ICD

# MODEL AIRPLANE NEWS

August 1959 — 35 cents

3/6

IN THIS ISSUE

**Delta Jet Glider**

**Low Wing RC**

ALSO . . . Aeronca Tri-Traveler Flying Model, Lauderdale's Dizzy Bee

FLYING TIGERS—BIG AND LITTLE

# 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.**

FOX
15
the RIGHT motor for YOU
RADIO CONTROL TRAINER MAMBO, designed and engineered for radio control. by Sterling
CONTROL LINE Ideal for Beginners. PROFILE TRAINER II by Guillow's
SPORT FREE FLIGHT FAIRCHILD PT-19 may also be flown as Control Line Model, as well as Radio Control. by Sterling
COMBAT FLYERS, the FLITE STREAK, JR. is supermaneuverable. by TOP FLITE
The ½A SUPER STUNTMASTER is a real tiger with Fox 15 power. by SCIENTIFIC
RAMROD 600
AMA
FREE FLIGHT . . . Get up there fast with a RAMROD 600. by Berkeley
Brand new RC Trainer the EXPLORER—Rudder only, intermediate or multi-channel. by Guillow's
SCALE FANS . . . Try this new super Combat-stunt HAWKER TYPHOON. by ENTERPRISE
AMA 123
COMBAT Control liner. For the Combat Keen flyer, the LANCER is the answer. by Berkeley
R C FANS ROTO VALVE Provides Speed Control
the RIGHT SIZE
the RIGHT POWER
the RIGHT BRAND
the RIGHT PRICE
$6 95
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.
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

# You're always "on frequency" with a CG transmitter-receiver combo

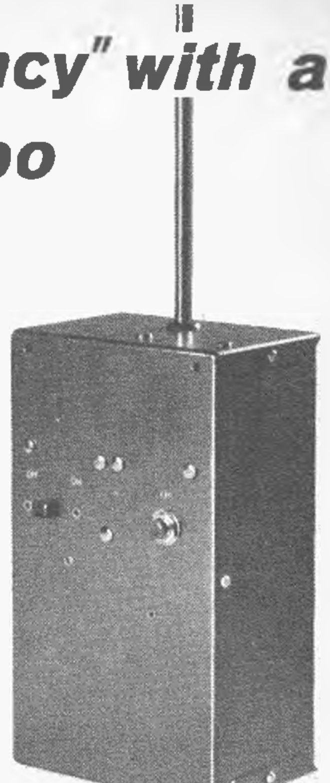
## (New CG Venus Transmitter meets new FCC specs)

Here's an entirely new, single channel, extremely stable tone transmitter that'll stay right "on frequency" through every flight you make.

Known as the Venus, this new high powered version, modeled after the famous CG T-12 transmitter, is lightweight and a dream to operate. A high precision CG crystal keeps the Venus within 0.01% of specified operating frequency – well within new FCC specs.

And it's economical to run, too! "Balanced Power" design saves battery power – gets up to a year's use from "B" batteries.

Best of all, the Venus is economy priced at only $29.95. Get your order in early. Contact your local dealer or write direct to CG Electronics.



Venus is designed for any one of following FCC-allocated frequencies: 26.995 mc, 27.045 mc, 27.095 mc, 27.145 mc, 27.195 mc, and 27.255 mc. Please specify desired frequency with order.

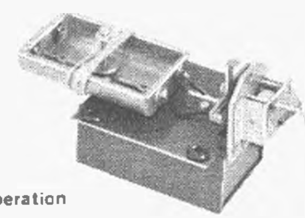
**only $29.95**


**The Receiver Without Equal – The Well Known RT1-3V** **$39.95**

- Size: 1½" x 2⅜" x 1"
- Weight: 2 oz. complete
- Power: 3 volts total
- Temperature Range: Guaranteed to operate between 0°F to 130°F
- Completely transistorized
- Factory pre-tuned

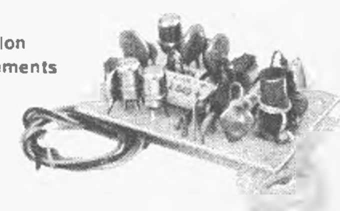
**No Wiring, No Soldering, No Tuning With JUPITER COMPACT – A Complete RC Unit!** **$39.95**

- No electrical installation
- Weight: complete with battery and escapement, 4 oz.
- Size: 2½" x 3" x 2¼"
- Power: only 3 volts required
- Completely transistorized
- Factory pre-tuned
- Guaranteed for 0°F to 130°F operation



**Economy-Sized PIONEER Delivers Big Performance** **$21.95**

- Size: 2⅔" x 1½"
- Weight: 1⅛ oz.
- Economical 3 volt operation
- Operates standard escapements
- Temperature stabilized
- Finest quality printed circuit construction
- Factory tuned and tested



CG

*Ask for FREE Catalog*

**CG ELECTRONICS CORPORATION**

Dept. B-8 · 15000 Central S. E., Albuquerque, New Mexico

31st Year of Publication

# MODEL AIRPLANE NEWS

M.A.N

JAY P. CLEVELAND, President and Publisher

August 1959 Vol. LXI, No. 2

## CONTENTS



WILLIAM WINTER, Editor

WITTICH HOLLOWAY, Art Director

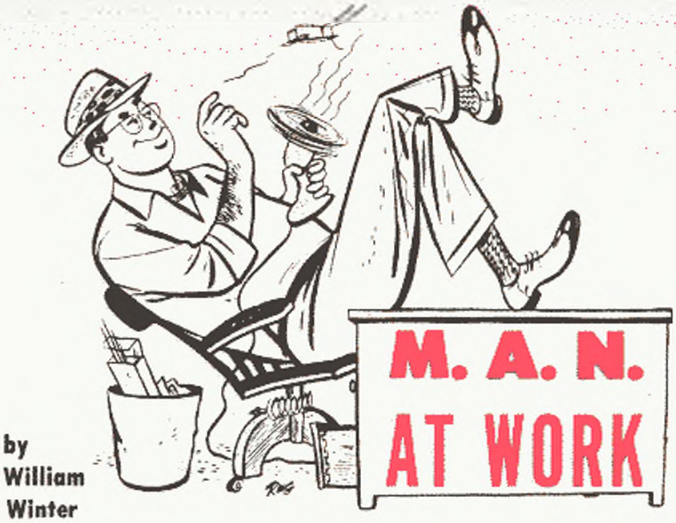
Contributing Editors: Peter Chinn (England), Don Grout, Ed Lorenz, Tod Martin, Bruce Wennerstrom, Harry Williamson

Executive and Editorial Office: 551 Fifth Avenue, New York 17, N. Y.

Advertising Manager, N. E. Slone, 551 5th Ave. New York 17; West Coast Adv. Mgr., Justin Hannon, 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

► Pan American's new film "Wings for Tomorrow," a 13½ minute, 16mm motion picture in sound and color, contains superb footage on models (and 707's) in action. It is deftly put together. To make a poor joke, the story gets in everything but motherhood and Christmas. It explains PAA-Load flying, modeling in general, ties all this in with careers and enobling influences (ahem), plugs Pan American, follows Ken Scribner, a Pan Am pilot from a knee breeches boy to adult Clipper Captain. Any good film seems too short. This one gets organized out yonder, then pours across the course at Mach 2. We suspect many a club will run it more than once in the same evening. Man, how a little Jetex job soars and banks majestically, like a 707 waiting its shot at the approach, when followed in slow motion.

Only trouble with the preview, attended by the model eds, Dallas Sherman (the payload pappy), and George Gardner, was the fascinating twin pusher "young Scribner" flew. In a moment of madness, mutual probably, yours truly had concocted the design for Al Lewis. That the story teller had this mock museum piece reconstructed from a ten-year old magazine plan suggested that Pan Am wanted, and got, the most in realism. The footage left on the cutting room floor would make wonderful entertainment for modelers who would take their models straight. Too bad, Pan-Am couldn't package what was left over, story or no story.

Wings for Tomorrow can be booked through the Academy of Model Aeronautics, 1025 Connecticut Ave., Washington, D.C.; Educational Director, Pan American World Airways, and will be available in offices of Ideal Pictures, and at many District Sales Offices of Pan American World Airways. MAN at Work suggests that you invite the town fathers, or recalcitrant officials, to a showing. You may end up with the rotunda in city hall for the next stunt contest!

The story incidentally was more perfect than even Pan Am knew. Talking of the Wright Brothers, who should be on screen, but C.O. "Pop" Wright, who has been flying these things since 1917. And a market tip: buy Jetex!

° ° °

► Most recent "attempt" to fly all day with that ugly RC model was grounded by the stork, of all things. When our CD, Bill Poythress, couldn't make it, the various *(Continued on page 62)*


NEXT MONTH'S COVER Miniplane

**SUBSCRIPTION PRICES**

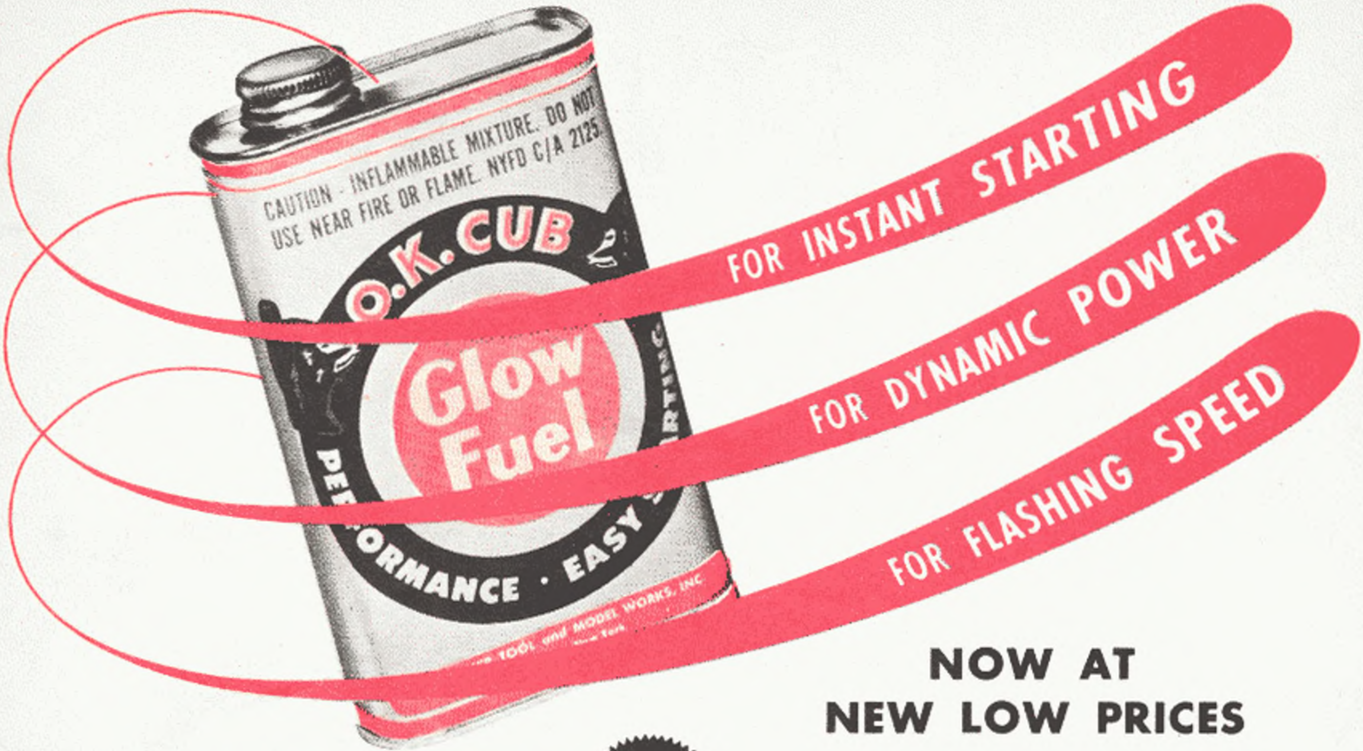
SEE PAGE 57 FOR ANNIVERSARY SUBSCRIPTION OFFER

*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 Paul Mantz, famous stunt flier, used Thimble-Drome Flying Tiger model to plan air action scenes for his TV series "Rogue for Hire," to be released this fall, young admirers Tommy Sparks and Mike James were lucky to be on set for a demonstration by Mantz. Yes, the P-40 in background is the real thing. Photographer even got a vapor trail!




## 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**
88 HARTER ST. HERKIMER, N. Y.

# RADIO CONTROL

**FAMOUS BRANDS AT BIG SAVINGS**

**SAVE!**

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

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 "SPACE CADET"

AN AHC EXCLUSIVE! A FANTASTIC VALUE, TOO!

### HI-FI RADIO CONTROL OUTFIT

**OPERATES ANY MODEL . . . BOATS, CARS & PLANES**

**From ½A 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 5000 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 **$23.95** Less Batt.
ALL FINISHED, TESTED AND ASSEMBLED READY FOR USE

### INDIVIDUAL PRICES

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

## R/C HEAD PHONES

## GUIDE TO Radio Control 25¢

Covers all phases of Radio Control for models

## 20¢ EACH Nylon Gears

## 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 ... 3.95

## MILLIAMETERS

AHC Sale on Quality R/C Test Meters

| | Reg. | Sale |
|---|---|---|
| 0-3 | $4.95 | $3.95 |
| 0-5 | 3.95 | 2.98 |
| 0-50 | 2.75 | 2.29 |

## R/C TUBES

| | Reg. | SALE |
|---|---|---|
| 3S4 | 1.40 | .89 |
| XFG1 | 3.55 | 2.95 |
| 3A5 | 1.35 | .98 |

## MINITONE 2.95

Miniature DC Motor

## 9.95 Field Strength Meter

## 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 ... Despite its lightweight and compact design, it is one of the finest precision R/C instruments ever made. Other features include one stage single tuning ... Complete instructions and Diagrams included.

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

"VANGUARD" TRANSMITTER is a powerful output ... Handsome portable aluminum case ...

**ASSEMBLED OUTFIT** Ready-To-Operate ALL FINISHED, TESTED AND ASSEMBLED READY FOR USE **$34.95** Less Batt.

**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 | 15.95 |
| Aerotrol Mark IV Assembled | 24.95 |

**Receivers—Single Channel**

| | |
|---|---|
| Ace Commander Kit 8.65 Asmbld | 12.95 |
| Magic Carpet Mark II Asmbld | 17.95 |
| Ace TR 45 Recvr Kit | 22.95 |
| Badger (Assembled) | 24.95 |
| Bramco (Assembled) | 29.95 |
| Citizen-ship PR27 17.95 Assembled | 21.95 |
| Citizenship 465AR (Assembled) | 24.95 |
| Citizenship 1VTR 14.95 SSTR | 19.95 |
| CG Al Kit 9.95 (Assembled) | 16.95 |
| CGRX1 29.95 CGRX-1 | 14.95 |
| Deltron R100 (Assembled) | 24.95 |
| Deltron R129 (Assembled) | 27.95 |
| Fuco TNT Recvr Asmbld | 21.95 |
| Gyro 27K 16.95 With Relay | 21.00 |
| Raytrol 2-103 13.95 200 | 19.95 |
| Super Aerotrol 13.95 (Assembled) | 21.95 |
| Tone Aerotrol (Assembled) | 29.95 |

**Receivers—Multi Channel**

| | |
|---|---|
| (2) Citizenship RER | 44.95 |
| (3) CG RT3 (Assembled) | 69.95 |
| (3) CG RT3 (Assembled) | 79.95 |
| (5) CG RT5 (Assembled) | 119.50 |
| (3) Bramco Regent 8 Asmbld | 118.00 |
| (8) Citizenship MSR 8 | 99.95 |
| (8) CG RT8 (Assembled) | 139.50 |
| (8) Citizenship SS MSRE | 149.95 |
| (10) Bramco Regent 10 | 150.00 |
| RAYTROL (1) Assembled | 54.50 |
| (5) 86.00 (6) 91.25 (8) | 124.00 |

**Transmitters—Single Channel**

| | |
|---|---|
| Ace Commander Kit 9.95 Asmbld | 14.95 |
| Magic Wand Kit 19.95 Asmbld | 24.95 |
| Badger (Assembled) | 14.95 |
| Bramco Trans. (Assembled) | 36.95 |
| Citizenship CTX (Assembled) | 39.95 |
| Citizenship Kit 15.95 Assembled | 19.95 |
| MK1 Citizenship Kit Transistor | 19.95 |
| MTX Citizenship Assembled | 26.95 |
| Citizenship 465MC (Assembled) | 34.95 |
| Citizenship 465MC Transistorized | 36.95 |
| CG TTX Kit 24.95 (Assembled) | 33.95 |
| Deltron T100 (Assembled) | 29.95 |
| Gyro RX1 Trans. | 44.95 |
| Raytrol 500X (Assembled) | 34.95 |
| Super Aerotrol 19.95 (Assembled) | 24.95 |
| Tone Aerotrol (Assembled) | 44.95 |

**Transmitters—Multi Channel**

| | |
|---|---|
| (3) Babcock 465MC (Assembled) | 69.95 |
| (3) Citizenship REX (Assembled) | 39.95 |
| CGT3 59.95 CGT8 | 99.95 |
| (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) | 55.00 |
| (5) 68.75 (6) 79.20 (8) | 98.00 |

## BOOKS

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

| | |
|---|---|
| Radio Control Handbook by McEntee | 3.95 |
| Simple Radio Con. by H. G. Hundleby | 1.50 |
| Application of R/C (Hobby Help) | .50 |
| Model Con. by Radio By E. Safford | 1.00 |
| Com. R/C Escapements (Hobby Help) | .66 |
| Basics of Radio Con. (Hob. Help) | .35 |
| R/C for Planes & Boats by Winter | 1.00 |
| Radio Con. of Models by Campbell | 1.50 |
| R/C for Model Boats by McEntee | 1.00 |
| Guide to R/C Winston Aldridge | .35 |

**R/C Parts & Accessories**

| | |
|---|---|
| Gem Relay 5000 ohm 4.25 2100 | 4.95 |
| Gem Micro 5000 4.95 2100 | 5.45 |
| Super Aerotrol Escapement | 3.95 |
| Bon. DE Relay 7.50 Comp. Escap | 5.95 |
| Babcock Low 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. | 8.15 |
| Selectrone Fuel Tank (-dell) | 5.95 |
| Citizenship Escapement 5.95 S.E. 7.95 | |
| Citz. Servo MRH-2RZH (R3H) 18 14.95 | 11.95 |
| Cameron SN Escape (2 pos.) | 5.95 |
| Cameron SN Escape (4 pos.) | 8.95 |
| Cameron Compound Escapement | 8.95 |
| Cobb Escap 3 or 1 Pos | 5.95 |
| Cobb Elec. Comp. Electro SN | 8.95 |
| Cobb 1 Pos. 8.95 Elec. Comp | 9.95 |
| Slow Line Servo | 8.95 |
| Babcock Elevator Servo | 12.50 |
| Bonner VariComp. 3 pos. | 8.95 |
| Dual 11.95 Rudder Ens | 9.75 |
| Bonner Servo 14.95 SN Escap | 5.95 |
| Multi-Servo 2 PN 11.95 3P3N | 14.95 |
| 2 P2N 11.95 3P 16.95 5PN | 24.95 |
| 2P2NX 2PNX or 3P3NX ea. | 14.95 |
| Multi-Servo Rudder L or R | 18.95 |
| Multi-Servo Elevator U or D | 18.95 |
| Relay (Annual) Super Sensitive | 7.95 |
| Con. 18E tube Kit | 4.95 |
| U-19 Battery Box 1 cell .30 2 cell | .50 |
| Battery Boxes 1 cell .75 2 cell | .50 |
| 3 cell .65 4 cell .80 specify battery | |
| Tubes XFG1 3.09 3A4 1.35 1AG4 | 2.95 |
| 3V4 1.75 1U4 1.75 1U5 | 1.50 |
| Test Meter (Citizenship) | 22.95 |
| Batteries: XX45 or 467, 67½V | 3.50 |
| XX30 or 455 45V | 2.95 |
| 4F or 742 1½V | 1.65 |
| U15 or 412, 22½V | 1.80 |
| 0-3 Milliammeter 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. 32" 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. Assembled in a few hours.

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

| | |
|---|---|
| Aero 9 48 .09 to .15 | 8.95 |
| Aero 15 87 .15 to .29 | 11.95 |
| Aeronca C3 36 .035 .099 | 3.95 |
| Aeronca C3 54 .09 to .15 | 6.95 |
| Aeronca Champion 37 Plast .049 | 9.95 |
| Aircoupe 45 .074 to .29 | 7.95 |
| Astro Hog 35 | 15.95 |
| Bird Dog 54" FF AA | |
| Boottleague "ABC" 54 AAA | |
| Breezy Jr 43 .049 .074 | |
| Breeze Sr 56 .09 to .23 | |
| Bat. Peg 37 .049 | |
| Buster 46" .15 to .35 | |
| Cessna 170 72 .25 to .35 | |
| Cessna 122 .64 .09 to .19 | |
| Cessna 180 36 AA | |
| Cessna 180 48 .09 to .16 | |
| Clipper 34 AA | |
| Custom Livewire 50" .25 to .35 | |
| Custom Privateer 114" .45 | 12.95 |
| De Haviland Beaver 48 .035 | |
| Douglas B73 Invader 00 .15 .25 | |
| Envoys 50 .049 to .099 | |
| Explorer 56 .15 to .35 | |
| Fairchild PT-19 .37 .15 to .29 | |
| Fairchild PT-19 .18 .09 to .19 | |
| Folker D-3 .28 .049 to .074 | |
| Hepburne 39 .049 to .14 | |
| 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 | |
| Livewire Super Cub 56 .15 .19 | 13.95 |
| Livewire Sedan 76 C-D | |
| Mambo Trainer 48 .049 to .09 | 6.95 |
| Miss Tiny 46 .049 to .074 | 4.95 |
| Monocoupe 64 .19 to .45 | 12.95 |
| Nomer Super 260 60 .35 to .46 | 16.95 |
| Piper Cub J3 54 .09 to .15 | 7.95 |
| Piper Comanche 56 .09 to .15 | 7.95 |
| Piper Cub J3 31 .15 to .28 | 11.95 |
| Piper Trainer 44" AAA | 5.95 |
| Piper Tri-pacer 37" Plast .049 | 9.95 |
| Ryan Navion 39" ABC | 12.95 |
| Royal Rudderbug 52" A | 8.95 |
| Sea Cat 68 .15 .21 | 9.95 |
| Sirus 36 .039 to .074 | 3.95 |
| Smog Hog 72" .29 to .35 | 22.95 |
| Spirit 51 .09 to .15 | 10.95 |
| Super Buccaneer 80" C-D | 14.95 |
| Waco Cabin 52" .15 to .29 | 9.95 |
| Waco Cabin 36 .049 to .074 | 3.95 |

**RADIO CONTROL BOATS**

| | |
|---|---|
| Corvette 40 (Sterling) | 24.95 |
| American Scout 50 (Sterling) | 24.95 |
| Ocean Tug 38 (Vosp) | 24.95 |
| Owens Bridge Sedan 23 (Ideal) | 10.95 |
| Sport Fisherman 42 (Ideal) | |
| Hydro ... 27" (Berkeley) | 6.95 |

## Wow!

BRIGADIER "RC-38" 38" SPAN **$1.95** **SALE!**

## Compound Escapement

REG. $5.95 **$3.95**

Converts single channel R/C sets to multiple control. Completely assembled ... Carries our famous Money Back Guarantee.

## R/C ALIGNING TOOLS

REG. 65¢ **39¢**
Choice of Flat Screwdriver or Hexagon Tip

| | REG. | SALE |
|---|---|---|
| 8000 Ohm Sigma Relay Sale | 2.95 | 1.69 |
| Elite Jewel 5000 Ohm Relay | | 2.45 |
| RBM Palladium Contact Relay | | 3.95 |
| GEM 5000 Ohm Relay $4.25 | | |
| Micro Relay | | 4.95 |
| Self Neut. "Amtron" Escape | 1.95 | .98 |
| Drum Rudd Escape 5 Reed | | 32.95 |
| 6 or 8 Reed | | 24.95 |
| Multi-Pin Plug & Socket Sets, 2 or 3 Prong | | .98 |
| 4, 6 or 8 Pin .30 .3 or 9 Pin | | |
| R/C Plugs or Jacks Std | | .98 |
| R/C Telescoping Antenna | 3.50 | 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. Solid 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-2A | 1.29 | 2V-8A | 2.75 |
| 2V-4A | 1.29 | W. CASE | 2.75 |
| 2V-12A | 5.75 | 6V-4A | 3.29 |
| Baby Wet 4 V 1.5A | | | 1.49 |

## R/C Battery CHARGERS ASSEMBLED

ESSCO UNIVERSAL 4.95

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

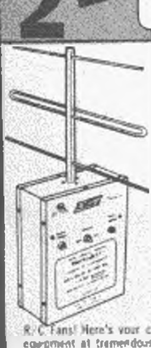
## 5.95 Famous "Weller" SOLDERING GUN

## 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.**



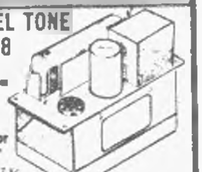
**REG. 69.95 34.95**

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 #CR425. 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 ... 8¾x6¼x3. 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 ... for use 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. ...

**Order Two Receivers & Save An Extra $5.00 34.98**
Reg. $79.90. Get them ... for only

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

**Limited Quantity! Rush your Order!**

## 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.

# The Tri-Traveler

by DAN LUTZ

***You can't ride in it, but this "trike" Champion, is as close to big plane realism as you can get. Fine performer on those .049's.***

Over 200 successful flights in all kinds of weather made the author happy with the results of time well spent on detail and paint job.

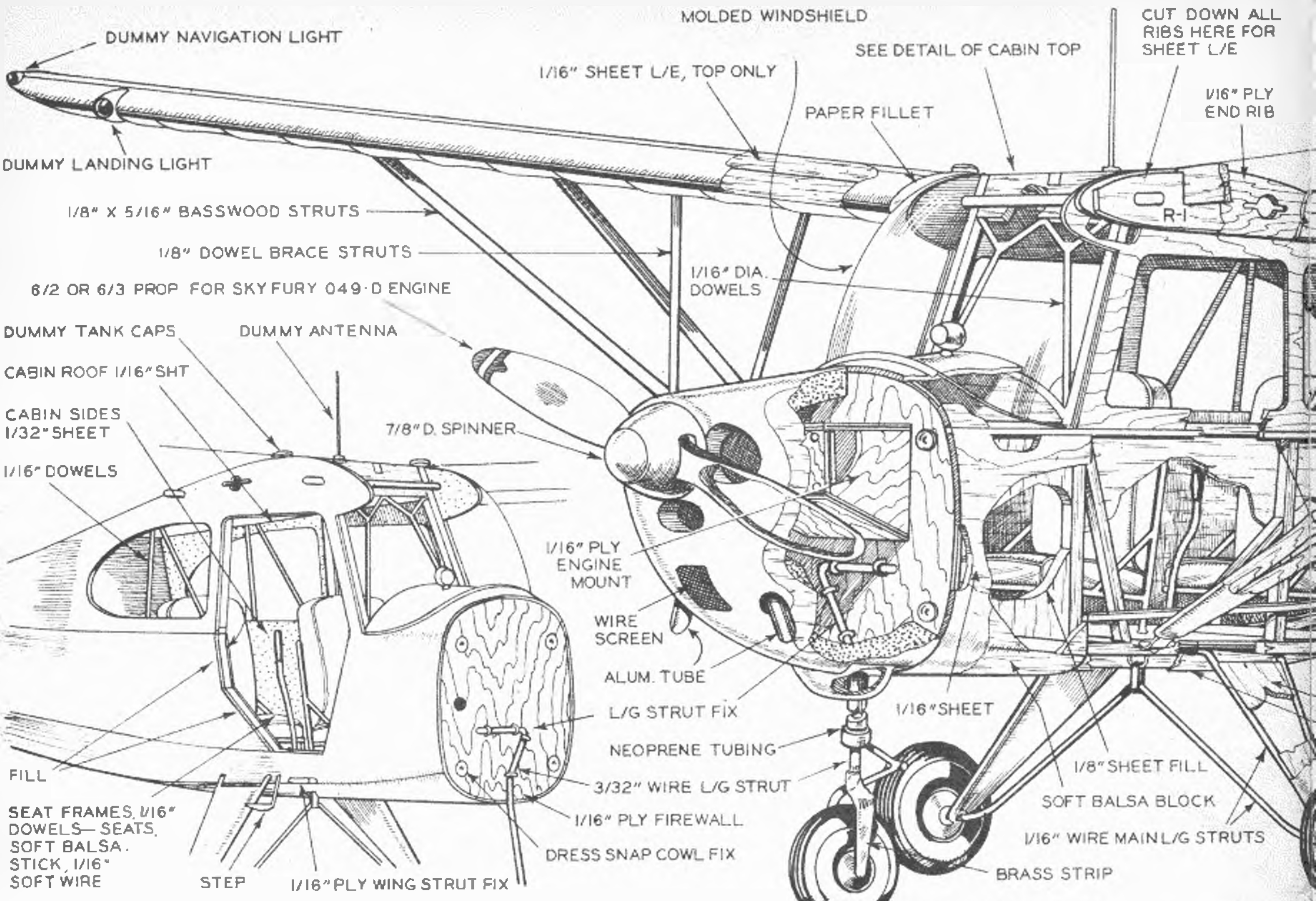
Scale tail surfaces and near-scale dihedral make Lutz's Champion exceptionally accurate free-flight scale. Yep, the door works!

► Descended from the famous Aeronca Champion, the new Champion Traveler is manufactured by the Champion Aircraft Corp., Osceola, Wis. The new Champions have increased horsepower, new oleo-type shock-absorbing landing gear, completely upholstered interiors and a flashy new paint and trim combination. This outstanding airplane makes a rewarding model.

At the 1958 Nationals, the model was relatively new and not well tested, but later in the season took second in the Ninth Annual Flightmasters Scale Contest, Inglewood (Calif.) being beaten out by a ship with two-speed motor permitting full-power take-off and throttled-back descent to power-on landing. At the time of writing the Tri-Traveler has logged over 200 flights in all kinds of weather. Scale tail area and near-scale dihedral don't seem to affect performance adversely.

The box-type fuselage is constructed from ⅜" sq. balsa with the nose portion planked with 1/16" sheet balsa. Cut out the two upper cabin side frames from 1/16" plywood. Drill the wing dowel holes in the right and left frames at the same time. This assures both wings have the same angle of incidence which is very important. Add the bulkheads, 1/16" balsa rudder keel and stringers. Don't forget the 1/16" x 1/32" balsa cap strip on the bottom longerons which will serve as a covering ledge to keep the covering from sticking to the fuselage upright braces when doped.

The main landing gear mount is cut from 1/16" plywood. Sew the 1/16" piano *(Continued on next page)*




DETAIL OF CABIN AND DOOR FRAME – R/H SIDE ONLY


**Wing lights, gas caps, antenna, typify details that make a stand-out craft. Cabin side slope automatically provides the dihedral.**

## The Tri-Traveler . . . *Continued*

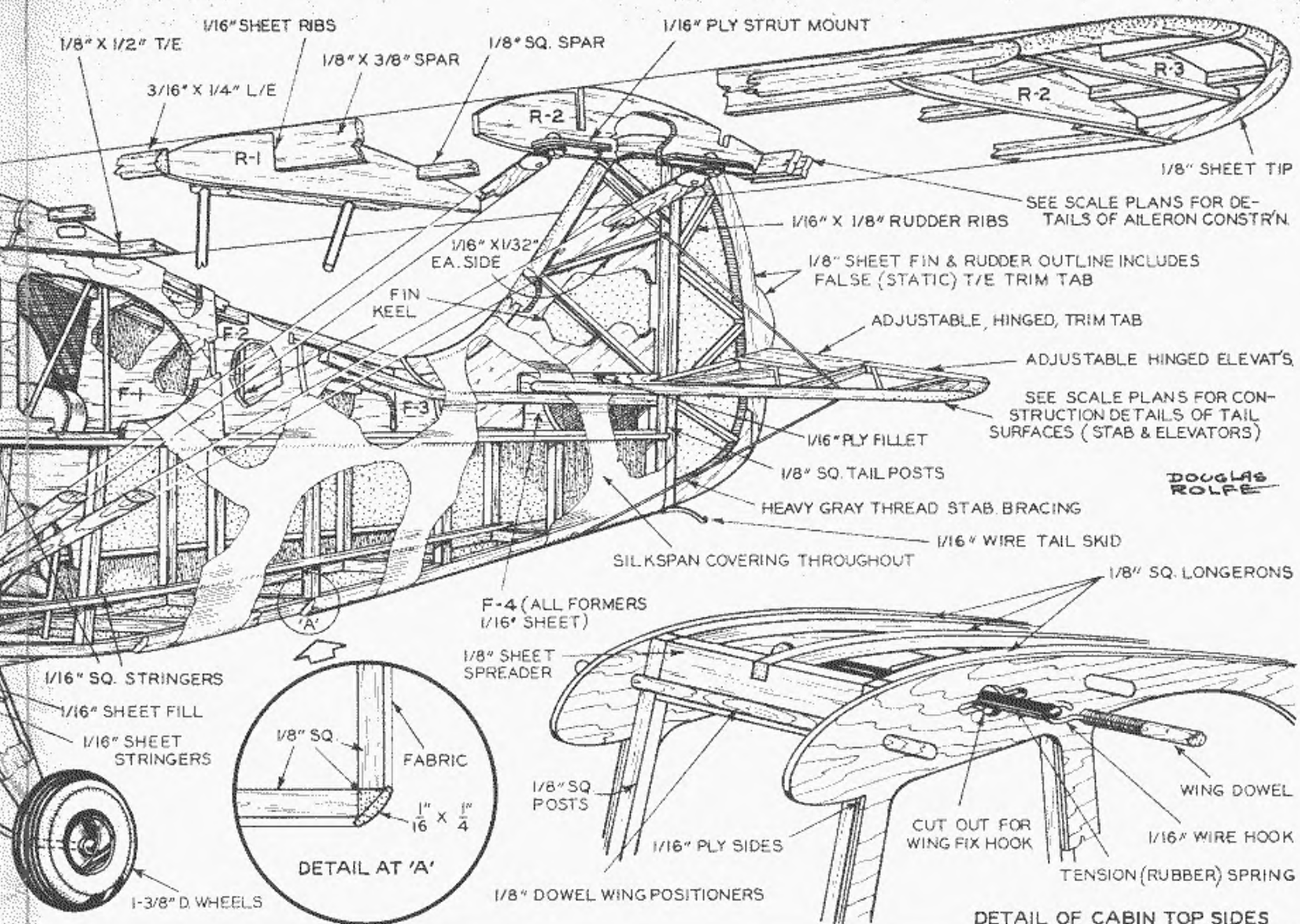
wire gear to this mount and glue several times. The nose gear is bent from 3/32" piano wire and held to the fire-wall by J-bolts. The firewall and engine mount box are also cut from 1/16" plywood. When building up the engine mount box, which may be altered to fit any 1/2A engine, make certain that at least four degrees of downthrust are built in.

Install the operating cabin door on the right side of the fuselage if you intend to add the interior details to your model. The seats are built from 1/16" dowel with soft balsa cushions. The cabin floor is 1/16" sheet balsa with the sides and top being 1/32" sheet balsa. To simulate the upholstered panels and seat cushions, colored flock is used. This flocking compound can be purchased from any arts and crafts store. It is very light and easy to apply.

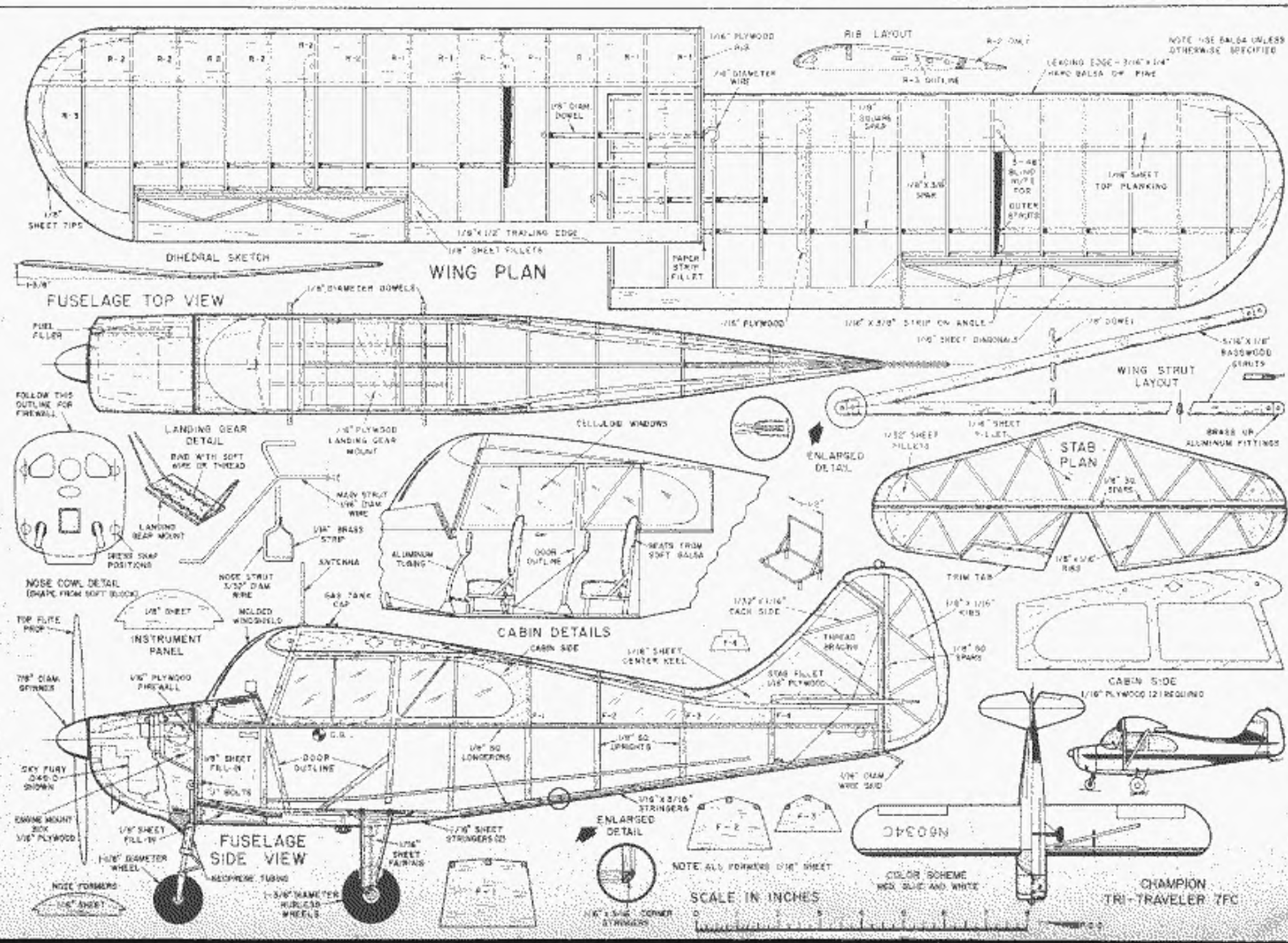
A trip to your local airport will give you unlimited ideas for the numerous small details. The cowl is built up from balsa blocks, then hollowed out. Use four large dress snaps to hold the cowl to the firewall. A small piece of wire screen and a length of 3/16" dia. aluminum tubing will make the details for the cowl.

The wing tips and tail outlines of the original model were formed over a template cut from ¼" sheet, with the inside contours as a guide when cutting out the templates; the strips of wood were boiled for ten minutes before bending them around the templates. The plan's show sheet balsa edges for simplicity. The 28 wing ribs are cut out, pinned together and sanded to the correct airfoil shape. While the wing ribs are still pinned together, drill a ⅛" hole through them where the rear spar is located. Cut out the ⅛ x ⅜" notch for the main spar, allowing an added 1/16" depth for the 1/16" balsa leading edge sheeting. Install the 1/16" wire hooks and add the 1/16" plywood end ribs which extend the full chord of the wing. Drill the two ⅛" holes in the end ribs to match the two ⅛" dowels on the fuselage. Make certain that both wings are mounted at the same angle.

All control surfaces are attached with soft iron wire as hinging material. The wing struts are constructed from 5/16 x ⅛" basswood or hard balsa. Use thin brass or aluminum to make the fittings. Use 1/16" dowel pegs to help hold the fittings in place. The length of the wing struts controls the amount of dihedral, which should be 1-⅜" at each tip. Follow the plans closely when assembling the wing struts, making *(Continued on page 36)*




FULL SIZE PLANS AVAILABLE. SEE PAGE 60.



Fort Wayne, Ind., Mad Modelers, had circles in McMillen Park as long ago as 1947. Shown are a 50 and 70 ft. circle—club then hoped for new additional UC circles of 70, 60, and 42 ft.

Two-level "control tower," one feature of the Charles A. Donnelly Modelport, in New Orleans.

# a place to fly

*Professional analysis of 30 "success stories," offers proof—useful tips—that you can do something about flying-site problem.*

**by WILLIS C. BROWN, AMA #1**

*Specialist for Aviation Education*

*U.S. Office of Education*


Many cities have had Modelports for 10 to 15 years, others in process of construction. Dayton takes theirs seriously.

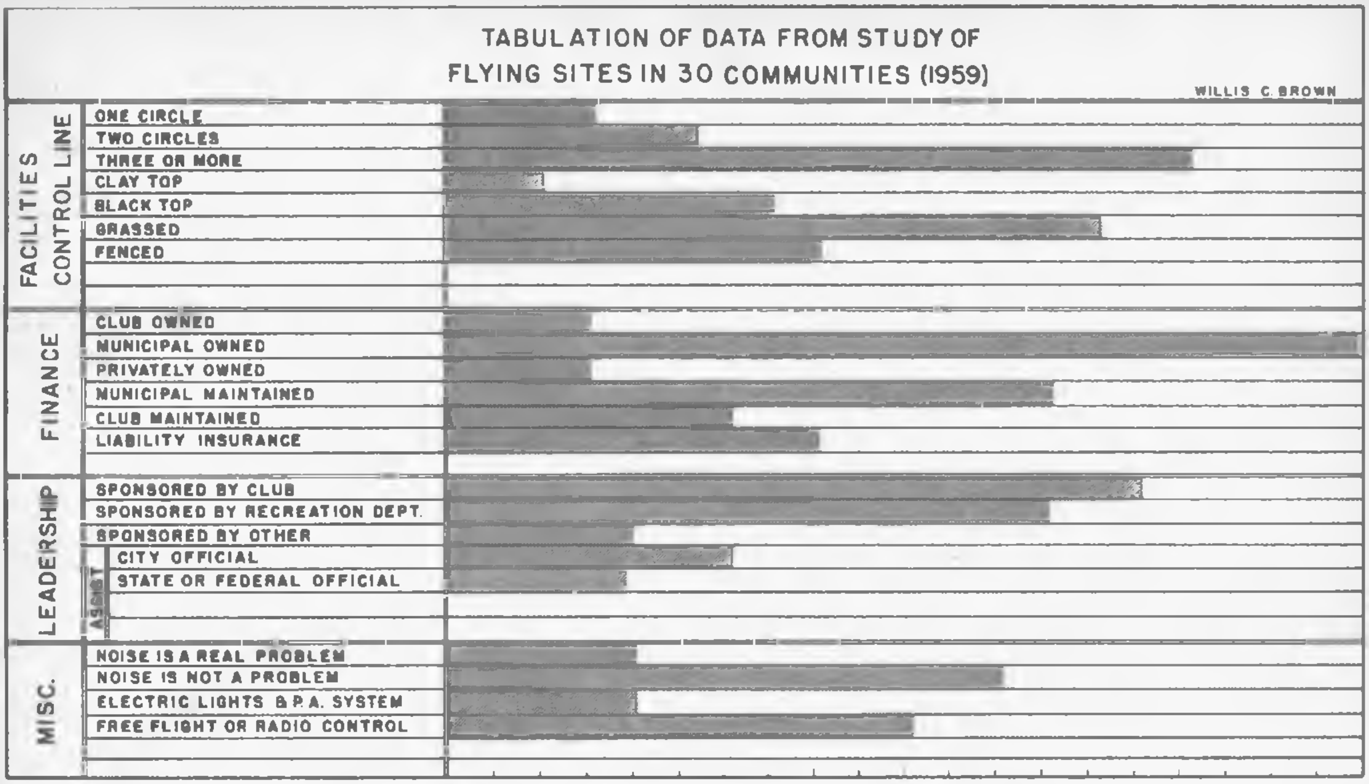
► Do you want to see that impressive level-green expanse of the ideal flying site in your town? Others have done it. You really can have that flying site you have always wanted, if you don't "goof" on your planned strategy.

Don't give me that old story about getting kicked out of your local park, or the town Fathers passing an ordinance forbidding your flights as a noisy nuisance. Perhaps these real quotes sound familiar? They are from groups that had nothing but bad luck until they saw the light.

"At various playgrounds and open areas in the city our ½ A models are flown regularly without interference.

**Before** Wilderness of weeds and brush marked site of the future impressive flying area in Dayton outskirts.

**After** City fathers—Dayton by no means unique—consider cost of flying area improvement worthy investment.




However, the larger motors made too much noise and we were squeezed out by complaints." —"always had trouble in securing a site for flying our models. It seems that we no sooner obtain a permanent site than we were asked to leave. Complaints of neighbors over noise, we surmised was the usual reason"—"our Police enforced a ban on the flying of model planes in our parks. We turned to various fields—school yards—complaints would be lodged, and out we went. We reached the end of our patience when a cemetery caretaker invited us to use an unused portion of the cemetery—imagine how long this lasted."

But perhaps these five actual stories from those who have found different successful methods may give you the idea you need.

1. From the Folsom, Pa. Golden Eagles R. C. Club comes a letter quoted in part. "We have been having a considerable amount of trouble finding and maintaining a flying site for our club members in this area. On the 28th of November (1958) the club officers went to the————Oil Laboratory, to see if we could obtain written permission to use their fields as our future sites.

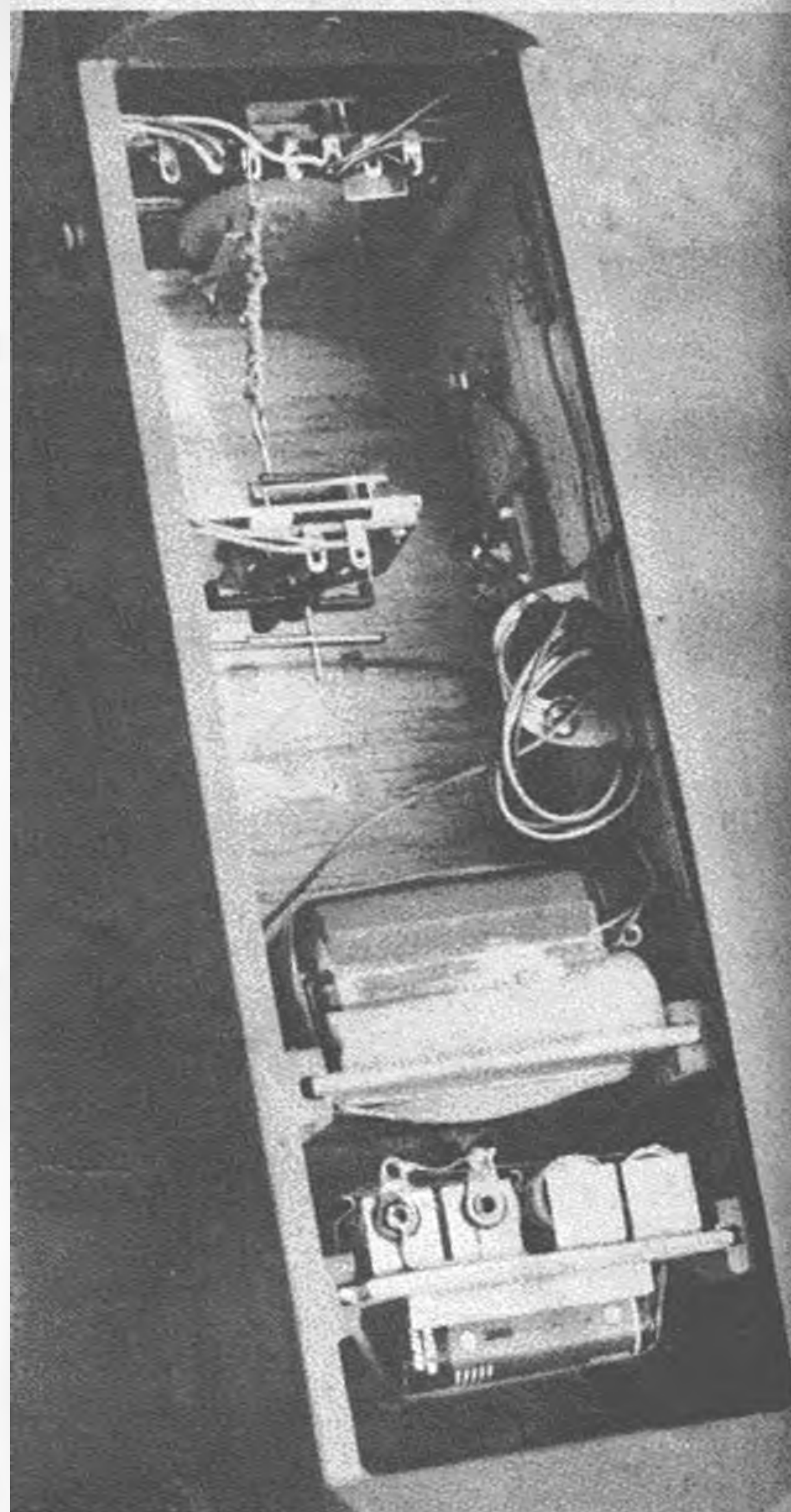
We found the management more than willing to cooperate and give their permission. A meeting of club members was called, and a basic set of rules written. These rules were also submitted to the ————Oil Co. management. The rules were voted on and approved."

The letter adds the thought that the management were evidently impressed by the rule making and self governing features of the Academy of Model Aeronautics. They probably gave approval because of this and the liability insurance features inherent in AMA membership.

Notice that this club had a plan which included self governing rules—something tangible on which the management could vote, a very businesslike way of going about getting a flying site. Have you carefully planned and tried this businesslike approach?

2. Another (*Continued on page* 48)

During dedication (1954) of Model Flying Circle, Boulder, Colo., sponsored by Civil Air Patrol, City of Boulder, Boulder Exchange Club.

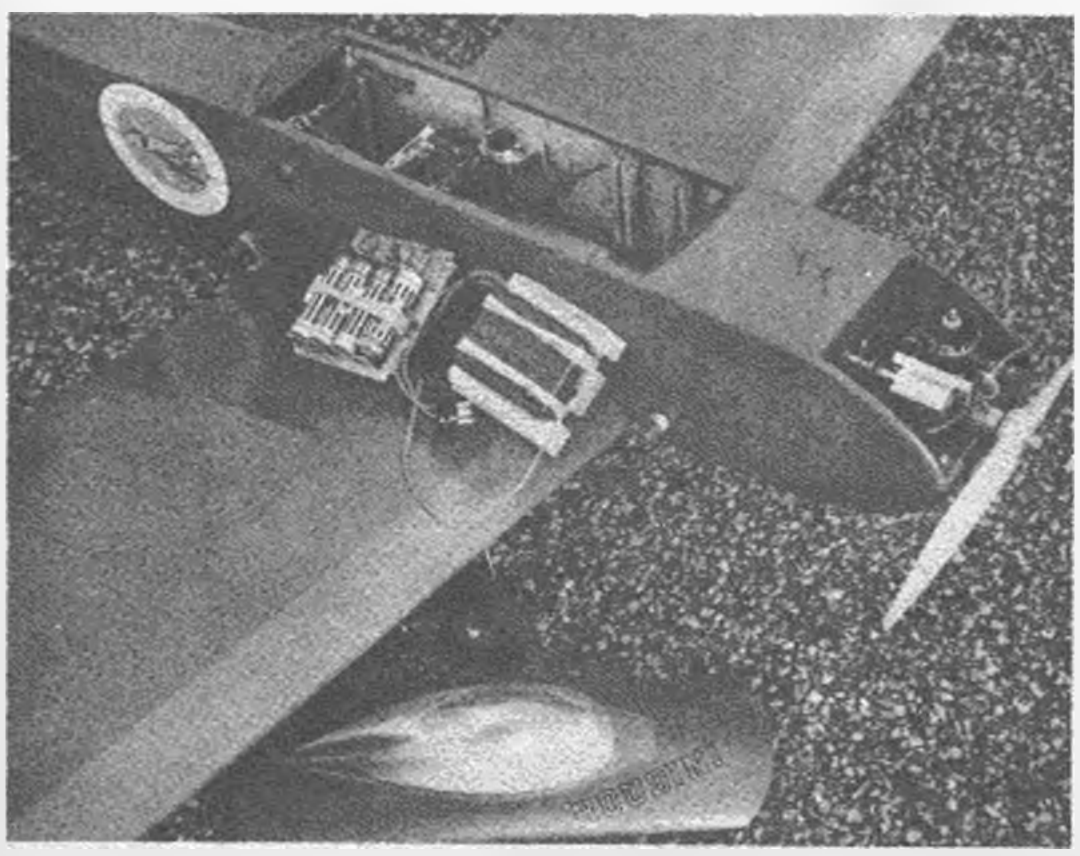



Straight wings and flat sides, yet looks fast. Bubble, few stringers, and graceful tail outlines give that going-places look. Engine is accessible, Roto-Valve and linkage easily put in.

Front to back: Battery-box tray, Gyro 22X r'cvr, Bonner motor-control SN, Bonner Varicomp esc'p.

# HOUDINI

***Once upon a time they said it couldn't be done but low wings have it over most cabin jobs in RC. Try this .15 pronto.***



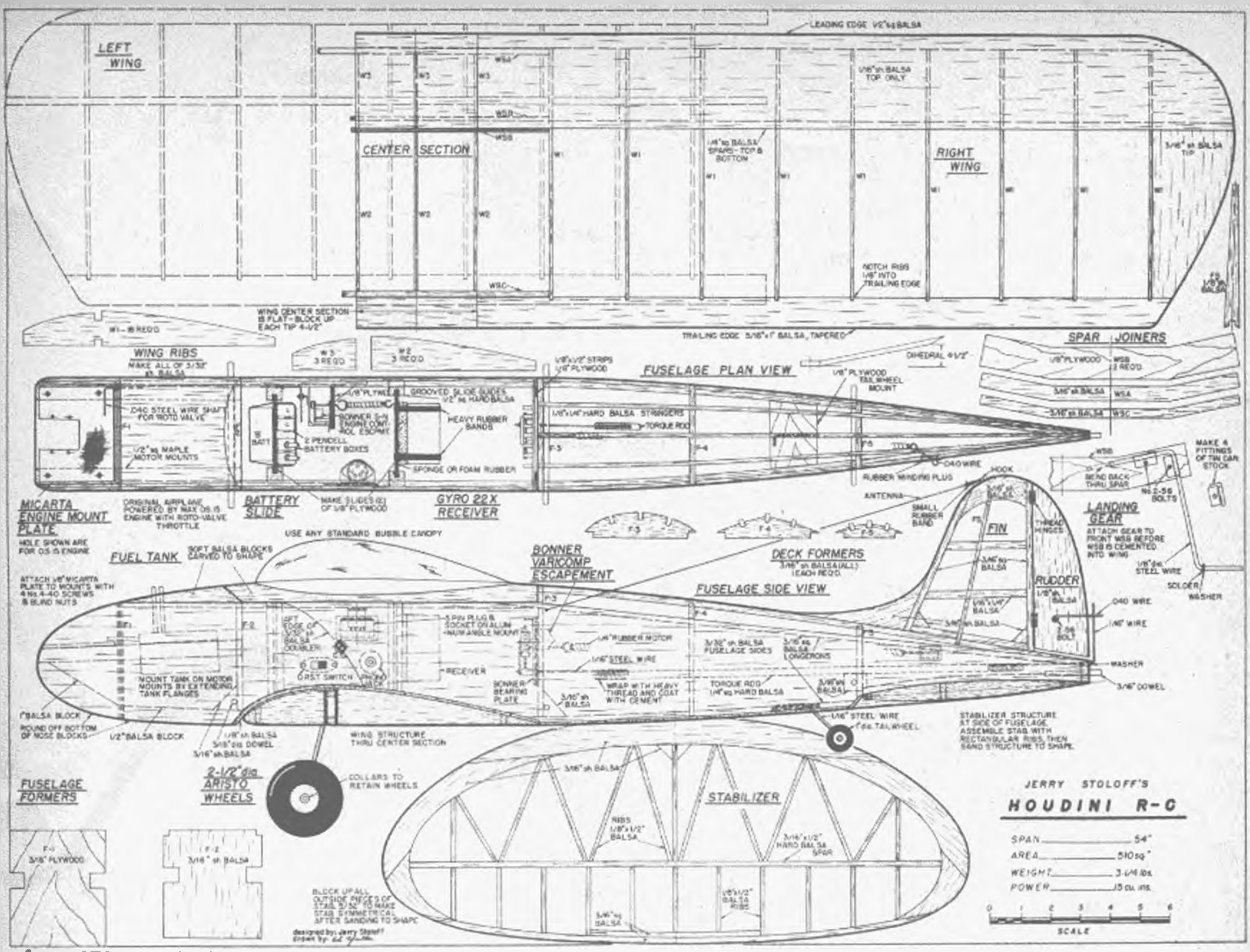
Top lifts off, and receiver and battery trays both slide out easy like. One thing about low wings—you'll never pop wing in loop!

► *Editor's Note—Having flown the first Houdini in the spring of 1958, found that it will break out of a turn within 90 degrees if not thrown in steeply. With normal entry it will complete a 360 on its own, perhaps losing little altitude. Heavy-on-rudder entries (no hold) start it down but recovers. Responsive. Flown tame, no worse than many cabins, better than some. If stunted, flat-trim gave long, screeching pull-outs. Pays off a bit on approach turns in wind but well worth it!*

Low wings once were thought unstable and difficult to fly. Houdini will do such maneuvers as rolls, split S, wing-over, etc., without difficulty. It has been flown for more than a year with mishaps due only to radio failure. Houdini performs as well, if not better, than most high wing models.

Houdini, like any single-channel low wing, has excessive dihedral with enough angular difference between the wing and stab to insure a more rapid pull-out from a vertical position. The landing gear is placed well back, slightly ahead of the center of gravity, for straight tracking without tendency to ground loop. The rudder was built so that when the top of the fuselage was covered, the silk would cover the rudder at the same time, fairing it into the fuselage. This enchances the appearance and adds strength. Construction is simple but sturdy. Weight is 3¼ pounds.

*Fuselage and rudder*: The two fuselage sides are cut out of hard straight-grained 3/32" thick sheet balsa, as are the two doublers. The doublers and the mating area of the fuselage sides are given a coat of cement and set aside to dry separately. When dry another coat of cement is applied to surfaces, the parts clamped together.




FULL SIZE PLANS AVAILABLE. SEE PAGE 60.

**by JERRY STOLOFF**

Mark off on the inside of the fuselage sides the position of all the stringers and uprights and cement them in place. Firewall F-5 is cut out of 3/16" plywood as per template. Bulkhead F-4 is cut out of 3/16" sheet balsa as are F-1-2-3. Cement formers F-4-5 in place. Sand inside of fuselage at the rear section so that when it is cemented together, there is a proper joint. The cross braces are added and the formers F-1-2-3 cemented in place. The motor bearers are pushed through former F-5 and cemented securely to the inside of the doublers. The ⅛x⅛" stringers are cemented in their respective slots of the top formers, making sure to taper them so that they flair into the rear of the fuselage.

The bottom nose blocks are cut out and cemented securely. The gussets, where the wing and tail dowels go through the fuselage, are cemented in place. The bottom half of the fuselage then is covered with 1/16" sheet balsa with the grain running crosswise. The tail gear is bent to shape from 1/16" diameter music wire and fastened to the [illegible] plywood mount. It is then cemented on the inside of the fuselage at its proper location with the gear protruding through the bottom of the fuselage. The top, front cowl block is cut out slightly oversize and just tacked in place with small dabs of cement. The removable hatch block also is cut slightly oversize and two [illegible] sq. pieces of balsa are cemented on the underside, running lengthwise as guides to keep the cowl block in its proper location. The blocks then may be sanded to conform to the fuselage width and contour.

The rudder is constructed flat with the exception of the 1/16" x ¼" caps which are assembled after the rudder is cemented in place. The fuselage, including the rudder, is thoroughly sanded and the bottom nose blocks rounded off. The removable hatch is separated from the rest of the fuselage. You now are ready for the radio installation, keeping in mind that the model must balance at the position shown on the plan. The ½" square grooved uprights which hold the battery tray and the receiver are cemented to the inside sides of the fuselage. The escapement is mounted on ⅛" plywood and cemented in position, making sure that the torque (*Continued on page* 31)

**Cranking the .15, Jerry readies Houdini for an ROG take-off. Get easy-to-work microswitch—this rudder job lives up to its name.**

# Early Birds

by DOUGLAS ROLFE

## Number 7

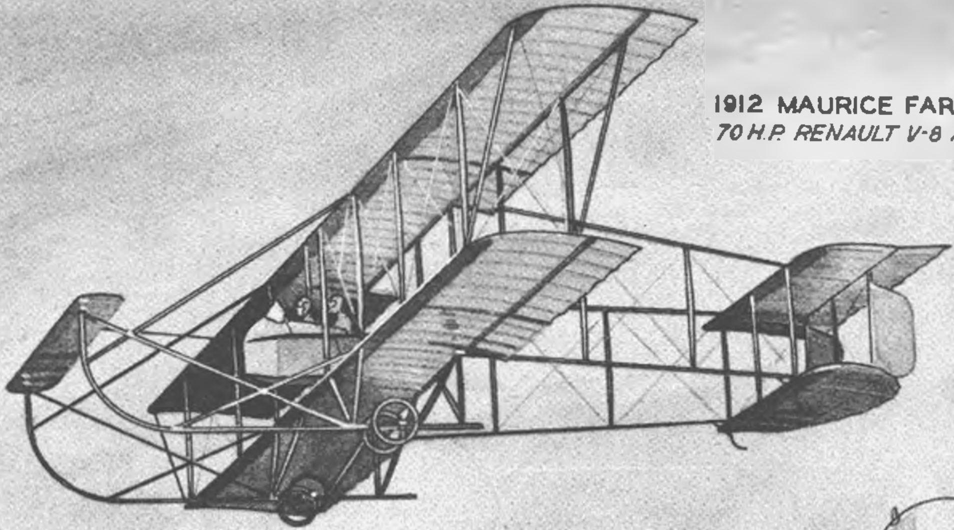
## DEVELOPMENT OF THE PUSHER BIPLANE


The pusher biplane was introduced by the Wright Brothers, Voisin, Curtiss and the Farman Brothers. There were others, of course, but not of such historical importance. The Wright was in effect a dead-end but all the others were developed until the pusher boxkite became obsolete.

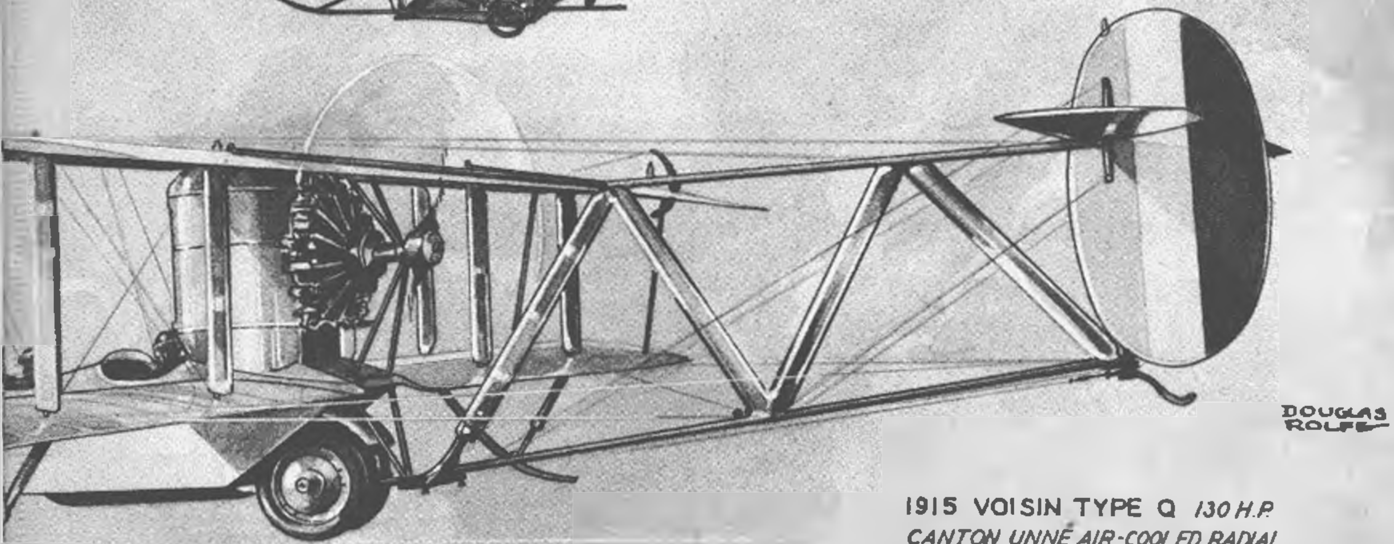
The Grahame-White boxkite shown was a modified Henri Farman in use 1909-1911. The Maurice Farman "Longhorn" (after the lengthy front skids) belongs to this period. Both Henri and Maurice Farman dropped the front elevator in later types, introduced the nacelle, but retained the four-wheel landing gear.

The clumsy-looking Maurice Farman with front elevator and biplane tail was slow but very easy to fly. The Wrights also abandoned the front elevator and one of their last designs, the "Tin Cow" (by mistake included in the last instalment covering tractor biplanes) had a bonafide fuselage.

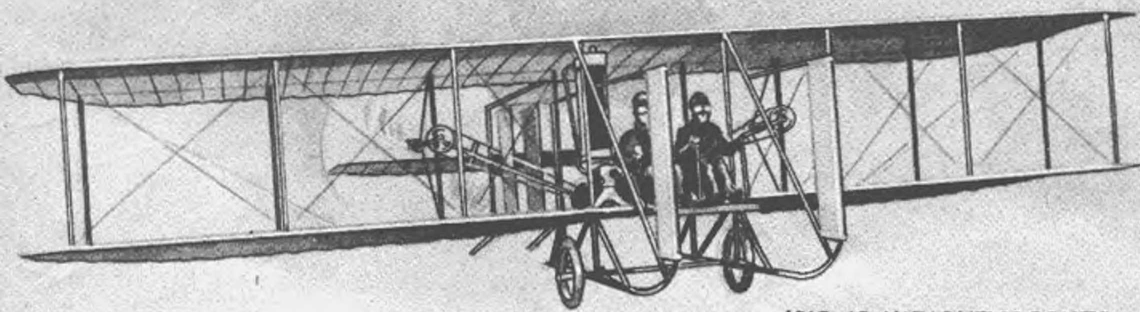
Vickers F.B.5 was prototype model of famed W.W.1 "Gun Bus". The Voisin Type Q was a brilliant example of fine engineering in these far-off days and largely of metal construction. Note the oleo strut wingtip skids!



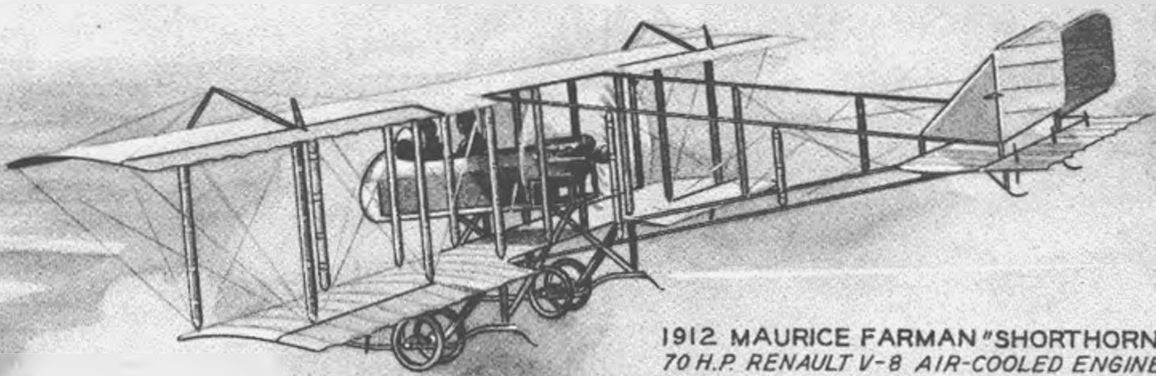
1912 MAURICE FARMAN "LONGHORN"
*70 H.P. RENAULT V-8 AIR-COOLED ENGINE*



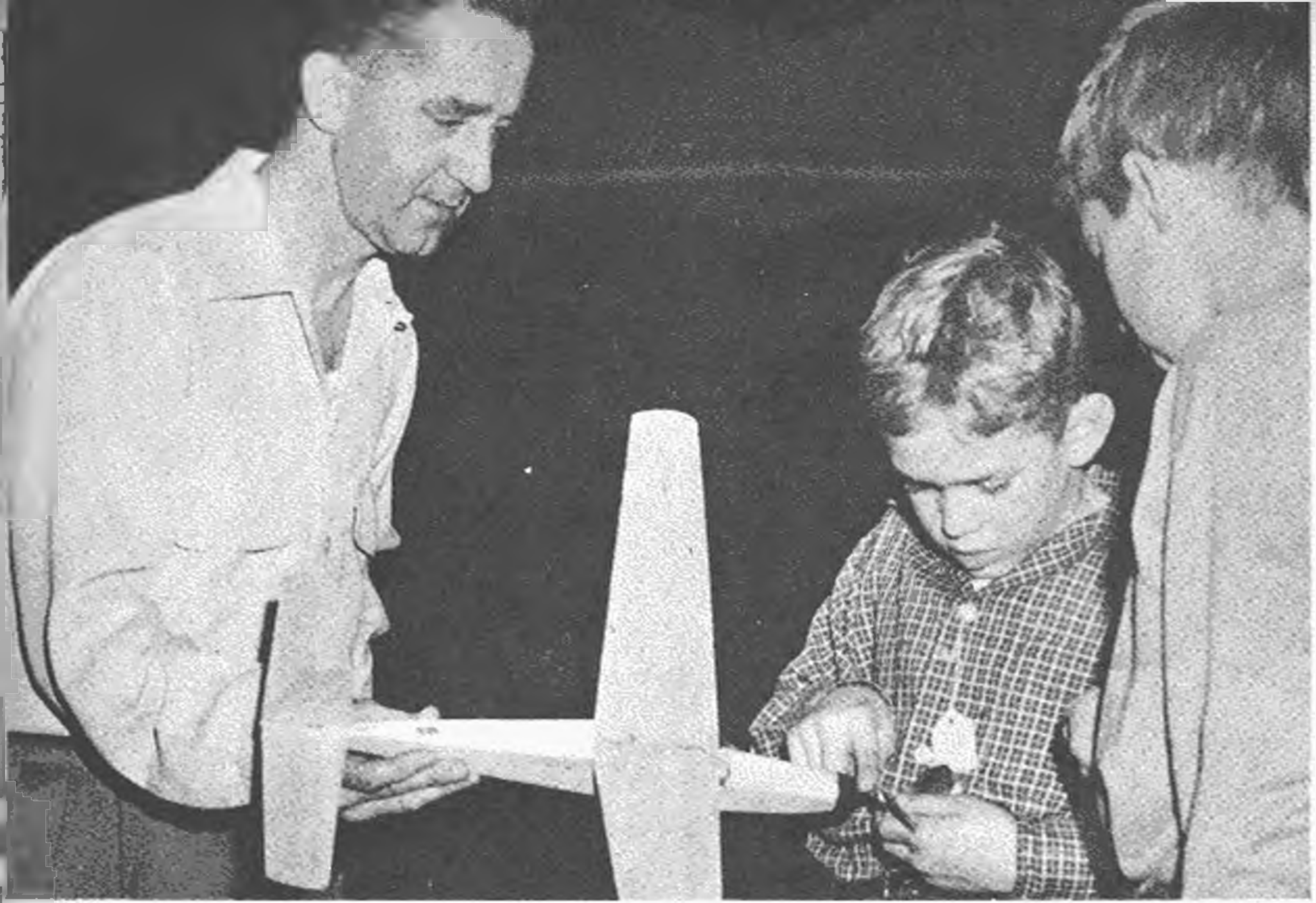

1915 VOISIN TYPE Q *130 H.P. CANTON UNNÉ AIR-COOLED RADIAL*



1912-13 WRIGHT "SCOUT"
*50 H.P. WRIGHT 6-CYL. ENGINE*



1912 MAURICE FARMAN "SHORTHORN"
*70 H.P. RENAULT V-8 AIR-COOLED ENGINE*

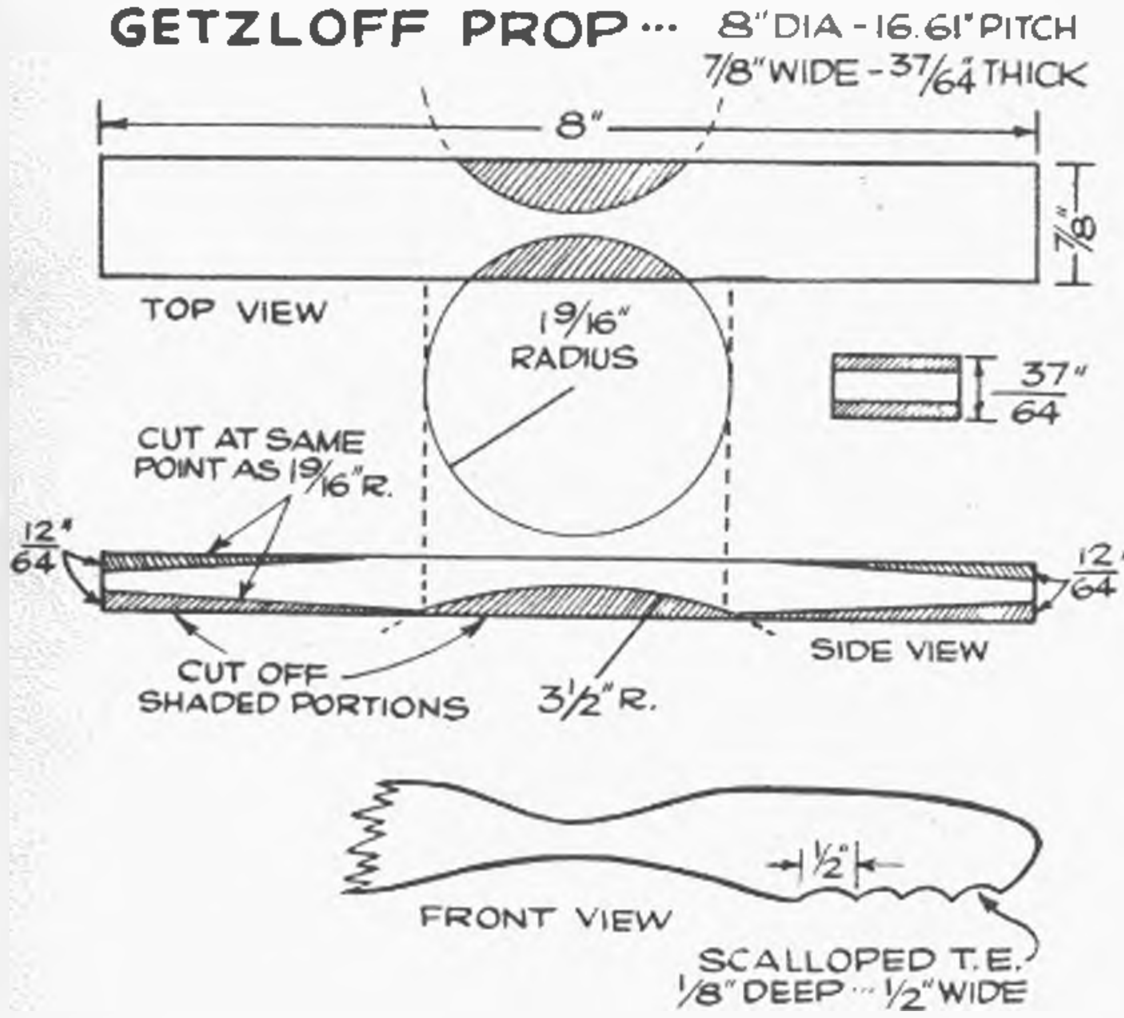


Kurt Reich, eight, has understanding helper in his dad, George, 37, US Wakefield finalist for 1958 and contest flier for more than 20 years. Model is popular Ranger. Pix, Cleveland Press.

# Souped-Up Pre-Fabs

by CHARLES TRACY

***Who'll be first to crack three minutes with simple kit? Some promising tips.***

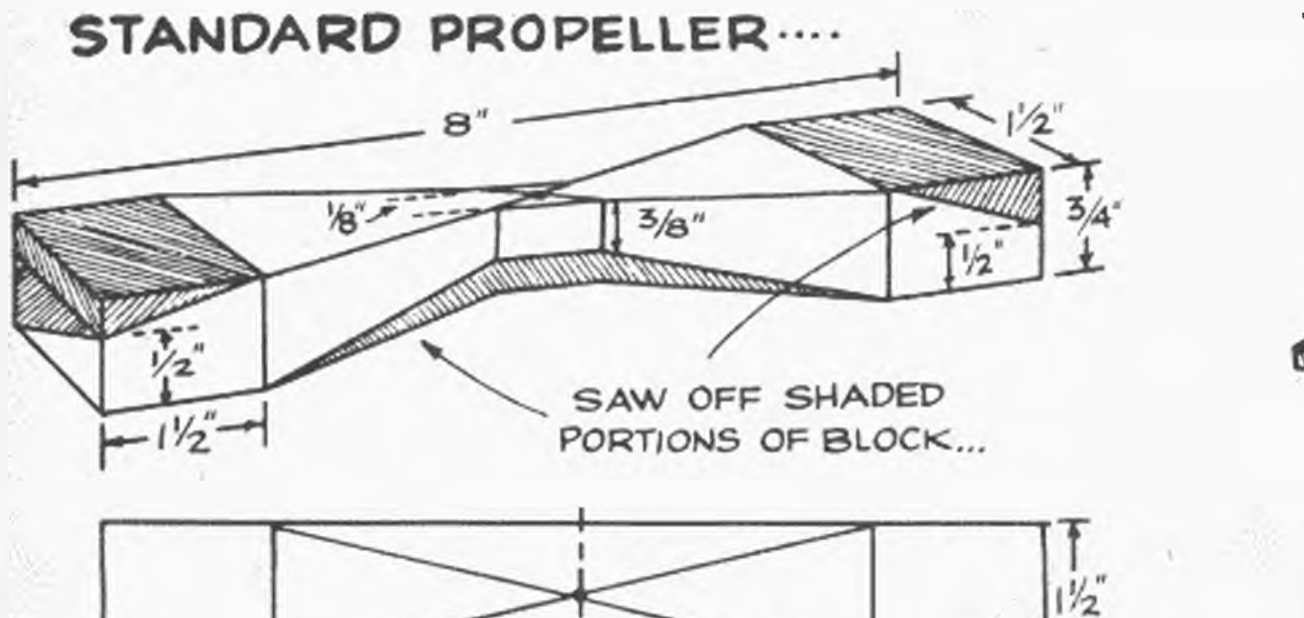


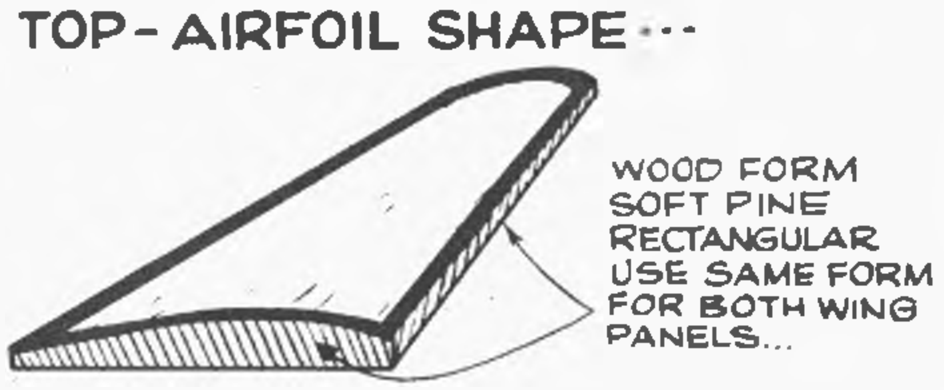

► Champion modelers of the midwest are enthusiastic about indoor "prefab" flying. Interest in it has been growing in the last eight years because it appears as a regular event on the program of the Great Lakes Indoor Air Meet held in Cleveland every winter under direction of The Cleveland Press.

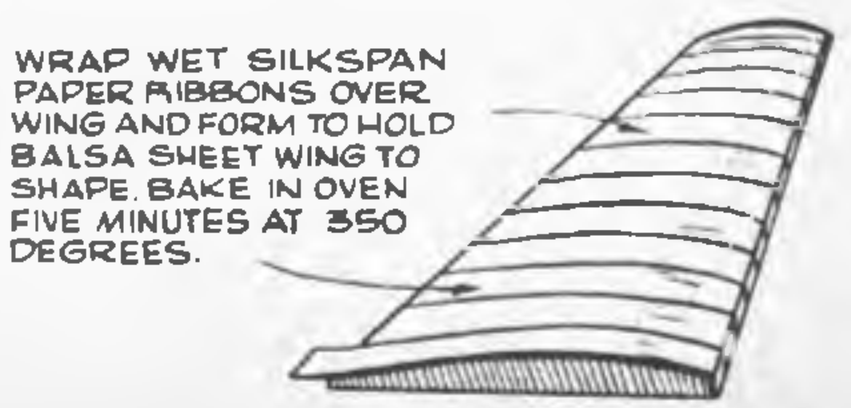
A "prefab" is a sheet-wood model made from a kit. Several manufacturers make them, commonly used examples being the Carl Goldberg Ranger 21 and the Top Flite Stinson, Luscombe, etc. series.

"Souped-up" by established Cleveland standards, one of these little jobs will cruise around a medium-sized school gym for two minutes. They're ideal for indoor flying contests because a giant-size hall isn't required.

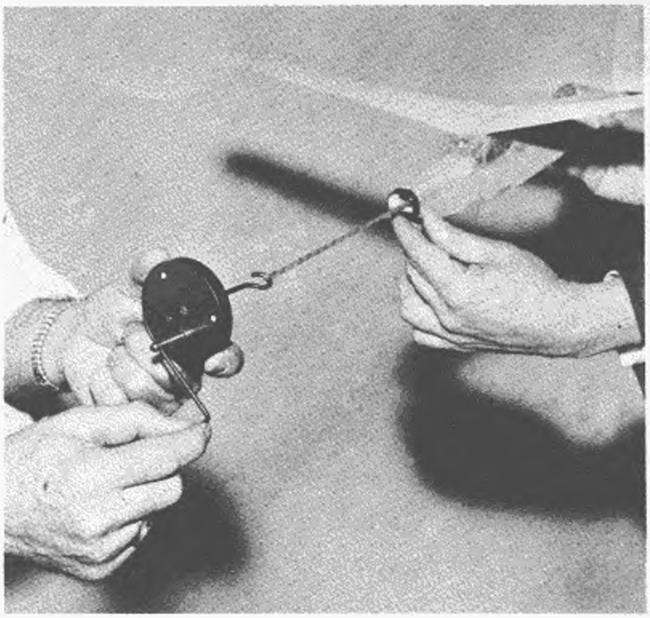
Prefabs fit nicely under a 30- 40- or 50-foot ceiling. They offer plenty of challenge. In fact, it is downright tough to complete with Detroit's Dick Kowalski, who set the new record of two minutes, 41.6 seconds last winter in the open age division using a Goldberg Ranger 21. Or Mike Karlak, Cleveland's champ, who flies a Ranger two minutes, 38 seconds on an official flight. He's in the open class too.



If Shirley McQuillan seems to question husband Dawson's winding, she's worried about prop in his mouth. Ranger deadsticks, above.



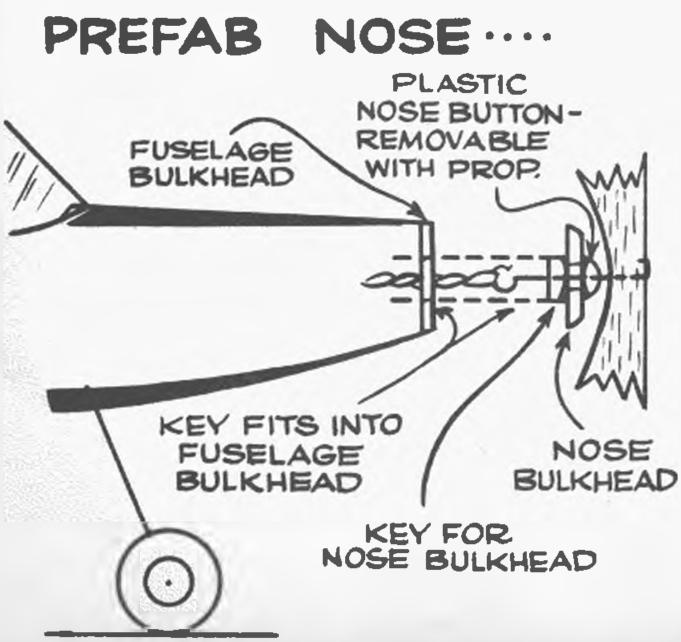
Rubber winder made by Wilson's of Cleveland, allows five to ten times as many turns. As rubber wound, winder moved toward nose.

The whole idea behind prefab contest flying was to put an event on the indoor program that would appeal to kids because they might easily make kit-models for it. So what are the kids doing with prefabs today?

A little nine-year-old girl, Susan Getzlaff, Cleveland, won the prefab Dodo event with a flight of one minute, 10 seconds, using a Top Flite Luscombe! Then Ron Roharik, 11, flew his Ranger one minute, 39.4 seconds; Dan O'Malley, 12, rolled up one minute, 52.8 seconds as champion Fledgling; Ronald Roskilly, 15, scored one minute, 35.8 seconds, as Junior winner; Don Eble, 20, made a hop of two minutes, 28.2 seconds as senior ace.

But it's true—almost anybody can put together a prefab. And for the Great Lakes Indoor, everybody does. They are entered by the hundreds. In last winter's meet, every winner used a Goldberg Ranger except Miss Getzlaff. Some second and third place fliers used Goldberg Cessna's and Spirit of St. Louis. But in the meet were every kind made.

The fascination seems to be in the variety of ways to meet the prefab challenge. Rules keep it from being an all-out redesigning job in favor of the experts, as every other AMA event has now become.




Prefab rules give you the same box of parts and materials as the next guy. No special light indoor wood or tricky tungsten wire bracing is allowed. Some things you can change. Look at this official description of a prefab in the Great Lakes indoor rules:

PRE-FABS: Made from Top Flite or Goldberg kits; all sheet-wood construction. Changes in general design layout or surface areas not allowed. No paper covering. Changes in following are okay: dihedral, polyhedral or cathedral in wing or tail; propeller; rubber motor; airfoil; prop bearing; nose fitting. Ballast and decals may be omitted. Except for these changes and omissions, all other parts and materials in kit must be used. Added external bracing not permitted. Ribs to hold airfoil are allowed. No substitute materials. Sanding for lightness okay, but leave trace of decoration scheme to prove kit wood was used for all parts. Timed for duration. Best flight of six scored as entrant's record. No delayed flights. So with the rules in hand, what can you do to win?

There are three key factors: light weight, correct propeller and rubber motor of proper size.

Kowalski's plane weighed .31 ounces, Karlak's .30 ounces. Kowalski used 12 ribs on the wing, six on the stabilizer. These not only formed the airfoil but, by holding the camber, gave the wing necessary rigidity to keep it from flapping, a common fault with "strutless" Rangers. (We begged Carl Goldberg to remove the struts five years ago. He did.)

Kowalski used a hand-carved balsa propeller 8-inch diameter, 16-inch pitch. It was turned by a 25-inch loop of ⅛-inch Pirelli rubber. His dihedral was 1¼-inches under each tip.

Carefully sandpapering all parts of the plane before assembly brings the weight down. A razor-blade plane can make the job easier and faster.

Dan O'Malley used a model heavy by usual standards. He smoothed and lightened a regular 8-inch balsa machine-sawed propeller, then added ¾-inch tips to it, increasing the diameter to 9½-inches. His motor was ⅛ flat, brown rubber, in one loop, twice the fuselage length.

Ribs in the wing should be kept shallow. Deep or thick airfoils are unstable longitudinally. The plastic nose blocks are replaced with wood to make easier winding and storing the rubber back into the fuselage.

CONTINUED ON NEXT PAGE

Few of the trophies (ahem!) at Great Lakes Indoor Meet, Junior winners Jim Skinner, Don O'Malley, Ron Roharik, Elmer Schroder.

Two minutes, 41.6 secs. Open prefab set by Dick Kowalski, Detroit, in Cleveland's Public Auditorium. But the ceiling was 90 ft. high.

## SOUPED-UP PRE-FABS . . . Continued

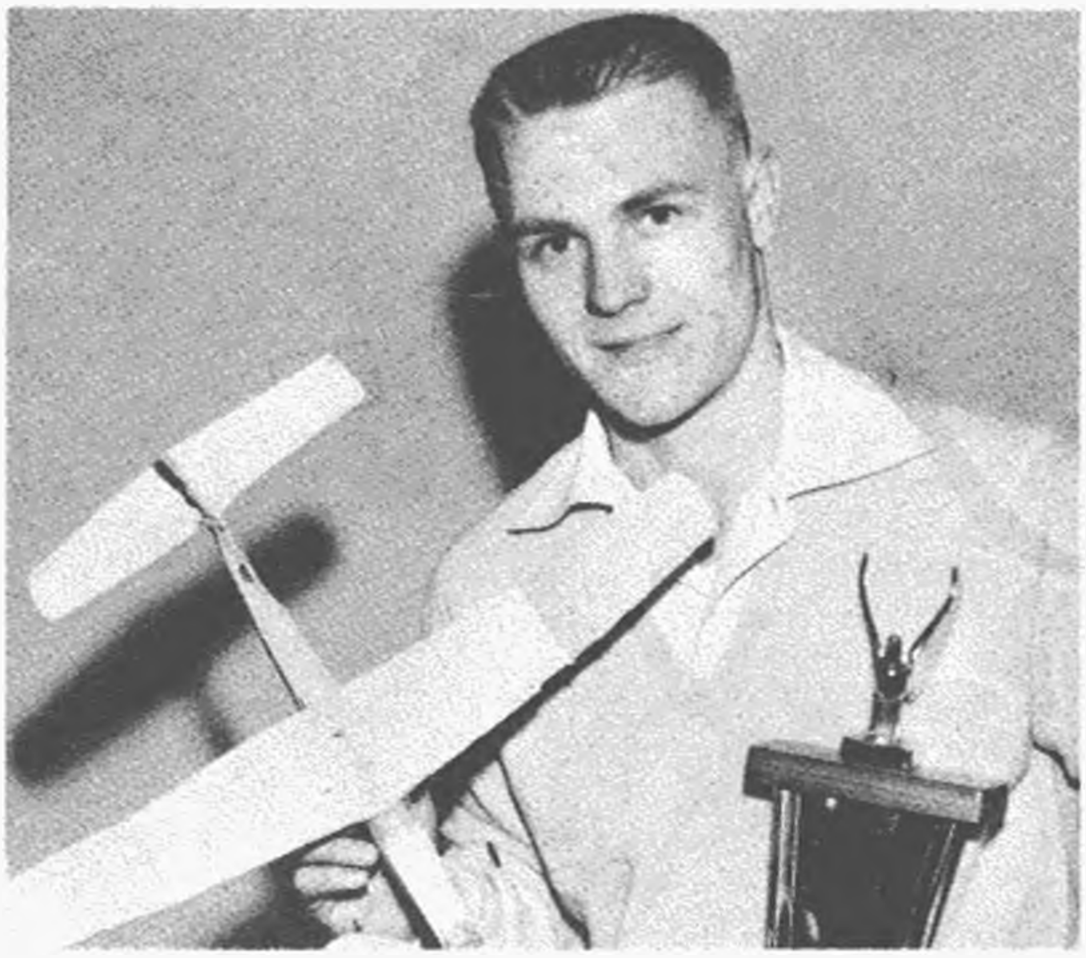
Wheels are cut in two, sanded and drilled full of holes to cut weight. Even windshields of plastic are sanded thin.

*The big trick*, however, is backing the wing to the proper airfoil. Carve wooden form to the airfoil shape. Lay sanded wing panels on it. Wet one-inch wide ribbons of Silkspan tissue and bind the wing panels to the form. Put into an oven at 350 degrees for five minutes. Remove, cool and unwind the paper. Your wing will be stiffly formed to the airfoil you want. Apply the ribs to hold it.

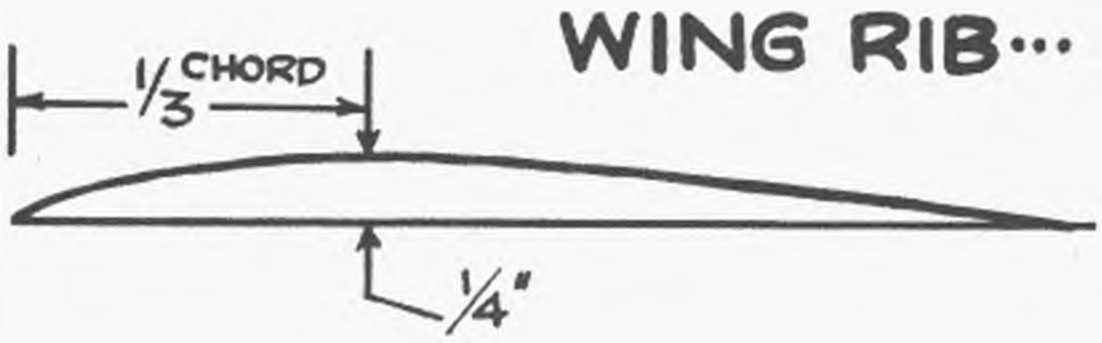
Carve the wooden form carefully. Use a razor-blade plane. Sandpaper it smoothly. Don't taper the form. Leave it rectangular, same width as chord of wing at root. Then you may use the same form for both wing panels. Wing, of course, is cut in two for this operation. Dihedral is added when panels are cemented to fuselage. Clay on plane's nose is used for balance rather than movable wing.

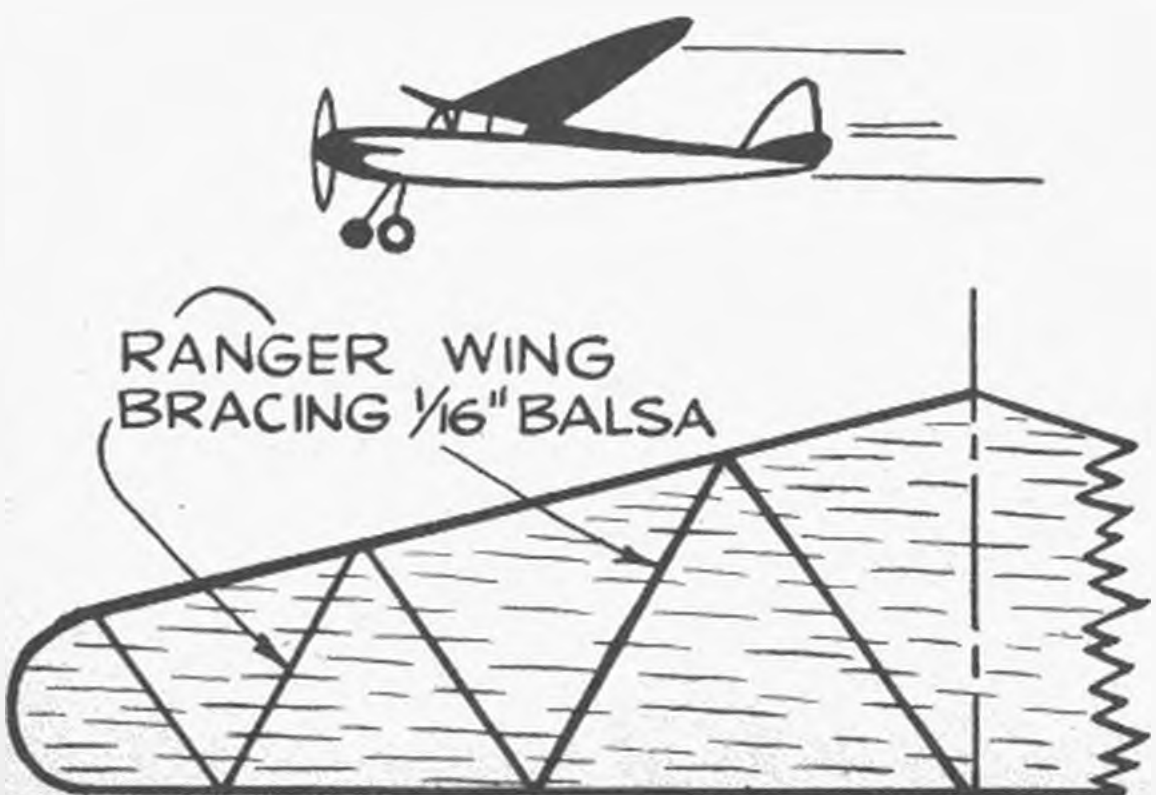
One panel of wing is done at a time. If oven is large enough, wooden form may be long enough to accommodate entire wing. Otherwise, with short wooden form, put one wing on from one end, the other wing later from the other end. *Don't make two wings for the same side.*

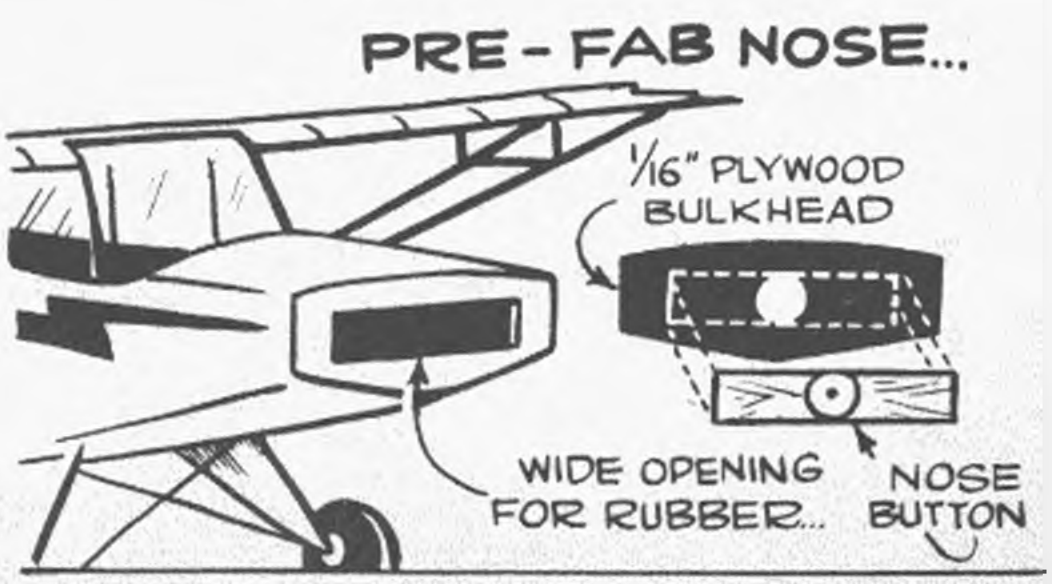
*PREFAB NOSE* is improved by enlarging the hole in the fuselage bulkhead so knotted rubber goes in easily. Plastic nose piece of Ranger can cut rubber and is too small for enlarged motors. A simple removable nose with a piece of 1/16-inch sheet wood fitted to key into the fuselage former works (*Continued on page* 40)

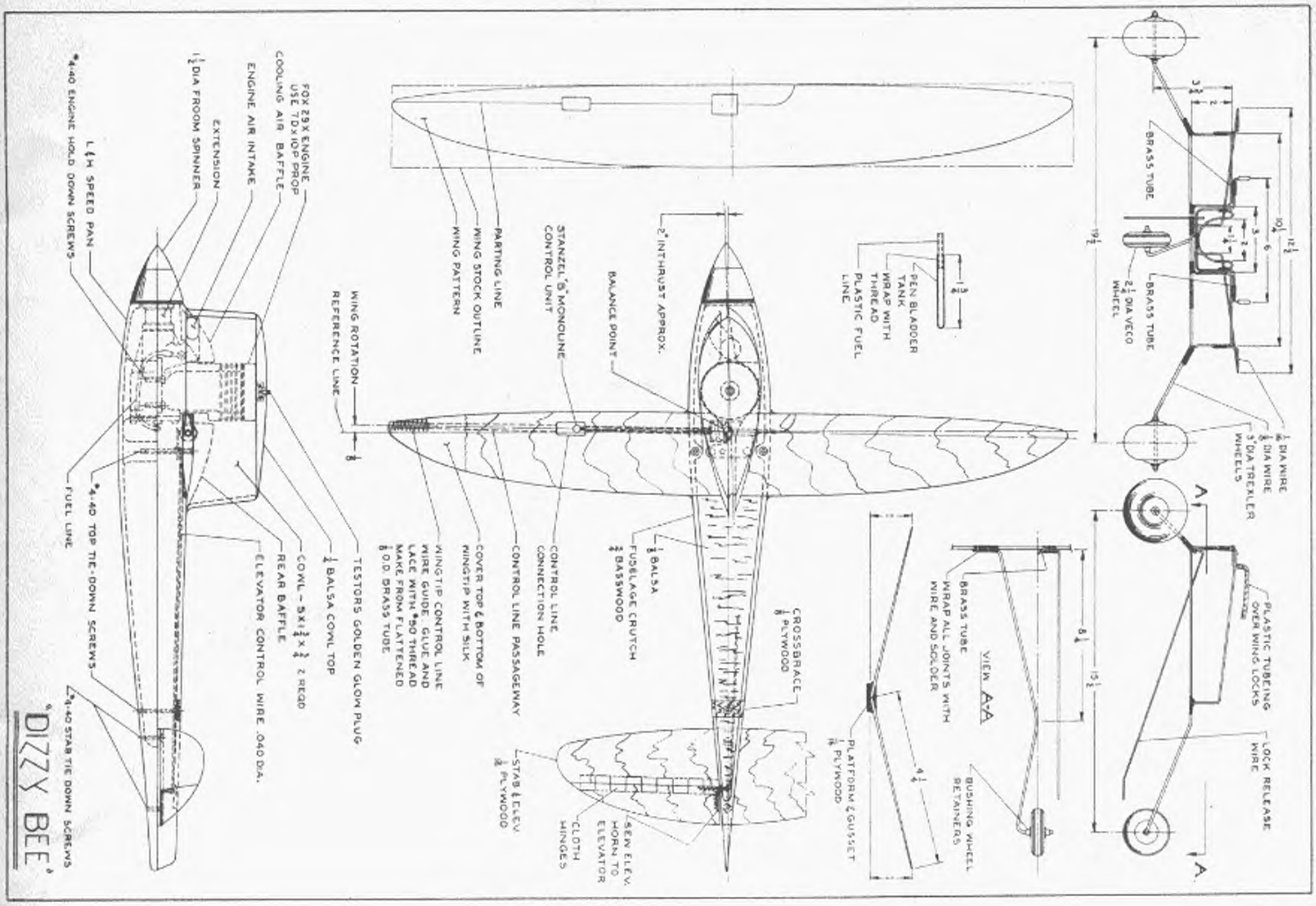


Senior Class winner, Don Elbe, 20, American Airlines employee. Plenty of keen competition in all three AMA age-class divisions.



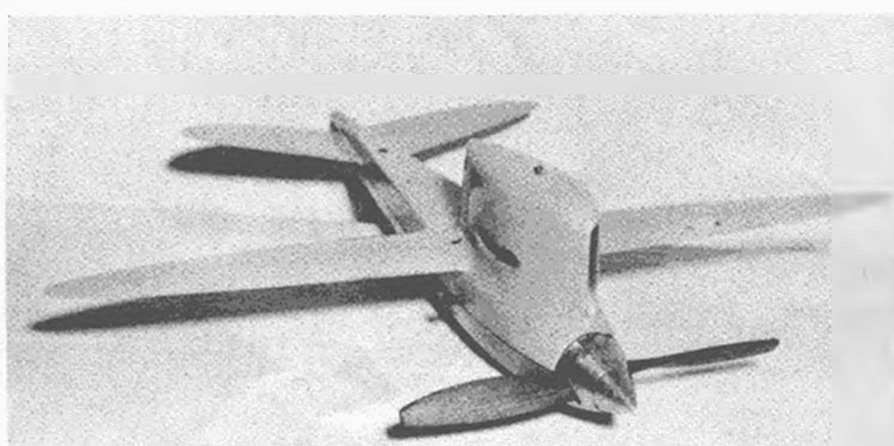


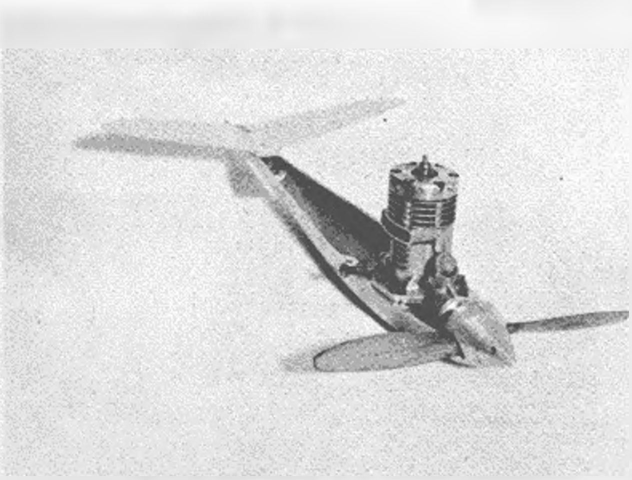

FULL SIZE PLANS AVAILABLE. SEE PAGE 60.

# Dizzy Bee

**by BOB LAUDERDALE**

***A master flier presents a .29 Mono-Line speed model. Thoroughly contest tested.***



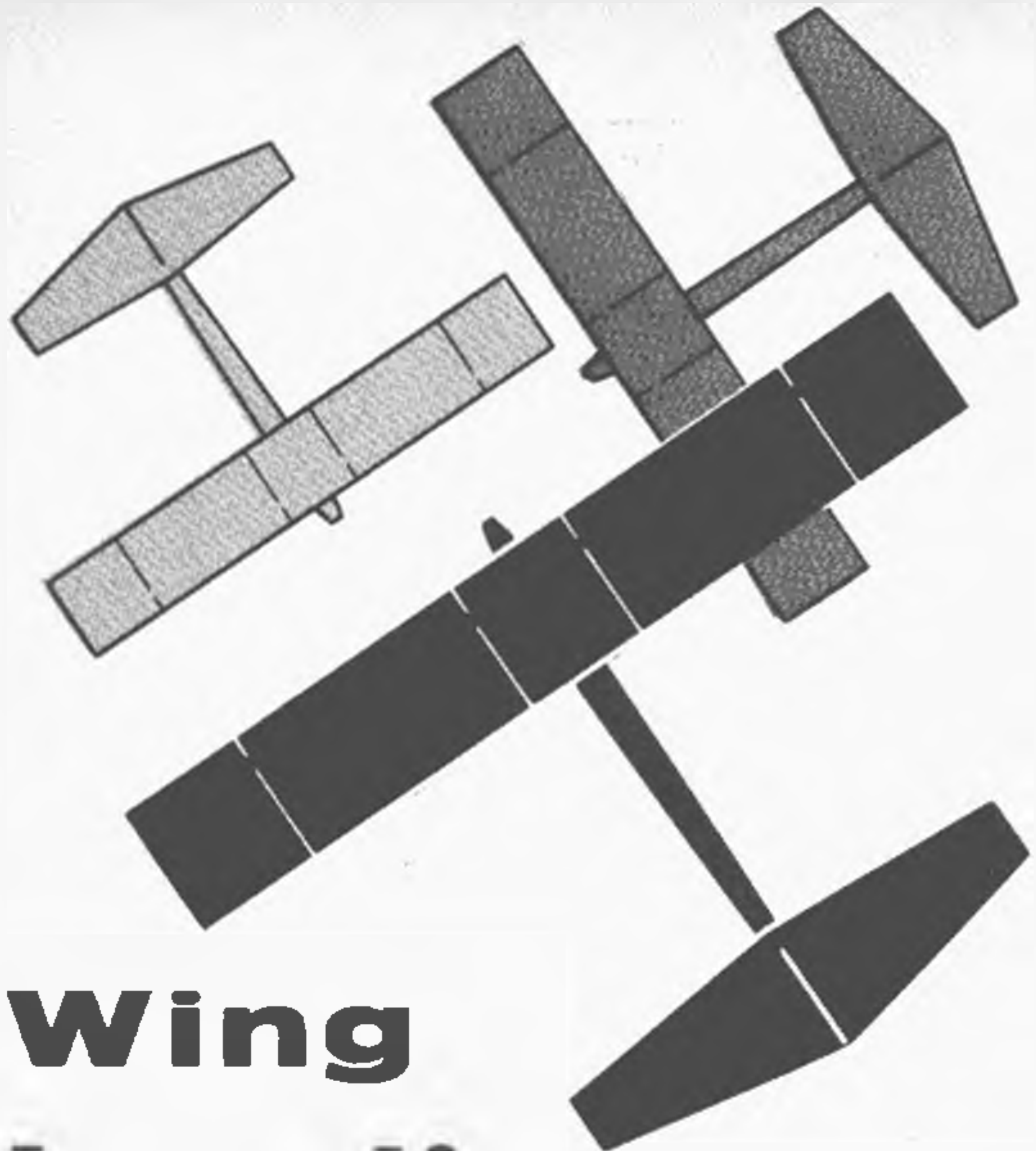


The 7 x 10 Tornado prop gives accurate impression of the size of the plane. Stable and easy to fly—for the speed hands, that is.

Left—Fox 29X or Dooling .29 used, mounted on L & H speed pan.

► The Dizzy Bee was built for the 1957 Nats in Philadelphia. No official flights were recorded because the new Fox 29X wasn't thoroughly broken in. For the 1958 Nats in Chicago, the Dizzy Bee was refinished and the engine was given more running time. The best flight turned was 149.92 mph, good enough for 6th place behind Harris and Shelton who hit 155 for a new record. Since then Dizzy Bee has won three firsts at speeds of 150 mph and is very capable of going faster under the right weather conditions.

To begin construction you (*Continued on page 36*)



# Wing Loading is Three Dimensional

by RON ST. JEAN

***Scale a hot airplane to different size and the result often is a "dog." This article solves long-standing free-flight mystery.***

► For years now we have wondered why, back in the days of the minimum wing loading rule, the small models glided so poorly in comparison to larger free-flight gas models. It was explained to us that the smaller model flew at a much lower effective Reynold's Number than the larger one, and "everybody knew that you need a high R.N. for best performance!" We discovered that R.N. is merely the product of velocity, chord, and some rather illusive "air density factor." So to make a more efficient model by obtaining a higher R.N. we needed to increase the chord of the model (hence, a larger one) and increase its velocity. (We figured that finding denser air would be quite difficult.) An experiment was made in very low wing-aspect ratio, but it was a dismal failure; we then had too much "tip loss." Building a heavy model to increase velocity also didn't work. Some success was obtained, however, by building a very low drag model, and thereby increasing velocity.

With this background, we were somewhat surprised to find, in recent years, that our ½A's could and *did* glide as well as our C jobs. "How come," we wondered. "What happened to Reynold's Number, was it repealed? Had small engines become much hotter for their size than larger engines? Or did the fact that the old wing loading rule had been abolished have something to do with this?"


Pondering his Ramrod, St. Jean came up with a concept that should influence world wide design.

To check out the latter possibility, we computed the wing loadings of our Ramrod fleet, coming up with information in Fig. 1.

As can be seen from the tables, there is a very definite progression evident, the small models having a much lower wing loading than the large ones. And yet the glides (sinking speeds) on all these different sized Ramrods were pretty much the same.

We felt we had found the answer but certainly didn't understand it, until one day it hit us like a bolt: For years, we have been thinking of wing loading in terms of so much per *square* something or other but the wing is *not* a two dimensional thing, *it is three dimensional*, and loading should be figured on a volume, not area basis; it has not only chord and span, but thickness as well. To test this hypothesis, we quickly checked this out, calculating the wing loading as so much per *cubic* inch, rather than square inch.

To make the measure of wing volume, we first determined the actual rib area of a typical Ramrod wing section, then divided the chord into this area value, in order to arrive at a measure of average thickness. Multiplying the average thickness of a particular wing by its area, then, would produce the volume in cubic inches. As shown in the table, dividing the weight in ounces by this figure gives us our three-dimensional, or cubic wing loading in ounces per cubic inch for the various sized Ramrods. (Fig. 2.)

As can be seen from the table, our cubic wing loading is almost identical through the various sizes. And since all these models have, in addition, equivalent gliding ability, a statement of principle seems in order: In scaling a design to a different size, so as to retain the same glide, the wing volume should be made directly proportional to the weight. Or, since we are dealing only with the same design, we can make the weight proportional to the cube of the span, or the 3/2 power of the area (square root of area cubed). The results are the same, the important thing being to put the measure of the wing in three-dimensional terms.

It is now apparent to us that figuring wing loading as so many ounces per square foot or square inch is useful as a measure of comparison between models only when those of almost the same sizes are considered.

The real fallacy of making wing loading comparisons on an area basis is that we are co-mingling oranges and apples, so to speak. That is, weight is three dimensional and area only two dimensional. For any direct comparison, we need to express one in terms of the other so that each will be in the same dimension, whether it be one, two or three. (*Continued on page* 41)

**FIG. 1**

| MODEL | ENGINE DISP. (CU. IN.) | WEIGHT (OUNCES) | WING LOADING (OZ./SQ. FT.) |
|---|---|---|---|
| RAMROD 150 | .020 | 3 | 2.88 |
| RAMROD 250 | .049 | 6.5 | 3.74 |
| RAMROD 400 | .099 | 13 | 4.68 |
| RAMROD 432 | .148 | 15 | 5.00 |
| RAMROD 600 | .225 | 24 | 5.76 |
| RAMROD 750 | .320 | 34 | 6.53 |

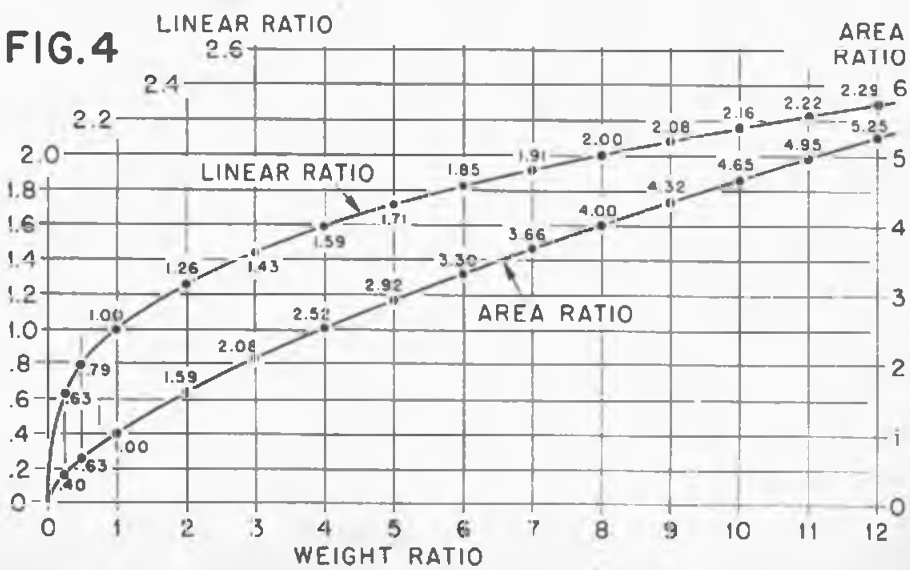
**FIG. 2**

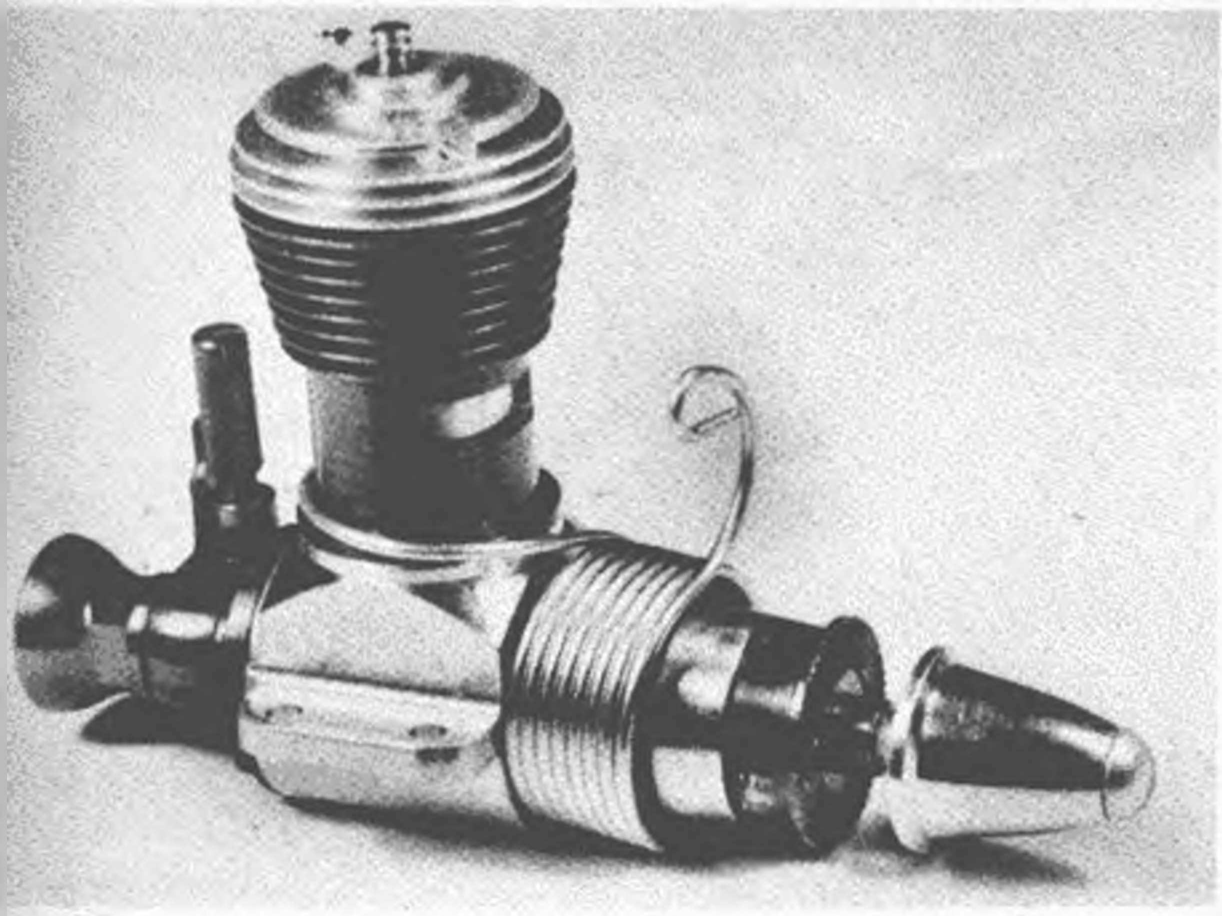
| MODEL | AVERAGE THICKNESS OF WING (IN.) | VOLUME OF WING (CU. IN.) | WEIGHT (OUNCES) | WING LOADING (OZ./CU. IN.) |
|---|---|---|---|---|
| RAMROD 150 | .341 | 51 | 3 | .0588 |
| RAMROD 250 | .443 | 111 | 6.5 | .0586 |
| RAMROD 400 | .562 | 225 | 13 | .0578 |
| RAMROD 432 | .579 | 250 | 15 | .0600 |
| RAMROD 600 | .681 | 409 | 24 | .0587 |
| RAMROD 750 | .766 | 575 | 34 | .0591 |

**FIG. 3**

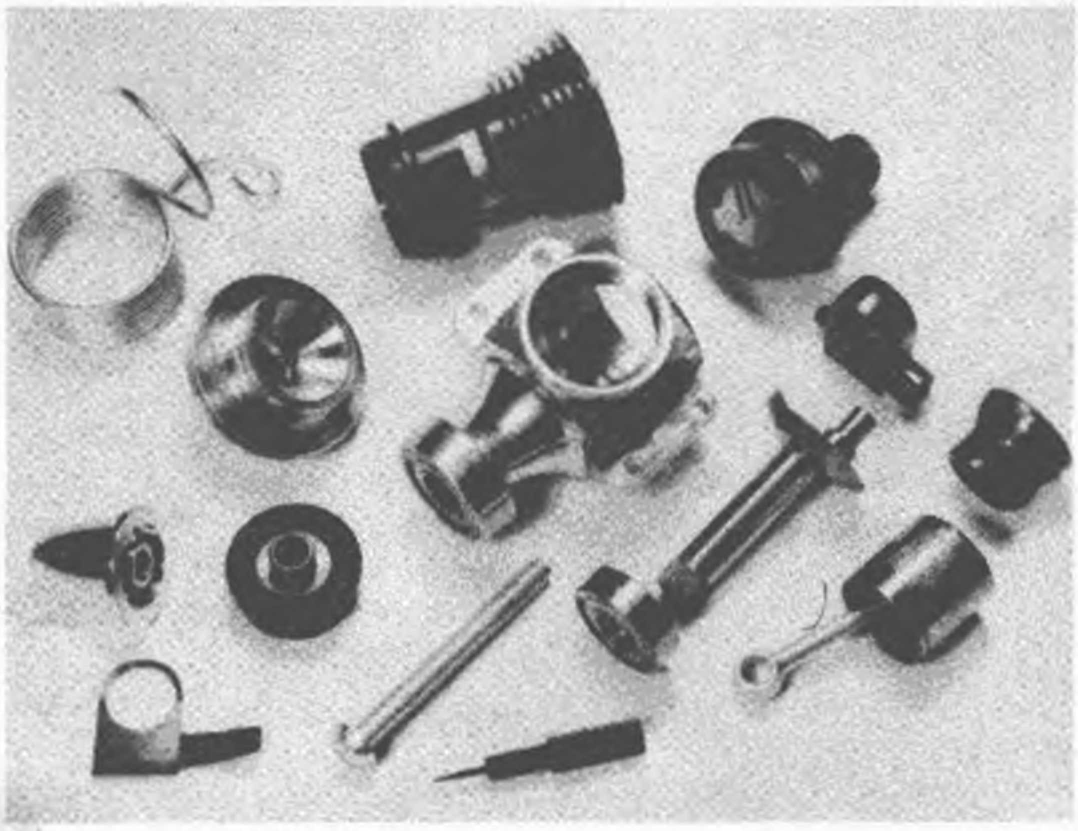
| ENGINE DISP. (CU. IN.) | WEIGHT (OZ.) | WEIGHT RATIO (.049 = 1.00) | SPAN (IN FEET) CUBED | SPAN (IN FEET) | LINEAR RATIO | THEORETICAL AREA (SQ. IN.) | ACTUAL AREA (SQ. IN.) |
|---|---|---|---|---|---|---|---|
| .049 | 6.5 | 1.00 | 38.6 | 3.38 | 1.000 | — | 250 |
| .020 | 3 | .462 | 17.8 | 2.61 | .772 | 149 | 150 |
| .099 | 13 | 2.00 | 77.2 | 4.26 | 1.260 | 397 | 400 |
| .148 | 15 | 2.31 | 89.2 | 4.47 | 1.323 | 437 | 432 |
| .199 | 24 | 3.69 | 142.3 | 5.22 | 1.545 | 597 | 600 |
| .320 | 34 | 5.23 | 202.0 | 5.87 | 1.737 | 753 | 750 |

**FIG. 4**





Starter on this ball-bearing .15 not essential, but nice to use.



Parts are typically Cox—and no castings utilized in its design.

# ENGINE REVIEW

# Cox Olympic

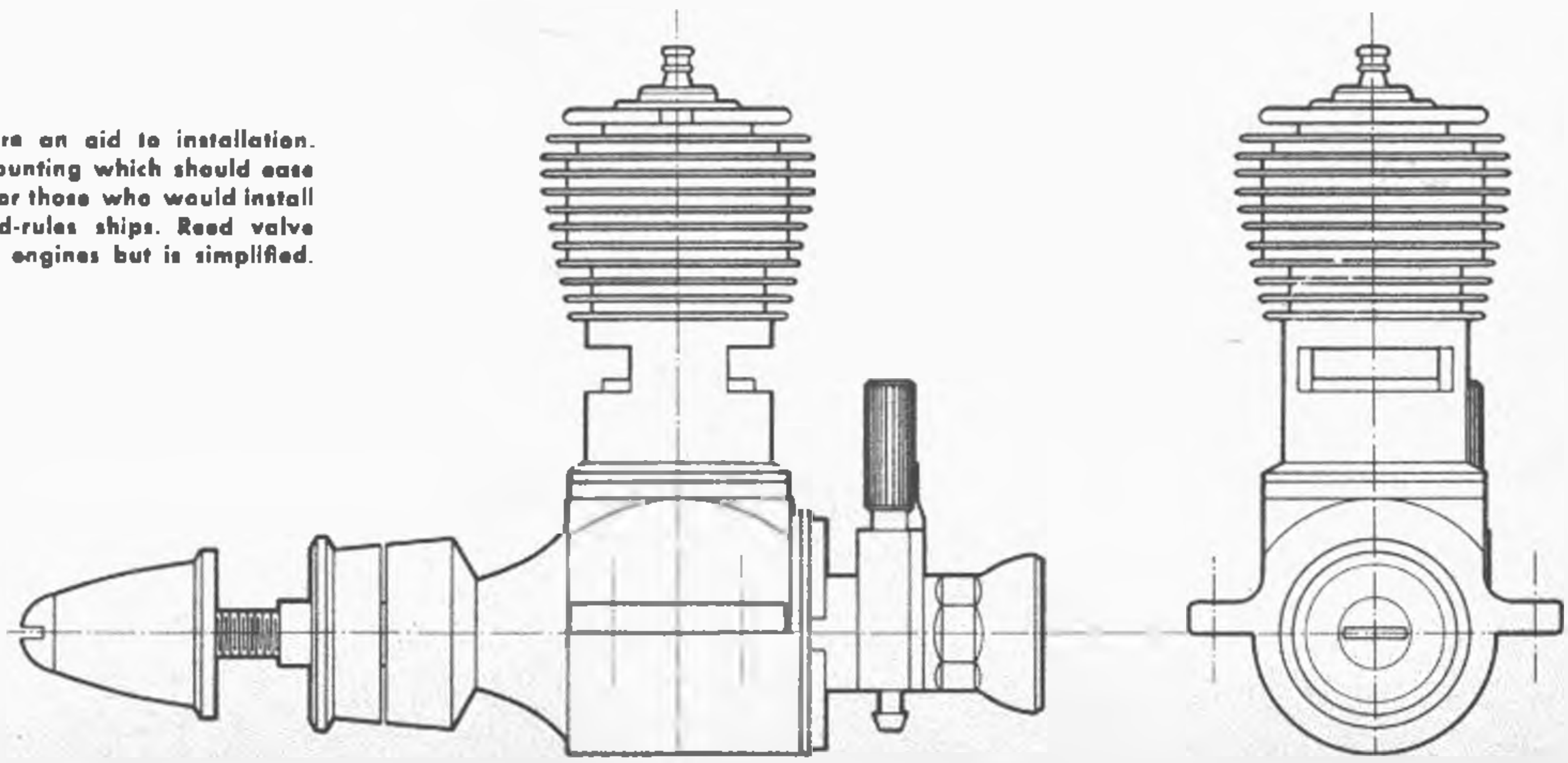
► Maybe the new AMA rules are not everybody's meat: rule changes never are, anywhere, but, in reducing the class A displacement limit to .1525 cu. in., the AMA has gone a long way towards raising the world status of American contest modeling.

The reason for this is easy to see. The .1525 cubic inch (2.5 cubic centimeters) displacement is the limit that is internationally recognized for world championship model flying. For several years now, the two FAI world championship events for gas-engined models, free-flight and speed, have been restricted to 2.5 c.c., and, in Europe, individual nations have adopted FAI rules for most, if not all, of their own internal contests. As a result, engine designers have been encouraged to concentrate their efforts on the development of high performance motors of this size, whereas American designers and manufacturers have, hitherto, devoted most of their resources to an entirely different set of requirements. Small wonder that no American modeler, or American engine, has won an FAI international contest for five years.

The U.S. can produce engines capable of winning such events and there is no doubt about this in the minds of contest men all over Europe. Ever since it was first known, two or three years ago, that the Cox company had a .15 on the way, engine enthusiasts in Britain and continental Europe have awaited its appearance with bated breath. They are not going to be disappointed. There is no shadow of doubt that the new Cox Olympic .15 can better the performance of any stock 2.5 c.c. engine made in Europe at the present time. There is little doubt, either, that Western Europe will use this engine wherever its potential can be exploited: the challenge of East European state-sponsored contest engines makes this inevitable.

The Olympic follows the usual Cox layout, of reed-valve induction and reverse-flow scavenged twin-opposed port cylinder. Such notable Thermal Hopper features as the multijet carburetor and clean, hemispherical cylinder head with built-in glow filament, are retained. The main visible changes are the beam (*Continued on page* 56)

Full-size drawings here an aid to installation. New feature is lug mounting which should ease conversion problems for those who would install the .15 in bigger, old-rules ships. Reed valve used as on other Cox engines but is simplified.



Conical camber shows in pic, drawings. If Miss Donna Hubbard seems to approve it's because she is an Aeronautical Engineering student at University of Minnesota. Jetex 50.

# delta dart

by DON MONSON

***Conical camber works on a model, too! Hand-launched glider and Jetex versions fly better. What is next?***

► When Convair engineers tested the prototype of their delta-wing F-102, they were surprised to learn that it wouldn't go supersonic even with afterburner, especially since wind-tunnel tests showed that the delta wing had less drag than the swept wing while it was passing through the sound barrier. The main cause of this effect was the excessive interference drag between the wing and fuselage.

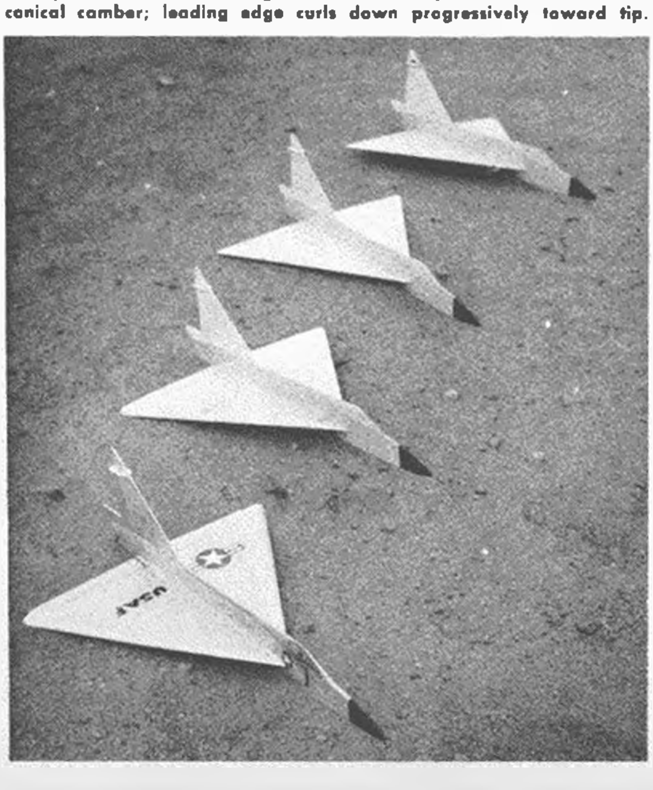
About the same time, two new aerodynamic discoveries were divulged by NACA scientists: (1) a reduction in interference and wave drag by application of the "area rule," popularly referred to as the coke bottle design, and (2) a reduction of the induced drag, i.e., the drag due to lift, by use of "conical camber."

"Conical camber" means that the leading edge of a delta wing has a progressive downward camber increasing in radius of curvature as it passes from root chord to tip chord (Ref. 2). Theory and experiment show that both area rule and conical camber have maximum effectiveness in the transonic range, i.e., the transition between subsonic and supersonic flight, with conical camber being effective also at high lift co-efficients; and when Convair applied these modifications to their F-102, the result was the highly successful supersonic F-102A that you see flying today.

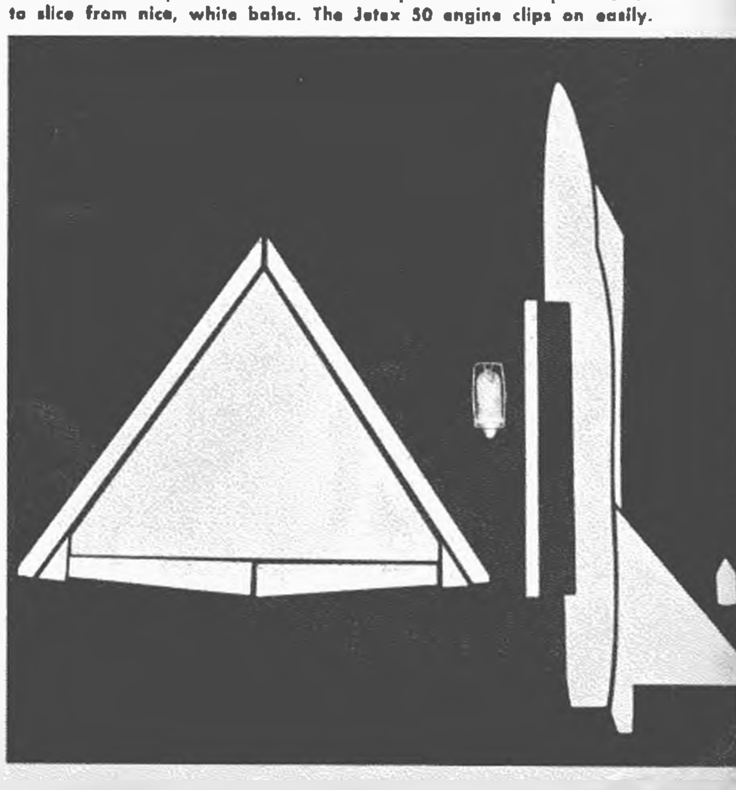
The model version of this plane originated when we began to wonder what the effect of conical camber would be on a paper glider. A few hours and several gliders later, living room tests showed a noticeable decrease in the glide angle of the glider with conical camber over the one without camber. Further glide tests in a gymnasium where more conclusive tests could be (*Continued on page* 46)

**FULL SIZE PLANS NEXT TWO PAGES**

For quickie, make flat-wing version—two top models. Others use conical camber; leading edge curls down progressively toward tip.

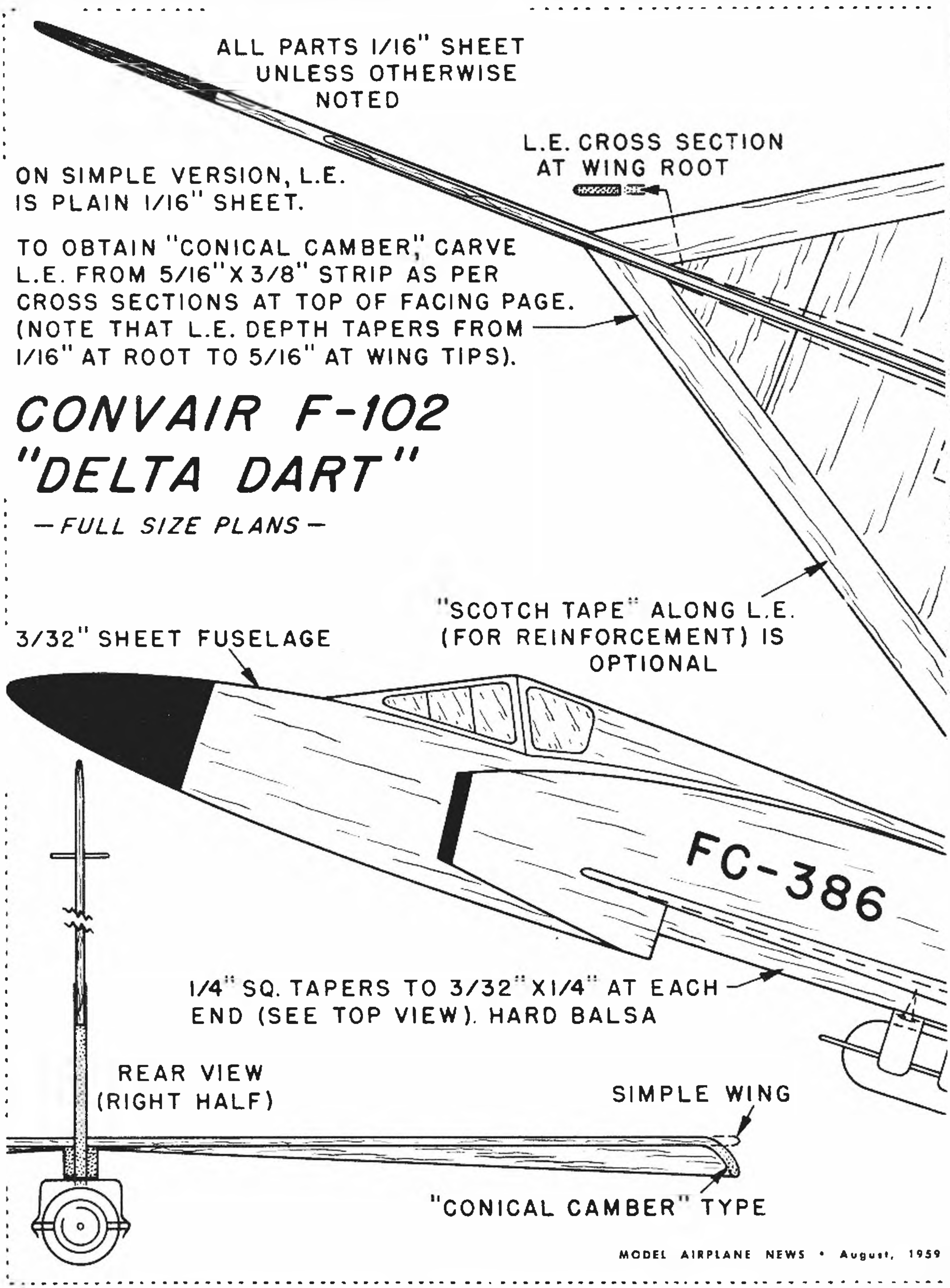


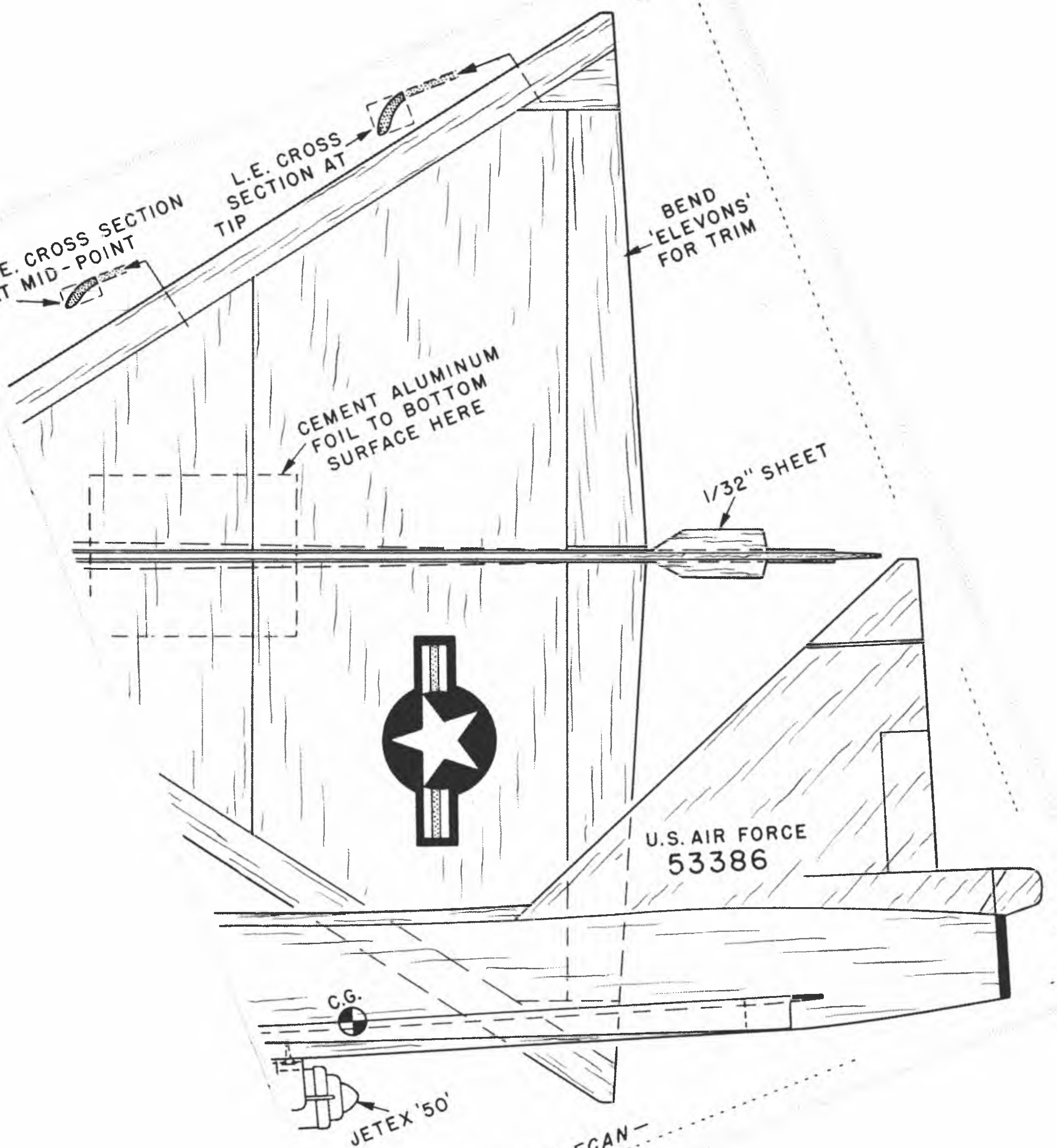
The whole is equal to the sum of its parts—and the parts cinch to slice from nice, white balsa. The Jetex 50 engine clips on easily.



# CONVAIR F-102 "DELTA DART"

*— FULL SIZE PLANS —*





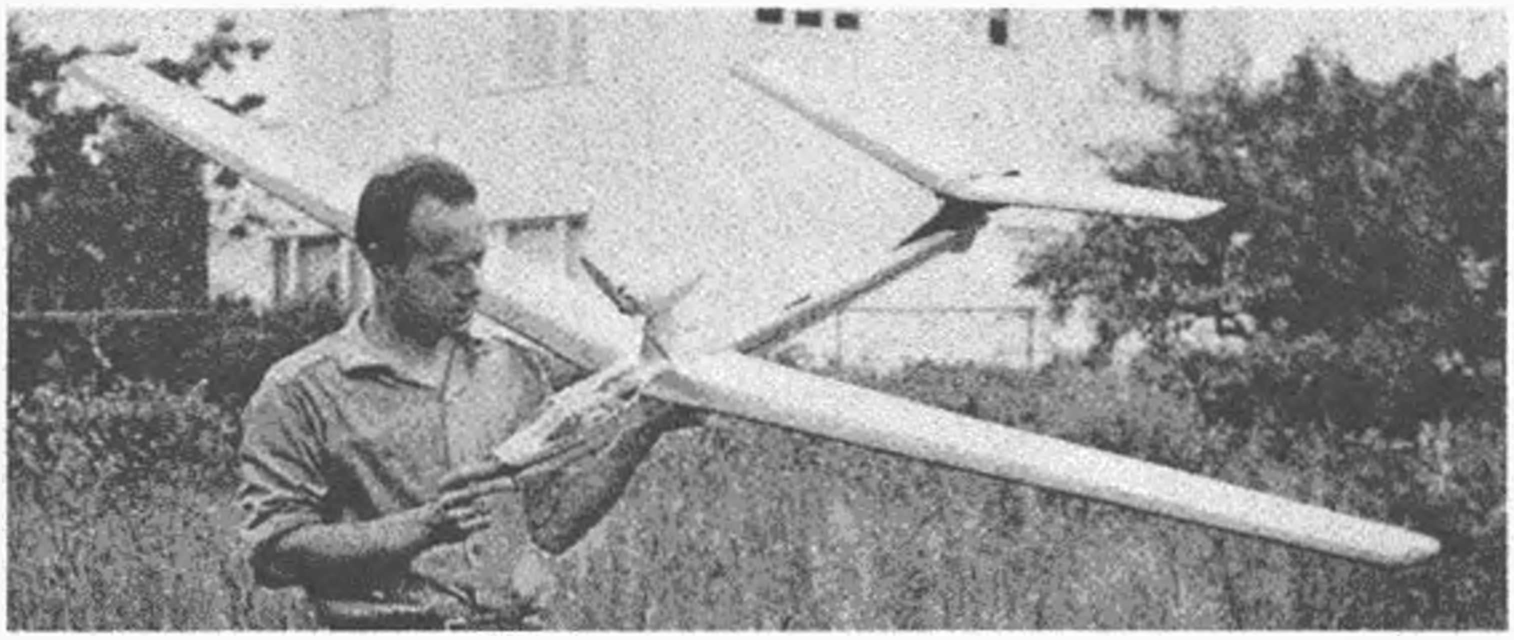

—DRAWN BY PAUL PLECAN—

# radio control news

by **EDWARD J. LORENZ**

***In good old summer time, strange and wonderful airplanes take to the skies.***

French Boy Scouts hear about RC from Sgt. James Duckworth, at Phalsbourgh AFB. Standing, right tip, Smog Hog, T/Sgt. Wing, American Scout Master; his L, H. Litzenberger, Director.



Powered glider, A. Friberg, Sweden, 100 inch span, transistor r'cvr convertor, Telematic actuator.

### TECHNICAL TOPICS

► Now that hot weather is covering most of the country, treat batteries, transistors and wing hold down rubber bands in the right manner. Batteries should not be exposed to the hot sun for prolonged periods, referring, of course, to the regular carbon-zinc type. Transistor characteristics will change with heat, therefore keep them out of the direct hot sun. Rubber will rapidly deteriorate when exposed to heat and ultra-violet radiation. Several covers have been shown in this column in the

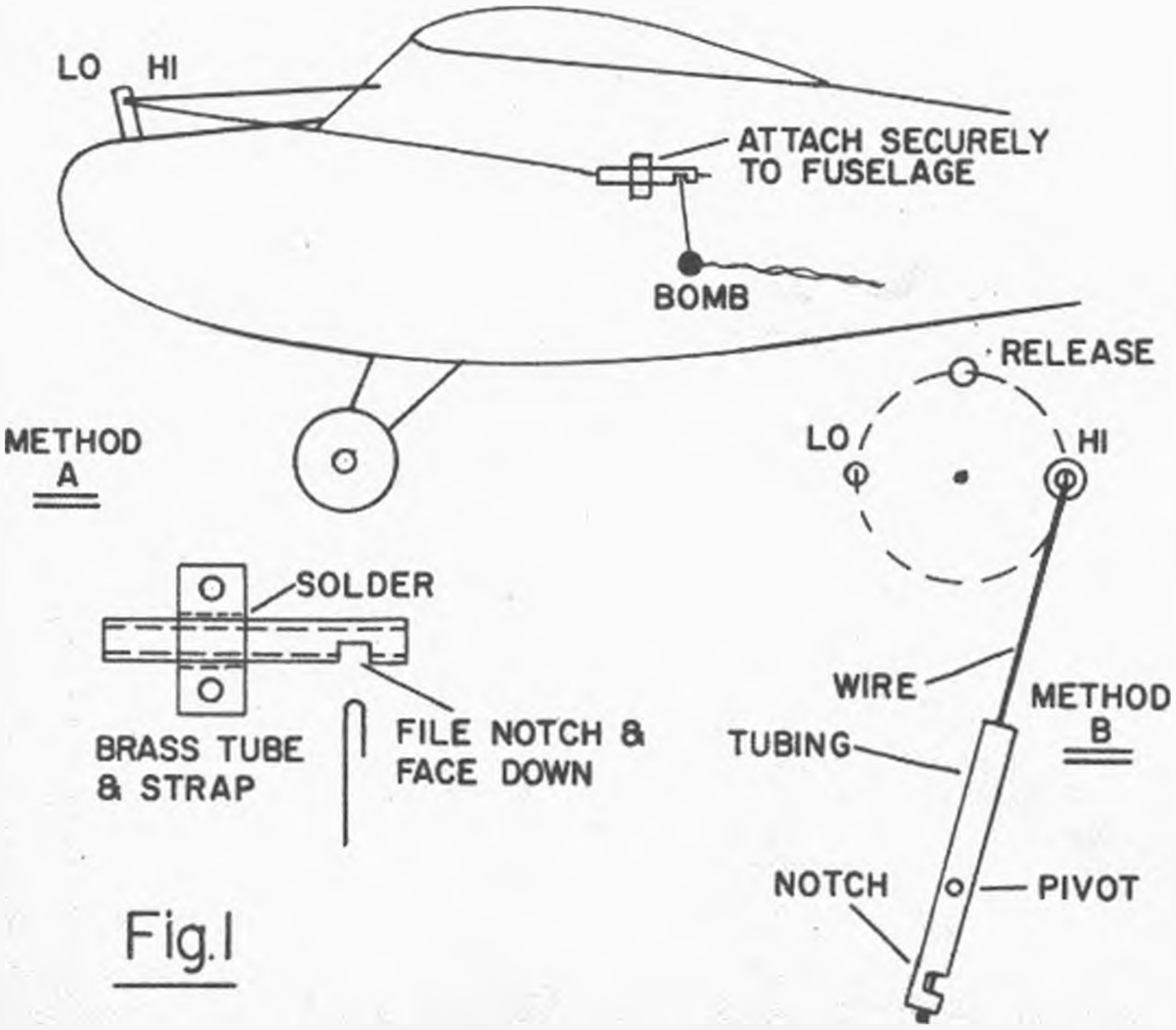
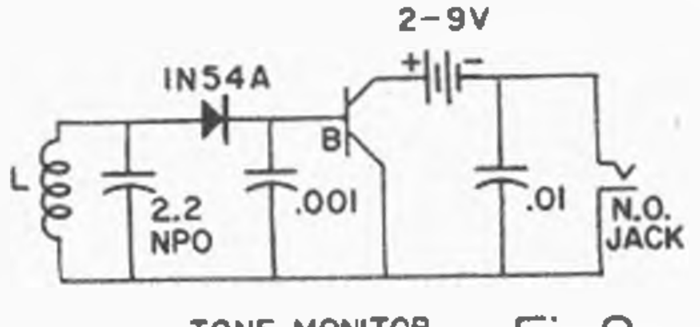


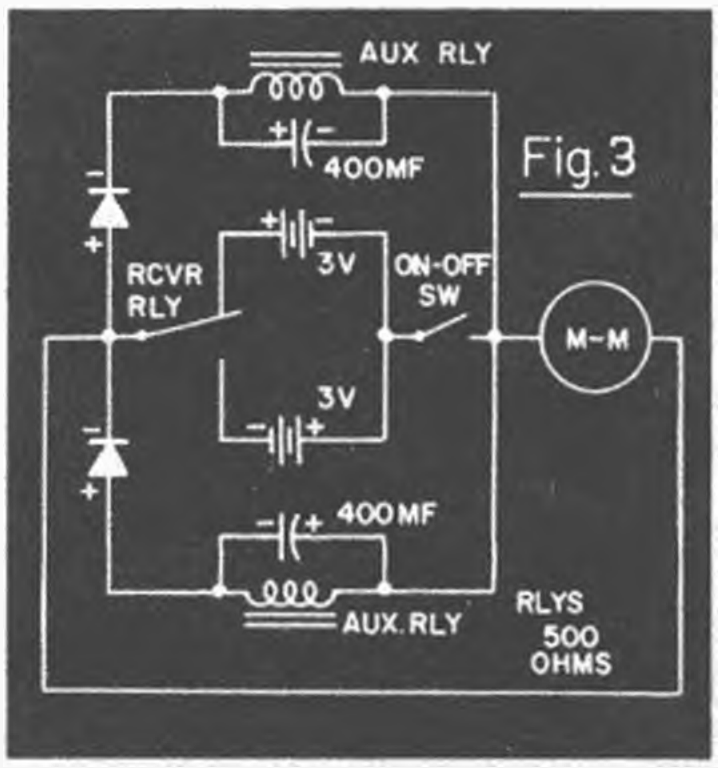

Fig.1




TONE MONITOR

L-NATIONAL N33R, 10 UH RFC

Fig.2



past, for protecting your plane. Otherwise cover the critical areas with aluminum foil. This is especially true when parked on the flying line in the direct sun for an hour or two.

• • •

Fig. 1 shows the method by the EBRC'ers in their Carrier, for bomb dropping. Since the run can be made at high speed, a shift to low speed just prior to the release presents no problem. The brass tubing is secured to the side of the fuselage with the notch face down. The hairpin hook is held within the notch area by the wire through the tubing. Be sure it operates freely and won't bind the motor control; Mount bomb behind gear where it won't get caught and make bomb from weights just heavy enough to fall. Add a silk streamer.

• • •

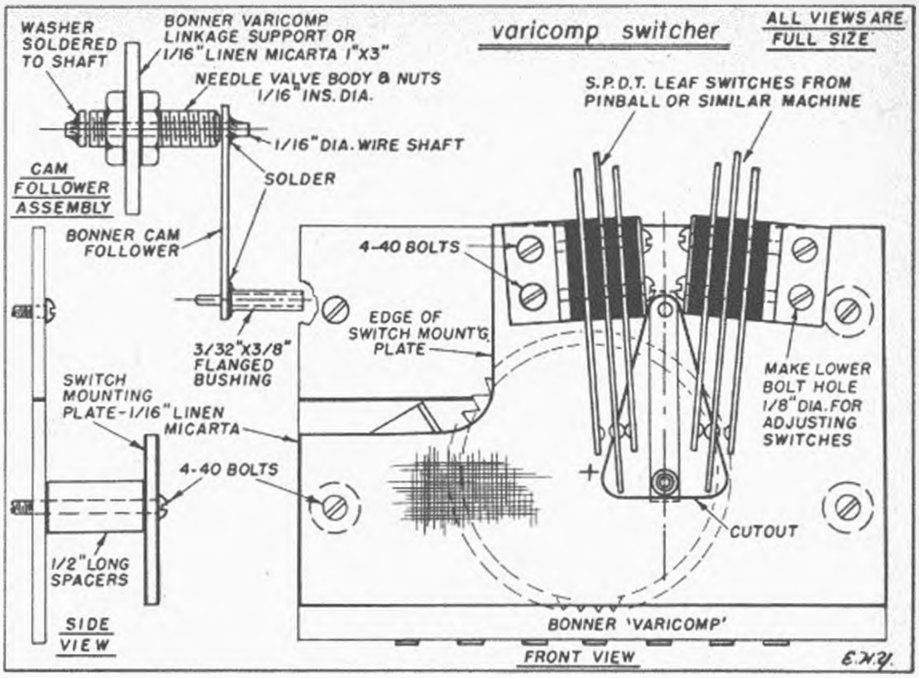
A reminder for working with transistors: don't apply too much heat when soldering them in place. Some transistors will take it, others won't. Heat may be shunted away from the header on the case by using pliers to grip the leads when soldering; maintaining about ½" of lead length and doing the soldering quickly and by stuffing cotton around the leads, then soaking the cotton with alcohol or even water. Be sure the leads to be soldered are clean and then get the job done as quickly as possible. If possible, use transistor sockets and then you'll be safe.

• • •

From the Convairiety, we learn that R. A. "Dick" Everett set a new world distance record for RC planes on April 12th. Spanning 6½ feet, the 51" long model weighed 5½ pounds empty, was powered by a Torpedo 19 and used a 5-channel receiver. Fairly conventional and boxy in design, the outstanding feature was the gear. It came straight out from the fuselage and then straight down, the tread being about 14 inches. The new distance record is now 37.1 miles and the ground speed was 47 mph.

• • •

In an early issue of MAN we will present a series of articles on superhet receivers. The first one will be of the 'front end' type, adaptable to the WAG TTPW and other tone receivers. The second section will deal with other basic circuits. This particular circuitry has been well engineered, and at first glance might be said to over done. However, we have noticed that consideration has not always been given to the fact that we have many other frequencies other than the six allotted to RC work, all in the same band. There are a total of 28 spot frequencies to consider, in addition to the usual amount of random interference. Superhets will (*Continued on next page*)




# Varicomp Switcher

**by RALPH DeCECCO**

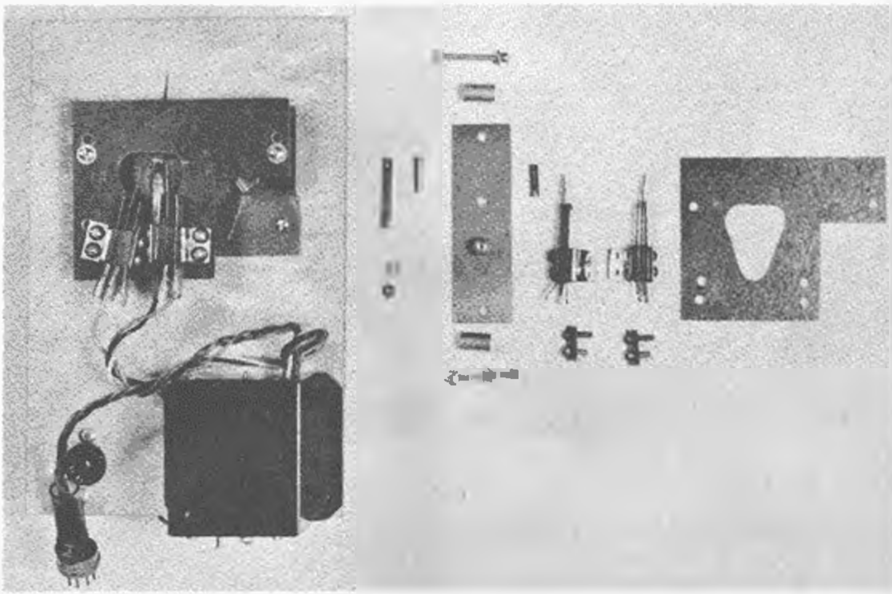
***For reliable "five-channel" operation two Varicomps, just add simple contacts, servo.***

► Since the advent of the intermediate class in R/C a more reliable elevator action has been needed, instead of the torque rod system. Because the elevator action is so unstable, many fliers have gone to the more expensive dual tones, the crank arm and more expensive pulse systems. The average modeler cannot afford these systems.

In my opinion this switcher does the trick. Most fliers have Varicomps so by cascading them, with the switcher coupled to a servo, a more reliable action is established. The cost is low, the unit easily made.

You get five channel results with one channel equipment. The unit works as usual, but a more (*Continued on page* 52)

Finished switcher, left, and Citizen-Ship multi servo; right, switcher parts as listed in text. The two contacts came from a pinball machine. Two Varicomps are cascaded as any installation.



## Radio Control News

(*Continued from page 29*)

not become popular until articles are published which enable the modeler to build his own equipment, eventhough he may pay just as much for the parts as he does for a finished set. This may be one of the reasons that 465mc has not been exploited as much as it should be. It's the ideal frequency as far as intereference is concerned, but the builder has not been able to build his own equipment.

• • •

Fig. 2 comes from the Peoria RC Tattler and the circuit was designed by Hank Chesko for checking tone transmitters. No antenna is needed and the battery should last a whole season. No tuning is needed since the National choke and the capacitor provide broad tuning. No switch is needed because the battery is never connected until the headphones are placed into the normally open circuit jack.

• • •

Another item for Simpl/Simul comes from Joe Ballasch, 5309 Big Creek Parkway, Parma O. Fig. 2 shows how two auxiliary controls may be used with S/S. The relays used came from a weather balloon transmitter which you can pick up for about $1.00 from a number of surplus stores or from ESSCO. Otherwise you can use a GEM 500 ohm relay. The 400mf capacitors (transistor electrolytics) can be obtained from Lafayette Radio.

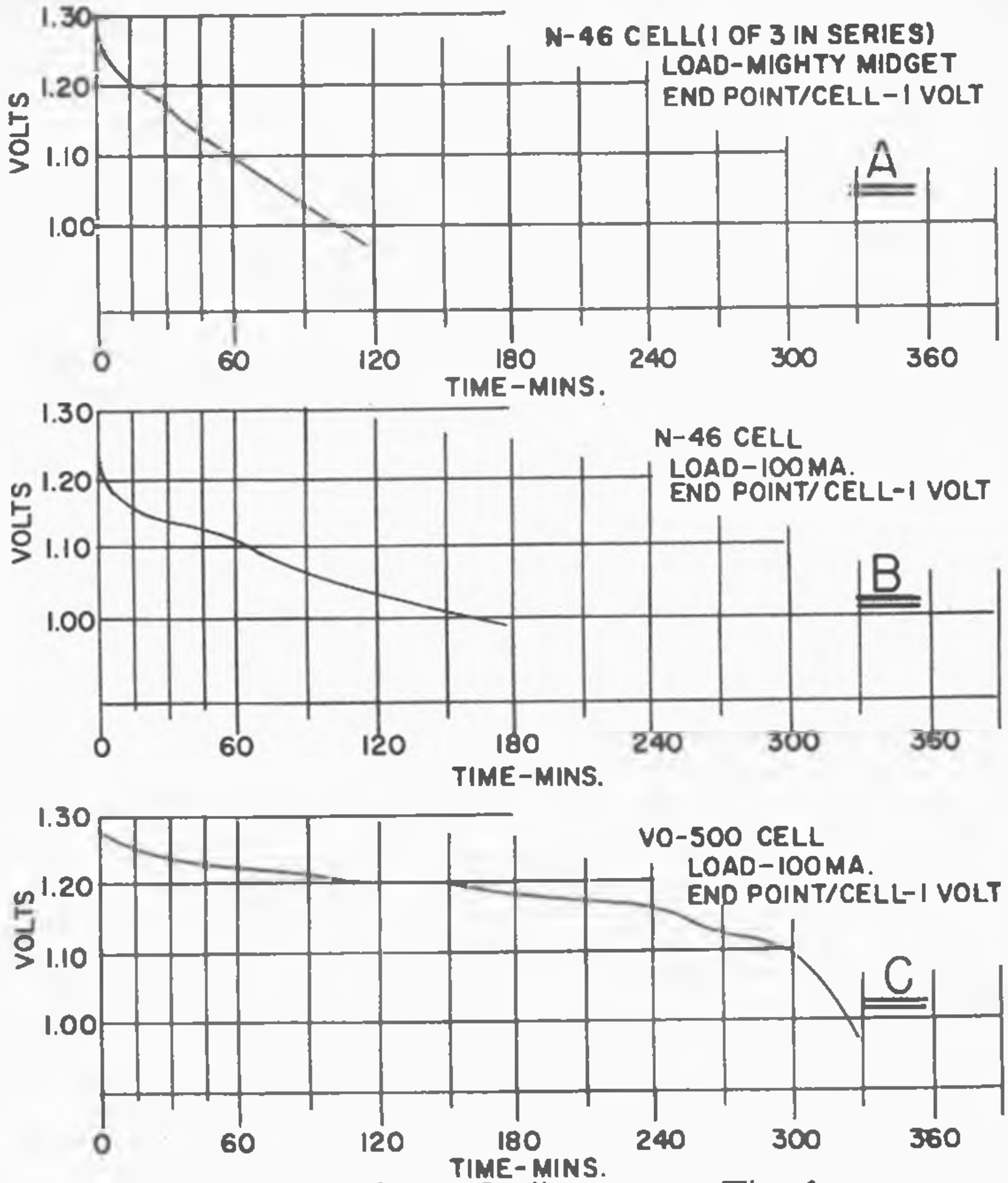
• • •

Want to make your RC gear more rugged? Try a little fibreglass resin over and around the components, especially when mounted to a printed wiring chassis. This method is particularly effective when components are mounted in an upright position. Use about 50% more catalyst in the resin and apply with a brush or small stick. Be careful not to get into flea clips or sockets. We have found this method of conformal coating to work very well.

• • •

The Central Jersey Radio Control Club made tests on the new Eveready N46, size AA pencell Nickle-Cad cells. Figure 4A shows the results of this test, performed so as to simulate actual use in a pulse system. The batteries, two sets, were three of the cells connected in series and the load was a Mighty Midget plus a 10-ohm resistor. Pulsing was through regular relay points as set up for S/S, pulse rate five per second with 50/50 duty cycle. Measurements were taken across *one set* of batteries and the chart also shows the voltage *per cell*. As can be seen, these cells will supply power for such a system for two hours. They are rechargeable.

Now let's see how these cells, which are of the non-sintered plate construction, compare with VO cells which contain sintered plates. The N46's are rated at 450mah, at a 10 hour rate, or 45ma suggested maximum drain. Fig. 4B shows the discharge curve for one Eveready N46 cell having a 100ma load applied. Fig. 4C shows the curve for one VO-500 cell, also having a 100ma load applied. The N46 is rated at 450mah at a 10 hour rate and the VO-500 is rated at 500mah at practically no rate limit. As can be seen, the N46 was good for approximately 160 minutes (Chart B) and the VO-500 for about 320 minutes (Chart C), or about twice the life for the VO-500. These tests were run with three cells of each and the average given in the charts. As stated in previous columns, the sintered plate construction is capable of much higher current drains. The non-sintered plate construction is perfectly satisfactory if used within the limits given. For example, (*Continued on page* 58)




Nickle-Cadmium Cells Fig.4

Built for an altitude attempt, 80-in. job, Harald Kurth, Germany, 8 lbs., .60 engine, one channel.

Arvo Arrow, G. Kittner, Germany, 70-in. delta, with K & B .35 power. Weighs 7½ lbs., single channel.

## Houdini

( *Continued from page* 15 )

rod does not bind at the rear eyelet. The top front cowl block is removed and the gas tank is fastened between the motor bearers with metal straps or blocks of balsa. The cowl block is drilled out for the filler tubes to protrude and then cemented back in place.

Give the fuselage two coats of clear dope, sanding lightly between coats, and then cover with silk. Two pieces of silk are cut out slightly larger than the profile, including the rudder, one for the left side of the fuselage and the other for the right. Start fastening the silk to the fuselage at the nose and, working back toward the rudder, the silk is pulled over one half of the turtle back and cemented to the center stringer. (Wetting the silk with a sprayer filled with water will simplify the stretching and eliminate wrinkles.) At the rudder, the silk is fastened only to the leading edge and the fuselage side running up the trailing edge of the rudder.

The bottom of the fuselage is covered in one piece from the nose to the tail, making sure that all exposed wood is covered with silk. The wing and tail dowels are cut to length and fastened to the fuselage. The fuselage then is given five coats of clear dope, making certain that the pores of the silk are sealed thoroughly. Make the holes and cutouts for the switches and jack. The radio equipment should be small in order that it may be fastened to the sliding tray. My model used a Gyro 22X receiver. The movable part of the rudder is hinged with either cloth or metal hinges and the yoke attached.

*Stabilizer and wing:* The stabilizer construction is strong and warpfree. The stabilizer is built on a flat board, making sure the leading and trailing edge are raised so that they are centered on the ⅜x⅜" ribs. When dry, it is sanded with a large, flat sandpaper block, to a symmetrical airfoil, then covered with silk.

The wing also is made on a flat board and joined together at the center section with the wing gussets of the prescribed wood. The landing gear is bent to shape, one left and one right, and fastened to the wing through the holes in the plywood gusset with metal straps (tin can stock). A gusset is cemented between the rib and the spar where the landing gear protrudes through the bottom of the wing. After sanding, cover wing and stabilizer with silk and give five coats of clear dope. Paint with colored dope if desired.

A plastic canopy is cemented to the top of the removable cowl block, the block held on to the fuselage with rubberbands. The antenna is attached to the top of the rudder and held taut with a rubberband.

*Test flying:* After field checking the radio equipment and making sure everything is in working order, do your test gliding. In the original model (which was free from warps) 1/16" right thrust was needed; down thrust is already built in. The model is glided from shoulder height holding it directly in front of the wing with the nose pointing slightly down. Use a running start. When the model glides flat, you are ready for power flight.

With about two minutes of fuel, attempt a take-off. The model tends to stay in a turn so opposite rudder is required to bring it out of the turn. Do not hold signals long as Houdini responds instantly. Get plenty of altitude before attempting to turn so you can familiarize yourself with its characteristics.

The first flight is always the most dan-

(*Continued on page* 36)

FOR BETTER MODEL BUILDIN
BETTER FLYING – THE ONLY NAM
YOU NEED TO KNOW IS

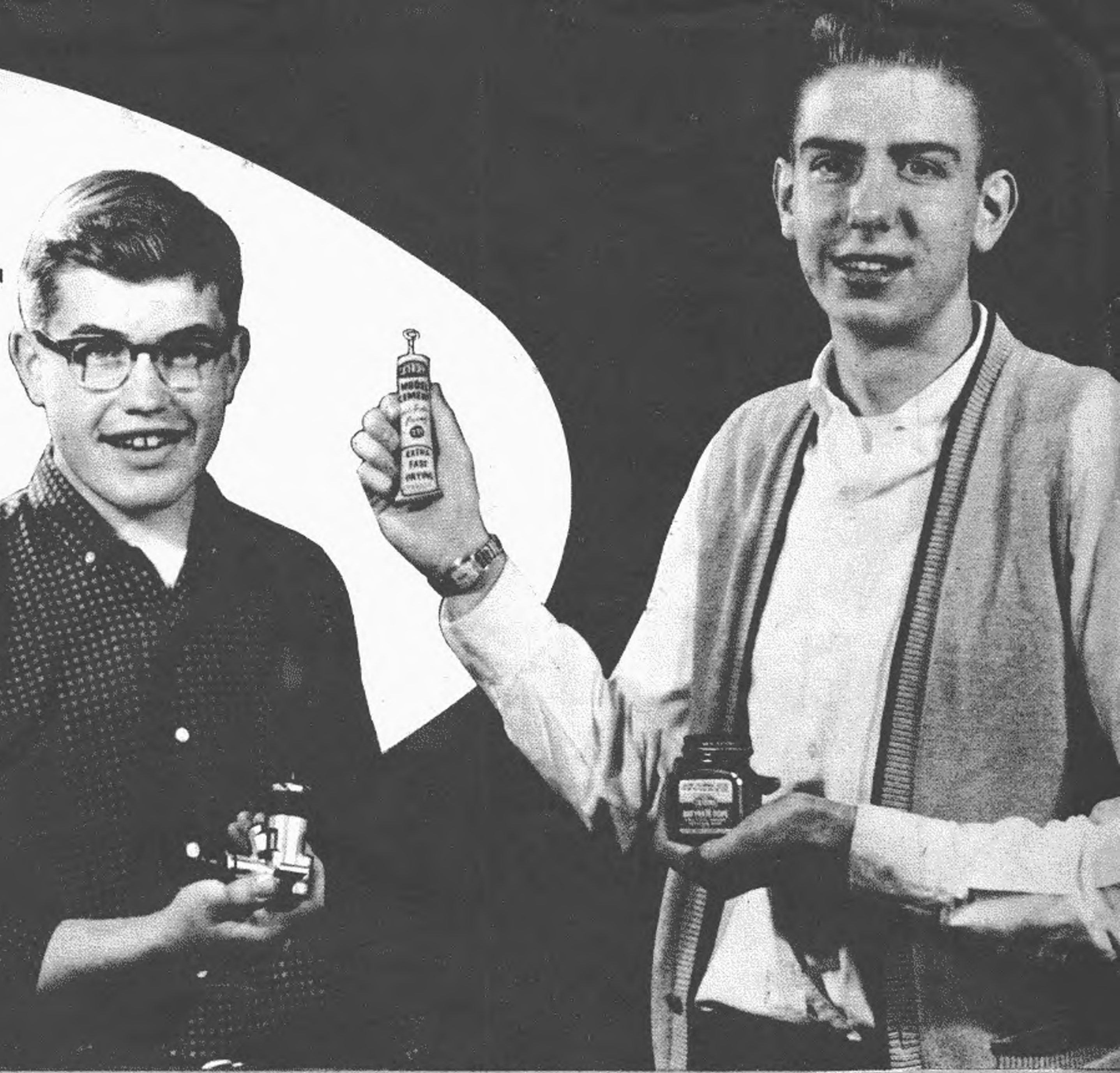
TESTORS

*PREFERRED BY MODELERS...EVERYWHERE!*

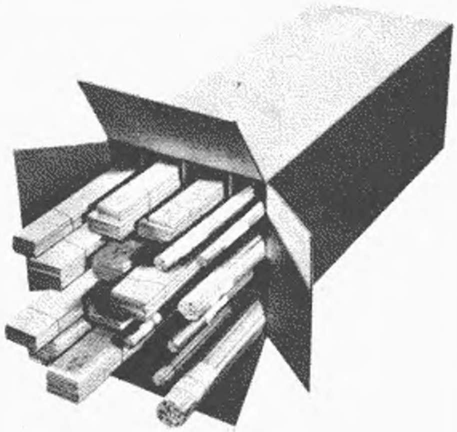
THE TESTOR CORPORATION • ROCKFORD, ILLINOIS

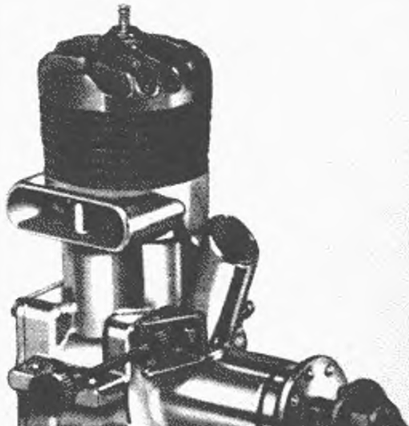
G-

E


EXTRA
FAST
DRYING


TESTOR'S ENAMEL SEVEN COLORS 69¢
for PLASTIC MODEL KITS · CHINA · GLASS · WOOD · METAL
ENAMEL TEN COLORS 98¢
PLASTIC MODEL KITS · CHINA · GLASS · WOOD · METAL





TOP FLITE

# GAS KITS TOP THEM ALL!

**Three terrific planes designed by George Aldrich, America's greatest stunt champion!**

**THESE ½-A MODELS SWITCH FROM CONTROL LINE TO FREE FLIGHT & BACK AGAIN IN A JIFFY!**

Each kit contains: formed landing gear, push rod, elevator horn, wheels, bell crank, firewall, decals, and all necessary hardware. All parts are completely finished. Only select Grade-A balsa is used. Full size detailed plans with many step-by-step construction features making it easy to build and fly.

- Ideal for beginners . . . and experts, too!
- All feature Famous JIGTIME CONSTRUCTION for easy, no-mistake assembly!

**PIPER CUB**

27 inch wingspan. This ½A scale flying model is so realistic that only the size makes it a model instead of the real thing! Includes formed plastic cowl, die cut clear plastic windshield.

Kit No. G-8 **$2.50**

**RASCAL 27**

27 inch wingspan. An outstanding favorite with all ½A model builders for years! Includes die cut clear plastic windshield.

Kit No. G-5 **$1.95**

**ARROWJET 24**

24 inch wingspan. Has the dash and class of modern Navy prop-jet design. Ideal for ½A gas engines. Includes formed clear plastic canopy.

Kit No. G-7 **$2.50**

Ask your dealer for a FREE Top Flite PROP CHART

## the NOBLER CHAMPIONSHIP CONTROL LINE

**STUNT SHIP**

Kit No. N-1

**$8.95**

Wing Area 550 sq. in.
Wing Span 50"
Length 38½"
Eng. Sizes .19 to .35

THE "WINNINGEST" STUNT MODEL EVER FLOWN . . . Won More Nationals and International Stunt Championships Than Any Other Model!

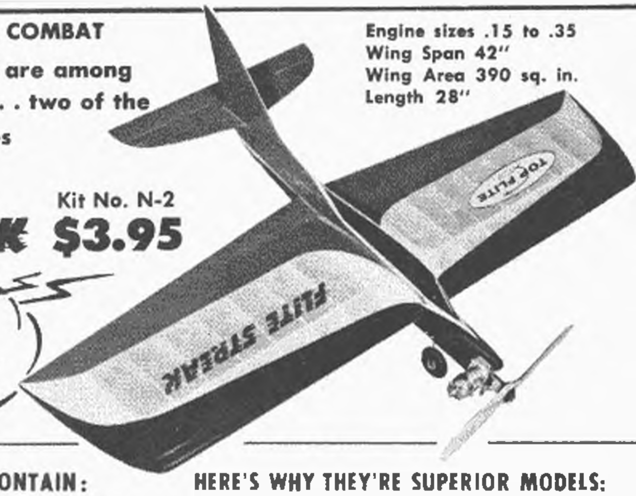
**these CONTROL LINE COMBAT and STUNT TRAINERS are among America's greatest . . . two of the most successful planes ever designed!**

Engine sizes .15 to .35
Wing Span 42"
Wing Area 390 sq. in.
Length 28"

Kit No. N-2

***FLITE STREAK* $3.95**

FLASH! 1958 NATIONALS WINNER of BOTH Senior and Junior COMBAT

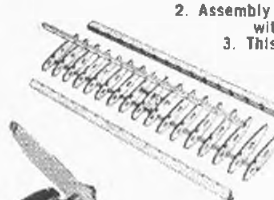


**BOTH OF THESE KITS CONTAIN:**

- Full length shaped and notched leading and trailing edges and spars.
- Shaped fuselage.
- Select grade A balsa.
- Printed and precision die-cut balsa and plywood parts.
- Formed landing gear and push rod.
- High grade silkspan.
- Hardwood engine mounts.
- Complete detailed plans with many step-by-step construction features making it easy to build and fly.

**HERE'S WHY THEY'RE SUPERIOR MODELS:**

1. Full length leading, trailing edges and spars. Require NO SPLICING, an exclusive feature for this size and type of model.
2. Assembly is easier, faster — with perfect alignment.
3. This Jigtime construction of notched spars, leading and trailing edges allows you to construct a symmetrical wing on a flat surface without special jigs, also making it warp resistant.



Kit No. N-3

**$2.95**

Engine Sizes .15 to .25
Wing Span 31"
Wing Area 230 sq. in.
Length 22"

***JR. FLITE STREAK***

*by the makers of famous TOP FLITES and POWER PROPS . . . the Props of Champs!*

*AVAILABLE AT ALL LEADING HOBBY SHOPS*

**TOP FLITE MODELS, INC.,** 2635 S. Wabash Avenue, Chicago 16, Illinois

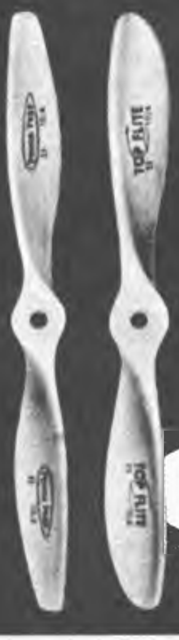
TOP FLITE

## The CHAMPS WIN *with* TOP FLITE & POWER PROPS *for the 11th STRAIGHT YEAR!*

# NEWS FLASH!

# Here are the WINNERS '58 NATIONALS

## GLENVIEW, ILLINOIS



Choose these famous TOP FLITES and POWER PROPS and YOU'LL be right up there with these Nationals winners!

**TOP FLITE**

### ALL THOSE LISTED ARE FIRST PLACE WINNERS

**½A SPEED SENIOR**
Edw. Pilkington
Hialeah, Fla.
99.3 mph
Engine: K & B 049
Fuel: This Is It
**PROP: 4½-7 POWER PROP**
Plane: Original

**FLYING SCALE CL OPEN**
Tom Dean
Corpus Christi, Tex.
330 points
**PROP: 9-6 TOP FLITE**

**½ A GAS FF JUNIOR**
Bill Hunter
Sun Valley, Calif.
Time: 823.0
Engine: Holland Hornet
Fuel: Thimble Drone Racing
**PROP:**
**5¼-4 PLASTIC TOP FLITE**
Plane: Satellite

**PAA CLIPPER CARGO OPEN**
Lawrence Conover
Cedar Rapids, Ia.
Wt. Lifted: 137.25 oz.
Engine: Thermal Hopper
Fuel: Nitro X
**PROP:**
**8-3 PLASTIC TOP FLITE**
Plane: Pelican

**A GAS FF OPEN**
Charles E. Diller
Riverside, Calif
Time: 1906.2
Engine: Torp 19
Fuel: K & B 100
**PROP: 9-4 TOP FLITE**
Plane: Ramrod 600

**RADIO CONTROL (MULTI)**
Bob Dunham
Norwalk, Calif.
213.0 points
**PROP: 11-8 TOP FLITE**

**NAVY CARRIER JUNIOR**
Alfred Gonzales
Woodside, N. Y.
Time: 308.02
**PROP: 10-8 TOP FLITE**

**STUNT OPEN**
Robert Randall
Indianapolis, Ind.
548.5 points
Engine: Fox 35
Fuel: Fox Super Fuel
**PROP:**
**10-6 NYLON TOP FLITE**
Plane: Original

**NAVY CARRIER SENIOR**
Robert Hemingway
Audubon Park, N. J.
Time: 490.99
**PROP: 11-8 TOP FLITE**

**FLYING SCALE CL JUNIOR**
Jim Vessey
Evansville, Ind.
244 points
**PROP: 11-4 TOP FLITE**

**RADIO CONTROL FLYING SCALE**
William F. Bertrand
Allen Park, Mich.
88 2/3 points
**PROP: 12-4 POWER PROP**

**A GAS FF SENIOR**
Ray La Hood
Omaha, Nebr.
Time: 996.0
**PROP: 8-4 POWER PROP**

**PAA CLIPPER CARGO JR-SR**
Donald A. Garnett
Fairfax, Ia.
Wt. Lifted: 151.25 oz.
**PROP: 6-3 NYLON TOP FLITE**

**½A GAS FF SENIOR**
Dick Mathis
Dallas, Tex.
Time: 1153.0
**PROP: 6-3 TOP FLITE.**

**R.O.W. GAS OPEN**
Vic Cunnyngham
Baldwin Park, Calif.
Time: 824.0
**PROP: 9-4 TOP FLITE**

**BC GAS FF SENIOR**
Charles Gilliland
Tulsa, Okla.
Time: 1096.0
**PROP: 11-4 TOP FLITE**

**R.O.W. GAS JUNIOR**
Bill Hunter
Sun Valley, Calif.
Time: 737.2 (New Record)
Engine: Torp 23
Fuel: Ohlsson 200
**PROP: 9-4 TOP FLITE**
Plane: Satellite

**COMBAT OPEN**
William F. Arrowsmith
Rochester, N. Y.
**PROP: 10-6 POWER PROP**

**FLYING SCALE FF OPEN**
Karl Spielmaker
Grand Rapids, Mich.
132-2/3 points
**PROP: 6-3 TOP FLITE**

**NAVY CARRIER OPEN**
Stephen Babin
Fairview Park, Ohio
Time: 463.0
Engine: McCoy 60
Fuel: Nitro X
**PROP: 10-9 POWER PROP**
Plane: Original

**JR NATIONALS HIGH POINT WINNER**
Dennis Alford
San Diego, Calif.
**PROPS: TOP FLITES Used in all gas events.**

**New ½ A Record**
**R.O.W. GAS JUNIOR**
Burt Ballentine
N. Hollywood, Calif.
Time: 11:31.2
Engine: Holland Hornet
Fuel: Thimble Drone Racing
**PROP:**
**6-3 NYLON TOP FLITE**
Plane: Satellite 320

**TOP FLITE MODELS, INC.,** 2635 S. Wabash Ave.—Chicago 16, Ill.

gerous one and the model should be flown with caution. Study the flight with the power on to see if the model is flying straight with no signal; if not, the thrust should be adjusted to the left or right opposite the turn the model takes. If the model has a tendency to go left or right in the glide the rudder is adjusted for a straight glide. (Note glide turn in order to know which adjustment is first—Editor.) If the model has a tendency to stall under power and not in the glide, additional down thrust may have to be added by shimming up the motor mount at the rear. In case the model stalls in the glide it is either tail heavy (Not if the CG is where specified—Editor), otherwise positive incidence is put in the stabilizer. This is done by inserting thin balsa shim between the top trailing edge of the stabilizer and the fuselage. All thrust adjustments and incidence changes should be done gradually.

With a little patience and a lot of practice you will find that Houdini lives up to its name.

## The Tri-Traveler

(*Continued from page* 10)

a right and left set. The wing struts are held to the bottom of the wings by means of 3-48 bolts and blind nuts. The wing struts are held to the fuselage tabs by a small cotter pin which will enable the struts to pivot at this point. Before covering your model, we suggest that you scallop bulkheads B and C between the stringers so that the covering will not stick to them when doped.

The original model was covered with light weight Silkspan, which smooths out with four coats of thin, clear dope. All the surfaces can be covered in a normal manner except for the vertical fin and the top of the fuselage. To cover this portion of your model, we suggest that you cover one side of the vertical fin and half of the top of the fuselage with one piece of wet Silkspan. This should form a graceful fillet which is a distinguishing feature of the Champion Travelers. The cowl and wing struts are also covered; this will enable you to fill the wood grain much faster when doping. The tank is made from a lipstick holder.

The original model is white with blue trim. Use wood filler on cowl, struts, and planked portions. If white or other light color, keep colored dope fairly thick. A very light sanding between coats with #400 wet-or-dry paper removes most of the brush marks left by thick dope. Thin the last colored coat for added smoothness.

To form the windshield, carve a mold from a block of sugar pine and sand it very smooth. Take a piece of .030 thick celluloid and heat it until it becomes pliant—be careful not to overheat it. Pull the heated celluloid over the sugar pine mold until it forms a graceful canopy. Trim off the excess material from around the edges and fit it to your model.

Add the windshield and side windows after the second coat of colored dope. Mask off the portion of the windows which do not get doped and then proceed with the finish. To add the trim color, start by masking a border stripe 1/16" wide. Apply two coats of the trim color. When this has dried thoroughly, remove the masking tape. Add the solid fill-in trim, by masking off another border 1/16" in from the original stripe. Apply two coats of the trim color and carefully remove the masking tape, leaving the base color for the pin stripe.

Your finished model should balance where shown on the plan. It should also be free of any warps. The original model was stable in both right and left power turns. However, we recommend a left-hand power flight pattern. A slight amount of right thrust may be required along with the downthrust. Do not attempt to control the power pattern of your model by turning the rudder. The little Champion Tri-Traveler should ROG and climb at a very slight angle to the left at half-power with a 6-2 or 6-3 propeller.

## Dizzy Bee

(*Continued from page* 21)

will need two pieces of basswood as specified. One for the wing, the other for the crutch; two balsa wood blocks for the engine cowling; plywood for the tail; and a cast aluminum speed pan. Dizzy Bee uses the L & H speed pan from the L & H Hobby Shop, Mesquite, Tex. Finally you will need a Class B Speedmaster Monoline control unit. Although a Fox 29X is used the new Dooling 29 can be installed if desired with minor changes.

*Fuselage:* Start with the pan by filing the outside with a course file to remove any pits or rough edges, then use a smooth file to finish. Using #270 wet or dry, sandpaper the surface until smooth, then rub to a high finish with DuPont #7 rubbing compound.

The pan is drilled and tapped for the hold-down screws. Use a #43 drill, then tap the holes using a #4-40 tap. Be sure in locating the four engine mount screw locations that you allow for a slight left-thrust adjustment.

For the fuselage crutch select a piece of straight grain basswood or pine and, using the pan as a pattern, draw the outline and cut out with a bandsaw or coping saw. Refer to the drawing for the inside lines of the crutch. Pencil these lines onto the fuselage block and cut out this inside portion.

Carve the underside of the crutch to clear the engine shaft housing and carburetor, allowing the crutch to set against the pan.

*Wing:* Select a straight fine-grain blank of basswood or pine, remove the leading edge portion, then spot glue it back in place and allow to dry overnight. The wing planform is drawn on the wing blank or the pattern used, also the outline of the wing cutout.

Taper the underside of the wing from the root section at the fuselage joint to each wingtip. Leave the wingtips as thin as possible. Carve and sand the airfoil into the wing. Separate the leading edge portion of the wing from the larger portion by parting the cement-tacked center-line joint. Carefully cut and sand the groove in both sides.

Slip the control unit into place and adjust so the tubular stem of the control unit extends exactly centered in the grooved passageway. Drill holes through wing and fasten control unit mounting bracket with suitable machine screws and nuts. When tightening screws, make sure the control unit remains set with the tubular stem in perfect alignment with the grooved passageway. Replace the the leading edge section of wing. When cementing, there is the possibility that cement may be pressed into the passageway, around the tubular stem, for instance, which, when dry, can cause drag or binding. Use only enough cement to do the job and then rotate the cam a few times to make sure the tubular stem has not become cemented in the groove.

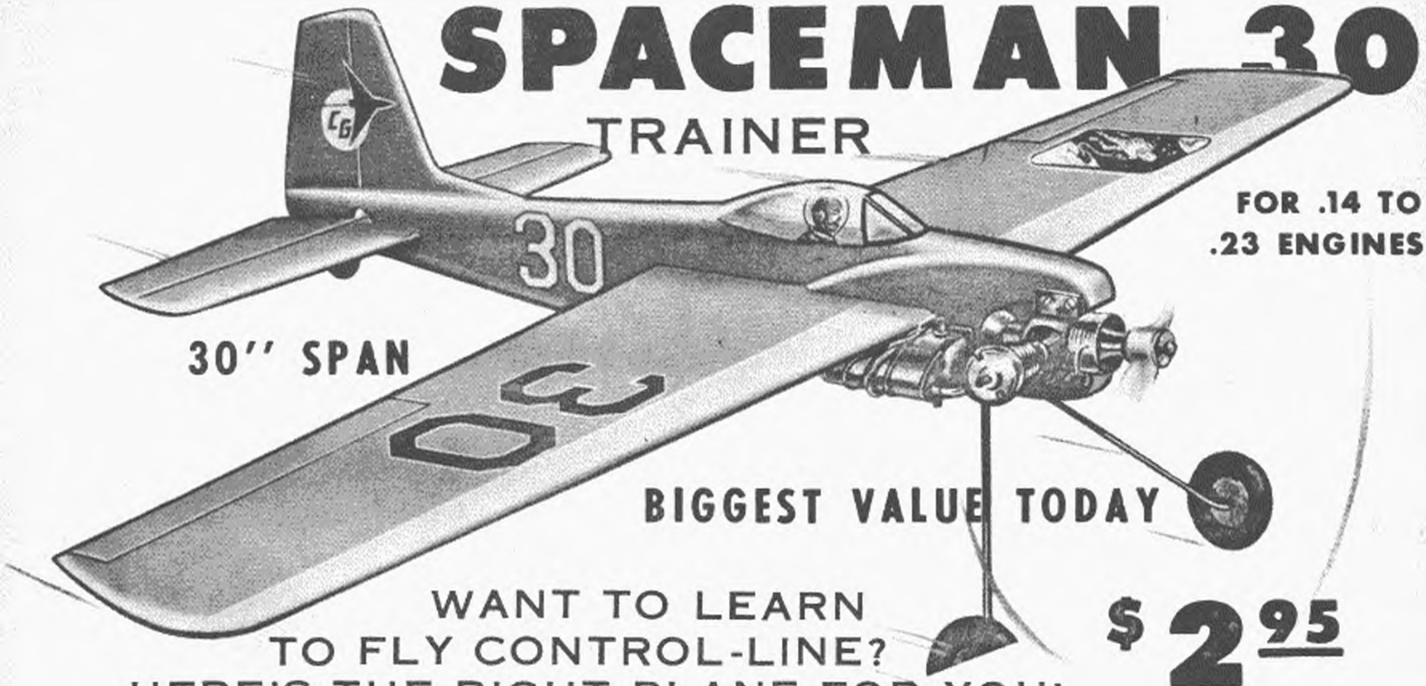
Now drill a 1/16" dia. hole through the wing to receive the bellcrank pivot pin. Adjust the pin in the hole so the bellcrank will move freely and fix pin into place by soldering on the opposite side. The bottom

(*Continued on page* 38)

# CARL GOLDBERG BRINGS YOU. . . .

# SPACEMAN 30

## TRAINER




**FOR .14 TO .23 ENGINES**

**30'' SPAN**

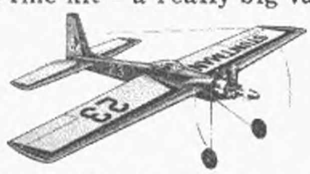
**BIGGEST VALUE TODAY**

## WANT TO LEARN TO FLY CONTROL-LINE? HERE'S THE RIGHT PLANE FOR YOU!

**$ 2.95**

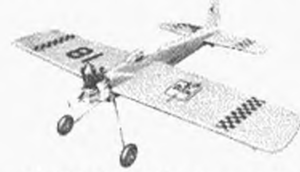
Dear Modeler: Our new Spaceman Trainer is really the plane to learn with. A beautiful, smooth flyer - yet designed RUGGED for beginner's needs. For instance, the landing gear is tough 1/8" diameter genuine music wire, held in place by an entirely new, simple shock absorbing method. And notice how the streamlined plywood doublers come back to the middle of the wing for extra strength. The controls have two positions — "gentle" to get you over those first flights, and "active" for wingovers and zooming up and down. It's designed particularly for the new Cox Thimble Drome 15 and Fox 15 engines, and has been flight-tested with the powerful K&B 23 as well. Simple to build because the structural parts are all die-cut balsa and plywood — no paper covering. In addition, the kit has all the hardware, screws, nuts, washers, wheel retainers, etc., a hard aluminum bellcrank and bushing, formed landing gear and tailgear, wheels, large attractive decal with all numbers, Spaceman figure, rudder decoration, pilot head, etc., engine bearers, nylon for hinges and reinforcing, and a fully illustrated clear step-by-step Plan, including instructions on Learning How to Fly. See your dealer now for this fine kit - a really big value at only $2.95.

**RANGER 30** - Die-cut balsa. 30" span for .020-.049 engine. . **$1.95.**



**STUNT MAN 23** - Die-cut balsa. 23-1/2", for .049-.09 engine. **$1.95**

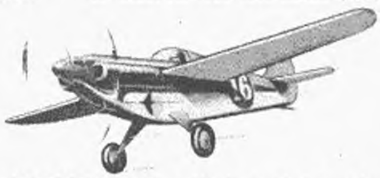
**SPACE JET 21** - Die-cut balsa. 21" span, for .020-.049 engine . . **$1.69**



**SWORDSMAN 18** - Die-cut balsa. 18" span, for .020-.049 engine **$1.49**

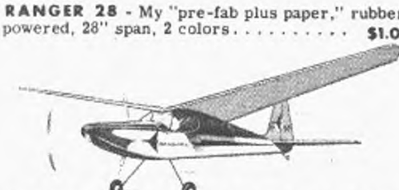
**1/2 A BLAZER** - Die-cut balsa, tissue. 40" span, for .049 engine. . . . . . . . . . . . . . . **$2.50**

**RANGER 28** - My "pre-fab plus paper," rubber-powered, 28" span, 2 colors . . . . . . . . . . **$1.00**



**SHOESTRING RACER** - All die-cut balsa, rubber-powered, 18" span. Complete. . . . . . **$1.00**

**SPIRIT OF ST. LOUIS** - A rubber-powered miniature duplicate, 21" wingspan. . . . . . . . **$1.00**



**RANGER 21** - All die-cut balsa parts, rubber-powered. 21" span beauty . . . . . . . . . . **$1.00**

**CESSNA 180** - Rubber-powered favorite, all balsa, 21" span. The champion of business liners **$1.00**

P. S. The easiest way to get these planes, of course, is to see your dealer. If no dealer near you, or he doesn't have them, send me cost of plane plus 25¢ each for postage and packaging. Better yet, send cost of any three and I'll pay the postage!

Carl Goldberg

**CARL GOLDBERG MODELS INC.**
**9848 S. CLAREMONT • CHICAGO 43, ILL**

of the cam-follower pin should have a slight clearance between the bottom of the groove in cam so that it will move freely; the bellcrank may be bent up slightly for clearance, if necessary.

The wing-tip control line bearing is formed of a short piece of brass tubing about ⅛" I.D. by ¾" long. This tubing is flattened to an oval shape and securely fixed and imbedded into the wing tip with cement; then sew several loops of #50 thread around it for additional strength.

The wing now is finished, sanded and the trailing edge brought to a sharp edge. Locate and then cement the wing to the fuselage crutch. Make sure to rotate the wing as shown. This will locate the wing-tip control line guide about ¾" ahead of the balance point when the model is completed.

After locating, drill and tap the pan for the fuselage tie-down screws. These hole locations are transferred to the fuselage crutch and drilled with a #35 drill.

Attach the wing and crutch to the pan with flat-head #4-40 screws, then taper down the crutch to match the profile or side view. Use 3/32" medium hard balsa to cover the open portion of the crutch. Note that the cover is cemented inside, flush with the crutch walls.

*Cowling:* Use two pieces of medium-grade balsa. Carve the cowling as shown, sand the inside and apply two or three coats of Ditzler metal primer. After the cowling parts have been finished on the inside, locate and cement them into place. The top of the cowling is carved, finished on the inside, and cemented into place.

*Tail:* To construct the "V" or "butterfly" tail, draw the outline on a 1/16" birch plywood and cut out. The leading edge is sanded to a round section and the trailing edge to a sharp edge. Draw a center line, cut the plywood in half, and remove the elevator portion from the inside half. Cement the stabilizer halves together on the 1/16" plywood platform and allow to dry overnight.

The elevator horn is made from .040 dia. piano wire. Bend this as shown, then sew it to the elevator with #50 thread. Attach the elevator to the stabilizer with cloth hinges. To insure a stronger joint at the "V" section of the stabilizer, a 1/16" thick plywood plate should be cemented in place. Make the necessary cutouts for the elevator control-horn movement. The tail assembly is held to the pan with #4-40 flat head screws. Use a #43 tap drill for the holes tapped in the pan and a #36 drill for clearance holes in the tail.

With the tail assembly attached to the pan, the notch is cut out of the fuselage to clear the tail. The rear hold-down screw crossbrace is located and cemented into place. Locate, then drill and tap the pan for the #4-40 rear hold-down flat head screw.

*Finish:* For a real fuel-proof finish it is suggested that you use Ditzler primer coat and a colored Ditzler auto enamel. The general practice is to give the model two or three coats of primer thinned out about 50%, allow to dry from two to three days, finish sanding, and then spray with the enamel which should be thinned out about 40%. Allow the finish to dry for three or four days before rubbing with a rubbing compound.

*Engine:* The Fox 29X engine has considerable increase in rpm when the load is removed as it becomes airborne. This means that needle valve settings are critical. However, this can be solved by experimenting with different sizes of inserts in the carburetor. A 40% reduction seems to be best.

For other modifications completely disassemble the engine and remove the cylinder liner from the crankcase. File the exhaust stack flush with the case and curve the front and back of the exhaust stack. Remove any burrs or loose pieces of metal from the inside of the case. The four-screw sealing area on the crankcase should be very lightly filed with a smooth file and then polished on a piece of ground glass or a surface plate. This will seal better the backplate.

The crankshaft requires no reworking other than advancing the timing. This can be done by grinding away the leading edge of the port opening in the crankshaft. As the grinding is being done, insert the shaft into the crankcase and check the degrees of opening. The chankshaft port should start to close the carburetor at 45° after top-dead-center and open at 10° after bottom-dead-center.

The crank-pin should have about 1/32 in. ground off the end and then polished. The bottom of the connecting rod should be uled to match the length of the crankpin. These two things are done to prevent rubbing and grinding away of the rear cover when a starter is used. The connecting rod can be lightened considerably by filing away all the square corners, then sanding and polishing.

To retime the opening of the exhaust port, use two cylinder-liner gaskets under the flange of the cylinder liner. This will raise the bottom edge of the exhaust port above the piston when it is bottom-dead-center, so file this edge down until it is flush with the top of the piston. The intake port is left "stock," other than adding a very slight radius around the port edge on the inside of the liner.

The underside of the head was scalloped out to add more combustion area and sharp edges were removed around the glow-plug area. The connecting rod wrist pin should have each end filed or sanded to a radius as much as possible and polished.

Before assembling the engine, be sure all the parts are clean and free from any metal filings. Use one head gasket between the cylinder head and the flange of the cylinder liner. Assemble the engine and thoroughly tighten all screws. Do not disasemble the engine again unless it becomes necessary to clean it. Be sure when mounting the engine to the pan, that the engine sets flush against the mounts, otherwise a bind will result on the shaft when the mounting screws are tightened down.

Allow for several runs before expecting peak performance. Hot or lean runs on this engine do not seem to effect its performance and it appears that at least 20 to 25 good flights are needed to bring the engine up to peak operation.

Before test flying check the controls for binding or rubbing. The controls should operate freely for good take-offs and landings.

Check out the control system to see that you have at least 10° up movement and 10° down movement of the elevator. Be sure there is no rubbing of the elevator push rod or that the control unit bellcrank doesn't rub against the tank.

Use a 7" dia. 10" pitch Tornado propeller cut down to 6¾" dia. with a little more pitch sanded into each blade. For maximum performance in record attempts, use "This is it" or Franny's Hi Nitro contest fuels. Dizzy Bee is very stable and easy to fly. Don't be surprised if you find yourself breaking the class "B" record.

## Souped-Up Pre-Fabs

(*Continued from page* 20)

fine. Make it from tough 1/16" sheet or plywood since the plane needs weight in the nose anyway.

The plastic nose-button or prop bearing should be used. Drill the nose block to take it snuggly. Have several buttons all the same size if you want to try different props. Put them on the prop shafts, bend the shafts to hold the rubber. Then to switch props, all you do is pull out nose button from nose bulkhead after rubber is unhooked. No shaft-bending at the contest.

For winding, pull entire nose block out front, unhook rubber and place on winder hood. When wound, hold rubber one inch from end, let winder unwind, and put resulting loop of rubber back on prop shaft. But don't have lubricant on your fingers.

*PROPELLERS* of all types have been tried. One theory is that fast turning props of smaller area give less torque reaction. Norman Getzlaff uses this theory with some novel ideas of his own. He puts "scallops" in the trailing edge. They let the prop turn faster, he says.

Getzlaff's block is illustrated here. He found that old props worked better. Floor landings had knocked off the leading edge tip corner. Then he cut off the leading-edge tip corner of new ones and obtained the same results. So the design is followed.

He prefers to plane off both rear and front faces of the prop blank and keep the blade angle in the center. He cuts the block by exacting methods using arcs.

Standard hand-carved props give good results. But Mike Karlak simply cuts two blades from sheet wood, joins them at right angles or at 45 degrees to the shaft, and gets nearly three minutes.

*RUBBER POWER* for prefabs ranges from two loops of ⅛-inch flat to two loops of 1/16-inch square Pirelli. Some braid their strands. Everybody uses plenty of slack—about twice the fuselage length. Remember that you can get more power from a shorter motor, only it won't last as long. Or you can reduce the power of a given motor by making the loop longer.

The main objective is to have the model land with some winds left in the motor. If it runs out at high altitude, the motor is too strong. If too much power remains after landing, rubber not strong enough.

Maximum turns—⅛" flat brown rubber; 2 strands, various lengths; 115 turns per inch (21-1 winder)

| Rubber Loop Length | Total Winds |
|---|---|
| 10" | 1150 |
| 15" | 1725 |
| 16" | 1840 |
| 17" | 1955 |
| 18" | 2070 |
| 19" | 2185 |
| 20" | 2300 |
| 21" | 2415 |
| 25" | 2875 |

These figures are for well-lubricated, fresh rubber of the best grade in peak condition. If your rubber is less than that, don't expect to get maximum turns. Reduce to 100 turns per inch for safety.

Four strands of ⅛"-flat brown

| | |
|---|---|
| 15" loop | 1200 |
| 20" loop | 1600 |

Maximum turns—3/32-inch flat, two strands (one loop), 130 turns per inch; Four strands (two loops), 94 turns per inch. (Reduce to 90 to allow for poor grade of rubber.)

| | |
|---|---|
| 14" loop | – 1260 turns |
| 15" " | – 1350 " |
| 16" " | – 1440 " |
| 17" " | – 1530 " |
| 18" " | – 1620 " |

## Wing Loading Is Three Dimensional

(*Continued from page 23*)

To clarify this, let's taken an example, which may be more familiar to us all: The relationship between the side of a cube, the area of any one side, the cube's volume, and weight. Consider a cube two inches on a side which has a weight of eight ounces. If a side is two inches, the area of a side will be the square of two, or four square inches; the volume will be the cube of two, or eight cubic inches. In describing this cube, we might say that it has a "loading" of two ounces per square inch (8 ozs./4 sq. in.). But if we used this relationship to predict what the area need be to have a cube of the same material to weigh 64 ounces, our answer is obviously incorrect.

Our erroneous reasoning might go something like this: The large cube is to weigh eight times as much as the small one (64 ozs./8 ozs. is 8). The large cube will have the same "loading" as the small one, two ounces per square inch (here's where we get into trouble). To find the area needed to "support" 64 ounces at two inches per square inch, we merely divide the 64 by two to arrive at our new area of 32 square inches. Taking the square root of 32, produces the value for one side, or 5.66 inches, the volume being about 181 cubic inches.

In correctly reasoning the above problem, and arriving at a cube size to weigh 64 ounces, our thinking should run like this: Since the volume will be directly proportional to the weight (both are three dimensional), and the 64 ounce cube will be eight times as heavy as the eight-ounce one, it will also have eight times the volume, or 64 cubic inches. Taking the cube root of this will give us the value for a side of four inches (4 x 4 x 4 is 64).

In our incorrect solution to this problem, we "mixed apples and oranges" by directly comparing a two-dimensional to a three-dimensional thing. Let's assume, however, that the volume was difficult to measure, whereas measuring the area was relatively simple. How *can* we compare area to weight? Merely by expressing the area in three-dimensional terms. We can do this by taking the square root of the area, thus reducing it to one dimensional terms, and then cubing this figure. We can express this two ways: $\sqrt{\text{area}}^{\,3}$ or $\text{area}^{3/2}$.

In the problem above, our solution, using this method, would work this way: The weight will be directly proportional to the area $^{3/2}$ values, which, for the two-inch cube will be $\sqrt{4}^{\,3}$, or 8. Since the large cube will have a weight eight times that for the smaller cube, its area $^{3/2}$ value will also be eight times that of the smaller cube, or 64. To then put the 64 back in two-dimensional terms, it is necessary to apply the 2/3 power to it in order to cancel the exponents: $\sqrt[3]{64}$ is 4. Four squared is 16, the area of the 64 ounce cube. This may seem like the long way around, but it did enable us to compare the weight and areas of the two cubes, without resorting to actual computations of volume. Utilizing an 8" circular slide rule, this type of comparison is quite fast.

Since a direct scale-up was involved in the cubes, we could have compared a side (one dimensional) to the weight, by first putting the side in three-dimensional terms by cubing, and thus arrived at the same result.

"All right," you say, "So what?"

Are you planning on building an FAI

(*Continued on page 44*)

# NEW

CESSNA 172

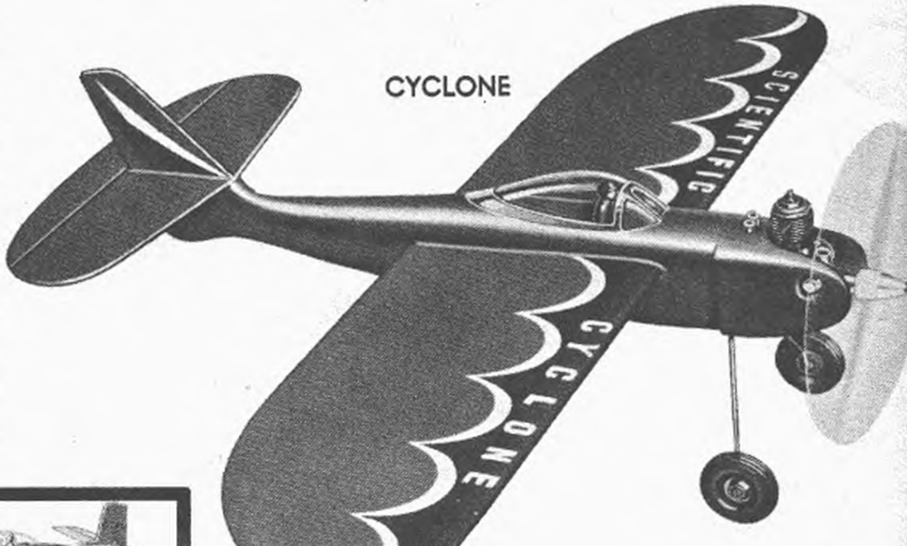
$2.95 each

## SCIENTIFIC MODELS FOR KING-SIZE FUN!

**CESSNA 172..........$2.95** Here's the newest Cessna private plane that you can fly yourself . . . by U-Control, of course, using just about any ½A gas engine (up to an .074). Performance-wise you'll find this model just about the snappiest you can fly—regardless of price. And—note the trim, slim, uncluttered lines of this scale beauty. Wingspan is a full 21 inches. The kit is all prefabricated . . . with a pre-carved balsa fuselage and all parts already cut, formed or shaped for you.

**CYCLONE ..............$2.95** U-Control fans . . . get ready to fly up a storm! You're looking at our brand new "CYCLONE" . . . 7 ounces (with the engine, that is) of sheer flying dynamite. The enormous wing area of this model (21" span) provides tremendous "lift" that lets you take off realistically . . . fly every stunt in the books . . . then land as softly as a feather. You can power your very own Cyclone with any small bore gas engine .035 to .099. And—assembly of the model is a cinch from the all prefabricated kit (with our pre-carved balsa fuselage, too).

CYCLONE




CURTISS HELLDIVER


BEECHCRAFT T-34 MENTOR

COMBAT MASTER

THUNDERBIRD


ARMY RACER

PIPER CUB RESCUE

## ◀ MORE NEW RELEASES

**See your favorite hobby dealer for these popular U-Control flyers . . . by SCIENTIFIC, natch! We call 'em our "super 6" . . . because they're super in every detail. Looks! Performance! Ease of Assembly! Quality Features! The Works! And the price is a tiny $2.50 each. Each kit comes super prefabricated with our exclusive pre-carved balsa fuselage and all parts formed or shaped for easy assembly. Most models have 18" wingspans. They power with gas engines .020 to .074.**

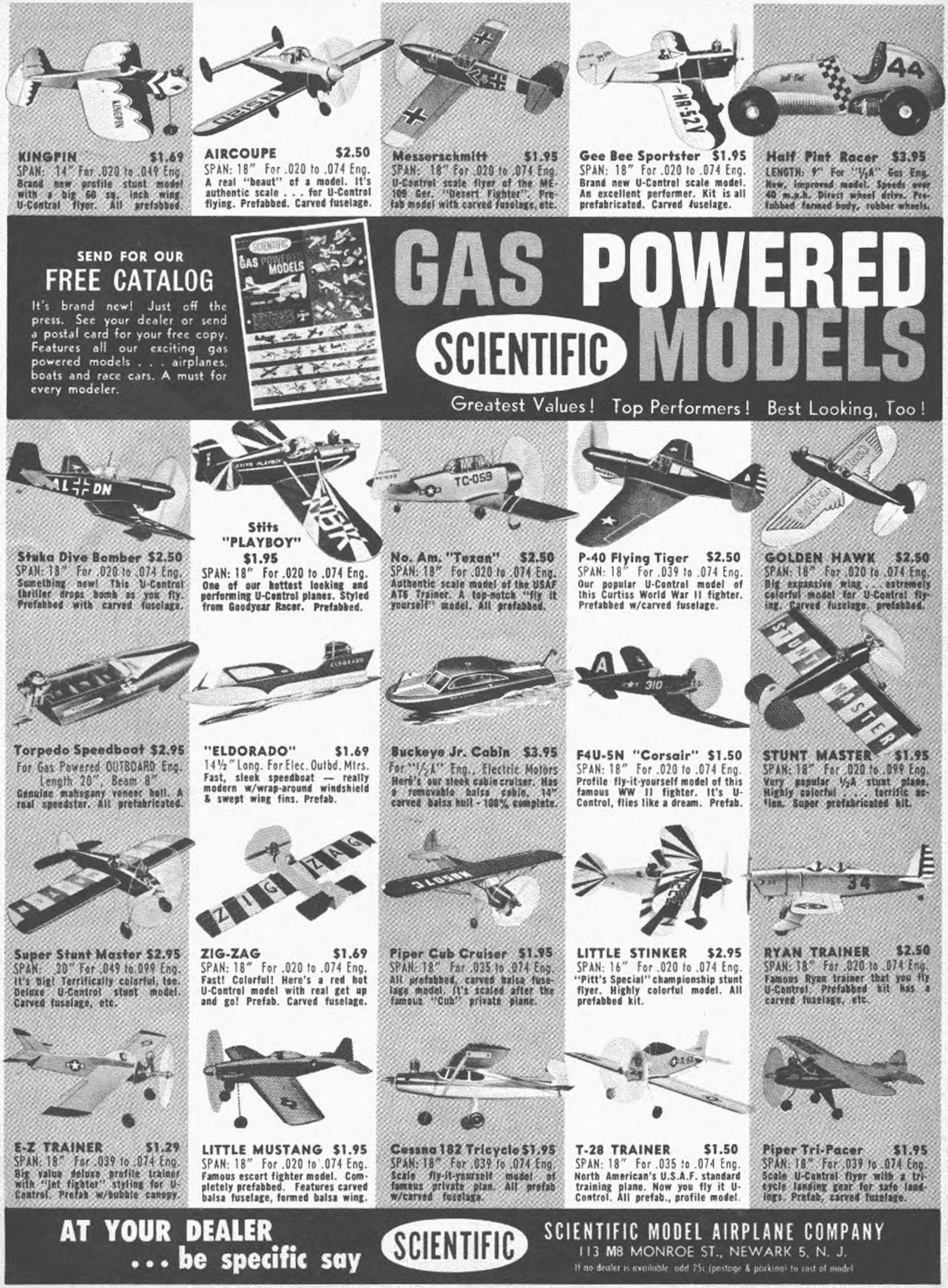
$2.50 each

## AT YOUR DEALER . . . be specific, say SCIENTIFIC

If no dealer is available, add 25c (postage & packing) to cost of model

**SCIENTIFIC MODEL AIRPLANE COMPANY**

113 M8 MONROE ST. • NEWARK 5, N. J.


KINGPIN $1.69
SPAN: 14" For .020 to .049 Eng. Brand new profile stunt model with a big 60 sq. inch wing U-Control flyer. All prefabbed.
AIRCOUPE $2.50
SPAN: 18" For .020 to .074 Eng. A real "beaut" of a model. It's authentic scale . . . for U-Control flying. Prefabbed. Carved fuselage.
Messerschmitt $1.95
SPAN: 18" For .020 to .074 Eng. U-Control scale flyer of the ME-109 Ger. "Desert Fighter". Prefab model with carved fuselage, etc.
Gee Bee Sportster $1.95
SPAN: 18" For .020 to .074 Eng. Brand new U-Control scale model. An excellent performer. Kit is all prefabricated. Carved fuselage.
Half Pint Racer $3.95
LENGTH: 9" For "1/2A" Gas Eng. New, improved model. Speeds over 40 m.p.h. Direct wheel drive. Prefabbed formed body, rubber wheels.
SEND FOR OUR
FREE CATALOG
It's brand new! Just off the press. See your dealer or send a postal card for your free copy. Features all our exciting gas powered models . . . airplanes, boats and race cars. A must for every modeler.
GAS POWERED
SCIENTIFIC MODELS
Greatest Values! Top Performers! Best Looking, Too!
Stuka Dive Bomber $2.50
SPAN: 18" For .020 to .074 Eng. Something new! This U-Control thriller drops bomb as you fly. Prefabbed with carved fuselage.
Stits "PLAYBOY" $1.95
SPAN: 18" For .020 to .074 Eng. One of our hottest looking and performing U-Control planes. Styled from Goodyear Racer. Prefabbed.
No. Am. "Texan" $2.50
SPAN: 18" For .020 to .074 Eng. Authentic scale model of the USAF AT6 Trainer. A top-notch "fly it yourself" model. All prefabbed.
P-40 Flying Tiger $2.50
SPAN: 18" For .039 to .074 Eng. Our popular U-Control model of this Curtiss World War II fighter. Prefabbed w/carved fuselage.
GOLDEN HAWK $2.50
SPAN: 18" For .020 to .074 Eng. Big expansive wing . . . extremely colorful model for U-Control flying. Carved fuselage, prefabbed.
Torpedo Speedboat $2.95
For Gas Powered OUTBOARD Eng. Length 20", Beam 8". Genuine mahogany veneer hull. A real speedster. All prefabricated.
"ELDORADO" $1.69
14½" Long. For Elec. Outbd. Mtrs. Fast, sleek speedboat — really modern w/wrap-around windshield & swept wing fins. Prefab.
Buckeye Jr. Cabin $3.95
For "1/2A" Eng., Electric Motors. Here's our sleek cabin cruiser. Has a removable balsa cabin, 14" carved balsa hull - 100% complete.
F4U-5N "Corsair" $1.50
SPAN: 18" For .020 to .074 Eng. Profile fly-it-yourself model of this famous WW II fighter. It's U-Control, flies like a dream. Prefab.
STUNT MASTER $1.95
SPAN: 18" For .020 to .099 Eng. Very popular 1/2A stunt plane. Highly colorful . . . terrific action. Super prefabricated kit.
Super Stunt Master $2.95
SPAN: 20" For .049 to .099 Eng. It's big! Terrifically colorful, too. Deluxe U-Control stunt model. Carved fuselage, etc.
ZIG-ZAG $1.69
SPAN: 18" For .020 to .074 Eng. Fast! Colorful! Here's a red hot U-Control model with real get up and go! Prefab. Carved fuselage.
Piper Cub Cruiser $1.95
SPAN: 18" For .035 to .074 Eng. All prefabbed, carved balsa fuselage model. It's scaled after the famous "Cub" private plane.
LITTLE STINKER $2.95
SPAN: 16" For .020 to .074 Eng. "Pitt's Special" championship stunt flyer. Highly colorful model. All prefabbed kit.
RYAN TRAINER $2.50
SPAN: 18" For .020 to .074 Eng. Famous Ryan trainer that you fly U-Control. Prefabbed kit has a carved fuselage, etc.
E-Z TRAINER $1.29
SPAN: 18" For .039 to .074 Eng. Big value deluxe profile trainer with "jet fighter" styling for U-Control. Prefab w/bubble canopy.
LITTLE MUSTANG $1.95
SPAN: 18" For .020 to .074 Eng. Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing.
Cessna 182 Tricycle $1.95
SPAN: 18" For .039 to .074 Eng. Scale fly-it-yourself model of famous private plan. All prefab w/carved fuselage.
T-28 TRAINER $1.50
SPAN: 18" For .035 to .074 Eng. North American's U.S.A.F. standard training plane. Now you fly it U-Control. All prefab., profile model.
Piper Tri-Pacer $1.95
SPAN: 18" For .039 to .074 Eng. Scale U-Control flyer with a tricycle landing gear for safe landings. Prefab, carved fuselage.
AT YOUR DEALER
. . . be specific say
SCIENTIFIC
SCIENTIFIC MODEL AIRPLANE COMPANY
113 M8 MONROE ST., NEWARK 5, N. J.
If no dealer is available, add 25¢ (postage & packing) to cost of model

job for that hot new Torp .09? Don't! Building anything other than the maximum allowed (2.5cc) would put you at a severe disadvantage, since FAI rules call out a minimum surface loading based on square measure; and as you can now see, the smaller model is doomed under such a rule, since its true loading (volumetric) would be much higher than that of the maximum-sized model.

Perhaps next time we vote on FAI rules, we should all push towards the elimination of the surface loading rule, or at least try to get them to measure it on a cubic basis. We feel that the best way of doing this would be to work with the 3/2 power of the area, as mentioned above.

Should the FAI rulemakers be unsympathetic towards eliminating the minimum surface loading requirement completely, we would specifically recommend a minimum loading of 3 gm/sq. dm $^{3/2}$.

In practice, the minimum weight could be figured this way: For a model of 40 sq. dm surface, (619 sq. in.) the area $^{3/2}$ value would be 253. Multiplying this by 3 gm gives a minimum weight of 759 gm, or 26.7 ozs. (To simplify this calculation, a curve could be prepared for the use of contest directors to read weight against area directly.) Similarly the minimum weight for a model of 19 sq. dm surface (295 sq. in.) would be 249 gm (8.8 ounces.). Under the current rule, the total area corresponding to this weight is 193 sq. in., obviously too small for an .049 powered job to compete against the 15's.

Because of the curve ball FAI rulemakers have inadvertently thrown, one seldom, if ever, sees other than a .15-powered model in FAI competition. Adopting either a no-wing-loading rule, or basing loading on the 3/2 power of the area, as above, will see the bringing of .049's and .09's to the FAI fold. This should act as a great stimulus to American interest in FAI Power.

Back in 1953 and 1954, we were satisfied with the Ramrod design and were building literally dozens of models just to find the best size for each engine we wanted to use. For each particular engine size, the process was one of trial and error from beginning to end. Many models were drawn up, built, tested, then discarded, only to repeat the process on one of a different size for the same engine. Most of this could have been eliminated if we had known then what we know now. By use of the process illustrated below, it is possible to find size by trial and error for just one engine, say an .049 for convenience, and then *predict* with an uncanny degree of accuracy what the size should be for *any* other engine and weight.

To set up a procedure for doing this and check its validity, we used the Ramrod 250 (½A) as a base to project theoretical areas for all other sizes, using only the desired weights (actually, the average weights for models already built) as a starting point. Our assumption is that the weights will be directly proportional to the cube of the span (a measure of volume, as is weight). The span was figured in feet rather than in inches to avoid large numbers.

As you can see from the table, the theoretical areas are, in each case, surprisingly close to the actual areas we had found from the trial and error method. (Fig. 3.)

These theoretical areas were found in this way: First, the weights for all were set into the table, followed by the span and cube of span for the "250." Assuming we want to find out, on this basis, the area to make an .09 job which we want to weigh 13 ounces, or twice the weight of the .049 job, we multiply the span cubed value for the .049 by the weight ratio of two (38.6 x 2 equals 77.2). Finding the cube root of this value (77.2), gives us a span of 4.26 feet. Dividing the span of the .049 job into the new span for our .09 model gives us a factor, 1.260 (4.26/3.38 is 1.260), by which we can multiply all dimensions on the .049 plans to scale up to .09 size. Our .09 job area will be the square of this linear factor times the ½A area (1.260 x 1.260 x 250 is 397).

In like manner, the proper size for any other model of a desired weight can be found by relating it to the ½A as in the above example.

It should be pointed out that this entire analysis presupposes several things:

1. We wish to scale one design to a different size, not mix different designs.
2. The same sinking speed is desired.
3. Structures are scaled approximately.
4. The same builder is involved. (Some modelers using the same plans as others build a 35 job as much as 9 ounces heavier than their friends.)

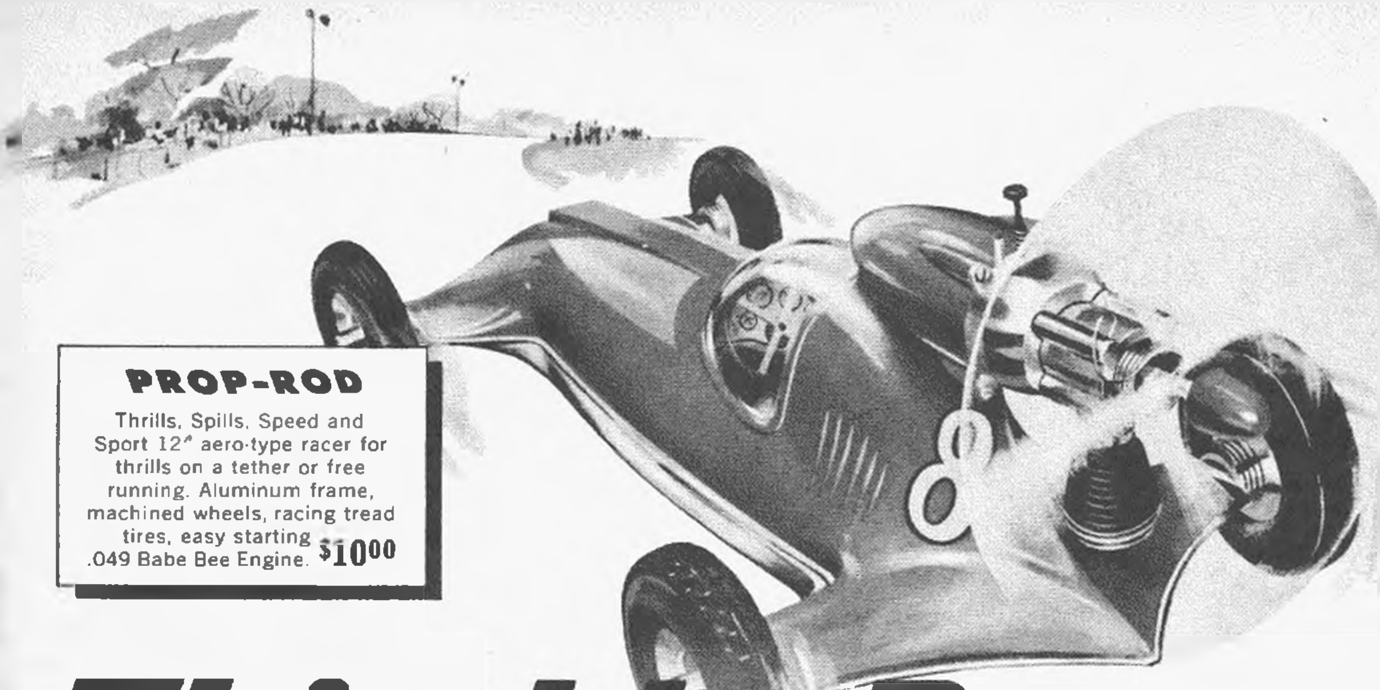
To further aid those of you who would like to use the principle stated above to scale your ½A original, or other model, to a larger one, we have prepared a graph. Using the graph will give you the same cubic wing loading on both models, and hence an equivalent glide. Also, should you wish to scale a design down, the graph will aid you in selecting the proper factor to use. (Fig. 4.)

As an example to illustrate the graph's use, let's assume you wish to scale your new 600 square inch .09 job up to one for a .20. Due to the fact that the 600 came out at 20 ounces, and is somewhat slow at getting upstairs, you'd like the larger version to just hit the required 35 ounces. In going to the graph, first determine the weight ratio: 35 ozs./20 ozs. is 1.75. Find 1.75 on the horizontal "Weight Ratio" scale and read up to where your imaginary line intersects the two curves. Reading over to the vertical scale will then show that the linear ratio should be 1.20 (the number by which you must multiply all 600 dimensions in order to produce the larger model) and the area ratio, 1.45. Your 20 job will then have an area of 1.45 x 600, or 870 square inches.

If your particular ruler should happen to be calibrated in centimeters, and your scale in grams, don't fret—the graph will still work, since only ratios are involved on it!

As an example to illustrate how the graph might be used to "dehydrate" a large model, let's assume you have an 800 square inch, .15 powered "floater" which you were able to build to 26 ounces. You now wish to make ½A version and will tolerate an all-up weight of 8.5 ounces. Your weight ratio is 26/8.5, or 3.06. In going to the graph, you will pick off 1.45 and 2.10 as the linear and area ratios respectively. Instead of multiplying by the area ratio, however, we must this time divide, to arrive at your new area of 381 square inches. In scaling down, multiply dimensions by the reciprocal (the number divided into 1) of 1.45, or .69.

Since the principle of cubic wing loading, which we were fortunate enough to stumble across, is basic in nature, there are undoubtedly many more applications than we have indicated in this article. We hope that knowledge of it may directly or indirectly help us all achieve greater satisfaction and success from our hobby.



**PROP-ROD**

Thrills, Spills, Speed and Sport 12" aero-type racer for thrills on a tether or free running. Aluminum frame, machined wheels, racing tread tires, easy starting .049 Babe Bee Engine. $10.00

# Thimble-Drome

*dependable*

# PERFORMANCE

***the key to more fun in every model sport!***


**WATER WIZARD**

**Exciting Step Hydro**

Slam-bang hydro action at the beach, or in your swimming pool! 15" overall – 8½" beam. Easy-starting .049 Babe Bee Engine. Long life nylon prop. Spring Starter. $10.00

**Send for Illustrated Folder M8**

**L. M. COX MANUFACTURING CO., INC.** Box 476, SANTA ANA, CALIFORNIA

*World's Largest Manufacturers of Ready-to-Fly Planes, Engines, Fuel, and Accessories*

## A Place to Fly

(*Continued from page* 13)

good letter from the President of the Fresno, (Calif.) Control Liners stated, as did 10 other letters, that the Director of Recreation for the city was interested and helpful. He says "It seems that we no sooner obtain a site than for some reason we were asked to leave . . . complaints . . . noise . . . the usual reasons. The City Director of Recreation was at first reticent. I suggested a possible site, a newly grassed park on the outskirts . . . quite suitable. He agreed to let us use the area, subject to city council approval, if we secured written approval of all people living on the streets bordering the park.

The petition we circulated contained conditions which we imposed upon ourselves with an eye to the future. The conditions were as follows:

(1) All fliers would be covered by insurance provided by the Western Associated Modellers group with which our club is affiliated. The insurance covers bodily injury and property damage through Lloyd's of London.

(2) We would fly only at given times on Saturdays and Sundays.

(3) *All* flying would be under adult supervision.

(4) *No* jet models would be flown. (Jet noise is a justifiable cause for complaint.)

(5) Flying circles would be completely "roped off."

The letter stated that these conditions were more severe than they would like, but, note the eye to the future. This agreement gives the club good facilities and the possibility of later softening of the agreement if their experiences are good.

It is interesting to note that all except three neighbors signed the petition. When they found out that everyone else had cooperated, the last three signed. It is stated, "So far our experience with the field has been good, no complaints . . . we feel that the fact that the residents nearby were consulted . . . is of great influence." Notice here again a definite plan, specific rules, good leadership, and hard work brought success.

3. From Westfield (Mass.) Aeronauts comes the news that after the usual sad experience of members cutting grass and making a good flying field, complaints terminated its use. However, its Advisor "went to see the former Mayor, who owns acres of land." They put up their case and outlined a plan requesting use of a lot about 1½ miles from town, in a semi-industrial area. This they were granted rent free. The former Mayor "is very much interested, and hopes to see us build a club house this summer. At present we are operating 150' circles. We have our own electricity and our own PA system." Because some of the boys do not like to fly over blacktop, they plan only two such circles, others will be clay or grass. They plan a two-way strip for radio-control flying.

The Advisor makes the following points: (a) "The club does its own maintenance. We have agreed to set up a work night every Thursday . . . so everything is ready for the week-end. Our flying hours are 8 a.m. to 8 p.m. weekdays. Sundays from noon to 8 p.m. For sanctioned meets we ask the Playground Department to mow our grass. The Auxiliary Police take care of contest traffic, the Air Scouts handle parking of cars, and the Kiwanis Club, which is our sponsor, runs a refreshment stand and gives us a percentage." (b) Noise is not a problem if you "get the right location and if you control the flying time." (c) It is important to let the public know what you are doing. "You gain a good reputation by doing something constructive for the young people of the community, and with this good reputation people will overlook the noise." (d) "Our Club is operated strictly according to AMA regulations." This helps also in gaining a good reputation.

4. Anyone who has driven south from Syracuse, N.Y., can picture the ideal location obtained by the Syracuse Sky Knights in Manlius, N.Y. They used a new method to obtain the use of a beautiful field, which merits a try in other parts of the country. The Elmira Flying Sparks tried the idea with equal success. The key to this situation is the Soil Bank Program of the Department of Agriculture.

This plan can provide an excellent site for control line and radio control flying, possibly even for free flight. It cannot, however, provide for any blacktop circles. Hundreds of communities may find this an adequate solution to their flying site problem.

Look for the Agricultural and Stabilization and Conservation County Office. This will be in your County Building. If you cannot locate it, ask any County Agricultural Agent or the teacher of vocational agriculture in your high school. The Agricultural Stabilization and Conservation County Office knows the location of all land in the "Soil Bank" program. Some land is bound to be clear and level, just right for flying.

One of the "spark plugs" of the Sky Knights says "I believe our deal went smoothly because we first talked with the owner of the property and were lucky to find one who was interested in model flying. He sent us to the conservation officials, and then sat down with his own lawyer and went over all the legal aspects of the deal. We took out a public liability policy to protect the club and also the owner of the field. We are also working on incorporating the club to protect the individual members."

This leader said that the Soil Bank officials were very cooperative, so this idea should work just as well for you. Look in your phone directory under some such title as Soil Conservation, and make your first contact through them. Keep in mind that the land cannot be "improved," only mowed. Still, who would turn down a real nice place to fly. The photo of their site would make any model flier drool. A huge flat field with no trees!

5. One of the most glamorous sites is the Charles A. Donnelly, Jr. Modelport, in New Orleans, La. The President of the New Orleans Aero Club who is also a model plane Contest Director says, "After being pushed around as most modelers are in various cities, I met a man willing to listen to my story." This prominent "oil" man was interested in helping modelers. He had his company architect draw ideal plans. The "Modelport" is located across from an amusement park, and the flying site measures 320 ft. by 380 ft. The field is enclosed with chain link fence, and has auto parking space outside the fence. There are four flying circles. One for 70 ft. lines and three for 60 ft. lines. Each has a 6 ft. concrete slab for pylon flying."

Read on and drool some more. He says "Located in the corner of the field is the control tower. The upper floor all glass enclosed, provides an area where all clerical (contest) work, tabulating and recording is carried on. The Contest Director has an electronic timing and lap counting device in the tower, and all trials are directed by inter-comm. to stations in the circles. (Continued on page 50)

"A splendid PA system keeps contestants and spectators constantly informed. Surrounding this upper room is a balcony from which supervision can be exercised."

Work tables with formica tops are part of the furnishings of the 2nd and 1st floors, while a shop, work bench, and lockers are also on the 1st floor. Two rest rooms, and a drinking fountain are appreciated, and a flag pole with wind sock and flags trim up this excellent control tower. Outside four flood lights make night flying possible. Pretty keen Modelport! New Orleans is really fortunate, but you can be too.

Possibly your eventual site may not have all the features of the New Orleans Modelport, yet with proper planning you can look forward to less complaints and more permanence. The 30 cities studied showed increasing permanence. A great many new Modelports are now in process. Cities like Dayton, Ohio; Ft. Wayne, Ind.; Detroit, Mich.; and smaller cities like Union, New Jersey, have operated Modelports successfully for periods varying from 10 to 15 years. Evidently these cities have found a satisfactory solution and noise is not a serious problem.

Many other cities and towns have interesting and very adequate flying sites. Such places are St. Paul, Minn.; Boulder, Col.; Los Altos, Burbank, Oakland, Alameda, Livermore, Hayward, Sunnyvale, Santa Ana, San Mateo, Calif.; Plainville, Conn.; Denver, Col.; Wichita, Kan.; Houston, Tex., and many others. Then there is the huge Los Angeles Model Airport in the Sepulveda Basin area as fully described in the March 1959 issue of this magazine.

From the Vancouver (Canada) Gas Model Club bulletin it is evident that the same problems exist to the north. Their approach is unique, broader than usual, but good. The British Columbia Society of Model Engineers decided to build a center for all hobbies. They approached the municipality for a grant of land. The Park Commissioners felt that this would be a worthwhile project. They gave nine acres of land worth $70,000. On this nine acres will be built three U-Control circles, a pond 100 feet by 200 feet, a railroad track around the pond, a three-story hobby center building, complete with hobby museum, machine shop, woodwork shop, ham radio room, and a complete custom carbuilding shop.

At the present moment, a forest appears (*Continued on page* 52)

# *Sterling* SPECIFIES AMBROID!!

Most of the people in the model plane industry are enthusiasts from way back, as well as being long-time Ambroid cement users. Like genial Ed Manulkin of Sterling models (seen below with his 'Corsair' and 'Space Master Jr.' kit models), who built his first model plane with Ambroid back in '29! Says Ed — "Ambroid is the finest and strongest cement ever manufactured — its superiority making itself felt not only in the model plane field, but also in model boat building. We at Sterling recommend Ambroid to all model builders — and that also goes for Ambroid Plastic Cement, which is perfect for our plastic Chris-Craft 'Cobra' and 'Express Cruiser' electric-power boats."

Look for the familiar Ambroid blue and orange tubes (Regular, Extra-Fast & NEW Plastic Cement) at YOUR local model shop.

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


"REGULAR" AMBROID — FOR MAXIMUM STRENGTH CONSTRUCTION


"EXTRA-FAST" AMBROID (Model Airplane Cement)
20 cc. Tube . . . . . 15¢
"SYNTHE-WOOD" (ideal as a filler & for fairings)
4 Ounce Can . . . . 40¢
NEW AMBROID PLASTIC CEMENT 28cc Tube . 15¢
"REGULAR" AMBROID
1-3/4 Oz. Tube . 30¢
4 Ounce Tube . . 60¢
1 Pint Can . . . $1.75
AMBROID SOLVENT
1 Pint Can . . . $1.35

NEW! After FIVE Years of Research . . . .

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

AMBROID CO. • BOX 30 • WEYMOUTH 88 • MASSACHUSETTS to be occupying this area, but not for long. In May the bulldozers would level the field and the tress will have to be cut down. In July the Engineers' Langley track goes in. In August the grass will be seeded for the flying field. The last sentence is the key to their ambitious program, it says, "See you out there every Saturday morning 8 a.m. to 1 p.m. Bring an axe!

Here are some points that from the analysis of 30 reports seem to be important in preparing your plan:

1. *Leadership*, should be adult, strong yet cooperative.

2. *Planning*, develop a plan in writing that will have appeal to groups, then get the help of local businessmen or organizations.

3. *Self discipline*, be ready to curtail flight hours, or even install motor mufflers in order to show cooperation.

4. *Support*, attend city meetings and get to know people and city problems. Cultivate the friendship of your Superintendent of Recreation, State Director of Aeronautics, County Soil Bank Officer, newspaper staff, airport manager, Kiwanis, Rotary, Exchange Clubs, etc.

5. *Public relations*, guard your club reputation, don't let one or two "non-cooperative" members get you in trouble. Take time to write newspaper accounts of the science achievements of members. Newsmen will take the photos. Keep your skills on display. Make friends with neighbors if you can.

6. *Reliability*, keep your word, build your club reputation.

7. *Work*, roll up your sleeves, you may have to clear land, grade, seed and maintain for a while until you can prove that you have a worthwhile activity.

8. *Cost*. What will it cost a Recreation Department? Some say about $1,000 replacement cost and $100 per year for maintenance.

Several letters from Directors of Recreation say that until the noise problem is improved, there is no chance of getting a favorable flying site. There are at least three motor mufflers on the market. Have you thought that eventhough it is not desirable, still if everyone who flew at your site used them, competition would be fair?

What is your particular problem? What ideas can you use from the experience of others cited above? Reflect, then plan!

## Varicomp Switcher

(*Continued from page 29*)

sturdy action is obtained for the elevator on the third and fourth pulses. ("Quick blip" for motor is the fifth "channel.") The elevator horn decides the positions of the elevators. If placed on top of elevators, the third position is down and fourth is up. If horn is reversed, the action is reversed. Due to the fast or slow rate at which the Varicomps accept the pulses, the servo action from switcher is reliable and stable. Since 4½ volts on each side of servo hook up give better power, working the servos to three volts or lower still will give plenty of service.

The action of the switcher will give such rapid action that, if the fourth position is necessary, you can pass through the third pulse almost without noticing it. There is no breakdown on the switcher if built correctly. The unit has been bench tested for six months and 10,000 operations and still is working.

The bottom Varicomp to which the switcher is attached should use ¼" rubber, with at least 75 to 100 turns on it at all times. No spark suppression is necessary, so this is of some value to the receiver. Hook-up should be followed as per manufacture's schematics of each unit (Varicomps and servo). Use any servo that will Hold, Release, Hold (Citizen-Ship or Bonner). The mechanical relays are contacts are obtained from any pinball machine (get from service man or company). The author can advise prices and sources of material.

Photo shows parts:

Base, insulated board; contacts (2); old needle valve ⅝" long (cut from threaded end); 2 mounting bolts 4-40 (1" long with binding nuts); 1 center torque board (obtained with Varicomps); 1 pc. steel wire

(*Continued on page 54*)

# Surprise! Fun! Authenticity!

Monogram
Hobby Kits FOR FAMILY FUN

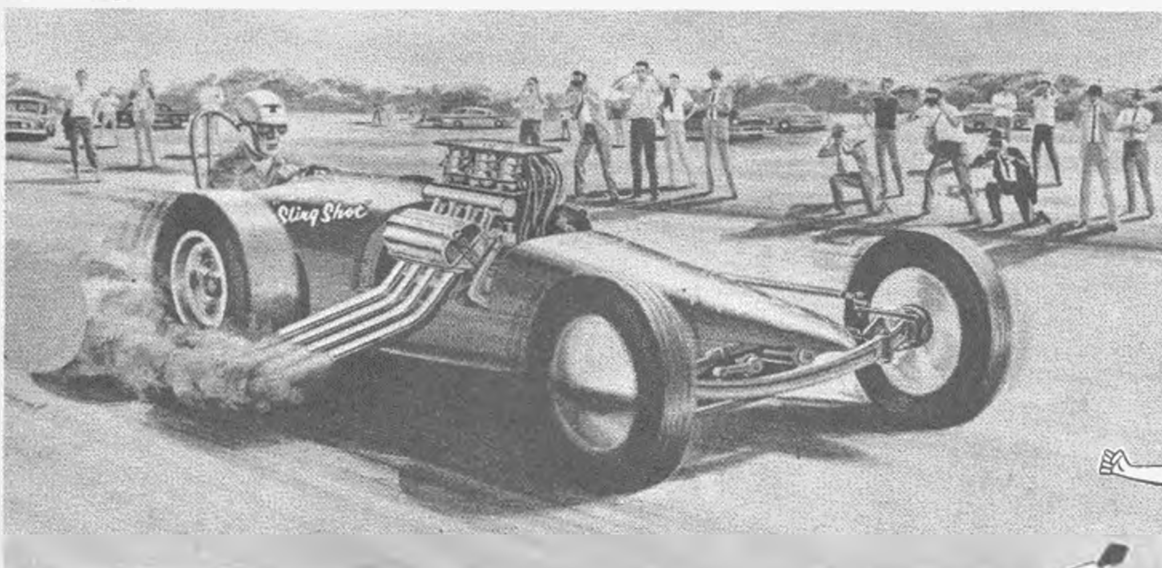
## With these NEW Monogram Models

Here are two fine new kits in a long line of famous Monogram models.
Both are authentic and true-to-scale and packed with plenty of fun and many surprise features. See them at your favorite store today.


**Yeah!**
**It's a JET!**
**Only 98¢**

### Army's New Jet-Turbine Iroquois Helicopter

New all-plastic model of Jet Helicopter HU-1 Iroquois recently adopted by U.S. Army for utility use in combat zones. This is the first jet-turbine powered helicopter and the first model of this unusual aircraft. Main and tail rotors both revolve. Cabin doors can be set in open or closed position. Completely detailed cabin interior and instrument panel. Model follows hospital transport design and is accompanied by five figures—pilot—two stretcher bearers—two men on stretchers. Authentic decals.




### It "Goes" Too! Power With "Jetex" $CO_2$ Capsule

The slingshot Dragster is an authentic drag strip racer model scaled from top-winning cars. Has all of the conforming drag racer features—long nose shell housing, big exposed engine in center, oversize exhausts, big squarish rear tires and the driver in the "hot seat" at the extreme rear. Kit includes scale Chrysler engine with 6 carburetors, pin stripe decorative decals and power unit mount for racing.

**It's a Slingshot**
**Dragster**
**Kit Only 98¢**

1/16" x 1" (with washer to fit); 2 cam followers (1 for rudder) (1 for switcher Varicomp); 1 3/32" x ½" eyelet; 2½" spacers.

Assemble switcher before mounting to bottom Varicomp with aid of 2½" spacers. Contacts should be mounted in oversize holes so adjustments can be made. Once set, the relays can be forgotten as they hold indefinitely. The cam follower should be loose enough so that it can rotate in needle valve. Do not solder to wire while in place on nylon gear. The Varicomps should use 4½" volts for a good reliable action; ¼" rubber on both Varicomps. Use color code book* hook-up as servo specifies. If instructions are followed, you will have many good hours of flying fun. You don't need a 5-channel job to do most of the maneuvers the Multi boys do!

## Foreign Notes

*(Continued from page 2)*

young hobbyist with small glow engines, in this way, would have a serious effect on the strong position that the diesel has held for so long.

*GERMANY*

Surprise item from West Germany is that the big Metz radio firm—widely known outside Germany for their Mecablitz electronic photoflash units—are in the model radio control business. They have just announced their first outfit, to be known as the Metz Mecatron.

This is an audio-tone outfit for 27.12 mc., and gives a choice of single-channel control, or three channels by means of adapter units on receiver and transmitter. The transmitter uses a single tube and two transistors and features a transistorized D.C. converter to utilize the cheap power supply of four 1.5-volt batteries. Alternatively, it can be connected to a 6-volt car battery supply, or, with the aid of a special connector cable, to a 12-volt car battery. It is housed in a flat plastic case approximately 8 x 6 x 2-in., with carrying strap. The Mecatron receiver is fully transistorized and is temperature checked up to 140 deg.F. It operates on 6 volts and is enclosed in a case measuring 3.6 x 1.6 x 1.4-in. A neat battery box with switch and plug connection to receiver is available.

This new Mecatron equipment only started reaching the hobby trade in late May, but already Metz is working on new equipment, including a proportional outfit.

*INDIA*

The tenth annual All-India Model Aircraft Rally was, this year, held on the newly-built Indian Air Force runway at Barrackpore. The meet was officially opened by the Indian Minister of Civil Aviation in the presence of a distinguished gathering of officers of the government and armed forces of India and before about 4000 members of the public.

Official support for model building is now being considered in India. The Directorate of Civil Aviation is investigating the possibility of establishing a modeling center at the proposed new civil airport at Behala, which would include flying sites, workshop facilities and a design and research section. In this way, plus concessions for the increased import of modeling goods, it is hoped to greatly expand model interest in India.

*AUSTRALIA*

Carrier deck events are getting popular in Victoria. In addition to using the accepted scale navy carrier type models, enthusiasts have restored to converted team-racers and stunt jobs to try this fascinating branch of the hobby, which is so little known outside the U.S. Practically all the engines used at present are of the O.S. Multi-speed series with coupled exhaust/intake throttles operated through a third line, the J. Roberts Flight Control handle and bellcrank being most widely favored.

Model building in Australia follows U.S., rather than British trends and the main center of activity is concentrated on the eastern sea board state of Queensland, New South Wales and Victoria. Over on the western side, Noel Mitchell, secretary of the West Australia Model Aeronautical Association, Perth, tells us that, with 1500 miles separating them from the next capital city, Adelaide, exchange of modeling ideas between east and west travels slowly and that, as a result, West Australians tend to take a lead from trends as reported in M.A.N. Mitchell asks us to mention that if any U.S. modeler would care to write to him, he would welcome such correspondence. His main interests are team-racing, stunt, combat and RC and his address: 379 Mill Point Road, S. Perth, W. Australia.

*SOUTH AFRICA*

Our Capetown correspondent, noted South African modeler, Pete Visser, reports that the recent S.A. Nationals, held this year at Johannesburg, were quite a success. For the energetic Visser they were, anyway . . . Driving 1000 miles up from the Cape, he placed in six events, obtaining three firsts (Open Rubber, FAI Gas and Nordic A2) and, by a coincidence, three fourth places: ½A Gas, Open Glider and A Gas.

Two other Cape Province modelers, Brian Partridge and Robbie Rowe also did well, Partridge winning ½A Payload and Jetex, and Rowe taking the B Gas event, plus the F/F Championship Shield. Grand National Champion (F/F and C/L to qualify) was Cannon of Bloemfontein and the Champion Club was the well-known Western Providence M.A.C.

U.S. design trends are evident in Class A and B free-flight gas with Torpedo powered Ramrods and Spacers still much in favor—especially for Class B. T/Hoppers are the accepted engines for ½A. Diesels in English model designs are more widely used in FAI gas, and Visser's winning Dream Weaver used an Oliver Tiger, although diesels, in general, were at a disadvantage at the high altitude (6000 ft.) of Johannesburg.

# 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-1 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—now B 26
- BOEING B-17 — The Flying Fortress
- CONSOLIDATED B-24 — Liberator—a heavy!

**Set # W-6**
- CURTISS A-25 — Navy divebomber
- 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 ______

## Engine Review
## Cox Olympic

*(Continued from page 24)*

mounting lugs (a recent departure and also seen on the new Space-Hopper .049) and the twin ball-bearing mounted crankshaft.

Constructionwise, the new Cox is typical of this manufacturer's products. No castings are used. Crankcases are turned on screw machines from extruded bar stock, afterwards passing, in turn, through two other machines which do all the remaining operations—i.e. those non-concentric to the shaft. Pistons are machined from bar steel and are hardened on the wearing surface only, in order to leave the socket for the conrod ball-joint sufficiently ductile for subsequent working. Connecting-rods, which are of steel, are assembled to the pistons by a special machine, built in the Cox company's tool shop. The operator merely places rods and pistons in two hoppers feeding the machine, which assembles them entirely automatically.

In the finishing of such items as cylinder bores, much emphasis is placed on temperature control, as an aid to accurate working. All grinding, cylinder boring, honing, etc., are therefore done in a temperature-controlled room, in which the temperature is maintained constantly within one degree, after being pre-set at a comfortable working level.

The Olympic uses a ball-bearing mounted crankshaft, because, all other things being equal, a ball-bearing engine must achieve higher mechanical efficiency than a plain bearing motor. Agreed some highly impressive performances have been put up by plain-bearing motors, but these have been in spite of, not because of, having plain bearings. Frictional losses in the Olympic are obviously very low indeed.

The chankshaft journal itself is of smaller diameter (¼-in.) than is usually employed in .15's. This is practical because it does not have the stress-raising intake port of a shaft-valve, and, being supported in ball-bearings, does not need the added bearing area of a large diameter journal. The shaft has a chamfered circular web and a machined-in crescent counterbalance. The connecting-rod is rather longer than average and piston side thrust is thereby held to a minimum. The piston is flat crowned and uncovers the large exhaust ports at 70 degrees BBDC, a normal timing. Bypass timing, on the other hand, is very advanced, the tops of the two internal bypass flutes being almost flush with the upper edges of the exhaust ports. The cylinder, as in other Cox motors is machined in one piece, with integral cooling fins, and screws into the crankcase. The combined glow head unit screws into the top of the cylinder and seats on a soft copper gasket.

Cox reed valves have been simplified, compared with the assemblies used on the Space-Bug and Thermal Hopper. On the Olympic, a single copper reed, retained by a wire snap ring, is used. Reed valve housing, crankcase backplate and carburetor venturi are combined in a single machined unit. The familiar and highly effective Cox triple-jet carburetor is featured, whereby fuel is supplied, finely atomised, via three small jets bored equidistantly around the venturi. Actual metering takes place before the fuel reaches the jets, by means of a separate needle-valve. The complete needle-valve unit is secured to the venturi by means of a nut with a large screened intake, and can be rotated through 360 degrees, for the most convenient location for individual installations.

Surprise item with the Olympic is the provision of a starter spring. Incongruous on an "expert's" engine? You will doubtless think so—until you have tried it a few times. There may be a few diehards who will insist on finger flipping rather than resort to such a "sissy" item as a spring starter. And they won't have any trouble because the Olympic is an easy-starting motor. But reed-valve motors have a tendency to occasionally start backwards, especially on small, light props. The starter definitely does a better job of starting: we were convinced of this after trying it against normal hand flipping. No reverse starts and the thing works like a charm, first time, every time. Starting from cold needs a cylinder prime, plus a couple of turns of the prop with the intake choked to draw fuel to the carburetor. The engine will then start within two or three attempts, provided it has been adequately primed. Restarts with a hot engine are instantaneous. If there is fuel in the delivery line, no priming, no choking and no needle re-adjustments are necessary: just wind the prop back one turn against the spring, energize the plug, release the prop and she's away.

As on other Cox engines, no lengthy break-in is needed and it is normally quite safe to let the motor have its head after a preliminary rich mixture break-in of only one minute. However, as a courtesy, our test engine was given 30 minutes running before any performance figures were taken. Tests were carried out with the aid of our reaction-dynamometer, on which, incidentally, some 40 different types of .15 engines, both diesel and glow, have been evaluated to date.

The first thing that became apparent with the Olympic, was its high torque. This reached a maximum of 23 oz. inches at between 11,000 and 12,000 rpm, which is equivalent to a brake mean effective pressure of 60 lb/sq. in., is better than any glow .15 previously tested and closely approaches the very high torque of top diesel 15's like the Oliver Tiger. As rpm are increased, however, the normal decline of the torque curve is less abrupt than with the diesels and, in consequence, the Olympic reaches a higher bhp peaking speed. Actual bhp figures, obtained with a fuel containing 30 percent nitromethane, were as follows:

| | | |
|---|---|---|
| At 10,000 | rpm | —.218 bhp |
| 11,000 | " | —.248 " |
| 12,000 | " | —.270 " |
| 13,000 | " | —.288 " |
| 14,000 | " | —.300 " |
| 15,000 | " | —.310 " |
| 16,000 | " | —.316 " |
| 17,000 | " | —.318 " |
| 18,000 | " | —.317 " |

Running qualities throughout the tests were excellent, the motor running smoothly and consistently, and the response to the needle-valve was just right. Suggested prop for achieving maximum free-flight performance would be around 8 x 4 or 8½ x 3½.

*Summary of Data*

Type: Reverse-flow scavenged two-cycle with reed-valve intake.
Weight: 4⅝-oz including starter spring.
Displacement: 0.1495 cu. in. or 2.45 c.c.
Bore: 0.585 in. Stroke: 0.556 in.
Stroke/Bore Ratio: 0.95:1.
Specific Output: 2.13 bhp/cu. in.
Power/Weight Ratio: 1.24 bhp/1 lb.
Price: $12.98 including starter and special wrench.
Manufacturer: L. M. Cox Manufacturing Company Inc., 730 Poinsettia Street, Santa Ana, California.

by P.G.F. Chinn

## Radio Control News

(*Continued from page* 30)

the N-46, while rated at 450mah will give this capacity only at a 10 hour rate, or a maximum drain of 45ma. The quick discharge in no way affects future life.

• • •

### CLUB NEWS

The Lakeland RC Club, c/o Bill Deffner, 165 Bank Street, Waukesha, Wis. is holding an AMA sanctioned two day contest on July 18th and 19th. This 6th Annual event at the Waukesha County Airport will cover rudder-only, intermediate, multi, pylon and scale, with plenty of trophies and other prizes. If you go early, a welcome party at the Avalon Hotel. Flying from 9 am until 5:30 pm on the 18th and from 9 am until noon on the 19th for eliminations and from 12:30 pm until 5 pm on the 19th for the finals.

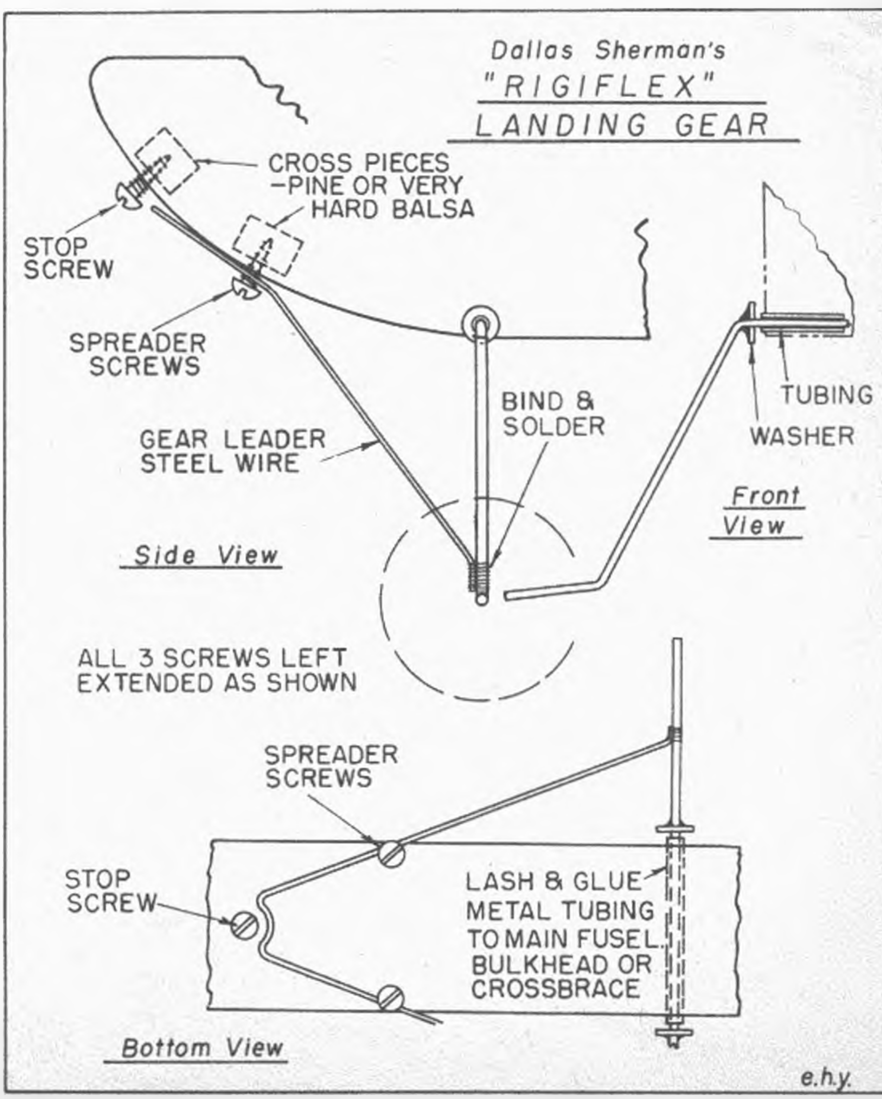
• • •

From the Bison Beep Box, Flying Bisons, Buffalo, we learn that Stan Keysa is building an ME-109 fitted with a .15 or .19 engine. Rudder-only to start and then elevators and engine control. Bud Marsh has finished a Piper Commanche using an O.S. Max. 25 to power the 56" model. Vince Rasp built a Cessna L-19 and should have no trouble with scale jobs since he built the Boeing F4B-4 last year. Looks like quite a scale outfit, in addition to the Smog Hogs, Astro-Hogs and Live Wire designs. Cliff Barber points out that trouble can occur when using sub-miniature sockets if the tube leads are not straight (no kinks) and you are careless in inserting the tube, or transistor.

• • •

Interesting comments from the Central Jersey RC club tend to back up statements made in this column. Superhets won't be popular until the price is reduced and, at present, little if anything has been published to enable the RC fan to build his own. Super-regen circuits have been proven over many years and are now quite reliable. They can be built by the average builder and except for the interference problem are perfectly satisfactory. Superhets will be coming onto the scene but in the meantime don't sit around and watch others fly just because you have an "old-fashioned" super-regen. In the Rolling Breadboard operation (RC cars) on March 10th, Herm Birnbaum took first with his three-wheeler with a WAC TTPW system and a Mighty Midget for steering. Jan Mock took 2nd with his four-wheeler, one driving, and a two-relay delay network for two channels. Nick Ciampa 3rd with a three-wheeler having the two front wheels driven separately by Mighty Midgets. The tail wheel was free to swing and

(*Continued on page* 61)



# 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

**61.** TRI-TRAVELER: Sc, FF, .049
HOUDINI: RC, .15
DIZZY BEE: Sp., U/C, .29
**Maneuverable but stable, Houdini, a low wing; Dizzy Bee, Lauderdale's latest Mono-Line.**

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

**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!**

**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.

**51.** AMERICANO: .15 FF, by Blanchard
BOMARC: Scale, Jetex, missile.
CUTLASS: Sport U/C, .049's.
**Scorpion power makes Bomarc terrific flier. Americano is National Champ's very latest.**

**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.**

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

**60.** BELLANCA: Scale U/C, .19-.29
HALF ALPHA: FF, .049
DUNWOODY GLIDERS
**Gliders (4) from Dunwoody series of articles.**

**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

**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 ______

steering was accomplished by alternating power to each drive motor. Ed de Fillipo was 4th with his three-wheeler and three-channel receiver, only two channels used. Ed's was the only non-pulse entrant.

• • •

A. B. Kunz, 2804 Liberty Street, Allentown, Pa. advises there are about 30 active fliers in his area, most on single channel. The multi channel fliers use Orbit, Bramco, Marcy and WAG TTPW.

• • •

Too late to announce more on the 6th International RC Contest held June 20-21 in London, Canada. Mentioned a new Perilous Pylon Race. For rudder-only, it had to be a flying start and a flying finish. For intermediate an ROG start with one loop down and one loop back and a flying finish. For multi an ROG start with two loops down and two back and then an upwind landing.

• • •

Photo from A. Friberg, Box 224, Tyringe, Sweden, shows him with his 2500mm (100") powered glider. The receiver uses a DL651 tube and three transistors, features a transistor converter and operates from six volts. The control actuator is a Telematic, mentioned in previous columns. Other interesting photos showed his transmitter, usable on either tone or CW and also featuring a DC power converter. With 6v input it gives 180v output at 20ma and uses two 2N256 transistors. RC gliders are an important phase of model building in the European and Scandanavian countries. Transistorized power converters are also widely used, mainly due to the higher cost of B batteries.

• • •

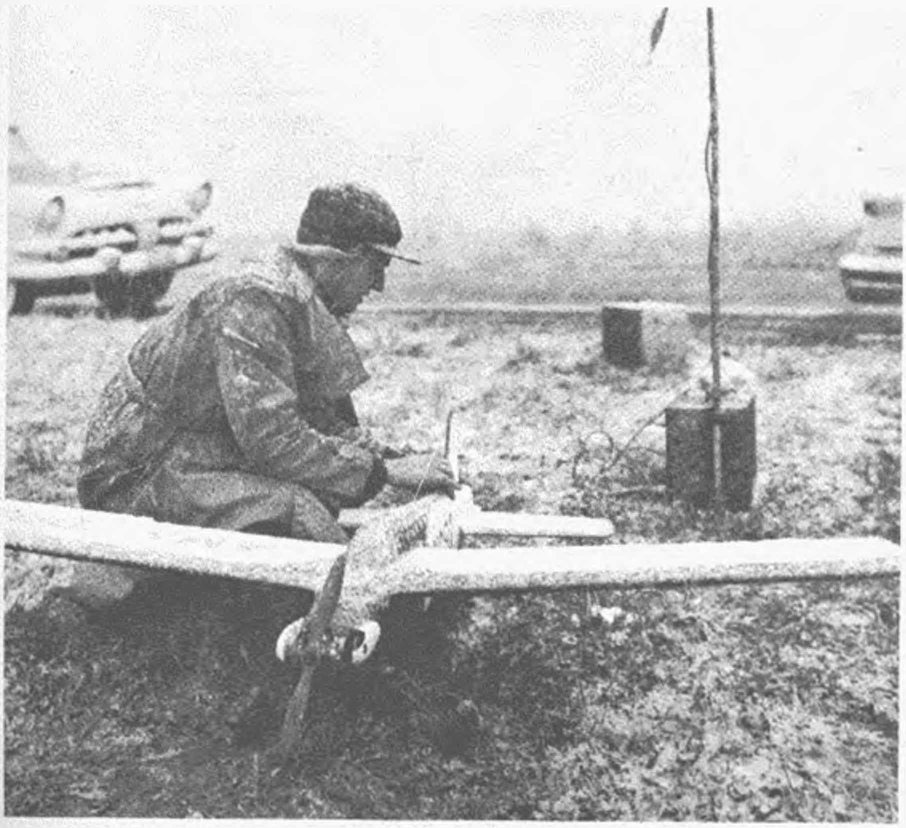
Speaking of RC gliders, we learn that the Wichita, Kan. boys really go all out with their RC glider work. Fourteen footers using eight channels and a 1200-foot tow line. Control is maintained on the tow and, without hitting a thermal, a four-minute flight is about normal, the tow being almost overhead to the full 1200 feet of line. Just think, no engine or gear to install, no vibration problems, less building cost and the feeling of real accomplishment with even a two or three minute flight. The west coast fliers are the only ones we know of (Stan Hill in particular) who have done much to date in this field. Good conditions should produce flights of several hours with a five to six footer.

• • •

A quick check of the Carrier (EBRC'ers of Oakland, Cal.) shows that Bob Heise took 1st in the multi five-lap pylon race with a Torp .35 powered racer using the TTPW system. Dale Root was 2nd with the same style racer using the Torp .45 and Orbit-8. Dick Jacobsen came in 3rd with a scale PT-19 with Torp .35 and Orbit-8. In rudder only, three-laps, Bob Forbes was 1st with Breezy Sr. Torp .19 and Marcy Tone. Ralph Hall with a Super Cub was 2nd and Larry Murphy with a Max .19 Waco bipe and Orbit single was 3rd. Scale is really coming into its own out that way with PT-19's, Waco bipes, Aeroncas, a Stearman bipe, Cessna 170, Monocoupe and an exact scale P-38—stand back! Dale Root, in addition to holding the speed record at 65.7mph, now holds the Bay Area Trophy for duration. His Comet Clipper (do you remember?) kept its wheels off the ground for 1 hour 24 minutes.

• • •

The Washington DC/RC Newsletter has it that Walt Good may be taking up RC gliders and Tom McCraw had returned to him his six-foot "Pterodactyl", the only damage being to the stabilizer which was stepped on by a cow or other large animal, probably a dinosaur. Symposium papers from the April convention will be availbale from the AMA for $2.00. This



Maynard Hill was "snowed" in his attempt to put his "Maxie" into the air for demonstration at the RC Symposium, held in Washington, D.C., on April 12. More than 125 enthusiasts attended a second annual RC Symposium, put on by the DCRC and Academy of Model Aeronautics.

# ADVERTISING INDEX—AUGUST, 1959





100 pages plus proceedings will bring you up to date on the technical topics discussed.

• • •

Following is the *proposed* system for selection of FAI RC team members to represent the USA. The country will be divided into three regions with division lines at 80 and 100 degrees longitude. One team member will be selected from each region and will have the highest number of points *within his region*. Points will be earned as follows, 1st through 10th place: (Multi) 1958 Nats—180, 95, 85, 75, 65, 55, 45, 35, 25 and 15 points; 1959 Nats—200, 115, 105, 95, 85, 75, 65, 55, 45 and 35 points. In addition, the candidates can gather other points in their own regional contests as follows: 1959 RC/DC at Washington, D.C.—1st place 36 pts; 2nd, 24 pts; and 3rd, 12 pts. Same points given at the 1959 Great Lakes Meet, Detroit, and at the LARKS Meet in Bakersfield, Calif. Candidates must hold valid AMA cards and comply with applicable FCC regulations. This system will also be used to select the 1st, 2nd and 3rd alternates in each region.

• • •

## NEW ITEMS

New to most modelers, Celastic is a "poor man's fibreglass". Thanks to Mr. Ev Schoenberg, 811 Whittier, Witchita, Kan. we have tried a sample. Celastic is a fabric-based material impregnated with other fibres and a thermoplastic material. It is about 3/64" thick and is ready for use after it has been dipped in a solvent. We found acetone, thinner, MEK and other solvents to be excellent, with the best mixture for our use being 50/50 acetone and dope thinner. After a quick dip in the solvent, the material becomes very pliable and is easily formed and adhered to practically any surface, wood or metal, flat or with mild compound curves. While not as tough as fibreglass, it is easier to use and can be applied over dope and even oily and greasy surfaces. Once in place, and you can smooth it and feather the edges by applying a few drops of solvent. It dries in about 45 minutes.

The only apparent drawback is that it is not fuelproof, otherwise you can sand, saw, file and dope it. What can you do with it? John Worth repairs broken fuselages in about 30 minutes. Dean Zongker uses it for wing tip skids on "Speed Merchant", Dick West on landing skids for his ½A RC job, and Tom Williams repairs fuselage and reinforces noses. Good for dihedral joint splicing. Two square feet cost about $2.00 from Serco Imports, Wichita, Kan. or, a club can obtain it in quantity from Ben Walters Inc., 156 7th Ave., New York 11, N.Y.

• • •

Reports in on the Tomoser MP-H servo are very encouraging. Low drain and high torque, together with smooth action and versatility of application make this servo a must for pulse (especially WAG TTPW) systems. Tests have gone up to 750,000 operations, which actually reprsents 1,500,000 commands on multi use. Dale Springsted has run two of the MP-H units for over an hour on three 500mah nickle-cadmium cells. An up-and-coming servo for the proportional field. Tomoser Electronics and Mfg. Co., 217 Vulcan St., Buffalo 7, N.Y.

• • •

Gyro Electronics Co., 36 Walker St., New York 13, N.Y. offers the following from 1959 RC Directory! Diagrams for receivers, transmitters, pulsers and other items can be had for 19 cents. A reverse-stop stepping switch for boats or cars is $3.25, a telephone dial for 1-10 impulses, $3.50. A joystick control box, made for an Automatic Pilot and containing five micro-switches is $3.95. Gyro also has a wide range of subminiature disc and electrolytic capacitors.

• • •

United Mineral and Chemical Corp., 16 Hudson St., New York 13, N.Y. has a new pressure-sensitive Foam Tape that may be used for shock-mountng, seal against dust, anti-slippage and other applications. Available in ⅛", ¼" and ½" thickness and from ¼" to 18½" widths with colors being green, gray, brown, black and cream-white. Prices are reasonable and we trust an enterprising hobby distributor will be able to make this readily available to the RC and other modeling fans.

• • •

Ace Control, Box 301 Higgsinsville, Mo., has a spiral plastic, flexible tube that helps eliminate floppy wires in an installation. The tubing is merely wrapped around the bundle of wire, which may be up to about ¼" in diameter. This is the ideal thing for multi jobs at 7 cents a foot. Ace also features a more complete line for those desiring td make their own printed wiring patterns. Individuals or clubs can now make a sizable number of patterns with the minimum amount of work.

• • •

From F & M Electronics, 537 Grove St., N.E., Albuquerque, New Mex., word of forthcoming single-channel proportional system using frequency modulated sub-carrier to carry the information. This will be a 3v superhet working directly into a Sage actuator or equivalent. There will be no pulsing and the system will be fail-safe in that controls remain in neutral on loss of signal. Relay for throttle operates by elimination of modulation.

When CG discontinued their multi-channel sets (new line impending) F & M purchased entire stock, now offered as follows: RT-8 receiver, $139.50, RT-5, $105.00; RT-3, $70.00; RT-2, $55.00. In each case, the transmitter comes free. Limited supply of T-11 x-mitters at $9.95 each.

## MAN at Work

(*Continued from page* 4)

judges, watch holders, and well wishers turned the event into an all day jam session. Seems everybody had a trunk full of shiny models accumulated during the winter. The joint was Simpl/Simul crazy. Having an inexhaustible battery supply in the FAI job, made 21 flights, experimenting with flight patterns over hot runways and green woods.

Three-channel Marcy receiver gives left and right on Bonner servo, with third channel for spoilers. This will be replaced with four-channels, giving down trim with last channel for quick neutralizing. All engines present suffered from heat, as usual, so, putting a three-inch diameter piece of tin under the compression adjustment crank of the Diesel, picked up 750 rpm to normal. You cannot turn an "over-size" prop on any modern engine on a hot day—manufacturers don't believe in fins or cooling, we gather. This tin hat—really crazy, but it stays! Marcy multi uses filters, not reeds, so one less worry on long flights.

What a day! At Moon's Memory Inn, alongside the Dutchess County Airport, some 30 couples (ancient order of Skyscrapers) and their wives—and a raft of kids—were set for a reunion. Wonderful idea that other old clubs should try. On the airport were many gliders assembled for a Northeast Gliding Meet. Things got lively when some power plane guy, so far

# IT'S HERE ...NOW!

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

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

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

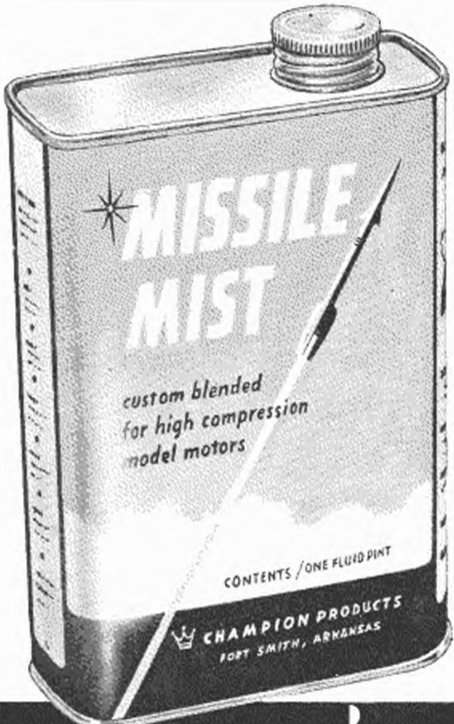
You will find this fuel especially suited to the following motors:
**FOX 09, 15 and 19**
**FOX COMBAT SPECIAL**
**McCOY 29 and 35**
**TORPEDO 19, 29 and 35**

## 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**

**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**

# HERE THEY ARE!

# Customizing

## AUTOMOTIVE COLORS

10¢ per bottle
3 – 25¢

***for your individualized "show" models!***

Special paint jobs are as essential to "customizing" your car kit as tail fins, chrome bumpers and wheel discs—and Pactra's new *Customizing AUTOMOTIVE COLORS* are ready for the job! Here is 'Namel—the kit builder's favorite paint—in special "custom" colors to match this season's popular makes. Pick your kit today and paint it with these Pactra authentic automotive colors:


METALLICS COLOR KIT 59¢


# pactra

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