we watched it make a perfect landing about a 1/2-mile down the airport. Not even the prop was broken! Later I learned that total "free flight" time was about 12 minutes. So if you want a super-stable trainer type, just substitute a 36 inch straight foam wing with 4 inches of total dihedral for the one shown. All else should remain the same.

Simple Simon has yet another feature which may well be better than those already mentioned, hard as that is to believe. It is as its name implies, simple.

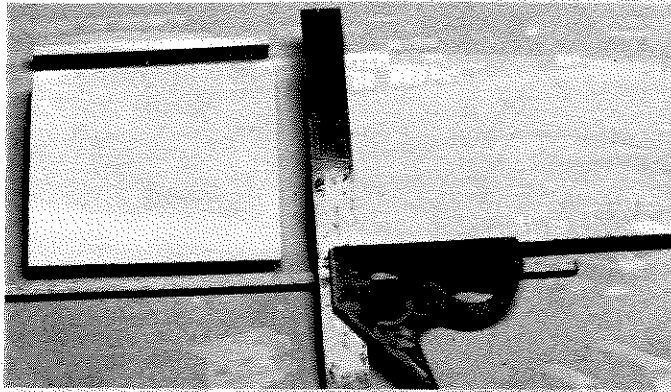
How simple? Well a foam wing and sheet tail together with a fuselage that has no



Get the dirty work over with first; cut out all the parts and make yourself a kit. Now the fun starts!



Plywood wing cut-out doublers are clamped in place for gluing by one of a modeler's most handy tools . . . clothespins.



There's that square again! This time it's used to cut the wing root square to the trailing edge, giving sweep-back to the L.E.



Also square off tip, cutting it at 90 degrees to the trailing edge.

formers, not even one, make for quick, simple building. Also, the whole thing can be built with just three sheets of balsa and a little 1/16 ply, plus a foam wing. Also, as all gluing is with cyanoacrylate and 5-minute epoxy, the construction goes very quickly and the same goes for finishing, because of the exclusive use of mylar covering.

So, if after reading all of this you are interested, let's "have at it."

WING

As I hate to build wings, I always get it out of the way first. This one is foam and very easy to build. You will need either a ACE "Pacer" foam wing kit, or if you prefer to do it the hard way, a set of ACE tapered 1/2A wing cores and a 5-3/4 inch section of straight core. If you have decided to use the ACE Pacer wing kit, just assemble according to the instructions and change the fuselage wing cut-out to fit. If doing it from scratch, start by using a square on the trailing edge of the tapered cores to make cuts of 90 degrees. This will gain the swept leading edge we are looking for. Next, trim 3/16 off the trailing edge of all parts and 1/4 inch off the leading edge of the center section. Epoxy the 1/4x1/2x5-3/4 inch hard balsa leading edge on the center section, remember to always use epoxy sparingly, because it's very heavy. Next, epoxy together all wing panels, keeping them straight and even.

After the wing dries, a groove is cut in the top for a spar. A metal straightedge can be taped to the top of the wing with the front edge approximately 3-3/4 inches forward of the trailing edge. Now, with your soldering gun, make an 18 inch groove along this, centered on the wing center line, 1/4 inch deep for the spar. Practice this on some scrap foam and you'll get the hang of just how fast to move the gun for the size hole you need. It's not hard, just a bit "different." The spar can be made by laminating two 1/16x1/4x18 ply parts, or using 1/8x1/4x18 spruce. Your choice. I have used both and see no difference. Glue the spar into the wing using "white" glue.

Next, epoxy on the 1/4 sq. hard balsa trailing edge. Mark the spot for the aileron servo and cut this out by cutting all the way through the wing just behind

the spar. Glue the 1/16 ply plate on the underside of the wing to hold the servo and lightly sand the wing smooth. Ailerons are made from 1/4x1 trailing edge stock cut down to 3/4 inch. Make sure it's hard balsa and you re-taper it. Each aileron is 18-1/2 inches long, but if you want to save a bit and get by with just one 36-inch piece of trailing edge, they could be 18 inches with no ill effects. Hinge ailerons using a "living" type hinge. Also, I used Du-Bros 1/2A strip-aileron linkage and used a strip or two of mylar wrapped over the epoxied tubes of the aileron linkage, well up onto the wing. The final step in the making of the wing is to cover the whole thing with your favorite low-temp mylar. But be sure to keep it straight and true. If you use the ACE Pacer wing kit, you will have to modify the center section trailing edge and ailerons . . . also leave off the tips.

TAIL SURFACES

The tail surfaces are cut from 1/8 balsa as shown on the plans. All edges are sanded round except those to be joined, and the stab-elevator hinge. I used what is referred to as a "Monokote hinge" on Simple Simon and it has worked very well, along with being very simple and light. For those of you who haven't tried it, see the diagram on the plans. Also, I used a different way of attaching the horn on the elevator. This could be called a "Hot Stuff rivet". Remove the covering from the spot where the small horn is to be and place the horn on the spot. Micro balloons are then worked into the bolt holes on the horn, with some left on top to form the head of the rivet. Drop Hot Stuff on the micro balloons to form a rock-like rivet through the horn to the balsa. A bit of Hot Stuff around the base of the horn and you are all done. My Simple Simon has over 150 flights and a number of dorks on it and this method is still holding up.

FUSELAGE

Start by making yourself a "kit" of the fuselage by cutting out all parts needed according to the plans. Make the firewall by laminating three pieces of 1/16 ply. Start construction by gluing ply wing saddles to fuselage sides, being sure to make one right and one left side. Next step is to drill the firewall for the ACE

motor mount, being sure to keep the thrust line in the exact center of the firewall. Place the top fuselage piece on your workbench and epoxy the firewall to the front, using a square or a builder's triangle to keep it square, with equal overlap on each side. The sides are next glued to the top, using cyanoacrylate glue, and epoxy at firewall, again being careful to keep it square both front and rear. Follow this with the chin block behind the firewall (epoxy) and fuselage sides (cyanoacrylate). The block will have to be notched to clear wing doublers. Then, using a triangle to keep things lined up, glue on rear lower fuselage balsa crossgrain. Final step before assembly is to make the fin by gluing parts together. Cover tail assembly separate as described before and then glue on fuselage (also pre-covered) keeping it square with fuselage. Add dowels for the wing hold-down and you're all done with the fuselage.

FINISHING

Simple Simon was entirely covered with World Engines film; which is a low temperature film, partially because it works well on foam, and partially because by covering entirely with film you keep the whole thing light. The area immediately around the firewall was treated with Hot Stuff before covering. Remember to cover the firewall with film before installing the motor mount. Use sealing tape on the wing/fuselage joint.

RADIO INSTALLATION

The Simple Simon prototype was flown with an ACE receiver, Bantam servos, and a 100 ma pack. This battery is sufficient for six flights with no problems encountered. Servos are installed with double-sided tape and receiver and battery are wrapped in foam and stuffed up in the nose just behind and under the tank.

FLYING

Simple Simon was designed to fly on a TD 049, and has no bad habits. Just make sure it balances at the point shown and all surfaces and engine thrust should be set at 0 degrees. Throws to start with should be approximately 1/4 inch up and down on elevator and 3/16 on aileron. Fill up the tank, make a range check, fire it up, tweek it out, throw Simon into the wind and have a ball! •