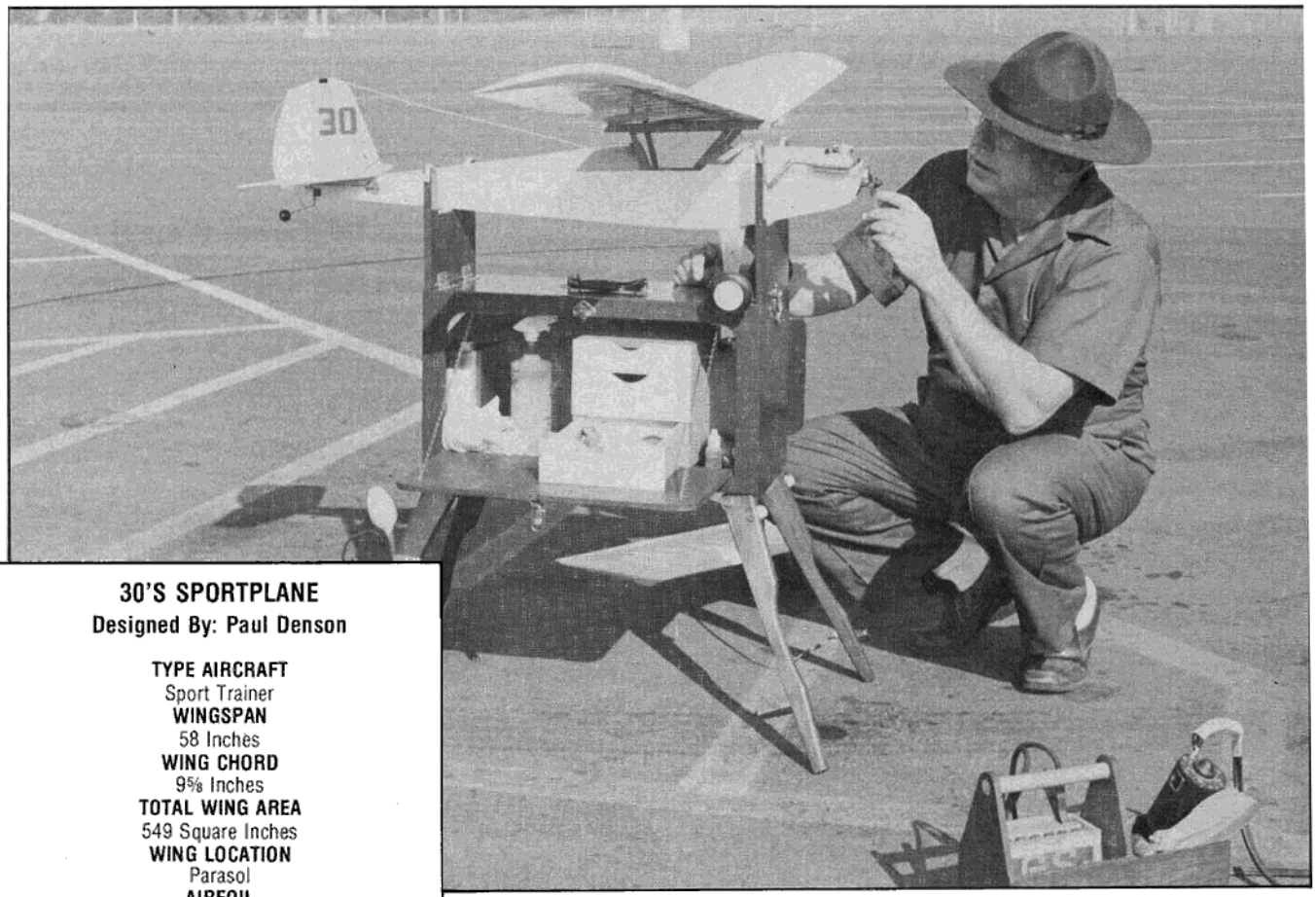


30'S SPORTPLANE

If your favorite time in aviation goes back to the golden era of home-builts, this vintage type, three channel sport trainer for .19 to .25 engines is for you.

By Paul Denson

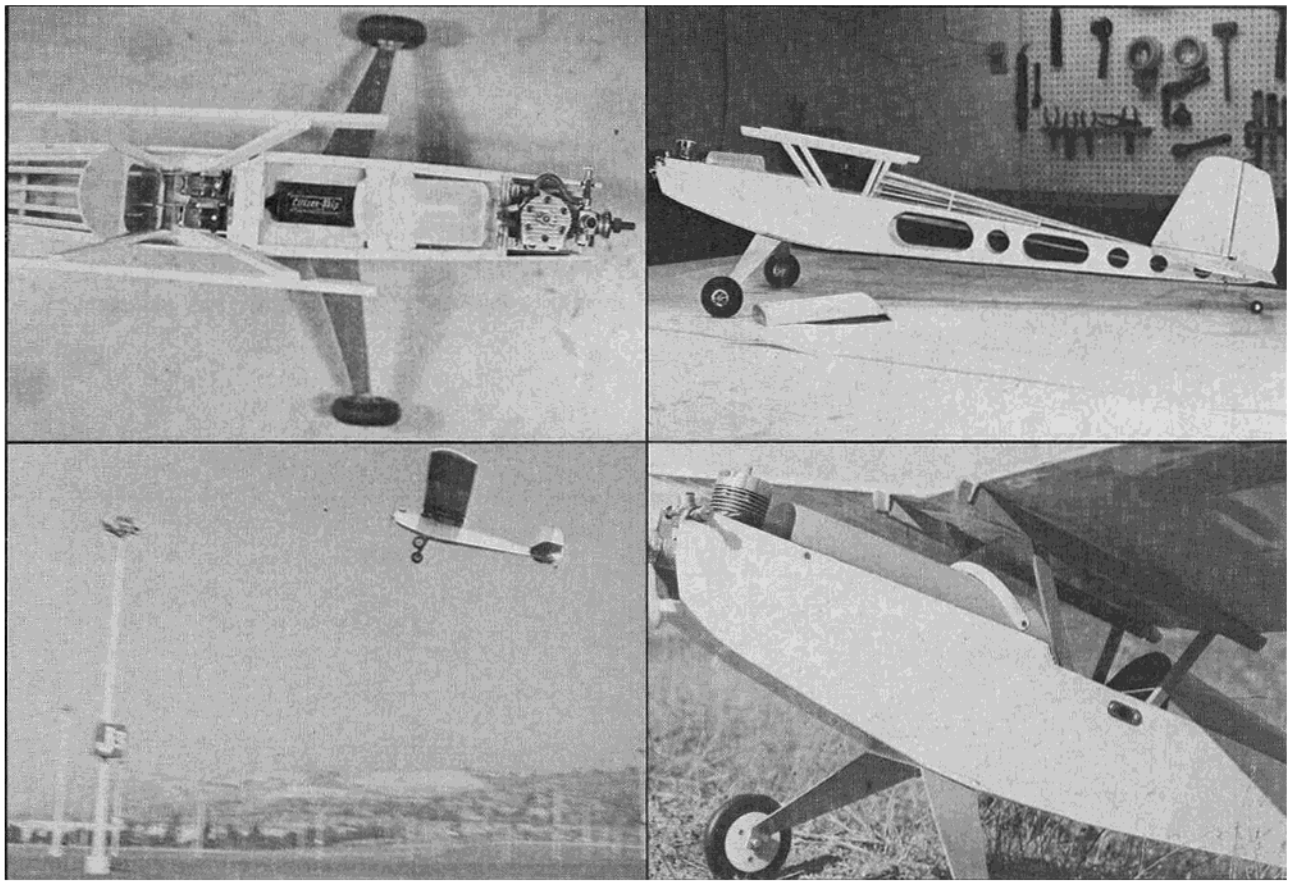
There are times in your life that stay favorites, no matter what progress is made, or how things are improved. My favorite time in aviation is the era of home-builts, the Thirties. I guess this started way back when I took my first airplane ride. A non-descript biplane, not a home-built I am sure, landed on the 17th fairway of my father's golf course. It stayed there for a week, just off the edge of the golf course, using the fairway for a runway. The pilot took golfers up for a ride to see what the golf course and city looked like from the air. It must have been lucrative because of the length of his stay. When he would leave the plane in the evening to go to his hotel room, my brother and I would crawl over and look at every square inch of that plane. I guess we flew that plane thousands of imaginary miles, taking turns in the rear cockpit.

The most amazing thing about that generation was the ability of those pioneers of aviation to build and fly their own machine. Swanson, Long, Heath, Dormoy, Pietenpol, those flyers fabricated everything themselves. Oh yes, there were companies in those days that sold parts and supplies for building airplanes just as there are today for model plane building, however, you didn't go to the hobby shop, you ordered by mail, and waited impatiently for the parts to arrive. They used everything from Model-T to Harley-Davidson engines for power. If it wasn't quite suitable, they would take two Harley cylinders, build their own crankcase, and call it, what else, a Harlequin.

As a boy, I am sure I built every kit that Comet put out; the Rearwin Speedster, Art Chester's Jeep, Gee Bee, the Taylor E-2 Cub and even the Aeronca C-3. In the late 30's-early 40's, Cleveland put out a kit for a Heath LNB-4, I remember building it then and recently I found a set of the old plans and scaled them down to

30'S SPORTPLANE
Designed By: Paul Denson

TYPE AIRCRAFT
Sport Trainer
WINGSPAN
58 Inches
WING CHORD
9⅝ Inches
TOTAL WING AREA
549 Square Inches
WING LOCATION
Parasol
AIRFOIL
Under Camber
WING PLANFORM
Constant Chord
DIHEDRAL, EACH TIP
3¼ Inches
O.A. FUSELAGE LENGTH
38 Inches
RADIO COMPARTMENT AREA
(L) 9¾" X (W) 2½" X (H) 3"
STABILIZER SPAN
17⅜ Inches
STABILIZER CHORD (incl. elev.)
5½" (Avg.)
STABILIZER AREA
91 Sq. In.
STAB AIRFOIL SECTION
Flat
STABILIZER LOCATION
Top of Fuselage
VERTICAL FIN HEIGHT
5¾ Inches
VERTICAL FIN WIDTH (incl. rudder)
5½" (Avg.)
REC. ENGINE SIZE
.19 — .25 Cu. In.
FUEL TANK SIZE
4 Ounce
LANDING GEAR
Conventional
REC. NO. OF CHANNELS
3
CONTROL FUNCTIONS
Rudder, Elevator & Throttle
BASIC MATERIALS USED IN CONSTRUCTION
Fuselage ..... Balsa, Birch Ply, ... Sig Lite Ply & Spruce
Wing ..... Balsa & Ply
Empennage ..... Balsa
Wt. Ready-To-Fly ..... 42 Oz.
Wing Loading ..... 11 Oz/Sq. Ft.



TOP, LEFT: With hatch & wing removed, easy access to all equipment. TOP, RIGHT: Fuselage ready for covering. Simplicity is the name of the game. ABOVE, LEFT: Very realistic as our prototype heads for the open sky. ABOVE: Close-up shows the simple method of mounting the windshield.

12" wingspan and built a P-Nut Heath LNB-4.

Off and on I have been working on a 1/4 scale of Les Long's Parasol Longster with a Harlequin engine; if it were powered with a Ross twin, the engine would almost be scale too. The ribs are built exactly like they were in the original, each rib has 64 pieces.

It would be nice to think that I took the best features of a group of home-builts and incorporated them into the 30's Sportplane. It would be nice, but I didn't. I knew I wanted it to look like a cross between a Longster, a Heath Parasol, and a Corbin Baby Ace, which was, by the way, a modification of the 1929 Heath Parasol. Probably, it looks more like the American Eagle Eaglet than any other one. I drew what I wanted it to look like and let the engine determine the size. There are .049 sport planes which are great for fuel consumption, but it is difficult to cram 3 channels in one if you want engine control. The larger engines are fuel gulpers and are difficult to transport in our compact cars. So settle for something with a small engine which is large enough in size to be seen at a reasonable distance.

Another thing of importance to me was that if flies scale speed which is sloooow! The blinding speed of my .35 powered Skylark makes me quake every time I fly it. I want a plane with which I can relax, this is it. I have flown it the full length of the field, about 4 feet off the ground, using throttle only to maintain that altitude. I am sure the speed never exceeded 10 mph. It is a docile, sporty plane that can be flown from a small field by the newest beginner.

The whole plane is simplicity itself. To make the slab-sided fuselage, purchase from your hobby dealer a 1' x 4' piece of Sig Lite Ply, it is 1/8" thick and extremely light. Trace the outline of the side of the fuselage and cut two. Tape them together and sand them alike, then using a hole saw in an electric drill, cut the lightening holes. Cut carefully and sand neatly, when you cover with a colored transparent MonoKote they make a pretty see-through pattern. Cut out the formers 1 and 2 from the ply, mark the position of the formers on the inside of both the left and right sides of the fuselage. Lay the right side down on the plans, glue on the two formers, check with a right triangle and allow to dry. When solid, so no movement can happen, put two strips of masking tape under the right side, parallel to the formers sticky side up. Apply glue to the top edges of the formers, put the left side on, making sure the formers hit the right places. Bring the ends of the tape up and over, stretching as you go, seal down. Squeeze the tail ends of the fuselage together and hold with a clothes pin, don't glue. Later, when you can check the symmetry of the sides, you can glue the tail ends together.

It helps to measure the cross braces because the sides will bow slightly and if you cut them to the length shown on the plans, they will be too short. The sides can't be bent as sharply as the lines on the plans. Cut out the firewall, taper the sides slightly and glue in place. Use rubber bands or masking tape to hold while the glue dries. Add the bottom sheeting. Since ply was used the full length of the plane, it was found necessary to cut the lightening holes and to eliminate the use of bottom sheeting from the cockpit rearward to keep the plane from being tail heavy.

The turtle back formers were cut to shape and sanded, then undersized notches were cut. Cut the notches with a Dremel tool and a carbide cutting disc. After they are glued on, the notches are enlarged to take the hard 1/8" square strips. Sight down the strip, keeping it true, take out little bits of the notches from either side till it is straight the full length of the turtle back, glue, sand lightly.

The cowl is made of two 3/4" square blocks of soft balsa with a piece of 3/16" sheeting glued on top. Taper the 3/4"

blocks from back to front, about 1/4" before gluing on the top sheeting. Add formers 1A and 1B, carve and sand roughly to shape. Then tack glue in place and do your final sanding.

The position of my fuel tank happened in such a way that the fuel tubes exited exactly between the cowl and firewall. I file two grooves in the firewall with a small rat-tailed file. The grooves were just a tiny bit smaller than the outside diameter of the rubber tubing included with the tank. I then slipped short lengths of this tubing on the vent and filler tubes so they would fit tightly in the grooves when the tank was installed. Surprisingly enough, they completely stop the fuel and oil from entering the fuselage. It is the easiest tank to remove I have ever had in a plane. Bolt on your favorite landing gear and wheels with blind mounting nuts.

The wing, even though it isn't built in the traditional way, is easy to build. From the scrap box, acquire about 3' of 3/4" lumber, a 3/4" x 2" is just great. Put this piece of lumber on the plans over the T.E. and cover with waxed paper. Cut 3/16" notches in the T.E. stock to take the ends of the ribs, add the L.E. and check the plans to see if your jig is okay. When the ribs are glued solidly in place, put in the bottom spars. Make sure the spars fit in each notch and don't protrude. When dry, add the 1/16" vertical

Due to the extreme undercamber, seal the MonoKote first to the bottom spars, secondly to the bottom of each rib, then individually shrink the squares formed. This method greatly increases the strength of the wing.

The windshield on the plane was designed to overcome most of the difficulties associated with windshields on MonoKoted planes. Practically no glue will stick to MonoKote for any length of time. When you do use epoxy, or contact cement, on a windshield or canopy, it is almost impossible to keep from getting glue where it shows. Cut a long strip 1/4" to 3/8" wide from the side of a plastic butter container, letting it curve up and around. Leave a 1/4" x 1/4" tab attached to the bottom. Glue the windshield inside the strip with contact cement where it can't show. Bend the tab under and put a small wood screw through it into the center of the cowl. Bend the ends of the strip back and down, to give the windshield its proper shape and screw these to the cowl. It is easy to remove for cleaning and there is no glue strip between the windshield and cowl. See close-up picture of windshield. □

From RCModeler Dec. 1977