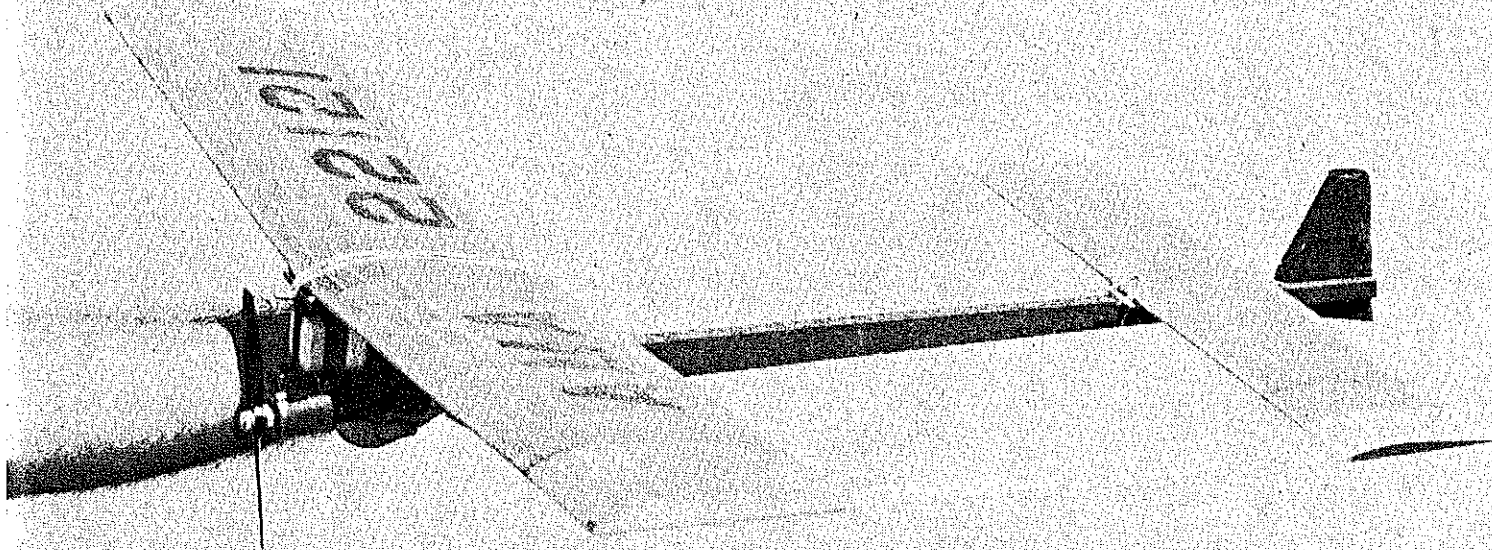


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Developed by Bill Jenkins & Jim Clem  
Text and Photos by Larry Kruse



# Electric Country Boy

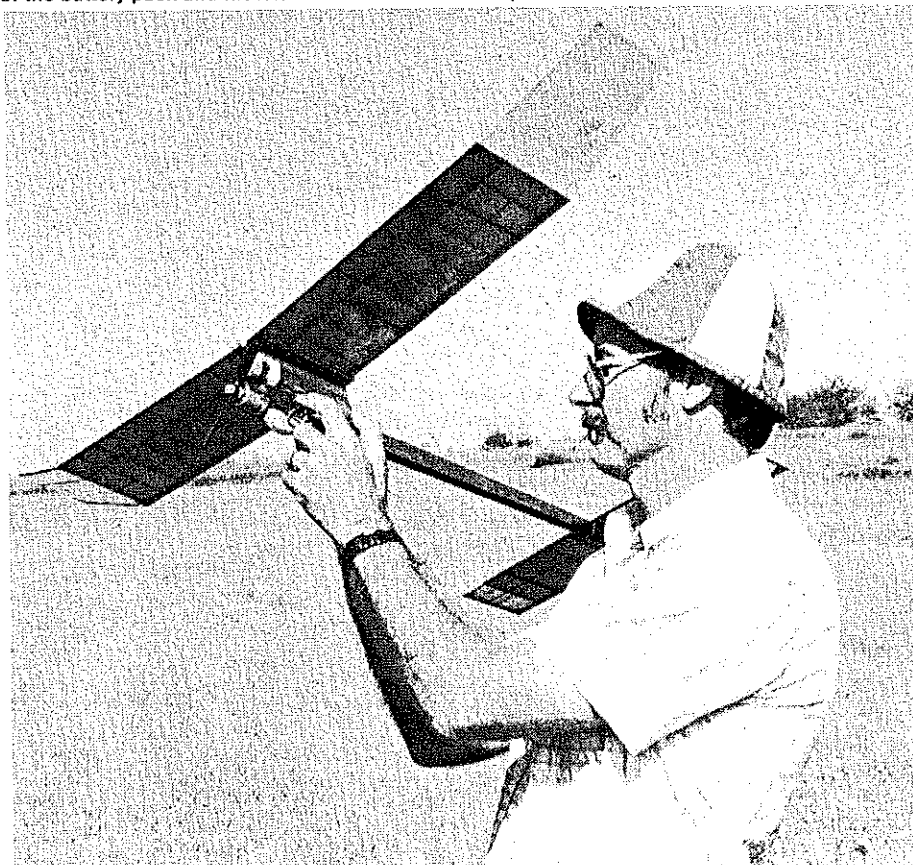
Electric Free Flight isn't an event of the future; it's here now. Cheap, clean and noise-free, it has been gaining greatly in popularity. You can get in on a good thing with this design, which has set and exceeded its own records, as well as building up an impressive string of Nats wins.

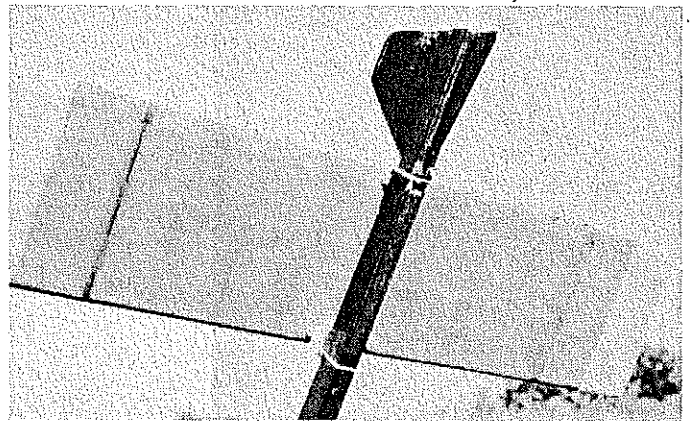
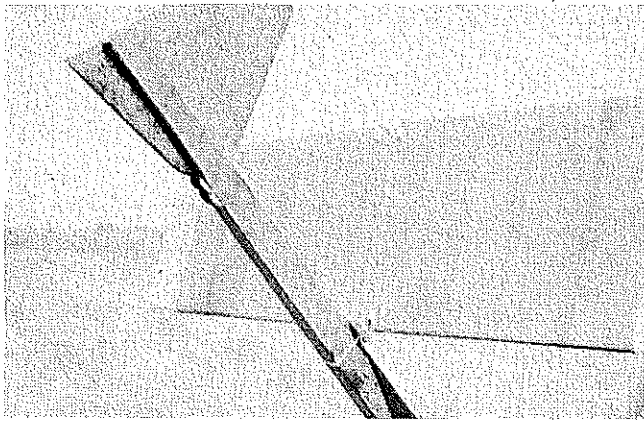
IN THE COURSE OF covering powered Free Flight for *Model Aviation* during the 1979 Lincoln Nats, I described Electric Power as an event trying to find itself. That comment was not meant as a criticism but rather as a positive note on the state-of-the-art—implying that Electric Power, unlike many other Free Flight events, has a refreshing amount of room for technical experimentation and aircraft design development. For example, among the trophy winners in electric power at the 1979 Nats were an .020 replica Valkyrie by Bill Stroman, a converted Unlimited rubber Stratowake by Bill Baker, and the model presented here, the Electric Country Boy, a development by Bill Jenkins based on Jim Clem's 1/2A-A design. Obviously the event is in its embryonic stages with a tremendous latitude yet available for originality and refinement.

Bill Jenkins' Electric Country Boy offers just such a state-of-the-art commentary on the event. It eclipsed its own previous national record at the 1979 Nats, where it recorded an amazing 13:31 for first place (a feat it repeated at the 1980 Dayton Nats and for the third time at the 1981 Seguin Nats). The Electric C.B. began as a 1/2A ship in 1977 (a scaled-down version of the Clemcraft kit) carrying about 220 sq. in. of wing, which made it comparable at that time to the small GLH Satellite. The small Country Boy proved every bit as good as Bill had hoped, and at one point held the Cat. III 1/2A Gas record.

At about the same time that the plane was winning 1/2A contests and setting records, Bill decided to shelve the 320 sq. in. electric ship he

Bill Jenkins switches on the Electric Country Boy. Short nose moment is due to forward placement of the battery pack and motor. Nats wins and records prove this is one mean model.





The stabilizer in the DT mode shows how the limit wire attaches through a tube in the rudder. Stab in power/glide mode on the right; note notches in fuselage to hold rubberbands near DT fuse.

was flying and build another fuselage for the small Country Boy—one that would accommodate an O2 Astro Flight motor and battery pack. Building another fuselage meant that all trim adjustments could be made on the fuselage without touching the existing wing or stab. Bill's thinking proved to be right on the money. He proceeded to prove the worth of the new little ship by setting a national record in April of 1978. That stood until August of '79, when he shattered it by over 5 min. at the Lincoln Nats, a record which was still standing when this was written.

**Construction.** Wood selection is important in building this model, as it is in building any competition Free Flight. Use good, light A-grain for fuselage sides, C-grain for wing and stab ribs. Spars and stringers should be of light A-grain with good resiliency. Avoid overly heavy, hard, or brittle pieces. Particularly avoid wood that

appears excessively soft or mushy.

The fuselage employs a basic framework built directly over the plan, without fuselage sides at this time. The pylon and rudder,  $\frac{1}{8} \times \frac{1}{8}$  longerons and vertical members,  $\frac{1}{8}$  sq. strips in the rudder area are all assembled *flat* over the plan. I can't emphasize the *flat* aspect too much. It's the only way to assure the accuracy of the power pattern.

After the fuselage framework is dry, use it as a pattern to cut out both right and left fuselage sides. Glue the sheet sides to both sides of the frame using Titebond or a similar glue, and weight the assembly down until it dries. Again, the word *flat* comes to the fore.

You will note that there is no nose block or firewall employed. The motor is simply epoxied to the fuselage at the angles shown on the plan. Scrap fill pieces can be added on either side of the motor to give additional gluing surface. The on-board battery pack is fitted and epoxied over

a hole cut in the pylon after basic assembly. There is spruce in front and in back of the pack with additional spruce pieces used as necessary to wedge the pack firmly in place.

The Radio Shack micro-switch has two small mounting holes in it and can be held in place with toothpick pieces Hot Stuffed to the fuselage. The switch must be mounted so that the timer arm comes down on the switch lever and cuts off the current. Keeping your fingers from entanglement can best be handled by gathering up any slack wires, and securing them to the fuselage sides with small U-shaped pins.

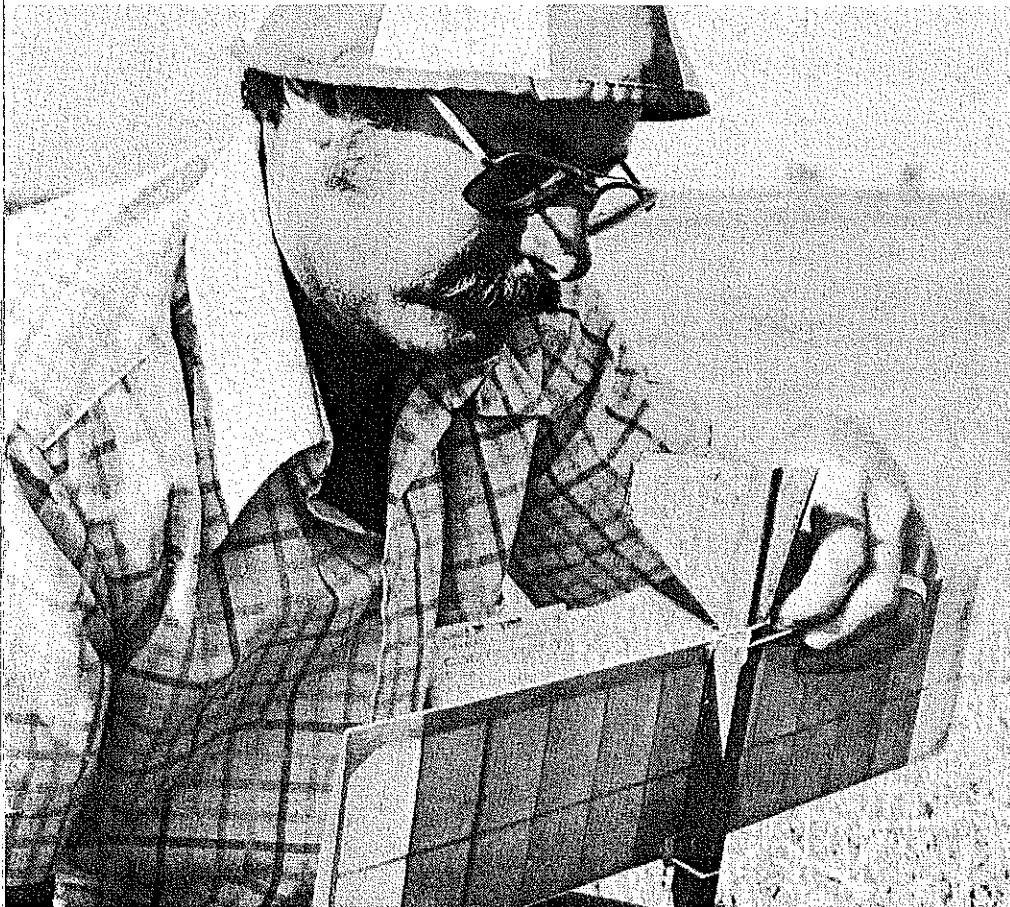
The dethermalizer system is one that Bill has been using for a number of years in most of his Gas models. As the plans and photos show, the snuffer tube is in the bottom of the fuselage. Notched spruce rails keep the rubberbands together and away from the fuselage so the fuse doesn't go out before burning through the bands. The limit line is 6-lb. monofilament tied to the base of the rudder on top of the fuselage and fastened to the stab with a rubberband stretched between the back stab hooks.

The wing and stab are built in a similar fashion flat on the building board. Frame the wing with the L.E., T.E. and most of the ribs, omitting all spars and dihedral break ribs until after the dihedral and polyhedral angles are installed. This process makes it important that no twist is built into the wing as the top and bottom spars are added. This can best be ensured by pinning down each panel as the spars are installed, and supporting the other panels by blocking them up to avoid over-stressing previously formed joints.

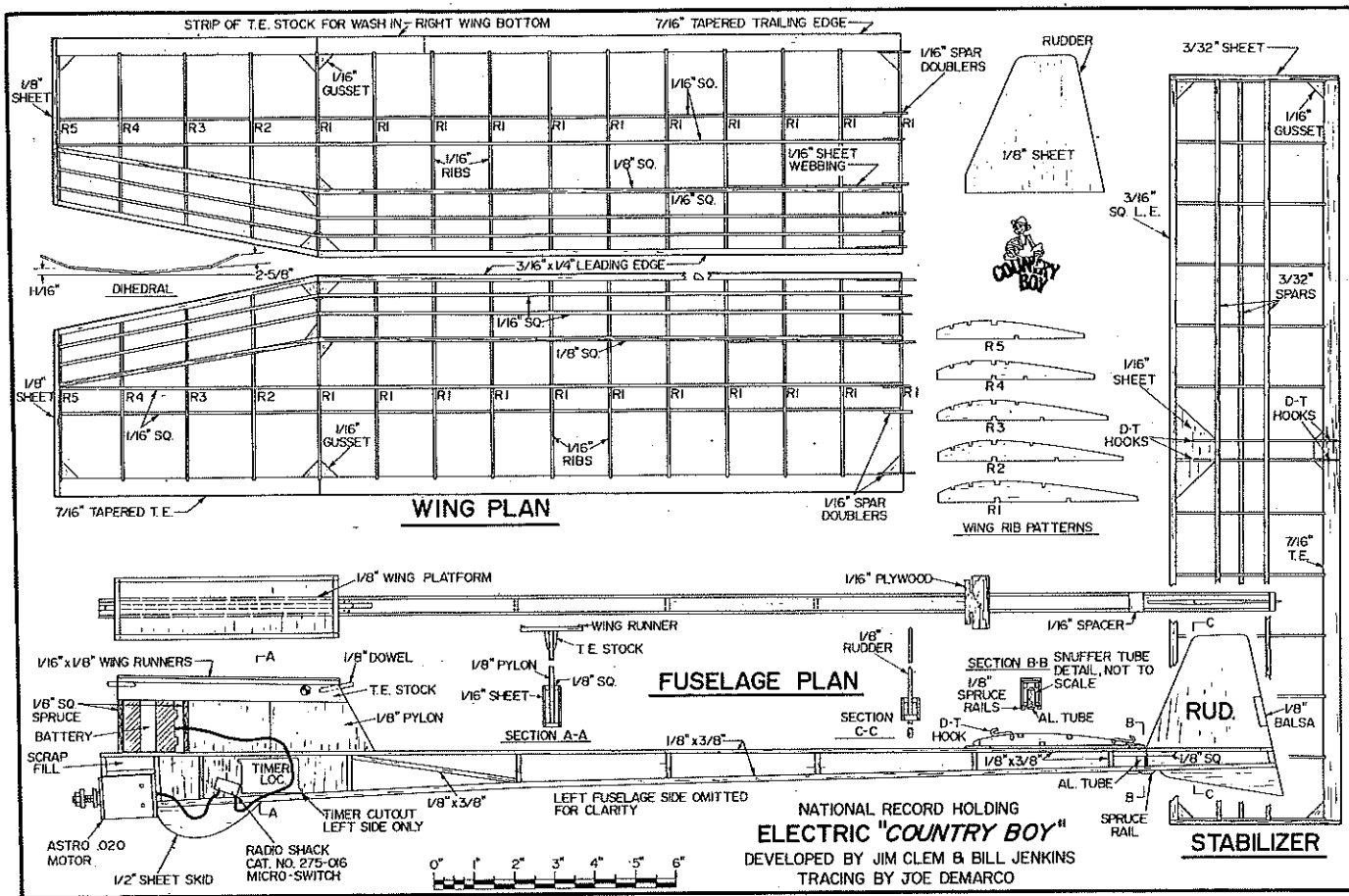
Construction of the stabilizer differs from the wing only in pinning down the bottom spar, along with the leading and trailing edges. The ribs, top spars, and sheeted portions of the stab complete the basic construction sequence.

Bill covered the entire ship, fuselage included, with Japanese tissue. Be careful that no warps are pulled into the structure as dope is applied. Since there's no fuel residue to contend with, a minimal amount of dope can be used, well-thinned, with ample drying time between coats. Nitrate dope would be an excellent way to go with this ship.

**Flying Tips.** All surfaces should be flat and warp-free. Any warps which may have crept in during the finishing process or in the course of construction must be steamed out prior to flight testing. The right wing needs to have, a  $1\frac{1}{2}$  in. piece of T.E. stock glued to its bottom, just inboard of the tip dihedral (see plan for location) in order for the right wing to stay up during the power pattern. Check the balance point to make



Jenkins adjusts DT rubberband on the Country Boy. Note fuse placement on bottom of fuselage.



certain it is as shown on the plan. Add lead or clay to the nose or tail, if necessary.

Under calm conditions, hand glide the plane several times over tall grass, shimming the front of the stab if the plane stalls, or the back of the stab if it dives. Try for a long flat glide with a decided turn to the right. Right glide can be assured by tilting the stabilizer (right top high when viewed from the rear).

Electric power flights will differ a bit from what you might be used to in a Gas job. Through experimentation, Bill has found that the optimum power pattern is two full circles to the right within the 25-second motor run. Originally, he had the

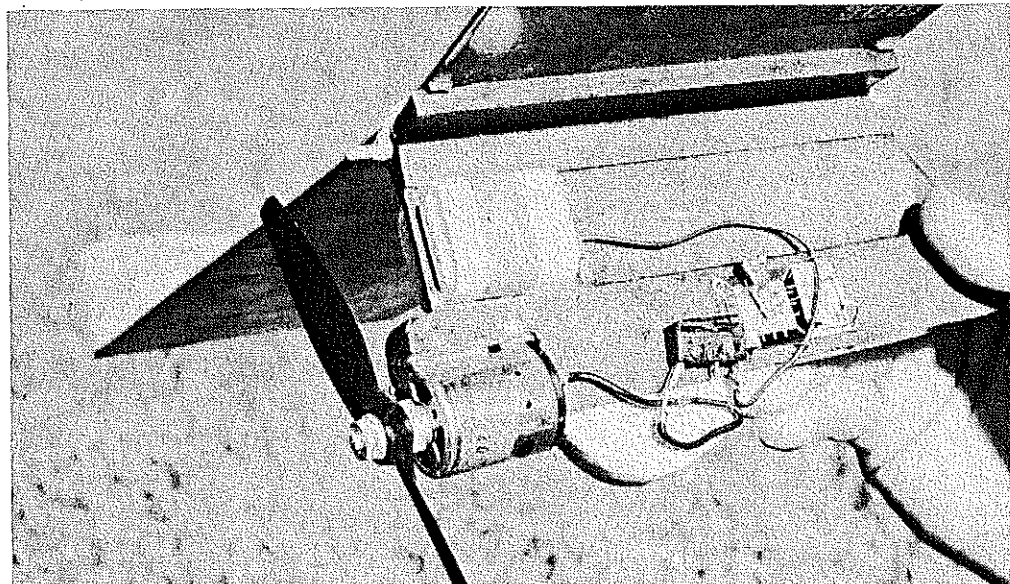
ship climbing pretty much straight away, but discovered that the ship tended to hang on the prop just a bit with the lesser power of the electric motor. Putting the Country Boy in a circular power pattern effectively uses the lift provided by the wing and seems to allow the plane to center itself better in a thermal. It also provides an extremely good transition from power to glide. In fact, from the ground, it's sometimes difficult to tell when the transition occurs. Use the rudder tab to adjust the power pattern so that it's neither too tight nor too much of a wandering arc.

When you're satisfied with the total flight characteristics of the little Country Boy, take it

out and fly it—a bunch. Electric power has not yet come into its own on either a national or regional level, so you're not apt to encounter hordes of competitors when the event appears on the contest calendar. But it is an event which has shown phenomenal growth in the last year or so and will continue to do so as it gains exposure. As nitro prices climb out of sight, noise pollution offends more non-modelers, and flying fields grow smaller, Electric Power is an event of the immediate future. It offers not only dependable, steady power, but ease of starting and handling. The Electric Country Boy will put you way ahead of the game.



Bill and Bonnie Jenkins happily show off the Country Boy right after setting a National Record of 13:31.



The timer shuts down the micro-switch at the end of the motor run. Motor is mounted with lots of down thrust. Balsa bumper on bottom of fuselage keeps the motor from popping off on landing.