

# Electra-Fli

Silent aerobatics are fun with this two-channel, electric-powered model. Motor/battery system is rechargeable at the field in just 15 minutes. / by Bob Boucher and Dave Shadel

The Electra-Fli was designed while I was searching for a suitable sport-type aircraft for the Astro 10 electric propulsion unit manufactured by Astro Flight, Inc. of Los Angeles.

Several kit designs were modified to accept this system and of these, the Midwest Cardinal and Goldberg Ranger 42 proved the best. They were docile in flight and were good trainers, but it was believed that a lightweight, all-balsa design with similar dimensions would perform even better.

The first original designs resembled the Spirit of St. Louis Electric Pylon Racer flown by Bob Boucher at the 1972 MATS Show, but with larger constant chord wings and an increase in the tail area. We have flown several variations over the past few months, and are quite pleased with their ability.

This ship will ROG from smooth surfaces in 50 to 60 ft. It will perform barrel rolls, snap rolls, inside loops, spins and inverted flight.

If you're interested in a fun-type ship which is easy to build and fly, quiet, and doesn't spew out greasy kid stuff, give electric flying a try.

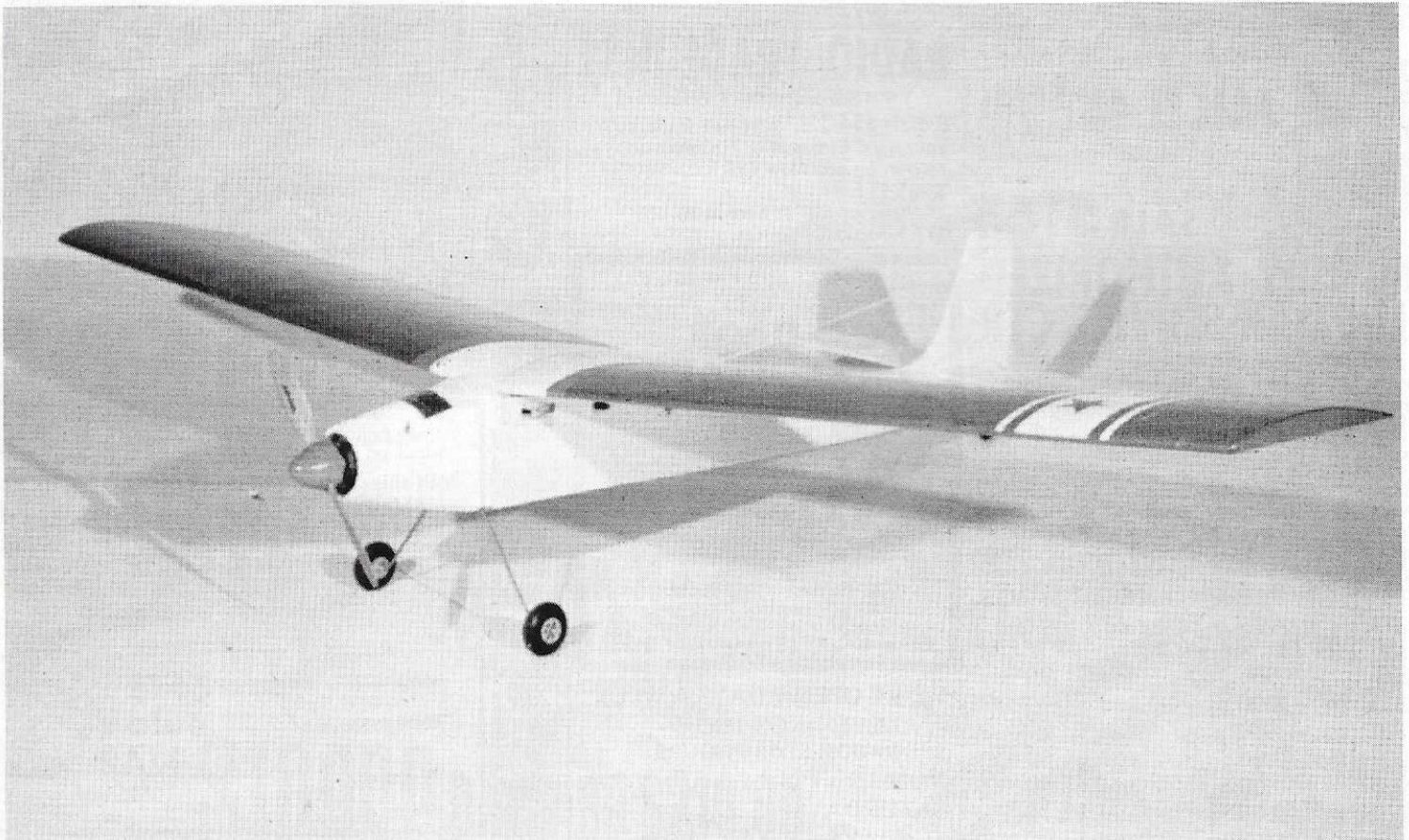
### Construction

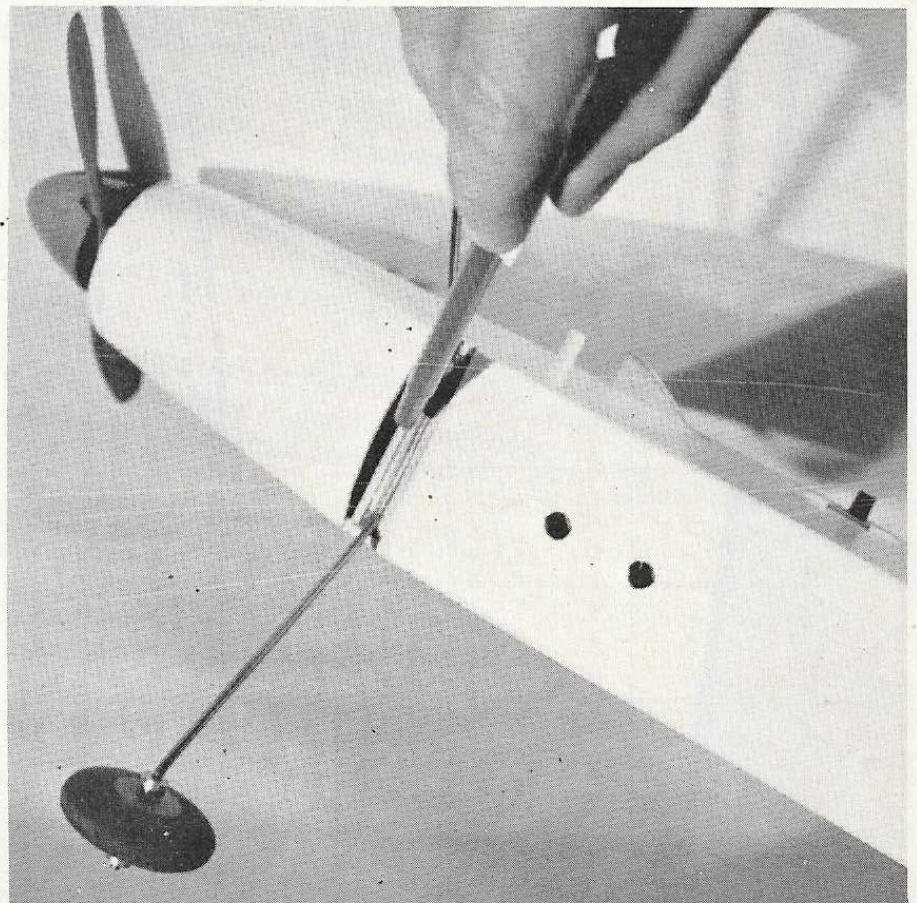
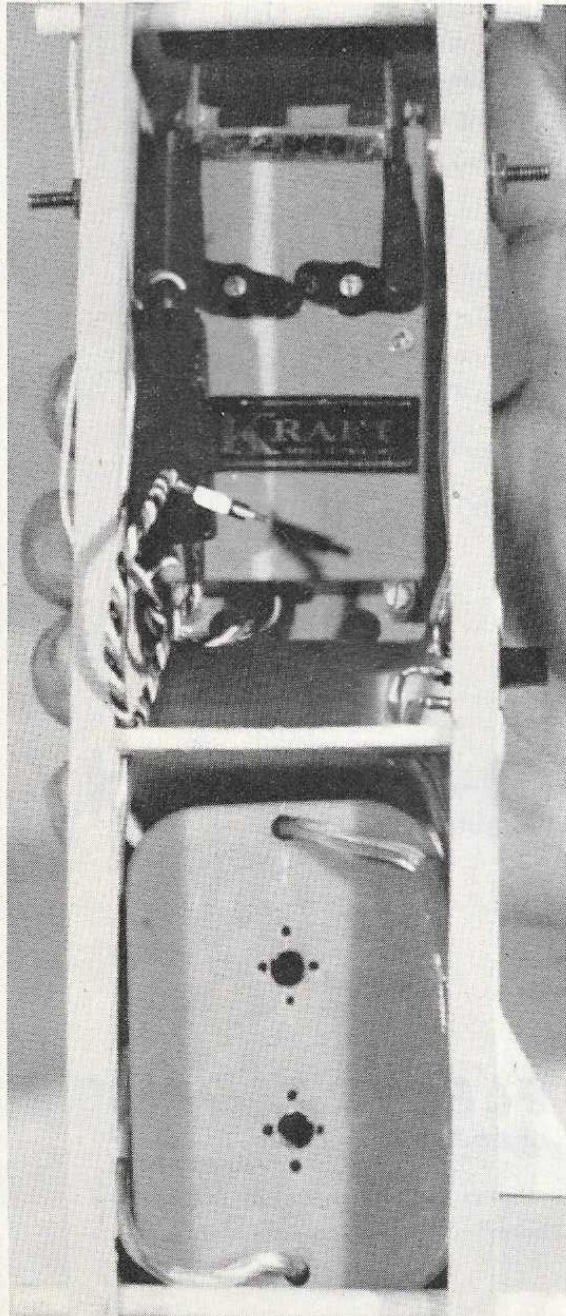
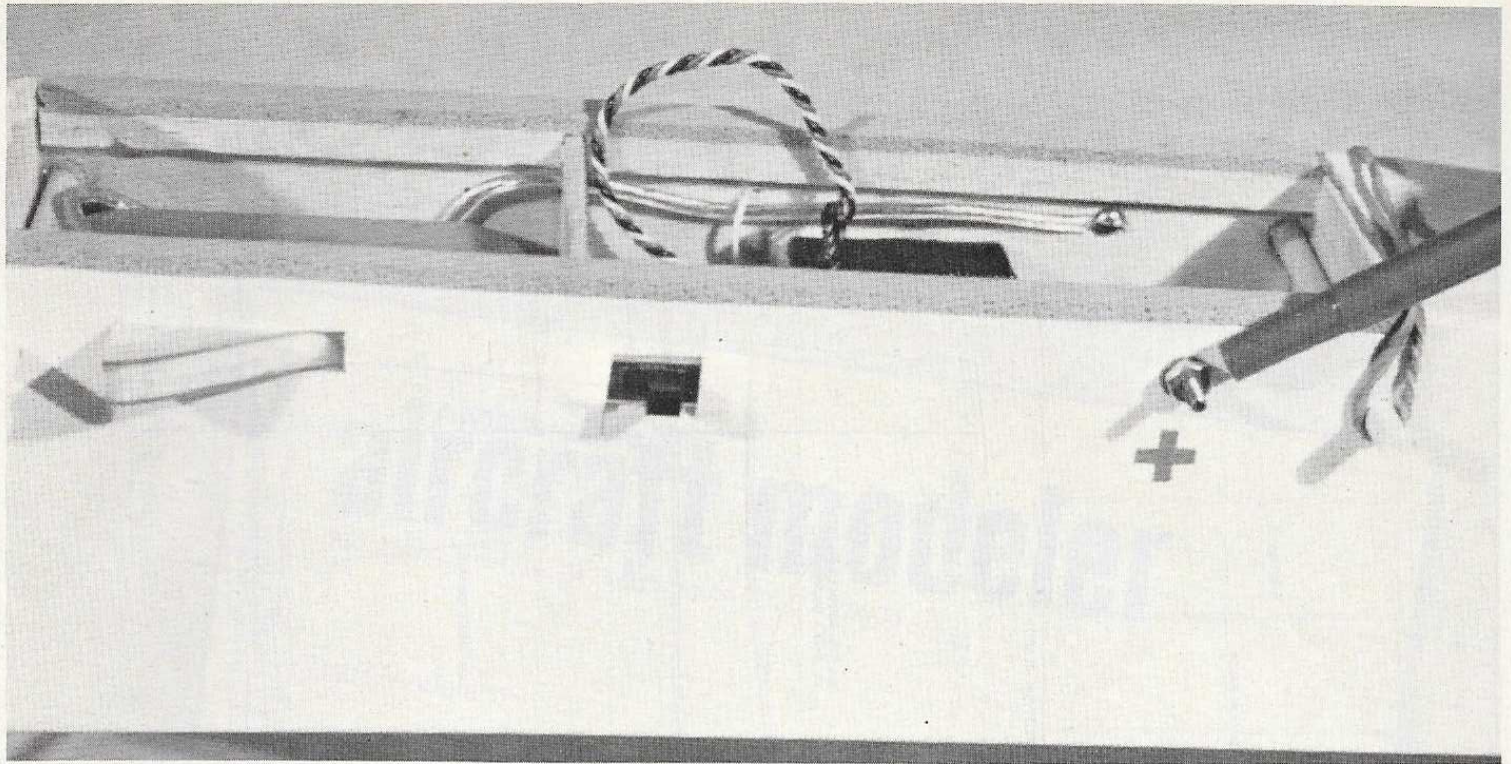
The Electra-Fli can be built and ready for covering in one day.

*Fuselage:* The fuselage is an all-balsa box with only three formers. The motor tube can be made from a rolled balsa or cardboard tube, whichever you prefer. It must be a snug fit, since no bolts are used to secure the motor. Remember, electrics have no vibration and will not tear out of the mount as glow engines have been known to do.

*Wing:* The wing is of the fully sheeted, constant chord variety, with 1/16"

*Plans on following page  
Text continues on page 101*





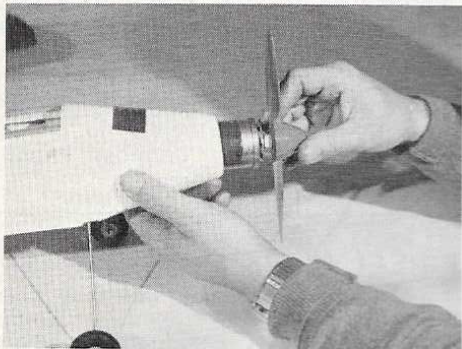
Opposite: This fast flyer makes quick takeoffs and uses a large lifting airfoiled wing. Really great for in-town school yard flying. Top: Forward is to the left. Note air scoop for battery cooling. Batteries are charged by terminals on each side of the fuselage. Left: Because the battery is a heavy mass, it is kept near the CG and ahead of the radio gear. No radio-controlled on-off switch is needed although one can be added, triggered by full rudder or down elevator command. Above: Cooling the motor and battery is essential. Author points out warm air exit for engine heat outlet.

# DID YOU KNOW THAT COVERITE REQUIRES NO PAINT



## ELECTRA-FLI

(Continued from page 20)



Motor, located in a balsa or cardboard tube, is simply retained by friction. Cooling air is forced to pass through engine and into back of mounting tube. See plan.

balsa top and bottom skins, 3/32" ribs and a 1/4" square leading edge. With the constant chord wing, no washout is necessary, so the wing may be built flat on the board.

**Tail:** The tail surfaces are simply 1/8" medium sheet balsa, with the edges sanded to streamlined shape.

**Finishing:** MonoKote or Solarfilm is used throughout for beauty, strength and light weight.

**Radio:** The Kraft two-channel brick or equivalent is used with a lightweight battery pack consisting of four alkaline AAA cells taped together. This battery

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This Volksplane covered with Super Coverite won 1st Place at the 1973 Nats in Oshkosh. The builder is John Roth.



## COVERITE

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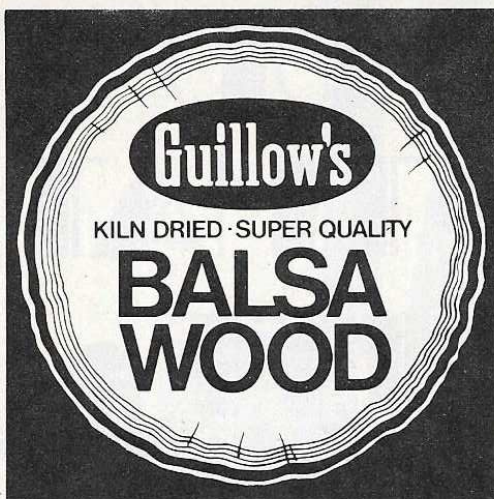
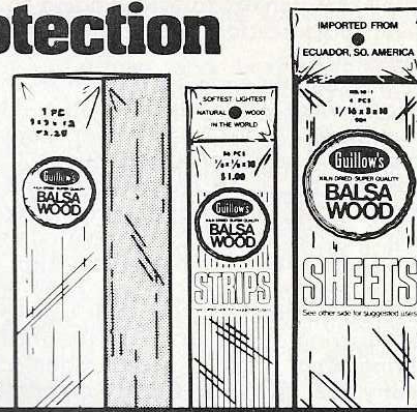
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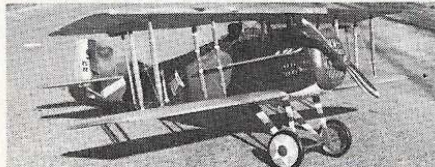


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#### Flying

Before flying, be sure that the CG location is as shown on the plans, and that there are no warps in the wing or tail. Also check that neutral trim settings result in neutral tail surfaces. The landing gear and tail-wheel lengths must be as indicated on plan, so that the plane ROGs properly. Some of our test ships experienced difficult ROGs due to excessively long tail-wheels.

If everything checks out, charge your batteries from your field charger and turn on your radio system. Check controls once again and place the ship on the runway. Flip the motor switch on and release the airplane. It should accelerate quickly and be airborne in 50 to 60 ft. Let the ship gain speed and make a fast climb to maneuvering altitude. Once around the field should put you at a 200+ ft. altitude. Try some stunts, wring it out a little. It's fun and quiet, too!

During the last 30 sec. of the motor run, the batteries will sag and you should compensate by putting in some back trim to maintain altitude. Set up your approach now, back to neutral trim and bring the ship in.

It will float a little with the remaining power, but once the wheels touch, there is enough drag to keep it down.

Shut the motor down as soon as possible to avoid completely discharging the battery. Turn off your radio, then stand back and admire your new machine.

Get your field charger and recharge for 15 min., then go back up again. Notice that the noise has attracted no one, and also notice that at the end of your flying session there's no oil on your hands, clothes, or most importantly, your new airplane.

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