

A Parasol Winged "Citabria Pro"

How about a very modern two hole open cockpit aerobatic parasol? It's Stand-Off R/C for a Ross Twin .60 and is tough and contest proven!

by Bob Godfrey

Photos by Jack Sheeks

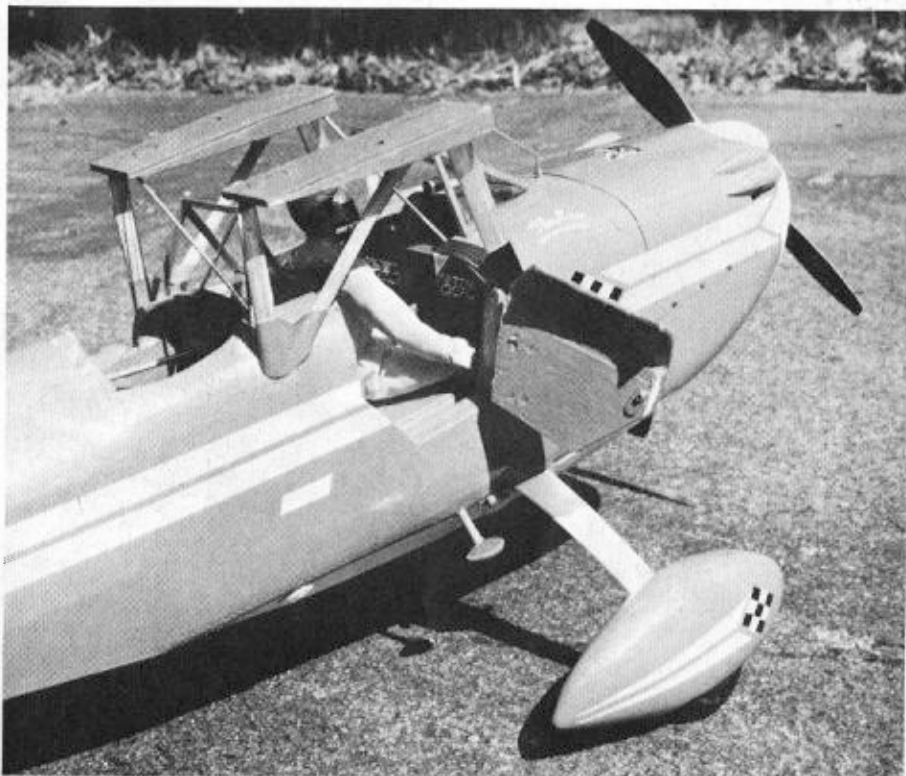
It all started on a Monday, in April, 1972. When I arrived at work Phil Stone, my Parts Manager, had the November, 1968, issue of *Air Progress* opened to the center fold. She really was a beauty, a red and white parasol wing with a single cockpit that they had named the "Pro." Phil knew my weakness was the "Citabria," and he was right, it was love at first sight. I knew then and there I was going to build this plane and since the magazine said production would begin in a few months I figured there would be no problem in finding a prototype.

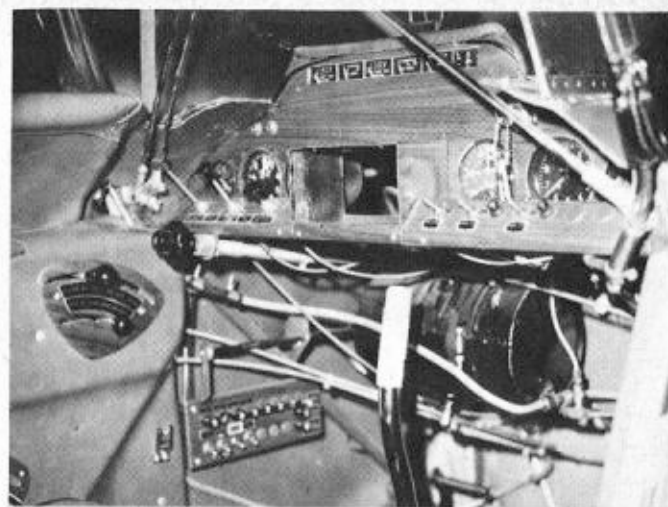
After I had searched without success for a "Pro," I wrote to the factory for information, and learned that this was the only one Champion Aircraft had manufactured and it had been hand built. The Corporation sold out to Bellanca Aircraft shortly after the experimental plane had been built and they decided against full production. In March, 1971, the aircraft factory burnt to the ground and any specifications on file were destroyed. The plane was on tour at airplane shows at the time of the fire and later Bellanca donated the "Pro" to the EAA.

Mr. Chomo, with the EAA Museum at Hales Corners, Wisc., confirmed that they would have no objections to my coming to the Museum to photograph and measure the aircraft, so Jack Sheeks and I climbed into the old Mooney and flew up to Hales Corners, only to find the plane was hangared at the Burlington, Wisconsin airport. Off we went again to Burlington, which is about 30 miles south of the museum. When we landed at the Burlington field, we taxied up to the large EAA hangar and one of their staff opened it up for us. There she was, over in a corner, even prettier than the picture in the magazine. We spent about two hours measuring and Jack took pictures from every angle possible. Since he has taken many,

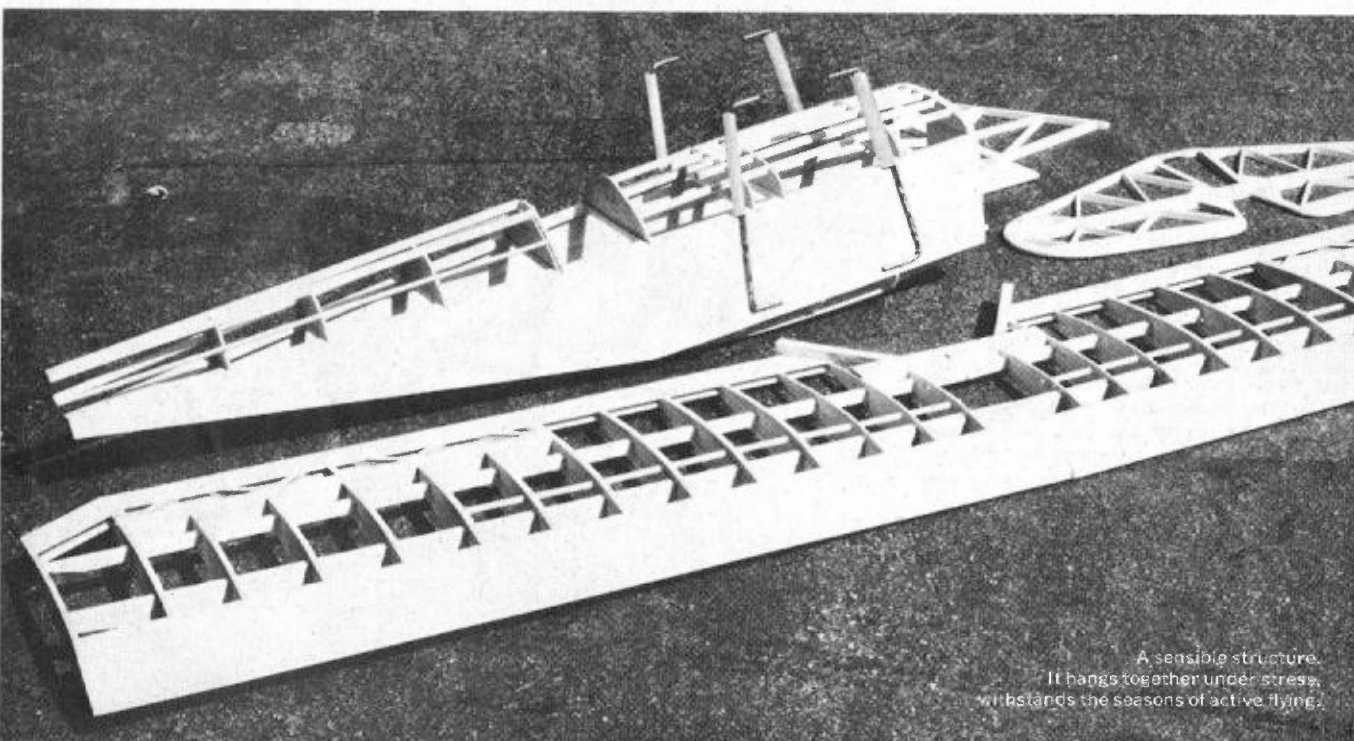
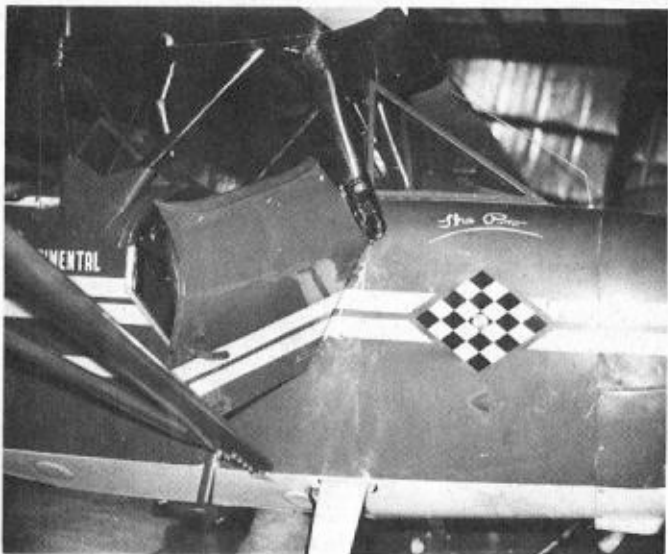


"Back home in Indiana." Bob twiggles the sticks one last time before committing it to the blue. Bottom: Not sure if he wants to, plastic pilot leaves door ajar. Mount fits into wing recesses.





Some full scale prototype details. The forward office, radio unplugged. Left: That's the rear cockpit, sparsely furnished. A breezy way to ride. Beneath: Doors swing like so, and taildragger details. Note leaf spring.



A sensible structure. It hangs together under stress, withstands the seasons of active flying.

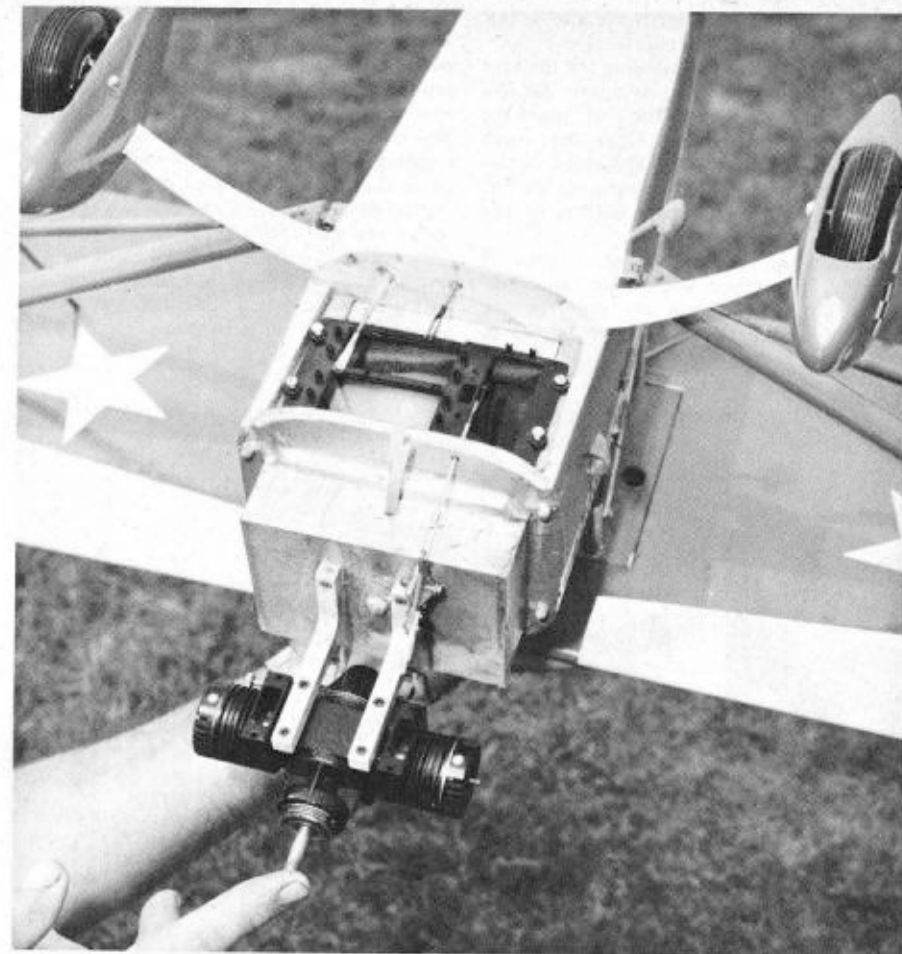
many airplane pictures, I felt he was the best qualified with a camera. When we had all the information we needed and had taken off for home, I knew I had a big job ahead of me. I had never attempted to build a plane before that was not in a kit already.

The first "Pro" was built to $\frac{1}{8}$ scale and after the first few flights I decided it was too large. I refigured and built another 2" to 1' and after the first flight I knew I had the right combination: Plane, engine and radio. It flew great. One thing I had not done was build a symmetrical wing as on the prototype.

The third "Pro" was constructed strictly "scale" and when I flew it the first few flights I knew the flat bottom wing was the best. The Ross twin .60 gave me plenty of power, but in a loop or Immelman turn it had a tendency to stall out on top. With the flat bottom wing it does everything you want it to and more, so when you build the "Pro" keep this in mind. The weight with all the goodies came out at 7 $\frac{3}{4}$ lbs. The .60 fits in the cowl perfectly and the radio is easy to hide, so you have plenty of room for your cockpit detail.

The Fuselage

I built the fuselage first, gluing $\frac{1}{4}$ " square to the $\frac{1}{8}$ " sides and after drying I sanded a taper at the rear $\frac{1}{4}$ " square. I then glued the two sides together at the rear and spaced the front with $\frac{1}{4}$ " cross pieces. Next I put in my formers, preceded by the stringers. I then glued the cabane struts in position on the $\frac{1}{8}$ " sides. These were sandwiched with $\frac{1}{4}$ " planking from the front of the fuselage to the back of the rear cockpit. I then planked with $\frac{1}{8}$ " x $\frac{3}{8}$ " strips on the top of the



A sturdy nose and solid mounting compliments the engine's power. Note the forward R/C mounting. Below: Everything accessible. A practical airframe in the field. Struts, gear sturdily mounted.



fuselage, starting at the front and going to the back of the rear cockpit.

After drying, cut the opening for the two cockpits, then put the stringers on the $\frac{1}{8}$ " siding up against the $\frac{1}{4}$ " planking to the rear of the body. Once dry, sand and taper the stringer on the sides to the rear. Next install the landing gear on $\frac{1}{8}$ " plywood and epoxy to the bottom of the fuselage.

The cowling was constructed from 1" planking and carved and rough sanded to shape. The wheelpants are done in the same way. Glue the two outer halves to

the center-section and install $\frac{1}{8}$ " plywood support for the landing gear to bolt on to. I used epoxy on the plywood and sanded it to shape. The final cowl sanding was with the cowl fastened to the body. The cowl on my first "Pro" was fit with a spring attached to the firewall and hooked on the cowl at the front air intake hole. On the next two ships, the cowls were held on by the spinner back plate and worked very well. The cowl fits very tight on the five $\frac{1}{8}$ " firewall pins that hold it aligned, so the spinner back plate has very little to do with holding it in place.

Build the elevator and rudder out of $\frac{5}{16}$ " square balsa with a stiffener in the center and a $\frac{5}{16}$ " dia. dowel at the leading edge of the elevator. Insert $\frac{1}{8}$ " x $\frac{5}{16}$ " balsa stiffeners when sanding to shape. I used Dubro hinges (three on the rudder and four on the elevator) pinned on with toothpicks.

Wing Construction

This is an easy wing to build. Cut ribs out of $\frac{3}{16}$ " planking and thread on to the two spars, then lay the assembly on a flat table and block up the spars evenly, just

so the ribs don't touch the table top. Align the ribs and glue into place, then add the leading edge and trailing edge and top $\frac{1}{4}$ " square. The two spars taper from the bottom up to fit the tip rib. When dry, remove from plans and add $\frac{1}{4}$ " square to the bottom camber and the lower part of the trailing edge. Plank the top and bottom part of the leading edge and capstrip the ribs with exception of the center-section of wing which is planked. Epoxy dihedral braces in to one wing half and then the other. Lay the completed wing on a flat surface and block up one tip so you have 1 degree dihedral and let it dry overnight. Next plank the center-section of the wing top and bottom and add wing tip blocks.

As you can see on the plans I used the outer part of a Nyrod epoxied to the ribs to guide my $\frac{1}{16}$ " dia. piano wire from the bellcrank to servo. Now sand the wing tips and wings to shape and cut out the ailerons and hinge. Fit the wing to the cabane struts. I used the top fuselage longeron as a centerline. The elevator was set $0^{\circ}00'$ incidence to the longeron and the wing raised $\frac{3}{16}$ " of an inch in front.

Finishing

I covered model with Super Coverite then put dots of aliphatic resin with a glue gun on top of the Coverite on the ribs and tail section. Following this, cut the rib stitching from Super Coverite with pinking shears and iron it over the ribs and tail sections.

The paint used was Aero Gloss. I painted the whole model white first, then marked it off and painted on the red. I cut the numbers and the stars out of 3" wide masking tape. The wheelpants and cowl had two coats of polyester resin, sanded then painted. Make sure the wheels turn freely in the wheelpants, as this will help eliminate nose over on landing and sloppy take-offs.



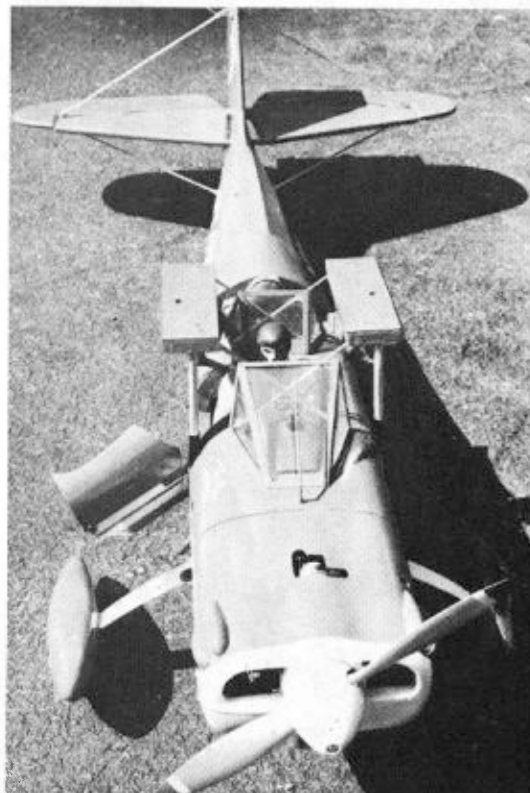
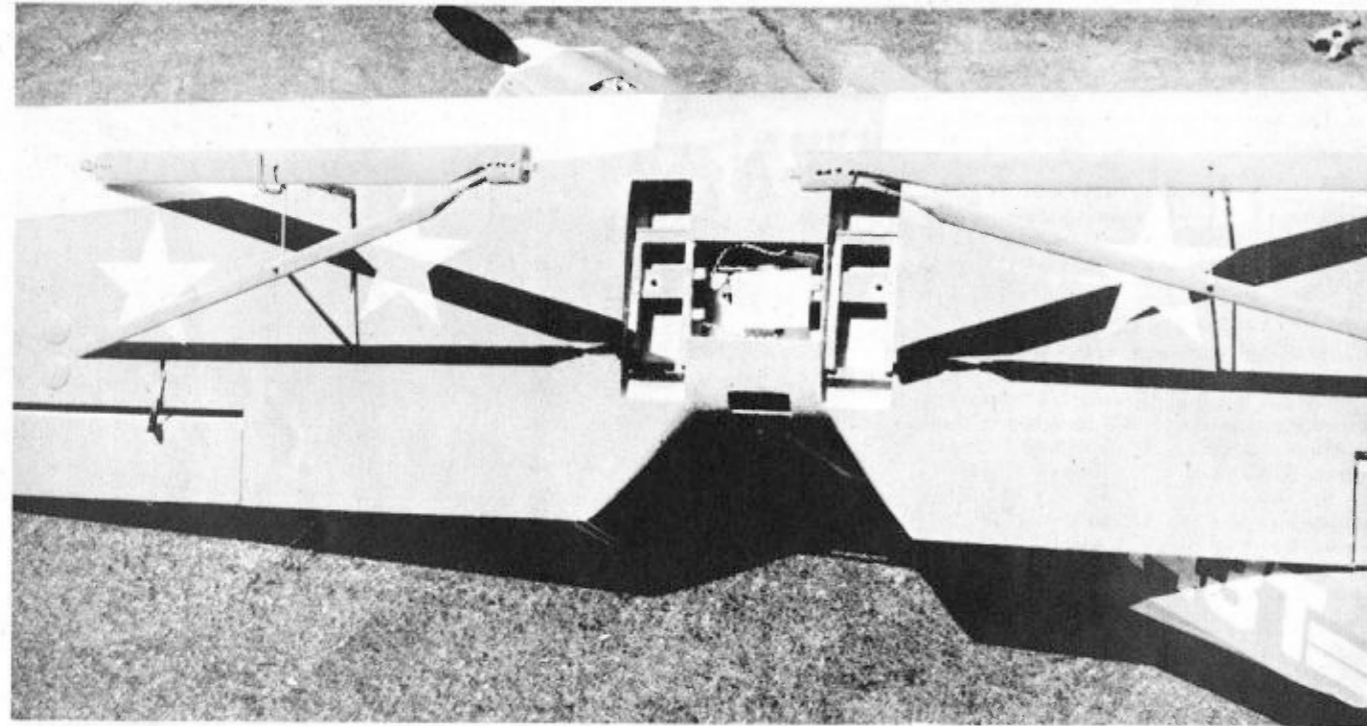
"Citabria Pro" in action where it counts; flying at the Mint Julep (above) last spring and at the Lake Charles Nats (below). Fear not that parasol wing, rugged struts supported and are easily installed.

Flying

For a tail dragger it's hard to believe the model handles so well on the ground and flies so beautifully. This plane took 3rd place at the Tangerine in Florida, at Rough River, Kentucky, Lima and Dayton, Ohio contests and entered at Lake Charles in the 1974 Nats. I have been well satisfied with its performance. At the present

I am working on two more "Pro's" for next year's contests, one for Stand-Off and the other for A.M.A. scale.

One thing that may help you out that I had to find out the hard way—when using a .60 twin as I have, when you put the power to it on take off, don't forget to feed in right rudder to compensate for the torque of the engine. Fly it safely. ☺



Aileron servo located within the wing's center. The strut arrangement is visible here. Left, below: A novel wing mount, windshields, door action. An aircraft with character.

