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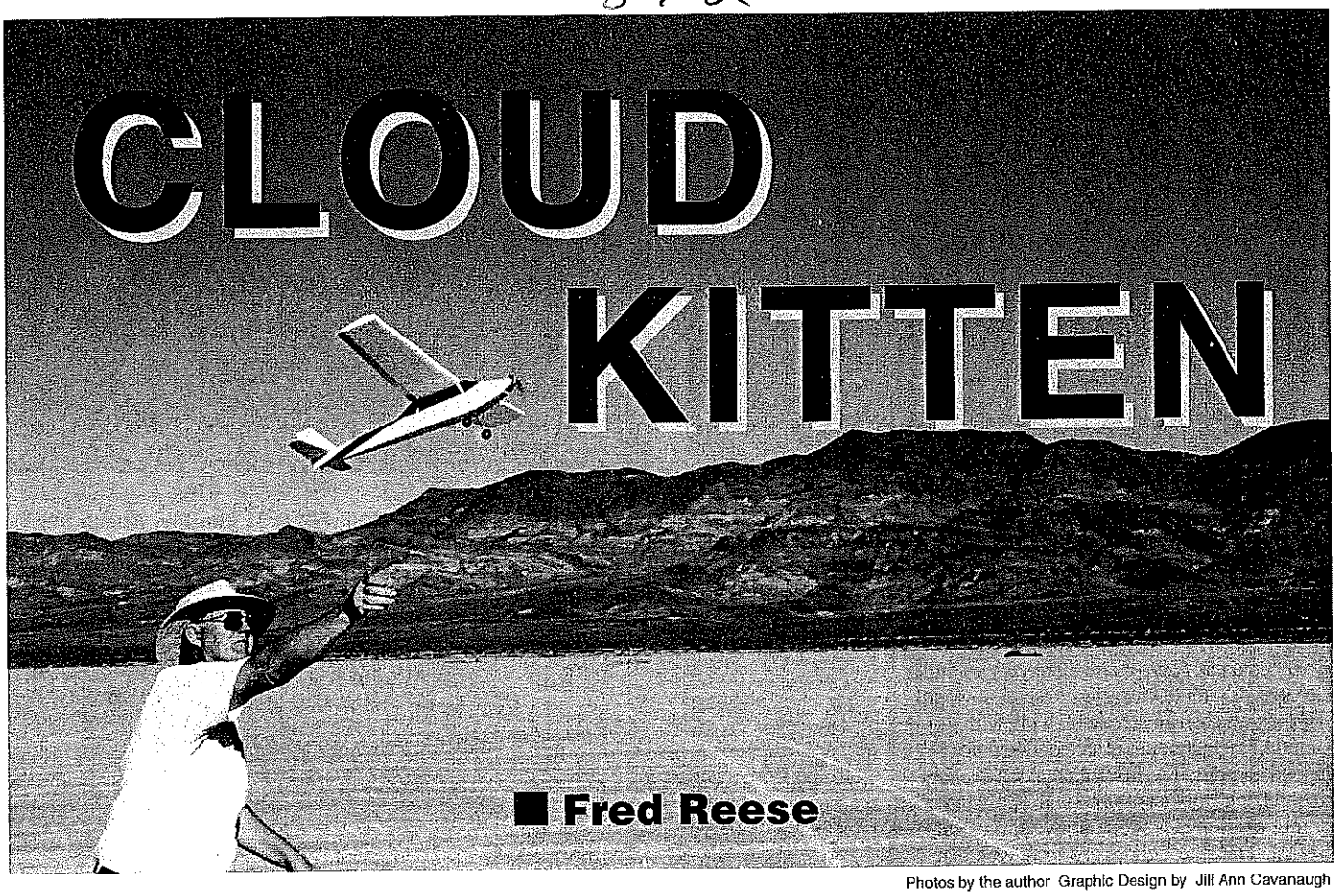
CLOUD KITTEN

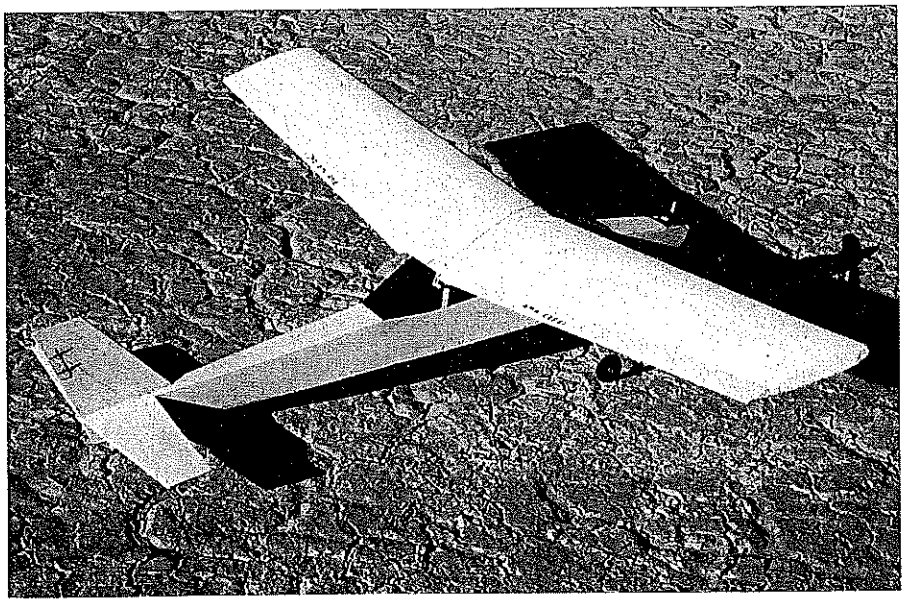


■ Fred Reese

Photos by the author Graphic Design by Jill Ann Cavanaugh

A gentle toss starts another flight. Be sure to put your name and phone number on the model, just in case.

Foam-wing Free Flight sport model purrs along on a Pee Wee .020



Cloud Kitten is based on the Ace RC mini foam wing and the Cox Pee Wee .020 engine. Modern Cessna appearance with old-time performance.

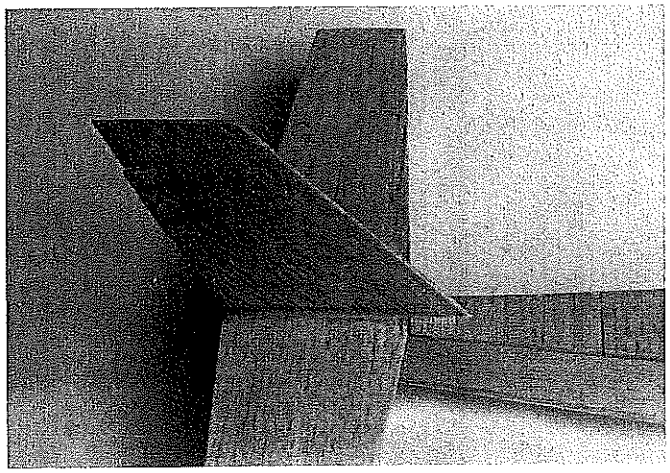
BACK IN THE "OLD DAYS," when I was younger, Free Flight was much simpler. Build the airplane, fill the tank, start the engine, cross your fingers, and let it go. The engines then had much less power than those of today, so the models would cruise on up until the engine ran out of fuel, then the model would glide back down. The Veco Dakota by Joe Wagner is a good example.

The little Dakota biplane was very popular because it flew well and because of the glide, it would come back to fly again. With this concept in mind, I designed the Cloud Kitten based around the Ace RC mini foam wing and the Cox Pee Wee .020. The Pee Wee has lots of power and the thick foam wing takes the Cloud Kitten out of the floater category.

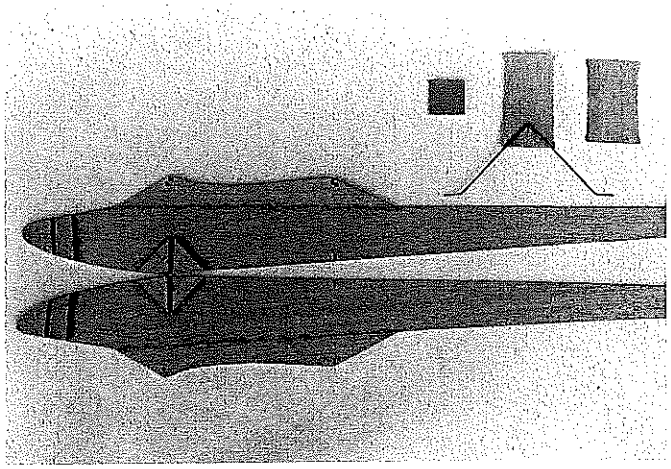
To give the Cloud Kitten a more modern look, I designed it to look like the full-scale airplanes we see at the airports and flying overhead every day.

Many of the older small engines came with a built-in fuel tank that only allowed a minute or two of engine run, which was perfect for sport Free Flight models. The engines we used were the OK Cub, Baby Spitfire, K&B Infant, and the Atwood Wasp. The reed valve Cox Pee Wee .020 has similar power to the older larger engines and has a built-in fuel tank.

I designed the Cloud Kitten several years ago but never built it. Time went by and I would occasionally look at the Cloud Kitten plans, but there would always be more pressing issues. I am a member of the Las Vegas Dust Devils and fly at the El Dorado



Make the adjustable rudder tab by gluing on two strips of thin copper wire, then cut out the tab. Wire "sets" adjustments.



Firewall is 1/8 aircraft plywood; F-2 is 1/8 Lite Ply. Attach the 1/16 wire landing gear with thread and glue.

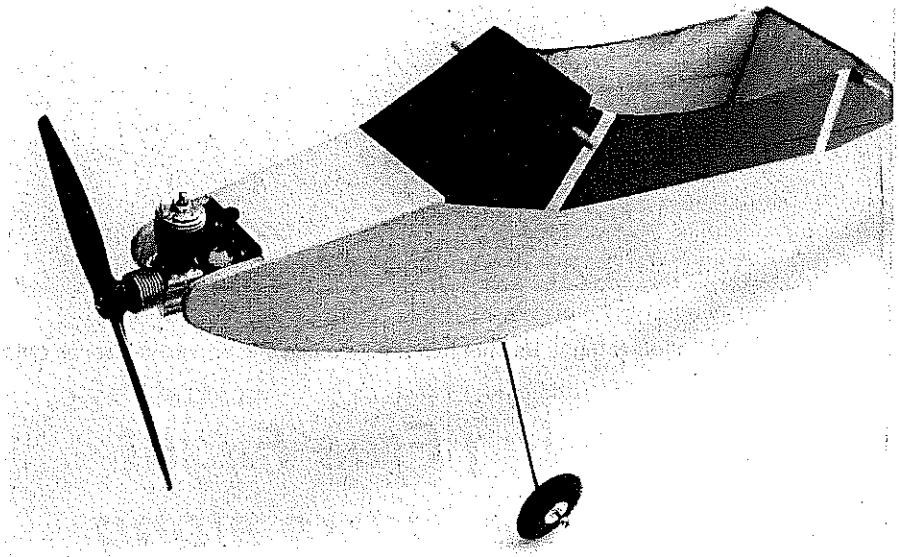
dry lake. This is a huge site—flat and open, with only an occasional starter stooge sticking up to attract a low-flying model.

Since I was going out there anyway, I built a prototype Cloud Kitten just to see if it would fly. I already had an Ace foam wing with about the right amount of dihedral and no hinged ailerons. The fuselage took an evening to build, and another afternoon to apply three or four coats of clear dope from a spray can.

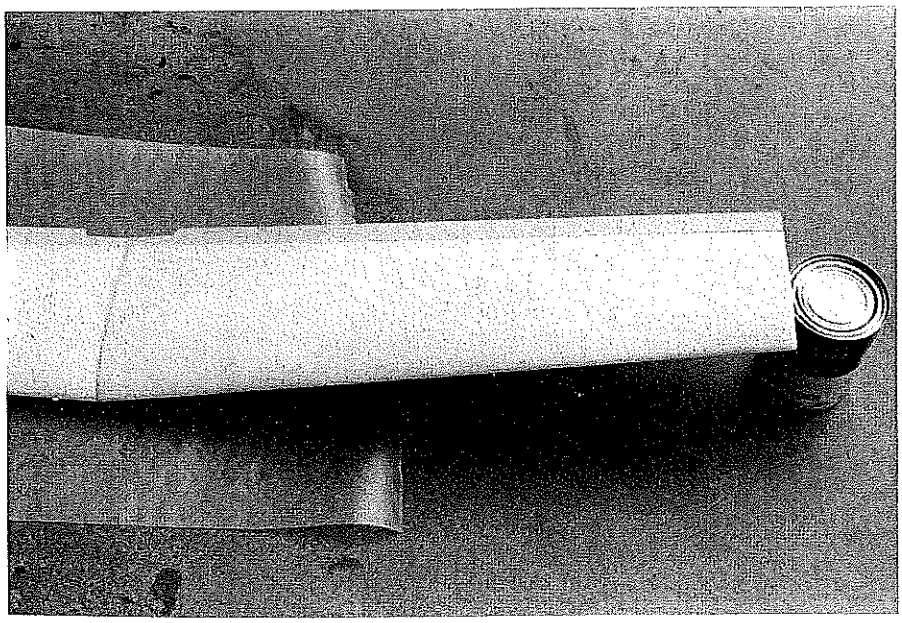
After some test glides at a local park that evening, the Cloud Kitten was ready to test-fly at the dry lake. Flying weight was 6½ ounces.

The model required some additional downthrust and sidethrust, but after some adjustment the little model flew very gently in a large circle, and gently glided down and made a very pretty landing. The model was turning slowly to the right under power, and only slightly right under glide.

With each successive flight it got better. Rudder trim tightened up the turn. A little clay on the tail improved the glide. Power and engine run time were increased until the little model would climb up to about 300 feet and turn in 200-foot circles. Flights would last



Spray on three or four coats of clear or colored dope. The windows are brushed-on black dope. Wheels are secured with collars or soldered washers.



Sand the inboard ends of the wing panels for the dihedral angle. Epoxy the wings together over waxed paper, blocking up one wingtip with a soup can.

CLOUD KITTEN

Type: FF Sport

Wingspan: 35 inches

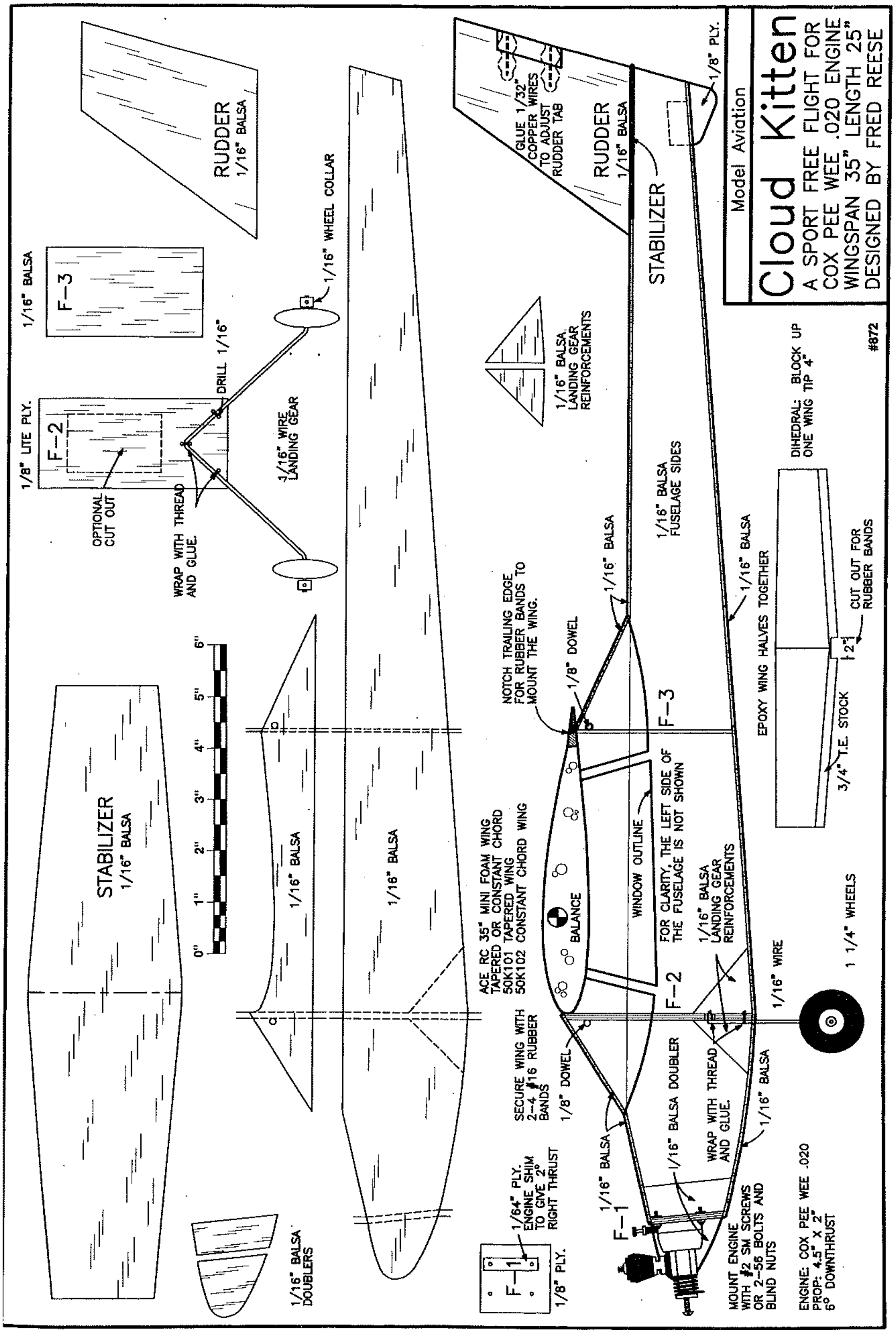
Engine: Cox Pee Wee .020

Flying weight: 6½ ounces

Construction: Foam wing, balsa fuselage/tail surfaces

Finish: Dope on balsa; foam unfinished

Full-Size Plans Available—see page 173



three to four minutes between power and glide. Kind of fun—just sit back and watch the little Cloud Kitten fly.

I built another Cloud Kitten with the changed wing and engine incidence, and took some pictures as I built it. I was really pleased; it flew very well, just like the first one, after just a couple of trim flights.

A year later, I am still flying both models and enjoy flight as much as ever.

CONSTRUCTION

Cut out all of the parts called for on the plan.

Glue the two parts of the 1/16 balsa fuselage sides together. Lay one of the sides over the plan and mark the location of the firewall and two bulkheads. Make the second side from the first, making sure to have a right side and a left side. Glue the 1/16 balsa nose doublers to each of the sides. Glue in the little triangles ahead of and behind F-2 to support the landing gear.

Bend the 1/16 music wire landing gear and glue it to the Lite Ply bulkhead F-2. Drill 1/16 holes on each side of the wire near the bottom of the bulkhead and at the top of the wire V. Stitch the wire landing gear to the plywood bulkhead with carpet thread and apply glue over the thread and knots.

Glue bulkheads F-2 and F-3 to one of the fuselage sides, using a square to keep them perpendicular to the side. Glue the second fuselage side to the bulkheads. Pull the fuselage sides together at the rear and glue.

Glue in the firewall F-1 between the forward fuselage sides, right behind the nose doublers. Hold until dry with both sides bent the same so the firewall is straight. It will be angled down.

Glue on the top and bottom 1/16 balsa sheeting (cross-grained up front and behind the wing; the rest can be straight-grained).

Cut out the stabilizer and rudder and glue them in place.

I left the wing uncovered and unfinished to save weight and effort. The flashing and little bumps were sanded off with very fine sandpaper. Trim off the rear 3/16 of the foam trailing edge and glue on 3/4 trailing edge stock (use white glue or epoxy; most cyanoacrylate glues will melt the foam). Glue on the trailing edge with the bottom rear of the foam wing and trailing edge flat to the building board, over waxed paper. Do not skip this step; the wing needs the trailing edge added or the finished model may not be stable.

Sand the dihedral angle on each of the wing center ends, then epoxy the two wing halves together, blocking up one tip five inches (or one soup can). Notch the center trailing edge so the wing will fit into the fuselage.

Sand all of the wood fuselage and tail with #400 wet-or-dry sandpaper to get the wood really smooth. Vacuum off the dust and wipe with a tack cloth, then brush or spray on a coat of clear butyrate dope, Sig or Pactra AeroGloss. When dry, sand off all of the fuzzies with the #400 sandpaper, wipe with the tack rag, and spray on another coat. Sand again and spray on two more coats of clear. Mask off the windows and brush or spray on the black windows.

Glue in the wing dowels. Install the wheels with 1/16 wheel collars.

Mount the engine with a 1/64 plywood shim behind the left side mount holes to give about 1½-2° right thrust. Use #2 sheet-metal screws to mount the engine.

Make the top and bottom cuts in the rudder for the trim tab, then glue on two pieces of thin copper wire to act as hinges on the right side of the rudder. When the glue is dry, cut the tab free from the left side of the rudder. Bend the tab about 1/16 to the right for the first flight, then adjust as needed. Adjust the rudder for glide turn and the engine thrust for power turn.

Flying: Test-glide the model over grass to get a smooth, non-stalling, flat glide with a slight right turn. Add clay to the nose or tail until the glide is right. Adjust the glide with the rudder until the glide circle is about 200 feet in diameter and the glide is flat and not stalling. You may need to add more tail weight to hold the nose up as the circle is tightened.

For the first powered flight, put the propeller on backward. The engine still runs in the same direction, but the thrust is reduced. I recommend Cox Super Power fuel or Sig Champion ½A fuel for the little engines. Adjust the engine to peak power, then unscrew the needle valve until the engine is just barely running. Let the engine run awhile so the flight is short.

Launch the model straight ahead into the wind with just a gentle push. The model will just about fly out of your hand. Watch the power and the glide.

Adjust the power turn with engine right thrust.

If the model is balanced as shown on the plan, but is stalling under power, decrease the positive wing incidence by sanding the wing saddle. This needs to be corrected first, along with the glide circle—especially if the stall becomes progressively worse.

The downthrust shown on the plan should be enough to control the power. If a TD .020 is used, a degree or two more may be needed. Tightening the turn under power will also reduce the stall, but be careful—this is sensitive.

Gradually increase the power, and finally, the engine run. If a breeze is blowing, definitely shorten the engine run—the Cloud Kitten can cover a lot of ground.

I prefer to fly the Cloud Kitten with the prop on backward and the engine running rich, to keep the aircraft lower. I get to see it better and don't have to chase it as far. I also get to see the landings. When there is no wind, I fill the tank and just let it fly.

Be sure to put your name and phone number on the model or inside the cabin in case you do have a flyaway, so that you may get it back.

The large glide circle will help to keep the Cloud Kitten out of the thermals. Fly in the mornings, before the real booming thermals form. If you put the Cloud Kitten into one of those, you will be in for a long chase. ✈

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