# MODEL AIRPLANE NEWS

June 1959 — 35 cents

## WILLARD'S GASSER RC

•

Home-Built Airplanes—
a round-up in pictures.
*1958 Wakefield Winner*


Skyhopper

# Digital Edition Magazines.

This issue magazine after the initial original scanning, has been digitally processing for better results and lower capacity Pdf file from me.

The plans and the articles that exist within, you can find published at full dimensions to build a model at the following websites.

All Plans and Articles can be found here:

Hlsat Blog Free Plans and Articles.

http://www.rcgroups.com/forums/member.php?u=107085

AeroFred Gallery Free Plans.

http://aerofred.com/index.php

Hip Pocket Aeronautics Gallery Free Plans.

http://www.hippocketaeronautics.com/hpa_plans/index.php

**Diligence Work by Hlsat.**

# IT'S HERE ...NOW!

*the ULTRA of TODAY'S model fuels . . .*
*superlative quality . . . performance*
*the NEW*

# MISSILE MIST

**custom blended for high compression model motors gives you**

**MORE POWER – QUICK STARTING**
**COOL BURNING – LESS SENSITIVITY**
**to mixtures and weather conditions –**
**GREATER ECONOMY**

**FORMULA**
This fuel is a scientific blend of these high quality ingredients . . .

**CASTOR OIL**
first pressing, filtered
**METHANOL**
**NITROMETHANE**
**PROPYLENE OXIDE**
**SYNTHETIC LUBRICANTS**

**You will find this fuel especially suited to the following motors:**
**FOX 09, 15 and 19**
**FOX COMBAT SPECIAL**
**McCOY 29 and 35**
**TORPEDO 19, 29 and 35**


**PRICES**
**Pints** **95¢**
**Quarts** **$1.69**
**Gallons** **$5.50**

MISSILE MIST, the new liquid propellant, contains perfectly matched components. This was achieved by first testing, in comparative flight operations, nearly all model airplane fuels on the market as well as the favorite mixes of many well-known modelers. MISSILE MIST fills *all* the needs of the most demanding experts and is designed to give the finest performance with *all* medium and high compression motors . . . a truly premium fuel at a non-premium price.
You will find MISSILE MIST superior in the world of model airplane fuels. Every can of MISSILE MIST is guaranteed to give you complete satisfaction.

**TRY IT! Ask for it by name — the New Champion MISSILE MIST liquid propellant — at your Hobby Shop.**

**SATISFACTION GUARANTEED**

**CHAMPION PRODUCTS**
**FORT SMITH, ARKANSAS**

Way Out in Front in Performance and Value

# COMET'S Ready-to-Fly All-Plastic Gas Models and Ready-to-Run Racing Car

## Snark SM-62 TRUE-TO-SCALE Intercontinental GUIDED MISSILE

PLM-47 $14.95

**Ready-to-Fly, True-to-Scale, U-Control GAS MODEL. High-Impact Plastic. Complete with LAUNCHER, Control Handle and Lines and .049B "OK" Cub Engine with Auto-Recoil Starter.**

A scale version of the Air Force's dramatic intercontinental missile, modified for thrilling control flights! Big—18⅜" long; beautiful—in rich red and yellow plastic; complete—with mobile 6-wheel launcher, powerful engine, control handle and lines, in striking 4-color box.


Length 18⅜"
Span 13⁹⁄₁₆"
Weight 7¾ oz.

COMMENDED BY THE CONSUMER SERVICE BUREAU OF PARENTS' MAGAZINE

Complete with Gas Engines

## Regulus SSM GUIDED MISSILE

Length 14³⁄₁₆"
Span 14"
Weight 6 oz.

**Ready-to-Fly, U-Control GAS MODEL. High-Impact Plastic. Complete with .049A "OK" Cub Engine and Twist-Cord Starter, Control Handle and Lines**

This model has only one rival in value—Comet's own Tri-Pacer! Smart, sleek; blue-and-white color scheme; 14⅜" long; cushion-rubber tires, tricycle landing gear, colorful decals. Complete with engine, starter, control handle and lines in a full-color chest.

High Impact Plastic

AVAILABLE JUNE 1st

PLM-31 $7.95

PLR-3200 $11.95

COMET

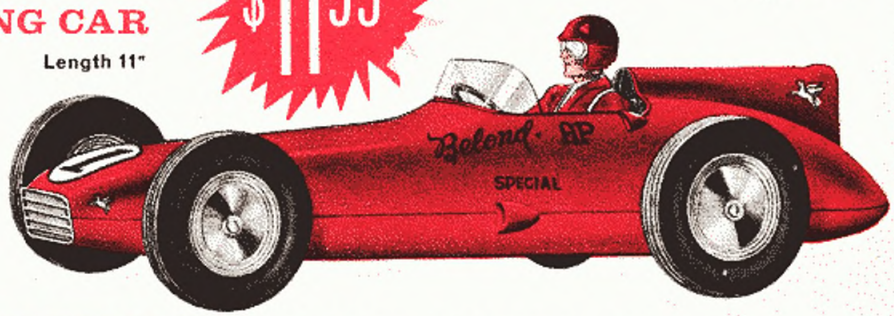
## BELOND AP Special Engine Powered RACING CAR

**TRUE-TO-SCALE**

**Ready-to-Run, High-Impact Plastic. Complete with .074 "OK" Cub Engine with pull starter, Bridle and Tetherlines.**

Replica of the racing car that won the 1957 and 1958 Indianapolis Speedway classics, beautifully molded in dazzling yellow plastic! Genuine rubber tires, decals, driver, bridle and tetherlines—ready-to-run! Telescoping 3-color box.

Length 11"




**COMET MODEL HOBBYCRAFT, INC.** 501 West 35th Street Chicago 16, Illinois

A Comet Exclusive
HILLER X-18 KIT PL-805
PROPELLOPLANE

ALL-PLASTIC
*True-to-Scale*
98c Each

KIT PL-806
A Comet FIRST
COUGAR $CO_2$ Powered RACING CAR

Send for these 2 BIG COMET BOOKS:
The New Comet Catalog—10c; shows hundreds of models in color. 20-Page Book—"What Makes An Airplane Fly"—lots of pictures and diagrams—in 2 colors—25c.

P. G. F. CHINN

# Foreign Notes

*WEST GERMANY*

About 30 model manufacturers were represented at the Nuremberg International Toy Fair held during the last week of February. Among the radio-control exhibits, OMU showed the complete Stegmaier system they are manufacturing, an interesting compound servo giving rudder and throttle control on single channel, and a stick box for single channel. Johannes Graupner exhibited revised versions of the Hobby .06 and Rasant .15 diesels and the new Schlosser .03 was much admired for its high quality construction.

New German model products continue to appear frequently, despite the big increase in imported items now being offered in the Federal Republic. These latter include the full Cox and Herkimer engine ranges from the U.S.A., Super-Tigre from Italy, DMI from Denmark, Allen-Mereury from Britain, OS from Japan. The Hungarian Alag and Aquila engines are also imported, including the little V.T. .015 cu. in. diesel, although this does not sell too well in competition with Cox's Pee-Wee.

Present trends in German kits are towards the wider use of vacuum-molded plastic parts and accessories. Star Models turns out complete boat hulls and is experimenting with aircraft parts; Graupner uses molded wing-tips, etc.; Becker makes molded hull boat kits and is also expected to enter the model aircraft field.

On the new Schlosser .03 diesel, Karl-Heinz Denzin gives some idea of its performance by reporting a 60-degree climb on his new 36-in., 9-oz., free-flight built for this engine, turning a 6/4 nylon prop.

*AUSTRIA*

Former world model glider champion and Chicago Aeronuts member, Ossi Czepa, tells us that he has gone over to asymmetric Nordic A2 designs. As reported last year in these columns, asymmetric configurations have been used, highly successfully, by the Swiss expert Thomann. Ossi says that his new model is the best A2 he has yet designed. He also mentions that the special towline reel he uses is to be offered in a plastic version by Star Models of Germany.

*FRANCE*

The appearance of a new French built engine is something of an event. Very few new motors have been marketed in France over the past few years. The announcement of a new motor from Micron—one of the oldest established model engine manufacturing concerns—is bound, therefore, to arouse wide interest. The new model is the 'Super-Sport' 29, a shaft-valve, plain-bearing, glow-plug engine. Designed primarily for stunt and team racing, claimed output is .55 bhp at 14,500 rpm. One French magazine shows the Super-Sport as delivering approximately 35 percent more power than the Fox 29—which, however, leads us to think that it must have been compared with an uncommonly dud Fox.

General design of this new Micron is conventional. Crankcase and cylinder are a monobloc casting with detachable head, front bearing and rear plate. Counterbalanced shaft has the usual rectangular intake port. Lapped piston has the skirt relieved below wristpin centers. Bore and stroke are 19 x 17 mm. (.748 x .669 in.), giving a dis-

(*Continued on page* 36)

# Guillow's

**TOP QUALITY • TOP VALUE**

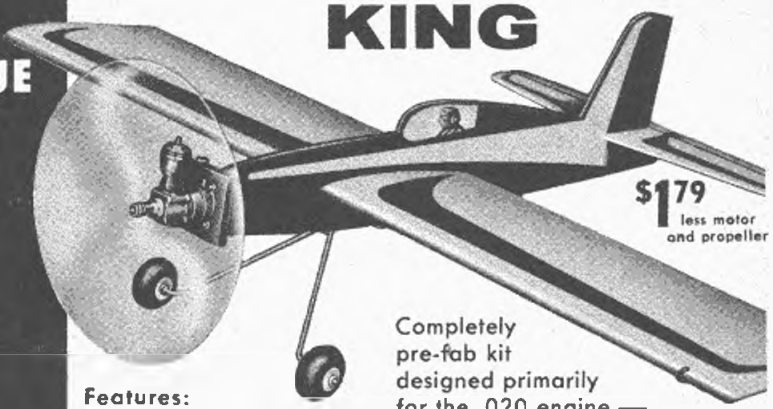
# GAS MODEL AIRPLANES

★ *RADIO CONTROL*
★ *FREE FLIGHT*
★ *U-CONTROL*

**STUNT • COMBAT • TRAINERS**

*Brand New!* 20" WING SPAN CONTROL LINE MODEL

## *The* SKY KING



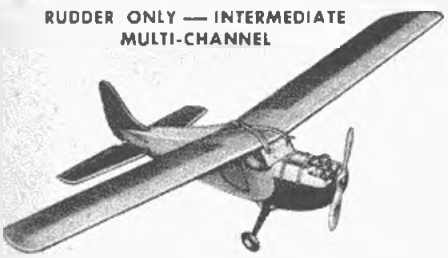
**$1.79** less motor and propeller

Completely pre-fab kit designed primarily for the .020 engine — also easily adapted for .049 motors. Designed and guaranteed to "stay out on the lines" even in high winds. No equal for flight performance and durability in its class.

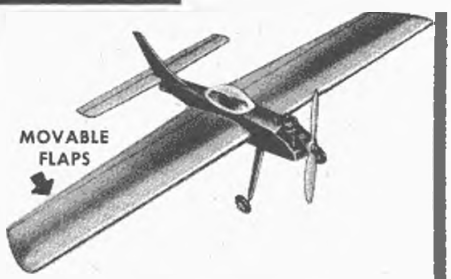
**Features:**

- Airfoiled balsa wing
- Complete hardware package
- Flying lines and control handle
- Sturdy motor mount system and new angle poised landing gear arrangement

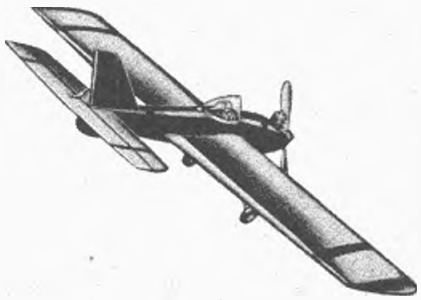
RUDDER ONLY — INTERMEDIATE MULTI-CHANNEL



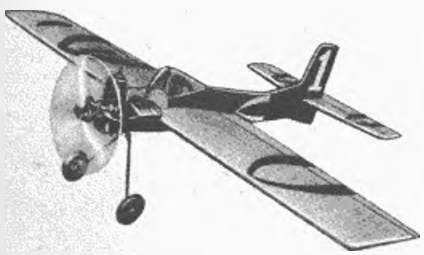
**EXPLORER** 56" wing span R/C model. Wing area 560 sq. in., Engine .15 to .25. **$14.95**



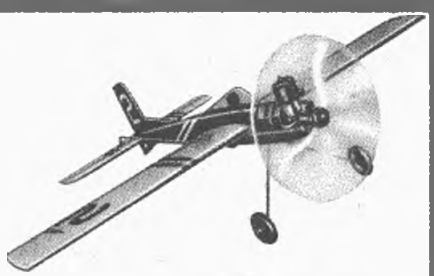

**BARNSTORMER MARK 2** U-control stunt model. 47" wing span, wing area 470 sq. in., Engine .19 to .36. **$7.95**



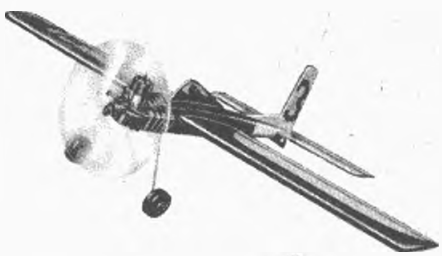
**BABY BARNSTORMER** ½A U-control stunt. Wing span 23½". Wing area 118 sq. in., Engine .035 to .049. **$3.25**



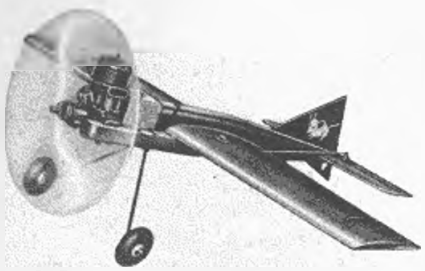
**PROFILE TRAINER 1** Ideal control line model for small engines from .049 to .099. 24" wing span. **$3.25**



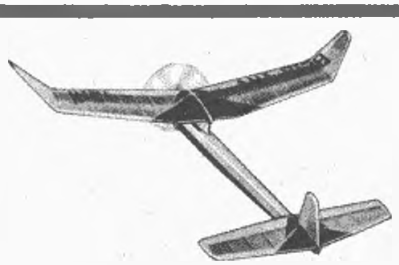
**PROFILE TRAINER 2** 30" wing span U-control model for engines from .14 to .19. Rugged — dependable. **$4.50**



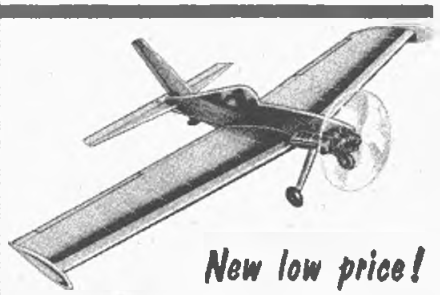
**PROFILE TRAINER 3** Giant 36" wing span U-control trainer for engines from .19 to .36. Best value. **$5.95**



**RAT RACER** U-control model for Rat Race event. 24" span — for engines .25 to .40. Indestructible! **$4.50**



**KIWI** ½A 35" wing span free flight model. **$2.95**
**KIWI A** 48" wing span free flight model. **$4.95**



*New low price!*

**TRIXY** 45" span, swept wing U-control model stunt, combat or sport flying — for .19 to .36 engines **$5.95**

If not available at your Hobby Dealer send direct to factory adding 25¢ packaging and postage in U.S.A., 40¢ outside U.S.A.

**PAUL K. GUILLOW, INC., Wakefield, Mass.**

30th Year of Publication

# M.A.N. MODEL AIRPLANE NEWS

JAY P. CLEVELAND, President and Publisher

June 1959 Vol. LX, No. 6

## CONTENTS

### CONSTRUCTION



### ARTICLES



### FEATURES



WILLIAM WINTER, Editor

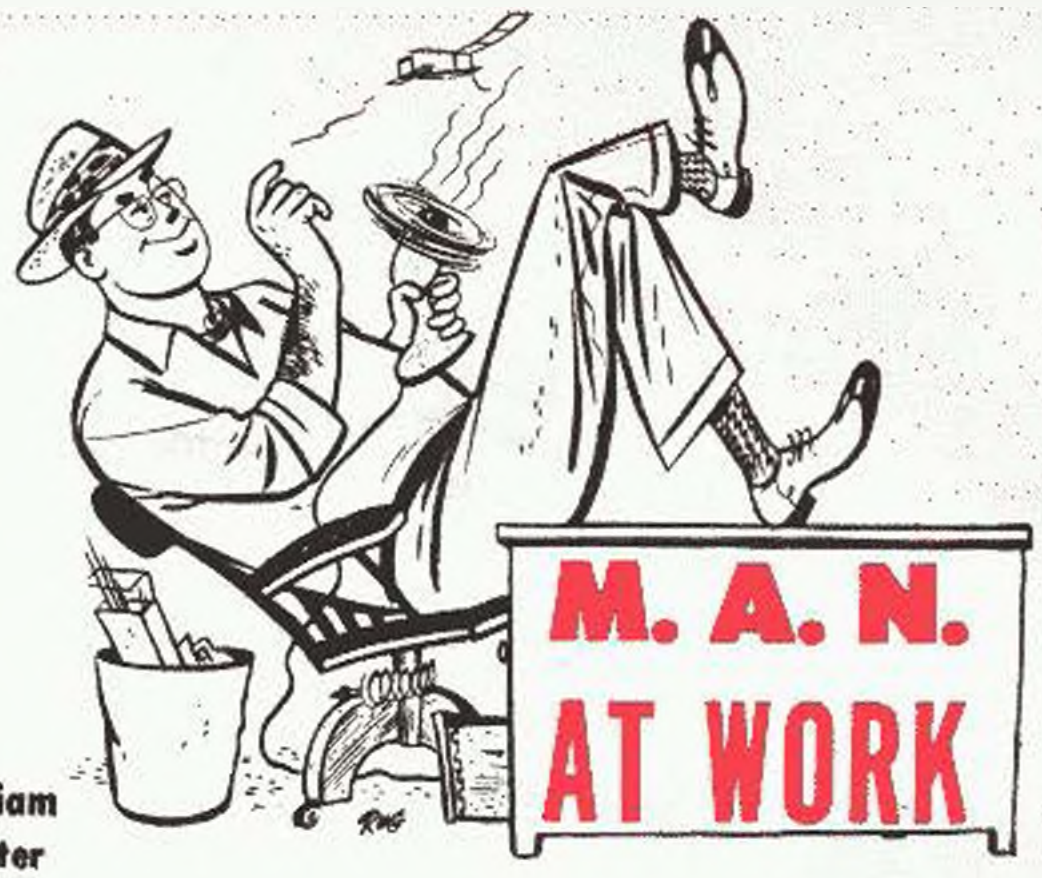
WITTICH HOLLOWAY, Art Director

Contributing Editors: Peter Chinn (England), Don Grout, Ed Lorenz, Ted Martin, Bruce Wennerstrom, Harry Williamson

Executive and Editorial Office:
551 Fifth Avenue, New York 17, N. Y.
Advertising Manager, N. E. Slane, 551 5th Ave. New York 17; West Coast Adv. Mgr., Justin Hannan, 4708 Crenshaw Blvd. Los Angeles 43, Calif.

Published Monthly by Air Age, Inc. Editorial and Business Offices: 551 Fifth Ave., New York 17, N.Y. Jay P. Cleveland, President; Y. P. Johnson, Vice Pres.; Louis V. DeFrancesco, Treas.; G. E. DeFrancesco, Sec. Second Class Postage paid at Columbia, Missouri. Additional Second Class Entry at New York, N.Y.






by William Winter

► After three months of dreary, small-time arguments about rules, MAN at Work salutes the modeler who quipped, "If all you guys had to build nine new models a year, you'd do less talking and more building." Amen. Perhaps you, too, feel as if it just rained the whole three-day weekend! After listening to soap box orators shouting what do we add, a pound of lead or a head of cabbage, along comes Ed Rieber, Anaheim, Calif., with a .19 in his .35 Upstart, cops Class A at the San Valeers Contest (of all places), and sets high time for the day with a very good 35-minute total.

▫ ▫ ▫

► Could there be a hush-hush reason for the lengthy delay in releasing the Hatschek-drafted statement on the builder of-the-model rule? This statement was written for obviously good reasons before the new rules were released. The Contest Board Members voted overwhelmingly for its release—only one dissension. Despite sworn statements, eye-witness accounts and letters about dirty work at the cross roads, MAN at Work still finds it possible to justify a recent remark in this column, that something would go out of life if any of this stuff was proved.

That many of our RC buddies fly crates built by hired hands, doesn't shake us. For most of these guys can build as well, if not better, themselves. Of course, it is wrong. And it is about time we admit it. It is the father-helps-son teams that worry us. Not the kids so much. Just some of the old men. If we could only get across the fact that a kid has more fun in the long run if allowed to stand on his own two feet. This is hard to realize, we know, having had six builders of our own, one of whom recently pressed out the windows of a diecut fuselage and threw away the sides.

Hundreds of Dads, tickled pink when junior first swipes Pa's glue tube, right-away quick look for plans of some ancient clunker published 20-25 years ago. It may have been nailed together or flew like a lead sinker but Junior is going to do it the hard way or he'll get a kick in the pants. This is fun? Reminds us of the Dad at a Detroit Nats whose son wound in a free flight and then flung his hat on the ground. In those days, practically everything wound in and you could double your vocabulary on any windy day by listening to scientific (*Continued on page* 61)

NEXT MONTH'S COVER Little Toot

### SUBSCRIPTION PRICES

U.S. & POSSESSIONS: 1 year $4.00; 2 years $6.50; 3 years $9.00
CANADA: 1 year $4.50; ALL OTHER COUNTRIES: 1 year $5.50
*Payment from all countries except Canada must be in U.S. Funds.*

*CHANGE OF ADDRESS—Send to MODEL AIRPLANE NEWS, SUBSCRIPTION DEPT., 551 FIFTH AVENUE, NEW YORK 17, N.Y. at least one month before the date of the issue with which it is to take effect. Send old address with the new, enclosing if possible your address label or copy. The Post Office will not forward copies unless you provide extra postage. Duplicate issues cannot be sent.*

**PLANE ON THE COVER**

When aeronautical engineers set out to design and make a home-built, the result usually is a mighty efficient little monoplane, such as the Salvay-Stark Skyhopper. Second in the series of covers on amateur projects, Jo K's rendering of the Skyhopper captures the wonderful feeling of sport flying. For plane details, see page 34.


**NOW AT NEW LOW PRICES**

# ALWAYS USE OK ENGINE FUELS

**FOR ALL GLOW ENGINES . . .**

45¢ ½ PINT — 80¢ PINT — $1.40 QUART — $4.50 GALLON

**"OK" DIESEL FUEL . . . 80c PT.**

Minimum takeoff and maximum climb with plenty left for flashing acceleration in maneuvers. Plus purring smoothness when you throttle back to cruising.

That's what you get from "OK" Glow or Diesel Fuels. More flash, fun and action. Finer control with fewer adjustments and coaxing.

"OK" Fuels leave your engines clean, free from varnish or residue. Ready to go, even after long usage. Whether you're in big time competition or flying for fun, insist on "OK" Engine Fuels . . . the kind that give you the 3 big features you want.

**BUY OK GLOW FUEL IN THE NEW ECONOMY SIZE GALLONS AND SAVE!**

It's the economical way to buy OK Fuel particularly for use in meets, contest flying, clubs, or just for your own use. **Only $4.50**

**COMPLETE AS SHOWN**

**$1.25**


**FOR SUPERB ENGINE OPERATION GET AN "OK" ACCESSORY KIT**

**CONTENTS:** ½ pint OK Glow Fuel.
1 filler spout with plastic tubing.
1 set battery leads fully assembled and soldered with battery connection and glow plug clip.
1 combination plug wrench and screw driver.

**For Use with All Model Engines**

**AT LEADING HOBBY SHOPS EVERYWHERE**

**HERKIMER TOOL & MODEL WORKS**

26 HARTER ST. HERKIMER, N. Y.

# AHC RADIO CONTROL

## FAMOUS BRANDS AT BIG SAVINGS

**AHC IS FIRST IN SERVICE SAVINGS & SATISFACTION**
**World's Largest Selection, Too!**

**SAVE!**

**Buy With Confidence at AHC . . . Where You Get Not One But TWO GUARANTEES!**
**Manufacturer's Quality Guarantee & AHC'S Famous 14 Day Money Back Guarantee**

AMTRON

AN AHC EXCLUSIVE! A FANTASTIC VALUE, TOO!

## "SPACE CADET"

### HI-FI RADIO CONTROL OUTFIT

**OPERATES ANY MODEL . . . BOATS, CARS & PLANES**
**From 1/2A to the Very Largest • Up to 1½ Miles**

We've sold hundreds of these terrific R/C outfits! They're made exclusively for us by one of America's biggest and best known Radio Control manufacturers. You Save Many $$$ because of our huge purchasing power. Performance-wise, the "SPACE CADET" outfit is exceptionally dependable and easy to operate. Assembly is extremely simple, too. Operates on 27¼ mc. Features a lightweight (under 3 oz.) compact RECEIVER. Deluxe components include: hard 3S4 tube, genuine 6000 ohm Sigma Relay and only 4 major parts . . . yet gives maximum performance. 100% tested and proven equipment! All brand new! No surplus or junk parts! The powerful, hand held TRANSMITTER is a precision instrument, too. Comes in a sturdy all metal case. Complete outfit includes both Receiver and Transmitter . . . plus tubes, escapement, crystal, etc. All for the one low price. All prefabricated assembly, too . . . with easy to follow instructions included.

**MADE TO LATEST FCC REGULATIONS, TOO!**

GET BOTH THE RECEIVER AND TRANSMITTER KITS

*Both for only* **$14.95** Less Batteries

**A Verified $25.00 Value!**

**ASSEMBLED OUTFIT**
Same as Above, But
**Ready-To-Operate** ALL FINISHED, TESTED AND ASSEMBLED READY FOR USE. **$23.95** Less Batt.

**INDIVIDUAL PRICES**

| | |
|---|---|
| "Space Cadet" RECEIVER KIT with All Components, less batteries—only | $ 6.95 |
| ASSEMBLED RECEIVER. Ready-To-Use and Tested, less batteries—only | 10.95 |
| "Space Cadet" TRANSMITTER KIT, All Components, less batteries—only | 8.95 |
| ASSEMBLED TRANSMITTER, Ready-To-Use and Tested, less batteries—only | 12.95 |

## R/C HEAD PHONES

| | Reg. | SALE |
|---|---|---|
| #2260–2300 Ohm Dbl. | 5.25 | 2.95 |
| #2262–4300 Ohm Dbl. | 4.30 | 3.95 |
| #2261–1000 Ohm Sngl. | 3.75 | 3.29 |
| #MPS–1000 Ohm Sngl. | 2.75 | 1.49 |

## GUIDE TO Radio Control 25¢

Covers all phases of Radio Control for models—theory, practice & operation. A must for R/C fans.

## 20¢ EACH Nylon Gears

| # | Teeth | .10 Dia | .00 |
|---|---|---|---|
| N1 | 12 | 3/32 | 8/32 |
| N2 | 24 | 1/8 | 17/32 |
| N3 | 36 | 3/16 | 3/4 |
| N4 | 48 | 3/16 | 11/32 |

## ½ PRICE

**$1.98 R/C Deluxe Receiver INSTALLATION KIT**

**98c**

## CRYSTALS 27.255 mc.

**$6.50 VALUE 2.89** MEETS FCC REGS.

**New R/C MC Bands** Sale! 26.995; 27.045; 27.095; 27.145 or 27.195 **3.95**

## MILLIAMETERS

AHC Sole or Quality R/C Test Meters

| | Reg. | Sale |
|---|---|---|
| 0-3 | $4.95 | $3.95 |
| 0-5 | 3.95 | 2.95 |
| 0-50 | 2.75 | 2.29 |

## R/C TUBES

| | Reg. | SALE |
|---|---|---|
| 3S4 | 1.40 | .89 |
| XFG1 | 3.85 | 2.95 |
| 3A5 | 1.25 | .98 |

## MINITONE 2.95

**Miniature DC Motor**

Ideal power drive for servos, actuators, etc. Less than 2½ oz., 1¾" high. Noiseless and very efficient. 6 Volt.

## 9.95

**Field Strength Meter**

Complete, wired, adjusted and ready-to-operate. Has quality components—includes plug-in antenna, integral meter, plastic case.

## TWIN TUBE • PRINTED CIRCUIT

### AMTRON "Vanguard" DELUXE R/C OUTFIT

**Here's the Precision Equipment You Always Wanted at a Fraction of What You'd Expect to Pay!**

**"VANGUARD" RECEIVER** is a superior quality outfit—unmatched for reliability, accuracy and performance. It will fit into just about any model you can find, weighs a mere 1½ ounces (including relay) and measures 1½" x 2" x 1". Despite its light weight and compact design, it is one of the finest precision R/C instruments ever made. Other features include: One stage single tuning • All printed circuits • Twin diodes • Accurate and positive pin point control at all ranges • Low .15 battery drain as compared with .3 or .4 on most receivers • Saves you countless $$$ on battery costs • No pot required • 22½ Volt battery operation • Transmitter that eliminates sensitivity control • New improved 1AG4 tubes • Super sensitive 5000 Ohm Sigma relay • Plastic case • All prefabricated and easy to assemble • Complete instructions and diagrams included.

**SALE PRICED AT LESS THAN THE REGULAR WHOLESALE COST!**

**"VANGUARD" TRANSMITTER** is a powerful output instrument with all the precision components found only in the most expensive units. It has a simplified built-in tuning indicator with a one adjustment feature. Tuning-Eye light for E-Z checking. Printed Circuit Chassis. Exclusive new design that reduces "0" battery drain, yet supplies maximum power output. Other quality features include: Deluxe Crystal. Powerful 3A4 Tube. Handsome portable Aluminum case that you easily hold in your hand and really easy to assemble construction. The step-by-step assembly instructions are a cinch to follow. R/C fan who have seen the "VANGUARD" TRANSMITTER tell us it's the biggest bargain they ever saw—equal in power and quality to the most expensive!

**ASSEMBLED OUTFIT** Same as Above, But **Ready-To-Operate** ALL FINISHED, TESTED AND ASSEMBLED READY FOR USE. **$34.95** Less Batts.

**COMPLETE OUTFIT RECV'R & TRANSM.** **$24.95** Less Batteries **$39.95 VALUE**

**INDIVIDUAL PRICES**

| | |
|---|---|
| "Vanguard" RECEIVER KIT with All Components, less batteries | $12.95 |
| ASSEMBLED RECEIVER. Ready-To-Use & Tested, less batteries | 17.95 |
| "Vanguard" TRANSMITTER KIT, All Components, less batteries | 12.95 |
| ASSEMBLED TRANSMITTER. Ready-To-Use & Tested, less batteries | 17.95 |

## R/C FANS!

**AHC HAS EVERYTHING YOU WANT! EVERY BRAND! ALL PARTS AND ACCESSORIES! SEND US YOUR ORDER AND GET ALL THE AHC EXTRAS!**

**RADIO CONTROL**

| | |
|---|---|
| **R/C Recv'r & Transmitter** | |
| Berkeley Aerotrol Mark IV Recvr. & Trans. Combo Kits | 16.95 |
| Aerotrol Mark IV Assembled | 24.95 |
| **Receivers—Single Channel** | |
| Ace Comdr. Kit 8.85 Asmbld. | 12.95 |
| Magic Carpet Mark III Asmbld | 27.95 |
| Ace TR 4.5 Recvr. Kit | 22.95 |
| Bedeco (Assembled) | 24.95 |
| Bramco (Assembled) | 29.95 |
| Cit'ship PR27 17.95 Assembled | 21.95 |
| Citizenship 465AR (Assembled) | 24.95 |
| Cit'ship 3VTR 34.95 SSTR | 69.95 |
| CG R1 Kit 19.95 (Assembled) CGR1T-3V 39.95 CG-RX-1 | 26.95 34.95 |
| Deltron R100 (Assembled) | 24.95 |
| Deltron R109 (Assembled) | 29.95 |
| Esco T.N.T. Recv'r Asmbld | 21.95 |
| Gyro 22X 16.95 With Relay | 21.80 |
| Rextrol @100 @95 200 | 19.95 |
| Super A'trol 13.95 (Assembled) | 21.95 |
| Tone Aerotrol (Assembled) | 29.95 |
| **Receivers—Multi Channel** | |
| (2) Citizenship RER | 44.95 |
| (2) CG RT2 (Assembled) | 69.95 |
| (3) CG RT3 (Assembled) | 79.95 |
| (5) CG RT5 (Assembled) | 119.50 |
| (8) Bramco "Regent 8" Asmbld. | 118.00 |
| (8) Citizenship MSR-8 | 99.95 |
| (8) CG RT8 (Assembled) | 139.50 |
| (8) Citizenship SS-MSR8 | 149.95 |
| (10) Bramco "Regent 10" | 150.00 |
| RAYTROL: (3) Assembled (5) 86.00 (6) 91.75 (8) | 64.50 124.00 |
| **Transmitters—Single Channel** | |
| Ace Comdr. Kit 9.95 Asmbld. | 14.95 |
| Magic Wand Kit 19.95 Asmbld. | 24.95 |
| Bedeco (Assembled) | 34.95 |
| Bramco Trans. (Assembled) | 36.95 |
| Cit'ship CTX (Assembled) | 39.95 |
| Cits'ship Kit 15.95 Assembled | 19.95 |
| MRT Citn'ship Kit Transistor | 19.95 |
| MTK Citn'ship Assembled | 26.95 |
| Citizenship 465MC (Assembled) | 34.95 |
| Citizenship 465MG Transistorized | 26.95 |
| CG T12 Kt 24.95 (Assembled) | 33.95 |
| Deltron T99 (Assembled) | 21.95 |
| Deltron T100 (Assembled) | 29.95 |
| Gyro 8X1 Trans. | 49.50 |
| Raytrol 500X (Assembled) | 34.95 |
| Super A'trol 19.95 (Assembled) | 24.95 |
| Tone Aerotrol (Assembled) | 49.95 |
| **Transmitters—Multi Channel** | |
| (2) Babcock 465MC (Assembled) | 69.95 |
| (3) Citizenship REX (Assembled CGT3 59.95 CGT8 | 39.95 99.50 |
| (5) CGT5 Assembled | 89.95 |
| (8) Citizenship MST-8 | 99.95 |
| (8) Bramco (Hand Held) | 116.00 |
| (10) Bramco (Hand Held) | 131.00 |
| RAYTROL: (3) (Assembled) (5) 68.75 (6) 79.20 (8) | 55.00 98.00 |

## BOOKS


**Order the Radio Control Reference Books You Want From AHC. If it's in Print, We've Got It!**

| | |
|---|---|
| Radio Control Hi'book by McEntee | 2.25 |
| Simple Radio Con. by H. G. H'dleby | 1.50 |
| Application of R/C (Hobby Help.) | .50 |
| Model Con. by Radio By E. Safford | 1.00 |
| Com. R/C Equipment (Hobby Help.) | .50 |
| Basics of Radio Con. (Hob. Help.) | .25 |
| R/C for Planes & Boats by Winter | 1.00 |
| Radio Con. of Models by Somershaff | 1.50 |
| R/C for Model Boats by McEntee | 1.00 |
| Guide to R/C. Winston Mailbook | .25 |
| **R/C Parts & Accessories** | |
| Gem Relay 5000 ohm 4.25: 7500 | 4.75 |
| Gem Micro 5000 4.95 . 7500 | 5.45 |
| Super Aerotrol Escapement | 3.95 |
| Berk. D&S Relay 7.50 Comp. Escap. | 6.95 |
| Babcock Elec. Compound | 8.95 |
| Babcock Positionable Servo | 12.50 |
| Babcock Proportional Servo | 14.50 |
| Babcock Proportional Pulser | 18.95 |
| Babcock Super Comp. Escap. | 7.95 |
| Babcock Mtr. Control Escap. | 8.95 |
| Selectronic Fuel Tank (Ideal) | 5.95 |
| Citizenship Escapement 5.95; S.E. | 7.95 |
| Citiz. Servo HRM-2R2M-1R3M 3R 14.95 Kit | 11.95 |
| Cameron SN Escape (2 pos.) | 5.95 |
| Cameron SN Escape (4 pos.) | 8.95 |
| Cameron Compound Escapement | 8.95 |
| Cobb Escap. 2 or 3 Pos. | 8.95 |
| Cobb Elec. Comp. Electro SN Electro 3 Pos. 8.95 Elec. Comp. Slim Line Servo | 8.95 9.95 8.95 |
| Babcock Elevator Servo | 12.50 |
| Bonner Vari/Comps: Single Dual 18.95 Rudder Elev. | 8.95 9.75 |
| Bonner Servo 14.95 SN Escap | 8.95 |
| Multi-Servos 2 PN 11.95; 3P3N 2 P2N 11.95; 3P 10.95; 5PN 2P2NK, 3PNX or 3P3NX ea. | 14.95 24.95 14.95 |
| Multi-Servo Rudder L or R | 18.95 |
| Multi-Servo Elevator U or D. | 18.95 |
| Relay (Amtron) Super Sensitive | 3.95 |
| Citiz. 18E Inst. Kit | 4.95 |
| U-15 Battery Box 1 cell .30; 2 cell | .50 |
| Battery Boxes: 1 cell .25; 2 cell .50 3 cell .65; 4 cell .85; specify battery | |
| Tubes: XFG1 3.85; 3A5 - 1.25; 1AG4 2.95 3V4 1.75; 1U4 1.75; 1U5 | 1.50 |
| Test Meter (Citizenship) | 22.95 |
| Batteries: XX45 or 467, 67½V XX30 or 455, 45V 6P or 742, 15V U15 or 412, 22½V | 3.50 2.95 1.65 1.50 |
| 0-3 Milliamiter 4.95 0-50 | 2.75 |

## R/C MODELS

**Berkeley "Astro-Hog" $15.95**
Sensational winner of 1st, 2nd, 3rd & 4th place in Multi-1958 Nationals. 72" span. Length 50". For .35 R/C engines. Order yours from AHC.

**Babcock "Tri-Pacer" $9.95**
Fuel-proofed plastic model for R/C, F.F. or U-Control flying. 37" wingspan, all prefab to assemble in a few hours.

**AERONCA CHAMPION**
**NEW** All Plastic, 40" Span For .049 to .074 Eng. **9.95**

| | |
|---|---|
| Aero 9 - 48" .09 to .15 | 8.95 |
| Aero 15 57" - .15 to .19 | 11.95 |
| Aeronca C3 36" .015 - .099 | 2.50 |
| Aeronca C3 54" .09 to .19 | 5.95 |
| Aeronca Champion 37" Plast. .049 | 9.95 |
| Aircoupe 45" .074 to .29 | 7.95 |
| Astro Hog 72" .35 | 35.95 |
| Bird Dog 35" .09 AA | 2.95 |
| Boshstraps "A-RC" 54" AA-A | 4.95 |
| Breezy Jr. 42" .049 - .074 | 6.95 |
| Breezy Sr. 56" .09 to .23 | 14.95 |
| Bubl Pup 37" .049 | 3.50 |
| Buster 48" - .15 to .35 | 9.95 |
| Cessna 170 72" .25 to .35 | 14.95 |
| Cessna 172 - 54" .09 to .19 | 8.95 |
| Cessna 180 35" AA | 2.95 |
| Cessna 180 45" .09 to .15 | 6.95 |
| Clipper 24" AA | 2.95 |
| Custom Livewire 66" .25 to .35 | 21.95 |
| Custom Privateer 114" .45 - 1.2 | 19.95 |
| De Haviland Beaver 48" .035 | 5.95 |
| Douglas B26 Invader 88" .15-.25 | 16.95 |
| Esquire 50" .049 to .099 | 7.95 |
| Explorer 56" .15 to .25 | 14.95 |
| Fairchild PT-19 - 72" .15 to .29 | 24.95 |
| Fairchild PT-19 - 48" .09 to .19 | 6.95 |
| Fokker D-7 - 28" .049 to .074 | 4.95 |
| Helioplane 39" .049 to .14 | 4.95 |
| Kitten 34" .020 to .074 | 4.95 |
| Livewire Champion 56" .15 - .19 | 13.95 |
| Livewire Trainer 48" .09 to .15 | 9.95 |
| Livewire Rebel 48" .074 to .09 | 9.95 |
| Livewire Super Cub 56" .15 - .19 | 13.95 |
| Luscombe Sedan 78" C-D | 9.95 |
| Mamba Trainer 48" .049 to .099 | 6.95 |
| Miss Tony 46" .049 to .074 | 5.95 |
| Monocoupe 84" .19 to .45 | 12.95 |
| Navion Super 260 68" .35 to .45 | 16.95 |
| Piper Cub J3 54" .09 to .35 | 7.95 |
| Piper Comanche 54" .09 to .15 | 9.95 |
| Piper Cub J3 71" .15 to .25 | 10.95 |
| Piper Tripacer 44" AA-A | 5.95 |
| Piper Tripacer 37" Plast. .049 | 9.95 |
| Piper Tri-Pacer 58" A-B-C | 12.95 |
| Rascl Rudderbug 62" A | 8.95 |
| Sea Cat 68" .15 - .25 | 9.95 |
| Sioux 36" .029 to .074 | 3.25 |
| Smoo Hog 72" .29 to .35 | 27.95 |
| Spirit 54" .09 to .23 | 10.95 |
| Super Buccaneer 90" - C-D | 14.95 |
| Waco Cabin 52" .15 to .29 | 9.95 |
| Waco Cabin 36" .049 to .099 | 3.95 |

**RADIO CONTROL BOATS**

| | |
|---|---|
| Corvette 48" (Sterling) | 26.95 |
| American Scout 50" (Sterling) | 16.95 |
| Ocean Tug 35" (Veco) | 24.95 |
| Owens Bridge Sedan 23" (Ideal) | 10.95 |
| Sport Fisherman 42" (Ideal) | 24.95 |
| Constellation 27" (Berkeley) | 6.95 |

## ½ PRICE SALE

**AHC SAVES YOU 50% ON THESE TOP QUALITY, E-Z TO OPERATE "BABCOCK" R/C INSTRUMENTS**

## 2 CHANNEL 465 mc.

**Transmitter BCT-7**
**By far the finest, most reliable unit made.**

**REG. 69.95 34.95**

R/C Fans! Here's your chance to own the "Cadillac" of R/C equipment at tremendous savings. The BABCOCK BCT-7 is the world's finest modulated multi-channel UHF frequency transmitter . . . FCC type approval #DR425. Features include: High frequency 5 and 7 Kc. modulation. 3 element antenna for super-radiation efficiency included at no extra cost. Built-in voltage indicator. Convenient hand-held size . . . 8¼x6¼x3. Both channels can be operated simultaneously or independently. Fully factory assembled and tested. This is the Brand New 1959 model . . . and quantity is limited! Order this AHC super bargain now . . . while the supply lasts!

## SINGLE CHANNEL TONE RECEIVER BCR-8

**FOR USE WITH BCT-7 TRANSMITTER See Below**

**REG. $39.95 19.95** 5 Kc. or 7 Kc.*

*Your choice of either 5 Kc. or 7 Kc. useable with above Transmitter for operation of either or both units.

**NO TUBES! COMPLETELY TRANSISTORIZED!**

One of the finest, most reliable, most sensitive precision units you can buy. Features a unique advanced circuitry that offers interference immunity. Uses the popular 5K super sensitive relay. Has rugged, metal case and built-in battery holder. Only 6½ ounces. Simple to install. Simple to use. Wing antenna plus full installation instructions and diagram booklet included. Fully factory assembled and tested.

**Order Two Receivers & Save An Extra $5.00 34.95**
Reg. $79.90. Get Both (Mix'em or Match'em) For only

**FREE $7.95 COMPOUND ESCAPEMENT IF YOU ORDER BOTH Transmitter and Either Receiver**

These Babcock units, when used together, make a really R/C team. If multi control is desired (using one transmitter) you will need a Compound Escapement. We will give you one of the three made . . . the Babcock Mark II Super Compound Escapement. ABSOLUTELY FREE if you purchase the above Receiver and Transmitter set together ($34.90).

**Limited Quantity! Rush your Order!**

## Wow!



38" SPAN FOR E.D. .021 to .049

**BRIGADIER "RC-38"** Climbout! Fly at F.F., R/C or PAA! Land A real buy! **SALE! 1.95**

REG. $5.95 **3.95**

**Compound Escapement**

Converts single channel R/C sets to multiple control. Completely assembled . . . the finest heavy-duty unit you can buy. Carries our famous Money Back Guarantee.

**R/C ALIGNING TOOLS** REG. 65¢ **39¢**

Choice of Flat Screwdriver or Hexagon Tip

| | REG | SALE |
|---|---|---|
| 6000 Ohm Sigma Relay Sale | 2.95 | 1.69 |
| Little Jewel 5000 Ohm Relay | | 2.75 |
| RBM Palladium Contact Relay | | 3.75 |
| GEM 5000 Ohm Relay | 4.25 | |
| Micro Relay | | 4.95 |
| Self. Neut. "Amtron" Escape. | 3.95 | 2.95 |
| Dean Reed Banks — 5 Reed | | 22.95 |
| 6 or 8 Reed | ea. | 24.95 |
| Multi-Pin Plug & Socket Sets. | | |
| 2 or 3 Prong | | .20 |
| 4, 5 or 6 Pin .30 7 or 9 Pin | | .50 |
| R/C Plugs or Jacks, Std. | ea. | .35 |
| R/C Telescoping Antenna | 3.00 | 1.75 |

**AIR-SEA RESCUE BOAT** REG. $12.95 **6.95**

Terrific R/C boat model that you buy at almost half price. 30" overall length, 8" beam. Easy to assemble balsa hull structure with mahogany planking. For .09 to .19 eng. (or 2 elec. motors).

**WET CELL STORAGE BATTERIES**

High capacity, long life. The finest made for R/C use.

| | | | |
|---|---|---|---|
| 2V-3A | 1.29 | 2V-8A | 2.75 |
| 2V-6A | 2.39 | W/CASE | 2.75 |
| 2V-12A | 5.75 | 6V-4A | 3.29 |
| Baby Wet 6 V 1.5A | | | 1.45 |

**R/C Battery CHARGERS ASSEMBLED**

ESSCO UNIVERSAL 8.95

| 2 Volt | 2-6 V. |
|---|---|
| Reg. $5.95 | Reg. $7.95 |
| **4.95** | **6.95** |

**5.95**

Famous "Weller" SOLDERING GUN

Standard professional soldering gun that gives instant heat. Handsome hi-impact housing.

## Use Handy AHC Order Blank on Next Page

Send Order To: America's Hobby Center, Inc., 146 West 22nd St., New York 11, N. Y.

# AHC JAMBOREE OF FAMOUS BRANDS VALUES

AHC GUARANTEES 100% SATISFACTION . . . OR YOUR MONEY BACK

SAVE!

AHC IS FIRST IN SERVICE SAVINGS & SATISFACTION
World's Largest Selection, Too!

STOCK UP!

SAVE AT AHC!

## GLO ENGINES

**COX .020** "Pee Wee" Sensation that flies most ½A planes. 11½" high. Develops max. power at 18,000 RPM. **3.95**

COX .049 $4.95
Olympic .15 12.98 Sportsman .15 7.98

**Fox .29 or .35** Two most popular sizes. Dependable performers. Gives you easy starts . . . easy handling. **15.95 EA.**

Fox .099 4.95 .021 14.50
Fox .15 6.95 .19 or .25 ea. 14.50
2 Speed .15 15.50 Exhaust Valve .29 19.95
Fox .35 Combat Special 19.95

**K&B .29 or .35** From K&B Allen a couple of excellent performers. For fun or trophies, they're "Choice of Champs" **15.95 EA.**

K & B .099 9.95
K & B Torpedo 12 or 23 ea. 13.95
K & B 2 Speed .15 11.95 .19 16.95
K&B Torpedo .15 10.95 .295 19.95
K&B 19 R/C 19.95 35 R/C 22.95
K & B .45 19.95 .45 R/C 27.95

**McCOY .19, .29 or .35** We have on all . . . famous McCoy "Red Heads." We hear nothing but "raves" on these engines

.19 $7.95
.29 8.95
.35 11.95
.099 7.95
McCoy .60 40.00

**3.95 OK CUB .049A** The hottest ½A engine you can buy at a new low price. Fuel-rust nylon tank, prop & spin starter.

O.K. Cub .049B Kit 3.95 Assmbld. 4.95
O.K. Cub .049S w/starter 6.95
O.K. Cub .074 5.45 Pkge. 6.25
O.K. Cub .099 5.95 Pkge. 6.75
O.K. Cub .14 or .19 ea. 6.95
O.K. Cub .29 — 11.95; .35 — 12.95

**DOOLING .29** For Modelers who demand the finest. More horsepower per ounce of wt. than any other engine. **23.95**

## ENGINE TRADE IN SERVICE

We meet all competition! If anyone advertises a higher trade-in allowance in this issue, clip the ad and send it to our N.Y. office with your order. BONUS ITEMS INCLUDED AT NO EXTRA CHARGE! Your old engine is worth 25% of the amount of your purchase. Only 1 engine accepted per order. (Sorry, ONLY 10% on special sale merchandise and R/C Equipment). If in doubt, send payment in full and we will refund balance.

**VECO .35 RC** Smooth, dependable power from idle to top RPM's without a falter. Order this popular engine from AHC. **19.95**

Veco .19 11.95 .29 or .35 14.95
Veco .19 R/C 15.95 .35C 16.95
Veco 100 Series .29 or .35 15.95

## JET ENGINES

**PAA LOADER $1.98** The terrific JETEX "150" . . . a high performance, solid fuel jet engine. Thrust 1¼ oz. Wt. ¾ oz. Order now.

**Jetex 50B** Direct A/C ideal for most jet model etc. Engine. **98¢**

JET FUELS
Jetex 50 - (10) .59 (20) .98
Jetex 150 .10 .20 1.25
Berkeley Hi-V .10 .59
Jetex 600 .20 1.59

**DYNAJET "REDHEAD"** **35.00**

Holder of all world records for jets. Powerful gas engine develops 4¾ Lb. Thrust! Length 21½", Wt. 16 ounces.

## MARINE ENGINES

**Cameron .19 Water Cooled** Popular inboard marine engine that's loaded with power.

Single $14.95
Dbl. Jet 16.95

**Sea Fury OUTBOARD .049 or .060** Allyn's sensational outboard's . . . model builder's choice.

.049 — $10.95
.060 — $11.95

**COMBAT MASTER $2.50** Scientific's terrific new U-Control thriller for ½A engines. 18" span. All prefab with carved fuselage.

**THUNDER BIRD 2.50** Another popular Scientific U-Control model. 15" wingspan biplane for ½A engine. Prefab. Carved fuselage.

**SMOOTHIE 7.95** VECO's 52" contest winning stunter. Designed for windy weather. Wingspan 32". For .29 to .35 eng.

**STERLING "RUFFY" $7.95** Contest type full-stunt model. 50" wingspan for .29 to .35 eng. All balsa & plywood die cut parts.

**MODELCRAFT "ZERO" 2.95** Tosh Matsuda's famous "ZERO" that has won a "string of Firsts" in competition. For .049 engines.

EVERY DAY IS SAVINGS DAY AT AMERICA'S HOBBY CENTER

**SNIFFER "29" 2.25** Popular free flight model from "Midwest". Wingspan is 29". Powers with .020 to .049 engines. Order #1

## AHC HAS EVERYTHING

ORDER FROM THIS MAGAZINE . . . OR SEND FOR OUR CATALOG

### ONLY AHC GIVES YOU ALL THESE EXTRAS!

1. One year subscriptions to Model Airplane News, Air Trails and Flying Models or their equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. BONUS TERMS with every engine ($3.95 or over) purchased. Includes: Correct Size Propeller, Glo Engine Handbook, etc.
4. BONUS ITEMS with Gas Planes (selling at over $1.95) . . . includes Construction Manual, Rubber Wheels, Insignia, etc.
5. **IN U.S.A.** no postage or packing charges for orders of over $2.00 (include 25c if order is under $2.00). We insure safe delivery ANYWHERE IN THE WORLD. **Outside of U.S.A.** (except APO & FPO) add 10% for postage (minimum 50c).
6. Membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. Over 100,000 members!
7. No "minimum" orders. Any order is welcome.
8. **Fastest Service in the World!** Whether your order is for 5c or $500.00, you get our famous **24 HOUR SERVICE**
9. Most complete model stock in America—gas, rubber, solids, etc. If it's advertised, we can usually supply it.
10. Competent understanding of your modeling problems.
11. 80 page giant illustrated catalog FREE with order. On Request

### SATISFACTION GUARANTEED OR YOUR MONEY BACK

## DIESEL ENGINES

**OK CUB .049** Herkimer's rugged diesels "check proof" construction. Excellent performers. **6.95 CUB .075 $7.95**

McCoy .049 (AA) 7.95

## PRICES SLASHED

**TIGER JET ENGINE** Save a big $10.00 on this powerful jet type engine with a 2¼ lb. thrust. Features new easy glo type starting. 18½" long.

**REG. 9.95** **$19.95**

**"Hi-Pulse" Jet Engine $32.95 VALUE** Big 3¼ lb. thrust. Sea 21¾" long 7½" diam. Weight: 14 oz. **19.95**

## U-CONTROL

**AMERICAN BOY $1.29** Scientific's profile U-Control trainer for ½A eng. (.020 to .074). 18" span. Ideal for beginners in control line.

**FLYING CLOWN $1.95** From P.D.Q. this popular 28" span profile model. Ideal for sport, stunt or combat flying. .19 to .35 eng.

Super Clown 2.95

**VECO "RENEGADE" 3.50** Simple to build from the prefab kit. Wingspan 33". For .29 or .35 engines. Top combat winner.

**CG STUNTMAN 23 $1.95** Exciting new stunt model by Carl Goldberg. 23½" span. Die cut interlocking all balsa construction.

**JR. FLIGHT STREAK 31" Span $2.95**

**FLIGHT STREAK $3.95** Top Flite's popular combat or stunt profile flyer for .15 to .35 engines. 42" wingspan. Order from AHC!

**B17G FLYING FORTRESS 19.95** Great new multi-engine controliner by Berkeley. 2 or 4 .09 to .15 eng. 52" Span. ½" scale. Prefabbed.

**Rearwin Speedster $5.95** Jetco supersonic model for FF or controliner. 38" span for .049 to .19 engines. Order yours from AHC.

**1.95 LITTLE MUSTANG** Here's Scientific's exciting model of the famous escort fighter. For any ½A eng. 18" span. Carved fuselage.

**BOEING P-26 $4.95** Berkeley's deluxe carved fuselage controliner for .09 to .15 engines. 21" span. Prefab. Has metal Cowl.

ORDER NOW! GET ALL THE AHC "EXTRAS"

**RINGMASTER $3.50** A combat-stunt ace from STERLING for 29 to .35 eng. Profile, prefab kit. Big 42" span. Order yours from AHC.
Ringmaster Jr. 30" .099-.19 — $2.50
Sear. Ringmaster 42" .19-.60 4.95

**REDSKIN 5.25** HENRY ENG. Another popular model . . . the fabulous "Redskin." Terrific sport or team racer. For .19 to .35 eng. 31" span.

**FLIGHT TRAINER $2.95** Sterling's entry for beginners in controline flying. Takes plenty of punishment. 24" span. .09 -.15 eng.

**STUNT MASTER 1.69** ½A stunt model from Scientific. It's highly colorful. Powers with ½A engines. Prefab. carved fuselage.

**AERO "15" 11.95**

**R/C AERO 9 8.95** From AERO MODELS . . . this very super R/C flyer. Designed to withstand shock. 48" span. For .09 to .15 eng.

**PIPER CUB J3 7.95** Sterling's top notch model for R/C experts. 54" span for .09 to .35 eng. Die cut and shaped parts.

## SPECIAL BONUS OFFERS

**FREE** of extra cost with every **GAS ENGINE**

Bonus items include: Tube of "REV-UP" Lubricant (makes your engine last twice as long!). Ownership Decal. Correct Size Propeller, Glo Engine Handbook. Mounting Nuts & Bolts. Numeral & Alphabet Decals, etc., etc. FREE of extra cost.

**FREE** of extra charge with **GAS PLANES** selling at $1.95 or over

Bonus items include Ownership Decal. Gas Model Construction Manual. Correct Size Rubber Wheels, Insignias, Numeral & Alpha. Set Decals, etc. FREE at extra cost.

## WE MATCH ANY OFFER

AHC matches any offer made by any other advertiser. Attach ANY ad in this issue to your order — and take advantage of the AHC "extras."

## ORDER NOW! Get all these AHC "EXTRAS"

**RAT RACER $4.50** Guillow's U-Control model for Rat Race event. 24" span for .25 to .40 eng. Prect. indestructible.

**WHIPSAW $1.95** Combat and stunt model from Enterprise. Prefab, 31" span. For .09 to .19 engines. U-Control.

Super Whipsaw 40" $2.95

**"WOW" $3.50** Exciting different flying model from CONSOLIDATED. 35" Wingspan. Powers with .29 to .35 engines.
WOWEE 23 — ½A model ..... $1.95

**LIVEWIRE TRAINER $9.95** DeBolt's popular R/C model for .09 to .15 eng. Big 48" span. Simple rugged construction.

**GRUMMAN F11-1F "TIGER" $2.95** Berkeley's exciting ducted fan jet model for .020 engines. Free flight or "Monoline". 25" length. Formed canopy. Detailed plans.

**STINSON RELIANT $24.95** 82½" span R/C old timer brought back by popular demand by Cleveland. For .19 to .60 engines.
Luscomb Sedan 76" .19-.35 14.95

## MODEL BOATS

**Colonial Fisherman $24.95** We've heard nothing but "raves" about this famous 42" "IDEAL" R/C BOAT. Prefab with welded wood hull

## FREE FLIGHT & R/C

**BLAZER ½A 2.50** C-G MODELS contest flyer for .049 engines. 40" Wingspan. A truly excellent performer. Order from AHC

## RUBBER MODELS

**Guillow Flying SCALE MODELS** 18" span. Rubber Pwr. WW I Heros: SES. Spad. Fokker DF Altross, Nieuport Sop. Camel, Morse, Nieuport **1.29 ea.**

British SES 24" Span (Rubber) 2.95
Nieuport 11 (Shown) 24" Span 2.95
Thomas Morse Scout 24" Span 2.95

**Fitting Set $9.95**

**42" CORVETTE $26.95** Sterling's exciting Chris-Craft model. An R/C fan's dream performer. 48" long. 14" beam. All prefabricated.

**22" EXPRESS CRUISER 3.95** Berkeley's powered speedboat model for gas or elect. motors. 22" long. Prefab kit with mahogany planking.

**P-51 Giant Mustang $14.98** Brand new from Wen Mac. Big 30" span. Has Wen Mac .049 engine and rotomatic starter. Includes flight lines and control handle.

**PIPER TRI-PACER $7.95** Brand new COMET scale flyer with a Cub .049A engine. Colorful, rugged plastic model with a 16" wingspan.

**O&R MOTORJET 16.95** All metal racer. Starts and launches automatically. Has an .04" engine with automatic starter. A real "beaut"!

**PROP ROD $9.95** Cox's streamlined, colorful racer . . . 12" long. With an .049 Babe Bee eng. Unbreakable spring starter, too!

## Why Order from any Manufacturer?

We carry in stock all the planes, motors, etc. of every manufacturer advertising in this magazine.

ORDER from AHC and GET FREE FREE FREE Postage & Insurance **PREMIUMS** Membership in MODELCRAFTERS of AMERICA

**25** Manufacturer's CATALOGS & SHEETS For Only **$1** plus . . . 80 page Giant AHC Catalog that sells for 25c

Herkimer (OK) - Enterprise - Comet - Chemcraft - X-Acto - Wen Mac - Stanzel Cox - Consolidated - K & B - Fox - De Bolt - Hawk Models - Berkeley - Sterling - Austin - Aurora - Revell - Scientific - Veco - Monarch - Etc.

Note! When "out" of a particular catalog, we reserve the right to substitute.

## READY - TO - RUN

**P-40 FLYING TIGER $10.00** Cox's terrific new Ready-to-Fly scale model. Full 20" wingspan. Powered with Super Bee engines.

With Recoil Starter $12.95

**AUTOMITE $12.95** Speeds at 35 mph. A truly fun to operate race car by Wen Mac. Complete in every detail. Plastic

With Recoil Starter $12.95

**AQUAMITE $10.95** Here's Wen Mac's extremely popular speedboat—ready to run and super seaworthy. 13" long. All plastic

## MISCELLANEOUS

FAMOUS MERCO PLASTIC **SPINNERS**

Colors: Yel. Bl. Blk. Blue. Red. Gn.
1¼" Diam. Needle Nose or Std. .29
1¼", 1¾", 2" or 2¼" Needlenose .39
1¼", 1¾", 2" or 2¼" Std. .39

**Accessory Kit** OK Cub. For all model engines. Has fuel, spacer, battery leads, plug wrench, etc. **$1.25**

**U-REELY** Our most popular control handle.
Std. Wire ..... $2.95
Braided .018 ..... 8.95
Braided .018 ..... 8.95

MAGNESIUM **SPEED PANS**

| | Top | Btm | Cowl | Stab | Wing |
|---|---|---|---|---|---|
| ½A | 2.40 | 1.95 | | .35 | |
| A | 2.95 | 2.95 | 2.50 | .85 | 3.50 |
| B | 3.45 | 3.45 | 2.75 | 1.00 | 4.00 |
| C | 3.95 | 3.95 | 3.00 | 1.15 | 4.50 |

**6.95 YELLOW JACKET** Brand new WEN MAC gull wing ready to fly sensation. Big value outfit. Rotomatic starter. Real bargain!

**7.95 SUPER CUB 105** Realistic, smooth flying COX model. Hi-impact plastic. Comes with Thimble Drome .049 engine. 13½" wingspan.

OVER 5,000,000 MODELERS KNOW

## YOU BUY WITH CONFIDENCE AT AHC

Use Our Handy Order Blank Next Page

### HOW TO ORDER

Send payment in full (sorry, no stamps or C.O.D.'s) to:

**AMERICA'S HOBBY CENTER**
146M West 22nd St., New York 11, N.Y.

# ORDER-BY-MAIL FROM "AHC" . . . THE HOBBYIST'S SUPERMARKET FOR SUPER

# SAVINGS


YOUR "ONE STOP" SHOPPING CENTER FOR ALL YOUR HOBBY NEEDS

## COMPLETE FLYING OUTFITS

### FREE BONUS OFFER

**Free of extra cost with every plane and engine.**

Buy your engine and plane from us at the same time and get all your accessories free!

STANDARD MDSE. ONLY

Correct Size Finished Propeller — Engine Handbook — 18" Insulated Ignition Wire — Insignias — Giant Book on Construction — How to Build and Fly Them — Cement — Sandpaper — Metal Bellcrank with Bolt, Nut and Washer — Elevator Horn — Elevator Hinges — Lead-in Wire — Push-Rod Wire - U-C Handle - Control Lines - Ownership Decal

STANDARD MDSE. ONLY

**NOTE:** You may substitute any plane or engine of equal value for any plane or engine included in these offers. Choose from the listings in the first AHC ad.

### 2 PLANE OUTFIT

Believe it or not! 2 COMPLETE PLANES
Make and fly BOTH these 18" profile models


BIG $10 flying outfit FOR ONLY 5.99
With Cub .049 $7.39

### BIG $10. VALUE

NOW ONLY $7.50 with Atomic .099 Engine


### FREE FLIGHT OUTFIT

FAMOUS CONTEST MODEL


DELUXE $15.00 OUTFIT $8.95

MEETS F.A.I. and A.M.A. RULES

Thoroughly tested and contest proven! AHC brings you this sensational Free Flight outfit . . . and we're bargain priced it, too! The "AMAZON 400" is light, rugged and efficient . . . designed to exact every inch of altitude possible for its thermal soaring glide. Kit is all pre-fabricated . . . with selected balsa and plywood parts and full size thoroughly detailed plans.

NEW & POWERFUL FOX .15 ENG. & COMPLETE AHC BONUS EXTRAS, F.F. ACCESSORIES, ETC. . . . WORTH MANY $$

## SALE

| | REG. | SALE |
|---|---|---|
| Scale Team Racer 2⅝" Plastic Pilot | .75 | .39 |
| 2" Race Car Wheels (4) ½" wide | 1.50 | .50 |
| Electric Outbd. Motors 3-6V., powers model boats up to 24" | 2.95 | 1.99 |
| Spirit of St. Louis, ½A U-Control, 18" | 2.95 | 1.95 |
| Model Builder's Alum. Block Plane | .80 | .29 |
| Electric Motor, U.S. made, 1⅛" | 1.98 | .69 |
| Modeler's Knife Set (6 Pc.) | 1.79 | .98 |
| Kellett Autogiro, ½A U-Control, 18" | 1.98 | 1.29 |
| Model Builder's Saw (for wood & metal) | .60 | .39 |
| Hobbyist's Screwdriver Set (6) | 2.25 | 1.49 |
| Rev-Up Lubricant (adds RPM's to Eng.) | .50 | .29 |
| "Air Racer" ½A U-Control model, 18" | 3.39 | 1.98 |
| Fox Glo Plug Wrench | .60 | .39 |
| "Sky Mate" - ½A U-Control model | 2.98 | 1.95 |
| "Apprentice" U-Control Trainer, 24" | 3.25 | 1.98 |
| U-Control Wire (.008-100 Ft.) | .60 | .39 |
| Modeler's Carving Knives (12 asstd.) | 1.98 | 1.49 |
| "Firebird" Race Car (18") ½A Eng. | 1.89 | 1.29 |
| 88M .15 Diesel Engine | 13.95 | 7.95 |
| Set of 12 Hobbyist's Files in Case | | 2.50 |
| Midget Elect. Motor 1½-3V. Imported | | .39 |
| Engine Muffler (A-B-C) cuts noise | 2.95 | 1.69 |
| Shyteil Tissue (24 x 36) 10 Sheets | 1.00 | .49 |
| Ignition Spark Coils with hi tension wire clip | 2.00 | .98 |
| **IMPORTED MODELS** | | |
| SA-16 Albatross 53" (2) .19-.35 | 25.95 | 19.95 |
| Beech Bonanza 34" .19 to .35 | 10.00 | 7.95 |
| F-8-F Bearcat 36" .29 to .35 | 10.00 | 7.95 |
| B-29 Boeing 48½" (4) .09 to .15 | 29.95 | 19.95 |
| B-29 Boeing 84¼" (4) .19 to .29 | 39.50 | 27.95 |
| F-4U Corsair 31" .29 to .35 | 10.00 | 7.95 |
| C-47 Douglas 48" (2) .15-.19 | 24.50 | 19.95 |
| FW190 Focke Wolf 36" .29-.35 | 10.00 | 7.95 |
| ME109 Mes'rschmit, 36" .29-.35 | 10.00 | 7.95 |
| F-51 Mustang 36" .29 to .35 | 10.00 | 7.95 |
| L-17 Navion 32" .19 to .29 | 10.00 | 7.95 |


SPECIAL OFFER $3.95 VALUE 2.49 LIMITED QUANTITY


21" Chris-Craft Cobra Speedboat
With Free Elec. Motor
Operating Speedboat. Plastic (kit) 16" L. 5⅛" beam. Authentic Scale.
1.49 REG. 2.98

### COMPLETE JET OUTFIT

DELUXE OUTFIT ONLY $2.95

The hottest Jet Flying Outfit you can find! Scale models have realistic shaped fuselages, etc. — NOT flat profiles! E-Z to assemble, Anyone Can Fly!


CHOOSE ONE PLANE
PLUS JET ENGINE & SUPPLY OF SOLID FUEL CHARGES

PLUS Catapult Launcher, All Accessories & Finishing Items. 100% Complete Outfit.

### SPACE AGE MODELS & MISSILES

Aerobee-Hi

6.45

Extra Motors 3 for $1.50

Realistic operating rocket with vinyl nose cone and positive parachute recovery system, 16" long. Absolutely safe. Comes with 3 motors and launcher rail.

ALPHA-1 MISSILE & LAUNCHER 2.98
ADDITIONAL FUEL — 35c

Plastic Model—with all auxiliary equip. Ready for many flights. Safe. Travels over 150 ft.

INTERCEPTOR Mark III 2.49

Complete with Remote Launching Pad
Extra Fuel Pellets - 59c

Aurora's popular interceptor missile. Absolutely safe. Ready to operate. You get rocket, motor & fuel pellets for about 60 flights.

### FOX .29 or .35

We have a limited quantity of this famous eng. on sale!
Reg. 15.95 11.95

### Glo Plugs

Reg. 65c 39c
3 for $1.00
An AHC Super Value! Specify Long or Short Threads

### DECAL BARGAIN

Worth twice the price easy! You get 1 (3½") AMA Nos. & Alph; 4 U.S. Army; 6 Pictures; 3 Sheets Solid Color; 1 Sheet Checkerbd; 12 Asstd. Nos. & Alph; Plus Many, Many Bonus Decals & Tips & Hints on Use of Decals.
Bargain ____ $1.00

### Flying Accessory OUTFIT

For .19, .29, .35 Eng.

REG. $3.75
2.75

Includes (1) Spool .015 or .018/32"-4" Leadout Line Cable, (1) Plastic Cable Storage Reel and (1) Plastic Str. Control Handle.
Sullivan "Pylon"

### SURF-SKIMMER With Free Elec. Motor

REG. $2.95 1.95

Save on this 12" speedboat thriller. Power with .049 eng. or elec. motors. 4½" beam. Prefabricated.

### $2.95 "BEL-AIR"

18" U-CONTROL
Deluxe, all prefab model 18" Wingspan. For .029 to .099 Engines.
1.50

15 DECAL PICTURES
Assorted. Perfect for dressing up your models. $1.50 Value
FOR ONLY ____ 98c

### SALE 14.95 IMPORTED F-86 SABRE

Sale
REG. $24.50
26" Wingspan for Tiger Jet Engine
34" For Dyne Jet ... $15.95
32" Starfire or MIG-15 for Tiger Jet ... $14.95

### MODEL BUILDER'S BARGAIN TOOL KIT

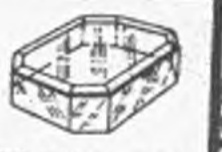
REG. $1.79 98c

A real bargain effort! Consists of Razor Knife, Modeler's Saw, Balsa Stripper, Needle File, Sandpaper, Screwdriver. This is a must outfit for every modeler.

### 12 OZ. "PACTRA" AEROGLOSS

Special buy! 12 oz. Spray cans in choice of Red, Cream, Blue or Green. Terrific for finishing models. Limited!
Reg. $1.79
98¢

### AHC PARTS BOXES



Transparent plastic with hinged tops. 1⅝ x 2⅛ x ¾" high. Ideal for small parts storage.
Reg. 15c each. 6 for 50c

### DOPE BRUSHES

We made a special purchase and can offer you a real "buy". Asstd. sizes
$3.00 Value
20 for $1.00

### FAMOUS BRAND O & R PROPS

Reg. 35c or 45c Ea. $1 10 FOR
60 for $5.00
7/7; 8/7; 8/8; 8/9; 8/10; 9/5; 9/10; 10/4; 11/4; 12/4; 12/7; 13/8; 14/5; 14/6

### Bill Winter's Model Aircraft "Plan Book"

132 pgs. of plans (Gas, R/C, Rubber, etc.). By famous designers.
Reg. $1.00 50c

### SILK or NYLON

Finest quality. Silk colors: Yellow, Blue, Red or White. Nylon: Yellow or White.
Reg. $1.50 a yd. 79¢ YD.
Checkerboard Silk Reg. $1.98 yd. — 1.49

### FULL SIZE Scale Plans

Solid models like: P-51, B-24, Focke Wulfe 190, B17E, Spitfire, B-26, Kingfisher, P-36, etc., etc. Scale Plans w/3 view drawings, etc. We'll send you an assortment for only —

15 for 49c

### GLUE TUBE NOZZLE


REG. 55c 19¢

An AHC super buy! It fastens easily to top of tube. Special threads or easily cut them own threads for secure, non slip attachment. A must for every modeler.

### SOLDER

15¢

SOLDERING IRON
Ideal for all model work
Reg. $2.25. A Real buy at only ____ $1.29

## USE THIS HANDY ORDER BLANK

SAVE TIME! ALL ORDERS PROCESSED IN 24 HOURS

## HOW TO ORDER

Please Print Your Order! Send payment in full. Sorry, No C.O.D.'s. Include 25c extra if order is under $2.00. Foreign Modelers—See instructions on left.

## AMERICA'S HOBBY CENTER

146M West 22nd St., New York 11, N. Y.

AHC Guarantees Safe Delivery ANYWHERE in the World! You're Safe! You're Sure when you order the reliable AHC way! And our modern, efficient mail order set-up speeds your order back P-A-S-T.


PLEASE PRINT

Name _____

Street Address _____ Amount Enclosed _____

City _____ Zone _____ State _____

| Quantity | Cost Each | Name & Description of Items | Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | Total | |

IF ORDER IS UNDER $2.00 DON'T FORGET TO ENCLOSE 25c FOR POSTAGE & PACKING

24 HOUR SERVICE AT ALL TIMES

Dept. M-69

ONLY 25c EACH

- ☐ WORKBENCH EDITIONS of the famous Winston books (Reg. $1.00 each) for only 25¢ ea.
- ☐ GLO ENGINE HANDBOOK. Tells all about the theory and operation of glo engines.
- ☐ CONTROL LINERS. How to build and fly them. Covers subject from A to Z.
- ☐ GAS MODEL PLANE CONSTRUCTION. The answers to every problem you will ever meet.

### CATALOGS

| | | |
|---|---|---|
| 80 Pg. Airplane Catalog | 25c | ☐ |
| Std. Models Catalog | 10c | ☐ |
| 80 Pg. Railroad Catalog | 25c | ☐ |

## BRAND NEW! 80 PAGE CATALOG

All New 1959 Edition!

BIGGER AND BETTER THAN EVER


Completely new from cover to cover! Send for your copy of the most complete model & hobby catalog in the world. Over 10,000 items! Everything pictured! 80 pages jammed full of all the Airplanes, Speedboats, Cars, Motors, Engines, Accessories, Parts, etc. etc. This is our big "Silver Jubilee" edition, easily worth 50c to $1.00.

ONLY 25c

America's Hobby Center, 146 W. 22nd St., N. Y. 11, N. Y.

CALLING ALL N.Y. CITY and Metropolitan Area MODELERS

Visit Our Famous "Hobby City"
146 West 22nd St.,
In New York City

Choose from World's largest stock! Plenty of "un-advertised specials too". Experts on hand to help you.

FREE — Send for the famous AHC "BARGAIN BOOK"

Lists hundreds of fabulous bargains in hobby supplies & models . . . exclusive at AHC. Send a 4c stamp (unused) to cover postage. Please specify Hobby Bargain Book "AHC"

Canadians & Foreign Modelers!

You save plenty by ordering from us. We accept your currency at market rates. Canadian - $1.00; Sterling - $3.70; N.Z. - $2.38; Australian - $2.00; Philippine Peso - 33c; etc. Add 10% for postage and packing (maximum 50c).

Taxiing out on a summer's day at Chicagoland Airport, Jack Corne's Baby Ace, Continental 65 hp. Baby Ace is most popular home-built.

# They Build Their Own

***Under the guidance of the Experimental Aircraft Association, and the watchful eye of a cooperative Federal Aviation Agency, home builders are going to town.***

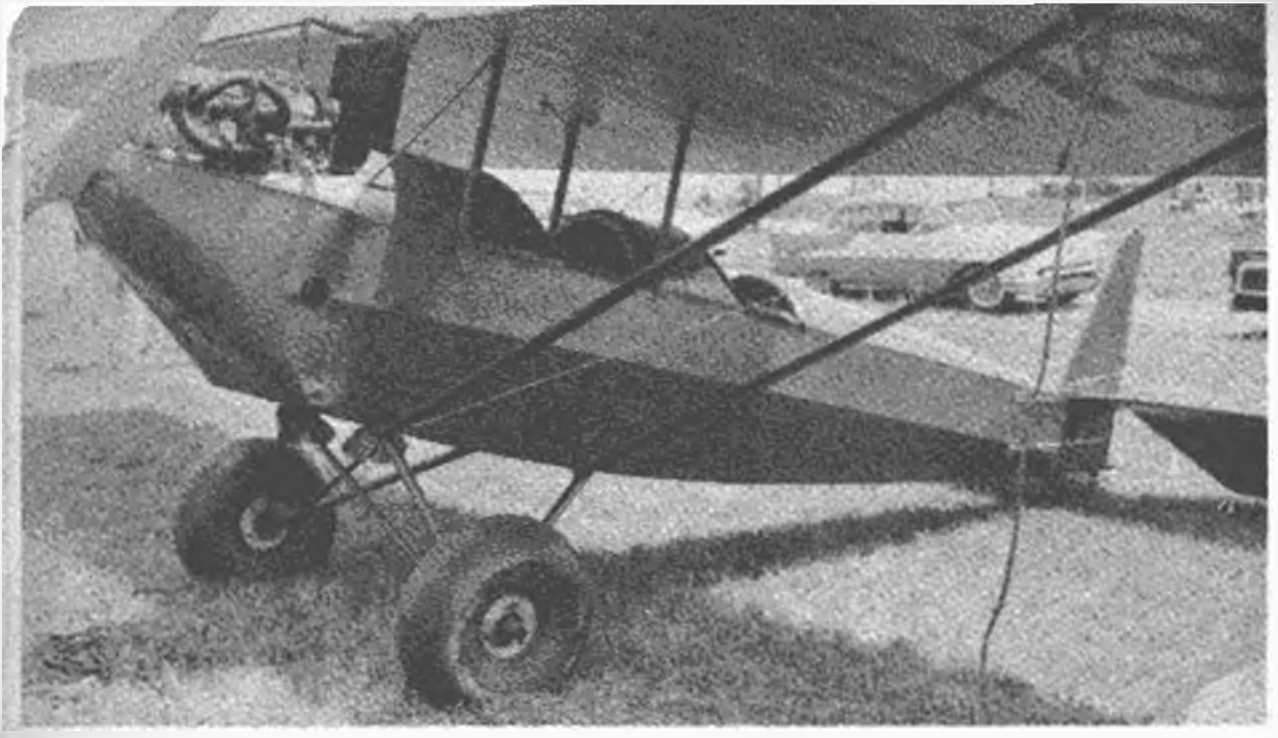
► Homebuilding of aircraft is as old as aviation itself, for the early pioneers had to design and build their own, and many prototypes of advanced designs were first built in this manner. Today's amateur-builder enthusiast has a well established organization available to him for information and assistance. The Experimental Aircraft Association of Hales Corners, Wis., founded in 1953 by its President, Paul H. Poberezny, with the assistance of Bob Nolinske, Secretary-Treasurer, and other local enthusiasts, today has more than 5000 members from all over the U. S. and Canada, and many in foreign lands as well. Local chapters—55 of them—have been formed in various cities of the U. S. and Canada to give members a closer contact with each other. Many more are in the process of being formed as the membership grows.

Dedicated to the advancement of sport and private flying, the EAA has become the spokesman for this segment of general aviation. The organization is non-profit, all of its officers serving without remuneration, and all income is used to operate and promote the Association. Several of the officers spend as much as 40 to 50 hours of their spare time each week answering correspondence and tending to other details necessary to operation.

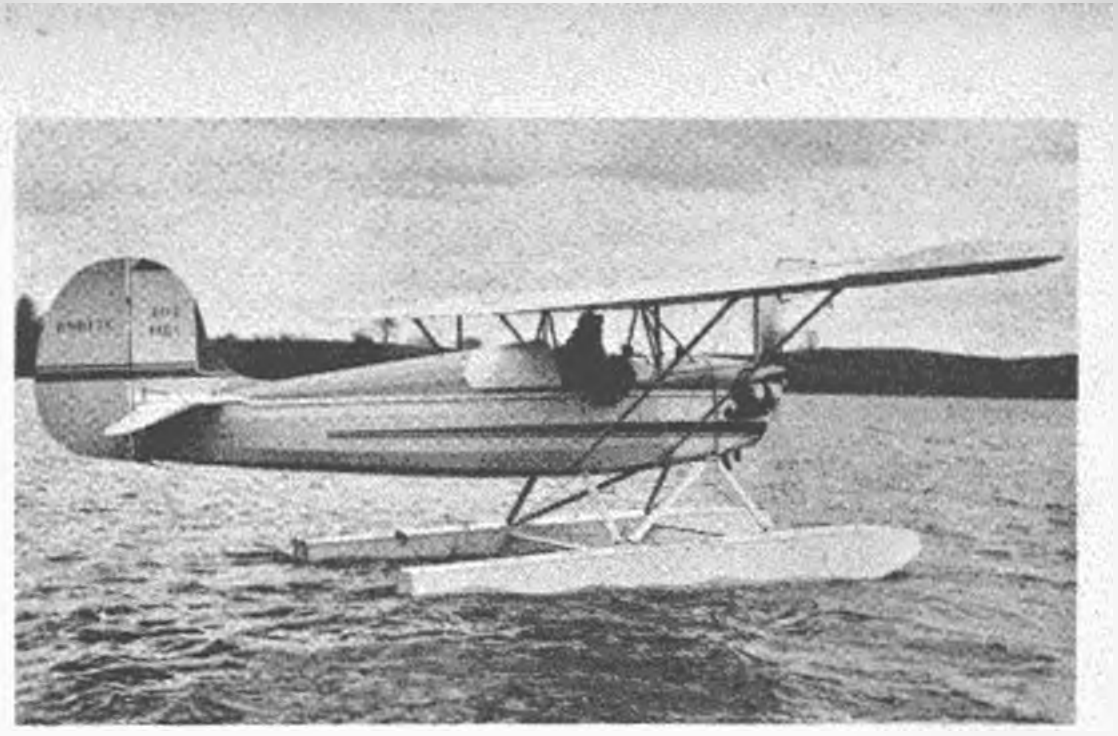
Communication among the members is accomplished through the pages of Sport Aviation, EAA's monthly "house organ." *(Continued next page)*

Experimental Aircraft Association offers $5000 award in 1960 for best readable amateur project. Bryan 2, highly modified Ercoupe.

Skimming over ribboned obstacle marker, a 1930 Kadiak Sportster rebuilt by Bob Horne. A 150 hp Lycoming gives top acceleration.



Vintage Pientenpol with original Ford A engine has been flying a quarter century. Old time modelers well remember the Aircamper!



Heading into wind for inland-lake take-off, is Lambert D, Baby Ace on Edo-type floats. Paul Poberezny, EAA, is at the controls.

Extraordinary cruise and fine flight characteristics have made Wittman's Tailwind design famous. This one by Sundby, Amundsen.

Unique trike gear on Wittman W-9L. Tailwind, handles beautifully, minimizes bad landing shocks, virtually eliminates fuse damage.

Meyer's Little Toot (July cover) is a modeler's dream realized. For the lovers of the glamorous, tiny bipes, this the ultimate.


Most prolific designer and seller of aircraft plans to the home-builders is Ray Stits. Playboy SA3A does 130, lands 45, 85 horse.

## They Build Their Own . . . continued

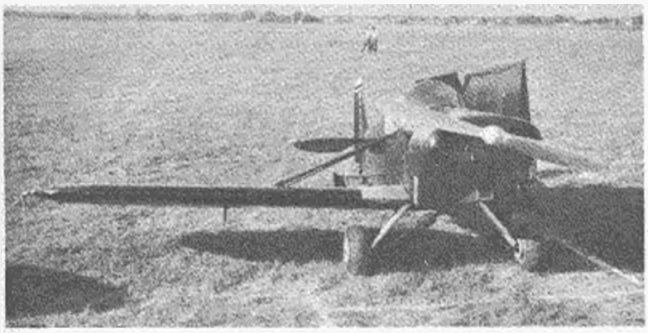
Poberezny serves as editor-in-chief, while the duties of managing editor are handled by George Hardie, Jr. An interesting compilation of news of the projects being built by members, aircraft completed and flying, latest government regulations, construction hints and information, and many other items of special interest to this class of flying enthusiast, Sport Aviation provides the cement that binds the organization together. More technical information is featured in the Amateur Builders' Manual, a semi-annual publication furnished to members containing reference and guidance material to aid them with their projects.

At this point you may well ask, "Can I *really* build my own airplane?" Yes, you too can build your own airplane—*IF* you follow certain prescribed rules and procedures, and if you possess the necessary determination and perseverance to carry the project through to completion. There is no real mystery about aircraft design and construction—at least not of the size of aircraft encompassed in the sport plane class. After all, the aircraft industry has been in existence for more than 50 years and design techniques and construction methods have become pretty well standardized. Anyone with a real interest in the subject and possessing average mechanical ability can acquire through study and training the knowledge and skills required to build his own aircraft.

"What about government regulations?" you may ask. The Federal Aviation Agency (formerly the Civil Aeronautics Administration) is charged with the promotion and advancement of aviation, as well as the regulation of all aviation activities. Most of its regulatory work concerns the certification of standard commercial aircraft such as airliners, executive planes and factory-built light aircraft used for training and pleasure. However, to reach this standard category, type-certificated class, all airplanes

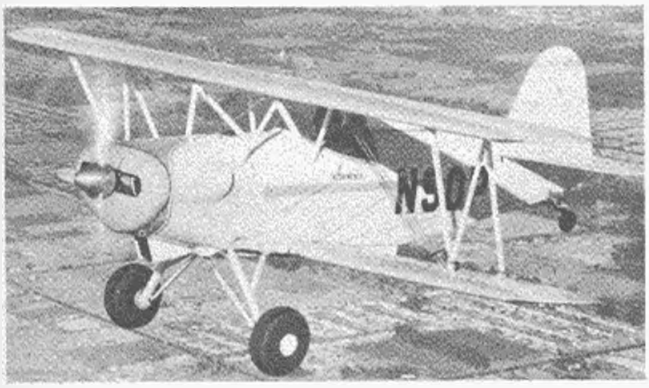
Stits Skycoupe, two-place cabin, 140 top, 48 land, on 85 Continental Span is only 27 ft. 4 in., gross 1300, 550 pay, 420 range.

Twin by Miller is a modified Cub. An interesting experiment, it is practical but single-engine performance is not the world's best.



Folding wings put on Stits by James Frost facilitate towing to and from field, allow plane to fit in garage where easy to work on.

Ease of handling has won awards for Maule four-place. Performance so good ship may be produced in future. (Maule, tail-wheel man.)



Smith Miniplane (DSA for Darn Small Airplane!), finished by his friends after his death. Frank set ukie mark of 105.75 (B), '44.

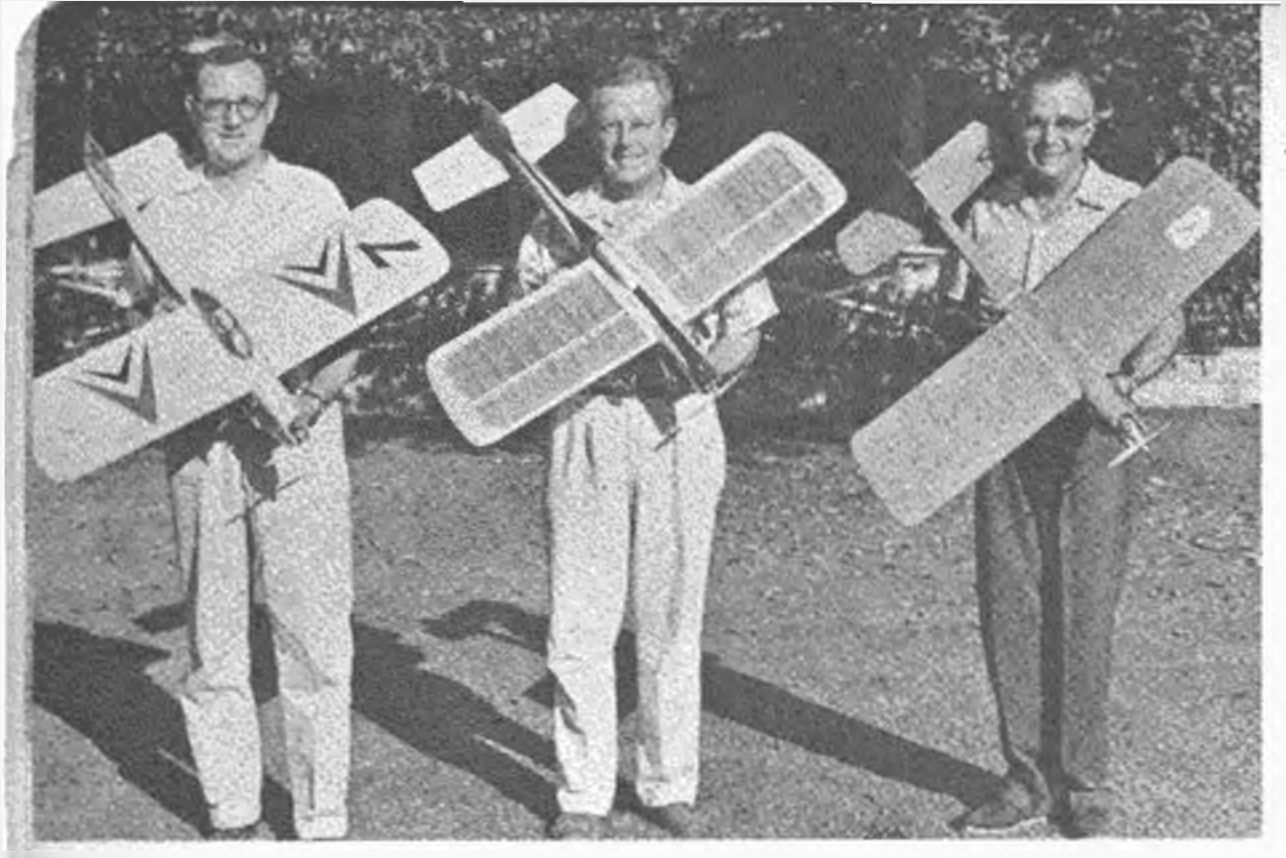
Jeanie, a low wing from a Cub, by Horace Sackett, won take-off prize EAA Fly-In. On 90 hp Franklin, trike job really hops off.

Joe Sablar's tiny 15 ft. 85 hp. Continental (May cover) twice a winner of best workmanship awards in EAA competition. A modeler.

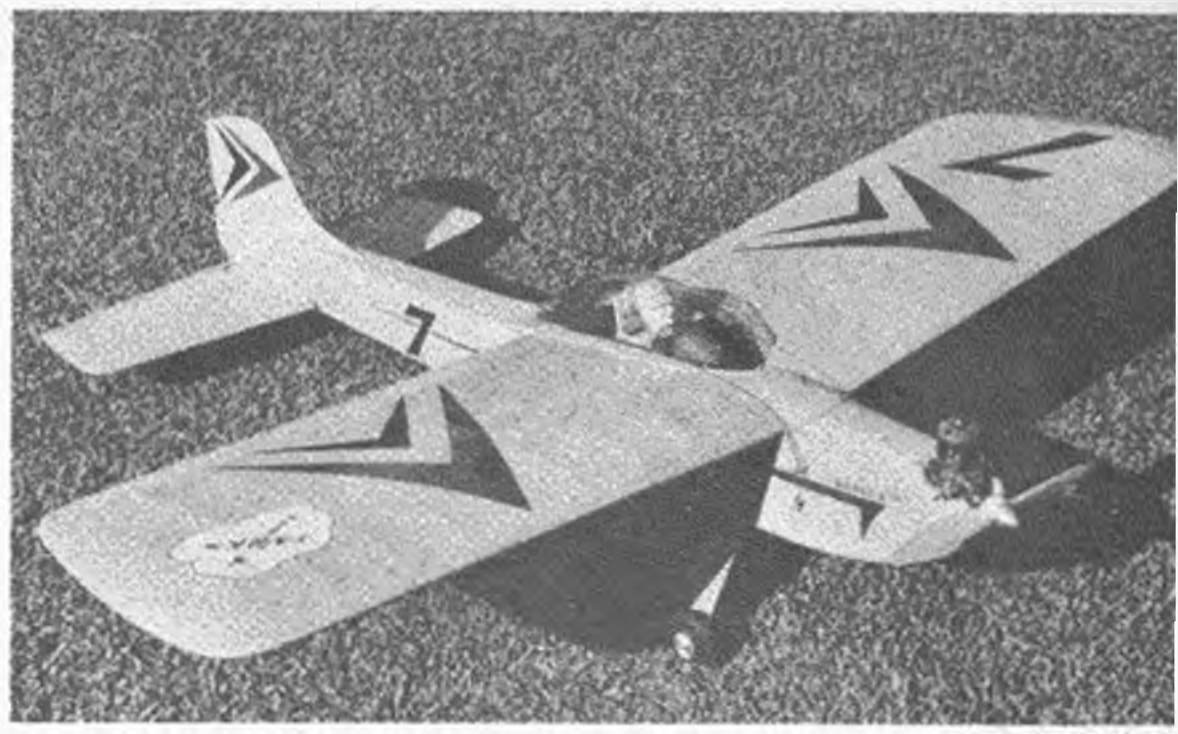

Another job that might go on the market is the Davis five-place, with Vee flying-tail. External stiffeners instead internal ribs.

must first pass through the experimental stage and so are included in an experimental category, which also takes in racing aircraft, special exhibition aircraft, agricultural aircraft, etc. Here we also find the amateur-built classification, under which all home-built airplanes are certificated for airworthiness.

This amateur-built classification has been established for a specific purpose, which is best described by quoting from the Civil Aeronautics Manual, Part 1.73-1 (c) which reads in part as follows: ". . . when the applicant presents satisfactory evidence that the aircraft was designed and/or fabricated by an individual or group of individuals, the project having been undertaken for educational or recreational purposes . . ." The important point here is indicated by the words "educational or recreational purposes." In 1954 the CAA inaugurated an Aviation Incentive Movement—their AIM Program. The purpose of this program was to encourage (*Continued on page 42*)



Gassers three! John Shearer, left; Ken; and Bill Glick, right. With low aspect ratio wing (4-1) Gasser does 27-30 mph on .09.



Detailed cockpit and dummy pilot Shearer's model suggests racer. To hold down nose at high speeds, use 5-8 degrees down thrust.

# the Gasser

**by KEN WILLARD**

***She'll cut a pretty pattern on that .09 but, for pylon racing, you've got handful of lightning. And in intermediate or sport flying Ken's latest job is barrel of fun.***

Make them detailed, left, or functional, rear—no cockpit. Modified Babcock escapement gives loops, Cuban eights, dives, so on.

► Let me begin this article by telling you quite frankly—if you're a beginner in radio control, put these plans and this article away until you've got a little experience in flying. Or, if you prefer, go ahead and build yourself a Gasser, but get an experienced flier to check you out before you solo.

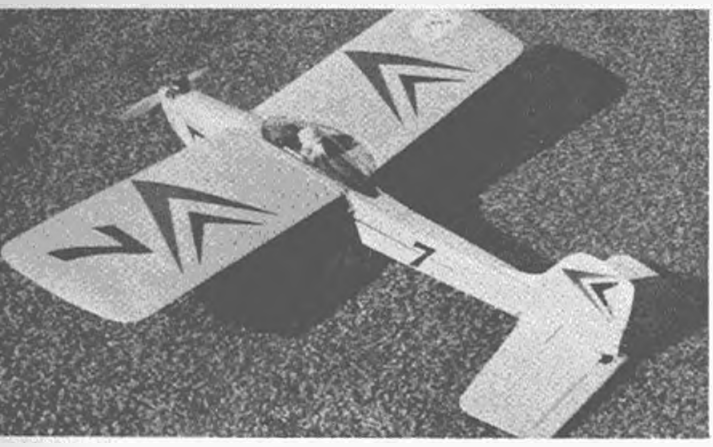
You see, the Gasser is deceptively simple to build—as radio jobs go. Also, when you watch it fly, it looks very easy—and it really is, once you get on to it. But—and this is the important point—this airplane isn't called the "Gasser" for nothing. When it gets going, and you give it a down elevator to get up to high speed, you've got a handful of lightning, and it can strike faster than you can see the ground coming up! I know—I've clobbered mine twice just by getting fascinated watching it zip along upside down, then forgetting to pull out in time. Fortunately, it's rugged, and repairable.

But enough of this warning—you're probably going to go ahead and build it anyway. So let's talk briefly about the idea behind the design.

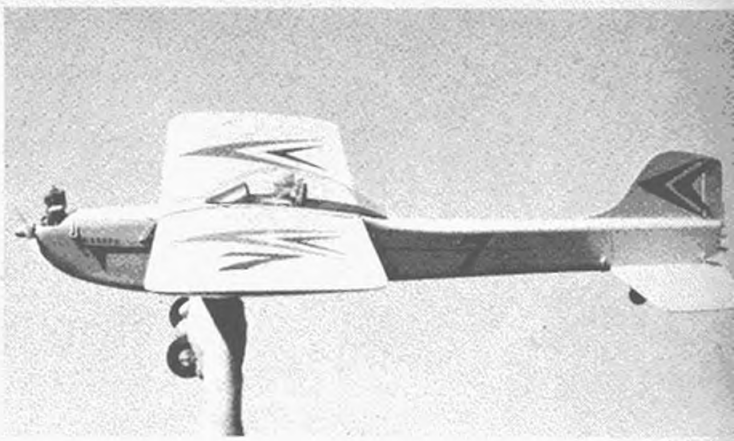
The Gasser was designed for pylon racing. It is a legal AMA class .09 pylon racer; the wing area figures out right on the button at 386 sq. in. The prototype won first place in the LARKS pylon racing contest early last year. It had a flat bottom wing which gave a vicious zoom characteristic when rounding the pylon, so the final design incorporated the semisymmetric airfoil to reduce this tendency. Also, the tail moment was increased, and the aspect ratio lowered from five to four. Finally, the downthrust was increased from 5° to 8° to help hold the nose down under power at high speed. This in turn caused a reduction in the right thrust, since the prop wash now is directed so that it just hits the top of the fin. Right thrust is from 0° to 1°, depending on the trim of the model. Bill Glick, John Shearer, and I each built one. John did a beautiful job on his, with a detailed cockpit and all, as you can see in the photos. Mine was functional in nature, as was Bill's. But they all do a terrific job of flying.

The AMA only has one class for pylon racing, so it soon became apparent that the multichannel boys would dominate this event. However, at the LARKS Western Open, we had two classes, so I pointed for that meet. In practice I was making between 27 and 30 mph for the five-lap course, and figured to place pretty high. Occasionally I would tire of practicing racing and would grab a little altitude and try a few maneuvers. This was when I discovered that the racing design has really great potential for precision flying. The maneuvers are large, but exceptionally smooth for single channel operation. I have my "poor man's multi-control" modified four-position Babcock escapement mounted in my Gasser, and with it I found I could do excellent loops, Immelman's, Cuban eights, and a power dive that is frightening.

Well, I went to Bakersfield with the intention of winning the single-channel pylon event. But the time allotted for pylon racing was very short, so, just for kicks, I also entered precision. I didn't have a motor control installed, for fear it might work when I didn't want it to during a race, so I had to do the pattern and maneuvers all at high speed. The entry list was long, but I got in three flights.



Fast flier, fast construction, too. Sheet-sided fuselage is box, tail from sheet balsa. Straight wing, with only one spar it is breeze to build.



Knock-off wing, stabilizer, landing gear let you "walk away" if a piloting error. Helmeted pilot says he doesn't worry much, tho.

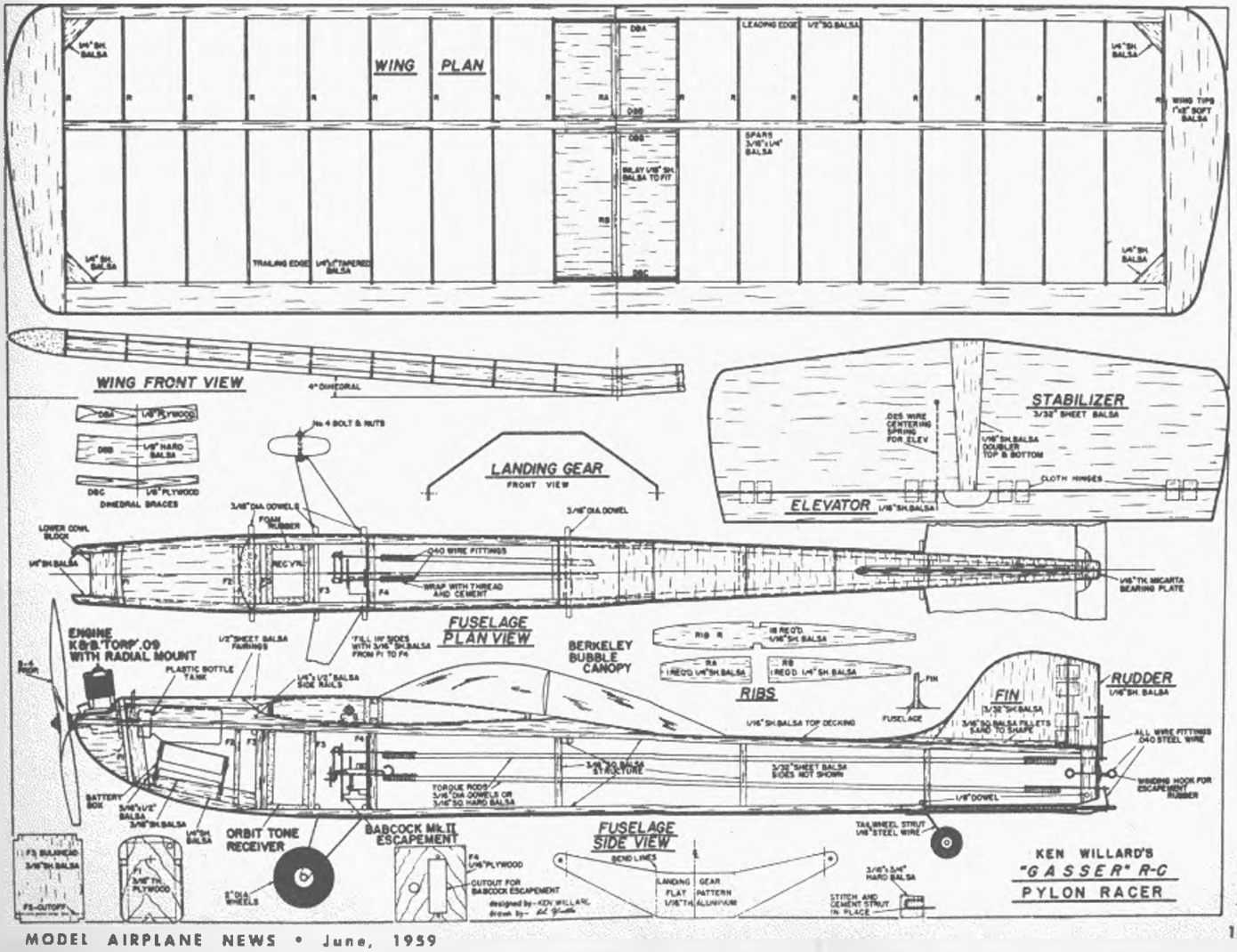
Then came pylon. I took off, was flying along fine until the third lap, when suddenly my receiver began dropping out and I lost control. The result was that I never finished the pylon race—but I came in second in the intermediate precision event! Actually, I had used up my batteries in flying precision, and they were too weak to hold a prolonged signal which was required for racing.

So, although the Gasser was originally designed for racing, (and a multi-channel version could probably do all right in the coming Nats) it turns out to be a top flight performer in precision—and that's the event it's competing in now.

As I said in the beginning, this airplane is for you fellows who have a little experience under your belt. With that in mind, I figure you also have some pretty good ideas of your own regarding installations, so I haven't gone into much detail, except to show that your gear must all be packed well forward in order to provide the necessary balance. Let's consider the various steps in building the Gasser.

## CONSTRUCTION

*Wing:* The wing is very straightforward in construction. Use medium-hard balsa for the leading edge, spars, and trailing edge, and medium balsa for the other parts. Build the wing in one piece, right on the plans, using 36" wood, then cut it in two and splice it back together at the center section using the four-degree dihedral braces as shown on plan. *Horizontal tail:* Use a good, (*Continued on page* 38)




FULL SIZE PLANS AVAILABLE. SEE PAGE 60.

# Early Birds

by DOUGLAS ROLFE

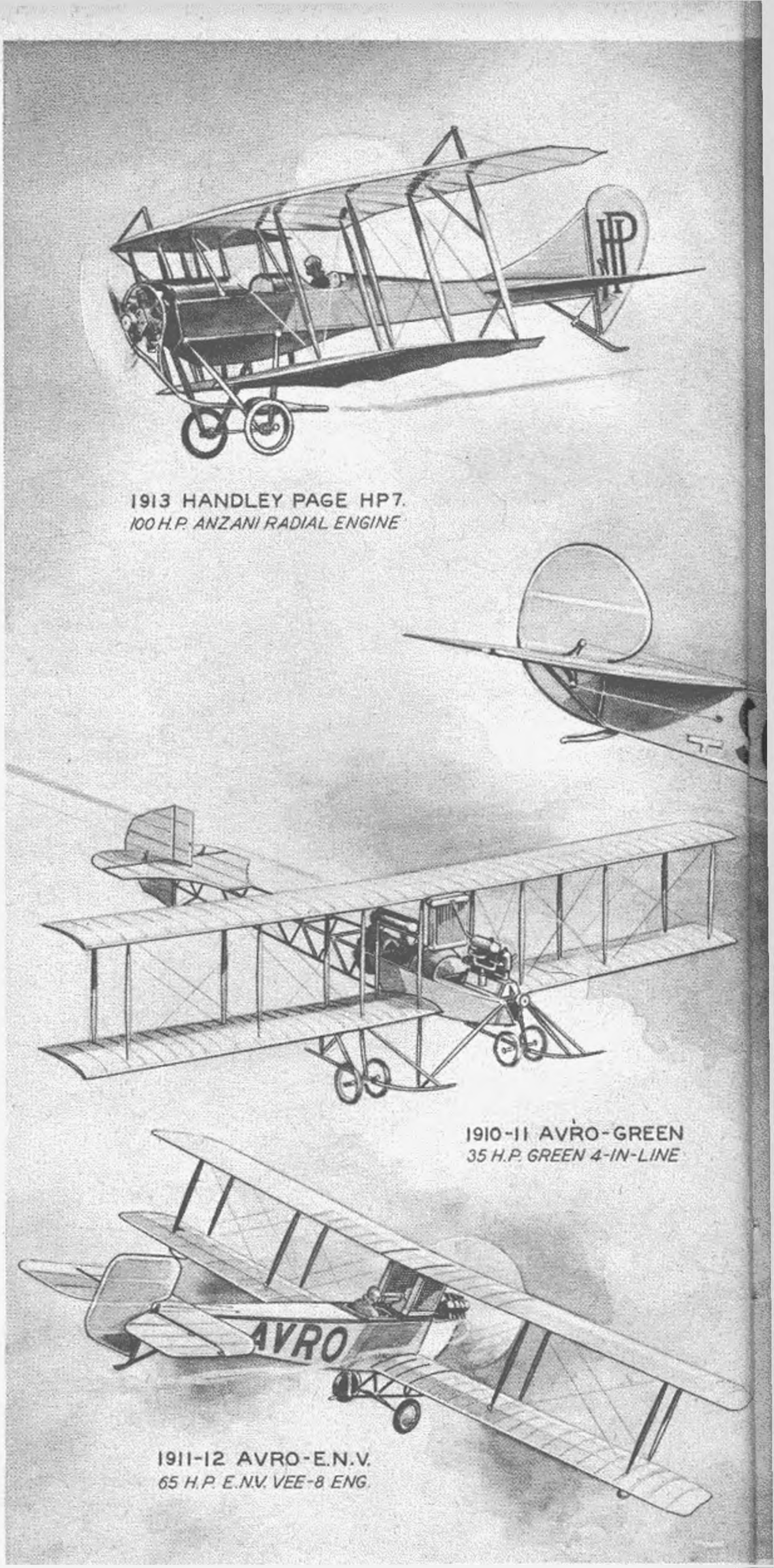
## Number 6

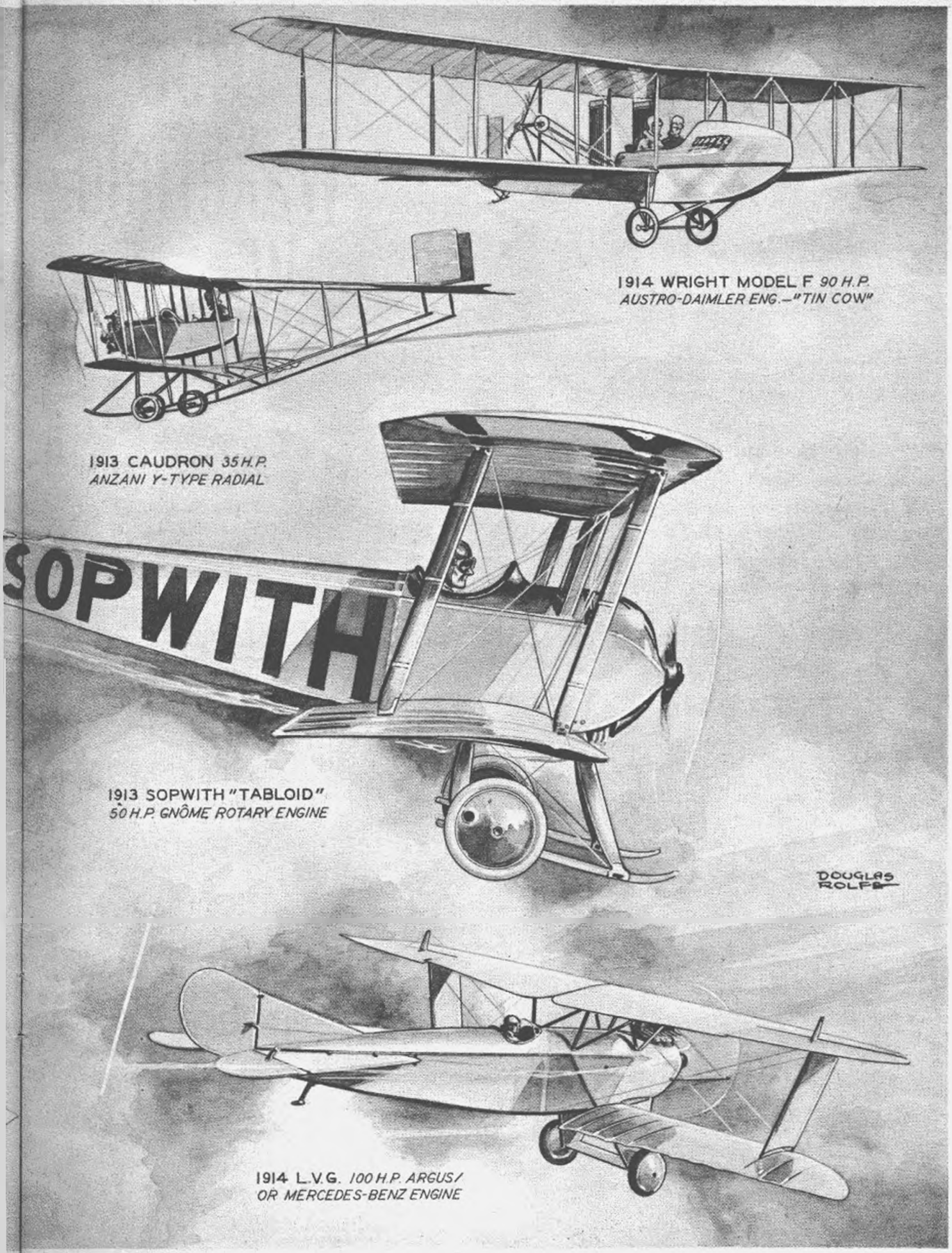
## DEVELOPMENT OF THE TRACTOR BIPLANE

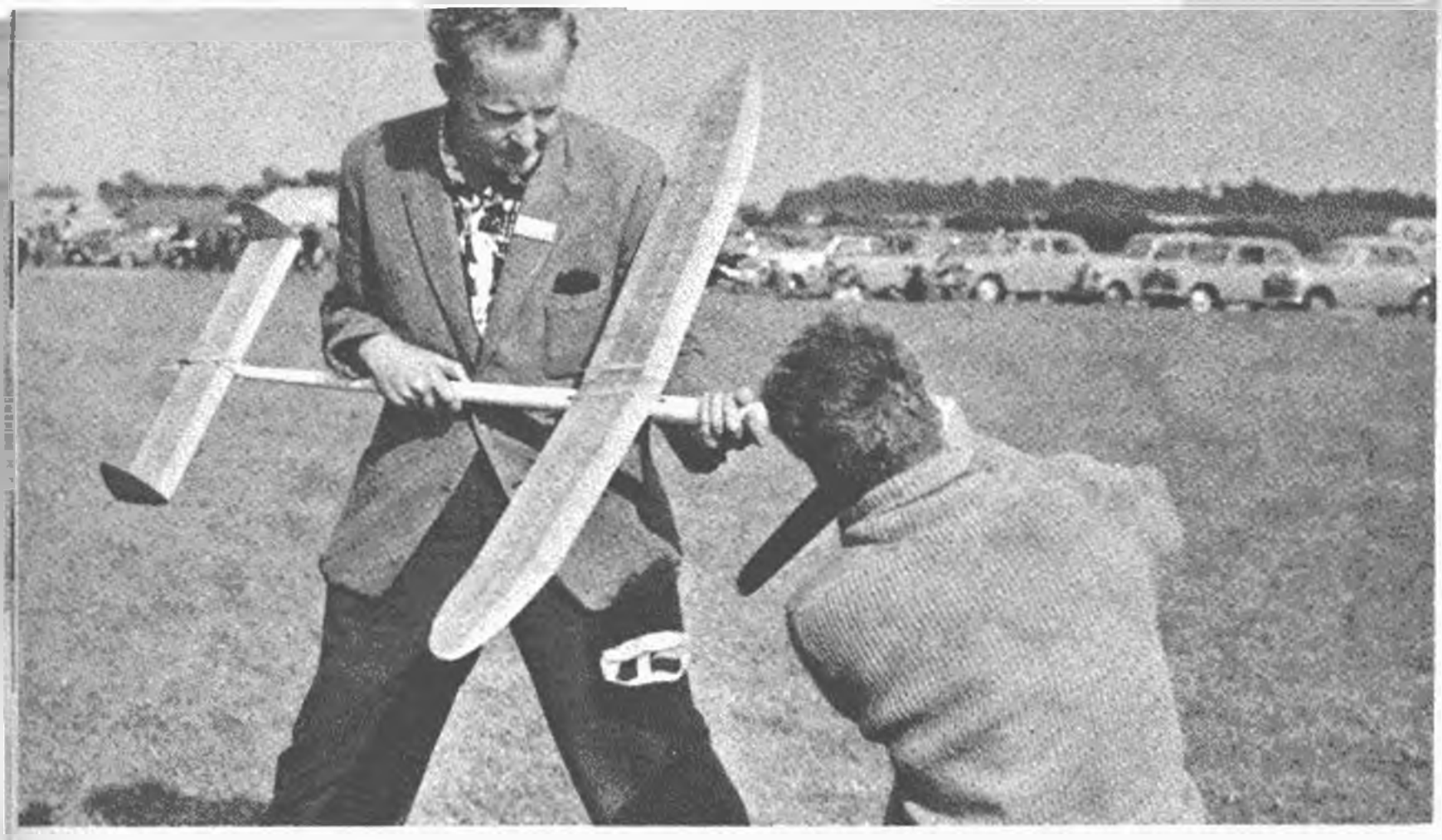
The first crude biplanes, as we have already seen, were predominantly of the "pusher" type. Between 1910 and 1914, however, the tractor type biplane began to come to the fore.

Two examples of the remarkable development achieved during this period are Sopwith's tiny "Tabloid" and Germany's L.V.G. The "Tabloid" hit 92 mph with a 50 hp engine—no mean performance for 45 years ago—while planes of the L.V.G. type had already succeeded in remaining airborne for periods of 24 hours by 1914! The L.V.G. illustrated is particularly noteworthy on account of its clean lines, washed-out wingtips and the careful attention paid to streamlining—a rarity indeed 45 years ago!

The Wright Model F, or "Tin Cow", was a belated effort to breathe new life into a dead-end design. Encowled nose engine, aluminum-clad fuselage and skid-less landing gear were departures from all previous Wright designs but wings and chain-drive props remained much the same. The fragile looking little Caudron was, in fact, a safe airplane, used widely as a primary trainer. The two Avros shown are examples of almost incredible design progress within the space of one year while the Handley Page is yet another example of this famed firm's early preoccupation with the crescent-wing concept.




1914 WRIGHT MODEL F 90 H.P.
AUSTRO-DAIMLER ENG.—"TIN COW"
1913 CAUDRON 35 H.P.
ANZANI Y-TYPE RADIAL
SOPWITH
1913 SOPWITH "TABLOID"
50 H.P. GNÔME ROTARY ENGINE
DOUGLAS ROLFE
1914 L.V.G. 100 H.P. ARGUS/
OR MERCEDES-BENZ ENGINE



Inserting nose plug after winding at Cranfield, England, finals. Molded sheet balsa fuselage withstood a full-winds breakage—though substitute model successfully completed the flights.

# 1958 Wakefield Winner

**by PETER G. F. CHINN**

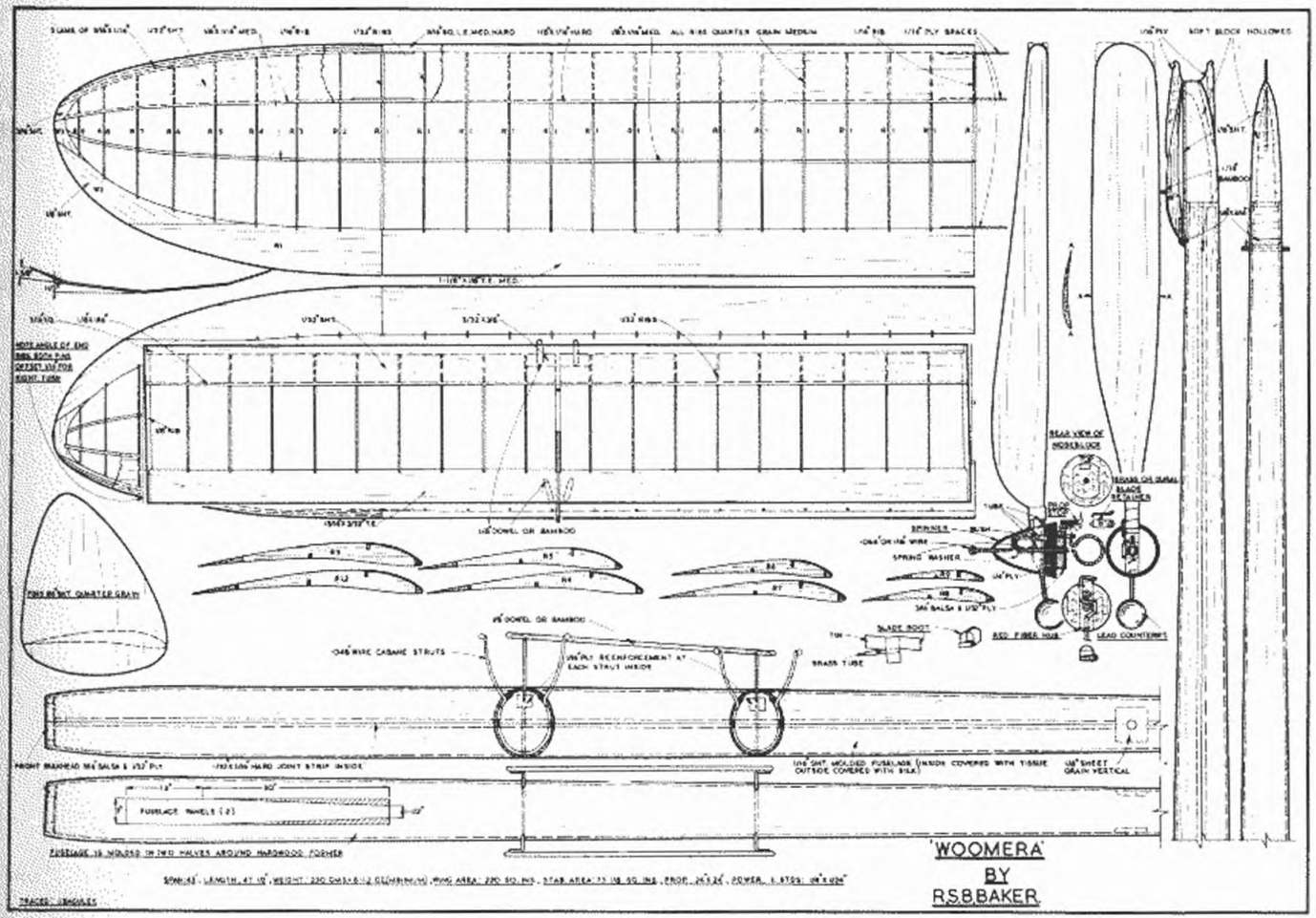
***Willingness to build a better-than-average model enabled Australian "loner" to top the state-organized teams of Eastern Europe.***

► Twenty-two years ago, the Wakefield formula was revised and the minimum weight went up from 4 oz. to 8 oz. From that time forward, Wakefield designers made periodic sorties, trying to get out of the slabsider rut. With one or two exceptions, however (such as Jim Cahill's Clodhopper—1938, Chesterton's Evans-designed Jaguar of 1948 and Alan King's 1954 winner) nearly all the honors have been taken by the traditional, square-cut model of conventional construction. Admittedly, models of the past five or six years (i.e. since the abandonment of the old Wakefield cross-sectional area rule) have been fined down, but not since Cahill's 1938 winner, with its streamlined, planked fuselage, has any Wakefield winner so closely approached the classic streamlined design, as Baker's Woomera. Monocoque, oval-sectioned fuselage; spinner; graceful, elliptical-tipped wings and twin fins, it uses most of the features thought desirable for a couple of decades, combined in a modern, long-fuselage configuration, to produce what is, undoubtedly, one of the finest models yet to emerge under the current Wakefield formula rules.

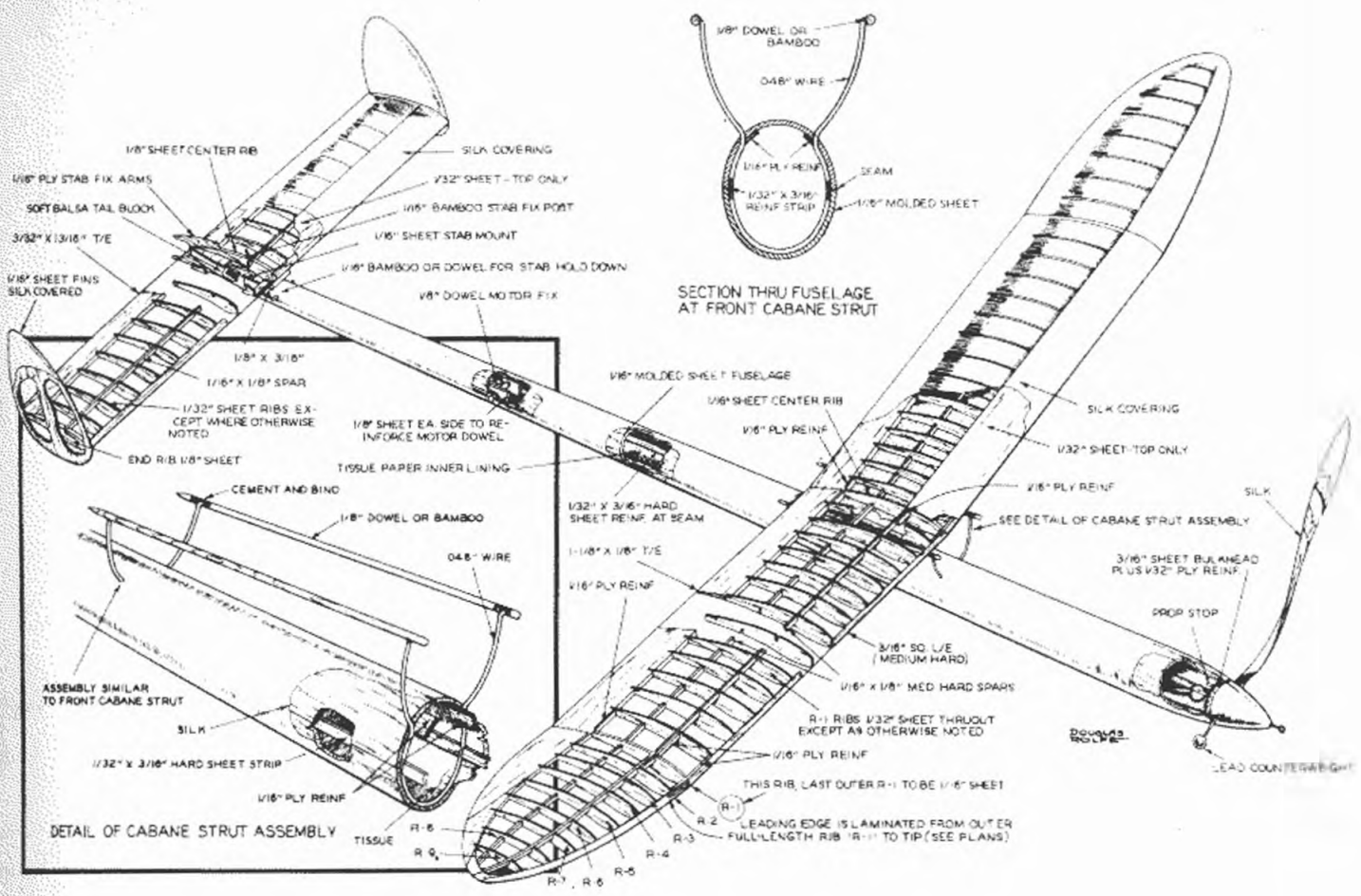
This, needless to say, is not a model for beginners. Fuselage construction is unorthodox and involves carving a hardwood mold, over which the fuselage halves are formed. For the serious contest modeler, however, who must have several models for a season's flying, it is a worthwhile proposition. The fuselage, as Bond comments at the end of the building instructions, is very strong. We were present when he had a full turns motor break in the second round at Cranfield and can vouch for the effectiveness of its construction. Although, like any other contest model, it will take an experienced modeler to get the best performance from it, Woomera does not appear to be unduly temperamental. When Bond's No. 1 model had its fuselage choked with knotted rubber after the second round catastrophe at Cranfield, he switched to his reserve model, which had never previously been flown on full turns. Despite the fact that it had a lively 11-strand motor, (*Continued on page* 52)


Not since Cahill's 1938 winner has any model so closely approached the classic Wakefield design. Baker, with ship, during the finals.

Baker launches the Woomera into righthand pattern—power and glide. Woomera, incidentally, the site of Britain's missile test range.

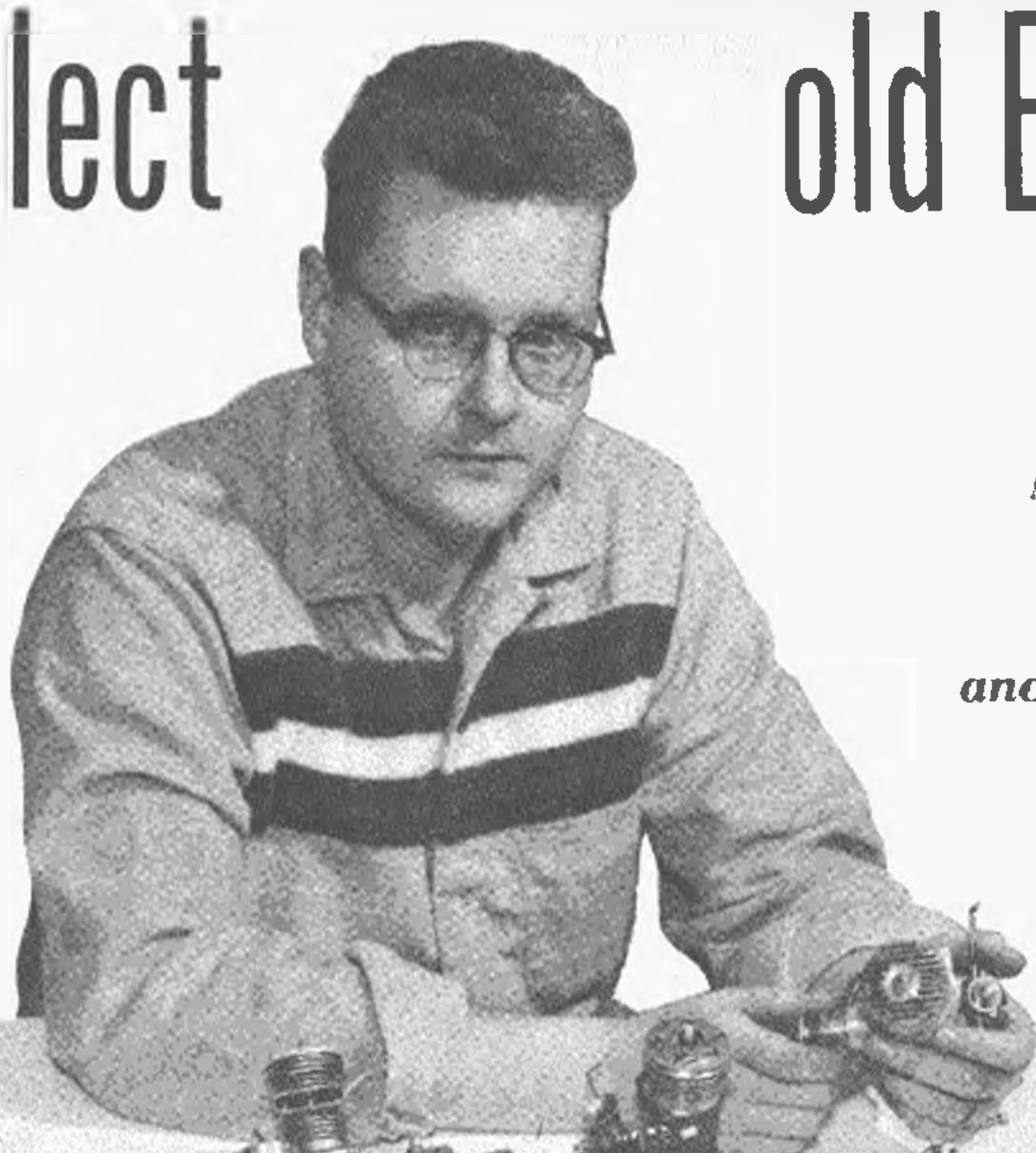



FULL SIZE PLANS AVAILABLE. SEE PAGE 60.

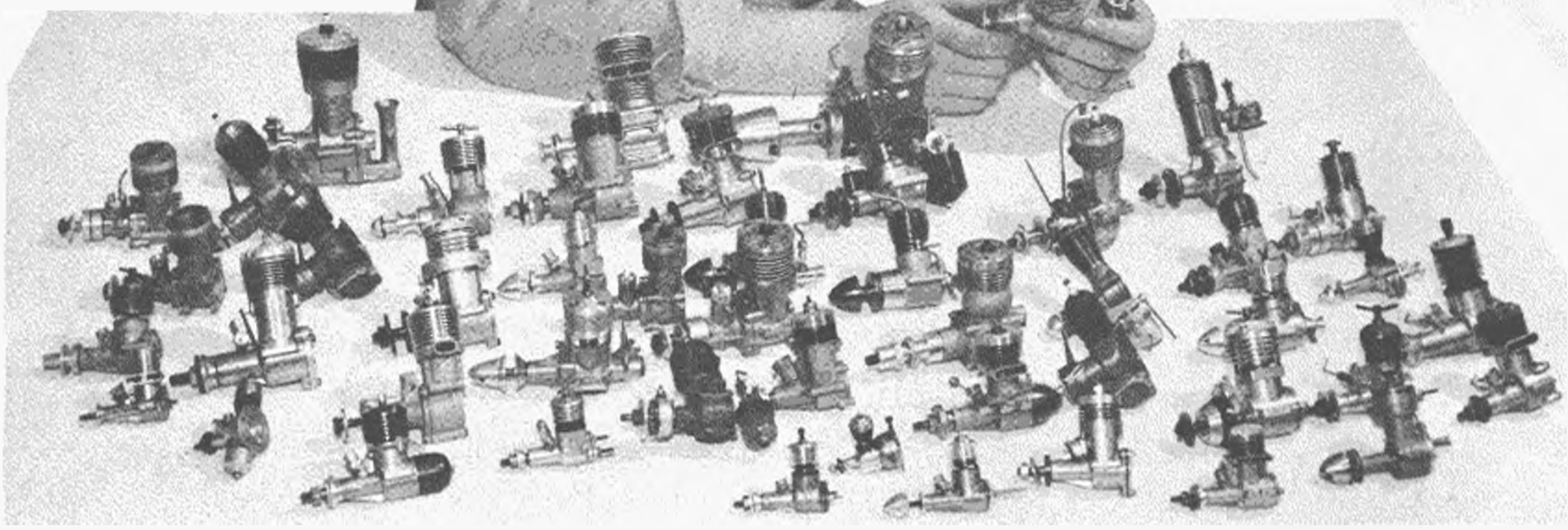

1/8" DOWEL OR BAMBOO
.048" WIRE
1/16" PLY REINF
SEAM
1/32" X 3/16" REINF STRIP
1/16" MOLDED SHEET
SECTION THRU FUSELAGE AT FRONT CABANE STRUT
1/8" SHEET CENTER RIB
SILK COVERING
1/16" PLY STAB FIX ARMS
1/32" SHEET - TOP ONLY
SOFT BALSA TAIL BLOCK
1/16" BAMBOO STAB FIX POST
3/32" X 13/16" T/E
1/16" SHEET STAB MOUNT
1/16" SHEET FINS SILK COVERED
1/8" BAMBOO OR DOWEL FOR STAB HOLD DOWN
1/8" DOWEL MOTOR FIX
1/8" X 3/16"
1/16" X 1/8" SPAR
1/32" SHEET RIBS EXCEPT WHERE OTHERWISE NOTED
1/8" SHEET EA. SIDE TO REINFORCE MOTOR DOWEL
END RIB 1/8" SHEET
TISSUE PAPER INNER LINING
1/16" MOLDED SHEET FUSELAGE
1/16" SHEET CENTER RIB
1/16" PLY REINF
SILK COVERING
1/32" SHEET - TOP ONLY
1/16" PLY REINF
SILK
SEE DETAIL OF CABANE STRUT ASSEMBLY
3/16" SHEET BULKHEAD PLUS 1/32" PLY REINF
PROP STOP
1/32" X 3/16" HARD SHEET REINF AT SEAM
1-1/8" X 1/8" T/E
1/16" PLY REINF
3/16" SQ. L/E (MEDIUM HARD)
1/16" X 1/8" MED HARD SPARS
R-1 RIBS 1/32" SHEET THRUOUT EXCEPT AS OTHERWISE NOTED
1/16" PLY REINF
THIS RIB, LAST OUTER R-1 TO BE 1/16" SHEET
R-1
R-2
R-3
R-4
R-5
R-6
R-7
LEADING EDGE IS LAMINATED FROM OUTER FULL-LENGTH RIB (R-1) TO TIP (SEE PLANS)
LEAD COUNTERWEIGHT
CEMENT AND BIND
1/8" DOWEL OR BAMBOO
.048" WIRE
ASSEMBLY SIMILAR TO FRONT CABANE STRUT
SILK
1/32" X 3/16" HARD SHEET STRIP
1/16" PLY REINF
TISSUE
DETAIL OF CABANE STRUT ASSEMBLY

# ..I collect old Engines

by
**WALLACE R. MacLAREN**



***Meet now a new kind of hobbyist. His eyes light up at the sight of an ancient "mill." But he has a problem—how to outfox many rivals!***



**The value of a good, clean, antique engine rises every year, according to MacLaren, showing here a portion of his collection.**

**Most collectors go in for vintage engines, others specialize, like the chap who has 15 Brown Jr.'s. "Horsetrading" becomes a fine art.**

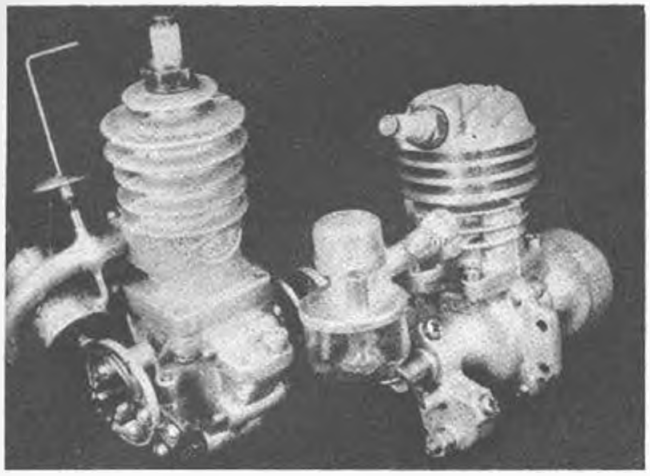
► Obsolescence of model engines, although not so apparent as with full scale military aircraft, has led a British scribe to suggest that a purpose quite removed from powering model airplanes be utilized for them—that of museum curios! Actually, dozens of well known makes have somehow disappeared from the market in the past decade. Names like Feeney, Bond, G.H.Q. and Hurleman are unknown to new modelers and almost forgotten even by the old timers.

Thus, with the continual passing of years, the chances of seeing some of these motors grow remote. The Smithsonian Institute in Washington, D.C., has had a sizable collection of motors, but the fantastic numbers that have been produced both here and abroad render a single collection of all types fairly difficult.

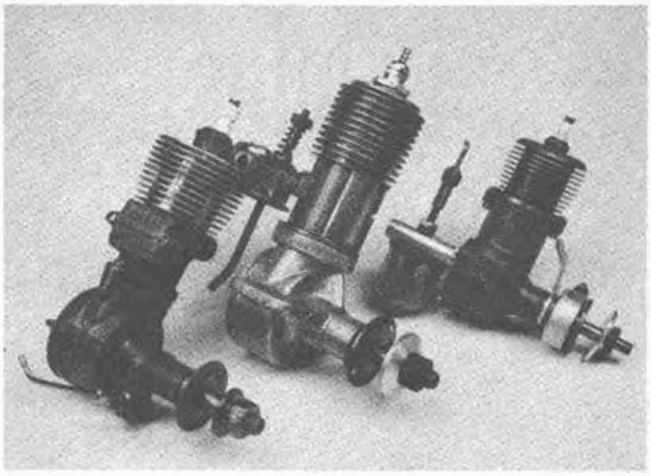
Actually, model builders have been quietly collecting motors for years, but it is only recently that we have become aware that this "new" hobby has a wide-spread following. Individual motor museums are springing up like mushrooms in a damp cave and many collectors have over one hundred motors to choose from when building a new ship. Top honors for sizable and unusual collections go to Bruce Underwood of Columbus, Ohio, who is well past the two hundred mark. And if that sounnds farfetched, let me reiterate that there's been a heckuva lot of motors produced since Bill Brown's baby first belched in a breezy back room.

Most large cities in the U.S. harbor at least one engine collector. His collection might be small, but in most cases, he'd rather part with his left arm than his pre-war Atom. Of course, most of us have some pet motor, too, and since most of us also have a couple of extra ones that are not in constant use, it may be that all of us are potential collectors. (Gad!)

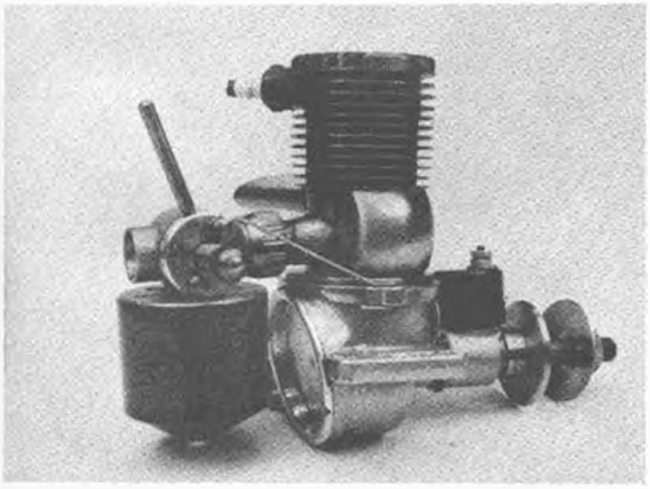
Now why would anybody really take a serious interest in collecting inanimate globs of steel and aluminum? A psychologist might state that aside from the profit motivation, collecting guns or stamps or even motors affords the opportunity for vicarious prestige and emulation. (I beg your pardon!) Actually, many collectors do find that their hobby can be profitable. The value of a good, clean, ancient motor rises every year. There is also considerable fascination in ferreting out motors which have long since disappeared from the market and restoring them to their original condition. Then there is the knowledge to be gained about 2-cycle engine theory and construction by observing, firsthand, the use of various materials and methods of porting. Some modelers just like to be different by showing up at the local flying session with a Dennymite powered Nobler. Of course, it probably won't get off the ground, but the owner can get his kicks by telling onlookers that the model is sporting a prototype of the new Cohnocker .35. We have known many dealers to strategically place a few Browns, Synchros, Rockets, etc. in their showcases. Don't expect to be able to buy them, though—they're just "eyecatchers." Finally, one of the best reasons for collecting motors is that it's fun. That's good enough for most of us.



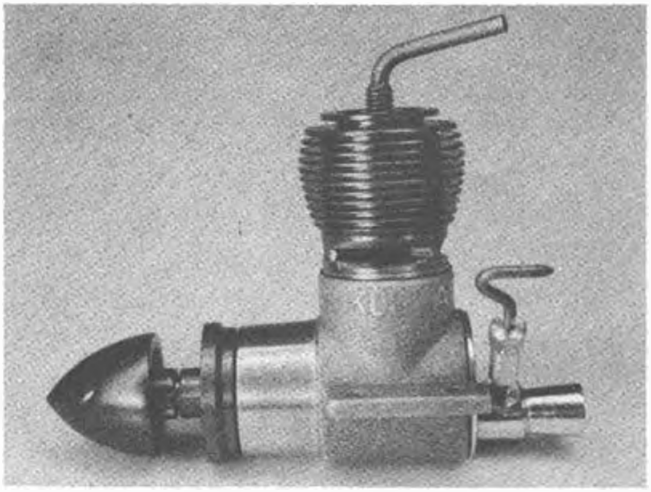
These two Elf engines once were advertised by John Maloney at $45 apiece. He received two offers! Don't toss out that Cobknocker!



Baby Cyclone, Brown Jr. and Bantam after reconditioning. Great satisfaction in restoring such oldtimers to operating condition.



Never-run Kapper King .60—copper head, fins, by-pass, exhaust—has mono-control of spark ignition and fuel. Note the odd case.

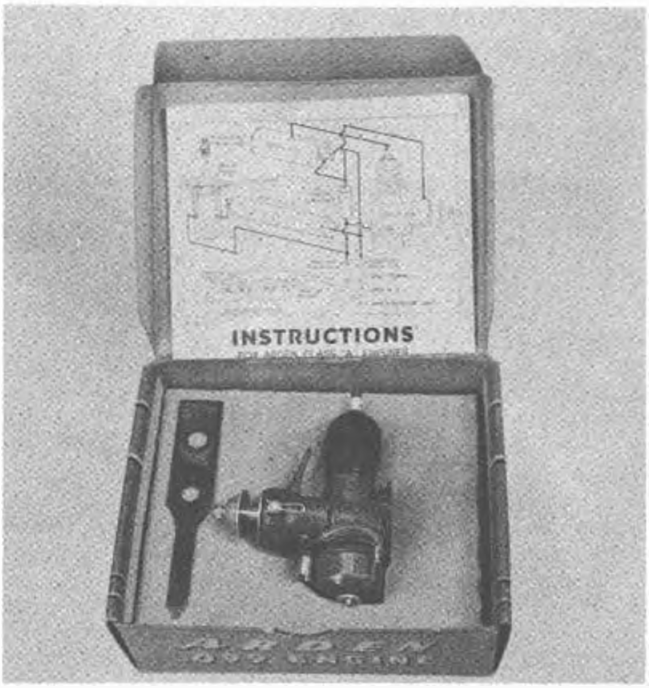


The rarer, the better. This Polish Jaskolka III, sent to author by designer Stanislaw Gorski. Three built. This one was a preproduction.

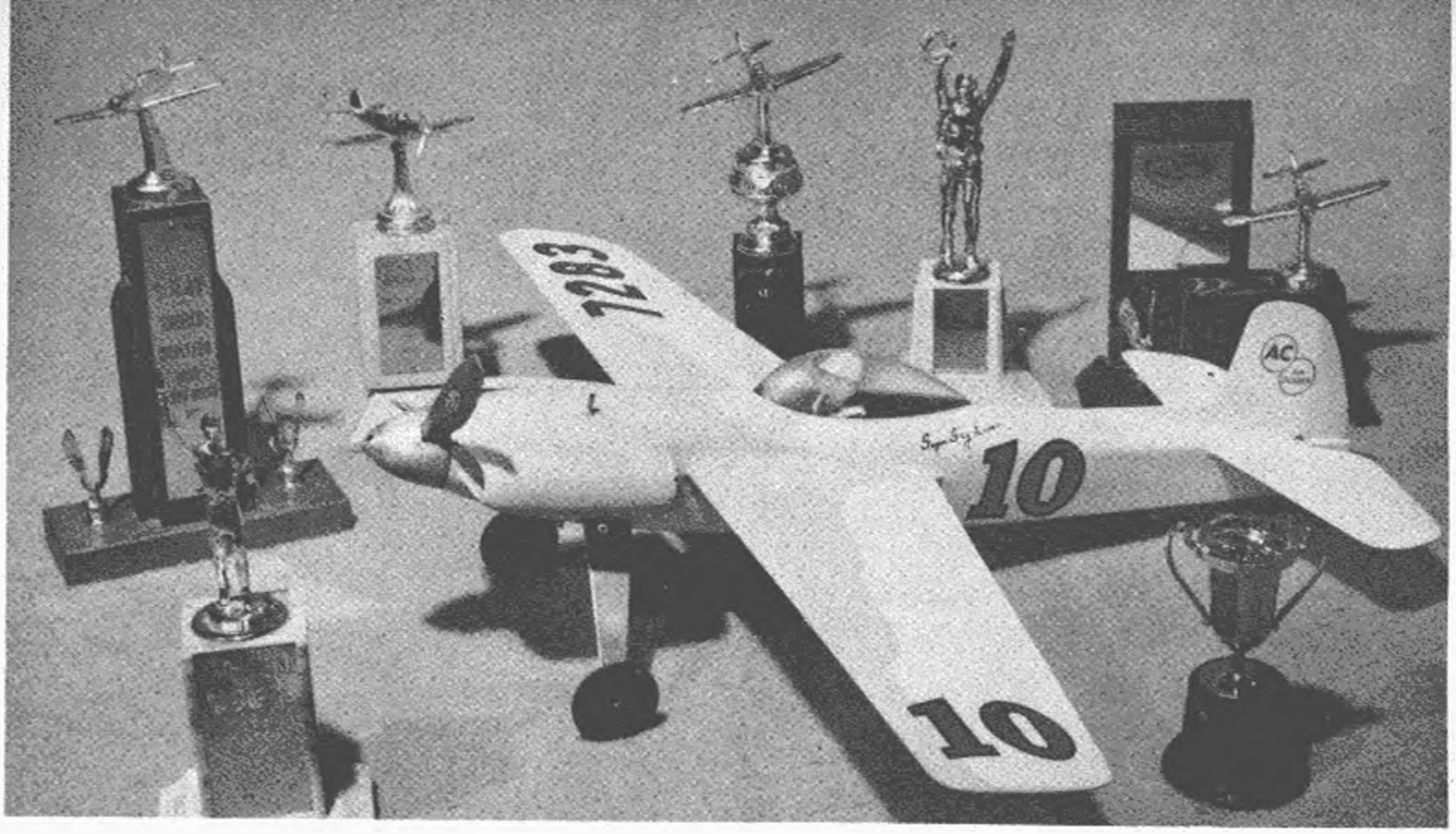
Many collections are highly specialized. For the sake of simplicity, we shall divide the most common types of collecting into two categories: "Vintage", which refers to all motors not being produced at present, and "Other", which comprises an endless variety of specialization.

*Vintage Collections:* Since World War II temporarily interrupted model engine production, vintage motors are usually considered to be pre-war or post-war. Pre-war engines, dating from about 1935 to 1942, are the most difficult to obtain in good condition and they bring the highest prices. This leads us to a very interesting question. How much is an old motor worth? The value of any motor, be it a Wasp or a Baby Cyclone depends upon such factors as its internal and external condition, whether any parts are missing, its age and the relative scarcity. In the final analysis, however, an engine's value actually depends upon how much someone else would be willing to pay for it. To a novice modeler, the Wasp might be far more "valuable" than the Baby Cyclone. The engine collector might be willing to pay the equivalent of four Wasps to get the Baby Cyke.

We do have some indication of the market value of vintage motors. John Maloney, who used to have quite a "going" used engine business, usually sold an average Brown Jr. with missing tank and timer for $4.50. A Brown in good condition and with all parts brought $12.50. An almost new one, in the original running stand and complete with tank, coil and condensor, sold for as much as $25.00. For a joke, he once (*Continued on page* 48)

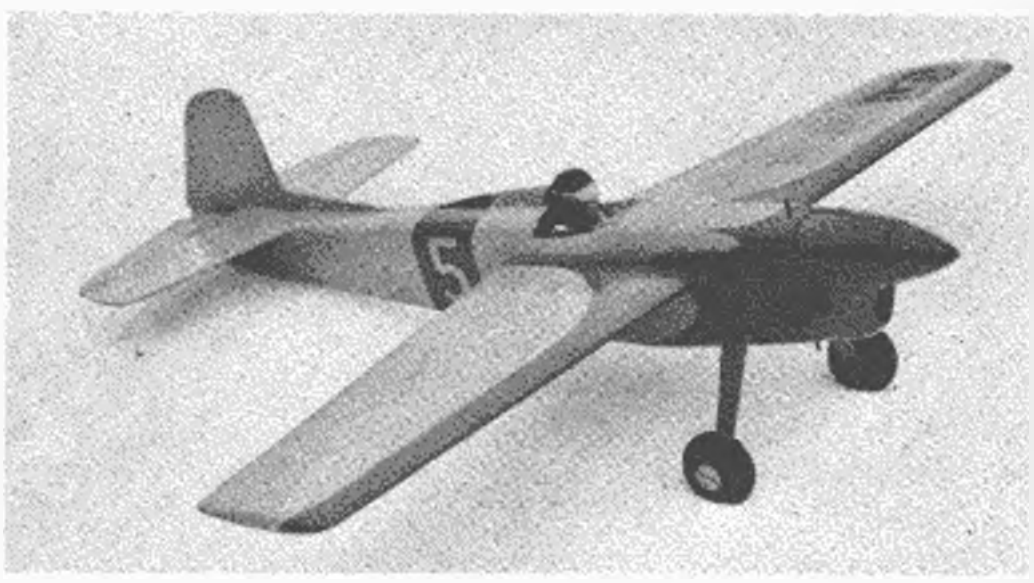



Arden .099 (you're getting old, bub!) rendered more valuable because still in box with directions, etc. It was purchased for $3.

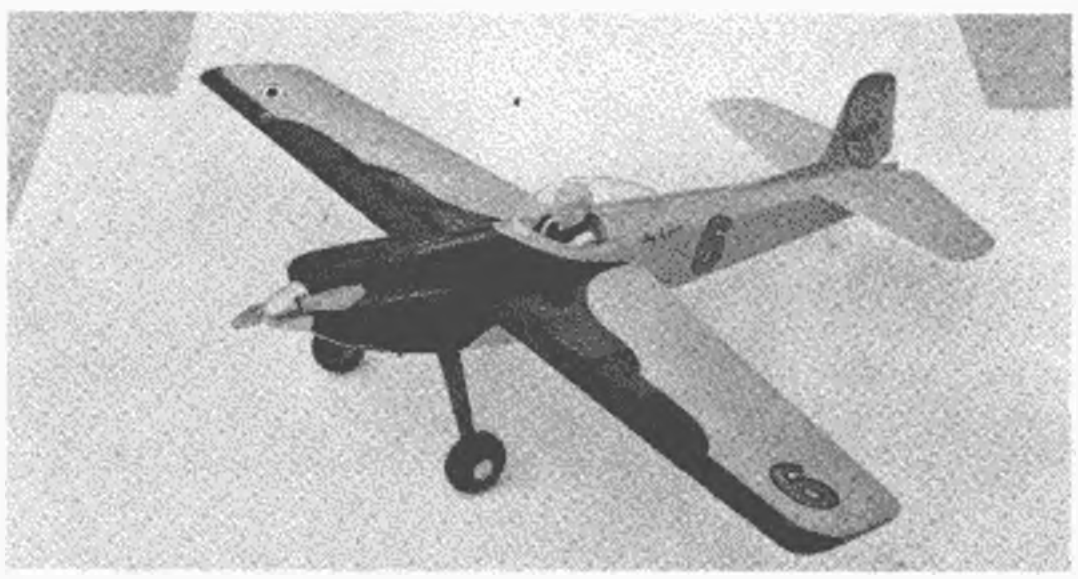



After three years of service and hundreds of miles logged, Number 10 is still a threat to team races. Trophies from team, proto.

# Super Sky Lancer



The Super evolved from 1/2A Sky Lancer. Number 5 shown, turned 115 laps at 60 mph on Mac .049 Diesel, got speed flier dizzy on test.



Final version of 1/2A, Number 6, was taken to meets to confuse the competition. Well finished ship a pleasure to fly just for sport.

**by EDWARD HARP and JOSEPH NEDELA**

***Prettiest by far, and most real looking control-liners are proto and team-race jobs. This .29er excels in both events.***

► The Super Sky Lancer is the result of a long line of ships. The first Sky Lancer was a hot ½A job. Number 10, the first "Super", has proved itself by logging hundreds of miles in three years of racing, and has had to fly only one consolation race (snagged some taut lines taking off after a pit stop in a heat race). It has two firsts in Proto, even though it is basically a team racer. Best qualifying time has been 106 mph. The 140-lap 10-mile feature race has been flown in 7:50. Two pit stops were required. The Super Sky Lancer flies 48-50 laps at 93 mph and does 98-106 mph for 35 laps, using *Super Sonic 1000* fuel.

Through experience, many features were built into the later versions to ensure trouble free operation and desirable flight characteristics. Symmetrical wing sections had a tendency to drop the ship out of the air, making spot landing more difficult. Built up wings saved little weight and had a floating tendency due to extra thickness.

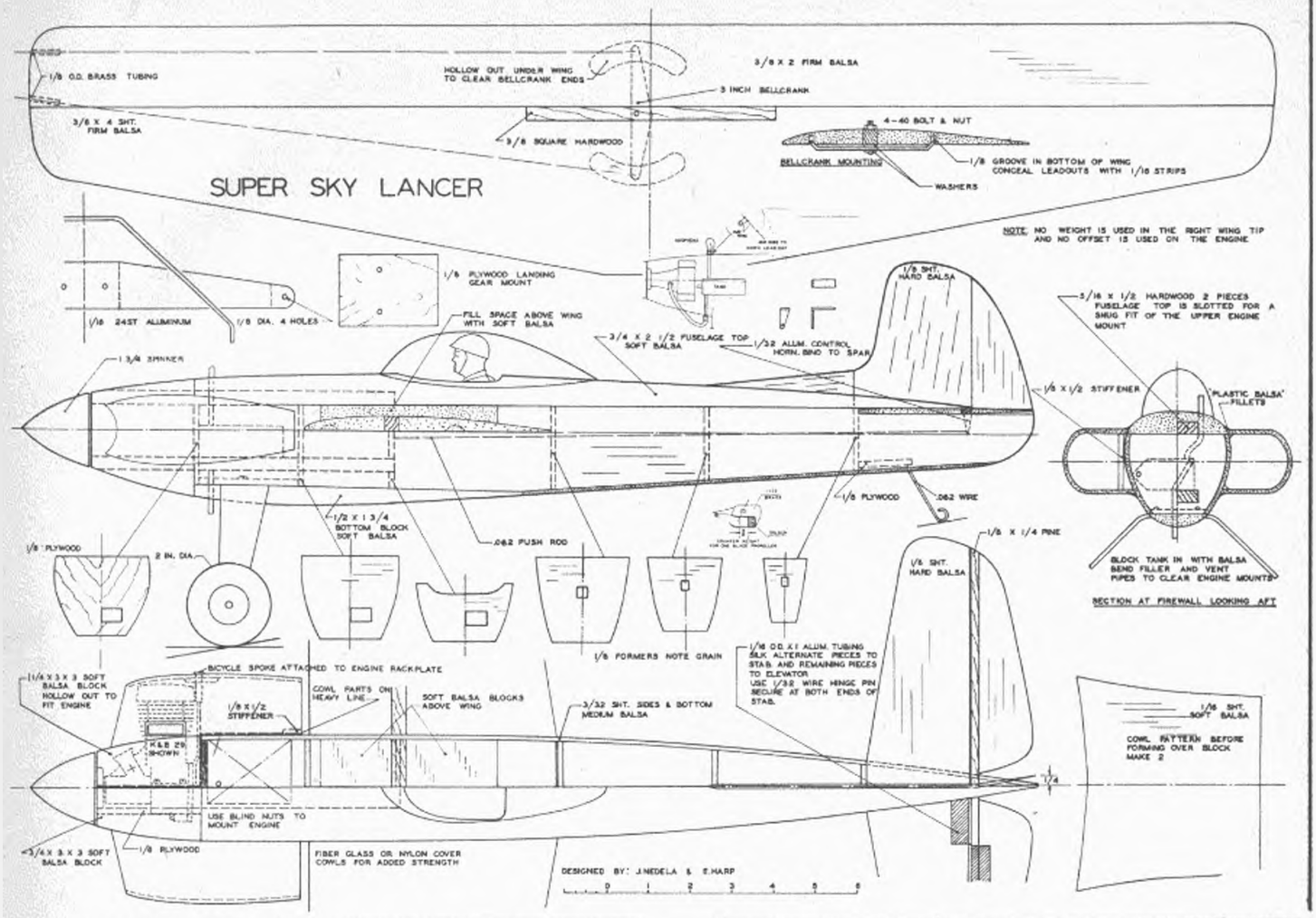
Vibration and oil seepage are the deadliest enemies of a plane that is intended to fly a grueling 20 miles an afternoon many times during the flying season.

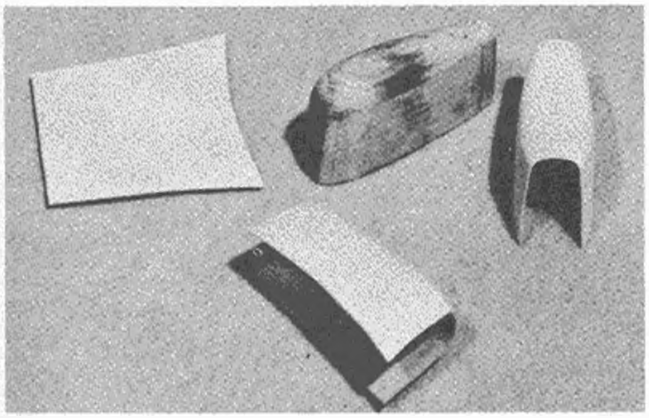
The plane is completely sealed from the firewall back, including a sealed-in tank that has caused no trouble. Vibration is dampened and kept to a minimum by using the shortest engine mount overhang, and by embedding the upper mount into the top fuselage block. The lower mount is secured by the cowl blocks.

A "side-winder" was decided on early in the series—the reason is obvious to anyone who has flooded an inverted engine. The apple-cheek cowls appear to be excess frontal area, but the performance did not suffer. The long fuselage length is also a departure from the usual team racer. The long moment arm helps it stay in any groove. It's a smooth flying, easy to handle ship.

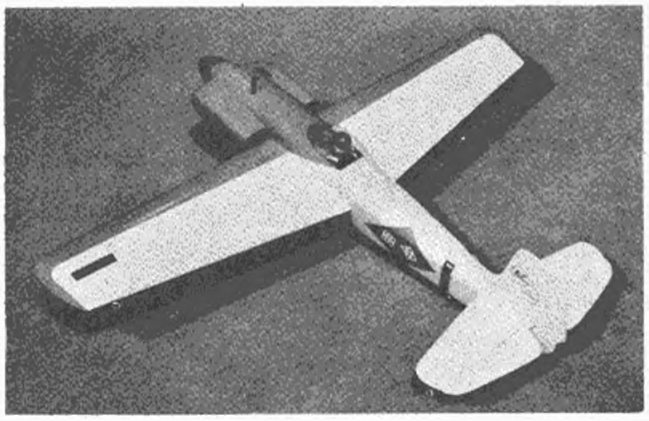
A pressure tank is used—sometimes at a disadvantage. Speed and mileage are definitely increased and starting is easier. You must decide if it is worth the disadvantages. Once started, you can't add fuel to tank, and run the risk of using too much fuel on the ground. The extra "plumbing" also requires a little more time on pit stops. The pressure take off jet is a 4-40 bolt with head removed, and a 1/32 hole drilled through its length. One end is soldered

FULL SIZE PLANS AVAILABLE. SEE PAGE 60.



**Light-weight apple-cheek cowls are formed over a pine form after soaking in water. Allowed overnight dry, while wrapped ⅛ rubber.**

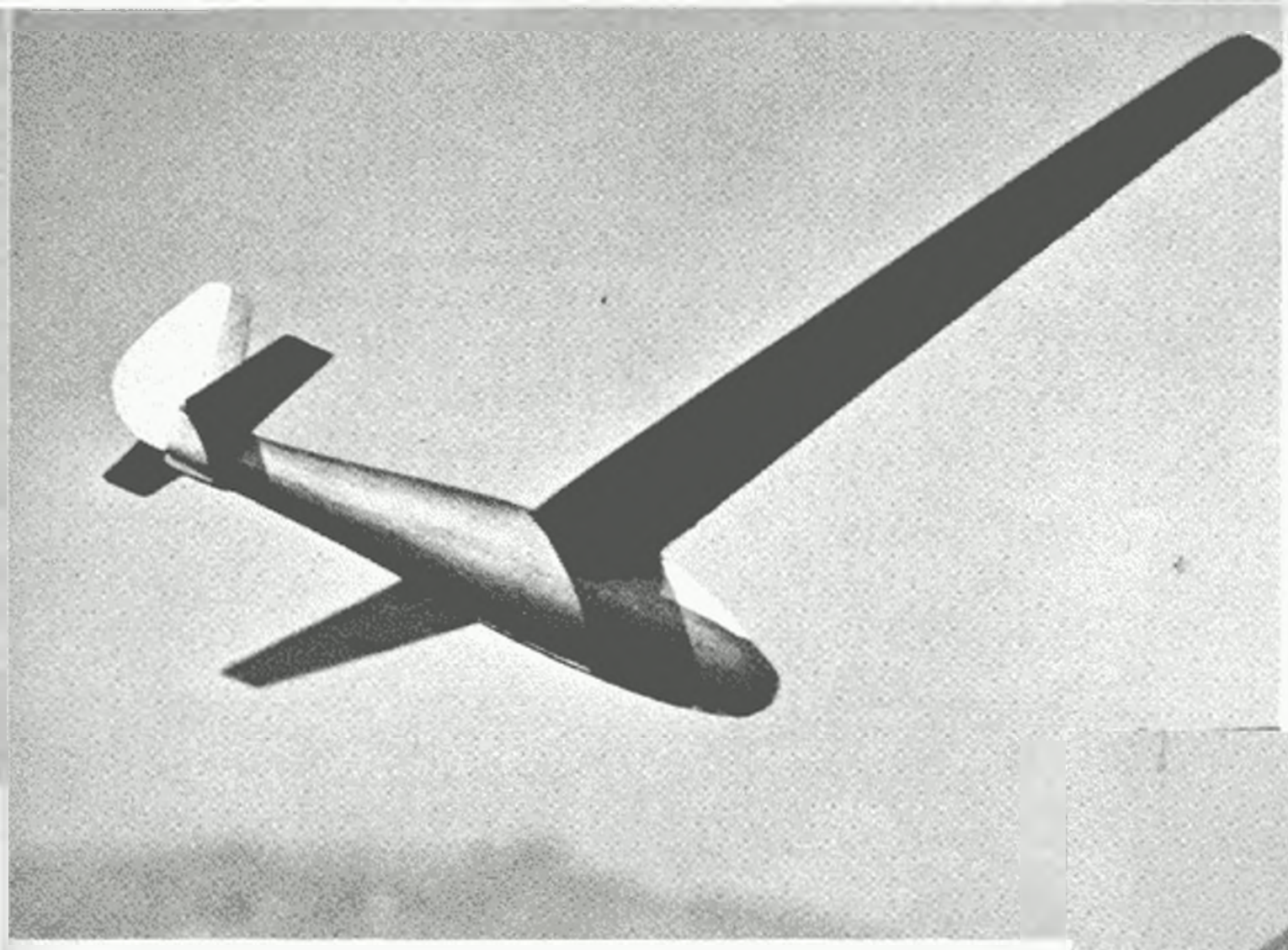


**Number 11 is the latest and, although all the bugs aren't out of the engine, crate shows promise of achieving record similar the 10.**

closed, and a small hole punctured through with a pin, approximately .010" diameter. Some experimenting may be required to obtain the proper size hole. We could find no commercial cut-off that wouldn't leak pressure, so the simple cut-off shown was evolved. When the short line from the down lead-out pulls the wire, the neoprene tube unkinks, bleeding off pressure and engine stops. Our pressure jet was located opposite intake on front of crankcase.

Qualifying runs and short heats are flown with the engine wide open, no restricters. Intake restricters are used for all the other races. The engine used is a four year old KB-29 Regular. The major reworking was to radius off and polish the inside.

*To Build:* Cut two fuselage sides from matched sheets of 3/32" medium balsa. All bulkheads are ¼" balsa. The firewall is ⅛" plywood. Bevel rear of fuselage sides and cement together. When dry, cement in bulkheads, starting from the rear, holding them in place with pins and rubber bands. The fuselage top may be built up of balsa blocks or solid, with a groove added for the upper mount. Cement mount securely in place. Cement lower mount in place and block with scrap balsa. Spot glue the top to fuselage and carve and sand to approximate shape, then remove. Cement in ⅛" plywood for landing gear support. Gear is .062" (1/16) 24 ST aluminum cut to dimensions shown. Mount tank in place as shown after changing filler and vent. (*Froom* 1 oz. tank was used). Filler tube was bent to avoid going through the upper mount. Vent must be longer to extend through fuselage. Block tank on all sides with scrap balsa. (*Continued on page* 47)

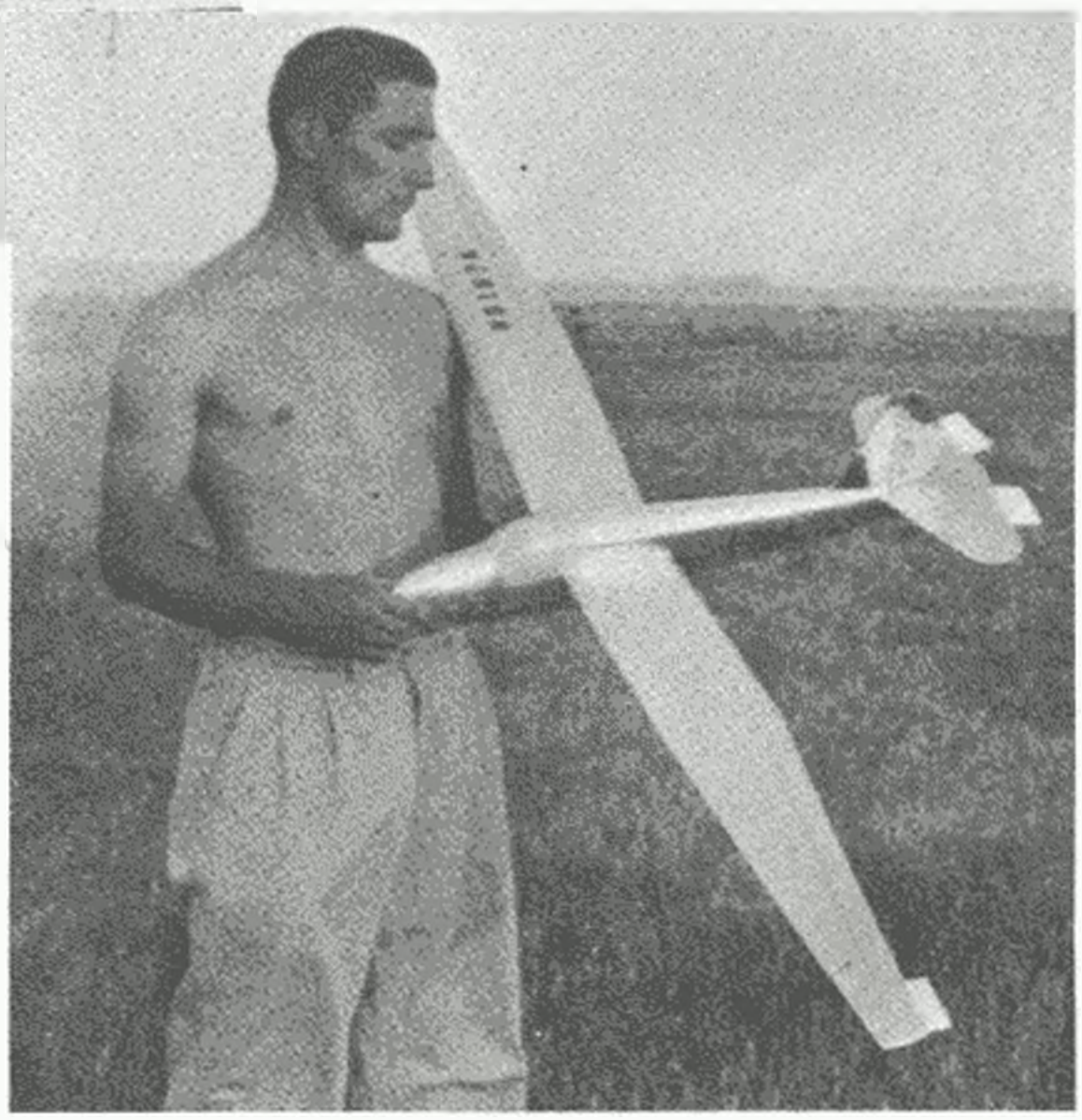


True flight picture, no strings attached—you know what we mean! Long tapering wings and streamlined fuselage incomparably clean.

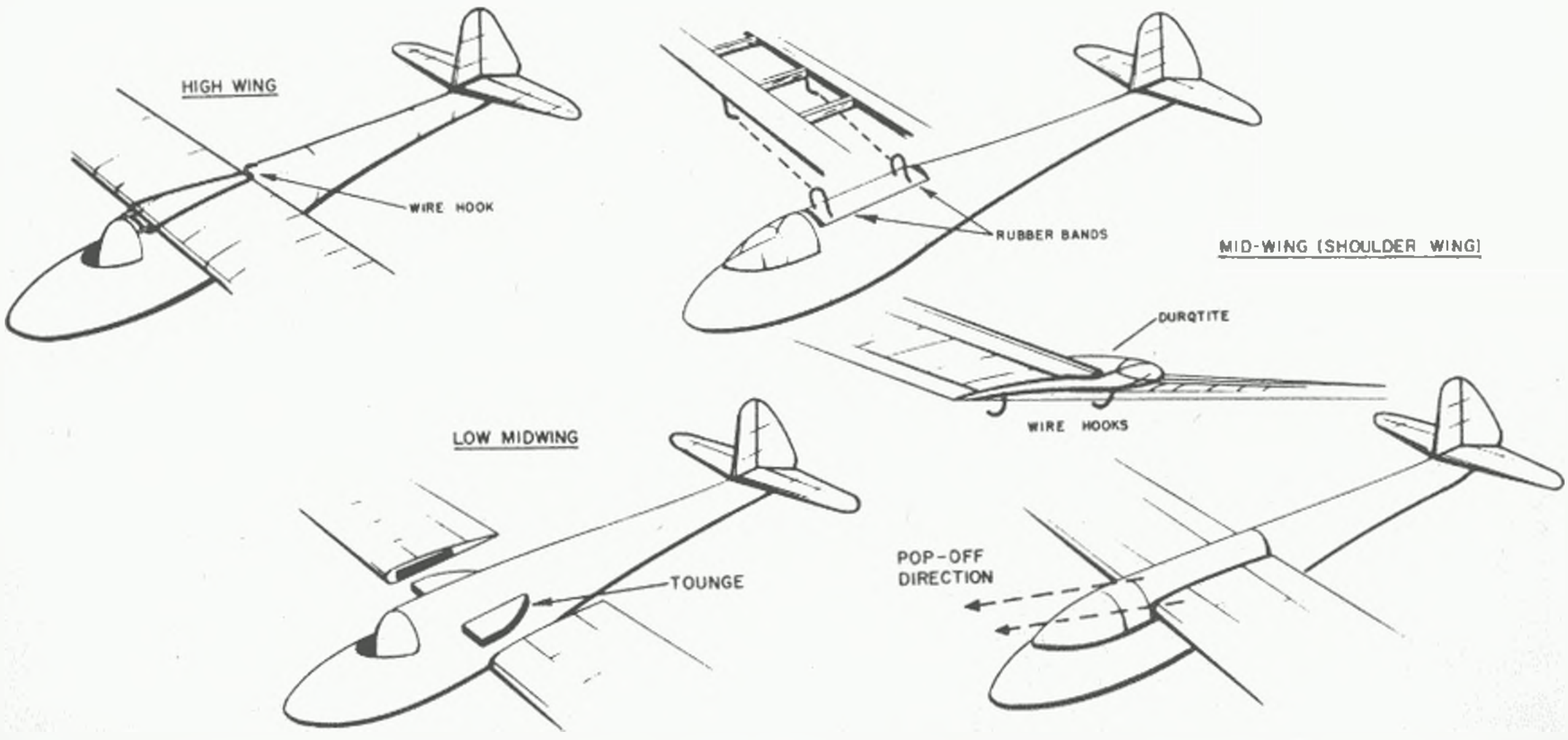
# Why not a Sailplane?

**by JACK LAMBIE**

***Soaring and circling high on silent wings, the top performance glider offers a fertile field for scale builders who want something truly different in model designs.***

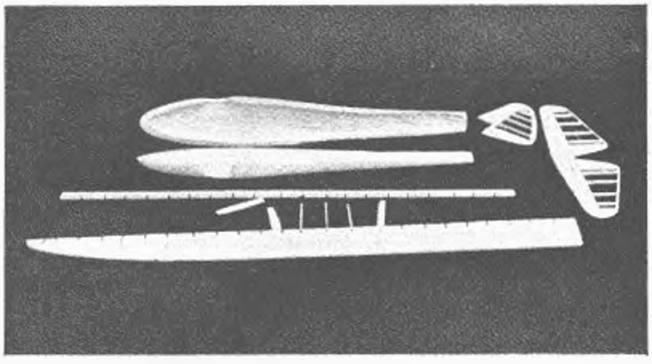


Enthusiast of gliders big and little, the author holds experimental flying scale model. Temporary tabs helped find right surface areas.

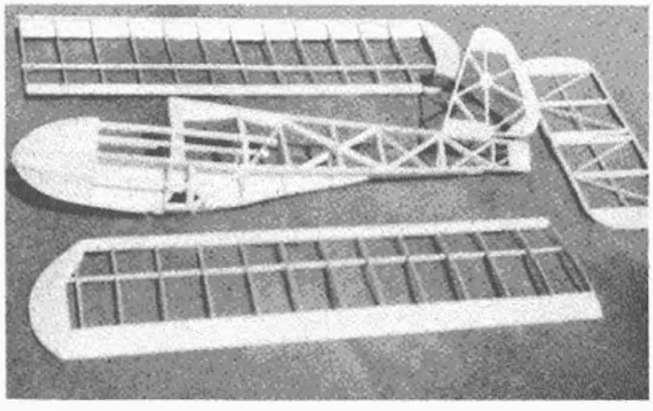


► Now that the jets and rockets are going over a thousand miles an hour and the airliners come and go like streetcars we are apt to forget that forerunner of flight, the glider. The powerless craft have kept pace with the fuel-urged craft almost point by point. Altitudes over 40,000 feet have been made frequently and a contest doesn't go by, that a flight over 350 miles isn't posted. The record is 535 miles. Between-thermal cruising speeds have doubled over the years.

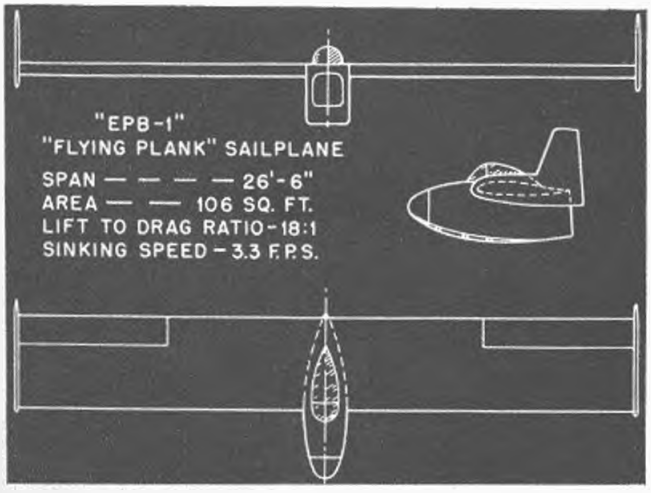
Construction and design are very advanced today. Metal, fiberglass, and very original methods of making sailplanes are often used. The laminar flow airfoils and other low-drag aerodynamics have reached efficiencies almost unheard of in the powered planes. There are some sailplanes flying with efficiencies of over 98%. Of course, the modern sailplanes have their forerunners and the ranks of the sailplanes include many historic ships.



Fuse shaped from two tack-glued blocks, opened, then hollowed by gauge. Wings and tail easily assembled from sheet, strips, ribs.



Glider people call this type a secondary glider, midway between primary and sailplane in performance. Model shows simple frame.




Many flying plank type gliders built by European modelers—for instance this real EPB-1. Secret is airfoil, wing twist. It works.

We have been building scale models of all kinds of the modern power planes and even more popular are the older interesting or historic aircraft. Most have no real performance anything like their counterparts. Basically, most of them are not well suited for modeling. They buzz around like jerky bumble bees.

Now let's take a look at the scale towline gliders. If you see a slowly moving model climbing on the towline, hang for an instant high up, release and, after a few minutes, glide by for a buoyant, sliding landing you have a real thrill.

The scale towliner is a beautiful model. Clean, unencumbered by wheels and propellers, the ships still can include cockpit, pilot etc., to delight the detail enthusiast. These most birdlike of airplanes are a challenge to the builder because of the high aspect ratio wing. The high-polish fan can load a towliner with an excellent finish because he has lots of wing area to carry the weight. No hot fuels to mar the finish or soak into the structure either.

There are three general types of gliders, the primary training glider, the intermediate sailplane, and the high performance sailplane. Each has its advantages and disadvantages as far as the model builder is concerned.

The primry glider was the old wire braced trainer with the open frame fuselage in which the pilot sat out in front with nothing under him but the seat. It is about the lightest and strongest model that can be built. Most of the strength comes from the thread bracing. If you have tried towliners and had no luck with towing try a primary for a starter. You can tow this type without even looking at it and hardly faster than a slow trot in still air.

The utilities and intermediate sailplanes are most like the standard contest towliners in use today. The aspect ratio is under ten and, as most of the real ships are of steel tube construction, a conventional crutch type assembly is easily employed in the fuselage. This type has the easy flying characteristics of the primary gliders and is almost suitable for contest work.

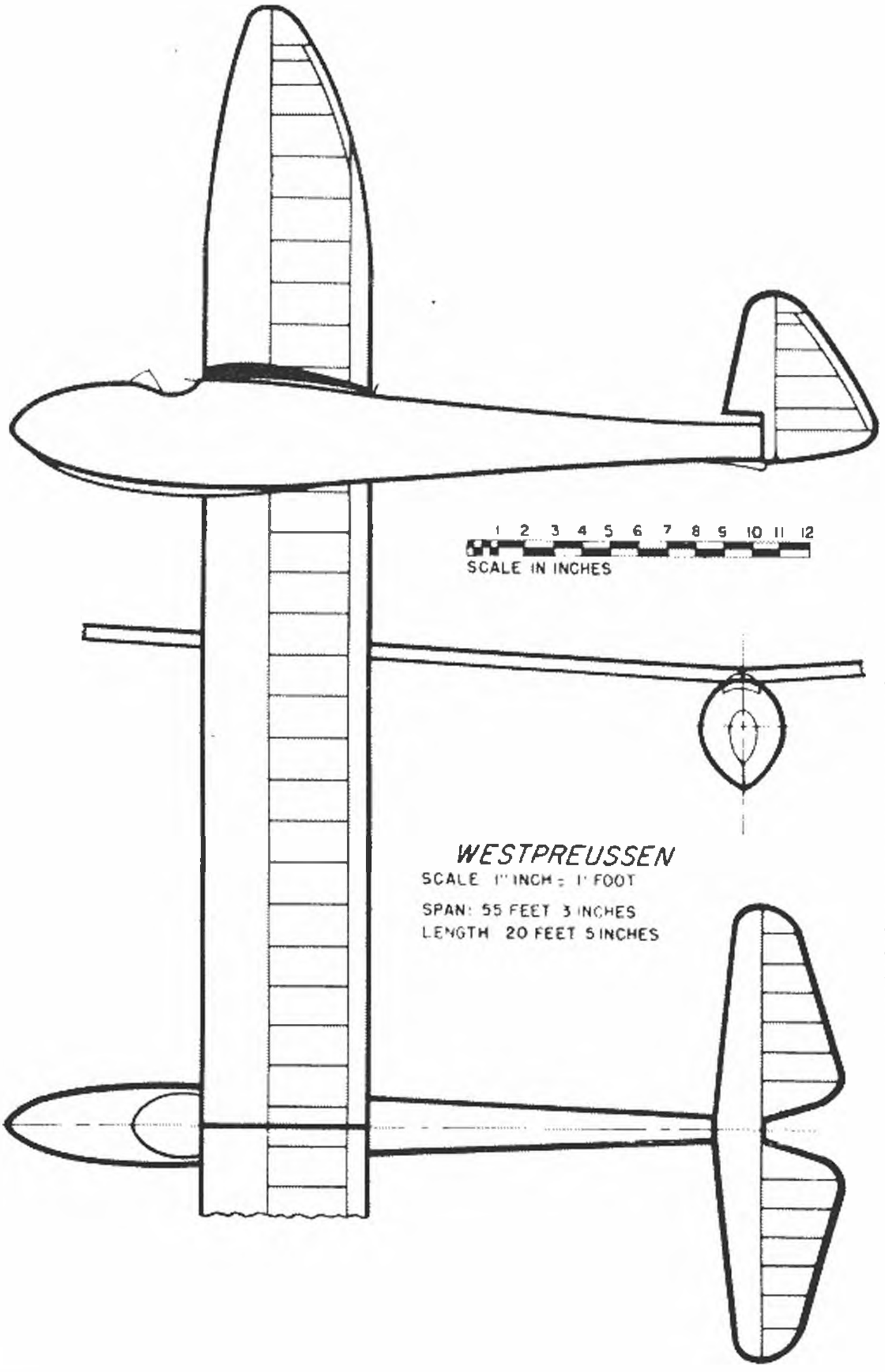
The modern, high-performance sailplanes are outstanding in sleek appearance and clean design. If you have ever tried a model with an aspect ratio of over 10 to 1 and more, you probably had trouble with the warps and lack of efficiency of the model at slow speed. Most of the modern gliders are of all metal construction, which is sometimes hard to reproduce in the model. They are worth the effort, and we'll talk about how to build one in a minute. First let's look at the rest of the sailplane types.

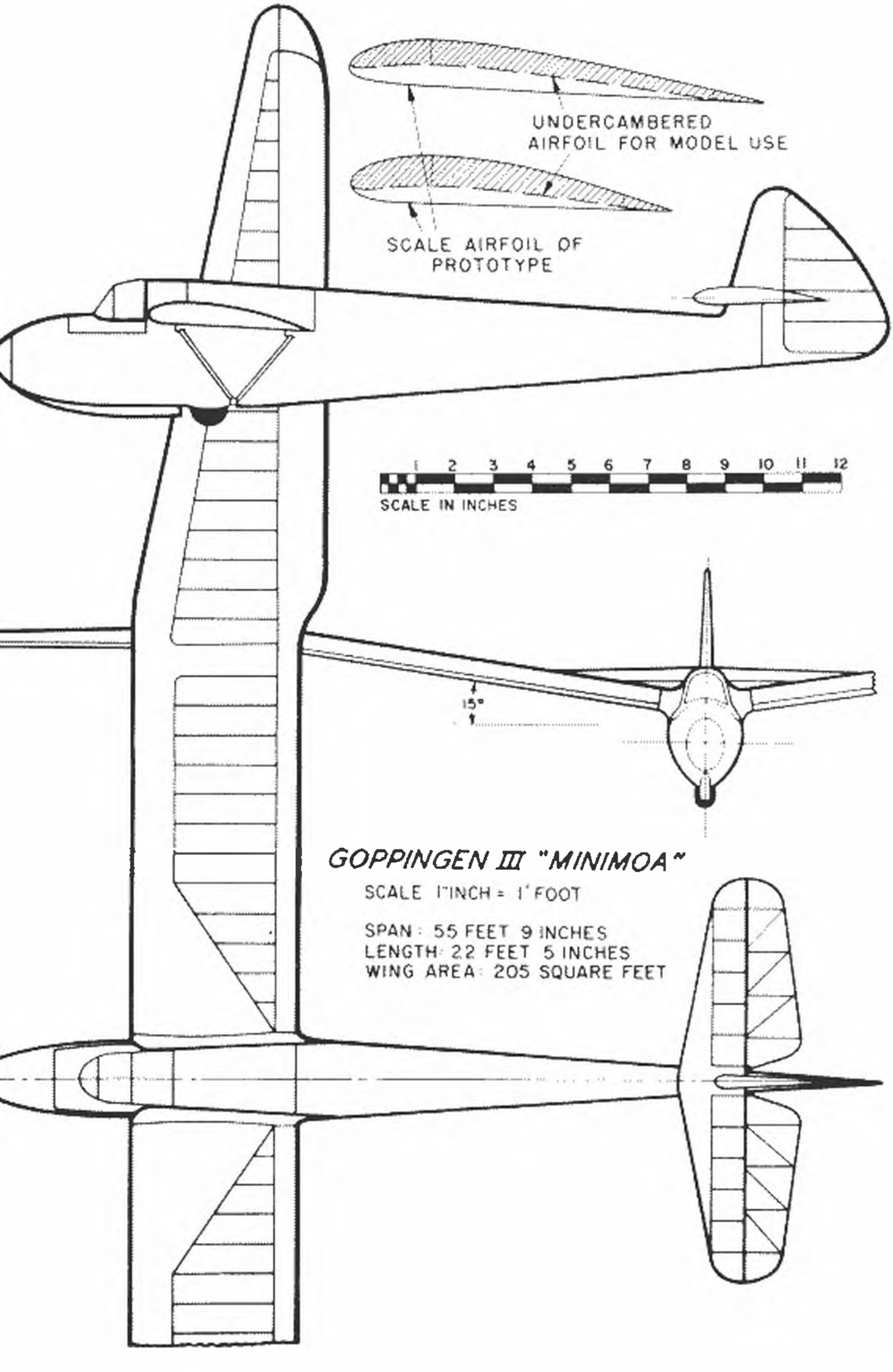
One of the most interesting types of scale gliders to fool with are the unconventional jobs like the flying wings. Past flying wings, like the Horten, were of fairly high aspect ratio and had a lot of sweepback. The modern trend is just a straight wing with no sweep at all! The two latest of these designs, the Fauvel and the Flying Plank are proving very popular. These ships fly very well. One would swear that they would tumble in flight, but just build a model and see. It simply doesn't happen. The big problem is yaw, the same as on the sweep-back jobs, only worse.

The historic old sailplanes are the best fliers and the prettiest because all the old ships were made of mahogany plywood with the natural wood finish polished and clear varnished fabric over the rest. The old ships like the Minimoa don't have that lethal clean look of the modern ships but they do have a heartwarming birdlike quality with their gulled wings and dragonfly-like clear fabric over the ribs. These historic sailplanes are good fliers because the early ships had a lower aspect ratio wing and larger stabilizer and elevator area. (*Continued on page* 44)

**TWO PLANS ON NEXT PAGE**

Why not a Sailplane ? . . continued from page 23






## GOPPINGEN III "MINIMOA"

SCALE 1"INCH = 1' FOOT

SPAN: 55 FEET 9 INCHES
LENGTH: 22 FEET 5 INCHES
WING AREA: 205 SQUARE FEET

Very fast Fox .35 delta, 8-channel Min-X, by Bill Bertrand, Allen Park, Mich. Stable enough for single-channel operation, Bill's dope.

Navy Memphis Tail Hooks club—officer members admire the Rebel bipe, 25 active members, junior membership for Navy dependents.

# radio control news

***Flight line for the month: Club News • Technical Topics • New Items • Ye dope!***

## CLUB NEWS

► After a flying trip coast to coast, and back, we fail to see how some of the mid-west and western fliers can be without a flying site. It sure looked good from 23,000 feet. We also know why the California boys get in the flying they do. In February and March, with blizzards sweeping the middle west and east, California was perfect for flying. Those suitcase models of Ken Willard would sure have come in handy on this trip.

• • •

From the KC/RC Contacts (1861 Praun Lane, Kansas City, Kan.) comes a really novel idea, and from our opening remarks, should be quite feasible. Why not have an RC Modeler's Fly-In? They do this sort of thing with full scale aircraft and with the flat country in Kansas, a 25-mile hop is not too much out of line. Of course, one has to plan on eliminating interference between the planes about to land and those enroute. Here again it is perfectly possible to have about five planes participate at the same time, without even touching the new frequencies. This idea could be the fore-runner of new RC events just as team racing and carrier events added interest to U-control.

• • •

The 5th Annual 3-day flying session of the RC/NC will be held May 29 through 31 at the Reidsville Airport, about 20 miles from Greensboro, N.C. This is not a contest although prizes are given for various events and happenings. Family rates are available at the Holiday Motel and a big banquet is the highlight for Saturday. Contact Mr. Ed Reich Jr., Box 4127, Winston-Salem, N.C. The RC/NC Bulletin (Jim Thrift, 838 Shober St., Winston-Salem, N.C.) puts out a plea to the local boys which holds true for clubs all over the country. If you have anything new in the way of planes, circuits, (*Continued on page* 54)

**by EDWARD J. LORENZ**

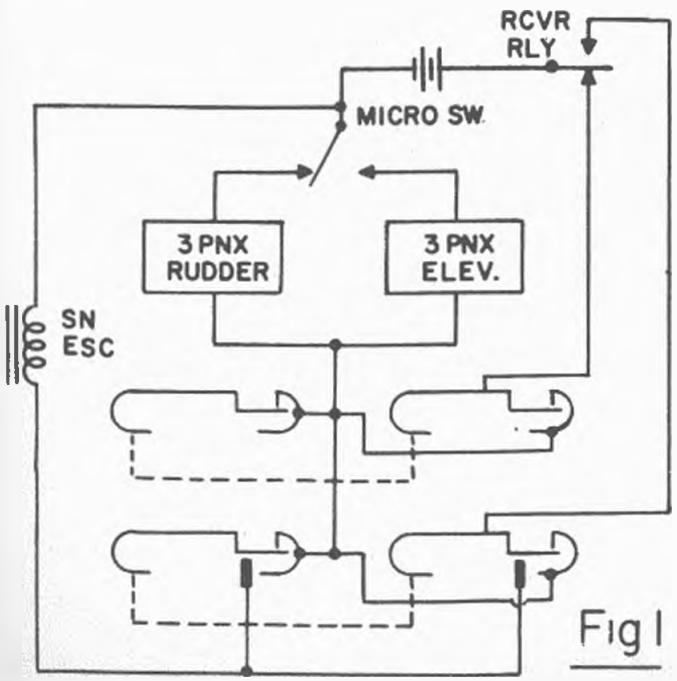
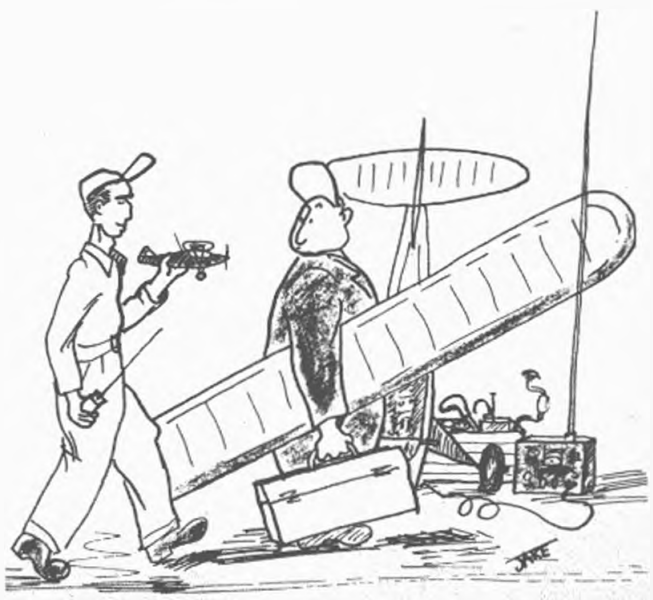
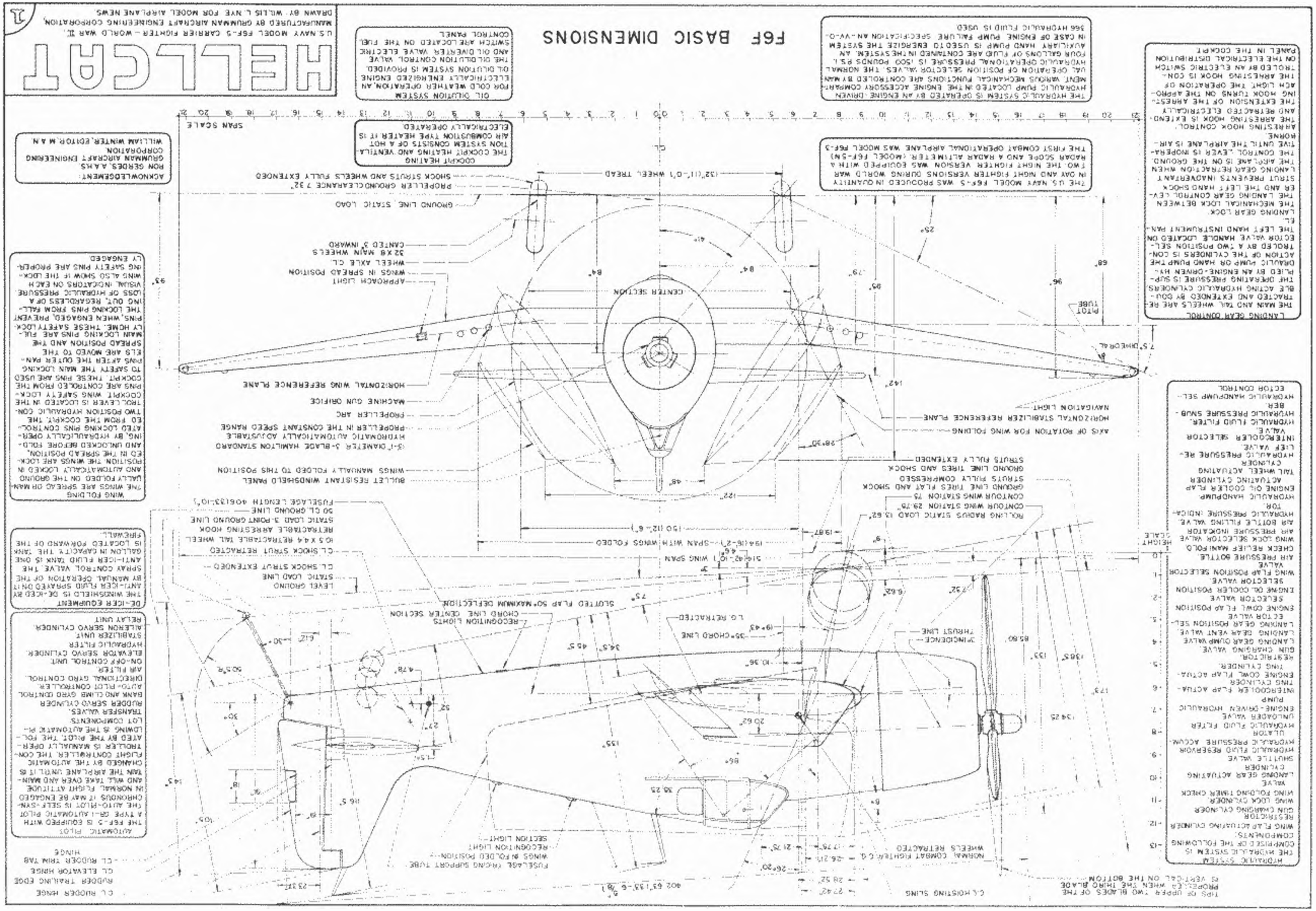
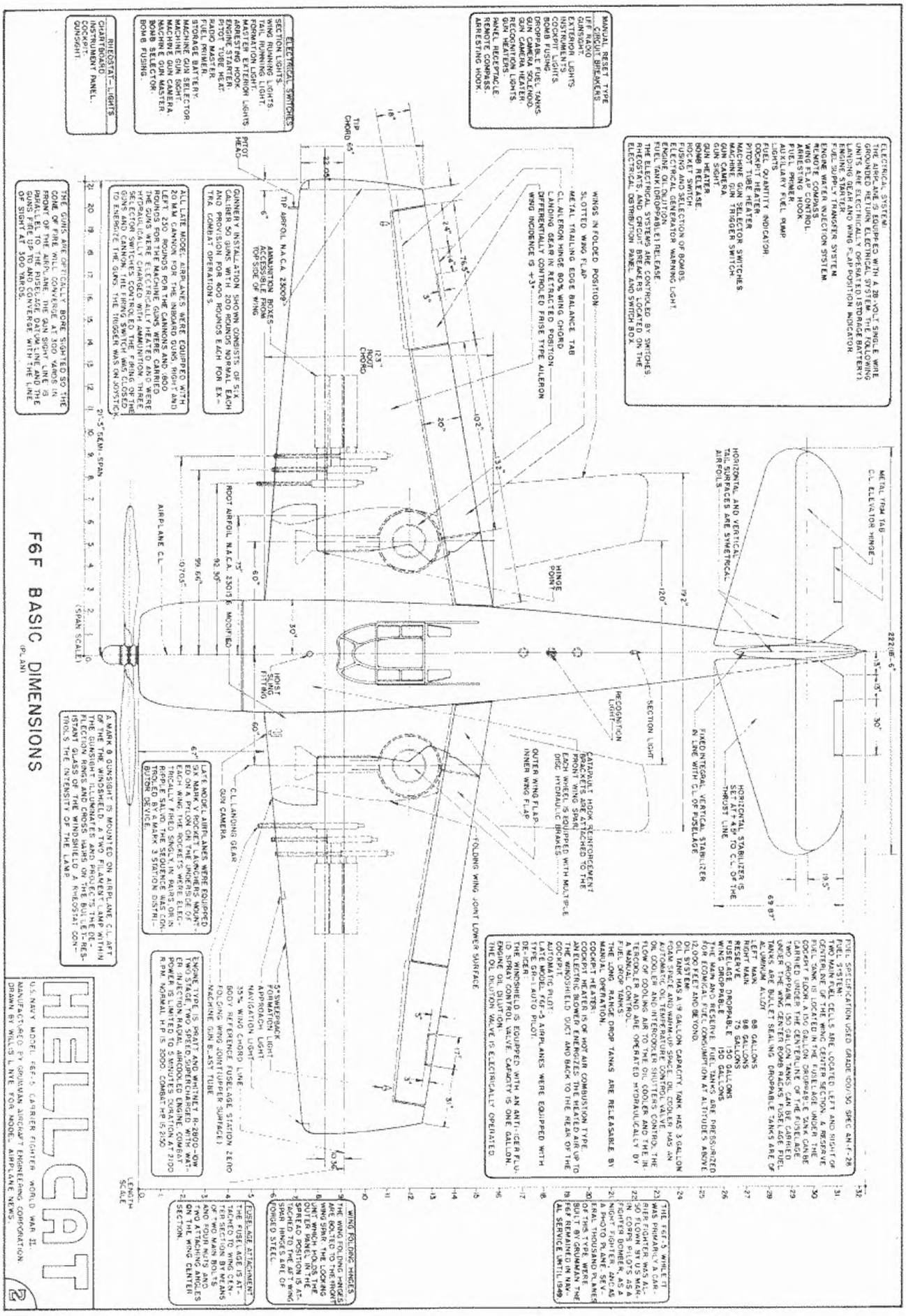


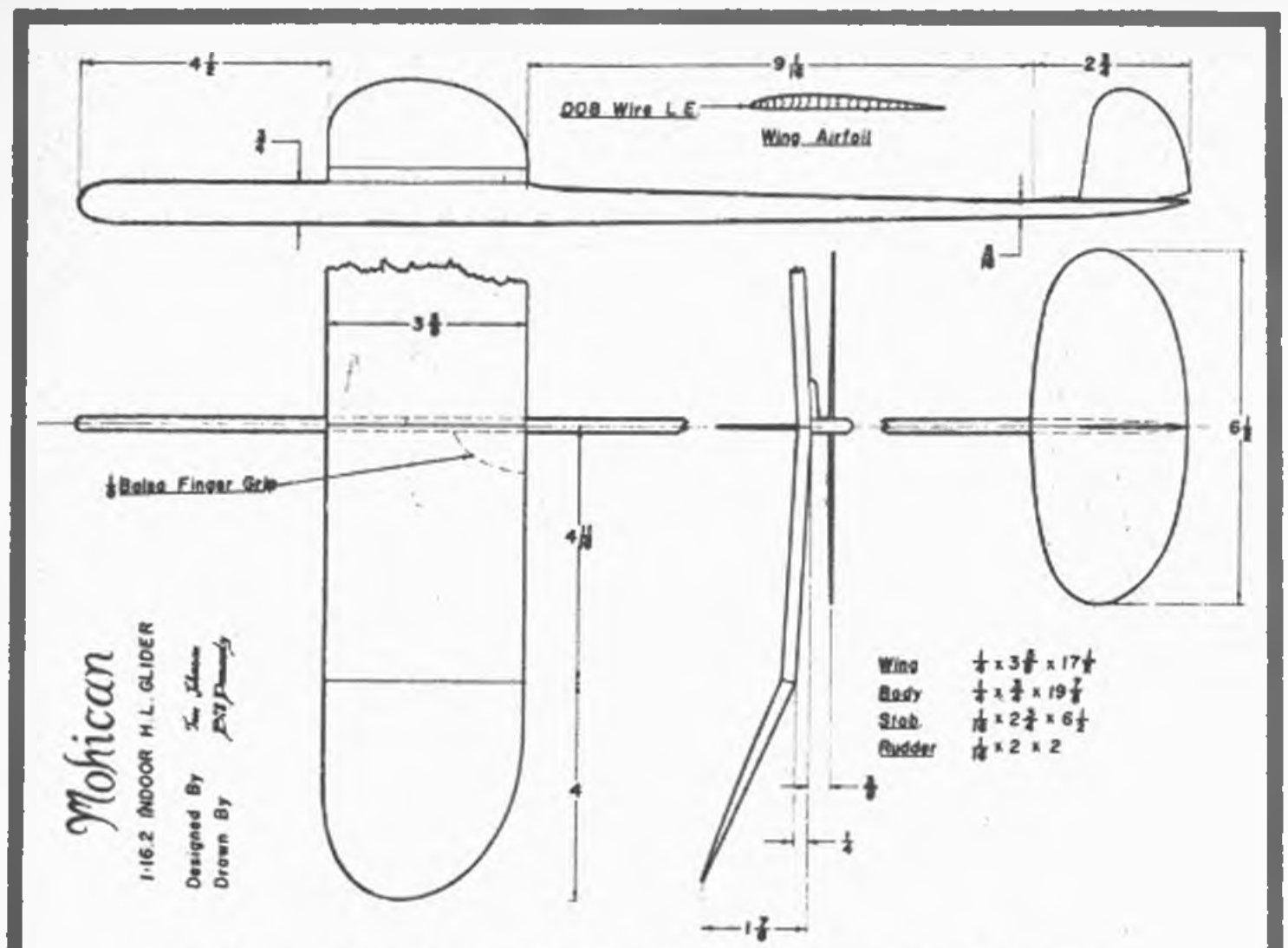

Fig I




HELLCAT
U.S. NAVY MODEL F6F-5 CARRIER FIGHTER — WORLD WAR II.
MANUFACTURED BY GRUMMAN AIRCRAFT ENGINEERING CORPORATION.
DRAWN BY WILLIS L. NYE FOR MODEL AIRPLANE NEWS.
F6F BASIC DIMENSIONS
THE HYDRAULIC SYSTEM IS OPERATED BY AN ENGINE DRIVEN HYDRAULIC PUMP LOCATED IN THE ENGINE ACCESSORY COMPARTMENT. VARIOUS MECHANICAL FUNCTIONS ARE CONTROLLED BY MANUAL OPERATION OF POSITION SELECTOR VALVES. THE NORMAL HYDRAULIC OPERATIONAL PRESSURE IS 1500 POUNDS P.S.I. FOUR GALLONS OF FLUID ARE CONTAINED IN THE SYSTEM. AN AUXILIARY HAND PUMP IS USED TO EMERGIZE THE SYSTEM IN CASE OF ENGINE PUMP FAILURE. SPECIFICATION AN-VV-O-366 HYDRAULIC FLUID IS USED
THE U.S. NAVY MODEL F6F-5 WAS PRODUCED IN QUANTITY IN DAY AND NIGHT FIGHTER VERSIONS DURING WORLD WAR TWO. THE NIGHT FIGHTER VERSION WAS EQUIPPED WITH A RADAR SCOPE AND A RADAR ANTENNA. (MODEL F6F-5N) THE FIRST COMBAT OPERATIONAL AIRPLANE WAS MODEL F6F-3
OIL DILUTION SYSTEM
FOR COLD WEATHER OPERATION, AN ELECTRICALLY ENERGIZED ENGINE OIL DILUTION SYSTEM IS PROVIDED. THE DILUTION CONTROL VALVE AND OIL DIVERTER VALVE ELECTRIC SWITCH ARE LOCATED ON THE FUEL CONTROL PANEL
COCKPIT HEATING
THE COCKPIT HEATING AND VENTILATION SYSTEM CONSISTS OF A HOT AIR COMBUSTION TYPE HEATER IT IS ELECTRICALLY OPERATED.
LANDING GEAR CONTROL
THE MAIN AND TAIL WHEELS ARE RETRACTED AND EXTENDED BY DOUBLE ACTING HYDRAULIC CYLINDERS. THE OPERATING PRESSURE IS SUPPLIED BY AN ENGINE-DRIVEN HYDRAULIC PUMP OR HAND PUMP THE ACTION OF THE CYLINDERS IS CONTROLED BY A TWO POSITION SELECTOR VALVE HANDLE LOCATED ON THE LEFT HAND INSTRUMENT PANEL.
LANDING GEAR LOCK
THE MECHANICAL LOCK BETWEEN THE LANDING GEAR CONTROL LEVER AND THE LEFT HAND SHOCK STRUT PREVENTS INADVERTANT LANDING GEAR RETRACTION WHEN THE AIRPLANE IS ON THE GROUND THE CONTROL LEVER IS INOPERATIVE UNTIL THE AIRPLANE IS AIRBORNE.
ARRESTING HOOK CONTROL
THE ARRESTING HOOK IS EXTENDED AND RETRACTED ELECTRICALLY THE EXTENSION OF THE ARRESTING HOOK TURNS ON THE APPROACH LIGHT. THE OPERATION OF THE ARRESTING HOOK IS CONTROLED BY AN ELECTRIC SWITCH ON THE ELECTRICAL DISTRIBUTION PANEL IN THE COCKPIT
LANDING GEAR CONTROL
HYDRAULIC SYSTEM
COMPRISED OF THE FOLLOWING COMPONENTS:
WING FLAP ACTUATING CYLINDER
RESERVOIR
GUN CHARGING CYLINDER
WING LOCK CYLINDER
WING FOLDING TIMER CHECK VALVE
LANDING GEAR ACTUATING CYLINDER
SHUTTLE VALVE
HYDRAULIC FLUID RESERVOIR
HYDRAULIC PRESSURE ACCUMULATOR
HYDRAULIC FLUID FILTER
UNLOADER VALVE
ENGINE-DRIVEN HYDRAULIC PUMP
INTERCOOLER FLAP ACTUATING CYLINDER
ENGINE COWL FLAP ACTUATING CYLINDER
RESTRICTOR
GUN CHARGING VALVE
LANDING GEAR DUMP VALVE
LANDING GEAR VENT VALVE
LANDING GEAR POSITION SELECTOR VALVE
ENGINE COWL FLAP POSITION SELECTOR VALVE
ENGINE OIL COOLER POSITION SELECTOR VALVE
WING FLAP POSITION SELECTOR VALVE
AIR BOTTLE FILLING VALVE
AIR PRESSURE INDICATOR
HYDRAULIC PRESSURE INDICATOR
WING LOCK SELECTOR VALVE
CHECK RELIEF MANIFOLD
AIR PRESSURE BOTTLE
HYDRAULIC HANDPUMP
ENGINE OIL COOLER FLAP ACTUATING CYLINDER
TAIL WHEEL ACTUATING CYLINDER
HYDRAULIC PRESSURE REGULATOR VALVE
INTERCOOLER SELECTOR VALVE
HYDRAULIC FLUID FILTER
HYDRAULIC PRESSURE SWITCH
HYDRAULIC HANDPUMP SELECTOR VALVE
SPAN SCALE
HEIGHT SCALE
CENTER SECTION
HORIZONTAL WING REFERENCE PLANE
MACHINE GUN ORIFICE
PROPELLER ARC
PROPELLER IN THE CONSTANT SPEED RANGE
HYDROMATIC AUTOMATICALLY ADJUSTABLE 5'-1" DIAMETER 3-BLADE HAMILTON STANDARD
WINGS MANUALLY FOLDED TO THIS POSITION
BULLET RESISTANT WINDSHIELD PANEL
FUSELAGE LENGTH 406133-10"
50 CAL. GROUND LINE
STATIC LOAD 3-POINT GROUND LINE
RETRACTABLE ARRESTING HOOK
10.5 X 4.4 RETRACTABLE TAIL WHEEL
CAL. SHOCK STRUT RETRACTED
CAL. SHOCK STRUT EXTENDED
LEVEL GROUND
STATIC LOAD LINE
WING SPAN 316'-10 1/2"
(42'-10 1/2")
(50' (12'-6"))
(SPAN WITH WINGS FOLDED 19'-8 1/2")
SLOTTED FLAP 50° MAXIMUM DEFLECTION
RECOGNITION LIGHTS
CHORD LINE CENTER SECTION
L.G. RETRACTED
39° CHORD LINE
INCIDENCE
THRUST LINE
NORMAL COMBAT FIGHTER C.G.
WHEELS RETRACTED
C.G. HOISTING SLING
PROPELLER WHEN THE THIRD BLADE IS VERTICAL ON THE BOTTOM
TIPS OF UPPER TWO BLADES OF THE
FUSELAGE TAILING SUPPORT TUBE
WINGS FOLDED POSITION
RECOGNITION LIGHT
SECTION LIGHT
PROPELLER GROUND CLEARANCE 7'3"
SHOCK STRUTS AND WHEELS FULLY EXTENDED
GROUND LINE. STATIC LOAD
CANTED 3° INWARD
32 X 8 MAIN WHEELS
WHEEL AXLE CL.
WINGS IN SPREAD POSITION
APPROACH LIGHT
PROPELLER GROUND CLEARANCE 7'3"
(12'(11'-0") WHEEL TREAD)
PILOT TUBE
7.5° DIHEDRAL
AXIS OF ROTATION FOR WING FOLDING
HORIZONTAL STABILIZER REFERENCE PLANE
NAVIGATION LIGHT
STRUTS FULLY EXTENDED
GROUND LINE TIRES AND SHOCK
STRUTS FULLY COMPRESSED
GROUND LINE TIRES FLAT AND SHOCK
CONTOUR WING STATION 75
CONTOUR WING STATION 29.75"
ROLLING RADIUS STATIC LOAD 13.62"
ACKNOWLEDGEMENT:
PON SERGES, AAKS
GRUMMAN AIRCRAFT ENGINEERING CORPORATION.
WILLIAM WINTER, EDITOR, M.A.N.
AUTOMATIC PILOT
THE F6F-5 IS EQUIPPED WITH A TYPE G8-1 AUTOMATIC PILOT THE AUTO-PILOT IS SELF-SYNCHRONOUS IT MAY BE ENGAGED IN NORMAL FLIGHT ATTITUDE AND WILL TAKE OVER AND MAINTAIN THE AIRPLANE UNTIL IT IS CHANGED BY THE AUTOMATIC PILOT CONTROLLER. THE CONTROLLER IS MANUALLY OPERATED BY THE PILOT. THE FOLLOWING IS THE AUTOMATIC PILOT COMPONENTS:
TRANSFER VALVES.
RUDDER SERVO CYLINDER
BANK AND CLIMB GYRO CONTROL
AUTO-PILOT CONTROLLER.
DIRECTIONAL GYRO CONTROL.
AIR FILTER
ON-OFF CONTROL UNIT
ELEVATOR SERVO CYLINDER.
HYDRAULIC FILTER
STABILIZER UNIT
AILERON SERVO CYLINDER.
RELAY UNIT
DE-ICER EQUIPMENT
THE WINDSHIELD IS DE-ICED BY ANTI-ICER FLUID SPRAYED ON IT BY MANUAL OPERATION OF THE SPRAY CONTROL VALVE. THE ANTI-ICER FLUID TANK IS ONE GALLON IN CAPACITY. THE TANK IS LOCATED FORWARD OF THE FIREWALL.
WING FOLDING
THE WINGS ARE SPREAD OR MANUALLY FOLDED ON THE GROUND AND AUTOMATICALLY LOCKED IN POSITION. THE WINGS ARE LOCKED IN THE SPREAD POSITION, AND UNLOCKED BEFORE FOLDING BY HYDRAULICALLY OPERATED LOCKING PINS CONTROLED FROM THE COCKPIT. THE TROU LEVER IS LOCATED IN THE TWO POSITION HYDRAULIC CONTROL LEVER IS MANUALLY OPERATED BY THE PILOT. THE FOLLOWING IS THE AUTOMATIC SEQUENCE OF OPERATIONS:
THE MAIN LOCKING PINS ARE FULLY HOME. THESE SAFETY LOCK PINS, WHEN ENGAGED, PREVENT THE LOCKING PINS FROM FALLING OUT, REGARDLESS OF A LOSS OF HYDRAULIC PRESSURE. WINGS ALSO SHOW IF THE LOCKING PINS ARE PROPERLY ENGAGED
SPREAD POSITION AND THE MAIN LOCKING PINS ARE FULLY ENGAGED
ELS ARE MOVED TO THE
PINS AFTER THE OUTER PAN-
TO SAFETY THE MAIN LOCKING
COCKPIT. THESE PINS ARE USED
TROU LEVER IN THE
COCKPIT WING SAFETY LOCK-
PINS ARE CONTROLED FROM THE
TWO POSITION HYDRAULIC CON-
ED FROM THE COCKPIT. THE
ATED LOCKING PINS CONTROL-
ING, BY HYDRAULICALLY OPER-
AND UNLOCKED BEFORE FOLD-
ED IN THE SPREAD POSITION.
POSITION THE WINGS ARE LOCK-
ULLY FOLDED ON THE GROUND
AND AUTOMATICALLY LOCKED IN
THE WINGS ARE SPREAD OR MAN-
WING FOLDING
C.L. RUDDER HINGE
RUDDER TRAILING EDGE
C.L. ELEVATOR HINGE
C.L. RUDDER TRIM TAB HINGE

***This is the first of two installments of the most authentic plans drawn to this date.***

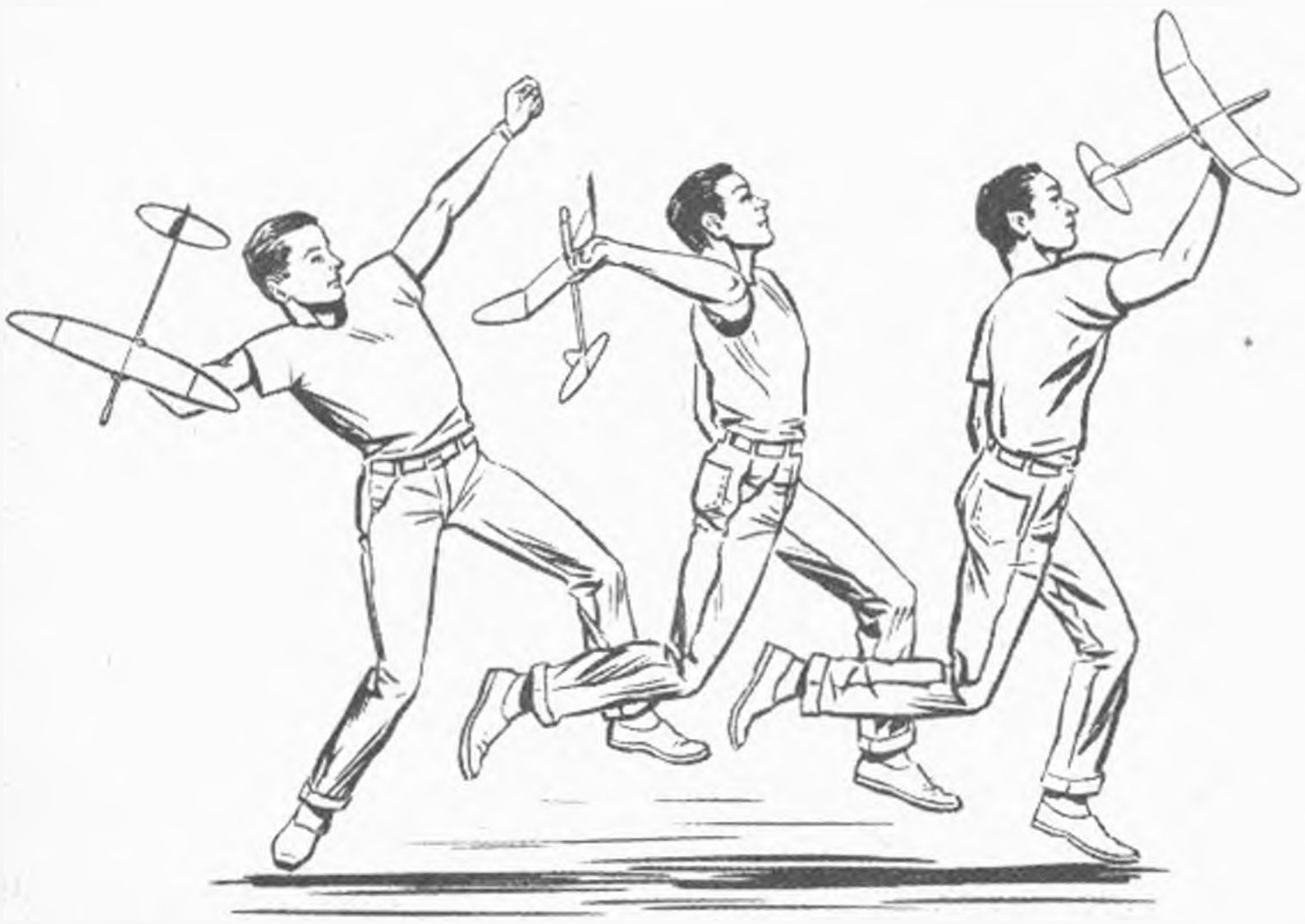





Mohican glider described in Part 2. Plan for Curly, May issue.

# Hand Launched Glider . . . part three

***Don't just rear back and heave. It's fancy footwork that pays off. Arthur Murray should be a whiz with toss gliders.***



What the eye sees and what really happens when man throws glider are vastly different things. Sequence sketches, copied directly from action pix, to be compared with "steps" opposite page.

by **WILLIAM DUNWOODY**

► Flying a hand-launched glider is a two-part project. One part involves adjusting the glider; the other, and by far the more important part, involves adjusting the launch. We'll start with the easy part first and trim the glider for flight.

The first step in trimming the glider is the same as in trimming any free flight model; gently hand glide the model at gliding speed, adding or removing clay as needed at the nose to obtain a flat, smooth glide path with a very slight suggestion of a stall (Fig. 3.1a). Further gliding should be done as you warp the rudder to give a moderate turn in the direction desired. That direction depends upon the arm with which you throw the glider. A right hander should adjust his model to glide to the left and a lefty the opposite. To start, the circle should be about 50 feet in diameter. When the model glides smoothly in the right size circle, slightly more power may be put into the throws, banking the glider slightly into the glide turn. In this manner a flight pattern such as that in Fig. 3.2 can be achieved. The exact amount of bank and power can easily be determined by trial and error, if care is taken and no radical changes made from one flight to the next. Adjustments should be made a little at a time. If no tendencies to stall or dive show up with these harder throws, the model is ready for more powerful launching.

Should the model show a tendency to go into a dive with the increased launching speed after gentle gliding showed a good glide, the trailing edge of the stabilizer should be warped up on both sides and weight added to the nose, while hand gliding to obtain smooth flights. If the model stalled with the increased launching speed, try banking the model into the turn more. If the stall persists, warp the trailing edge of the stabilizer down and remove some clay from the nose to obtain the smooth glide. If the stall is characterized by a tendency to turn away from the glide circle, examine the glider carefully to determine the cause of this (it usually is a twist in the wing, but warps in any surface will do it) and take corrective steps.

In throwing the model for full height, the flier should not be afraid to use his muscles. Far more gliders are wrecked in testing from too gentle a launch than from too hard a one. The glider should be thrown banked in the opposite direction from its glide circle at an angle of about 35° and released just about horizontally. Don't try to throw the model at the ceiling or the sky, throw it straight out in front of you; the wings

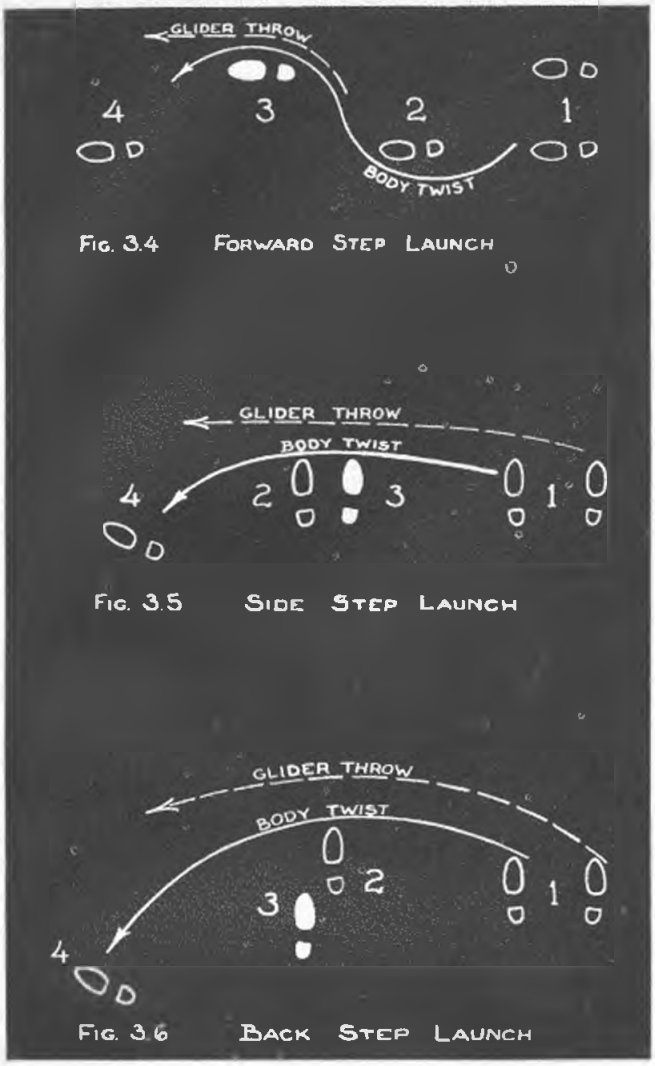


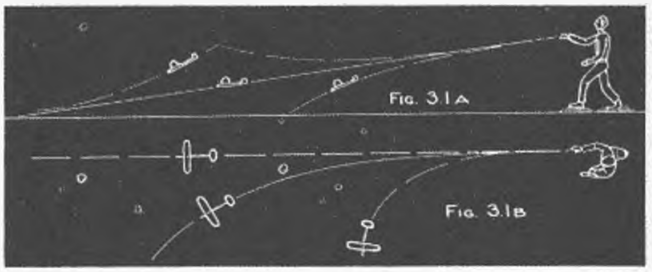

Fig. 3.4 Forward Step Launch

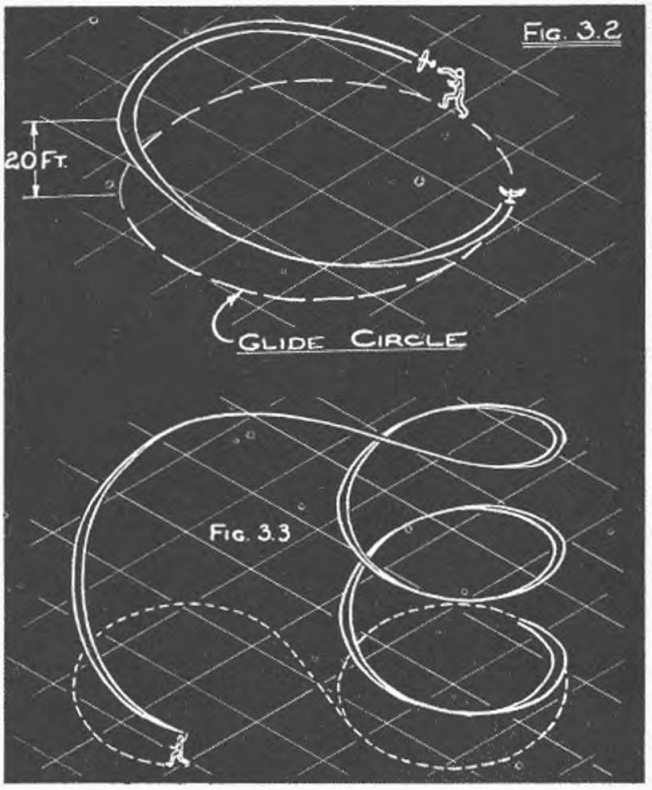



Fig. 3.5 Side Step Launch




Fig. 3.6 Back Step Launch




will lift it up. Grip the fuselage between the thumb and middle finger, put the index finger against the throwing grip, and give the model a toss at about ¾ of your full throwing power. Use a grip which is comfortable and concentrate upon releasing the model in the proper position and at the proper instant. Use a smooth throwing motion.

Let's study a few of the possible results of your first throw:

1. The model rises steeply, stalls and dives into the ground. This is usually the result of too little bank in your launch, letting go of the model too soon, throwing the model upward rather than horizontally or not throwing the model hard enough.

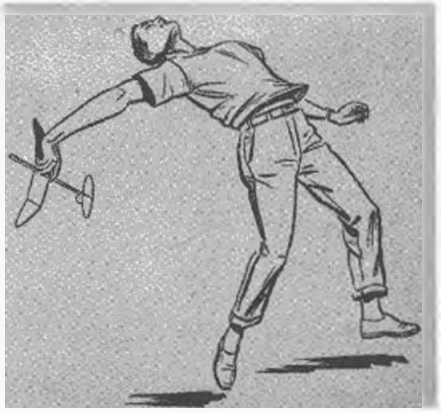
2. The model zooms around in a steep banked turn for about half a circle and then stalls and glides smoothly. In most cases, this will indicate that the bank angle was too great. If the glide circle was very wide or even straight, there was insufficient rudder offset to counteract the initial bank. You'd better go back to hand gliding as at the start, adding more rudder offset to tighten up the glide circle.

3. The model rises in a smooth spiral climb, rolls into its glide turn with a slight dip and glides smoothly down to earth. It's unnecessary to say that this is what you want (Fig. 3.3). To eliminate that dip at the top of the climb try holding on to the model a split second longer. In other words, lower the launching angle (not the bank angle).

In all cases the adjustments should be made a little at a time, avoiding radical changes. This applies to changes in your launching techniques, too. In indoor flying the direction of your launch and the spot from which you launch the glider are very important, as they determine whether the glider will have a clear flight path or will hit the walls or other obstructions while in flight.

It is no secret that the most important single factor affecting the performance of a hand-launched glider is the launching technique used to get it airborne. Smoothness and consistency are the watchwords. Strength of arm is of only sec- (*Continued on page* 40)

Many people think the glider is at all times pointed in direction of flight. Only on launch.



Many action shots show this posture at instant of release, body arched, feet off the ground.

# Bulletin Board

► "Probably one of the memories not too hard for you to recall is the old Bamberger Aero Club," begins the letter from Emanuel Radoff, about plans for a reunion of oldtimers from Newark, N.J., and easterners who competed with them before World War II.

Radoff and his committee are tracing old members. Everyone is being asked what kind of affair is preferred—dinner-dance, dinner only, or informal meeting—and the best time to hold the shindig. If you're interested or if you know of any oldtimers who were in this group, write to Mrs. Roy Messinger, 1844 Dill Avenue, Linden 2, N.J.

• • •

► A "get-together" of a different sort is the South Shore Model Airplane Council, a group of model clubs within a 50-mile radius of Brockton Mass., who organized about a year ago. Main purpose of the Council is "to insure the future of modeling as a sport and hobby" and membership is open to any club in the area with 10 or more members.

Council plans include classes in each phase of modeling, starting a speed club to revive local interest in these events, and bigger and better contests with greater variety of events. A demonstration team travels around the area putting on exhibitions at schools, military installations and on television.

Contact man is Robert E. Girard, Jr., 153 Plain Street, Taunton, Mass.

• • •

► Still another kind of "get-together" is the Second Annual Control Line "Flyinic" of the Ohio Valley Aeromodelers. The Wheeling, W. Va., bunch invites all modelers in the Tri-State (Ohio, Pennsylvania, West Virginia) area to attend on June 7 at the Ohio County Airport. Info from Bob Knowlton, 2107 Marshall Avenue, Elm Grove, W. Va.

A Flyinic? It's a day of combined flying, picnicking, bull sessions—all fun! No special events—but plenty of prizes for the likes of longest distance traveled, biggest airplane, best (?) crash, oldest model builder and many others.

• • •

► And still another kind of "get-together" was a test rocket shoot sponsored by the First U.S. Army at Camp A. P. Hill, near Bowling Green, Va., a couple of months ago. First Army took several dozen teenage rocket enthusiasts from headquarters at Governors Island, N.Y., to Fort Belvoir, Va., thence to A. P. Hill for a full day on the rocket range.

Groups of student rocketeers from the Baltimore, Washington, northern Virginia area, also attended and some 50 rockets blasted off. It's all part of the First Army program to encourage potential scientists with safe, professionally supervised rocketry experiments.

• • •

► The Chicago Acronuts are seeking junior, senior and open modelers who are interested in free flight (indoors or out). The club has started a program of instruction in building and flying free-flight models—and they've got a crew that really

(Continued on page 40)

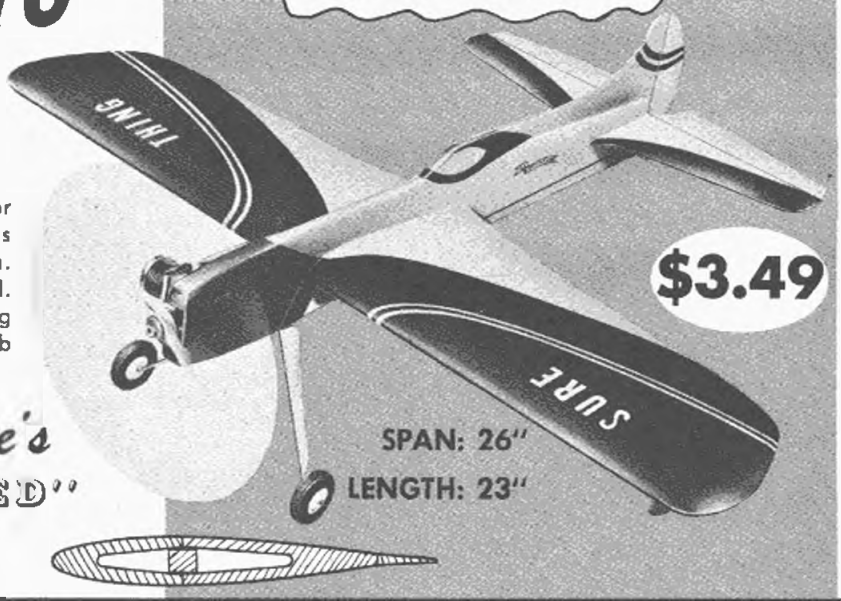
# ALL EYES ARE ON ENTERPRISE

AMAZING!

## SURE THING

FOR .15 TO .25 ENGINES

SUPERIFFIC!
CAN BE FINISHED IN A SINGLE EVENING!




$3.49

SPAN: 26"
LENGTH: 23"

## AT LAST!

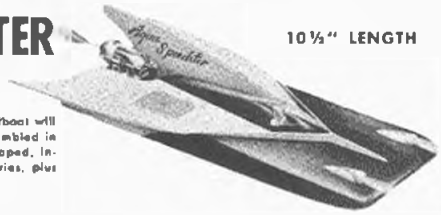
An ideal model for a new flier or for the weekend sport flier. Assembles like a trainer and flies like a charm. Light in weight, rugged, easy to build. You can't beat it for sheer building and flying fun. A natural for club training programs.

*Featuring Enterprise's*
"HOLLOW-STRUCTED"
*"Wonder Wing"*

## Aqua SPEEDSTER

For JETEX "50B" and $CO_2$

10½" LENGTH



Excitingly new and different too, this little speedboat will amaze you with its performance. It is easily assembled in less than an hour! All parts are pre-cut and shaped. Included also are colorful decals, plastic accessories, plus loads of other Enterprise extras.

$1.49 EACH

9½" LENGTH

## SIZZLER

For JETEX "50S" and $CO_2$

Patterned after the hottest real racing cars ever developed, the Enterprise "SIZZLER" sets the pace for super speeds in models. FREE RUNNING OR TETHERED. Ready to run in less than two hours! All parts are pre-cut and shaped. Colorful decals, plastic driver, wheels and accessories are a few of the many Enterprise extras.

## FREE-FLIGHT

PERFECT FOR THE NEW .020 PAA-LOAD RULES

Complete with new PAA-Load decals and instructions.

$2.50 each

**PEE WEE SPORTSTER** — Great new ½ A Free Flight. Designed for .020 to .049 engines. Can operate in limited area. **32" wingspan**

**SKY-LINER**—Dual purpose ½ A free flight and rubber powered for sport, precision and PAA load flying. Pre-fabricated parts, formed landing gear wheels, extras. .020 to .049 engines. **Wingspan 32".**

## enterprise for 59

## "COMBAT-STUNT"

### SUPER-WHIPSAW

FOR .18 TO .35 ENGINES

SPAN: 41"


ONLY $2.95

DESIGNED EXPRESSLY FOR COMBAT AND STUNT FLYING, THIS HIGHLY PREFABRICATED MODEL CAN BE ASSEMBLED IN A MATTER OF HOURS! IN FLIGHT YOU'LL FIND IT'S FAST AND HIGHLY MANEUVERABLE, YET PLENTY EASY TO HANDLE AND BUILT RUGGEDLY. A NATURAL FOR THE 1959 CONTEST FLYING SEASON!

### WHIPSAW

31" SPAN

**WHIPSAW**—Combat-Stunt Controline. Pre-fabricated, Shaped leading and trailing edges, die cut ribs, plywood doublers, hardwood engine mounts, extra sturdy. For .09 .15 .19 engines.

ONLY $1.95

### HAWKER TYPHOON

31" SPAN

**HAWKER TYPHOON** — A lavish kit featuring pre-fab parts, full size detailed plans, large four color decals. For .09, .15, .19 engines.

ONLY $2.95

## FIRST IN QUALITY • FIRST IN VALUE • FIRST IN DESIGN

NEW! 1959 CATALOG—SEND 10c FOR POSTAGE AND HANDLING

**ENTERPRISE MODELS, INC.**
MINEOLA, NEW YORK

# McCOY®

# Red Head Stunt

## GREATEST PERFORMERS OF THEM ALL...

*Jewel Packaged*

IN PLASTIC BOXES

● Superior all-new test-proved design for faster starting, exceptionally smooth running, superior flight performance.

● Bore and stroke ratio balanced for maximum power, minimum fuel consumption.

● One-piece aluminum alloy cylinder block and crankshaft housing to insure correct alignment of cylinder bore to crankshaft; precision anti-friction long-wearing main bearing; long venturi for maximum fuel draw in all stunt patterns.

● Aluminum alloy cylinder head with spherical dome matched to piston; blow-out proof head gasket.

● Piston is fine grain iron casting for light weight; has spherical high dome head for top power; precision-fitted to sleeve.

● Connecting rod is heat treated high alloy aluminum forging precision machined.

● Fully counter balanced crankshaft is machined from high alloy steel bar stock . . . heat treated and precision ground to exact tolerances and micro-finished.

● Needle valves easily reversible if desired.

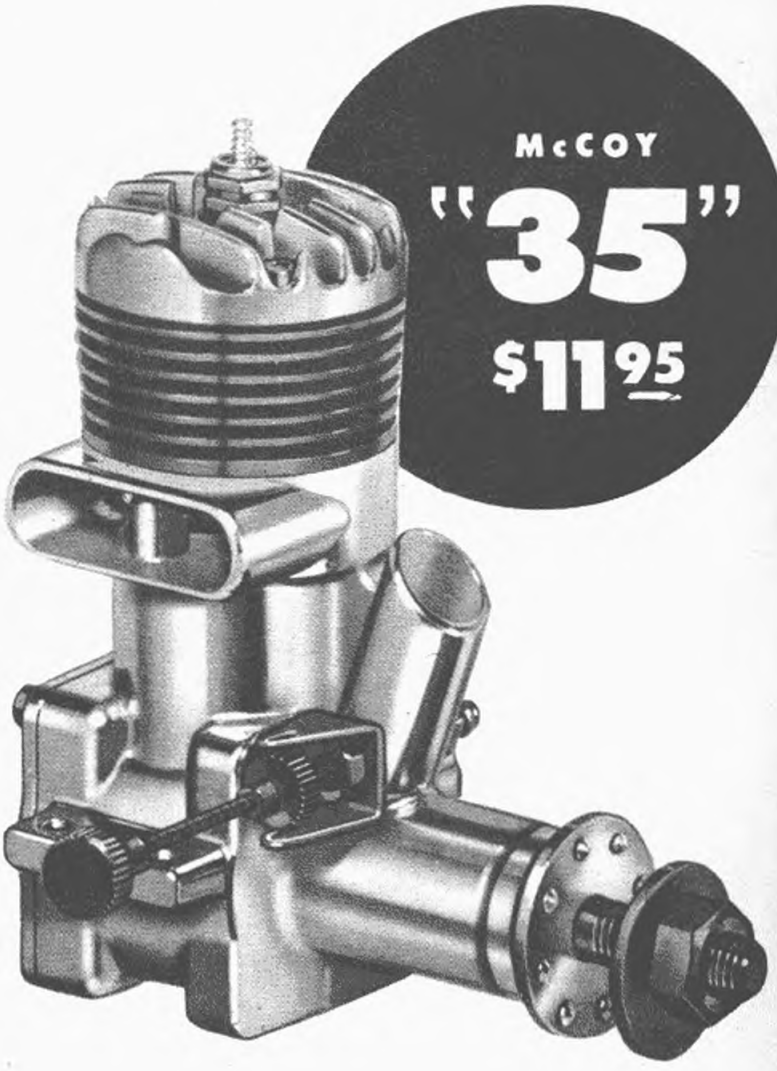
| Engine No. |
| --- |
| "19" |
| "29" |
| "35" |

THE TESTOR CORPORATION • ROCKFORD, ILLINOIS

TESTORS

# Engines

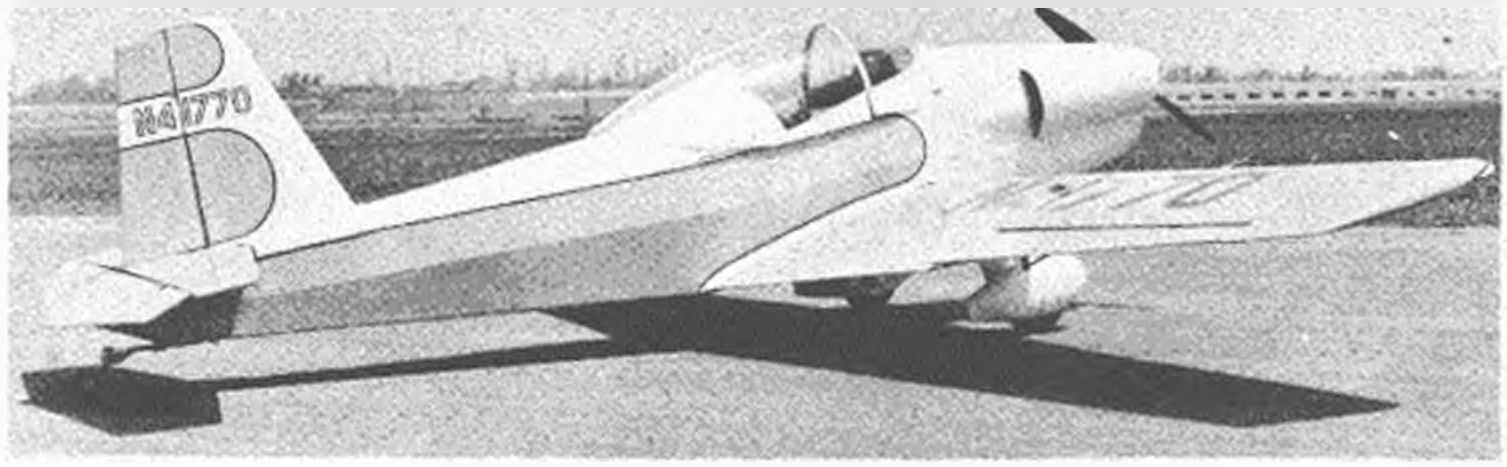





| Bore | Stroke | Displacement | Weight | H.P. Rating |
|---|---|---|---|---|
| 0.642" | 0.617" | 0.19 cu. in. | 6.0 ounces | 0.40 at 13,000 |
| 0.732" | 0.712" | 0.290 cu. in. | 7.0 ounces | 0.54 at 12,500 |
| 0.775" | 0.740" | 0.350 cu. in. | 7.0 ounces | 0.60 at 12,500 |

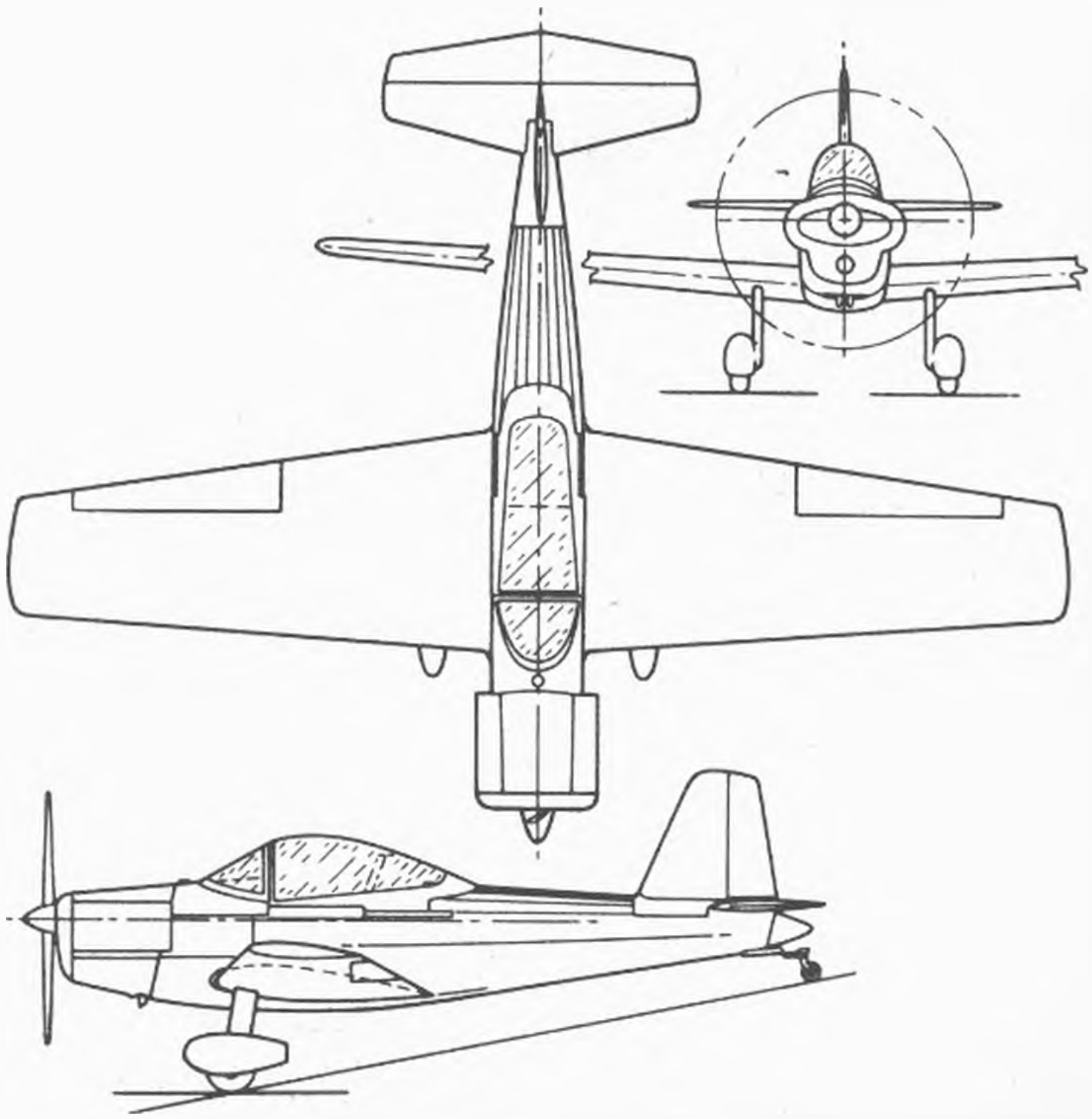
# Home Built Parade

# Skyhopper



Resplendent in orange-and-white color scheme Skyhopper has look of a manufactured craft.

***In 14 years of flying, the single-place Salvay-Stark Skyhopper piled up well over 1000 hours in the air.***




Original open cockpit was covered, finally fitted with bubble canopy. Top 130 on 65 horse.

► Many home-built designs originate with professional engineers. The Salvav-Stark Skyhopper is an outstanding example. Design was begun in the spring of 1944 by H. E. Salvay and G. A. Stark, two engineers for North American, then based in Kansas. Now a familiar sight in the Los Angeles area, the Skyhopper has amassed well over 1000 accident-free hours in the air. Hundreds of pilots, both amateur and professional, have pronounced approval of its performance and flying qualities.

A good top speed of 130 mph for a Continental 65-hp engine is combined with a reasonable landing speed of 42 mph. It is single-place and clearly fulfills the designers' dreams of a single seater having distinctive lines with pleasing appearance, good performance, simplicity of construction, maintenance, and, above all, safety.

No attempt was made to obtain a Type Certificate but sufficient stress analysis and drawings were submitted to CAA, (now FAA) to assure a sound structure with a minimum of weight. The Skyhopper design conforms to CAR-04 requirements. First test hop came in March of 1945. Everything went fine, the only change being a stabilizer adjustment. The original open cockpit was later modified to a covered cockpit and, more recently, a bubble canopy gave a truly slick appearance.

The fuselage is of welded steel tube construction. The wing has two laminated spruce spars, built-up spruce ribs. Both stabilizer and fin are built-up from spruce and are covered with three-ply mahogany veneer 1/16 inch thick. Light aluminum covering is used over the leading edge, the entire craft being fabric covered. Flippers and rudder surfaces are welded steel frames, fabric covered.

A 15-gallon capacity fuel tank provides a comfortable range of 400 miles. Aft of the seat, there is a small baggage space. A true sport job, the Skyhopper, nevertheless, is a reasonable cross country machine for the flier who wants to go places.

Like quite a few other attractive home-builts designed by "pros," the Skyhopper is available in plan form. (Salvay-Stark Aircraft, 8296 Poppy Way, Buena Park, Calif.) By airplane standards such plans are reasonable, but the $40 cost puts them out of modeler's reach. Ribs and fittings are drawn full size.

Any potential home-builders among us are cautioned to read with care the lead article "The Home-Builts," on page 9.

## Foreign Notes

(*Continued from page 2*)

placement of 4.82 c.c or .294 cu. in. Weight is given as 215 grams. (7.6 oz.).

*HUNGARY*

Speed flier Rezso Beck, 2nd place winner in the 1959 FAI Control-Line International Championships at Brussels with a speed of 214 km/hr (winner 216 km/hr), has now raised his best official time to 221 km/hr (137.3 mph). Having regard to the fact that motor displacement for this, the World Speed Championship class, is restricted to .1525 cu. in., while models have to be as big as normal 60 size jobs, this says a lot for the performance of the Hungarian state-sponsored MOKI-S1 engine. East European strength in U/C speed looks stronger than ever for next year's World Championships and will call for a really vigorous effort in the West.

*FINLAND*

First event of the 1959 FAI International calendar was the annual winter free-flight contest held at Helsinki, Finland. Events were the three World Championship classes: Nordic A2 glider, Wakefield rubber and FAI gas.

As usual, the meet was held on the frozen surface of a bay near Helsinki. The Leningrad team from Russia, which had competed in the '57 and '58 contests, was absent, but in its place, members of the well-known Gamen Club of Norrkoping, Sweden, provided an equally strong challenge. Numerous "international names" were present, but only two members of each team (selected before the event), represented their countries in determining the team results. This worked well in the case of glider and Wakefield, but had the curious effect of eliminating the first nine place international winners in gas.

Conditions were mixed: wind was slight and there was some thermal activity due to drifting warm air from the city, but, for part of the time, the gas models were disappearing in a mist at about 200 feet. Hanshieri Thomann, Swiss glider expert now living in Sweden, who flew for Gamen, won the A2 flying one of his asymmetric designs. Reino Hyvarinen, Nordic and Finnish champion last year, won the Wakefield. In the power event, I. Jokinen set the highest time at 851 secs., Hans Friis and Rune Olsson, in 10th and 11th places, securing the team win for Sweden.

*JAPAN*

Whereas most model products from Japan compare favorably, on a price basis, with domestic items, platinum filament glow plugs have, up to the present, been an exception to this rule, due to the high cost of platinum in Japan. Factory wholesale prices of some platinum alloy plugs have been as high as the actual retail prices of U.S. plugs, leaving no margin for import expenses, importers' profits or retailer discounts. It is for this reason that most Japanese engines are sold less glow-plug or with a 2-volt nickel-chrome filament plug. Following a recent reduction in the price of platinum, however, one Japanese firm, Oishi & Company, is introducing a new platinum plug at little more than half the price of previous high-quality Japanese plugs. These plugs will be available in "hot" (polished finish) and "cold" (Parkerized finish) ratings.

*SOUTH AFRICA*

Anent MAN at W's comments on pops and juniors in the January issue, Robbie Rowe, contest secretary of the South African MAA, remarks that this problem has also been with S.A. modeling for years but that no real solution has been devised. Rowe makes another point: there is the guy who buys his models ready-built from more energetic fellows. OK so long as he does not fly them as his own work in contests, but what about the chaps who complete half-finished airframes started by others? Where is the line to be drawn? If the letter of the law is to be adhered to as rigidly as in the days of the A-frame pusher, where is the difference between completing someone else's abandoned work and assembling a prefabbed kit like a Firecat? A thorny problem all round.

*IN BRIEF . . .*

Great Britain . . . British Nationals, scheduled for May 17-18, will, this year, be at RAF Scampton, Lincolnshire, a bomber base and one of the largest airfields in the country. Fourteen events will be squeezed into the two days. (No junior or senior categories, incidentally.) Proposed changes in British record classes will, if accepted, reduce somewhat unwieldy list of 62 types down to 38.

Japan . . . Unusual item being offered in Japan by the maker of the Sky Queen engine is the "Sky Queen Controller." This is a remote control device in which a stick control is used to transmit up, down, left and right signals via a long cable attached to the model. Control box is in the shape of a reel, around which the control cable is wound when not in use.

Australia . . . Tony Farnan, well-known Melbourne contest flier, tells us that he has built the Netzeband sonic tachometer featured in MAN (April '58) and that it works fine.

Rumania . . . Just for the record . . . Rumanian absolute record marks are as follows: Duration, J. Georgescu, 3 hr. 15 min.; Distance, T. Kaksur, 60 km. (37.28 miles); Height, A. Moldovean, 3950 m. (13,107 ft.); Speed, A. Moldovean, 257 km/hr (159.7 mph).

## The Gasser

(*Continued from page 13*)

straight grained sheet of 3/32" balsa for the stab, and 1/16" balsa for the elevator. Cover both with silk for strength.

*Landing gear:* Either a formed aluminum gear or 1/16" wire can be used. I used a wire gear, John Shearer and Bill Click have formed aluminum gears. The aluminum gear looks better, and it also lends itself to the addition of wheel pants if you want to dress your model up more. Also, you can get the aluminum gear commercially if you want to.

*Fuselage:* The fuselage, compared to many designs, is really a joy to construct. The two basic sides are cut from 3/32" x 3" stock, the 3/16" longerons added to the top and bottom, the upright 3/16" braces and doublers added. Then, using the firewall and the crossbrace in back of the radio for alignment, the sides are joined. The tail post then joins the sides together at the rear, and the basic structure is set up. The rest of the crossbracing can then be added as you fit in your equipment. I have shown a structure suitable for the Orbit single-channel receiver, the Babcock super-compound escapement, a Bonner S/N motor control if you want to install one, and a small bottle tank for precision flying. The battery complement consists of one of the small, square 22½ volt B batteries which is about the same size as a pencell, and one pencell for filament, and two pencells for the escapement. These four batteries are mounted in two of the Hillcrest two-pencell plastic holders which are cemented together back to back. It makes a very compact and convenient battery pack. You may want to vary the arrangement to suit your own taste in receivers. But the fuselage structure can be varied just as easily.

After you've figured out your radio installation and mounted your escapement or servo, add the wing cradle to the top longeron. Note that it is one piece from the firewall back to where it tapers into the longeron behind the wing. This makes for a very strong and crash-resistant structure. Next cover the top and the bottom with 1/16" balsa, except where the landing gear fits. Cover this with 1/16" plywood so the gear won't be cutting into the bottom of the fuselage. Also, the bottom of the fuselage from the firewall back to the crossbrace forward of the radio is filled in with ⅛" balsa, shaped to fit the fuselage line. You need the extra strength here for those occasions when you have a hard landing and the ship noses up and skids along. Note that at the rear the bottom of the fuselage is cut away so the stab fits flush with the bottom. Add a couple of small stringers on the inside, then leave this open so you can get at the torque rods if you need to. The stab will close it up when mounted so dirt won't get in.

The fin is butted to the top of the fuselage, then the reinforcing braces are added. This gives ample strength. Note the detail on how the corners of the fuselage are rounded. This makes a very pretty structure and is also very strong. Cover the fuselage with silk for added strength.

The building instructions are pretty brief, but you experienced modelers won't have any trouble. In fact, after some of the designs you've tied into, this one will be a breeze.

*Flying:* Now here's where you're gonna be a little bit busy right at first. To begin with, let's assume you want to get familiar with the model before you try any fancy maneuvers. If you start with rudder only, don't do sharp turns near the ground—wait until you've got some altitude to see how your model reacts. If you are using the pickup elevator, you'll find that sharp turns can be made by starting with rudder, then flipping in elevator just as the nose starts to drop.

Incidentally, the Gasser makes beautiful take-offs. The long tail moment gives it very good ground control, so if you're hesitant to hand launch it on the first flight, try a take-off and be ready to make a turn in case your model may be a little tail-heavy in trim.

After you've had a few familiarization flights, and you want to try pylon racing, there are several things you can do. The simplest, if you have a Babcock compound, is to reverse the elevator control so that on the third pulse, instead of getting up elevator, you get down elevator. This is the system I used at first, and it was good enough to win. But be careful—don't put in a lot of down—just a little, and then don't fly the pylon pattern too close to the ground, because you don't have any up elevator to pull you out of a nose down attitude on the turns.

A system which is well fitted to the Gasser is the Cobb Hobby escapement-servo setup. With it you can get both elevator and rudder, and motor control as well.

I use the modified Babcock escapement which gives rudder and elevator, both up and down, and which can also include the quick-blip motor control. John Shearer's Gasser has the motor control installed, and he has been making some fine touch-and-go landings.

In any event, no matter what you preference is (and some of you eastern fellows will probably have pulsers and all that jazz) you'll find that this job will be a real crowd pleaser, a top competitor, a lot of fun to fly.

## Bulletin Board

(*Continued from page* 30)

knows the business. Write Pete Sotich, 3851 West 62nd Place, Chicago, Ill.

The Chicagoans have had a series of Saturday indoor meets in the 132nd Infantry Regiment Armory (75-foot ceiling) with regular events and a novelty event for youngsters up to 12 years old flying models supplied by the sponsors for 50 cents.

The two big free-flight meets in Chicago this year will be the Seventh Annual Chicago Prop Nutz meet on June 28 and the Sixteenth Annual Midwestern States Championships (sponsored by the Aeronuts) on Sept. 13. Lots of events at each both gas and non-gas.

• • •

► The New Castle (Pa.) Flite Kings run RC meets under a set of home-made rules that enables Rudder Only class to compete favorably with Intermediate and Multi jobs.

All ships are judged on the same basis for precision pattern, balloon breaking and spot landing. Then there are six stunts for Rudder models and six others for Intermediate and Multi models, the basic idea being to pick one stunt for Rudder class and an equally difficult one for the other ships. Rudder stunts are loop, Immelman, spiral dive, wing over, Cuban eight and lazy eight. Intermediate and Multi stunts are split S, power dive, two-point roll, horizontal roll, inverted flight and clover leaf. Maximum possible scores are: Pattern, 69; balloon breaking, 9; spot landing, 36; and stunts, 18.

It's reported that all contestants thought results were equitable. What won? A Rudder job. Bob Oesterling RD #5, New Castle, Pa.

• • •

► MAAWNY (Model Aeronautics Association of Western New York) formed March 8, at Dansville, N.Y. meeting attended by nine chartered AMA clubs. Fifty people elected as president, Charles Phillips, Louis Whitford, Secretary. Next meeting was to have been May 3, now past. Purpose of the group is the promotion of inter-club co-operation, and model aviation interests with the public.

For information address: Charles Phillips, 212 Coddington Rd., Ithaca, N.Y.

## Hand Launched Glider

(*Continued from page* 29)

ondary importance, grip is minor, wrist action means little; the "secret", if any, lies in the footwork.

Were this a fable, some sort of moral could be derived from the fact that the part of the modeler farthest from the model affects the model's flight most. We'll simply say that the most efficient machine results only when all its parts act in perfect coordination. You are that machine and every part of your body should aid your glider's climb. Most good glider fliers throw well instinctively. When asked to criticize a poor launching technique, few glider fliers could spot specific faults; most simply say it "looks jerky" or "not smooth."

There are three basic launching techniques characterized by different footwork. One, the "forward step" lacks smoothness and is undoubtedly responsible for more than poor duration. Its herky-jerk motion can cause the modeler to release the model at different times and varying attitudes from one flight to the next, sometimes with

a demolished glider as the result. The "side step" is a good, smooth launching method slightly lacking in power but a very useful stepping stone to better launching styles. The "back step" is the powerhouse of glider launching methods and is employed by virtually every top notch glider flier.

Forward Step Launch (Fig. 3.4): The launcher steps forward onto his left foot (2) then steps onto his right foot (3) and throws the glider as his left foot touches the ground (4). Note the reversed twisting of the body as each step is taken and the short jerky throw which must be squeezed into the proper moment between body twists. A poor method of launching a glider.

Side Step Launch (Fig. 3.5): The launcher steps sideways to his left, onto his left foot (2), following quickly with his right foot (3), crouches slightly and launches the glider as he pivots on his right foot and steps to his left (4). Practice will develop one long smooth motion and will usually evolve the Side Step into the Back Step.

Back Step Launch (Fig. 3.6): The launcher begins in much the same manner as in the Side Step Launch (2) but brings his right foot behind his left foot (3), crouching slightly and then springing onto his left foot as he launches the glider (4). The back step permits a much longer stride to be taken into the launch, adding greatly to the power developed and giving one long smooth curve. The apparently reversed twisting necessitated by moving the right foot behind the left involves only the lower portion of the legs and does not affect the smoothness of the launching motion.

The steps shown in the drawings are for right-handed fliers and must be reversed for left handers. The full push of the launch in all three methods is made from the right foot and is indicated by the solid footprint. The body twist line indicates the path of the mid-point of the launcher's shoulders. The steps shown are the actual launching operation and are usually preceded by two or three "wind-up" steps which give the flier added momentum.

That's all there is to the "secret" of hand launched glider flying. In one word, it's SMOOTHNESS. The whole idea is to get as much of your body, arms and legs moving in the same direction as the glider during as much of the launch as possible and to bring into play in the final push as many muscles and as much momentum as can be obtained. The best means of accomplishing this seems to be the Back Step Launch, apparently ridiculous when seen on paper, awkward when done slowly, but beautifully powerful and graceful when put into use as a means of propelling a glider into the sky.

Drawings are presented in Fig. 3.7 for "Curly", the present open indoor record holder. The model, as presented, is an indoor glider; the lifting stabilizer should be made symmetrical for outdoor use. There is nothing out of the ordinary in its construction and if the procedures outlined in Part II are followed, no difficulty should be encountered.

The remaining article, Part IV, will present a collection of ideas from various sources pertaining to design, construction and flying of hand launched gliders along experimental lines. A sort of extension course in glider theory. Also included will be a chart analyzing many of the top indoor gliders in the country and plans for a high aspect ratio glider.

## They Build Their Own

(*Continued from page* 11)

the youth of America to actively participate in all aspects of aviation. The program was to be worked through the grade and high schools or outside of school activities, or a combination of both, through local sponsoring groups such as local civic clubs, veterans organizations, and public interest organizations.

The objective of the AIM Program was to create a pool of future manpower trained and interested in aviation. The lack of air-minded personnel available to the aviation industry is reflected in the reluctance of our young people to adopt careers in aviation. The AIM Program was intended to attempt to rectify this situation. It consisted of four phases: Phase I for the age group 7 to 12 years, encouraging competitions in model building, leading to more advanced modeling in Phase II for the age group of 12 to 16 years. Phase III would make those graduates of the previous phases eligible to work competitively with others in the construction of full size glider and/or powered plane kits. Phase IV envisioned the awarding of flight or technical scholarships to the winners of Phase III activities. Unfortunately, the AIM Program had to be abandoned by CAA when budget cuts of that year eliminated funds for such activities.

But the new FAA is still very much interested in encouraging amateur participation in aviation, for the skills developed here serve to strengthen the aviation industry, which leads all industry in numbers employed, and there is always a need for skilled help. This is where the Experimental Aircraft Association fills the gap. Today's youth, looking over the fence at the big jets and executive aircraft predominant at most airports, feels left out of the aviation picture. However, when he has the opportunity to examine first hand a small private plane, or even watch one under construction in some basement or garage workshop, he finds that the machine is of a type of construction that he can understand, for it really is only one step above his model building experience. Seeing and understanding the problems of design and construction of these aircraft encourages him to seek the knowledge and skills required so that he can eventually tackle a project of his own.

After he has acquired the necessary training in woodworking, metal fabrication and welding, and working with dope and fabric, either through schooling or helping experienced builders with their projects, the beginner is ready to proceed. There are certain prescribed procedures which the amateur must follow if he hopes to have his aircraft certificated for flight. It is advisable that he first discuss his proposed aircraft with his FAA Safety Agent, for it is this self-same agent who must eventually pass on the airworthiness of the aircraft before flight is permitted. Better that the agent be completely informed at the beginning and throughout construction so that errors may be corrected immediately, than that flight permission be refused and expensive alterations become necessary later. This works to the advantage of the would-be builder too, for he learns first-hand what he can and cannot do.

After the aircraft has been completed in accordance with the requirements as specified by the Safety Agent, it is ready for flight test. It is assumed that all necessary "paper work"—registration, etc.—has been completed satisfactorily, and the certificate issued. Test flights of amateur-built aircraft can only be performed by a pilot

(*Continued on page* 44)

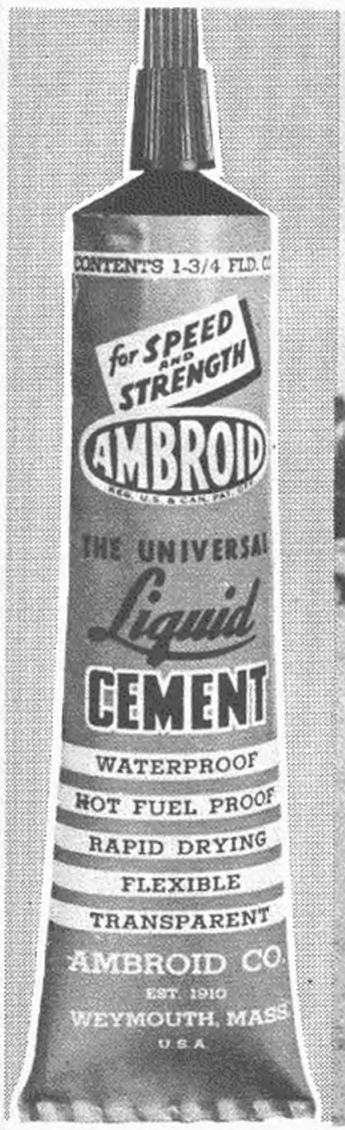
# DUKE FOX USES AMBROID!

It seems like everybody who is anybody in the model plane industry is an Ambroid Cement user. Duke Fox, President of the famous company which bears his name, is no exception. Says Duke — "Ambroid, like Fox Motors, represents quality in its field. I have used many different brands of cement, but have never come across anything that holds as well as genuine Ambroid". So speaks a modeler of 32 years experience, who has built stunt (his favorite), speed, gliders (indoor and outdoor), free flight and microfilm types.

Remember to look for the familiar Ambroid blue and orange tubes (now with "miracle spreader cap") at your local hobby shop. It costs just a few pennies more, but that little extra buys the world's ORIGINAL and still-the-finest model cement.

"EXTRA-FAST" AMBROID FOR LIGHT MODELS & "FIELD" REPAIRS


"REGULAR" AMBROID — FOR MAXIMUM STRENGTH CONSTRUCTION




"REGULAR" AMBROID
1-3/4 Oz. Tube . 30¢
4 Ounce Tube . . 60¢
1 Pint Can . . $1.75

AMBROID SOLVENT
1 Pint Can . . $1.35

"EXTRA-FAST" AMBROID (Model Airplane Cement)
20 cc. Tube . . . . . 15¢

"SYNTHE-WOOD" (Ideal as a filler & for fairings)
4 Ounce Can . . . . 40¢


Motor manufacturer — and Ambroid fan — Duke Fox looks over one of the many Fox powered speed entries at a recent "Nats" contest

## In Every Field There's A Leader — In Cement It's AMBROID

AMBROID CO. • BOX 30 • WEYMOUTH 88 • MASSACHUSETTS

► **1959 Nationals:** Will be held at Naval Air Station, Los Alamitos (Long Beach), Calif., July 27 through August 2.

► **State Championship Fund:** Hobby Industry Association has underwritten the cost of sending 50 state champions to the National Contest. An eliminations system will be established by the time you read this.

holding a private pilot's rating, or better. The flight test period can last from 10 to 50 or 75 hours, depending upon the design and any other factors which may influence the Agent's decision, for the length of the test period is left to his discretion. During the test period a complete log is kept, recording any unusual characteristics encountered as well as time and type of flights.

Upon completion of this testing period and after the "bugs" have been worked out, a flight demonstration before the Safety Agent is next in order. This demonstration is to show that the aircraft's performance at minimum and maximum weights is adequate for take-off, climb and landing. The plane must be shown to be satisfactorily controllable and reasonably maneuverable during taxiing, take-off, climb, level flight, dive and landing, with and without power. When the final stage has been passed successfully, certain flight restrictions on the aircraft will be removed and the aircraft may then be operated within the specified limits for its class as provided by regulation.

That today's amateur-builders are well aware of their responsibilities can be seen at any of the many EAA Fly-In meetings. The 6th Annual EAA Fly-In was held at Curtiss-Wright Airport, Milwaukee, Wis. in August, 1958, and drew over 60 home-built aircraft and thousands of members and visitors from all over the U.S. and Canada. The high standards of workmanship which prevail throughout the ranks of the amateur-builders was here presented for all to see. Outstanding performance of some of the new designs was an encouraging sign that advances are being made. Such novel features as folding wings for roadability in the Bryan II, and the variety of design types ranging from the open single-seater sport monoplanes (Baby Ace) and biplanes (Mong, Sablar Special) to the two-place Wittman Tailwind and Maule four-place cabin aircraft point up the fact that new ideas are constantly appearing.

The 1959 EAA Fly-In will be held at Greater Rockford Airport, Rockford, Ill. on August 6, 7, 8 and 9 and an even greater number and variety of aircraft can be expected to make their appearance, for the movement is only now gaining momentum. Many new designs are even now being completed and tested, and will appear at the Fly-In for the first time. In addition to this unparalleled opportunity to see and examine the latest in home-builts, the members attend technical forums on various subjects of interest and usefulness to the homebuilder. The friendly contact with fellow members and enthusiasts lends an air of informality to the entire event which is seldom seen elsewhere. It is this fine spirit of cooperation which has brought such outstanding success to the organization in its short period of existence.

To hasten the development of an improved sport aircraft, EAA is sponsoring a Design Competition, the judging of which will be held at the 1960 Fly-In. Already many builders are at work in various parts of the U.S., and even a member in France has entered. From this Competition it is hoped that an aircraft design will emerge which will provide the answer to the incessant demand for a light sport plane within the reach and capabilities of the average enthusiast. There is every indication that some truly advanced designs will be offered for judging.

The future of private flying for the average enthusiast will be determined to a large extent by what he does to help himself. Through the Experimental Aircraft Association he learns his problems and responsibilities through active participation. That he can succeed is evidenced by the growing number of EAA members who have built and are flying their own aircraft. This experience can only result in a strengthened air-minded population who are a definite asset to the country.

## Why Not a Sailplane

(*Continued from page* 23)

Some ships like the old Darmstadt School designs can be built scale right off the plans. This brings up a good point. Where do you find sailplane three views?

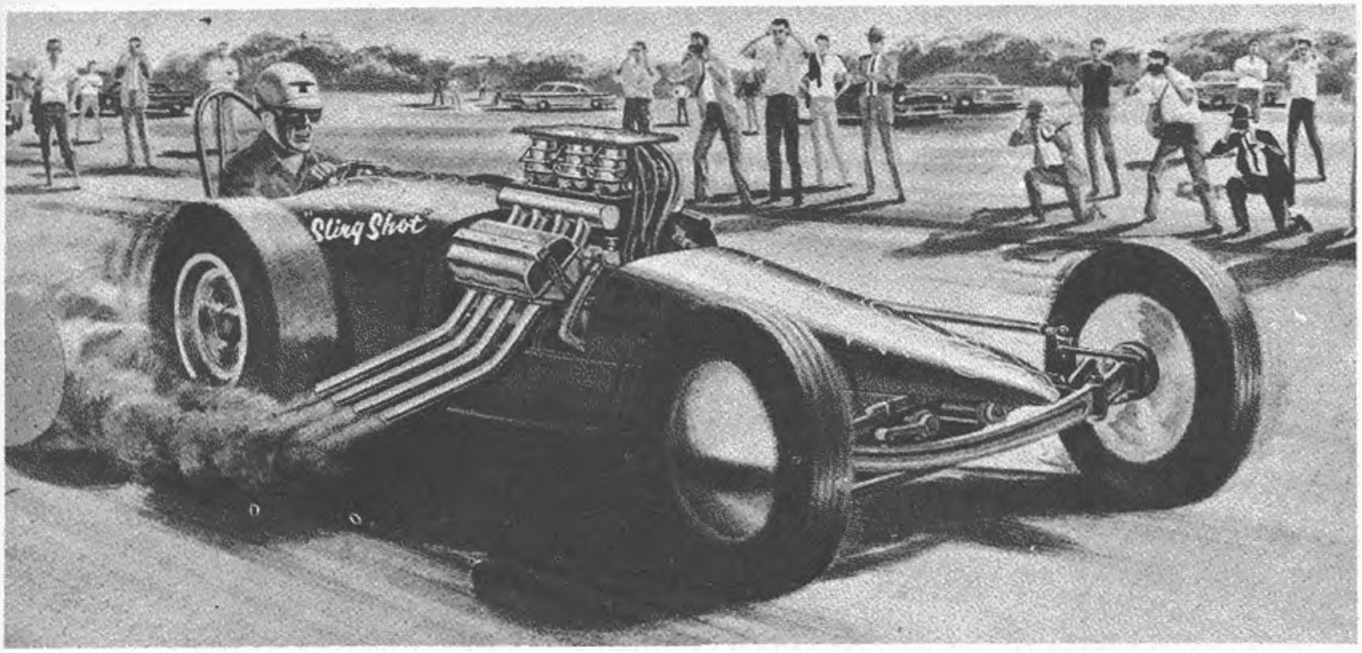
Many libraries have old glider books on the Aviation shelf which contain small three views. The best for old gliders is *Kronfeld On Gliding and Soaring*. The recent American ships can be had only by writing the designer or manufacturer and asking politely.

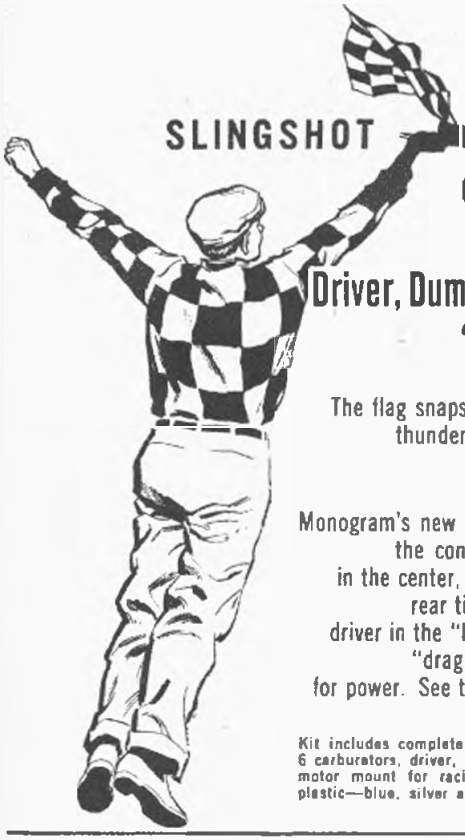
I like to make my towliners an inch to the foot scale. This seems small but the span of most sailplanes is 50 to 60 feet, and the ease in handling and economy is well worth sticking to this handy size.

One of the biggest challenges in working with models is their peculiar aerodynamics because of their low Reynolds

(*Continued on page* 46)

# NEW · Authentic-Scale Drag Strip Racer Model · Add it to Your Collection!!



SLINGSHOT

# DRAGSTER

## Driver, Dummy Chrysler Engine, 6 Carburetors, Drag "Slicks," Pin Stripe Decals "Drag Race" this Model—Power with Jetex 50B Unit or $CO_2$ Capsule

The flag snaps—then a blasting roar. It's a Dragster. It's away on a hot quarter-mile strip. The big engine thunders. The 6 carburetors hum. It betters 150 miles an hour, from a standing start, at the end of the run. Drag racing with cars built for the purpose (not converted stock cars) is a popular, fast growing man's-size sport.

Monogram's new Slingshot Dragster is an authentic drag strip racer, scaled from top-winning cars. It has all the conforming drag racer features—nose shell housing the fuel tank, big exposed engine mounted in the center, oversize exhausts, big squarish (drag slicks) rear tires, smaller, thin front wheels and tires, the driver in the "hot seat" at the extreme rear. Model can be "drag raced" using Jetex 50B unit or $CO_2$ capsule for power. See the Slingshot Dragster at your favorite store.

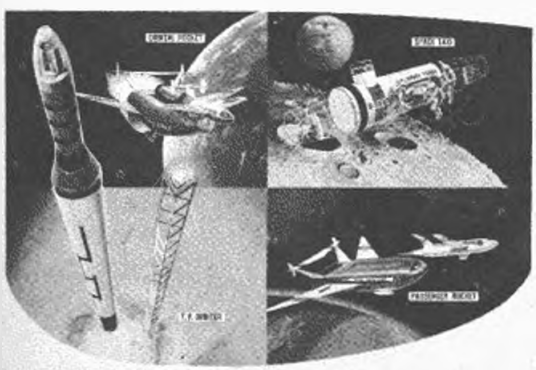
Kit includes complete Dragster with scale Chrysler engine and 6 carburetors, driver, pin stripe decorative decals and a special motor mount for racing the model. Molded in three colors plastic—blue, silver and black.

**98¢**

**Monogram**

Hobby Kits FOR FAMILY FUN

---



# NOW FOUR Willy Ley Space Models

## How many of these Exciting Models Have You Built?

Now at stores everywhere, four "Thrills in Space" models designed by Willy Ley, world famous space travel authority.

**SPACE TAXI**
Transport and work ship. Opening cargo door. Pilot and 3 figures in space suits. Terrestrial globe mounting and base. 9½ inches long. $1.29

**PASSENGER ROCKET**
Two separating stages, retractable landing gear, launching pad, 5 figures. For trans-oceanic service at 100 mile altitude. $1.49

**ORBITAL ROCKET**
Manned rocket for controlled orbital flight. 3 separating stages, landing gear, droppable fuel tanks, launching pad, 5 figures. $1.49

**TV ORBITER**
Television from outer space. 3 separating stages, television nose cone, launching pad, service tower, 3 figures. 12¾ in. high. $1.29

numbers. That is the number that denotes the quantity of air passing over the surfaces of the model. It depends on the airplane's size and speed. For the average model it is around 100,000 compared to a few million for a real glider. Not to get too technical, what this means is that you can't use the same aerodynamics for a model as for the big ships. The biggest and most important change that must be made is in the airfoil. The airfoil must be as thin as can be made without sacrificing the strength too much. A scale model that copied the thick airfoil of the real ship would give unacceptable performance, unless, turbulators were added, and this would ruin the scale effect. The thin airfoil that must be used is not very noticeably different from the real plane s wing section. Although the modern sailplanes use as thin a section they can get away with too, the laminar-flow airfoils they use are useless on a model where a turbulent flow over the wings is best. With the scale towliner the performance may sometimes be improved with a strip of thread along the wing or a series of fancy paint strips that will make bumps on the top surface of the wing.

Whether or not to use the scale stabilizer area is a matter that I leave to individual experimentation. I usually start with as close to scale as possible and enlarge if the ship is too unstable. The modern Nordic gliders use very small stabs and get away with it. Why not scale jobs too?

To get down to some actual construction problems let's start with the primary glider. The wing is actually the strongest member of this type ship; the fuselage is sewed to it with thread bracing. Just take needle and heavy thread, #6, and run it through the keel and wing spars, then back to the aft fuselage stations, sewing through them, and pull tight. While holding it tight and sighting for alignment, put a drop of cement on all the places where the thread runs through the wood structure. Be sure to gusset and wrap all the fuselage joints with silk, too. A pilot is very necessary to the structure!

For the more advanced models, more advanced construction must be used. A good example of a famous sailplane that is midway between the old and new is the Minimoa, designed by Wolf Hirth of Germany around 1935. This ship held most of the records in the 1930's and early '40s. After much experimentation I have found the strongest warp-free construction as follows:

Buy a block of balsa the size of the fuselage, as soft as you can find. This is important so look carefully. Then mark off the fuselage on it and either carve or slice it out on a bandsaw, carve and sand it to final shape the same as any solid balsa model. After the final fine sanding, draw a fine line along the top and bottom and split the block by slicing it with a sharp knife a little deeper each time until you can pull it apart. Next hollow the halves out with a gouging blade from about ⅛" near the tail, to ¼" at the center section, to ⅛" at the nose section. Cement the fuselage halves back together and the fuselage can be laid aside. I have made the entire fuselage to this stage in an hour.

The wing is made by picking two nice soft pieces of balsa the width and thickness of the leading edge plywood on the real ship, ¼x2" for the "Mini." Cut this to shape of the leading edge. There will be four pieces. Bevel in the dihedral at this point. The rib positions are marked on the leading and trailing edges. Run a rough metal saw into each mark to a depth of ⅛". Then cut a bunch of 1/16" rib blanks to exact length and roughly ¼" thick,

squeeze the ends of the ribs and push them into the leading edge and then into the trailing edge. Sight along the wing to line everything up and apply a drop of cement to each rib. When this is dry, sand the ribs and leading edge to shape with a rough, and then a finer, sanding block.

The wing joints are now covered with "Duratite" plastic wood. Smooth this into place with lacquer thinner so that the wing appears to have been made in one piece. The tail assembly is made similar to the wing. The wing is held in place by internal rubber bands. The fuselage above and forward of the wing is sliced off and cemented to the wing permanently and filleted with the plastic wood. The wings and tail are covered with yellow silk and clear doped and the wood parts are sprayed with white enamel over the usual six-coat filler-and-dope finish. Towing and flying are conventional, of course. Try a scale towliner soon for a new thrill in modeling!

## Super Sky Lancer

(*Continued from page* 21)

Wing is of ⅜" firm balsa. Cement ¾" square hard wood spar to 2" sheet in proper position. Notch ⅜" sheet to fit around spar and cement in place to build up remainder of wing. Cut to outline shape. Cut grooves for lead-outs. Carve and sand wing to shape. Cement wing in place. Add strips or blocks to inside of fuselage at wing junction. Fasten lead-outs to bellcrank. Slide lead-outs through grooves in wing and bolt down bellcrank. Solder nut in place.

Cut tail assembly from ⅛" hard balsa. Cement elevators to 1/8" x 3/16" hard wood spar. Sand to shape and add horn and hinges. Aluminum tubes as shown with 1/32" wire hinge pin make a hinge far superior to cloth. It is much easier to make pushrod in two pieces and bind with thin copper wire and solder than to try to bend it to correct length in one piece. Slide pushrod in place and cement stabilizer securely to fuselage, using lots of cement. A cement fillet in the inside should be added. Bind both pieces of pushrod with wire, align bellcrank and elevator, then solder. Attach landing gear. Use solder, lock nuts, or lots of cement to prevent nuts from loosening. Cement top to fuselage. Cement fin and dorsal fin in place then add rudder with ¼" offset. No offset is used on engine, and no weight is necessary on wing tip. Mount tail skid in place, then all ⅛" sheet fuselage bottom. Cement block to bottom of nose. Cement ¼" plywood to left side of engine mounts to dampen vibration. Use *Weldwood* glue and clamp. "Blind nuts" are ideal to hold engine. Cement balsa block to left side of nose. Hollow it out enough to mount engine in place; cut and hollow a block to fit right side of nose, then draw a line around back plate of spinner and remove engine. Carve and sand fuselage top and nose to shape. Finish off rest of fuselage with a long narrow sanding block.

Cowl cheeks may be carved from solid balsa, or easily formed from 1/16" sheet balsa, by soaking piece in water and carefully binding it to a carved block with rubber. It is very light and surprisingly strong when covered with fiberglass. Model cement may be used in place of resin very satisfactorily. Trim cowls to shape and cement in place. Generous "plastic balsa" fillets should be added to inside and out-

side of cowls. Cover cowls and nose with fiberglass. A coat of clear dope all over makes a good base for filler. Fill in and sand. Add pilot and canopy. By lashing canopy in place with a rubber band after trimming, apply clear dope around edge several times to form a good fillet—it's neater and holds better than cement. A bicycle spoke is suggested to hold cowl in place. A D.E. cutoff may be mounted to a plate and fastened to rear of engine. A short "third line" from the down lead-out is used as a trip.

A one bladed prop is sure to cause comment—in spite of the convincing results. All types and sizes were tested. Speed and mileage were both improved with a single blade 10-8 cut down to 9⅜" diameter. Prop breakage is greatly reduced—a big factor in a race. The blade usually stops out of the way for those occasional rough refueling stops (avoiding another ship or a pit crew that shouldn't be there). An 8-8 two blader has been our second choice. There is *no* substitute for safety and a poorly made one blader can be dangerous. If you decide to make one, bend a 1/32 thick brass or steel strap to a "U" shape to fit around prop and drill hole for shaft. Use soldering paste orflux and "tin" the surface for a good bond. Assemble prop and "u" strap with shaft through hole. Use adhesive tape to close off opening on one side. Now carefully fill with melted solder. When cool remove tape and check to see that weight is bonded to strap. File excess weight off to balance blade and to fit in spinner. A simple balancing rig can be made by slipping a snug fitting metal rod that has both ends sharply pointed through the prop. Hold lightly between thumb and forefinger. It is surprisingly accurate and handy for field checks.

## I Collect Old Engines

(*Continued from page* 19)

advertised the two Elf Singles in an accompanying photograph for $45, each. To his amazement, he received two offers.

On the other hand, we recently heard of a fellow who practically "stole" a Morton M-5, in running condition, for ten dollars. It was easily worth six times that amount. Such bargains are rare, but they do happen. In the past year, the author has purchased, from dealers, a brand new Arden .099 and .199. Both were still "in the box" and were picked up for a total of $8.00

Since most vintage motors haven't been seen on the old flying field for many a moon, the problem of identification enters in. We find the best way to become familiar with these old types is to study the engine adverts in old copies of Model Airplane News. If you can beg, borrow or buy a 1936–1941 issue, you'll have an invaluable reference aid. The April, 1938 issue, for example, has photos and descriptions of over twenty, including the Bunch Warrior, Pee Wee, Precision 820, Bat, Condor Midget, Trojan and the ever-familiar Tlush Super Ace. Even when you can recognize everything from a Meteor to a Mite Diesel, though, you can still get thrown for an occasional loss because of the large numbers of "home built" jobs that appeared in the '30s.

Now, how do you go about finding motors which have been out of circulation some twenty years? It's really not too difficult, providing you look in the right places. Much more fruitful than Grandma's attic are the older hobby shops, particularly those that accept used motors in trade. Many dealers give a dollar or so on used engines and they can be picked up for very reasonable prices. Occasionally, really rare motors show up along with the usual wornout ½A's. Recently, we followed several leads to a dealer who was supposed to have a "bushel basket full of junk motors." This turned out to be correct but, unfortunately, the entire works had been sold to another collector for $5.00. The lucky purchaser was Clifford McMillan, of Akron, who acquired among the "junk", a James .60, Condor Midget, M&M, Ranger "B", Ajax and an Elf Single. The dealer told me that Cliff looked rather pleased when the motors were dumped on the counter. I'll bet he was!

Another excellent source is the "retired" model builder who has long since flicked his last Flo Torque. Some of these ex-modelers are loathe to part with an old motor for sentimental reasons, but just as many others have all but forgotten that they have a few stashed away in the cellar.

Old engines can also be obtained from trade-in marts that specialize in selling used ones. Generally, you will pay slightly more, but there is an advantage in that they usually guarantee the stated condition of their motors. Collectors utilize many other sources in addition to those already mentioned, including, trading with other collectors, placing small "want" ads in newspapers and model mags, and leaving

# THOUSANDS OF MAIL ORDER CUSTOMERS PROCLAIM...

# LEE'S

## LEE'S

THE NAME THAT MEANS THE BEST IN QUALITY AT LOWEST COST, WHEN BUYING . . . . . FUEL, DOPES AND CEMENT

*ALL OUR FINISHING PRODUCTS ARE HOT FUEL-PROOF


LEE'S FUEL FACTS

- ECONOMICAL
- FILTERED CLEAN
- CHEMICALLY PURE
- SMOOTH RUNNING
- RELIABLE STARTING
- PROPERLY PROPORTIONED


Lee's dope flows smooth, resists humidity, produces tough high lustre finish with minimum applications. Costs you less too . . . .

Colors: Insignia White, Silver, Bright Orange, Insignia Red, Grey, Insignia Blue, Green, Light Blue, Black, Cub Yellow, Fokker Red.


For a grip of steel Lee's Cement has it over all the others, and it's most economical too. Handy wide neck jar, proves its worth for all around building needs. Available in pints also.


Seals and fills to perfection.

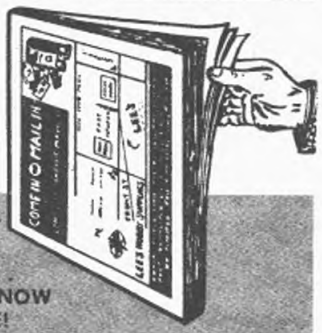

Fills cracks and makes fillets with ease, can be thinned with LEE'S Thinner. Bonds wood, silk and silkspan: sands easily.


A few drops will remove all oil and dirt . . . . does not affect dope or paint.

## It's Here! 1959 LEE'S CATALOGUE

COMPLETE LISTINGS

- PLANES
- BOATS
- ACCESSORIES
- ENGINE PARTS AND PRICE LIST




IF YOU DON'T HAVE THIS CATALOGUE . . . YOU DON'T KNOW WHAT'S MADE!

ONLY **50c** REFUNDABLE ON FIRST $10.00 PURCHASE!

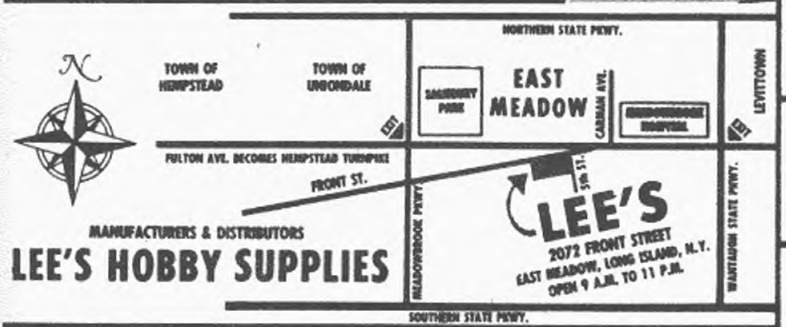
All products are available at a Lee's approved dealer agency or directly from us. Send us your dealer's name and location with your order so that we might contact him.

## LEE'S FINE PRODUCTS

| | 4 Oz. | Pint | Qt. | Gal. |
|---|---|---|---|---|
| • LEE'S GLOW FUEL | | .79 | 1.40 | 4.95 |
| • LEE'S CLEAR DOPE | .40 | 1.20 | 2.19 | 8.50 |
| • LEE'S COLORED DOPE | .45 | 1.50 | 2.89 | 10.95 |
| • LEE'S CEMENT | .50 | 1.79 | 3.19 | 10.98 |
| • LEE'S GRAIN FILLER | .40 | 1.20 | 2.19 | 8.50 |
| • LEE'S BALSA PUTTY | .79 | 2.98 | | |
| • LEE'S KWIK KLEEN | | .59 | | |
| • LEE'S THINNER | .35 | .90 | 1.65 | 5.25 |

DEALER INQUIRIES INVITED, STANDARD DISCOUNTS

## COME IN OR MAIL IN to LONG ISLAND'S LARGEST HOBBY CENTER




MANUFACTURERS & DISTRIBUTORS

## LEE'S HOBBY SUPPLIES

*ORDERS FILLED SAME DAY RECEIVED FROM THE WORLD'S MOST COMPLETE STOCK! TRY US - PLACE AN ORDER TODAY*

NO ADDED CHARGES FOR POSTAGE OR HANDLING

## By Popular Demand

Sensational GLUE GUN

NON-CLOGGING

ONLY 98¢ WITH STORAGE UNIT

TERRIFIC COMBINATION OFFER!

Here's What You Get

| | |
|---|---|
| FULL PINT OF CEMENT | $1.79 |
| GLUE GUN & DISPENSER | .98 |
| THREE EXTRA NOZZLES | .25 |
| TOTAL | $3.02 |

YOU PAY ONLY!

**TWO DOLLARS**

**FOAM RUBBER** 35c

- ½" THICK
- 36 SQ. IN.
- SMOOTH ONE SIDE

**5 COLOR WIRE** 25 FT. LONG MULTI STRANDED

ONLY 60¢

**AT LAST!** 1-INCH SHED-RESISTANT BRUSH

ONLY $1.25

**BRUSHES** SET OF THREE

ONLY $1.25 SHED-RESISTANT

**2072 FRONT ST., EAST MEADOW, L. I., N. Y.**

signs in local hobby shops. All that it requires is a little imagination and a great deal of persistence—attributes which most modelers have to begin with.

A question that often dogs the budding collector is, "How can I tell whether this motor is any good?" When examining an old motor, check first for missing parts because original needle-valves, drive-washers, tanks and timers are extremely difficult to replace. Next, test the compression by turning it over—the crankshaft, that is. Actually, this is not always an infallible test since many of these old motors may be "frozen" with congealed oil or the gaskets may be broken. The best single indicator of an engine's condition is its external appearance. Note carefully the screw heads and motor mount holes. Are they fairly clean? Is there evidence of excessive manhandling in the form of battered crankshaft threads or plier marks on the cylinder? Dirt and grime mean absolutely nothing and should not deter you from purchasing an engine. Gentle rocking of the crankshaft can uncover excessive wear in both the connecting rod and main bearing.

Sometimes it's a good idea to purchase a motor that's in fairly sad shape, especially if it's a rare one. Chances are pretty good that you can locate another of the same type, and between the two of them, put together one good engine. We've done this several times with Browns, for instance.

*Other Motor Collections:* Some collectors specialize in foreign motors. Besides the United States, engines are or have been produced in some 17 other countries. Japan, alone, has had over 40 different varieties. Collectors are drawn to foreign motors for many of the same reasons people buy foreign cars. They're different and some of them possess remarkably fine engineering features. Foreign motors can be purchased from their United States distributors or directly from the country concerned if there is no stateside representative. Since good American stunt motors retail in some countries for as much as $25.00, trades can often be made with pen pals and dealers, to the collectors' decided advantage.

Some collections are made up of motors having different types of porting and induction. Examples of the side-port type are the older Ohlssons and Browns, while the disc-valve is represented by the Hornet, Bantam and Dooling. The Supertigre G-24, Contestor and Atwood Champion are of the drum-valve type and the M&M, Thermal Hopper and Taifun Hurrikan typify those with reed-valve induction. There are even several variations of the familiar crankshaft rotary valve, including the Arden and Bullet (bottom) as well as the R.B. Special and Cannon (side). We haven't even begun to scratch the surface of the possibilities in this category.

Other forms of specialization are collecting within certain displacement limits and latching on to motors that are unique because of the use of color anodizing or enameling. Examples of the latter category are the Edco Sky Devil, Orwick .64, Drone Diesel, Bullet, McCoy Red Heads, etc. One collector is evidently trying to corner the market on Browns. He has 15 of them!

Next month we'll explore some very simple, but effective, methods of restoring old motors to "new" condition, and suggest ways to provide for their maintenance and subsequent storage or display. Meanwhile—it seems there's a fellow in town who has a practically new Barker .60 and he might be willing to—

*(To be continued)*

BRAND NEW!

JUST OUT!

Strongest Props Made!

**NOW!**

## A Complete Line of TOP FLITE

# NYLON PROPS

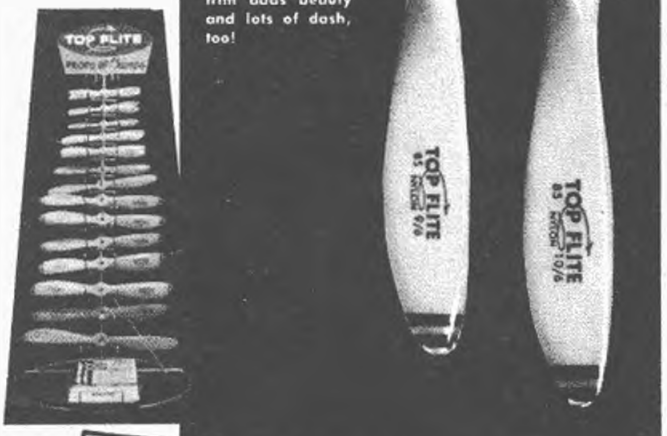
### that are indestructible under normal use!

These marvelous props were perfected after years of intensive work in design and development! They are the strongest props made! Field tests prove they will outlast any other kind almost 50 to 1, reducing the cost per flight to the absolute minimum. They are flexible, heat-proof, fuel-proof and have a super high gloss finish. They deliver the best all around performance of any prop!

| SIZE | EACH | SIZE | EACH |
|---|---|---|---|
| 5¼-3 | 25c | 8-4 New | 60c |
| 5¼-4 | 25c | 8-6 New | 60c |
| 6 -3 | 25c | 9-4 New | 85c |
| 6 -4 | 25c | 9-6 | 85c |
| 7 -4 New | 40c | 10-3½ New | 85c |
| 7 -6 New | 40c | 10-6 | 85c |
| | | 11-4 New | 1.00 |

**EXCLUSIVE SAFETY TIP STRIPES!**

The Safety Tip Stripes in contrasting bright red indicate the extreme tip of the prop to help prevent accidents. And this trim adds beauty and lots of dash, too!







## Our world famous wood props

New Sizes for the .020 Engine

**TOP FLITES:** 4½-3, 4½-4, 4½-5
**POWER PROPS:** 4½-6, 4½-7 — **15c** each

**TOP FLITES:** 6-3, 6-4, 6-5
**POWER PROPS:** 5¼-3, 5¼-4, 5¼-5, 5¼-6, 6-3, 6-4, 6-5, 6-6 — **20c** each


**TOP FLITES:** 7-3, 7-4, 7-6, 8-3½, 8-5, 8-6, 8-8, 9-4, 9-5, 9-6, 9-7, 9-8, 10-3½, 10-5, 10-6, 10-8
**POWER PROPS:** 7-4, 7-6, 7-8, 7-9, 7-10½, 8-4, 8-5, 8-6, 8-8, 8-9, 8-10½, 9-6, 9-8, 9-9, 9-10½, 10-6, 10-8 — **25c** each

**TOP FLITES R/C:** 11-3, 11-4, 11-5, 11-6, 11-8, 12-3, 12-4, 12-5, 12-8
**POWER PROPS R/C:** 11-3, 11-4, 11-5, 11-6, 11-8, 12-3, 12-4, 12-6, 12-8 — **35c** each

**TOP FLITES R/C:** 13-5½, 14-3, 14-4, 14-6 — **40c** each

TOP FLITES and POWERPROPS

## the PROPS OF CHAMPS

***deliver the MOST THRUST from ANY engine . . . more flights per prop, too!***

All of these props are designed with highly efficient airfoil and perfect pitch to give the most thrust from any engine. Every one is precision made, molded to round leading edges, thin trailing edges, and perfectly balanced to give maximum aerodynamic efficiency.

There are 84 precision engineered props of nylon, wood in the size and pitch best suited to your engine and plane in our line . . . the most complete and most widely used in the entire industry!

There's a TOP FLITE or POWER PROP for EVERY flying need:

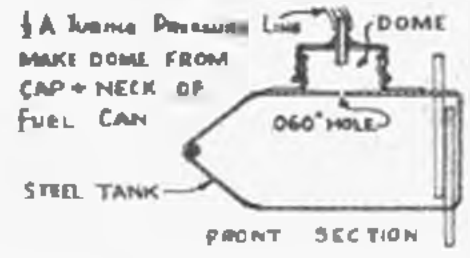
- Radio Control
- Free Flight
- Combat
- Sport Flying
- Speed
- Stunt
- Payload
- Scale

- *get a new, up-to-date FREE PROP CHART at your hobby headquarters or write us direct.*
- *get these PROPS OF CHAMPS at your favorite hobby store.*
- *made by the makers of "Duralume" Aluminum-Bonded-To-Balsa Kits.*

TOP FLITE

**TOP FLITE MODELS INC.**

2635 S. WABASH AVE.—CHICAGO 16, ILL.




SKETCH No. 1 DOME PRESSURE TANK



## 1958 Wakefield Winner

(*Continued from page* 16)

as against the slower-climbing No. 1 model's more docile nine strands, it was soon trimmed well enough to finish the contest with three successive maxes.

Bond Baker is from Queensland, Australia and has been a frequent winner in Australian Wakefield and free-flight power contests for the past four or five years. Visiting Europe in 1955, he competed in the Wakefield and FAI Power that year in Germany and then stayed on to try his luck in the 1956 World Championships.

We follow now with Bond's own instructions and comments on building Woomera.

—P. G. F. C.

### CONSTRUCTION

*Wing and Stabilizer:* Make ribs R1 by sandwich method from quarter-grain medium 1/32 sheet. Center and outer dihedral break ribs are 1/16. Trace and cut out tip ribs in pairs. Trailing edge is carved and sanded from 1⅛ x ⅜ medium balsa. Cut to exact lengths and notch for ribs. Tip trailing edges are traced from plan and cut from ⅜ medium balsa, except W3 which is cut from 3/16. Do not carve to section until after assembly.

Lay waxed paper over plan and pin down inner panel leading edge (medium-hard 3/16 sq. balsa). Pin down trailing edge, packed up to the correct angle. The method of packing, which I have found most satisfactory, is to take a sheet of ⅜ balsa and measure off 1-3/16 at one end. Chamfer down to an accurate wedge shape. The end is then cut off at a distance of 1⅛, thus making the resulting wedge about 7/64 deep. Wedge is then cut into 26 sections, one of which is placed under trailing edge at each rib position.

Insert R1 ribs, but not center or outer dihedral ribs, and fit top spar of 1/8 x 1/16 hard balsa. Remove from plan when dry and insert bottom spar of 1/8 x 1/16 medium balsa. Take pieces W1, W2 and W3, join together and pin down flat on plan. Remove when dry, sand to correspond with plan and cut notches for ribs. Pin down again to plan with W3 flat and W1 packed up at the inner edge with one of the wedges used for the inner panels. Form leading edge by laminating three strips of medium 3/16 x 1/16 balsa. Cement firmly to W3. Insert ribs and top spar of 1/8 x 1/16 medium balsa. Remove from plan when thoroughly dry and insert bottom spar of 1/8 x 1/16 medium balsa tapered to 1/16 sq. at tip. Sand trailing edge to section. Do not sand tip.

Join outer to inner section, blocking up tip 1⅝ in. Place dihedral keepers of 1/16 ply where indicated and fit dihedral break rib. Join inner panels, blocking up outer dihedral break to 1⅝ in. Cement in dihedral keepers and center rib. Sand leading edge to section shown in rib profiles on plan. Fit leading edge sheeting of pre-sanded 1/32 sheet balsa, inner panels first. Sand leading edge and tip to shape.

Stabilizer construction is similar to inner wing panels except that there is no lower spar. The two fins, of 1/16 quarter-grain sheet, are offset 1/16 to the right.

*Fuselage:* Make up mold or form of hardwood (not balsa) to the shape and section shown by the inner, broken line on plan. Mark center line on front and rear of form. At positions shown for cabane struts, cut two grooves around the form, using hacksaw blade or similar. These

grooves should be deep and wide enough to take easily wire for struts, which are formed so that they fit snugly in grooves, conforming exactly to contour of mold. Do not cut struts to length. Remove struts.

Take a sheet of straight-grained 1/16 balsa, 3 in. wide and 42 in. long and taper as shown in sketch on plan. Soak sheet in hot water and wrap around top half of mold, binding in place with strip rubber. Leave until thoroughly dry. Remove rubber. Trim ends. Pin straight-edged sheet of balsa along center line and cut off excess. Do same with other side. Repeat whole process for bottom half. It is helpful to cut shells about 1/64 oversize, so that, when both are made, one may strap both together to mold and wet again with hot water. This is not absolutely essential, but helps to get a good thin glue-line.

Carefully cover the inside of each shell with tissue, using banana-oil or *non-shrinking* dope. Make front bulkhead—i.e. part into which noseblock fits—from hard 3/16 balsa sandwiched between 1/32 ply. Shape and carefully cut out center piece with fretsaw. This piece is covered on cut faces with thin celluloid and is retained for rear of noseblock. Take mold and, at position of motor peg reinforcements, make two parallel, ¼ in. deep cuts on each side. Remove wood between cuts and lightly glue in pieces of hard ¼ balsa. Sand to contour and remove.

Take top shell and carefully cement in front bulkhead. Bore holes in correct positions and fit cabane struts, using *Pliobond*. Make four small squares of 1/16 plv, slotted on one side. Cement these inside shell where cabane struts come through. Cement rear peg reinforcements in place, leaving half protruding. Cut two strips of 3/16 x 1/32 hard balsa and sand to a very slight oval section so that they conform to inside contour of fuselage. Cement these down each edge of upper shell, so that half the width of strip protrudes below it to form a cementing surface for bottom shell. Place bottom shell in position and press onto cabane wires to mark position. Remove shell and run several layers of *Pliobond* around marks. also put several layers on wires. Run slow-drying cement across front bulkhead, along edges and on rear peg reinforcements. Place bottom shell in position, press in edges and bind with rubber strip.

Shape soft block for rear end and cement in place. Make stabilizer platform from medium 1/16 balsa and cement in position with grain across fuselage, putting a small D/T stop of 3/16 x 1/8 hard balsa at front. Cut rear D/T peg from 1/16 ply as shown, slot rear block and cement in place. Small fairing strips will be necessary under front of stabilizer platform. Sand to shape. Make stabilizer band peg of 1/16 round bamboo and cement.

Sand whole of outside of fuselage smooth and give two coats of dope mixed with cement and thinners. Cover with silk. Give two coats of talc and dope, sanding between each. Bend cabane struts to correct length and cut off excess. Cut two ⅛ dowels for wing mounts. Bind and cement to cabane struts. Give fuselage two coats of white *Dulux*.

*Prop Assembly:* Mark out prop blank of medium-soft balsa and carve to section as shown. Cut root hinge from tinplate and make up as shown. Cement firmly to blade. Cover blade with silk. Give one coat of talc and dope, then three coats of thin *Dulux* rubbed down between each. Turn or carve a hardwood form to the shape shown for the inside of the spinner.

Make spinner over form as you would fiberglass, but using nylon (three layers) fixed in place with a mixture of *Pliobond*, balsa cement and thinners. Leave on form for as long as possible before removing.

Make up noseblock, using quarter-inch plywood and the cut-out from the front bulkhead. Drill hole to take threaded brass bush. Bend winding-loop and shaft from 1/16 piano wire. Bind winding shaft to main shaft with single-strand control-line wire and solder. Slide small washer up to junction and solder in position. Make hub from fiber and drill through center to take 1/16 I.D. (inside diameter) brass tube. Solder thin brass washer to tubing at back of hub and file flat. Let other end of tubing stand proud of hub by 3/32 in. Press another washer on and solder in place. Drill hole in hub to take brass tubing for driving dog of shaft. This tubing must be large enough to make a loose fit for the driving dog. Bell out at rear of hub and file flat. Make a square washer of thin brass and solder to front. File flat. Fit spring and solder to washer at junction of winding and main shafts. Spring must be just long enough to give a clearance of about .004 to .006 in. to the driving dog. This gives a freewheeling action for winding.

Bend hinge and counterweight wire from 1/16 to shape shown. Cut groove in back of fiber hub to take wire, then glue and sew in position with control-line wire as shown. Fit spinner backplate of 1/16 ply. Cut out center to take one of the ball race washers. Brass bush in noseblock will also have to be recessed slightly, otherwise gap between spinner and noseblock will be excessive.

Assemble all hub, noseblock and shaft parts. Bend rubber hook at rear of shaft. This hook should be at right-angles to driving dog. Before bending pawl to engage propeller stop, slip on length of heavy polythene tubing. Make blade retainer from brass or dural. Fit blade, screw retainer to hub and make counterweight. Fit prop stop so that blade folds on left side of fuselage. Cement on spinner.

*Comment:* The center of gravity is at present at 50 percent. This could be moved back to 60 percent with beneficial results. Instead of covering inside of fuselage shells with tissue, use silk as far as the rear peg and tissue from there back. Make counter-weight wire longer. This will mean a smaller weight will be needed, so C.G. will be moved back. If this does not appeal, then the cabane struts may be moved forward instead. Trailing edge of the stabilizer, or leading edge of the wing, will have to be lowered in either case. Fuselage construction is unorthodox, but, in my opinion, worth it, as it is immensely strong and takes a high-gloss finish—always an aid to visibility in a wind. The fuselage is strong enough to withstand a full turns motor break. This was determined empirically at Cranfield! The plane climbs and glides to the right, displaying no more cantankerosity than is usual when one is trimming a new model.

## Radio Control News

(*Continued from page* 25)

experiments etc., let your club paper know about it. Many times the local club paper editors are hard pressed to find out what is going on in their own backyard. We also learn that Astro-Hogs have taken over in the North Carolina area. In closing out the RC/NC group we also want to report that for an RC group this is the eatin'est bunch we've heard of. They're always having big dinners, Southern fried chicken, etc.

(*Continued on page* 56)

# Why There is More Demand for FRANCISCO FUELS

**THAN ANY OTHER!**


THE **ONLY** **FUEL** with volatane control!

THE **ONLY** **FUEL** processed to avoid spoilage!

THE **ONLY** **FUEL** which is truly acclimatized!

THE **ONLY** **FUEL** based on 30 years' experience!

## POWER MIST "HI-THRUST" Is More Than a Fuel!

NOT ONLY does it give you everything you'd hope for in a contest glow fuel...

BUT, IN ADDITION it actually "nourishes" metal, piston, cylinder walls and bearings with three premium quality, "Degummed Processed" Castor Oils... reducing wear to ⅓ normal... greatly prolonging engine life.

16 Purity Tested Secret Formula Chemicals are used to assure most complete combustion... so essential for winning performance in exhaust control engines... and to prevent rust and acid destruction.

NO WONDER POWER-MIST "HI-THRUST" is the world's most wanted, most respected Contest Fuel... with over 2,000,000 gallons having proven by demonstrated merit that quality and "know how" are essential for the continuance of a product. See your hobby dealer.

francisco Racing Fuel

**FRANCISCO LABORATORIES**

3015 Glendale Boulevard, Los Angeles 39, California

### GET ON OUR MAILING LIST!

Mail coupon attached and I will include you on our mailing list of bulletins giving latest data and information on fuel, performance records, etc. IF YOU ALSO INCLUDE 25¢ (coin or stamps) we'll send a kit of literature about FUELS and 6 types of degummed-treated Castor Oils, our booklet "CONTEST FUEL at it's Best," and other helpful information.

FRANCISCO LABORATORIES
3015 Glendale Blvd., Los Angeles 39, Cal.

☐ Put me on your free mailing list.

☐ Enclosed find 25¢ for Literature Kit and one year's mailing information.

Name _____

Address _____

City _____ Zone ____ State _____

For those of you who don't feel you can make it all the way to California for the NATS, the Lakeland RC Club, Waukesha, Wis. invites you to their 6th Annual two-day contest on July 18 and 19. Events will include Rudder Only, Intermediate, Multi, Pylon and Scale with no age breakdown. Saturday night will feature a B & B or buffet and bull session and good RC movies. Elimination flying will be done Saturday and Sunday morning with the finals flying and trophy and prize presentations on Sunday afternoon. Motel accommodations have been made available. For further information on the contest and the supplying of RC films contact Mr. Bill Deffner, CD, % The Hobby Horse, River Park Center, Waukesha, Wis.

• • •

The Forest City Flyers are holding their 6th Annual International RC Contest on June 20 and 21, Kipp's Lane, London, Ontario, Can. Events will include Rudder Only, Intermediate, Multi and a 'Perilous' Pylon Race. The less experienced flier will have just as much of a chance at the big prizes as the expert. This is one of the top contests in the east and this year it is said to be even bigger and better. For additional information contact Mr. G. W. Rodgers, Forest City Flyers, 184 Brampton Road, London, Ontario, Can.

• • •

The Syracuse Sky Knights annual contest, AMA sanctioned, will be held June 28. Registration starts at 8 am and flying will continue until 5 pm. Usual AMA rules and plenty of good prizes. Don't forget their fabulous Hobo-Meet, August 15 and 16, with flying from early dawn until late dusk. The flying site for these events is in the vicinity of Manlius, N.Y. Write Bill Kenyon, R.D. #2, Manlius, N.Y. Bill reports plenty of activity in his area with Bramco 8 channel and Marcy Tone being the favored equipment. Two 60" delta designs with 35's are said to look good and you'll probably see them operational on June 28.

• • •

In conjunction with Pittsburgh's Bicentennial celebration, the Greater Pittsburgh Aero RC Society has planned a 'AA' sanctioned meet for August 23rd. The meet will be held at Hillman's Model Airport, off Rt. 22 on the way to Burgerstown. This will be the 4th Annual ARCS contest and everyone in the Pittsburgh area, especially, is invited to attend. Write to Ralph Pennetti, 3918 Brandon Road, Pittsburgh 12, Pa.

• • •

## TECHNICAL TOPICS

Mr. J. C. Madsen, 4578 E. White Avenue, Fresno 2, Calif. studied the two control independent system shown in the March issue of MAN and then came up with a system which eliminates receiver #2. The circuit is shown in Fig. 1. An SN escapement is substituted for receiver #2 and it in turn operates a SPDT micro switch on the third position of either servo. If rudder servo is pulsed to third position, switch changes servo batteries to elevator servo. A quick blip, as explained in the March MAN, could be used on rudder servo for engine control with another quick blip on elevator servo for flaps, etc.

• • •

With more S/S fans being converted from all parts of the country, Mr. Bill Heger, 1107 N. Garfield, Peoria, Ill. shows his method (Fig. 2) for differential elevator control. He gets about 15 degrees down and 40 degrees up elevator. This is used on a LiveWire Trainer and the principle applies as long as the elevator and stabilizer are mounted *below* the torque rod. If mounted above, action is reversed.

• • •

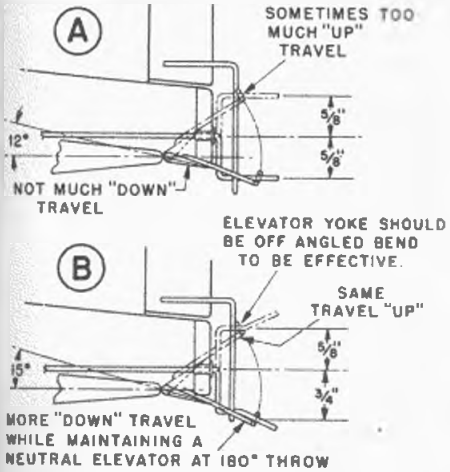
For the past few months we've been reporting doings in the superhet field. The Central Jersey Radio Control Club ran an interesting scoop in their Feedback paper. Transistors which have been found useful for audio amplification and IF work are the GE 2N192 ($1.90) and the RCA 2N217 ($1.70). Although some of the less expensive transistors, such as the Raytheon CK-722 and GE 2N107 might be used, these units are rejects from higher quality levels and therefore you are uncertain of the gain. It is often wiser to pay a little more for the grade which gives you a minimun gain figure. Otherwise, you'll have to go through a number of CK-722's and similar units until you find the right one. In the RF section, local oscillator and mixer, the Philco AO-1 ($1.90) is generally a good choice with the Philco SB-100 ($3.90) and the SB101 ($3.45) better suited for more critical applications, such as the TR-4.5. Here again, the AO-1 will work fine if you are able to select the right unit. For RF outputs of more than a few milliwatts, the Philco 2N499 ($8.25), rated at 75 mw, would be a good choice. It is the price of the correct transistor that prevents transmitters from being transistorized for general use. This paper highly recommends that transistors be placed in sockets and not soldered directly into the circuit. Sockets are inexpensive, some transistors are not. Also, sockets allow removal of the transistor for trouble shooting and test purposes.

The CJRCC group was very fortunate in having Mr. R. W. Ketchledge of the Bell Telephone Laboratories describe a selective RC receiver which he developed. The receiver has sensitivity equal to or better than present super-regen jobs and 10kc selectivity is no problem to obtain. It was also pointed out that in addition to the six frequencies we have for RC work there are 22 other frequencies in the band, separated by 10kc. Mr. Ketchledge's receiver employed a crystal oscillator, diode mixer and low frequency amplifier. He is also working on a proportional control for this receiver.

## NEW ITEMS

Servicemen and model builders located in remote areas have been doing business with America's Hobby Center, Inc., 146-148 West 22nd Street, N.Y. for a long time. However, very few know that AHC can also supply you with practically any commercially produced receiver, transmitter or actuator. In addition, they have a large supply of component parts and other RC accessories, including some of the hard-to-get items. Some of the unusual items are machine screws down to size

FIG. 2



00-90, all sizes of brass and aluminum tubing, rod and threaded rod and brass and aluminum sheet. In the RC plane area they have kits for 45 planes, including the famous 90" Super Buccaneer. Get their Giant Hobby Catalog and see for yourself.

• • •

Wireformer, marketed by the Vinkemulder Mfg. Co., 917 Princeton Blvd., Grand Rapids, Mich.: This $2.98 gadget will *not* cut piano wire but it will cut most other type wires up to 5/32" diameter. On forming, it will handle up to ¼" diameter piano wire to a 3/32" radius (Bend a 3/16" diameter loop). If you make a mistake, the Wireformer will straighten the wire so you can start over again. Looks like a mighty handy gadget for the RC builder and the general modeler. Nothing wrecks a pair of good pliers like trying to bend a ¼" piano wire.

Price increases are in effect on the CG VO cells as follows: VO-250 now $2.30 and the VO-500 now $2.50. This is still a good deal for the price, although other manufacturers are also coming out with nickle-cadmium cells. For example, Eveready's (Full line soon—Editor) AA pencell type and size.

• • •

Badaco (Shreveport, La.) has a new 8-channel receiver and transmitter for $99.50 each. Receiver, the '800', is completely transistorized, operates from 30 volts, idles at about 1.75ma and is housed in a spot-welded aluminum case. Range is said to be out of sight. The hand held transmitter provides simultaneous operation, has a neon indicator to tell when battery voltage is too low, tone voltages are regulated and the 4-tube circuit conforms to the new FCC regulations.

• • •

Good news from the GEM relay manufacturer in that the contact points on all GEMS are now a silver-paladium alloy instead of straight silver. We mentioned the merits of paladium during the writeups of the duration attempt. With the higher currents being drawn by actuators and the high voltage peaks reflected across the relay points, a considerable amount of heat is generated for a small fraction of time. Heat and arcing causes fusing or pitting of the points and the only real solution is to completely filter out the arcing or use a higher melting point contact material. This new alloy should help considerably and also aid towards decreasing or eliminating oxidation of the points due to corrosive atmospheres. There is no increase in price on the new GEMS.

• • •

BRAMCO has moved into new quarters, 4501 Belvidere Avenue, Detroit 14, Mich. and now is in a position to eliminate waiting for shipment of equipment. Bramco will have a superhet on the market as soon as it is fully field tested, probably late this summer.

• • •

ACE Radio Control, Higginsville, Mo. announces that the Marcy-Tone system will be available for twin simultaneous operation. Said to be capable of very high pulse rates, the new system can be operated on two channels by the conventional push button technique, or as a dual proportional affair.

• • •

Grapevine has it that CG Electronic's new multi superhet will be ten-channel, entirely new, with matching transmitter. The old 30v "eights" will be marketed soon by another firm at about $120 for x-mitter and receiver together! Some idea of the probable "ten" may be had from a

(*Continued on page 61*)

# NOW- a complete selection of HAWK KITS for 98c

CORPORAL MISSILE
No. 508 ..... 98c

VANGUARD SATELLITE
No. 515 ... 98c

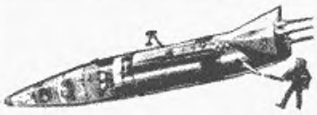
F-84G THUNDERJET
No. 505 ..... 98c

BANSHEE
No. 501 98c

CONTINENTAL VISCOUNT
No. 506 .. 98c

F-104 STARFIGHTER
No. 504 ..... 98c

U.S. NAVY TV2
No. 512 ..... 98c



ATLAS SPACE STATION
No. 513 ..... 98c

LOCKHEED T33
No. 509 ..... 98c

ATOMIC AIRPLANE
No. 514 ..... 98c

B.O.A.C.
COMET IV No. 507 .. 98c

CAPITAL VISCOUNT
No. 503 ..... 98c

hawk MODEL CO., 4600 North Olcott Ave. Chicago 31, Illinois

Send 10c for full color catalog on other fine HAWK MODELS

# WYLAM PLANS

## EIGHT 14 x 20 IN. PLATES TO EACH SET!

For the first time in sets—YOU asked for them! Now available!

Set = W-1
- SOPWITH CAMEL — Famed WW I English pursuit
- WRIGHT MODEL A — A true pioneer—a gem!
- WRIGHT MODEL B — Another collector's item
- SE-5A — WW I pursuit—a favorite

Set = W-2
- SPAD S-XIII C.1 — Renowned WW I French pursuit
- CURTISS MODEL A — A competitor of the Wrights
- SPAD S-VII — Great French WW I pursuit
- WRIGHT FLIER — Man's first flyable plane

Set = W-3
- CURTISS P-1 HAWKS — Glamorous Army fighters
- F11C-2 GOSHAWK — Navy carrier fighter
- P-6E HAWK — Greatest of all the Hawks!

Set = W-4
- REPUBLIC P-47D — The wonderful Thunderbolt
- SPITFIRE 2 — Battle of Britain hero
- MESSERSCHMITT Me-109J — WW 2 German fighter
- CURTISS P-40D — American WW 2 Warbird

For over 20 years, William Wylam has been an acknowledged master of the detailed drawings of historically famous airplanes. MAN is happy to comply with the many requests for Wylam plans by making available this selection

**MODEL AIRPLANE NEWS**
**551 Fifth Ave., New York 17**

*Just off the press! two new Wylam sets*

Set = W-5
- GRUMMAN F6F-3 — Navy's shipboard fighter
- DOUGLAS C-54 — Air Force transport
- DOUGLAS A-26 — Invader—new B-26
- BOEING B-17 — The Flying Fortress
- CONSOLIDATED B-24 — Liberator—a heavy!
- CURTISS A-25 — Navy divebomber

Set = W-6
- CONSOLIDATED PBY — That Catalina!
- NORTHROP P-61 — Black Widow!
- BOEING B-29 — Famed Superfortress
- BOEING C-97 — Military transport
- MARTIN B-26 — Medium bomber

EACH SET . . . . $1.00 ALL SIX . . . $5.00

Enclosed is for plan sets numbered in boxes below

Please print your number DISTINCTLY in box for each plan you desire.

| PLAN SET = | PLAN SET = | PLAN SET = | PLAN SET = | PLAN SET = | PLAN SET = |
|---|---|---|---|---|---|
| | | | | | |

NO STAMPS PLEASE

NAME PLEASE PRINT

ADDRESS

CITY ZONE STATE

# Complete Listing

## MODEL AIRPLANE NEWS FULL SIZE PLAN SERVICE

*The editor's selection of all time favorites, including completely new combinations of the greatest designs. All types!*

**PLAN SETS 50c p.p.**

**PLAN OF THE MONTH**

**59.** GASSER: Willard RC, .09
1958 WAKEFIELD WINNER
SKY LANCER: Team, Proto, .29
**Gasser, hot pylon racer. Both the others beauties, too.**

**4.** SURE FUN: UC Sport, .29-.35
PROFILE SILVAIRE: FF Profile, ½A.
ZEPHYR: Rubber, Fuselage
**Control line on floats. Sport Gassie.**

**6.** HIGGINS CABIN CRUISER:
RC Boat, .09-.19.
FOKKER D7: Scale, U/C, .29-.51.
**The great all-time favorite?
Try the Fokker D-7.**

**7.** WORLD CHAMP GL.: Nordic Winner.
HI BOY: Cabin Stunt, Palmer-Goyet, .29-.35
POW WOW: Bob Palmer stunt, .29-.35
**Collector's item—two Palmer models!**

**9.** AEROCOM'DER: Scale, U/C, 2 .15.
MARS: Bob Palmer stunt, .29-35.
NOBLER: Aldrich's Nats Winner, Stunt, .29-.35. **Palmer and Aldrich, plus a twin ukie. Imagine!**

**10.** SMOG HOG: Banner's Multi RC, .19-.35.
STRATOLINER: 2 Half A, U/C.
GUARDIAN: U/C Scale, .29 up.
**Greatest Multi RC of all time—a beauty!**

**11.** GAMBLER: Mirror Stunt Winner, .29-.35.
DOUGLAS B-66: ducted fan FF, .049.
**B-66, the ducted fan job that beats all others.**

**12.** WHIRLING WINGS: Sikorsky XH-5, .15, 'copter.
BREEZY: Small field RC, .049.
SPITFIRE: Stunt, semi-scale, .29-.35.
**P. Schoenky, 'copter master—his Sikorsky!**

**13.** T-CRAFT: FF scale, 049.
FENO: Combat, stunt, .29-35.
PADDY'S WAGON: Contest FF, .049.
**Paddy's Wagon—one contest job ok for beginner.**

**14.** HEATH PARASOL: RC, FF, Scale, .075 .09.
GUARDIAN: Nats carrier winner, .29's.
SHARPIE: FF Sport, .02-.049.
**—Guardian a dilly.**

**15.** RE-8: WW1, U/C. .29-.35.
FLAPPING WINGS: Rubber, ornithopter.
BOOMER: FF, sport, pusher, .049.
**Can planes fly like birds? Ornithopter sure does.**

**22.** MOONEY MITE: ½A Scale FF.
'55 RAMBLER: .29 Team Racer.
WACO CABIN: ½A FF Scale
**The Mite, stable, real looking low winger. Rambler still beats 'em. Waco—Cute!**

**40.** MUSTANG: U/C Scale, .29.
BI-GONE: Sport, FF, ½A.
GLIDERS FIVE: HL Sheet.
**Mustang, Jim McCroskey's Nats winner. Bi-Gone, nifty bipe.**

**43.** EQUALIZER: .15 to .19 multi, RC.
QUICKIE TRAINER: Speed, .29.
AMAZOOM: FF, contest, .15.
**deBolt's best, the Equalizer? Amazoom—Stan Hill's hi-thrust.**

**44.** CONVAIR'S DELTA: Jetex FF.
LIL DYNAMITE: .15 stunt, UC.
SWAT: ½A, FF, contest.
**A trio of exceptional planes.**

**45.** ASTRO-HOG: Multi RC, .29-.35
MITCHELL: Profile, .09's, .15's UC.
**Dunn's low wing radio—tops! Nothing matches this multi. The Mitchell a fine flier.**

**46.** PROPJET B-47D: U/C, .15's.
RUFFY: Stunt, .29-.35.
NOR'EAST'ER: Nordic glider.
**B-47D, beaut of a project
Ruffy: big winner—it's new!**

**47.** FOKKER E-3: 1/2A, FF, Scale.
NAVY RACER: Rubber, semi-scale.
WOODY: .29-.35, UC Combat. Hot!
**E-3, beautiful model, fine flier.**

**48.** SPORTCOUPE: .09, U/C, Stunt.
WHATIZIT: .35, Combat, Wooten.
SWIF-F-FT: Jetex, two sizes!
**Whatizit, settles fuse-wing debate!**

**49.** CONQUISTADOR: .29-.35, U/C Stunt.
TWO-STAGE ROCKET: Jetex (2).
**Stunter is a thing of beauty, and it flies as well as it looks!**

**50.** DUMBO: PBY Scale, U/C, .19's.
FRENCH OLDTIMER: 1914, ½A, FF.
**Dumbo, the Catalina, man-sized ukie, takes off, lands on water or ground.**

**52.** GAUCHO: RC Stunt, .29-.35.
THE CHAMP: Best U.S. Wakefield.
LAIRD SOLUTION: U/C Scale, .15-.23.
**Gaucho, Argentine Champ, does pattern inverted. Champ, a single Wakefield!**

**53.** SNAP: Sport U/C, .19-.23.
PELICAN: PAA Cargo, .049.
WINDMILL: FF, 'giro, .02-.049.
**For proto take-off and landing realistic Snap tops 'em all. Other two, collector's items.**

**54.** SATELLITE: Hunter's FF, .19-.35.
SUPERMARINE S-6B: U/C Scale, .09-.15. **Satellite is top contest free flight '58-'59. Schneider racer, S-6B seaplane is one of FAST club's best projects.**

**55.** DETROIT STUNTER: U/C .29-.35.
HORNET MOTH: FF, Scale, .02-.049.
THE BARDON: Wakefield.
**D'troit St.: McDonald's Strathmoor, Nats favorite. Bardon: Canadian and US Nats winner, tops in rubber.**

**56.** RYAN PT-22: U/C, .19-.25.
SNIPE: Gurnett's Nordic.
**Lovely scale job, that PT, with workable flaps, throttle.
Tow-line glider long, strong wing, right sections, etc.**

**57.** Twin Lizzie: 1/2A FF.
Com-Bat: U/C, .29-.35.
Fireboat: Marine, RC.
**T-Liz, a cute sport job.
The boat, Musciano, a beaut.**

**58.** SE-5: FF, .09-.15
PIED PIPER: Rat Race, UC.
½ WAVE: RC, .049
**SE-5 most beautiful flying scale model ever published.**

**PLAN SETS 50c p.p.** NO STAMPS PLEASE

**MODEL AIRPLANE NEWS • 551 FIFTH AVENUE, NEW YORK 17, N. Y.**

Enclosed is _____ for plan sets numbered in boxes below

| | | | | | |
|---|---|---|---|---|---|
| PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # |

Please print your number DISTINCTLY in box for each plan you desire.

| | | | | | |
|---|---|---|---|---|---|
| PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # | PLAN SET # |

List additional plan orders on separate sheet.

NAME _____ PLEASE PRINT

ADDRESS _____

**Limited Supply of Plans Listed Below. Order Early! Check Correct Number on Coupon.**

24. Aero Bat, Snoopy, Seagull
26. Corsair, Gyro-Glider, Santanita
29. Cougar, '55 Nordic Winner, Dizzy Boy
30. Great Lakes Trainer, Triple Threat RC
34. Corben Super Ace, Cessna 310, Profile Lightning

superhet "eight" that CG until recently had planned for early release. Longest dimension was 3¾, weight 9¾ ozs. It idled at 8 ma, and was a 3v receiver.

In addition to two light-weight superhets, CG will have a Nike converter for existing superregen's. Available May 1 is the Pioneer, a 3v single-channel superregenative relayless receiver that weighs only one ounce. It is possible that this receiver can be cascaded. Size is 2¾ x 1¾. All the new 3v single and multi units feature a power relay (a low impedance relay) used on the RT1-3V previously. Contact pressures, spring tensions, are much higher than on the 5000 ohm type. It is not sensitive and adjustments are not critical. CG also will release about July 1 a brochure including all their schematics. Price will be 50¢

Discontinued and out of stock are models: RT-2, RT-3, RT-5, RT-8 and transmitters T-3, T-5 and T-8.

• • •

Correction: In the April issue, idling current of Citizen-ship superhet was given as 19 ma with rise to 20 ma. Correct figure is 9 ma, rise to 20 ma. In fact, company has managed to lower idle to 6 ma.

## MAN at Work

(*Continued from page 4*)

mutterings. So this old boy, figuring to teach the lad a lesson, stomps all over the airplane. At the last Nats, a worried Pop asks a flying buddy of ours if Joe Z Jr., just flew his own ship and, five minutes later, Joe Z Sr. asks buddy if S. T. Jr. flew his own ship. And both the Pops were friends! Maybe it was such silliness that prompted affable Paul Gilliam to suggest to AMA that it was stupid to think of reading out one pop-son team for over enthusiasm at the Nats because at least 20 others did likewise. The innocent bystander might assume that the slot machine mob had taken over!

When you get out there on that hot flying field, hot engines screaming in all directions, and ships are zooming off in volleys, it's mighty easy to lose perspective. Gold fever. Winning that event seems to call for a military use of all means at the commander's disposal. If, under these supercharged circumstances, the pop-son team, or the kid, does win, the kid may wonder if he really beat anyone, and Dad if he let on, might well wish he had it all to do over again. We look to Pa for judgment!

• • •

► From the Letecky Modelar, the Czech modeling magazine (and a darn good one it is!) January '59, this beef:

"There are a good many young and old modelers in the Brno County but they are getting more and more sad every day. Why?

"The explanation is simple. There is only one aeromodeling Sales Center in Brno and if there was none, it would be just as well. For the past three months you couldn't buy any material for even the simplest model. Whenever you visit this Sales Center, you hear only one answer: "We don't have any; there are none; the goods have not arrived as yet, and similar.

Everybody will understand that when there is nothing to build from, the aeromodelers will be discouraged, especially the beginners . . ."

Don't think of Joe's hobby shop when you read Sales Center. This is a government run store controlled from the Central Government in the Capital. The Central office controls the distribution of goods, supplies, and determines where a Sales Center may be established, and how many

## ADVERTISING INDEX—JUNE, 1959



per city. Brno is probably the second or third largest city in Czechoslovakia—with only one "hobby shop" in the entire county.

• • •

► This is the way the cookie crumbles. From Claude McCullough whose empennage has been known to take on the shape of a tractor seat, this prophetic comment.

"Having spent quite a few years both as a petition-signer and a Contest Board Member—the latter experience considerably mellowing my outlook—I would like to venture an observation on the big new-rules uproar. Come change time two years hence, the protest will be every bit as loud in favor of the 1959-60 regulations as it is now against them. It is like having to take off a pair of comfortable old shoes and put on a new pair that may pinch at first. Once they are broken in you wouldn't be caught dead in the old ones."

Prophetic did we say? Mac has just been elected Chairman of the Contest Board! Mac, it was nice knowing you.

• • •

► After reading Czepa on Airfoils in August, 1957 MAN, John H. Wells, asks about F. W. Schmitz's "Modellflugel and Turbulenzeffekt," and goes on with, "I have long appreciated the almost unique supply of valuable and interesting technical articles on modeling that your magazine continues to present. For I can say that these articles help the modeler more in his pursuit of competition than all the gobbledegook on space barf, etc., that so many magazines persist in cranking out.

"Hope that being National Senior Champ twice is enough to back that up."

• • •

► From K. H. Denzin, Stuttgart, Germany, one of Europe's most respected modelers, the thoughtful observation that, in his opinion, USA Wakefields are at least as good as anybody else's.

"Contest success is a different story," he explains. "Previous experience and first hand reports from all World Championships convinced me that in free flight the success of the best model is not the rule but the exception. The best chances are always with the model-modeler combination and the experience and the attitude of the modeler contributes at least 50% to that.

"There is no other way," continues this competent observer, "to explain the success of Eastern modelers at recent contests, for their model designs (and engines and rubber) were in no way better than those of the 'west'. But those guys had the backing of their governments behind them and some pressure as well."

MAN at Work frequently has discussed the state-organized teams in East Europe. How people find it possible to fly planes all day for a month, in secluded practice, to be ready for anything. As Denzin says, "The more or less easy going attitude of the western modelers and the old Olympic idea that 'participation is more important than winning' is completely unknown to them as their personal well being is more or less dependent on their success . . . as long as we stick to FAI in its present form we have to face the problem and look for methods to overcome it."

The German reaction to the state organized competition, if we go by Denzin's remarks, is a constructive one.

"Government backing is not available to us, pressure is undesirable, and thank God, not available either—but out of our own free will we can concentrate on our personal preparations and we have the advantage to fly only under normal strain of a sports contest and have not to consider any consequences for us or our families.

"If then, those four individuals feel and work as a team, and concentrate not on their own but on their team's success, then we should be on even terms again."

• • •

► There's a story behind that Hobby Industry Association of America sponsorship of 50 free airline trips to the Nats. Ray Bryan, a traveling salesman who gets into every state, figured years ago that every time a dealer tells him there is no place to fly, well, then much of his line is dead. So he's been plugging industry help at the local level—a state's champ deal. Berkeley's Bill Effinger put a sturdy shoulder to the wheel in 1958 and the HIAA sent off eight state champs. Old shoot-the-works Willie E. evidently thought if eight states, why not all 50?

Within the HIAA membership of many hundreds of firms, an Aeronautical Division had formed. To answer the section's pitch on state champs the "Big Board" of the Association said, ok, we'll put up umpty-ump dollars if you aero boys match it by March 1, 1959. In mid February, a small group of airplane people from around New York, met with HIAA's Bill McMillan to hammer out a program. Obviously impossible most quickly agreed. Not so, argued Nat Polk, who set up a national drive. For days, the committee members stuck to their phones. When the smoke cleared, the funds had been subscribed. The many people who gave—some until it hurt, deserve a gold medal.

We can stand more "crazy" people like Bryan, Effinger, and Nat Polk. In fact, when Berkeley gives its next National awards to the modeler and to the industry members who did the most for modeling during the year, we can suggest a candidate—the fellow who said it wasn't impossible. . . . Nat Polk!

# Berkeley's FOR THE FINEST IN ACTION MODELS:

## SEMI-SCALE STUNT


**Grumman "GUARDIAN"**
For .19 to .36 Engines - 53" Wingspan
Designed for Stunt and Navy Carrier


**Curtis P-40 "WARHAWK"**
For .19 to .35 Engines - 45" Wingspan
Metal Cowl - Stunt Flaps - Flying Tiger Decals

## SPEED


**"SUPER-SQUIRT"**
For "Dyno-Jet" Engines - 21" Wingspan
Flies in 160 to 180 m.p.h. range

For .049 Engines - 8-1/4" Wingspan
Carved and Hollowed Fuselage, Bonnet

**"MINI-WHIRLAWAY ½A**


For .19 to .29 Engines - 12-1/2" Wingspan
Carved and Hollowed Fuselage - Bonnet

**"SUPER WHIRLAWAY" A-B**

## STUNT

Stunt Controline Design

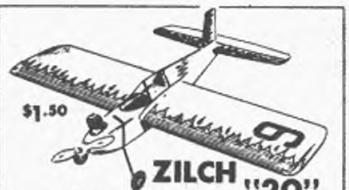

**"MARK-40" ZILCH**
For .15 to .25 Engines - 40" Wingspan
Highly Pre-Fabricated - Assembles Rapidly

Stunt Controline Design


**"MARK-30" ZILCH**
For .09 to .15 Engines - 30" Wingspan
Easy to build, highly Pre-Fabricated

All Balsa Wing - Stunt Controline


**"MINI-ZILCH"**
For .020 to .051 Engines - 20" Wingspan
Easy to build Stunt Controline for small engines



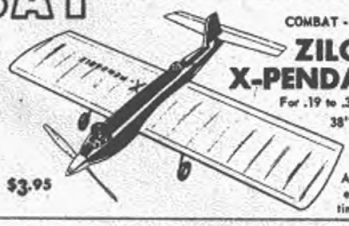

**ZILCH "20"**
For up to .074 Engines - 20-1/2" Wingspan
Especially designed for rapid assembly, small engines

## COMBAT

TAILESS COMBAT DESIGN


**"ORBIT ACE"**
For .19 to .35 Engines - 425 sq. in. area 40-1/2" Wingspan
Balanced Elevators - Wing tips washed out to prevent tip stall

COMBAT - STUNT




**ZILCH X-PENDABLE"**
For .19 to .35 Engines - 38" Wingspan
Assembles-fast, easy for more time in the air.


**"LANCER"** $3.50
For .19 to .35 Engines - 39-1/2" Wingspan
A proven contest winning design.

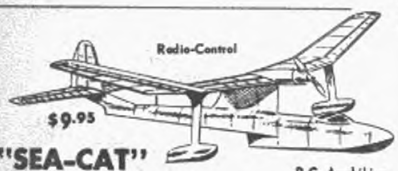
**Combat Trainers**
Machine milled all balsa hollow wings -

**"DAZE"**
.09 to .15 Engines - 30" Wing $2.95

**"KNIGHT"**
.19 to .36 Engines - 36" Wing $3.95

## SEAPLANES

Radio-Control




**"SEA-CAT"**
For .15 to .25 Engines - 68" Wingspan
R.C. Amphibian Flying Boat
Long Planing Hull Design - Beutiful Performance

Free-Flight

**½A "PRIVATEER"**
N.A.C.A. Long Planing Hull Design
For .035 to .074 Engines - 36" Wingspan $2.95
Takes off water in 15 foot run. Easy to build

Radio-Control or Free-Flight
1440 sq. in Wing Area


**"CUSTOM PRIVATEER"** Long Planing Hull Flying Boat N.A.C.A.
For .45 to 1.20 Engines - 114" Wingspan
Takes off water with R.C. equipment. Huge cabin area

## RADIO CONTROL

Radio-Control Free-Flight
Pay-Load


**BOOTSTRAPS "A-RC"**
For .09 to .14 Engines - 54" Wingspan
Clip in prone engine mount and R.C. chassis, fine flyer


**"SUPER BUCCANEER"**
.60 to 1.20 Engines - 7-1/2 Feet Wingspan
Eiffel section, 8.3 sq. feet area

Cabin Doors for R.C. access.


**"ROYAL RUDDERBUG"**
For .14 to .23 Engines - 62" Wingspan
Cabin doors for R.C. access. Proven in contests

1st, 2nd, 3rd, 4th in Multi - 1958 Nationals - 3rd in Plyon Racing
An exceptional kit.


**"ASTRO-HOG"**
For .35 Engines (R.C.) .45 to .99 (Controline) - 72" Wingspan - Length 50"

## DUCTED FAN MODELS

DUCTED FAN DESIGN
Gear not included


**Douglas "SKY-RAY"**
For "1/2A" Engines - 25" Wingspan
Ideal for "Pull-Starter" Engines - Flies out of sight


DUCTED FAN Gear not included
**Vought "CRUSADER"**
For "1/2A" Engines - 27" Wingspan 33-3/4" Length
Formed Plastic Parts - Light in Weight, Flies Well

DUCTED FAN Gear not included


For "1/2A" Engines - 29" Wingspan
Fine Ducted Fan Design - Torque-Free Propulsion

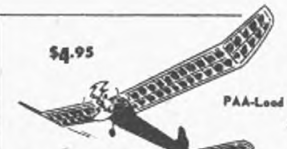
DUCTED FAN JET
Free-Flight or "Monoline"


**F-11-1F "TIGER"**
For .020 Engines Ducted Fan Jet - Impeller Included
Authentic Decals - Formed Canopy - Detailed Plans

## CONTEST


**RAMROD "250"**
For "1/2A" Engines - 40-1/2" Wingspan
Trims for Contest flying in three flights or less.


**RAMROD "600"**
For "A-B" Engines - 63" Wingspan
600 sq. in. Area
Trims for Contest flying in three flights or less




Blanchard's
**"INTERNATIONAL"**
For .09 to .19 Engines - 71" Wingspan
Nationals winning design - Easy to build and trim

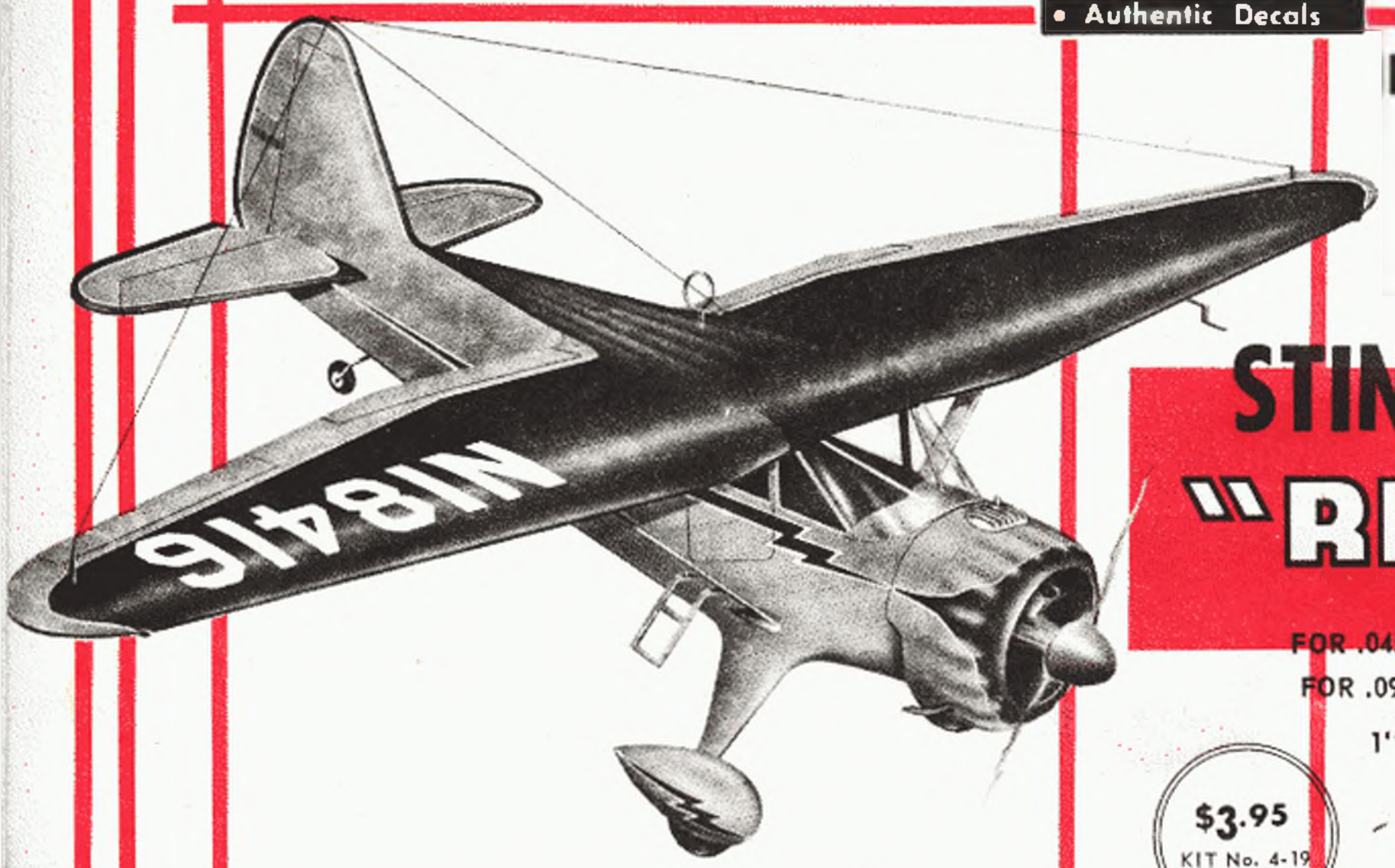
**3 Scale "SIL-O-JETS"**
Ready to Fly with "PSST-50" Engine
$1.95


Since 1933—Leader in Creative Model Kits
**BERKELEY MODELS INC.**
WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. MA., West Hempstead, N.Y. Please include 25¢ packing & postage.

# "MODELS OF THE MONTH" by Berkeley

- Authentic Decals
- Full Size Berkeley Detailed Plans
- Die-Cut Balsa and Plywood Parts
- Formed Wire Landing Gear
- All Necessary Hardware
- Formed Plastic Cowl




## STINSON SR-9C "RELIANT"

FOR .045 TO .099 ENGINES - FREE-FLIGHT

FOR .099 TO ..29 ENGINES - CONTROLINE

1" SCALE 42" WINGSPAN

$3.95
KIT No. 4-19

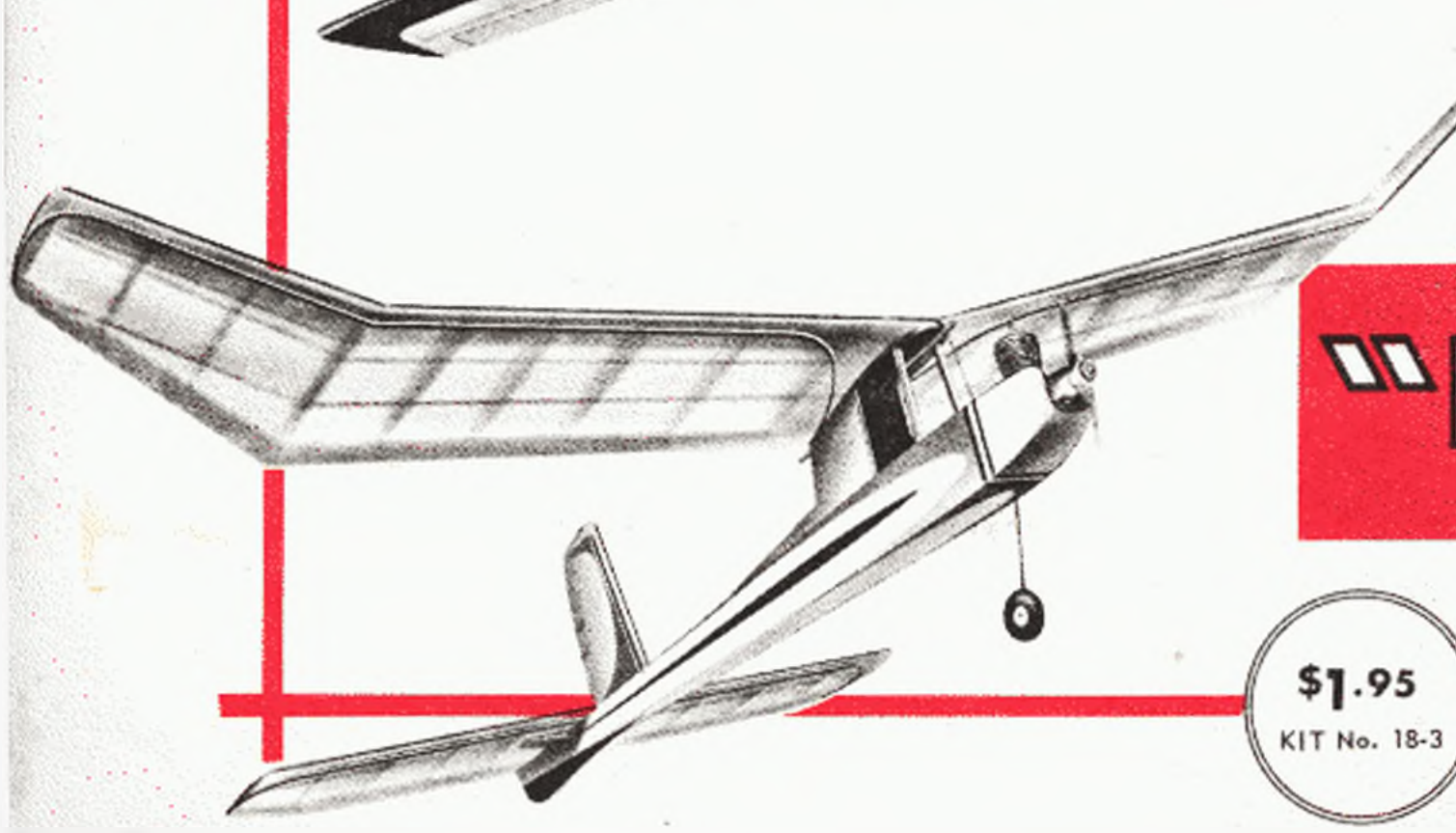
## "SWEITZER" 1-30

$2.95
KIT No. 4-18

.020 TO .049 ENGINES FREE-FLIGHT

(UP TO .099 ENGINES CONTROLINE)

1" SCALE 40" WINGSPAN

## PAY LOAD - SPORT "PAY-DIRT" FREE FLIGHT

FOR .020 ENGINES 36" OR 48" WINGSPAN

$1.95
KIT No. 18-3

Since 1933—Leader in Creative Model Kits

**BERKELEY MODELS INC.**
WEST HEMPSTEAD, NEW YORK, U.S.A.

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. M.A., West Hempstead, N.Y. Please include 25¢ postage & package.

# FOX 15

## the RIGHT motor for YOU

RADIO CONTROL TRAINER MAMBO, designed and engineered for radio control.

by Sterling


FREE FLIGHT . . . Get up there fast with a RAMROD 600.

by Berkeley

CONTROL LINE
Ideal for Beginners.
PROFILE TRAINER II

by Guillow's

Brand new RC Trainer
the EXPLORER—Rudder only,
intermediate or
multi-channel. by Guillow's


SPORT FREE
FLIGHT FAIRCHILD PT-19 may also be flown as Control Line Model, as well as Radio Control.

by Sterling

SCALE FANS . . . Try this new super Combat-stunt HAWKER TYPHOON.

by ENTERPRISE

COMBAT FLYERS, the FLITE STREAK, JR. is supermaneuverable.

by TOP FLITE


COMBAT Control liner.
For the Combat Keen flyer, the LANCER is the answer.

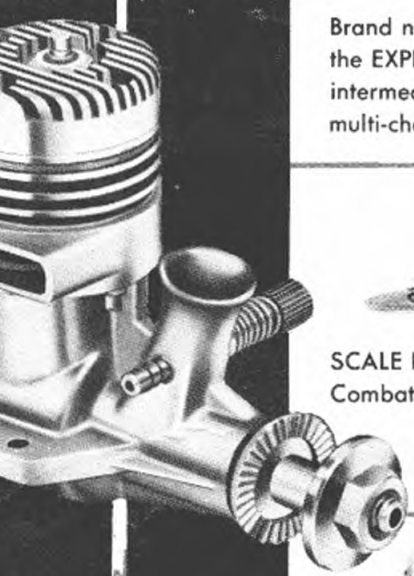
by Berkeley

The ½A SUPER STUNTMASTER is a real tiger with Fox 15 power.

by SCIENTIFIC

R C FANS
ROTO VALVE
Provides
Speed Control

*Kits shown are recommended by their manufacturers for use with the Fox 15. Both kits and Fox Motors are available from your Favorite Hobby Shop.*



the RIGHT SIZE
the RIGHT POWER
the RIGHT BRAND
the RIGHT PRICE

$6.95

SMART CHAMPIONS CHOOSE FOX

**FOX MANUFACTURING CO., Inc.**

Designers and Manufacturers of the World's Finest Model Airplane Motors

5305 TOWSON AVENUE, FORT SMITH, ARKANSAS

# HIGH VISIBILITY COLORS

IT'S OFFICIAL U. S. A. F.

# Aero Glow

hot fuel proof
FLUORESCENT
dope

U.S.A.F.

*Protective coloration* with high visibility fluorescent markings, has been made compulsory on all non-tactical planes of the U. S. Air Force. This most advanced step in air safety in years is being rapidly followed by commercial and private planes. And Pactra, as always, is ready with the newest—*AERO GLOW*—a line of special fluorescent paints for *model planes... hot fuel proof*, of course! Add striking fluorescent markings—for new air visibility and authenticity—on your plane TODAY. See Air Force approved striping suggestions and choice of 6 AERO GLOW colors at your dealers'.

35c



# pactra

PACTRA CHEMICAL COMPANY, 1213 NORTH HIGHLAND AVENUE, LOS ANGELES 38, CALIF.