

GP ELECTRO STREAK by FLOYD MANLY

"WHILE NOT a beginner's plane, the ElectroStreak is great for the intermediate or advanced flier who wants real performance with the quiet convenience of electric power."

These words are tucked neatly into a corner of page two of the ElectroStreak's instruction booklet; they *should* be printed in big, bold, letters on the cover of the box! As they say on TV, "This is not your father's Oldsmobile"—and the ElectroStreak is *not* a beginner's aircraft! With these few words of caution, let's take a look at what the ElectroStreak *is* and what it includes.

THE KIT: When the box is opened, the most striking thing is the *very small* pile of wood and the *very large* instruction booklet, which has over 140 photos and sketches showing every imaginable detail: assembly, cover, ground check, pre-flight, range check, test hop, fly, post-flight, etc. Whoever wrote the book was probably being paid by the word, and in typical Great Planes fashion, *everything* was discussed thoroughly.

PERFORMANCE: The ElectroStreak is a performance-designed aircraft, and this is just what you'd expect from Great Planes. To get it into the air, however, you'll have to perform a little yourself, as it takes a pretty good launch to get it moving fast enough for its semi-symmetrical wing to start flying. My first attempts

were nothing to brag about, and the less said about them, the better. After pulling the landing gear back off, removing 4 ounces of in-flight batteries and a 1-ounce switch, and installing a Futaba MC 112B FET motor control with BEC (Battery Eliminator Circuitry), we got it to fly—and it flew beautifully! Fortunately, I enlisted the aid of a fellow who was a couple of years younger than my 59. He could get moving and really chuck that devil out there. The ElectroStreak isn't a floater and has to be spear-tossed! Otherwise, it will just settle with a crunch back onto the turf. Forget up-elevator; it only invites a snap roll—as well as some harsh words!

When it was airborne for the first time, with the trims worked in, it really sang! There was some breath-holding during the first five seconds of each flight, though, until the Goldfire motor and seven Sub-C cells got up a "head of steam." It accelerates slowly, but moves out smartly after a while. It was a pleasure to listen to the remarks of the spectators and the other fliers: "Hey, that thing's fast!" ... "Look at it go!" ... "Rolls?—with an electric?" ... "Inverted flight?"—and so on. But I'd prefer to trade off some speed for more low-end power.

Keep the aircraft in close, because when the power runs down, it's ready to land immediately. With the electronic throttle, I used the tech-

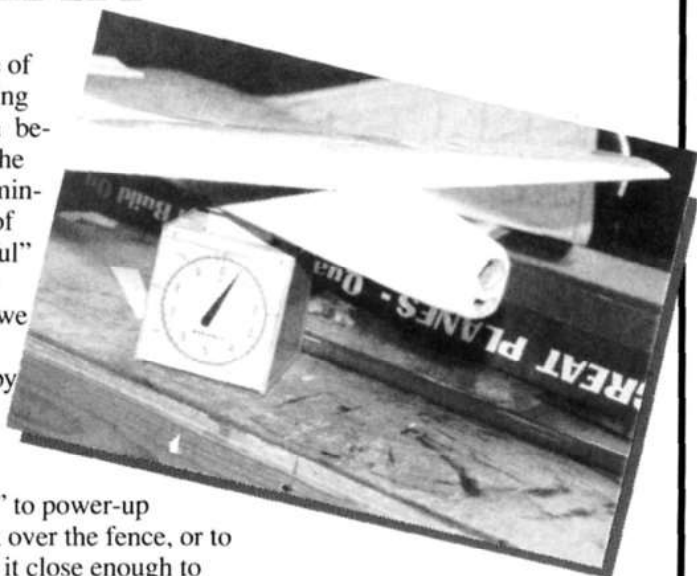
nique of shutting down before the five minutes of "useful" flight time we had, thereby saving a little

"fuel" to power-up to get over the fence, or to bring it close enough to land by my feet. Five-minute flights with the ElectroStreak are long enough. You won't sit back and let *this* electric just cruise or glide around—you'll be knocking clouds out of the sky!

Update, Update!

After 20 to 25 flights, we started experimenting with different props and battery combinations to get the most power and longest duration (another story!). A dramatic increase in power came when we installed a Master Airscrew 7x6 glass prop! No spinner, and we had to use a bushing made of Nyrod pushrod to fit the prop to the stock shaft. We did this out at the field, and the increase in performance was so significant that I think it merits a mention here.

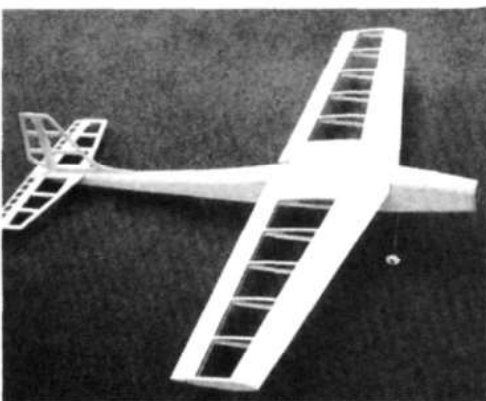
With the new prop, the ElectroStreak almost jumped out of the launcher's hand! Now we had a performer that had people gathering around to see what we had done. Later that day, I ran a couple of checks on my thrustometer to verify the



field results. Would you believe that the Master Airscrew 7x6 prop showed a $\frac{1}{4}$ pound more thrust than the Grish Tornado white nylon 7x6 prop that's included in the kit? We later tried a Graupner 7.25 folding prop, and it, too, performed better than that wimpy thing that I got for free—though not as well as the MA prop.

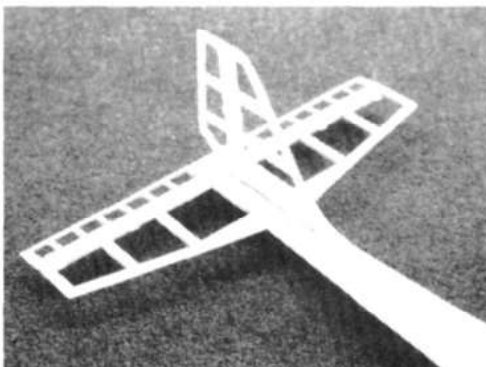
I'm no longer just happy with my ElectricStreak, I'm *delighted*! In fact, I was so impressed, I've already started to build another one in an attempt to convert my brother to electric.

ELECTROSTREAK



The completed ElectroStreak awaiting covering. Attention to weight conservation is evident.

To provide an airframe that's as light as possible, the ElectroStreak's construction is of balsa and ply. Before beginning construction, read through the instruction book to become familiar with construction sequence. There's a great deal of information about selection of radio and adhesives, along with cautions to keep the airplane light. During the building process, I got a little carried away with a digital scale that I borrowed from a friend; I even used it to match the weight of the spars and sheeting for the wing to laterally balance the wing during construction! Anyway, either a digital scale or just a



Tail feathers use simple, lightweight construction; even the elevator is built-up.

simple spring-style Dieter's scale is helpful.

To hold all the quality wood together, I tried a new product from Satellite City*. Although I'm sensitive to the fumes associated with the use of most CAs, I do enjoy the advantages of this type of glue. UFO (User Friendly Odorless) has the same characteristics as CAs, but without the fumes. It proved to be an excellent glue without the headache (and I do mean headache!).

CONSTRUCTION: The instruction

(Continued on page 50)



TELEFLITE CORPORATION

BUILD YOUR OWN ROCKET MOTORS!

WE CAN SHOW YOU HOW!

- 40 POUNDS THRUST!
- 50¢ EACH!

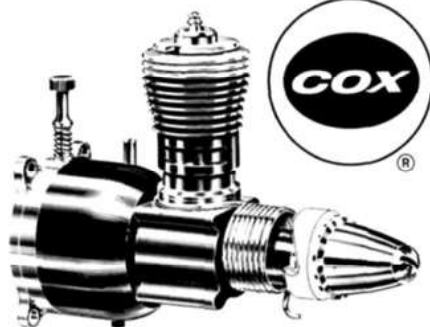
• With a rock tumbler and some simple hand tools, we'll show you how to build **YOUR OWN** rocket engines in your own garage or workshop for 1/5 to 1/10 the cost of the commercially marketed motors.

• **INTERESTED?** Just send us \$2.00 and we'll mail you our brochure along with a **WORKING SAMPLE** of an electric igniter that **YOU CAN MAKE YOURSELF** from materials you'll find around the house.

TELL YOUR FRIENDS ABOUT US! We're the **DO IT YOURSELF ROCKET** people.

Write to: The Teleflite Corporation
Department MN011
11620 Kitching Street
Moreno Valley, CA 92387-9978

THE WORLD'S FINEST SMALL ENGINES



AUTHENTIC Scale Instrument Kits for

• Planes • Boats • Cars •



• Over 83 assorted instruments including first time ever, WW I
• 20 Instrument bezels with clear plastic faces.
• Available from 1/3 to 1/12 scale from \$5.50 to \$8.50 retail.

1/3	1 1/16" & 1"	8.50	1/8	1 1/4" & 3/8"	5.50
1/4	1 1/2" & 3/4"	8.50	1/9	7/32" & 5/16"	5.50
1/5	3/8" & 5/8"	6.50	1/10	3/16" & 5/16"	5.50
1/6	5/16" & 1/2"	6.50	1/12	5/32" & 1/4"	5.50
1/7	9/32" & 7/16"	6.50			

Check MO, Visa, MC
At your hobby shop or ORDER DIRECT \$2.50 for UPS.

JTEC 164 School St. • Daly City, CA 94014
phone: 415-756-3400

Craft Projector Enlarges Pictures, Patterns, Drawings UP TO 25X'S BIGGER!

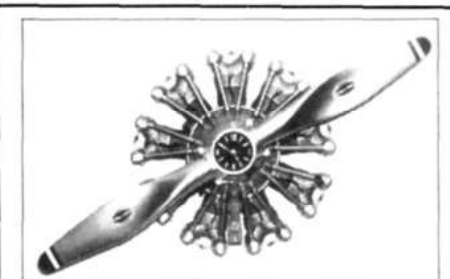
Project: Prints, Plans, Photos, Stamps, Coins, & Gems In Natural Color — Onto Almost Any Surface: Wood, Wall, Screen, Paper, Fabric.



Ideal For:
Woodworkers, Modelers, Arts & Crafts

Makes a real artist out of anyone! Place any object, design or picture under the famous Craft Projector. Switch on — it projects to wall, or any other object in front! Crisp projects even 3-Dimensional objects like sea shells, medallions, coins. Turn living insects into a live science lesson for the kids! **Really indispensable for the crafts-person.** Ideal for needlepointers, woodworkers, etc. Choose enlargement you want with adjustable lens. Crafted from Hi-Impact materials and metal. Plug into any ordinary socket. On-Off Switch and special **FREE BULB INCLUDED**. Plugs into ordinary outlet. Easy to follow instructions and ideas for use also included. Sent to you on **30 Day Home Trial**. Try for a full month after receipt. If not thrilled, return for refund less postage & handling.

Send Order To: **FOSTER-TRENT, INC.**, 2345 Boston Post Rd., Dept. 283-K, Larchmont, N.Y. 10538. Include check, cash or money order for \$18.95 plus \$2.95 postage & handling. Extra Bulbs \$2 each.



Imitari has just introduced an exact 1/2-scale replica of the Pratt & Whitney Wasp Jr. engine with a clock placed in the space normally covered by the propeller cone. The Imitari clock, under authorization from United Technologies, also carries the official registered trademark decal of Pratt & Whitney.

Complete kit: **\$195.** plus shipping
Assembled kit: **\$295.** plus shipping
(available in aluminum or black cylinder)

Available in kit form (more than 200 parts) or fully assembled. Imitari also carries baseball caps, T-shirts, belt buckles, decals in several different sizes, lapel pins, coffee mugs, cigarette lighters, pocket knives and even a .999 full troy ounce silver medallion, all bearing the Pratt & Whitney emblem.

Free Brochure Available

For more information on these and other products, contact

Imitari:
P.O. Box 19688
Las Vegas, NV 89132
702-435-5925

SCALE DOCUMENTATION

Scale-Tech

DRAWINGS — PHOTOS
FABRIC-COVERED BI PLANES to JETS
AEROBATICS, RACE AND MORE



AIRPLANE CATALOG \$2.50



REPLA-TECH
INTERNATIONAL
48500 MC KENZIE HWY.
VIDA, OREGON 97488

REAL SCALE MODELING

★ FOR GIANT SCALE BUFFS!
START YOUR C-D PLANS COLLECTION NOW!
EARLY BIRDS — WARBIRDS — COMMERCIAL AND
RACERS — PRIVATE JOBS — HOMEBUILTS — JETS

67 Curt J24 Jenny \$37	107A Morander B-26 \$49
68A Fokker D-7 Fr. \$39	81 DH Mosquito B/b \$42
70 Bayless Gee-Bee \$32	108 DH Mosquito Bomb \$55
60 Howard Pete Race \$32	98 Stear PT17 Kaydet \$56
60 Supermarine 5.6B \$24	99 N. Bk Widow P61 \$69
89 Supermarine 5.6B \$25	71 Doug DC-3 (C47) \$35
63 Curt Hawk P-6E \$42	75 Doug DC-3 (C47) \$55
94 Curt Hawk P-6E \$54	86 Hawk Texaco 13 \$32
74 Doolittle G-8 11 \$48	44 Stout Sky-Car \$18
95 Monocoupe Sport \$36	72 Curt O2U1/4 L&S \$46
80 Hall Spr Bulldog \$43	108 Curt O2U1/4 L&S \$56
107 Aerona C-3 Spit \$25	60 Douglas M-2 Mail \$24
62 Howard Race like \$45	68 Bristol Bulldog Fr. \$30
78 Turner's W-W Race \$35	59 Brunner M.L.A. \$54
63 Cur Goshik F11C \$42	107 Grum Bearcat RFF \$54
94 Cur Goshik F11C \$54	69 Lindbergs NX-211 \$28
66 DeHav Comet Race \$24	91 Lindbergs NX-211 \$39
62 How Mr Mulligan \$35	96 W. NW 114V Race \$48
94 How Mr Mulligan \$45	108 Fairch PT-19 Tr. \$50
63 Boeing P-26A Fr. \$36	60 Waco Taper-Wing \$36
84 Boeing P-26A Fr. \$48	90 Waco Taper-Wing \$48
69 Waco C-6 Cabin \$36	75 West'd Lysander \$32
64 Beech C17-B Stag \$38	100 West'd Lysander \$49
96 Beech C17-B Stag \$40	57 Ford Trimor 4-AT \$36
55 Lock 11 Electro \$30	126 Ford Trimor 4-AT \$48
82 Lock 11 Electro \$40	114 Ford Trimor 4-AT \$65
62 Stinson T/W SR7 \$26	93 Bellanca Aircruis \$40
81 Stinson T/W SR7 \$26	93 Loening C-2 Amph \$69
122 Stinson T/W SR7 \$38	58 Grum J2-F Duck \$39
59 Bristol Fr. F2-B \$20	78 Grum J2-F Duck \$56
118 Bristol Fr. F2-B \$20	74 Lock Air Express \$48
74 Turner's "Peco" \$45	62 Lock Air Express \$24
56 Cur Warh P-40 \$24	83 Lock Air Express \$36
55 Heath Baby Bul' \$24	77 W-Wms 121 RedL \$48
60 Vogt Corsair F4U \$35	63 C. Seahawk F7C-1 \$45
80 Vogt Corsair F4U \$69	94 C. Seahawk F7C-1 \$57
108 Sisk 5-38 Amph \$49	
60 Boeing 100 Sport \$24	
90 Boeing 100 Sport \$49	
72 Northrop Gamma \$48	
96 Northrop Gamma \$75	
90 Stins "A" Low 3/M \$56	
60 Stins "A" Low 3/M \$42	
120 Stins "A" Low 3/M \$82	
78 Conval Car PBVSA \$42	
104 Con Cat PBV-5A \$56	
65 M.China Clipper \$65	
97 M.China Clipper \$75	
77 Luskomb Sedan \$25	
62 Curtiss NC-4 \$59	
94 Curtiss NC-4 \$69	

Not Sold Thru Dealers. Prices subject to change.
AFTER PRICE INDICATED: STARTER SIZE GIANT PLANS
Over 1400 More. 50c Up. 6"-12" Parts. Always Incl.
Add 10% to all orders for shipping & ins. etc. to
USA, Can. & Mex. Elsewhere its 15% (25% if by air).
Pictorial catalog \$2.00 (includes Price List). Price list
section alone \$1.00. If by air, foreign, add \$1.00.
CLEVELAND MODEL & SUPPLY Co.
EDWARD I. PACKARD-AVIATION'S BEST FRIEND—SINCE 1919
10307A DETROIT AVE. CLEVELAND, OHIO 44102
Phone to 5-15 P.M.—E.S.T. (Or D.S.T.) (216) 961-3600

Jet Pilot Kit*

Lightest Pilots Available

PILOT BUST has:
Modern Jet Helmet,
Face Mask, Oxygen
Hose...

REALISTIC!

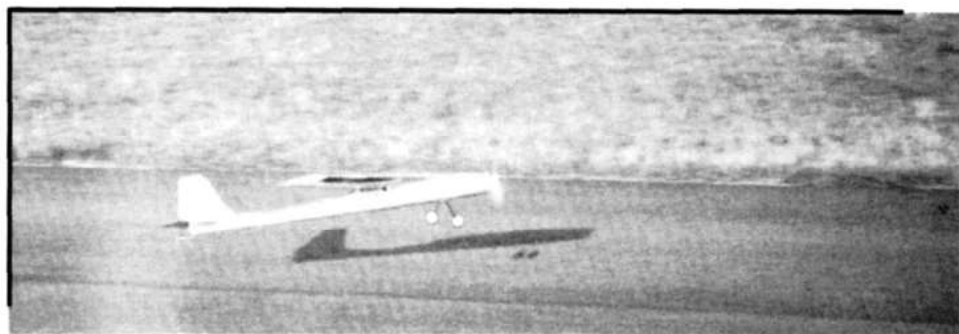
Weights Less Than
One Half
Ounce...

NEW

See Your Dealer or Add One Dollar for Direct Shipping —
No. 308 — 1/8 Scale \$5.95
No. 307 — 1/7 Scale \$6.95

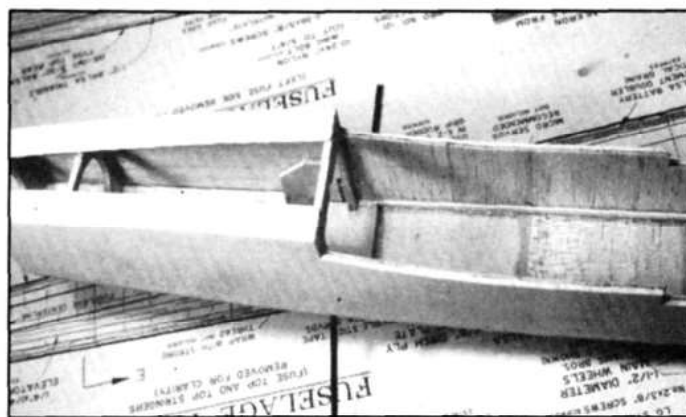
DGA* DESIGNS
135 East Main St. Phelps, NY 14532
1-315-548-3779

ELECTROSTREAK



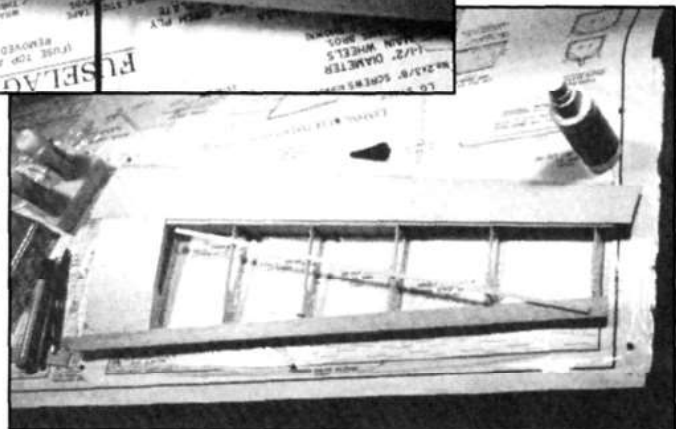
book has a box by each step, so you can keep track of progress. The first section directs you to examine the contents of the box, unroll the plans so that they lie flat, and identify the die-cut parts. The one fault in the entire construction sequence

holes in F-1, and trial-fit the motor by attaching it to F-1 and F-2. Slip the motor into the fuse nose, trim as necessary for a tight fit; glue F-1 and F-2 into place; and remove the motor. Glue the fuse rear together; add cross-grain bottom sheeting;



Left: Landing-gear vertical legs are held in position by hardwood blocks and ply scraps on interior wall of fuselage. Lack of vibration with electrics allows lightweight structure.

Right: The wing panel is built directly over the plans. It's shown here just prior to the addition of rib capstrips.

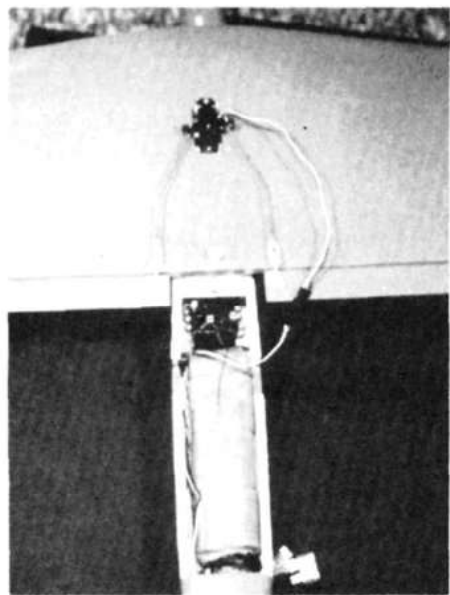


was at this point: The names of the front and rear landing-gear doublers are reversed on the die-pattern drawings (i.e., the front is the rear and the rear is the front). After this has been corrected, you can start construction of the fuselage.

Begin by joining the front and rear fuse side halves, label each half, and mark the location of the formers. Glue the stringers, landing-gear doublers and the triangular corner stock on the top rear fuse and the top and bottom of the fuse front. Glue the vertical-grain battery-compartment doublers into place. Trim the top triangular stock at the rear of the fuse; glue formers F-3 and F-4 into place; then join the fuse sides, ensuring that alignment is maintained so you end up with a straight solid fuse. Trial-fit the motor in F-2, drill

install the landing-gear top plate with the front and rear doublers properly installed. Sheet the fuse front top and rear top with pre-cut balsa sheeting. Laminate the balsa-ply nose block from the die-cut pieces, with alternating grain, and glue it into place on F-1. Sand the fuse to a rounded shape, as shown in the cross sections on the plans. It sounds complicated, but it really was easy.

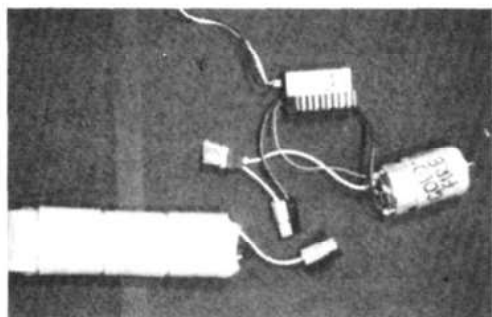
The instruction book claims that, at this point, the fuse should weigh 2.5 ounces. Mine weighed 3.3, so I sanded off some more balsa: It takes a lot of sanding to take off half an ounce! After nearly sanding through some of the sheeting, I managed to get the weight down to 3.1 ounces. As it was a rather humid day, it occurred to me that the fuselage might be lighter if it



Equipment compartment isn't spacious, but it's adequate to house a 7-cell pack, as shown. Wing is shown resting on aft fuselage, creating the impression that the battery is behind the wing—obviously not the case!

were dryer. After placing it on the oven door with the oven on for 15 minutes, the weight was down to 2.9 ounces—close enough!

The next steps require pre-installation of the servos for the servo-rail location and the wing plate (which will be drilled and taped for the wing hold-down screw). An additional note: The instructions *recommend* micro servos, but these are a *must*. If you use anything larger than micro servos, they will not fit—believe me!



Propulsion package includes 7-cell Ni-Cd pack, supplied Goldfire motor, and electronic speed controller, which replaces on-off switch.

The built-up fin, rudder, stab and elevator are constructed next. The main material is $\frac{3}{16} \times \frac{3}{8}$ -inch balsa, and this builds into a strong, yet light, structure. The hinge strip is prepared next by sanding both sides with 220-grit sandpaper, marking $\frac{3}{8}$ -inch width, drilling two $\frac{1}{16}$ -inch holes between the marks and then cutting the balsa into strips. These hinges

(Continued on page 130)

WILLIAMS BROTHERS ACCESSORIES



PILOTS WHEELS

STANDARD • SPORTSMAN
RACING • MILITARY

VINTAGE • SMOOTH CONTOUR
BALLOON • GOLDEN AGE



ENGINES

PRATT & WHITNEY • WRIGHT • LE RHONE

PARTS

PRATT & WHITNEY • LE RHONE
WRIGHT • GNOME



GUNS

LEWIS • VICKERS • SPANDAU • PARABELLUM

SEND \$3 FOR FULLY ILLUSTRATED CATALOG
DEPT. MA 181 PAWNEE ST. SAN MARCOS, CALIFORNIA 92069



FIBERGLASS COWLS

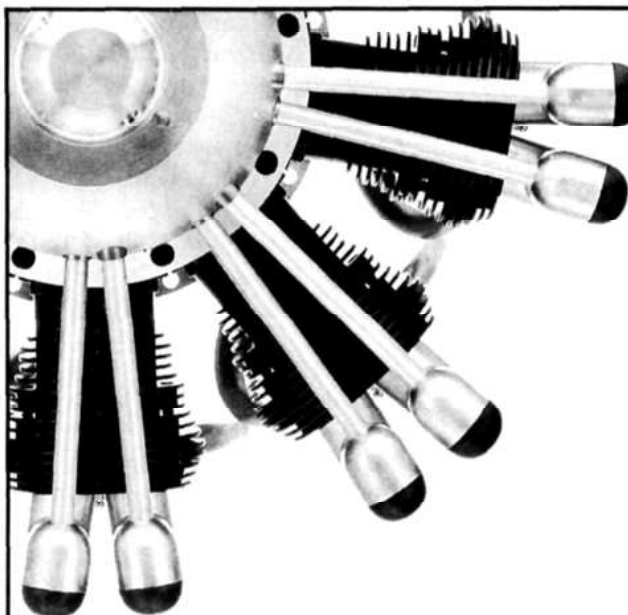


Hundreds of cowls for kits and plans. Strong, lightweight, one-piece construction. Exact duplicates of the manufacturer's original. Also radial cowls and wheelpans.

Send \$1.00 for 8-pg. brochure. Or call 703-890-6017, 9 a.m.-9 p.m. EDT, for phone orders and information.

FIBERGLASS MASTER

Dept. MAN, Rt. 1, Box 530
Goodview, VA 24095



IT'S BIG.

The C Series family of 5, 7 and 9 cylinder fine scale radial engines from Technopower II are **BIG**, in fact 9" in diameter **BIG**. They're also **BIG** on power, precision and scale realism.

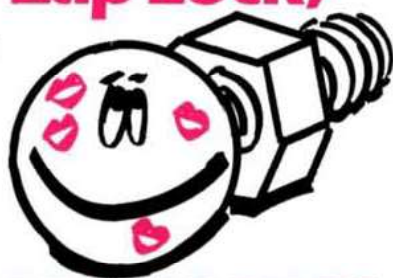
Easy to start, powerful and reliable, a Technopower II C Series radial engine will add that certain "magic" to your airplane that only a Technopower II radial engine can.

To find out more about these and other exciting fine scale radial engines, contact Technopower II.

TECHNOPOWER II INC.

610 North Street, Chagrin Falls, OH 44022 • (216) 564-9787
Complete Brochure \$5.00 • Visa & MC Accepted

If you're
not using
Zap Lock™



you may as
well kiss
your nuts
goodbye.

ZAP LOCK™

The ultimate
thread-locking
compound.
Works on
metal, wood,
plastic or any
combination of
surfaces.

Available
in medium
(blue label)
and high
(green label)
strength.



ZAP

"THE TOTAL ADHESIVE SYSTEM"™

Pacer Tech
California USA

SOPHISTICATED LADY

(Continued from page 128)

motor (.05 size), a pre-finished wiring harness, a spinner, an 8x6 nylon propeller and all necessary hardware. The only additional item needed for an "electrifying" experience is a typical 1200mAh, 6-cell car battery.

Construction and installation of this power unit is simplicity itself, but I didn't like the throttle-controlled motor switch. Frankly, I thought it too fussy and unreliable, and I was proved right on its first test! The major problem was the thickness of the Futaba servo arms, which made it impossible to really secure a drive point for the linkage as described in the manual. The drive point consistently malfunctioned. In any event, the system I used was far simpler and very reliable. I used a lever-actuated sub-miniature switch mounted on the servo body with double-sided mounting tape and driven by the servo arm. This arrangement is a cinch to adjust, and it never fails. The switch comes from Radio Shack as Part No. 275-016. Just get one, inspect it with your servo in hand, and the system simply describes itself.

The cowling is a little fussy to trim and install neatly but, once again, patience will carry the day, and the overall effect is well worth the effort. The rear outlet cone is shown installed with two small screws. Don't bother; using CA, just glue it to one half of the cowl, and the job is done more neatly.

As tight as the radio space seems to be, the Sophisticated Lady will accept most available servos and receivers. A little planning is required, and you must use a square 500mAh airborne pack (the flat type won't fit). I didn't use a switch, since it was so easy to lift the canopy and plug the battery pack directly into the receiver.

I used my trusty, single-stick, Futaba* PCM system, which performed flawlessly as it always has these last few years. The covering is Coverite's* Black Baron film, which continues to be my favorite heat-shrink. I had wanted to keep this an all-Goldberg job by using Ultracote, but none was available in my area, and it hasn't been available for several months. I don't know what the problem is. The Lady is certainly very easy to "dress" with no tricky curves or compound surfaces, and two rolls of Black Baron did the job nicely.

Before covering, I filled all the "dings" and bad spots with a Borden product (I remember when milk was that outfit's only business)—Elmer's Redi-Spack Lite. This very light, easily sanded mate-

rial is well worth investigating.

All surface throws were set as suggested in the instruction booklet, and they proved to be just right; CG was set in the middle of the two extremes described on the plans. Again, this was the "bingo" position. All-up weight, with the power pod installed, was 50 ounces for a wing loading of nearly 11 ounces per square foot—not bad by anyone's standards.

PERFORMANCE: No analysis is necessary. The Sophisticated Lady is a fine flying glider and, with electric power, it provides a relaxing way to spend a summer afternoon. There seems to be a variation in control-surface sensitivity between power-on and -off. (The prop blast hits the T-tail and probably accounts for this effect.) Don't dive the Lady; it's very clean and can build up a "head of steam" in the blink of an eyelash. The wings are sufficiently strong for all normal loads, but I'd be fearful of a very sharp pull-out! Even with the extra weight and drag of the power unit, the glider still soared beautifully.

I've never been enthusiastic about gliders, but the Sophisticated Lady has changed my mind. I thoroughly enjoyed building it, and I'm having even more fun flying it. Give yourself a treat; take your own Sophisticated Lady out on a date!

*Here are the addresses of the companies mentioned in this article:

Carl Goldberg Models Inc., 4734 West Chicago Ave., Chicago, IL 60651.

Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718.

Coverite, 420 Babylon Rd., Horsham, PA 19044. ■

ELECTROSTREAK

(Continued from page 51)

worked very well and appear strong enough to handle the loads required.

Following hinge preparation, the rudder/fin and the stab/elevator are pre-hinged, and the control horns are installed. A special note on the rudder horn: Owing to the pull-pull rudder configuration, a control horn is mounted on both sides of the rudder. This is done very easily by marking the location of the holes on one horn and transferring them to the other horn. The horns are held together with the 2-56 screws and nuts provided in the hardware package. The rudder horns are slightly modified, leaving only one hole available to connect the control cable.

After you've prepared the stab/elevator and the rudder/fin, ensuring proper alignment is maintained, carefully mount the stab to the fuse. The instruction manual explains all the necessary precautions

(Continued on page 132)



P-47

THUNDERBOLT

Scale..... 2.3 inches/foot
Wingspan..... 92 inches

SEMI-KIT INCLUDES:

FIBERGLASS FUSELAGE AND COWL, CLEAR PLASTIC CANOPY, PLANS—showing all ribs & formers plus wing, stab-elevator and fin-rudder structures.

RAZORBACK VERSION ALSO AVAILABLE—Please write for more information.

AVAILABLE FROM:
ROY VAILLANCOURT
18 OAKDALE AVENUE
FARMINGVILLE, NY 11738



THE BLACK BARON IRON

Advanced hi-tech thermostat reduces temperature drift to only 5°! Ordinary irons vary up to 40°. Exclusive "roll bars" fit into fillets & undercambers. Flat sole with bevelled edges provides constant heat without marks. Coating is 100% Blackstone - a big improvement over less expensive coatings. It slides with almost no adhesive buildup. Truly a magnificent tool.

COVERITE

420 Babylon Rd. Horsham, PA 19044

A magnificently crafted tool that reduces temperature drift to 5°!



ELECTROSTREAK

(Continued from page 130)

and suggested adjustments and measurements to ensure this is done accurately. The same care is taken in explaining the process of mounting the fin. Proper alignment is critical to a straight-flying aircraft.

After the fuse, fin and stab have become a complete assembly, wing construction follows. This process is accomplished much more easily than I can explain, and the instructions are quite clear; just follow them closely. This is the first plane I've built using both horizontal and vertical shear webs, but it seems logical and makes a strong, light structure.

The wing panels are joined with the $\frac{3}{16}$ -inch center rib between them. The kit includes one $\frac{7}{16}$ -inch-square and two $\frac{3}{16}$ -inch-square blocks to use as dihedral blocks. After sanding the center leading edge flat, install the fiberglass reinforcement tape. In building this or any other kit, I like to try new methods recommended by the manufacturer. Sometimes they *seem* strange, but often work quite well. After all, if you go through life with a closed mind, you will miss a lot of opportunities to learn! Anyway, I used 3M "77" spray adhesive to hold the glass in place and glued it down with CA. This is a fantastic glassing process: no fuss, no mess, no sticky epoxy.

After the wing has been built, trial-fit it to the fuselage, then carefully measure for alignment from the wing tips to the base of the fin. Drill the mounting hole through the wing and mounting plate, then tap the mounting plate for a 10-24 nylon mounting screw and harden the threads

with CA. I had to buy a tap—an inexpensive, but necessary, item for most shops.

Next, shape the fairing block to fit on the wing center so that it blends in with the fuse front. This has to be one of the *worst* parts of building any model! I always have difficulty carving these fairing blocks to be symmetrical and smooth. After much cussing and frustration, I managed to get it to look quite good.

The ailerons are trimmed to length from the shaped stock, and the leading edge is sanded to an angle to achieve a tight fit against the wing trailing edge. The mount for the aileron servo is prepared and the servo pre-mounted. The ailerons are then pre-hinged in the same manner as the elevator and rudder, and the control horns are mounted.

At this point, compute the finished weight of the whole airframe. The instruction book lists the expected weight of each assembly, and, by weighing each on an accurate scale, you can predict the finished weight. If the airframe is too heavy at this point, you can sand off excess weight, drill lightening holes in the landing-gear doublers, decide to do away with the landing gear altogether, or use 800mAh batteries.

After sanding the entire structure smooth, I covered it with dark red Super MonoKote by Top Flite*. I used Goldberg* Ultracote for the yellow trim, and the "canopy" was done with chrome Black Baron* Presto. It sure looks good in flight with the sun reflecting off it.

I was unhappy with the lack of guidance provided for installing the motor. The only reference to installing a fuse in the motor circuit was in passing: You're told not to exceed 25 amps. The instruc-

tions addressed breaking in the motor and options for connectors, but they didn't include any diagrams to follow, and these would have been useful for someone new to electrics. I'm no pro at dealing with electrics, but I've been reading most of the columns in the periodicals and from the information gleaned there, I decided that, for safety, both a fuse and some method of disarming the circuit was necessary. I installed an auto-type fuse with bayonet-style connectors to the motor circuit. By cutting an access slot in the fuselage side, I can remove or reconnect the fuse with the battery and wing in place, thereby having a method of disarming the motor without the extra weight of an additional switch. The motor is controlled by a Victor Engineering* speed controller with a brake.

One advantage of the design of the Victor speed controller is that it uses optocoupling, which further isolates any possible radio interference. The speed controller came with a capacitor and diode to be installed in the circuit to reduce, or eliminate, the possibility of radio interference from the motor circuit. The Goldfire motor came with its own capacitor, and I installed both in the circuit just to play it safe.

Cooling of the motor, battery and speed controller is accomplished by a flow-through, ram-air method. This begins through the nose-block intakes: one below the motor, the other through the motor. The radio is installed without wrapping anything in foam: Electric motors don't vibrate like the reciprocating kind. The cooling air flows past the speed controller over the motor battery and exits the tail—simple and effective.

I installed my "Heinz 57" radio (Tower* transmitter, World mini receiver with two micro servos and one Futaba* S133 micro servo—all powered by a 225mAh battery), and the total radio weight was 5.3 ounces. The radio installation is *tight*. The radio battery is mounted with Velcro to the bottom of the fuse in front of the motor battery; the speed controller is mounted inside the front top of the fuse with Velcro. The receiver is mounted behind the rudder and elevator servos, again using Velcro, and the elevator and rudder servos are mounted as far to the rear of the wing opening as possible. To give you an idea of why this is so cramped, almost all of the area under the wing is occupied by the motor battery. It is tight, but it works.

The completed ElectroStreak weighed in at 42.8 ounces with the 2½-inch Williams Bros.* wheels mounted and the 7-cell, 1200mAh battery installed.

PERFORMANCE: Flying the ElectroStreak was something that I approached with much apprehension. Would it just dog out on me like some other electrics have? Would it fail to get off the ground, or just be totally unmanageable? The day to realize the fruits of my efforts was at hand. All controls were

set to recommended throws; all batteries (receiver, transmitter, two batteries for the motor—a 7-cell 1200mAh and a 7-cell 800mAh) were charged the night before. Everything was ready for the first-flight photo session after work.

How does that saying go?—anything that can go wrong...? Well I peak-charged the 1200mAh pack, plugged everything in, secured the frequency, turned on the transmitter, turned on the receiver—nothing! Uh-oh! Somehow, the receiver switch had been turned on during the day and the battery was drained. Thank goodness for Ace* Fast Field Chargers: Within 30 or 40 minutes, the flight pack was back on line and I was ready for the moment of truth.

The first takeoff was from the runway. With the throttle up and the motor whining quietly, it tracked straight and broke ground after a roll-out of about 20 to 30 feet. The ailerons seemed sensitive, it climbed at a safe attitude, then turned slowly back for a flyby. As it was gaining altitude and I trimmed for first and second passes, the adrenaline was pumping! This thing was moving! After a quick trim set, a little aileron and a little elevator, it was flying level. This plane is *not* a trainer!

While watching (or flying) the ElectroStreak "streak," I think the best description that comes to mind was one word uttered by Editor Rich Uravitch: "Awesome!" It was eerie: this sleek plane with its profile zipping past with just a whine from its motor. The ElectroStreak is *fast*: It rolls fast, it flies fast, it responds fast and solid, and yes, it can do a Cuban-8 and stall turn. I was so preoccupied with doing flybys for the camera that it didn't even occur to me to do a snap roll.

I was definitely impressed with the performance of this aircraft. The adrenaline levels were high even into the second flight. By rough estimation, flight duration was about four minutes on the 1200mAh pack and approximately three minutes on the 800mAh pack; unfortunately, I was so excited that I forgot to time the *actual* length of the flight. I'll just say that although these times may seem short to wet fliers, it was very exciting.

Aside from the lack of guidance in selecting a method of wiring the motor, this is an excellent plane. Building is simple, and with the thorough guidance of the instruction book, this plane could be built by a almost anyone who has built at least one aircraft. However, this aircraft should

(Continued on page 136)

Works great, less filling.

Now available...Mighty Lite...the world's first premium grade light plywood. Mighty Lite's ultra smooth grain finish allows limited filling with virtually no flaking, saving you hours of precious building time.

Mighty Lite bonds easily with ZAP® or other CA's and cuts like butter with an X-ACTO® knife.

Shattering, splintering, warping and mildew are a thing of the past with Mighty Lite's quality formulation. It is currently being used by leading manufacturers, including BOB VIOLETT MODELS and HOUSE OF BALSA, because of its superior strength-to-weight ratio.

So, if you're tired of shattering experiences, next time do it right...use Mighty Lite!

Mighty Lite



House of Balsa
20130 State Road, Cerritos, California 90701
(213) 860-1276



Frank Tiano Enterprises
2460 S.W. 85th Terrace, Davie, Florida 33324
(305) 473-2211

Mighty Lite is available at better hobby stores everywhere.
If not, you may order direct from the regional sales office nearest you.



F-86 SABRE JET
Available from Bob Violett Models, Winter Springs, FL (407) 365-5869

Wanted:

AUTHORS CONTRIBUTORS PHOTOGRAPHERS



We think a lot of our readers have ideas that are worth sharing. How many times have you read an article and said, "I could do that!" or "That's not the only way to do that; mine's easier!" Could very well be! Here's your chance! We'll be expanding **Model Airplane News** and are looking for additional contributors to help us accomplish this objective. Of key importance is the ability to take good photographs; the writing we can help you with. Interested? It's much easier than you might think.

Let's hear from you. Send in your ideas, articles, thoughts and photos; we're looking forward to it.

**RICH URAVITCH
MODEL AIRPLANE NEWS
AIR AGE PUBLISHING
251 DANBURY ROAD
WILTON, CT 06897**

ELECTROSTREAK

(Continued from page 133)

not be flown by an inexperienced pilot: It goes where you point it, and it isn't self-leveling like most sport-type aircraft. If you feel the "need for speed" and don't want to get greasy, latch onto the ElectroStreak from Great Planes: You'll know you've grabbed hold of a mover.

**Here are the addresses of the companies mentioned in this article:*

Great Planes Model Distributor, P.O. Box 4021, Champaign, IL 61820.

Satellite City, P.O. Box 836, Simi, CA 93062.

Top Flite Models, 2635 S. Wabash Ave., Chicago, IL 60616.

Carl Goldberg Models, 4734 West Chicago Ave., Chicago, IL 60651.

Black Baron, distributed by Coverite, 420 Babylon Rd., Horsham, PA 19044.

Victor Engineering, 380 Camino De Estrella, Suite 170, San Clemente, CA 92672.

Tower Hobbies, P.O. Box 778, Champaign, IL 61820.

Futaba, 4 Studebaker, Irvine, CA 92718.

Williams Bros., 181 Pawnee St., San Marcos, CA 92609.

Ace R/C Inc., 116 W. 19th St., Box 511C, Higginsville, MO 64037. ■

FUTABA 1024H

(Continued from page 91)

I've been able to put in a great many flights on several helicopters, and it has never missed a beat. It's a pleasure to have radios of such high quality and reliability.

There are, however, a couple of things I'd change:

- When entering the inverted flying mode, the elevator control reverses as needed, but the elevator trim does *not*. This means that, while flying inverted, if the nose has to be trimmed up, the level must be positioned to the more *down* position. It also means that any nose-down trim you may have in the helicopter to maintain forward flight while upright will then become nose-up trim when flying inverted. That will *really* get your attention when you first notice it! These effects can be minimized by flying upright with neutral elevator trim, so the trim will remain neutral while inverted. The Futaba PCM 8H had the elevator trim also reverse when inverted, and I wish they followed suit with the 9VH.

- One of the nice features of this transmitter is that it can be used with either the supplied PCM receiver or with an FM-type receiver that isn't PCM. Because the transmitter is of a digital design, however, and the FM receiver is of an analog design, the servos move in small, but definite, increments as they go through their travel. This is virtually unnoticeable in my

helicopter except in the collective-pitch function, but I have to admit that I'm using 20 degrees of collective-pitch range in my X-Cell with a rotor-head speed of about 2,000rpm, and this makes the collective fairly sensitive. It's here that the hover altitude control is less than perfect because of this digital servo movement.

It's almost impossible to design a radio that's all things to all users, but the 9VH comes as close as any I've seen. A beginner won't need all the special features right away, and for more advanced fliers, I know of no other radio that gives so much control. If this review has done nothing more than whet your appetite to learn more about this new offering from Futaba, I'm happy.

**Here's the address of the company featured in this article:*

Futaba Corporation of America, 4 Studebaker, Irvine, CA 92718. ■

HELI CHALLENGE

(Continued from page 96)

the throttle stick is pulled back past the center position on the transmitter, the collective pitch will change the pitch of the rotor blade to the negative side of the curve, and the throttle will reopen. This allows the helicopter to be flown easily through aerobatics, and it makes getting in and out of inverted flight a little simpler.

- For inverted flight using the invert system built into the transmitter, your radio system must have this feature (which is included in most of the higher-priced helicopter radio systems). The pitch curve must be tailored for inverted flight. Be sure that you enable the invert system at the transmitter! With many of the radio systems, enabling invert will automatically alter the pitch curve. If this is the case, you'll always have to fly with the invert system enabled (not *switched* to inverted; enabling only makes the invert switch active), so you'll have to be careful not to hit the switch at the wrong time! Ideally, you should set your machine up so that the hover point is just about half-throttle, and the upright pitch curve is pretty much the same as it is for normal flight. Flipping the invert switch will reverse the collective pitch, and the inverted pitch curve should be set so that it mirrors the upright curve. This usually doesn't work out exactly because of mechanical restrictions (e.g., the presence of any differential throw or mechanical offset in the collective system). If you have to compromise your pitch curve, you can give up some of the negative pitch, as