

PLEASER

By STAN WILSON . . . Here is a really versatile electric sport plane that can be built in either rudder/elevator or aileron versions with either 05 or 075 electric motors. It builds quickly, too!

• As a youngster of 34, I do not remember the excitement that came with the first glow engines. However, I was obsessed with the first stories about flying radio controlled models using electric motors. I started using windshield washer motors and motors from cordless trimmers. I destroyed four of these home-brews before I bought my first Astro 05. I stuffed it in a Super Malibu, and the thrill was worth the effort. My next success was with the Kraft electric Cardinal. I retired it with about 200 flights . . . and several ounces of epoxy. I then built and flew the Astro Sport. This is a fine model, but I wanted something that more nearly resembled a real airplane. I have been building and flying rubber scale for over 10 years, and

I think that a model should look like a real plane.

I wanted a plane which would be capable of simple stunts, capable of flying in 10 mph wind, and steady enough for relaxed Sunday flying. I searched over 200 magazines for models which had these characteristics. After noting the dimensions of over 20 cabin jobs and about 10 airfoils, I settled down to put them all together. I eventually came up with what I call the Pleaser.

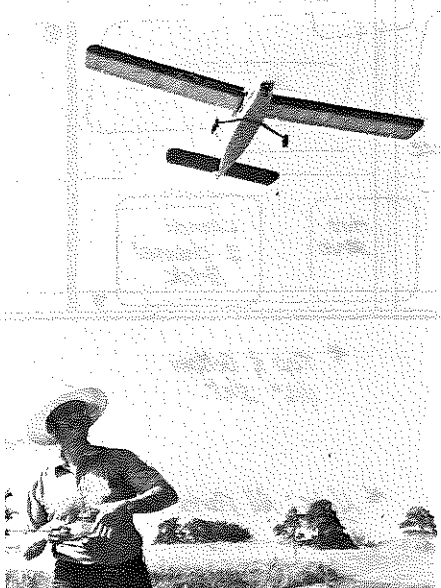
The original model now has over 100 flights using two power plants. I first used the Astro 05XL. This gave very pleasing flights, and was very stable. It would climb to about 300 feet easily, and could perform loops and very slow rolls. I fly with a four-channel, miniature Cannon radio. For all of my flights with the 05, I used coupled rudder/aileron. After mastering this power plant, I installed my Astro 075. What a per-

former. It almost jumped out of my hand on the first launch. It climbs to about 300 feet in the first 30 seconds. I have performed multiple loops, rolls, and split-S maneuvers with very little loss in altitude. The only drawback of using the standard 075 is its short motor run (three to four minutes). I cured this with a throttle, which I will explain later. With this throttle, I can climb to the desired altitude, perform a few stunts, then switch to low speed and just putter around the sky for five to seven minutes.

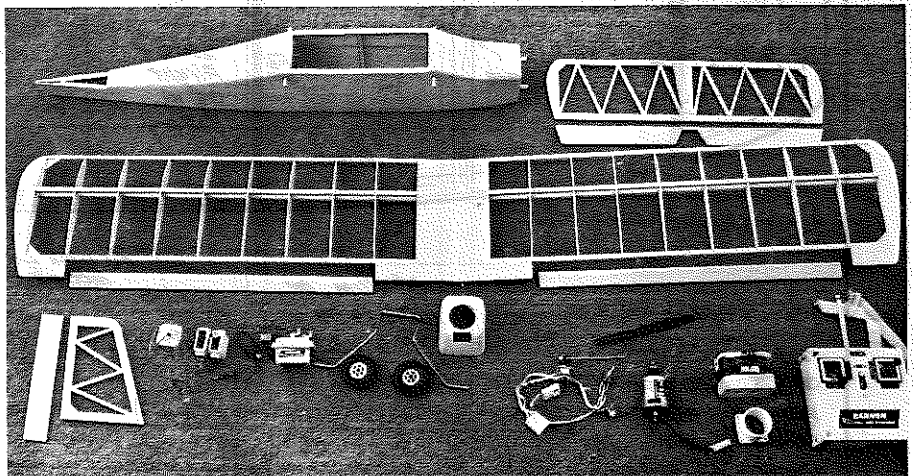
I am currently flying my second Pleaser. With this one, I extended the wing by one bay on each side, which slowed down the glide speed substantially. I would not, however, recommend the longer wing for use with an 05.

CONSTRUCTION

FUSELAGE: I designed the Pleaser to build very quickly. Cut the sides from hard 1/16 balsa, the firewall from 1/8



Stan Wilson launches his Pleaser into hot Oklahoma afternoon air. Hat is a necessity.



This is what the Pleaser looks like just prior to covering and final assembly. The equipment is actually more complicated than the model!

plywood, and the other bulkheads from 3/32 plywood. I like rounded corners, so I use 1/4-inch triangle stock for the longerons.

Glue bulkheads two and three to one side at 90 degrees. After this dries, glue the other side to the bulkheads. This forms a rectangular box as both bulkheads are the same width.

I then glue the bottom sheeting between the two bulkheads. This helps prevent warping when the firewall is installed, and when the tail posts are glued together. Next, glue in the firewall. I use rubber bands to hold the sides together for this. Next, bevel the triangular longerons starting about three inches from the tail post so that the fuselage sides are as wide as the 3/16 fin at the tail post. Glue together the fuselage sides at this time.

Complete the fuselage by gluing the remaining bottom sheeting and the top sheeting.

COWL: One of the advantages of electric power is that you can completely cowl in the motor, except for air holes. I cut the top, sides, and bottom from 1/4 balsa. Glue the top, sides, and bottom together to form a four-sided box. You then sand the rear of the cowl so that it will fit flush with the firewall.

Securing the cowl is somewhat of a chore. I made two brackets using 1/16 brass, each a 1/4-inch wide and a 1 inch long. I bent each in the middle to form an L-shaped bracket. Next, I located two places on the firewall to mount the brackets. I secured each with a wood screw. I then drilled a small hole in each bracket about 1/4 inch from the firewall. While holding the cowl in place, I marked the location of the brackets on the inside of the cowl. The next step was to drill a 1/4-inch hole in each side of the cowl at this location. After this, I cut two pieces of 1/16 plywood, each a 1/2-inch square. In these ply squares, I drilled another small hole in the center. Using sheet metal screws, I attached the plywood squares to the brackets. Next, I slid the cowl on so that the screws could be seen through the 1/4-inch holes in the sides of the cowl. I then glued the plywood squares to the insides of the cowl so that the cowl was perfectly aligned with the sides of the fuselage. All that remained for me to do was to glue on the front of the cowl, and sand the entire fuselage and cowl to shape. Cut holes in the front of the cowl to allow for motor and battery cooling. This completes fuselage construction.

WING: The model flies very nicely using rudder-only control with two

inches of dihedral under each wing. The following instructions are for building without ailerons.

Begin construction by cutting the ribs from the appropriate sheet material as indicated on the plans. Next, over the wax paper-covered plans, pin down the trailing edge, bottom spar, and bottom sheeting of the right wing. Follow this by gluing the ribs in place, then the top spar, leading edge, top sheeting, and finally, tac-gluing the wing tip in place. After sanding the wing tip to shape, remove it, and hollow it out.

Reglue it to the outboard rib at this time.

After building the right wing, tape the plans to a window, printed side out, and trace the left wing on the back of the plans. Construct the left wing as you did the right.

Sand the leading edge of both wings to an airfoil shape, and lightly sand the ribs and trailing edges. Block up each tip two inches and sand in the dihedral. Epoxy the wings together, and epoxy a one-inch wide strip of fiberglass cloth along the bottom seam.

The aileron version of this wing is constructed the same way as the two-channel version with the following exceptions: block up the tips only one inch each; cut out the ailerons; and install the servo and torque rods.

TAIL SURFACES: Simply glue the appropriate balsa directly over the plans, remove and sand. I use a piece of hardwood to join the elevator halves.

FINAL CONSTRUCTION: You have completed the basic plane. You may now install the wing hold-down dowels, hinges, and cut holes for the rudder and elevator pushrods to exit. I cut these holes rather large to allow for the air to exit after cooling the batteries. If you wish, you may use either a ready-made landing gear, or make your own from music wire, or just fly without gear. Give the model a final sanding and vacuum the dust off. Cover with your choice of coverings. I used Super Monokote. You can trim with almost anything as it does not need to be fuel proof. I have found that the only motor thrust adjustment needed is one washer behind the top right motor mount (viewed from the front). Install the motor and radio of your choice, and head for the nearest flying site.

FLYING: The first flight of the Pleaser required only a slight trim adjustment of the rudder/aileron, and she flew like a dream. Aileron turns are fairly slow, even with the long wing version. The short wing version has a rather fast glide. It does not drop like a rock, but it is wise

to plan your landing approach.

The throttle described below allows you to come in slower, and add power if needed for landing. I have always hand-launched the Pleaser, but it should ROG if you have a paved strip. Allow ample altitude before your first turn. The Pleaser handles the wind very well. I have flown in winds up to 15 mph with no trouble.

Build a Pleaser, and show those pattern guys what an electric ship can really do. They'll be amazed, and you'll be PLEASED.

THROTTLE: As I like flying for relaxation, I wanted to be able to throttle down. Astro Flight sells a throttle kit using a resistor which works fine, but your flight times on low are the same as on high. I wanted to be able to increase this time while flying on low. I know enough about batteries to know that if you wire them in a parallel, you will get twice the capacity. The switch provides this extra time on low. All cells are in series for high, and two sets are in parallel for low.

All that you will need to modify a stock Astro Flight battery pack is about two feet of ordinary household lighting wire, a double-pole-double-throw miniature switch with an off center position (available from Radio Shack), your soldering iron, and solder.

This switch should be put between the original switch in your Astro Flight wiring harness and the battery, not between the original switch and the motor. Wire your batteries in two sets. (Two sets of three cells in series for the 05XL, or two sets of six cells in series for the 075.) Follow the diagram on the plans, and you will have a hi-off-low switch. It is operated using your throttle servo linked to the switch. The only difference between this and a normal throttle is that off will be in the middle position.

To charge the batteries, turn off the stock switch. For the 05XL, turn the new switch to high and charge at the usual time and current. To charge the 075, turn the new switch to low and charge from your car for the normal time at twice the current. This is an extra feature because the 075 requires 18 volts when charged in series, but you can use your 12-volt car battery as a power source with this new switch.

When flying, I usually pause at the off for a split second when switching from low to high. You may blow a fuse if you do not give this brief pause.

Keep your batteries up, and join the QUIET REVOLUTION. ●