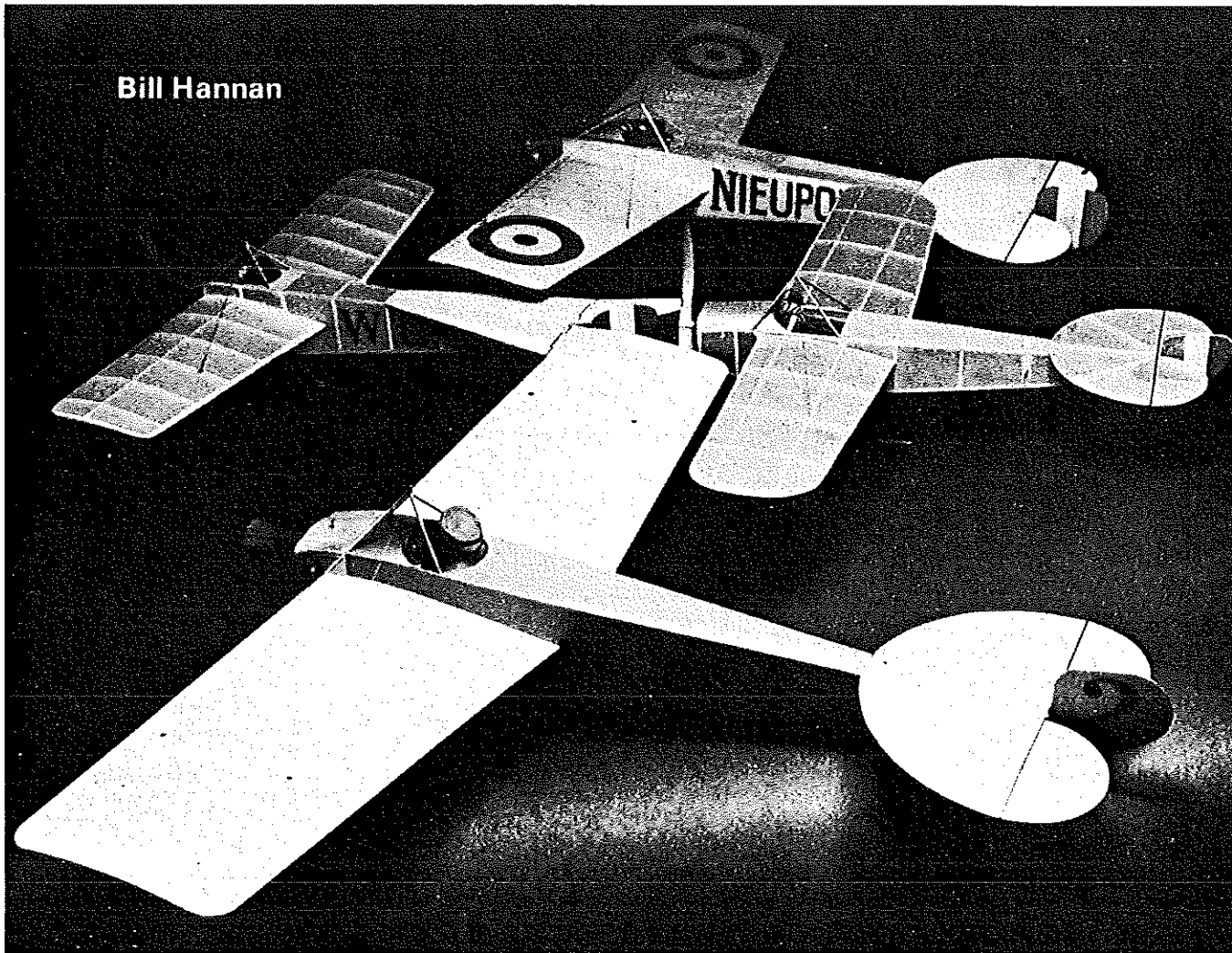


Bill Hannan



Some of the author's collection of Nieuport monoplane flying models. Foreground is the model in the article. Extreme left is Peanut Scale swallow-tail version; behind it a Peanut old-timer based on Ideal Nieuport kit; background, an earlier all sheet job with CO₂ power.

140

NIEUPORT MEANS biplanes to the average aviation enthusiast but before World War I, Nieuport was synonymous with monoplanes of great speed and efficiency. Edouard de Nieuport, who later changed the spelling of his name to Nieuport for commercial purposes, was designing aircraft scientifically while most other aviation pioneers were still stumbling along with "cut-and-try" methods. While most of his contemporaries were hanging larger engines on their flying machines in search of greater speed, Edouard was working with Gustave Eiffel (of tower fame) wind-tunnel testing his designs. The efforts paid off in the form of many records for speed, duration and altitude, including some established in the United States. Perhaps the crowning achievement was the winning of the 1911 Gordon Bennett Cup Race. First spot went to American Charles T. Weymann, while Nieuport himself, flying a sister ship, placed third in the event.

Sometime later, in far-off Russia, one Lt. Peter Nesterov succeeded in performing the world's first documented intentional loop in his Nieuport monoplane.

Many variations of these aircraft were manufactured, including versions with 2-, 3-, 5-, 7-, and 14-cylinder engines. Only two machines are known to exist today. One is a Gnome-rotary powered example, in Sweden, while the other is a 2-cylinder

Nieuport's Marvelous Monoplanes

Nieuports even prior to WW I were scientifically designed machines with extraordinary performance for their day.

This rubs off on our all-balsa CO₂-powered model.

type located in the French Musec de l'Air near Paris. In the company of J. D. Gillies of Scotland and Georges Chaulet of France, your author recently had the privilege of examining the latter craft firsthand. It is a magnificent piece of work, literally decades ahead of other machines of its time. For example, a Wright "Baby" racer

also on display in the museum, looks positively ancient by comparison.

My personal fascination with the Nieuport monoplanes extends back ten or more years, and they have served as inspiration for a number of flying models. Some have been rubber powered and others glo-engined. Our featured model is the second

PLAN REPRODUCED HERE IS PERFECT FOR PEANUT SCALE!

THANKS TO
FRANK
EHLING FOR
SUGGESTIONS!

THIN
ALUMINUM
COWL SIDE
2 REQUIRED
(SEE ARTICLE)

WING DIHEDRAL
1/2 INCH, EACH TIP

R-1 2 REQUIRED 1/16" SHEET

R-2 2 REQUIRED 1/16" SHEET

TRIM TO FIT AGAINST OPPOSITE WING PANEL

R-1 ROOT RIB LOCATION

WING PANEL (MAKE 1 LEFT & 1 RIGHT)

FIBER-POINT PEN "RIB LINES"

R-2 OUTBOARD
RIB LOCATION

RIGGING POINTS

1/32" SHEET

1/16" SQUARE HARD Balsa
OR SPRUCE ON
UNDER SIDE OF
LEADING EDGE

NOTE: ALL THIN
ALUMINUM SHEET
PARTS ARE CUT FROM
OFFSET PRINTING PLATE

FIREWALL

FOR FUEL LINES

FRONT LANDING
GEAR LEG

.025 MUSIC WIRE
1/16" PLYWOOD

PAPER FAIRING

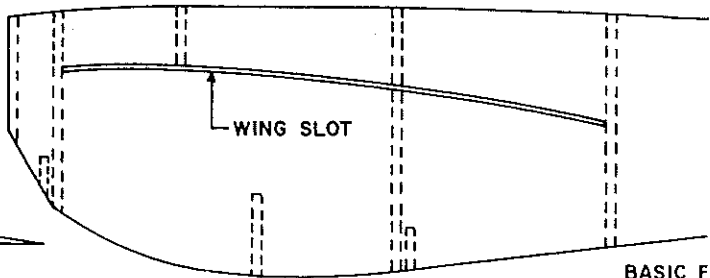
ROD GUIDE

WARP CONTROL ROD

BAMBOO SKID

EPOXY

1" DIAMETER HUNGERFORD WHEELS

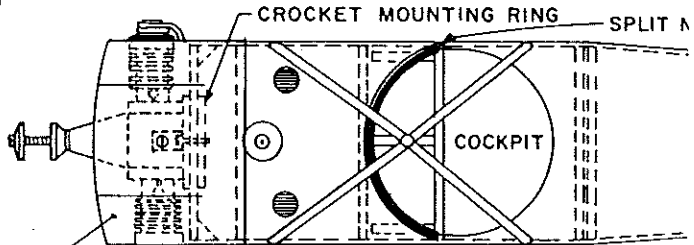
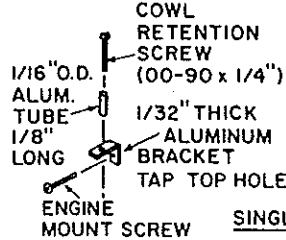


BASIC F
2 REQU

SKETCH SHOWING HOW REAR
LANDING GEAR FAIRINGS ARE
MADE FROM STIFF PAPER.
FRONT SIMILAR. BLEND LOWER
JUNCTURES WITH 5-MINUTE
EPOXY.



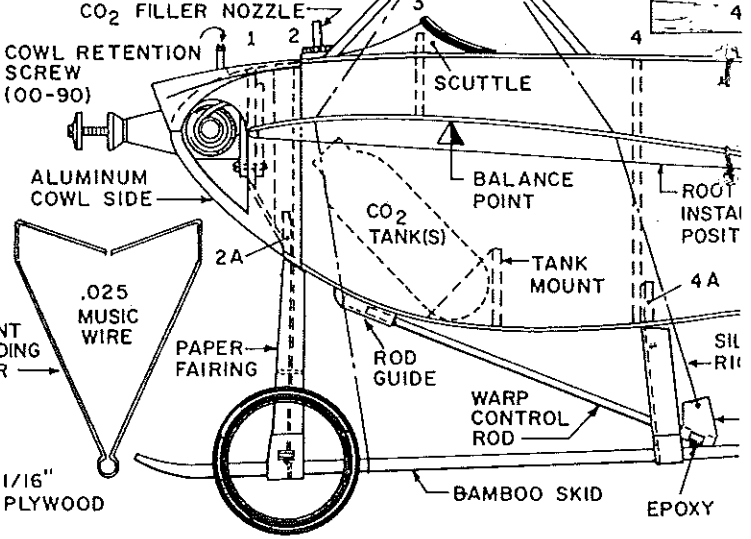
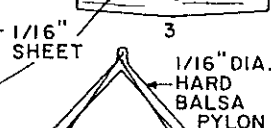
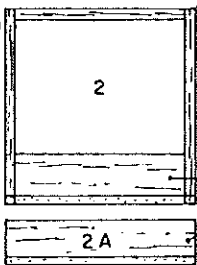
SKETCH OF COWL FORMING
BLOCK (SEE ARTICLE)



OPTIONAL
UPPER COWL
(SEE
ARTICLE)

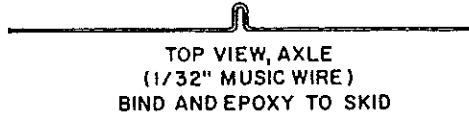
BROWN JUNIOR SINGLE
OR TWIN CO₂ ENGINE

NOTE: FOR CLARITY
NO INTERNAL FUEL
LINES ARE SHOWN

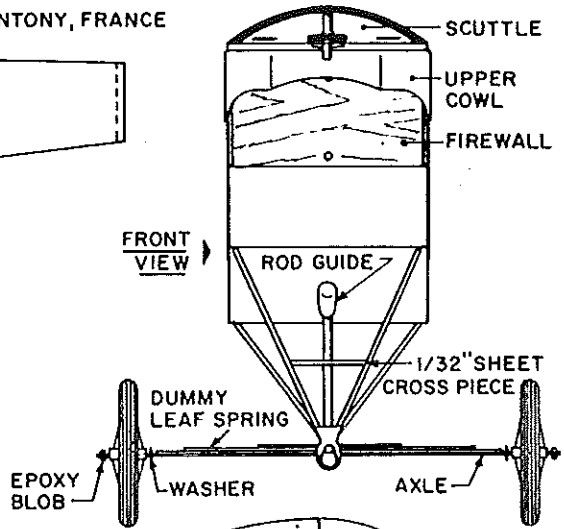


DEDICATED TO GEORGES CHALET, ANTONY, FRANCE

HC FUSELAGE SIDE
REQUIRED 1/32" SHEET

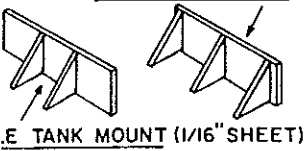


FRONT VIEW



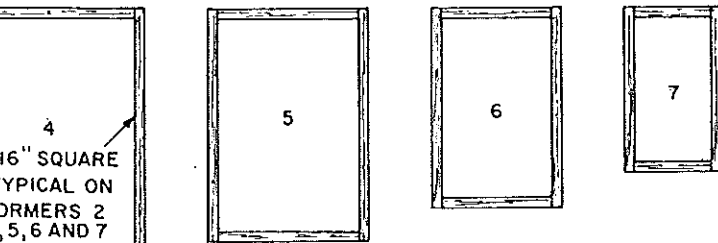
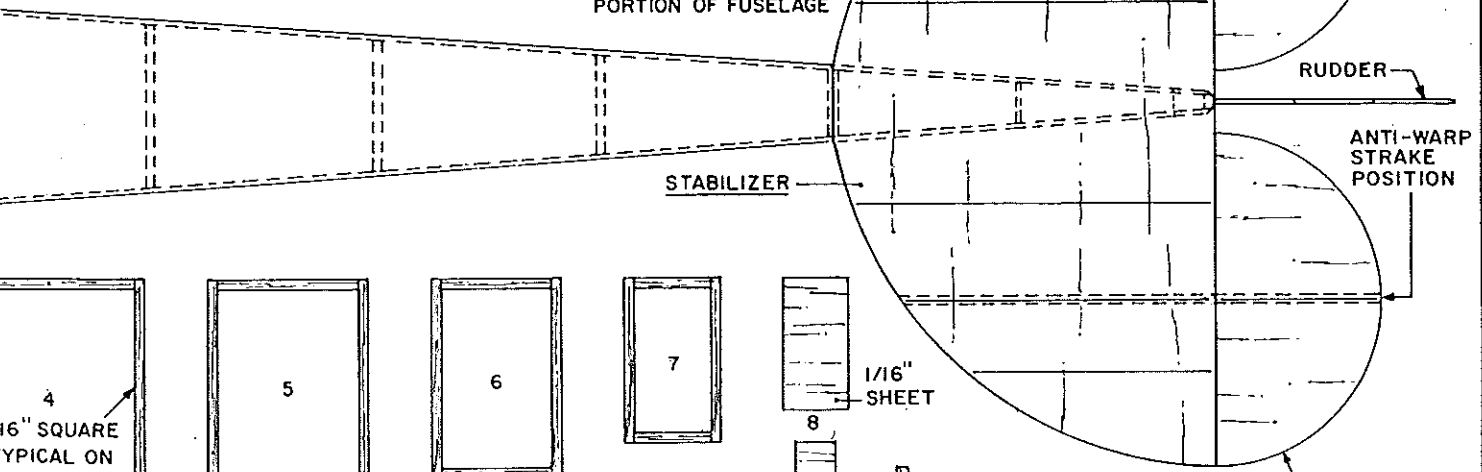
DUAL TANK MOUNT

PROTOTYPE MODEL EMPLOYED A WILLIAMS BROTHERS NYLON PROPELLER TRIMMED TO 4 1/4\"/>



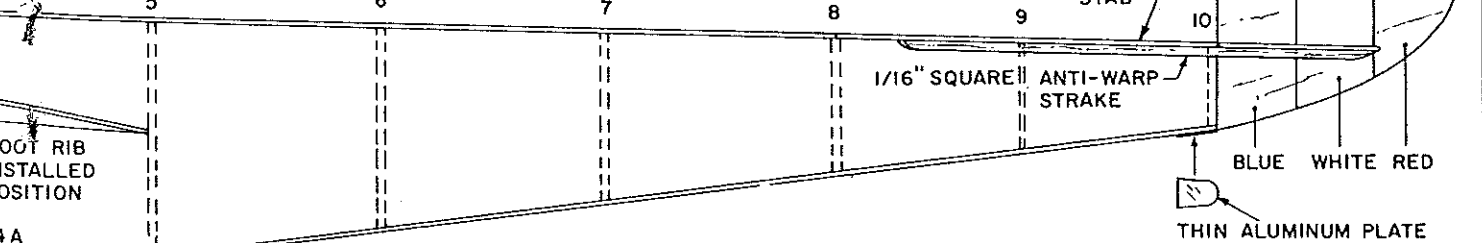
GLUE ON NEOPRINE TUBING

NOTE THAT THE STAB SERVES AS COVERING FOR THE REAR PORTION OF FUSELAGE

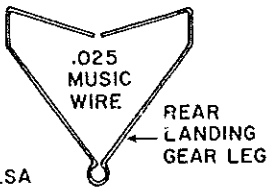


FUSELAGE SIDES, TOP AND BOTTOM ARE 1/32\"/>

4A 1/16\"/>

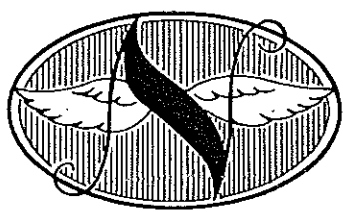


SILK THREAD RIGGING

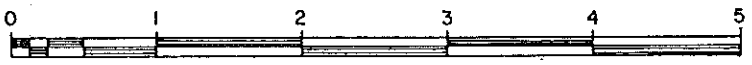


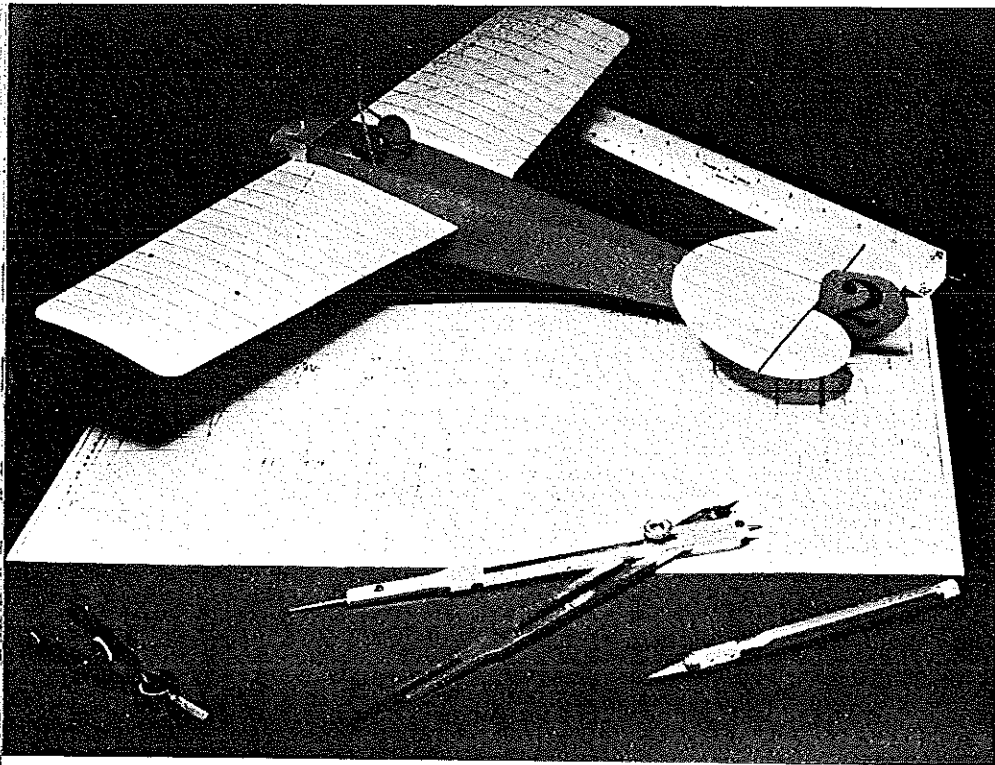
1911 NIEUPORT MONOPLANE

DRAWN BY BILL HANNAN



XY SCRAP BALSAM ROD GUIDE (DO NOT GLUE TO ROD)





The model in the article resting on top of the working drawings with various modelers tools enticingly scattered around for comparison purposes. The ribs are drawn with felt-tip pen.

Nieuport's Monoplanes

to have utilized CO₂ engine power, and employs a Brown Junior twin. However, it can very easily be flown with a single-cylinder Brown unit, as was the earlier model. Although designed primarily as a sport flyer, the first model placed well in several scale contests held in California and Nevada, by virtue of its dependable performance, rather than exacting detail. The current model placed second in this year's Flightmaster Annual Scale Contest, in spite of rather inept handling by its owner/designer, about which more later!

Construction

It is important for best performance to keep weight to a minimum. Careful selection of light balsa will go a long way toward assuring this result.

Fuselage: Transfer the fuselage side outlines to 1/32 sheet balsa by your favorite method. We prefer using a stiff mylar tracing as a template, but any accurate system is OK. Be careful to locate the wing slot openings properly, as they determine the correct incidence angle. Tape both sides together and trim until they are exactly alike.

Join the sides with #10 tail post and put aside to dry. Meanwhile construct the station frames and sheet balsa bulkheads. When finished, add the bulkheads to the fuselage sides, working forward from the rear. A draftsman's triangle may be used to check the sides for "squareness" relative to the building board.

The dummy balsa-block pilot looks realistic enough to be Edouard himself. Although a sport model the author's little ship has won contests in the Nevada-California area.

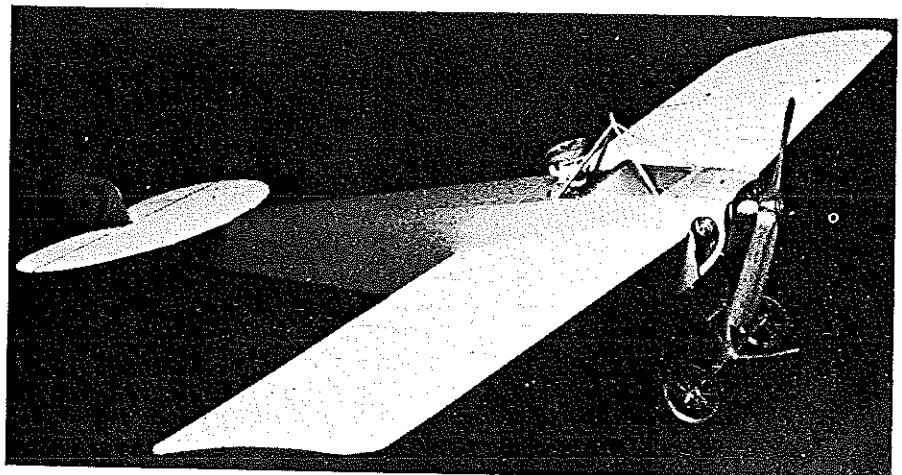
Cut the firewall to shape from 1/16 plywood, and drill for the mounting screws. Note that the older type CO₂ engine requires three screws, but that the newer type shown employs only two. We suggest the use of a Crocket aluminum mounting ring, which greatly simplifies installation. Alternatively, you may solder or epoxy nuts onto a thin shim brass piece, which in turn may be epoxied to the rear of the firewall. Cement the firewall in position with liberal use of adhesive. Triangular balsa gussets are added for extra strength. Next, fabricate and install the fuel tank support, which is made from hard 1/16 sheet balsa. Note that both single- and twin-tank versions are shown. It is suggested that timed engine runs be made before installation, but we prefer using two tanks with the twin-cylinder engines. The inside of the fuel tank support should be heavily clear-doped, since moisture often condenses on the tanks which might soak the balsa. The tank filler nozzle should be firmly mounted, with a

1/32 plywood back-up support and hard balsa gussets, since it is subject to strong pushing forces during refuelling. If the filler nozzle is secured with model cement, it may be softened with thinner for removal if the engine is later transferred to another model. We have tried locating the filler nozzle on the firewall lower side (as shown in our photos) and also on the top of the cowling, as indicated on the plans. We are inclined to prefer the cowling mount. Caution: When installing the engine and tank, avoid bending the copper fuel tubing more than necessary, as it may kink or fracture. When satisfied with the engine installation, the top fuselage sheeting may be installed.

Landing Gear: Bend the landing gear legs to shape from .025 diameter music wire. Install the landing-gear "sandwich" mounts in the fuselage, using the gear legs themselves to check for proper spacing, but do not glue the gear in place at this time.

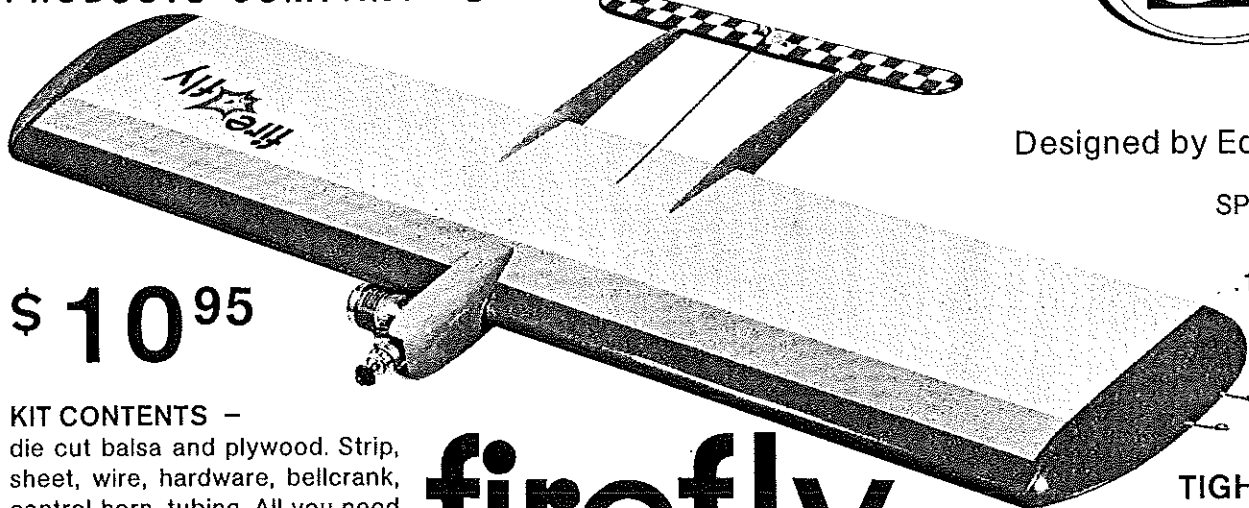
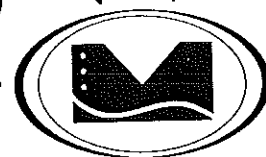
Skid: Bamboo is the best material for this component, in spite of being considered old-fashioned. It can be obtained in some food stores as chop sticks or meat skewers. Usually a larger piece will need to be split to obtain a smaller strip. Oddly, a dull thick-bladed knife works best for this. Also, a piece should be split down the middle, rather than off to one side. Each half may then be split, etc., until a size near that desired is reached. The rounding off can be performed by scraping or sanding, until the skid is of the proper diameter to fit within the landing gear wire loops. The bend in the skid is made over a heat source such as a soldering iron, and may require a bit of practice. The bend should be made in the middle of a fairly long bamboo dowel, about twice the final skid length, so the fingers may be kept a safe distance from the heat source while bending. The wood must not be placed too close to the heat or

continued on page 93



MIDWEST
PRODUCTS COMPANY

FAI COMBAT!



Designed by Ed Bridant . . .

SPAN 35-1/2 ins
ENGINES -
.15 - .19 cu. in.

\$ 10⁹⁵

KIT CONTENTS -
die cut balsa and plywood. Strip, sheet, wire, hardware, bellcrank, control horn, tubing. All you need is covering, lines and engine. We even supply the tank.

firefly

**QUICK
SMOOTH
TIGHT TURNING**

KIT NO. 247

Sole Canadian Distributor Canadian Aero Modelcraft Ltd. 195 Grand Prix Blvd. L'Acadie, Quebec

MIDWEST PRODUCTS CO.
400 South Indiana St., Hobart, Indiana 46342

Please send me your illustrated catalog of models and accessories. I enclose 25¢

Name _____

Address _____

City _____

State _____ Zip _____

Nieuport's/Hannan
continued from page 50

it may char and lose strength. When a satisfactory bend has been achieved, trim the skid to length using a fine-toothed razor saw. Next sand each end to shape.

Insert the landing gear legs into their fuselage slots and apply glue generously into the slots. Before the glue hardens, insert the skid through the two gear leg openings, and use it to help align them correctly. Check for accuracy by sighting from both the side and bottom of the model. When dry, add the music wire axle, and bind each intersection with strong thread and glue. When the landing gear assembly is completely dry, add the fuselage bottom sheeting.

Next, the dummy leaf spring may be assembled from either thin card stock or thin aluminum strips. It is secured at the center only with epoxy, to permit the outer leaves to flex with the axle. The folded paper landing gear fairings are then glued onto the wire legs. Note a slight clearance allowed between them and the fuselage, to permit rearward flexing of the landing gear during hard landings. A small fillet of epoxy is used to blend together the lower intersections for improved appearance and greater strength. The cross piece in the front landing gear "V" is made from 1/32" sheet stock. Hungerford spoked wheels

were used on the original models and are highly recommended. Alternatively, the clear plastic "pseudo spoke" wheels available from Peck-Polymers or Vintage Aero may be employed, and secured with tiny drops of epoxy.

Fuselage Details: Cut the cockpit opening in the upper balsa sheet covering. Carve the scuttle from a soft balsa block, and hollow the underside to fit over the instrument panel former. Instruments and a wood-grained background may be drawn on a sheet of vellum with india ink and colored pencils. Glue this panel in position and install the scuttle. The cockpit coaming is made from split black neoprene fuel line, contact-cemented in place. Next make the rigging pylon struts from hard 1/16 balsa sanded to round section, and glue into position. A pair of tiny holes are drilled in the topmost member to accept the rigging.

Cowling: The cowling sides are cut from thin aluminum stock. We obtained a used lithographic printing plate free from a local printer, which worked well for all of the aluminum parts employed in the model, with plenty left over. On the real aircraft, these parts are actually attached to the engine cylinders as mounts, but on the model, clearance must be allowed around the cylinders to permit adjustments. Note also that since one cylinder is located further aft than the other, slight compensations may

be needed for best fit. When satisfied, contact-cement the sides onto the fuselage. The upper cowling is optional, as some of the real machines did not employ them. Our first CO₂ powered Nieuport did not use this cowling, and it has been rather a bother on the second model, but it does add visual interest. If you choose to make one, carve a simple hardwood form over which to form the cowling. This may either be vacuum-formed or stretch-molded from plastic sheet, or formed from thin sheet aluminum, using a polished hardwood rubbing stick. Since slight compound curves are involved, the latter method may entail several attempts. In fact, this may be the point when you decide to do without it!

If, however, you persist and do produce a satisfactory upper cowl, it should be arranged for easy removal from the model. We fastened ours with a single 00-90 brass screw positioned through a short section of aluminum tubing intended to represent the scale oil distribution pipe. A piece of aluminum was tapped to accept the screw. Alternatively, a nut could be suitably located with epoxy to serve the same purpose.

Wings: Select medium light unwarped 1/32 sheet balsa, edge-glued as required to provide sufficient width. Trim each panel to outline, and glue on the 1/16 sq. hard balsa, spruce, or bass leading edge stiffeners. Next, add the 1/16 sheet balsa R-2 ribs. Some prefer to dampen one side



A POLK'S EXCLUSIVE!

NOT AVAILABLE ANYWHERE ELSE IN THE U.S.A.

'WINGS OF HISTORY'

Super 8mm Home Movies in Color

*a series of great value—for the air enthusiast—
collector—modeller—and all who enjoy historic aircraft*

FILMED ENTIRELY ON LOCATION AT
The Shuttleworth Collection
OLD WARDEN AERODROME
BEDFORDSHIRE, ENGLAND

MOST OF THE FABULOUS FLYING MACHINES
IN THIS UNIQUE COLLECTION ARE THE LAST
REMAINING ORIGINAL SPECIMENS ACTUALLY
FLYING ANYWHERE IN THE WORLD TODAY.

Lots of action! Lots of authenticity! See the legendary 1916 Sopwith Pup of WWI Start/In Flight/Land . . . with fabulous close-ups showing all its details — and all in natural color! Coming soon! The 1917 Bristol Fighter F2b, featuring a chase with the L.V.G. CVI. Both films are a "must" for the flying buff's film library.

SOUND & SILENT VERSIONS

MAGNETIC SOUND VERSION	\$35.00 sugg. ret.
SILENT VERSION	25.00 sugg. ret.
CONTAINED ON 200 FT. SPOOL		

For the authentic sound of the original engines and history
narration—SOUND IS RECOMMENDED

POLK'S *Model-Craft* HOBBIES REGULAR TRADE DISCOUNTS

346 BERGEN AVE., (Dept. FA) JERSEY CITY, N.J. 07304 / N.J. Tel: 201-332-8100 / N.Y. Tel: 212-233-5085

Nieuport's (continued)

of the wing panel to create an automatic camber, but ours were simply curved dry, and the ribs were held in place with masking tape while drying. Contact cement represents another possible approach. Sandpaper all surfaces smooth, and round off the edges.

The lines representing the real aircraft wing rib locations are drawn on with a fine-tipped fiber-point pen or ball-point pen. We prefer brown ink, as it provides a more subtle effect than black. A couple of sprayed-on coats of clear will protect the lines from moisture. Caution: Try first on a scrap, as some coatings will attack the ink and cause "bleeding" of the lines. Clear enamels, such as used on plastic models, seem not to affect any inks we have tried, whereas clear dope may.

Tailplanes: Select light, flat 1/32 balsa stock for the tailplanes, and cut to outline, noting the grain direction in each part. Assemble the stabilizer/elevator parts, and add the very hard 1/16 square anti-warp strips to the underside. Sand all edges smooth, and draw on the rib and control separation lines.

Decor: Before final assembly, attend to the detail finishing, which contributes a great deal toward alleviating that stark, plain balsa look. The cowling sides, top, bottom, and firewall are all natural alumi-

num color, as is the scuttle. The landing gear assembly should be painted flat medium grey, as should the warp control rod. The dummy leaf-spring may be painted Pactra "steel" color for a realistic appearance.

Most of the real machines seem to have been covered in natural fabric, which was probably a slightly off-white when new, but which gradually aged to a buff color, not unlike the color of balsa. The aircraft in the Musee de l'Air features a tri-color rudder as indicated on the plans.

At least a few Nieuports featured carmine-colored fuselages and rudders, and we simulated this scheme by covering those components with colored tissue. Some of the machines featured the manufacturer's name in bold letters on the fuselage sides, while still others bore racing numbers on the fuselage or rudder sides. Supposedly, a few of these machines served as trainers and scouts during the early stages of World War I and may have sported cockades, but to date we have only seen photographic evidence of the Gnome rotary engine versions so marked.

If you are using a horizontally mounted single-cylinder CO₂ engine, a Williams Brothers 1/2" scale dummy cylinder will simulate the second cylinder very realistically. For flying purposes, a Williams Brothers nylon prop trimmed to 4 1/4" diameter will serve. These may be dyed brown

using regular clothing dye in hot water, for better appearance.

Assembly: Install the wings. Probably a small amount of trimming will be required to obtain a good fit at the center juncture, and to clear the aluminum side cowlings. Cover the wing center joint with a strip of tissue or silk for added strength. Check carefully that the dihedral angle is correct. Add the hard 1/16 sheet balsa R-1 ribs to additionally reinforce the wing/fuselage intersections.

Add the tailplanes, being certain that they are correctly aligned. Cement the warp control rod and its aluminum control arm in position. Note that the rod is *not* glued at the top, and is free to slide back and forth in the rod housing. This allows movement, as in hard landings. Incidentally, the warp control rod in the real machine was actuated by the pilot's feet, while the rudder was operated by sideways movement of the control stick.

Install the silk thread rigging, which with planning, may be done in one continuous length. A sewing needle may be used to pass the thread through the wing panels outside the R-2 ribs. This rigging contributes to the strength of the model, and should not be omitted. Also, minor warps may be corrected by means of the rigging. Simply use a drop of glue to fix the rigging to the wing while holding it in the desired

position. Silk thread is very strong and free of the unrealistic "fuzz" found in more common sewing thread. Nylon thread is unsuitable, as it sags excessively with temperature and moisture changes, as your author learned the hard way!

We suggest adding a dummy pilot (or even a smart one!) to avoid that empty cockpit look. Our "Lucky Pierre" was carved from soft balsa and painted with matte colors.

Flying: Your model should balance close to the point indicated on the plans, and may possibly require ballast to achieve this. Recheck model for freedom from warps. It is particularly important that there not be even a hint of down elevator, or your Nieuport may exhibit ballistic tendencies! A shade of up elevator is relatively harmless, but may bring about the need for additional nose ballast. Testing should be performed on a windless day, as the model is sensitive to gusts. If possible, test over grass, but avoid weeds which may become entangled in the wing rigging. Usually any stalling or diving tendencies can be corrected with ballast, and elevator bending is discouraged. If model persists in falling off on one wing the addition of clay ballast to the opposite wing tip may effect a cure. When the glide appears reasonable, set the engine for low speed and charge with fuel. Hand launch, being certain the engine is running in the proper direction, and observe flight path carefully. If model stalls, add a thin shim for slight side thrust to tighten the turn circle. Rudder adjustments should be approached with caution, as in spite of its small area, it can be powerful in action.

We did not need downthrust on either of our models, and in fact one required a tad of upthrust. With power increases, readjustments may be needed. We prefer to fly our models slowly and realistically rather than rapidly. This also reduces the risk of high-altitude thermal flyaways, easily possible with such a light craft!

CO, Engines: A few words regarding the care and feeding of these powerplants may be appropriate here. These units offer many advantages, since they are very light in weight, quiet in operation, offer no fire hazard, and require no batteries of model fuel-proofing. Yet, like any other form of power, they do have certain limitations, and should be treated with care and understanding.

First, the capsules used to charge the fuel tanks vary widely in quality. Even in a given box, we have found surprising differences in power output. Temperature differences can also affect engine operation, and typically they are handicapped in cold weather. Conversely, an increase in outside air temperature can increase power output significantly, and it is well to consider this before launching a model previously ad-

What kind of covering do you prefer?

TISSUE? If you like tissue, we recommend Silkspun Coverite. It looks like tissue but it's 10 times stronger, and goes on with a household iron, in half the time. It can be used as is (the filler coat is built in) or painted, requiring one-third the paint. It's very economical. **SILK?** If you like silk, we recommend Super Coverite that can be easily ironed-on. It looks like silk, but it's 100 times stronger. Like Silkspun, it can be used as is or painted. Being a woven fabric, it's very authentic. **MYLAR?** If you hate to paint, but are tired of the way plastic film mylar scratches, sags, rips and shatters, we recommend iron-on PermaGloss Coverite. It comes with 4 coats of special paint bonded permanently to its upper surface. Paint that won't scratch, is fuelproof, rotproof and fadeproof. It is 150 times stronger than mylar, tissue, silk or anything else. **ONLY COVERITE COVERINGS MEET THESE RIGID TESTS:** **Shrink Test:** With household iron, shrinks drum tight, wrinkle free (even around compound curves). Will not sag like plastic mylar films, nylon, tissue or silk because Coverite has a permanent shrink memory, but will not warp airplane structure. **Abrasion Test:** Withstood 3600 cycles on Taber abrader (500 gram load). **Sunlight Test:** 6 months under glass exposure in Florida sun, retained 4X more original tensile and tear strength than silk. **Temperature Test:** Withstood up to 400° F. Did not become brittle at below freezing temperatures like plastic films. **Chemical Test:** Virtually impervious to engine fuels. **Humidity Test:** Resists water which causes other coverings to swell and sag. **Rot and Mildew Test:** Buried in soil 8 weeks without change. **Strength Test:** Far in excess of 25,000 PSI tensile strength.

COVERITE IS EASIEST TO APPLY 1) Requires no fancy tack irons; ordinary household iron is fine. 2) New improved Quickstik adhesive surface sticks tighter than ever when properly heated. 3) Requires minimal sanding. Hides far more defects than any other covering. 4) Requires no pre-doping of structure. 5) Takes less paint due to built-in filler coat. But all Coverite coverings can be used as is, without any paint whatsoever. PermaGloss, however, has 4 coats of almost indestructible paint bonded to its upper surface. 6) Requires no special handling. Won't scratch or burn up during application. 7) Can be trimmed with paint, any decal including mylar, or with itself (which is goofproof because it can be re-heated again and again).



IRON ON IRON TOUGH COVERITE

2779 Philmont Ave.,
Huntingdon Valley, Pa. 19006, USA

justed in lower temperatures. For example, our Nieuport, set for very docile flight in San Diego, climbed wildly in the elevated temperatures found at Taft, Calif.

Engine speed adjustments, made by rotating the cylinder(s), should be very slight to avoid damage. We prefer to do this with the engine running. Don't forget to oil your engine occasionally. Remember that it does not receive lubrication from its fuel, as do glo engines. Make every effort to keep it clean, and avoid operation in sandy areas. It is made with watch-like precision and deserves the best of care. With proper attention it should last for years.

Sidelight: Although the author has constructed several different variations of Nieuport models over the years, and thought he knew all their idiosyncrasies, he was forcefully reminded otherwise, during the recent Flightmaster Annual Scale Contest. Although one fully-tested Nieuport was available, it was rather old and decrepit looking. The brand-new model shown in our photos was entered instead, in virtually untested condition. On the morning of the event, a heavy fog had settled, which resulted in three unfortunate effects: First, the power output of the engine was reduced; second, the nylon rigging went slack in the moisture-laden air

FULL-SIZE PLANS

No. 136	Fieseler Storch	\$4.00
	RC scale model for .23-.45, 5-channel, has both slots and flaps.	
No. 137	Ambivalent	\$4.00
	RC assist FF for .29-.35, 2 chan., can be converted for sport.	
No. 138	Candle in the Wind	\$3.00
	Half-A free flight competition type offers looks and performance.	
No. 139	Jaguar	\$2.25
	FAI .15 Combat by an English champ offers different configuration.	
No. 140	Nieuport Monoplane	\$1.50
	Another Hannan cutie, a CO ₂ indoor/outdoor Brown single or twin.	
No. 100	Hinnant's F-5: For ultimate in maneuverability, and smoothness, .60 Pattern job has it all.	\$4.50
No. 101	Short Seamew: 40-powered Class I Carrier model, good prototype lends itself to innovations.	\$3.00
No. 102	French Wench: Free Flight for Classes 1/2A or A, an .049 or .051, a fully tested design.	\$2.25
No. 103	Klond King: .15-.19 RC Old-Timer Free Flight, based upon 1938 record breaker FF.	\$4.00
No. 104	Wiley Post Biplane: Petite, durable scale design for either rubber or tail wagger (pulse rubber).	\$2.25
No. 105	Harold Ruark's Sportsman: RC cabin job with pretty, smooth lines, 40 powered, full-house.	\$4.50
No. 106	Vought Kingfisher: A semi-scale, fully stuntable CL model by Les King. (For 25 to 35 engines)	\$4.50
No. 107	Aeronca K: 24" wingspan rubber Indoor Scale old-time lightplane. It's done 90 seconds.	\$2.00
No. 108	Electric One: Couldn't be done? Dick Sarpolus' Astro 25 RC job performs pattern.	\$3.75
No. 109	Bill Fuori's Quarter Midget: From House of Balsa design, modifications for faster times.	\$3.00
No. 110	The Zipper: The latest in CL Scale Racers. John Kilsdonk job is a must for all racing fans.	\$1.75
No. 111	Max-a-Million: If a fleet of free flights is a problem, a good one for A/B and FAI.	\$3.75
No. 112	S'neat: Sport RC glider, a simple job that can be flown with or without engine.	\$2.75
No. 113	Cessna 150 Aerobat: Step up from Half-A CL jobs, .09-powered semi-profile easy to build.	\$2.75
No. 114	Ernie Violet's D.H. Comet: CL Scale 1974 Nats first-place winner, a classic twin.	\$9.00
No. 115	Niris: An RC pattern job which takes advantage of best existing criteria.	\$4.00
No. 116	Electro-Lite: Hal Cover's contest-type free flight VTO's—Hytork electric motor.	\$1.50
No. 117	Novice: A simple beginner's A-1 Nordic constructed entirely from sheet balsa.	\$1.50
No. 118	GollyGeeWhiz: Dan Rutherford's simple Half-A powered Combat job turns on a dime.	\$1.50
No. 119	Four Beginners Too: A basic RC trainer, .09 to .15's, for rudder, elevator, motor controls.	\$3.00
No. 120	Cathexis: Dave Parson's FAI FF has auto-elevator and rudder; prop brake.	\$4.50
No. 121	Gremlin: Sturdy, aerobatic RC biplane, flies well on 35's up to 60's.	\$3.00
No. 122	Hot Wood: Twice a Nats winner in Rocket, an all-balsa Jetex-powered job.	\$1.00
No. 123	4-Bits: 40-powered RC 500 Club Racer has winning ways. Good for sport, too.	\$4.00
No. 124	Semi-Pro: Contest-winning HL glider has a pop-up tail dethermalizer.	\$1.00
No. 125	Half-Korda: For rubber, John Oidenkamp's 1/2-size all-balsa Old-Timer.	\$1.75
No. 126	Hooptee Mk III: John Kilsdonk's CL Rat Racer involves latest state-of-the-art.	\$1.75
No. 127	B.A.C. Drone: Astro-10 electric-powered 80" scale RC powered Glider.	\$4.00
No. 128	Komet: CL 1/2-A profile semi-scale profile for fun flying or Mouse Race.	\$2.00
No. 129	Rebel: Update of famed deBolt RC kit, Rudder/Elevator/Engine—for .15's.	\$2.75
No. 130	Altair: Class A-B Free Flight with conversion data for other classes.	\$4.00
No. 131	Gee Bee Model Y: 40-powered RC stand-off scale of one of the great old-time racers.	\$5.00
No. 132	Swiss WW II Fighter: A 45-inch CL scale-type sport model for 29's to 35's.	\$6.50
No. 134	Callisto: A superb Standard Class RC sailplane which also took a Nats first.	\$4.00
No. 135	Hyperion Mk. V: Don Chancey's classic Nordic A-2 which competed on the U.S. team.	\$2.75

Circle number(s) of plan(s) you wish to order:

100	101	102	103	104	105	106
107	108	109	110	111	112	113
114	115	116	117	118	119	120
121	122	123	124	125	126	127
128	129	130	131	132	134	
135	136	137	138	139	140	

Please print carefully Enclosed \$ _____

NAME _____

STREET _____

CITY _____

STATE _____ ZIP _____

Price includes first-class postage. Send check or money order, payable to Model Aviation, to AMA, 806 Fifteenth St., N.W., Washington, D.C. 20005.

Nieuport's (continued)

reducing wing rigidity; and third, the elevators took on a slight but decidedly negative warp. Probably had the model been left alone for a few hours until the fog lifted and the sun appeared, all three problems would have corrected themselves. However, a fog had also evidently settled over the author's brain, and in the resulting comedy-of-errors, the model was repeatedly crashed. It is a testimony to the easy reparability of a sheet balsa model that when the difficulties were finally identified and corrected, the model was flown to second place in its category. The lesson is, of course, an old one, but a humbling reminder: Think before you fly!

Acknowledgments: Special thanks for assistance are extended to the following: J. D. Gillies, Bill Warner, John Underwood, Georges Chaulet, Jim Leukeb and all the Flightmasters.

Supply Sources: Hungerford wheels: FH Wheels, 1770 Lilac Circle, Titusville, Fla. 32780; Peck-Polymers, Box 2498, La Mesa, Ca. 92041; Vintage Aero, 1 The Glen, Tenafly, N.J. 07670.

Clear "pseudo-spoke" wheels: Peck-Polymers, Vintage Aero.

Crocket CO² engine mount rings: Peck-Polymers or Jim Crocket, 1442 N. Fruit Ave., Fresno, Ca. 93728.

ADVERTISERS INDEX

Ace Radio Control, Inc.	81
Advanced Devices, Inc.	90
Aldrich Products, Inc.	88
Andrews Aircraft Model Co.	88
Bantam Model Products, Inc.	79
Cleveland Model & Supply Co.	84
Coverite	95
Du-Bro Products, Inc.	87
EK-logitrol	92
Fox Manufacturing Co.	86
Carl Goldberg Models	3
Grish Brothers	92
G-S Products Corp. Int'l.	91
Paul K. Guillow, Inc.	89
Kraft Great Lakes, Inc.	83
Midwest Products Co.	93
Peck-Polymers	83
Polks Hobbies	94
John Pond Old-Time Plan Service	89
Progress Mfg. Company	84
Satellite City	90
Semco Model Engineering	83
Sig Mfg. Company	1
Sterling Models, Inc.	80
Tom Sutor Trophies	78
Ted Teisler's Yardbird	88
VL Products	80
Weak Signals R/C Club	82
Westport International, Inc.	85
Williams Brothers	78
World Engines	Back Cover