MODEL AIRPLANE NEWS

AUGUST 1954— 35 CENTS

HENRY STRUCK SEACAT
RADIO CONTROL AMPHIBIAN

THE LORENZ TRANSMITTER

BOB PALMER and TED GOYET
CABIN TYPE STUNT MODEL

MODEL AIRPLANE NEWS 25th ANNIVERSARY 1929 1954 1st In The Industry

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.

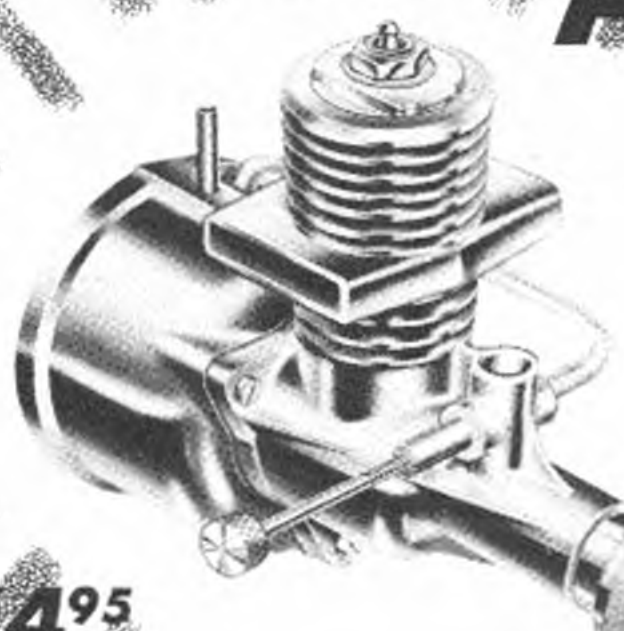
http://aerofred.com/index.php

Hip Pocket Aeronautics Gallery Free Plans.

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

Diligence Work by Hlsat.

A POWER PACKED PAIR!



$4.95

SKY *FURY* .049

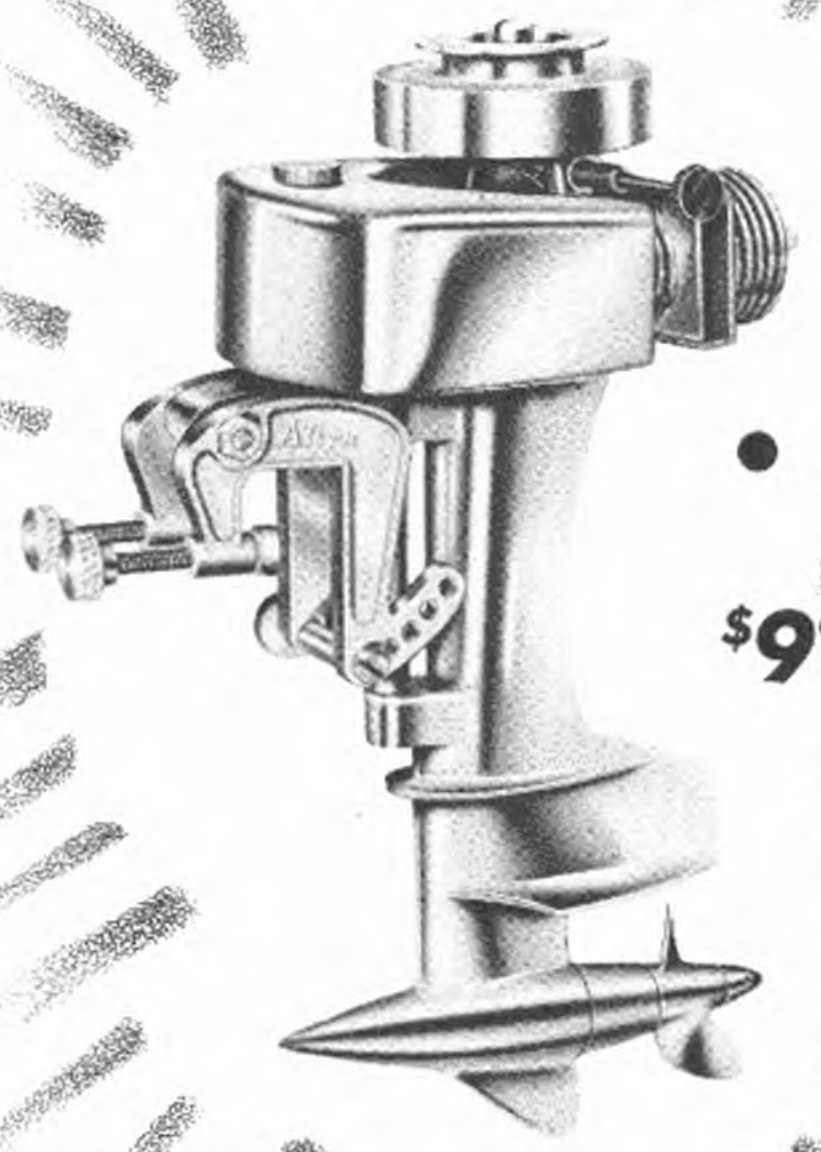
Skyrocketing to great heights in performance is the powerful, quick starting SKY FURY .049*. Built with the detail and precision found only in larger models it boasts of many exclusive features new to the ½A field, such as extended exhaust stacks, separate cylinder sleeve, greater rpm, and the maximum in valve timing. You will thrill at its fine performance and be amazed at its long engine life. . . . It's made that way.

*Many are the unsolicited letters we receive praising the SKY FURY

The *Allyn* FURY Engine is the only .049 especially engineered for an outboard power-head to give you a continually cool running motor. This same engine powers the now famous SKY FURY.

A FURYous POWER PACKED PAIR!

NOW
The famous ALLYN Quality is yours in 2 GREAT ENGINES



$9.95

SEA *FURY* .049

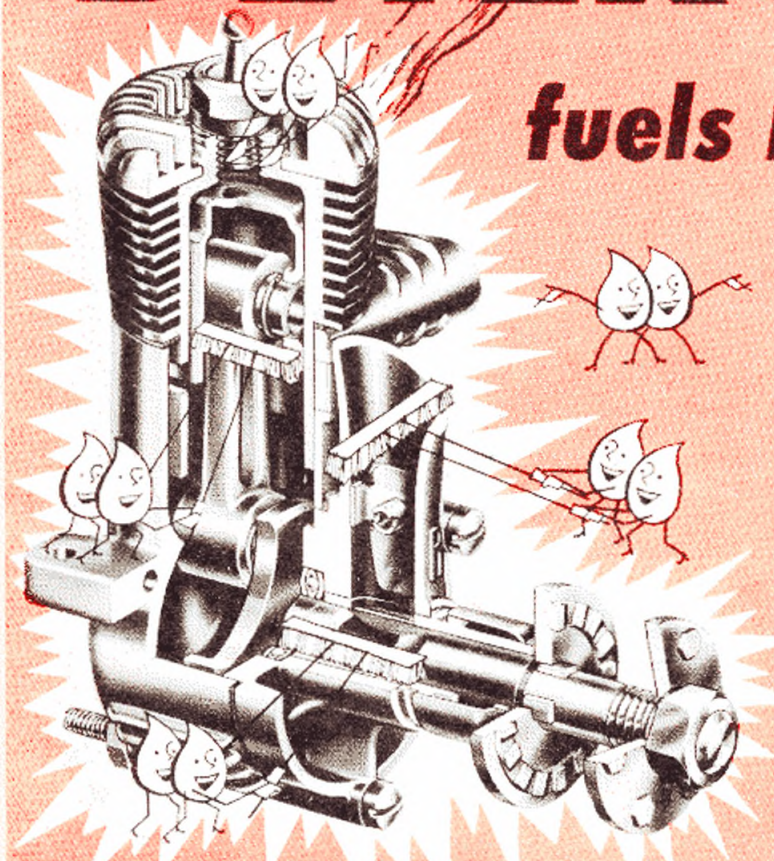
Sparked with the same powerful, smooth running Allyn SKY FURY engine, the Allyn SEA FURY, too, is engineered for top performance. The efficient lower end is equipped with a stainless steel drive and propeller shaft, adjustable dual clamp bracket, especially alloyed heat treated machine cut gears, aluminum alloy main bearing, and many other features. Clamped to the transom of your favorite model she'll look and run like the real thing. A whip of the starting cord and away she goes — a real internal combustion gas powered outboard.

Allyn **SALES COMPANY, INC.**

· 6425 McKINLEY AVE. · LOS ANGELES 1, CALIF.

From the leader comes a NEW leader!

Ohlsson & Rice DETERGENT fuels by Cheminol



1. THEY CLEANSE YOUR ENGINE.
2. THEY KEEP IT CLEANSED.

The world's largest formulators of model engine fuels bring you something truly new and revolutionary in fuel improvement—Ohlsson & Rice DETERGENT FUEL. To the fuels with most power, Cheminol has added the latest advantage of DETERGENT cleansing!

Now you can convert a "fouled up" engine into a sweet-running power plant and *keep it that way*...for life! If you're flying a "hot" new engine, this wonderful fuel minimizes wear and deterioration...keeping it practically factory-clean, *as long as you want to fly it.*

Say good-bye to clogging sludge and varnish! Put an end to rust formation and deposits! Switch today to O & R Detergent Fuel...the *new fuel standard of the model world.*

At your hobby dealer's you'll find the famous red and black can with ***new Detergent performance.*** *Under Cheminol formulation, the lubricant is permanently "married" to the nitrates so that combustion is complete ...residues cleaned out...new deposits prevented. Result:*

More Power to You!

Cheminol Corporation
9307 East Bermudez St., Rivera, Calif.
Eastern Factory and Warehouse:
410 N. Cass St, Middletown, Del.
In Canada, Canadian Hobbycraft, Toronto

MODEL AIRPLANE NEWS

26th Year of Publication

AUGUST 1954 Vol. LI—No. 2

CONTENTS

JAY P. CLEVELAND, President and Publisher
WILLIAM WINTER, Editor
WITTICH HOLLOWAY, Art Director

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

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

Advertising Manager, N. E. Slane, 551 5th Ave., New York 17; West Coast Adv. Mgr., Justin Hannon, 4068 Crenshaw Blvd., Los Angeles 43, Calif.

Editorial and Business offices: 551 Fifth Ave., New York 17, N. Y. Published monthly by Air Age, Inc., 1140 East West Highway, Silver Spring, Maryland. Jay P. Cleveland, President and Treasurer; Y. P. Johnson, Vice Pres.; G. E. Johnson, Sec. Entered as second class matter Feb. 1951 at the post office at Silver Spring, Md., under the act of March 3, 1879. Additional entry at New York, N. Y.

Price 25c per copy in U. S. Subscription Prices: U. S. and possessions: 1 yr. $3.50; 2 yrs. $5.50; 3 yrs. $7.50; Canada: 1 yr. $4.00; All other countries: 1 yr. $5.00. Payment from all countries except Canada must be in U. S. funds. Change of Address — Send to MODEL AIRPLANE NEWS, Subscription Department, 551 Fifth Avenue, New York 17, New York, 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.

Printed in United States

by William Winter

▶ MAN is 25 years old this issue. To our younger subscribers, a quarter century ago is as remote as the Ice Age. Many of them have not lived half that long (the irrelevant thought comes to mind that one 12-year-old wants to build a Quick Sixty for his new McCoy). To others, that first issue, in 1929, is only yesterday. For such a momentous occasion as a twenty-fifth birthday, one would expect that a few sky rockets be shot off or, at least, a Dynajet fired up in the hallway. But it seems to us that the younger readers will be sufficiently impressed by the event (the flying model hobby has existed since 1903 or thereabouts, coinciding with the flight of the Wrights, making MAN half as old as either modeling or aviation), and the many faithful readers of many years' standing will remember much without benefit of noisy comment. So, having directed your attention to the pictures and short commentary on pages 9, 10 and 11, we'll get on with the business of the day.

* * *

▶ The many people whose letters plead that MAN remain a model airplane magazine should be reassured. In the face of the heaviest correspondence in the history of the magazine, it would be suicide to consider any other course—not that a change in policy has never been seriously contemplated. There is this business of boats. More than half the readers who write in want boat material included. Since these folks are model plane fans primarily, it would seem proper to publish an occasional water project, but without detracting from model plane contents. The airplane-only people should not begrudge them this.

* * *

▶ Talking with Dallas Sherman of Pan American about the experimental controlline PAA (*Continued on page 6*)

PLANE ON THE COVER

The flashing McDonnell Demon and the ghostly Boeing F4B biplane fighter in background show how much aviation styles have changed during the 25 years that MAN has been appearing on the newsstands. One of the more imaginative of Jo Kotula's cover renderings, this now-and-then painting fittingly sets off MAN's 25th anniversary issue. The Boeing was a 30-foot job that did but 184 mph with a 500 hp engine. The 650 mph-plus Demon weighs more than a DC-3 transport, outpowers locomotive. It is one of the Navy's latest jet fighters.

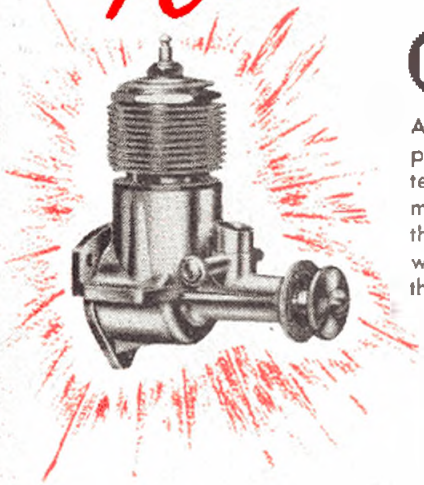
NEXT MONTH'S COVER

Another true great, the never-to-be-forgotten Curtiss JN-4D, or Jenny, enhances the September issue. Powered by the equally famous Curtiss OX 5 engine of 90 hp, more than 4,500 Jennies were made. A standard trainer of World War I, it afterward was a barnstormers' favorite. Kotula saw this scene as a boy in Texas.

Looking for a winner?

take your choice they're all "OK"!

New Engine



OK CUB .19

A WINNER . . . FOR POWER! This powerful new Cub is ideal for contest entries. Engineered to provide maximum Class A performance. Has the highest output on a power/weight ratio of any engine now on the market!

Displ.	.199
Bore	.655
Stroke	.590
Weight	2⅞ oz.

$8.95
As illustrated

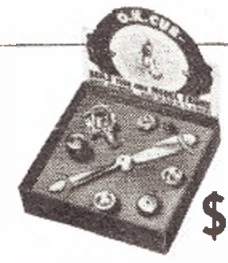
To make sure your Cub's a winner, always use "OK" Glow Fuel. A methanol-base fuel with extra punch. Assures quick firing, complete combustion — leaves no varnish or residue.

85¢ Pint

New Kit

OK CUB .049B POWER KIT

A WINNER . . . FOR PRICE! Enjoy the thrill of assembling your own engine—and save money at the same time! Kit contains all the parts you need and easy-to-follow instructions.



only $3.95

SEE YOUR DEALER . . . Or write us direct

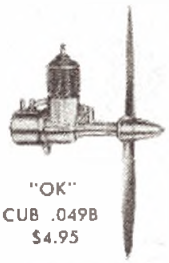
For PRICE, POWER, and PERFORMANCE

17TH ANNIVERSARY OK 1937 ★ 1954

A Complete Line of PROVEN Miniature Engines and Accessories

"OK" GLOW FUEL
"OK" DIESEL FUEL
Pint 85¢

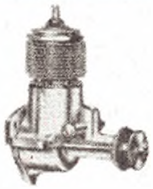
"OK" GLOW PLUGS
Short or long — 59¢



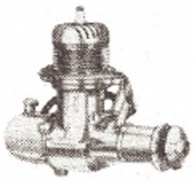
"OK"
CUB .049B
$4.95

"OK" CUB .074
$5.95

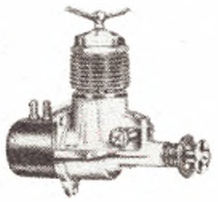
"OK" CUB .099
$6.95



"OK" CUB .14
$7.95



"OK" HOTHEAD
$10.95



"OK" CUB DIESELS
.049 $5.95
.075 $7.50

"OK" COMBINATION PACKAGES

CUB .049x	$5.75
CUB .074	$6.75
CUB .099	$7.75

HERKIMER TOOL & MODEL WORKS

88 Harter St. Herkimer, N. Y.

AHC ... the HOBBYIST'S SUPERMARKET of SUPER SAVINGS!

NOWHERE IN THE WORLD will you find as large a selection of
AIRPLANES • ENGINES • SPEEDBOATS
RACE CARS • ACCESSORIES • ETC.
CHECK THIS LIST!

AIRPLANES

FREE-FLIGHT PLANES

Baby Zephyr 28" AA	.98
Badger 72" A-B-C	5.95
Beaver 44" AA	2.95
Bird Dog 36" FF AA	2.95
Bootstrap 40" AA	2.50
Buccaneer B Special 54" B	3.95
Champion 36" A-AA	2.50
Clipper 34" AA	2.95
Cloud-Cooter 1R 25" AA	3.50
Cloud-Cooter D2 26" AA	2.95
Commanche 36" AA	2.75
Dakota 24" AA	2.75
Folly 32" AA	1.79
Fa-ber 36" AA	1.95
Fu-ber 65 66" B-C	6.95
Jasco Rival 44" AA	2.75
Jasco Streak 32" AA	1.95
Junior Phoenix 36" A	2.25
KIWI 35" AA	2.50
KIWI 44" A	4.50
Lift Master 34" AA	2.25
Lil Rascal 27" AA	1.50
Livewire Cruiser 65" A-B	14.95
Luscombe Sedan 76" C-D	7.50
Mini-Hogan 34 34" AA	1.95
Mini-Hogan 45 45" AA	2.95
Navajo 36" AA	2.50
PAA Master 36" AA	2.50
Pacemaker 40" AA	2.50

Buried in This Ad

are most of the new items. Sometimes there isn't time or space to list all of them. But if available anywhere we have it.

Phoenix Skipper 34" AA	2.25
Powerhouse 41" A	3.91
Powerhouse 55" B	4.95
Privateer Flying Boat 31" 1B AA	2.95
Proto Powerhouse 24" AA	1.00
Sandy Hogan 72" B-C	5.95
Shadow 32" AA	1.95
Sinus 34" AA	2.75
Skylark 31" AA	3.00
Sn-Hat 29" AA	1.95
Super Buccaneer 54" B	4.95
Taylor Cub 36" AA	2.95
Yank 23" AA	1.50
Zeal 31" AA	2.50
Zeal 50" A-B	4.95

CLOSEOUT SPECIALS
Discontinued Free Flight Models

Diamond Demon 46" B Reg. 2.95	1.50
Jersey Jumper 48" B Reg. 3.95	[illegible]
Pacer C—60" C Reg. 4.95	[illegible]
Roamer 45" A-B Reg. 2.95	[illegible]
Rocketeer 40" A-B Reg. 3.95	[illegible]
Stratos 42" A, Reg. 2.95	[illegible]

RADIO CONTROL PLANES

Halloplane 39" AA	3.95
Piper Tri-Pacer 39" A-B-C	10.95
Bootstraps "A-RC" 54" AA-A	3.95
Brigadier RC 38" AA-A	1.95
Kenhi Buzzer'd 72" A-B-C	10.95
Kitten 36" AA	3.95
Livewire RC 48" AA	6.95
Livewire Cruiser 65" A-B	14.95
Royal Rudderbug 62" A	6.95
Livewire Sr. 65" A	14.95
Buccaneer B Special 54" B	3.95
Buccaneer C Special 72" C	7.95
Super Brigadier 58" B-C	4.95
Super Buccaneer 90" C-D	10.95
Custom Cavalier 108" D-E	17.50
Luscombe Sedan 76" C-D	7.50

U-CONTROL PLANES

A/2 Twin 25½" AA	2.95
Aeronca Sedan 35¼" A-B-C	4.95
Aeronca Sedan 22" AA	1.95
Aeromite 17" AA	4.95
Air Racer 18" AA-A	3.39
All Amer. Trainer 21" AA	.75
All Amer. Sr. Trainer 26" A-AA	2.10
All Amer. Stunt 36" A-B	4.95
All Amer. Sr. Stunt 51" B-C	5.95
American Boy 18" AA	.20
Baby Barnstormer 23" AA	2.95
Baby Clown 22" AA	1.50
Baby Era 18" AA-A	2.50
Baby Era Bipe 16" AA	2.95
Bambino 24" AA	1.95
Barnstormer 47" A-B	5.95
Bearcat 35" C-D	4.95
Beechcraft 16" AA-A	2.95
Bel-Air 18" AA-A	2.95
Bipe Stunt Train. 32" B-C-D	3.95
Boeing F4B4 17½" AA	2.95
Boeing P26A 18" AA	2.95
Brave 36" A-B-C	4.75
Cat's Whiskers 40" A-B-C	3.95
Cessna 22" AA	1.95
Cessna 36" B-C	5.95
Chief 53" B-C	6.95
Circus King 40" B-C	2.95
Combat Sky Box 36" A-B	2.95
Corsair 17" A-AA	2.95
Corsair 36" B-C	5.95
Curtis P40F 20" AA	3.95
Curtiss Hawk P6E 13½" AA	2.95
Curtiss Hawk P6E 23¾" A	4.95
F & B Basic Trainer 25" A-B-C	3.95
Fire Baby 19" AA	2.50
Firebaby Biplane 19" AA	3.50
Flip-Flop 24" A-B	3.50
Flying Clown 28" A-B-C	1.95
Focke Wulfe 190 17" AA	2.95
Fokker D-VII 32½" UC A-B-C	5.95
Fokker D7 14" AA	2.95
Good News 30" A-B-C	5.95
Great Lakes Trainer 27" A-B	5.95
Gruman Guardian 50" A-B-C	5.95
Guided Star 24" A-B-C	5.95
Guided Starlet 24" AA	2.75
Hell—Razor 9" AA	2.00
Hell—Razor 14" A	5.95
Hell—Razor 15" B	6.50
Hell—Razor 18" D	6.95
Howard Ike 20" AA	3.00
Howard Pete 30" B-C-D	5.95
Infant Wagon 20" AA	1.95
Junior Puddle-jumper 19" AA	1.95
Junior Stunt 9 27" AA-A	3.48
Junior Stunt 19 34" A	3.98
Junior Stunt 29 40" B	4.98
Kenhi Panther 40" B-C	6.95
Kenhi Wildcat 37" A-B	4.45
Kenhi Bobcat 37" A-B	3.95
Kenhi Cougar 51" B-C	6.95
Kenhi Mustang 40" B-C	6.95
Key 29" B-C	5.95
Key—Dot 18" AA-A	2.95
Knockout 18" AA	2.50
Lil Duper Zilch 42" A-B	3.95
Little Ace 18" AA-A	1.95
Little Bipe 16" AA-A	1.50
Little Devil 18" AA-A	1.50
Little Mercury 18" AA	1.50
Little Mustang 18" AA	1.95
Little Sabre 18" AA	1.95
Little Schmoe 17" AA	1.50
Little Stinker 16" AA	2.50
Lockheed Starfire 23" Jetex	2.49
MPC-7 29" B	6.95
Mentor T-34A 33" A-B	4.95
Minnow 28" A-B-C	5.95
Mini-Zilch 19" AA	1.25
Monocoupe 36" B-C	4.95
Monocoupe "90 A" AA	1.50
Mr. Mulligan 32" B-C (Sterling)	4.95
Mustang 37" A-B (Berkeley)	5.95
Mustang (Sterling) A-B-C 38"	2.95
Mustang (Veco) 42" B-C	7.95
Mustang (Enterprise) 17½" AA-A	1.75
Mustang (Monarch) 20" AA-A	3.95
N.A. Pet 16" AA (Goss)	2.95
No. Amer. AT6 (SNJ) 31" A-B-C	4.95
No. Amer. AT6 18" AA	1.95
N. A. Savage 26" AA	6.95
Faboone 32" A	3.95
Peter Pan 16" AA	1.50
Piper Cub 22" AA	1.35
Piper Cub 35¼" A-B-C	4.95
Piper Vagabond 36" A-B-C	3.95
Pitts Special 25" A-B	4.95
Polish Fighter 36" B-C-D	5.95
Primer 18" AA	1.40
PT Trainer 26" A-B	1.99
Puddle Jumper 19" AA	1.00
Quest 30" B	4.95
Redskin 31" A-B	4.95
Ringmaster 42" B-C	2.95
Rookie Trainer 36" B-C-D	3.50
Ryan S.T. 36" B-C	5.95
Ryan S.T. AA 17½"	2.50
Scientific 2 in 1 Kit 18" AA	1.50
Scout 24" AA	2.50
SE 5 17" AA	2.50
SE 5 14" AA	2.95
SE 5 32" B-C-D	5.95
Senior 29 39"	4.98
Senor Puddlejumper 26" A-B	1.95
Sharpy 47" C-D	4.95
Shoestring 28" A-B-C	5.95
Skyleader 18" A-AA	2.50
Slick Trick 18" AA	1.95
Small Fry 17" AA-A	2.50
Smoothie 52" A-B	7.95
Space Buggy (incl. engine) AA	6.95
Space Master 24" AA-A	2.25
Speedster 12" AA	2.50
Spitfire 20" AA	3.95
Spitfire 18" AA	2.95
Sport Racer 18" AA	1.50
Sportwing 36" A-B-C	3.95
Squaw 39" A-B-C	5.75
Stinger 48" B-C-D	6.50
Stinson 22" AA	1.95
Stuntwagon 58" D	7.95
Super Clown 38" B-C	2.95
Super Duper Zilch 52" C-D	5.95
Super Knock-Out 24" A-B	3.50
Super Puddlejumper 28" AA-A	3.95
Super Squirt 21" (Jet)	5.95
Super Stunt Runt 20" A	2.25
Super Zenith 23" A	3.50
Sweet Chariot 18" AA-A	2.50
TD1 24" AA	9.95
T-28 N.A. Trainer 30" B.C.	5.95
Thunderbolt 40" C-D	4.95
Trail Blazer 24" B-C-D	2.95
Trister Improved Trainer	3.95
Trister Profile 32" A-B	2.50
Trister Profile 38" B-C	3.50
Twin Mustang F82—18" AA	2.95
Typhoon 17" AA	2.95
Vampire 40" B-C	4.50
Viking 51" C-D	5.75
Vixen 21" AA	1.95
Waco 33" B-C	5.95
Waco Cabin 12" AA	1.50
Warhawk 17" AA-A	1.95
Warhawk 32½" B-C	5.95
Warhawk Bark 45" A-B-C	4.95
Warrior 36" A-B-C	4.95
Wee Duper Zilch 34" AA	2.95
Wee Willie 18" AA-A	1.95
Whirlaway 11" AB	3.95
Wing Ding 18" AA-A-B	2.25
Wing Dingus 16" AA	2.25
Yak (P.D.Q.) 38" B-C	2.95
Yak (Sterling) A-B-C	2.95
Yank 23" AA	1.50
Zenith 19" AA-A	2.50
Zero 18" AA	2.95
Zilch X-Pandable 38" A-B-C	3.95

READY-TO-FLY PLANES Complete With Engines

Aeromite 17" (Assembled)	9.95
AJ Firebaby 19" (Assembled)	7.85
Firebaby Biplane 19" (Assembled)	9.75
TD-1 24" (Assembled)	19.96
Sabre 44 (Assembled)	4.96
Cox TD3 (Assembled)	10.95

LOOK! Only AHC Gives You All These Terrific EXTRAS

1. One year subscriptions to Model Airplane News, Air Trails and Flying Models or their equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. Sensational BONUS with every gas engine purchased! ITEMS WORTH OVER $5.00 FREE OF EXTRA COST. See box below.
4. BONUS with gas planes! ITEMS WORTH $2.00 FREE OF EXTRA COST. See box below.
5. No postage or packing charges for orders of over $1.00 (include 25c if order is under $1.00). We insure safe delivery ANYWHERE IN THE WORLD. Outside of U.S.A. (except APO & FPO) add 10% for postage (minimum 50¢).
6. Membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. Over 100,000 members!
7. No "minimum" orders. Any order is welcome.
8. 24-hour service. Mail addresses coast-to-coast a mail your orders to our N. Y. office for immediate shipment to you.
9. Most complete model stock in America—gas, rubber, solids, etc. If it's advertised we can usually supply it.
10. Competent understanding of your modeling problems.
11. 128 page giant 2-color illustrated catalog FREE with every order.

SATISFACTION GUARANTEED OR YOUR MONEY BACK

ENGINES

GLO ENGINES

Atwood 049 (UC)	(AA)	4.50
Atwood 049 (FF)	(AA)	4.75
Atwood 051	(AA)	5.50
Atwood Cadet	(AA)	3.95
Atwood Inbd. Air Cooled	(AA)	8.50
Atwood Inbd. Wat. Cool	(AA)	5.75
Atwood Otbd. Air Cool.	(AA)	9.75
Atwood Otbd. Wt. Cool	(AA)	9.95
Atwood Triumph 49	(C)	14.00
Cameron Ring	(A)	9.95
Cameron Lapped	(A)	9.95
Cameron .19 two speed	(A)	11.95
Cameron .09 Marine	(A)	9.95
Cameron .09 Marine Diesel	(A)	11.95
Forster F.29 Glo	(B)	11.20
Forster F.31 Glo	(C)	11.20
Fox 19	(A)	12.60
Fox 29	(B)	14.95
Fox 35	(C)	14.95
Fox 59	(D)	22.60
Infant Torpedo	(AA)	5.90
K & B Glo Torp 29	(B)	15.95
K & B Glo Torp 32	(C)	15.95
K & B Torpedo 19	(A)	13.95
K & B .15 (2-speed)	(A)	11.95
K & B 19 (2-speed)	(A)	16.95
K & B Torpedo 23	(B)	12.95
K & B Torpedo 15	(A)	10.95
K & B Torpedo .09	(AA)	7.95
McCoy 9	(A)	7.95
McCoy 19 Sport	(A)	9.95
McCoy 19 R.H.	(A)	12.95
McCoy 29 Sport	(B)	11.95
McCoy 29 R.H.	(B)	16.95
McCoy 60 R.H.	(C)	24.95
O & R 23 Rv Deluxe	(B)	11.95
O & R 29 Glo	(B)	13.95
O & R 33 Glo	(C)	13.95
O & R 29 Marine	(B)	14.95
O & R 60 Glo	(D)	13.95
O.K. Cub .099	(A)	6.95
O.K. Cub .099 Pkge.	(A)	7.75
O.K. Cub .049X Pkge.	(AA)	6.25
O.K. Cub .049B Pkge.	(AA)	4.95
O.K. Cub .049B Kit	(AA)	3.95
O.K. Cub .074	(AA)	5.95
O.K. Cub .074 Pkge.	(AA)	6.75
O.K. Cub .14	(A)	7.95
O.K. Cub .19	(A)	8.95
O.K. Hothead Glo	(B)	10.95
OS 29	(B)	14.95
Royal Baby Spitfire	(AA)	4.95
Sea Fury Outboard .049	(AA)	9.95
Sky Fury .049	(AA)	4.95
Space Bug	(AA)	6.95
Space Bug Jr. .049	(AA)	3.95
Spitze Senior	(AA)	3.95
Thermal Hopper (FF)	(AA)	6.95
Veco 29	(B)	14.95
Veco 31 or 35	(C)	14.95
Wasp (FF)	(AA)	6.75
Wasp (U-C)	(AA)	6.50
Wen-Mac .049 Plan.	(AA)	6.95

DIESEL ENGINES

McCoy .049	(AA)	5.95
McCoy .09	(A)	7.95
O. K. Cub .075	(AA)	7.50
O. K. Cub .049	(AA)	5.95

IGNITION ENGINES

Dennymite	(C)	6.95
O & R 23 RV Deluxe	(B)	12.95
O & R 29 Rotary	(B)	14.95
O & R 33	(C)	14.95
O & R 60 Lune	(D)	14.95
Phantom P-30	(B)	13.95
Spitfire	(D)	24.95
Thor	(B)	9.95
Wasp Twin	(D)	29.50

JET ENGINES

Dyna-Jet Redhead	28.00
Mew 307	11.45
Jetex Atom 35	1.75
Jetex 50	1.95
Jetex 50 Contest Sol.	2.95
Jetex 150	4.95
Jetex Scorpion 600	8.95

ELECTRIC MOTORS

Dynamite	1.98
Speed Reduction Unit	.98
Dumas Electric Drive Unit	4.50
Outboard	2.95
A.H.C.	1.50

SPECIAL BONUS OFFERS

ITEMS WORTH OVER $5.00 FREE of extra cost with every GAS ENGINE

[With Diesel or glo engines, all needed items are given.] Other bonus items include: Quality Coil — Everlast Condenser — Hi-Tension Wire — Stranded Ignition Wire — Insulated Coil Holder — Correct Size Prop — Complete Instructions — Battery Box — Slide Switch — Engine Manual — 4 Mounting Bolts — 4 Mounting Nuts — 4 Wiring Lugs — Spark or Glo Plug — No. 70 Oil — Membership in Modelcrafters of America — AHC Guarantee — 128-Page GIANT 2-Color Illustrated Catalog — Free Postage — Packing and Insurance if ordered by mail.

ITEMS WORTH OVER $2.00 FREE of extra charge with GAS PLANES

Correct-Size Rubber Wheels — Giant Construction Manual — Complete Full-Size Plans — Insignia — Membership in Modelcrafters of America — 128-Page GIANT 2-Color Illustrated Catalog — Free Postage — Packing and Insurance if ordered by mail.

(Bonuses on planes selling at over $1.50 only!)

ORDER NOW! Get all these AHC "EXTRAS"

MODEL BOATS

Buckeye Jr. 13½" AA-A	3.95
Buckeye Cabin Jr. 13½" AA-A	3.95
Little Buckeye 12" AA	1.95
C.C. Riviera 12" AA	2.95
C.C. Riviera 12½" AA-A	3.50
C.C. Catalina 31¼" A-B-C	11.95
C.C. Outboard Cruiser 18" AA	2.95
C.C. Special 12½" AA-A	3.50
Higgins Speedster 16½" AA-A	4.95
Richardson Sedan 17" AA-A	5.95
Royal Skimmer (Incl. Engine)	10.95
Spitcraft Plastic (Incl. Engine)	14.95
Spitcraft (Plastic)	7.95
Sterling C.C. Bucc 19" AA-A	7.95
C.C. Exp. Cruiser 14" AA-A	3.50
Resorter 12" AA	3.25
Sea Maid 12" AA	2.95
Sea Maid 27" A-B	7.95
C.C. 21" Express AA	2.95
C.C. 21" Sportsman AA	2.95
Century Resorter 12" AA	3.25
Century Seamaid 12" AA	2.95
Cruiser 28" Radio Control A-B	9.95
Scientific Sea Hawk 12" AA	2.50
XP-300 Dream Boat 12" AA	1.95
Sea Bird RC 28" AA-C	3.95
Sea Bird 14" AA	1.95

ACCESSORIES

PROPELLERS

Tornado

5" D 3-4-5-6-7-8 P	.15
6" D 2-3-4-5-6-7-8 P	.15
7" D 2-3-4-6-8-9 P	.25
8" D 3-4-5-6-8 P	.25
9" D 2-3-4-5-6-7 P	.25
10" D 2-3-4-5-6 P	.30
Scamper Plastic 5½" 3p., 6" 4p.	.25;
9" 6p., .45 10" 10p., 11" 8p.	.65
Kassun plastic 5/3, 5½/4, 6/3, 6/4, 6/5—15c; 7/4	.20

Top-Flite—6" in 3,4,5p—20c; 7" in 4,6p; 8" in 3½,6,8,10p; 9" in 4,6,8,12p; 10" in 3½,6,8,12p—25c; 11" in 4,6,8,10,12p; 12" in 5,8p; 13" 5½p; 14" 6p—30c. AND ALL OTHERS!

METAL GAS TANKS

Dale Stunt Tanks—All Sizes .65
#1—1½x1¼x⅝ #4—⅝x1¼x¾
#2—2¼x1¼x⅝ #6—1½x1⅝x1
#3—2¼x1⅛x1 #12—⅞x1x⅝
#15—2¼x1¼x¾ #19—1⅛x⅝x½
#20—2¼x⅝x½ .50

Froom #14—2x1x2	.85
#15—2x1x2¾	.85
#17—⅝x⅝x1½	.65
#17A—⅝x⅝x1½	.50

Berkeley: AA—.59; A—.75; B—.75; C—.85; D—.85
Pylon Plastic: Small .75; Medium .95; Large 1.25
Also Acme, Darwin, etc.

SPARK & GLO PLUGS

Champion Glo V, V2, V3	.75
Champion Spark V, V2, V3	.50
McCoy Hot Point	.65
O & R Glo (V, V2 or AA)	.65
O.K. Glo-plug (V2 or V3)	.59
K&B, V2, V3 .65—Cox Hotspot	.65
Duk (AA, V, V2, V3)	.65
Veco V2 or V3	.65

IGNITION ACCESSORIES

6 ft. Hook-up wire	.25
Austin Booster Plug-in	.30
Midget Switch: slide—.25 Toggle	.50
O & R Snap Pack	.35
Condenser .20; Smith Metal	.35
O & R Instant Clip	.15
O.K. Coil 2.50 Rogers Coil	2.00
Alligator Clips .10—Wilco Coil	1.95
Smith Firestreaker Coil	2.75
1½ Volt Battery	.90
Battery Conn. Cord Kit	.40

PROP SPINNERS

1⅛"—70c; 1⅝"—90c; 2"	1.00
Plastic 1⅛"—30c; 1½"	.50
Plastic 1⅝", 1¾", 2", 2¼"	.45

Also Wen-Mac, Austin.

WHEELS

K&B Alum. Hubs 1"—30c; 1½"—40c; 2"—50c; 2½"	.60
Semi Pneumatic (pr) 2"	1.25
2½"—1.40; 3"—1.75	
Sponge Rubber (pr) ⅝"-1" 30c 1⅛"; 1¼" 35c 1⅜" 40c 1½" 45c 1⅝"—65c; 2⅜"	.85
Tail Wheels ⅝", ¾"; 1"	.15
Trailer Pneu. (pr) 1⅛" or 1½"	.40
1¾", 2"—50c; 2¼", 2½"—60c 2¾" 1.00; 3" 1.25; 3½" 1.50	
Wheel Collars ea.	.15

MISCELLANEOUS

Glo Engine Handbook	1.00
Spitfire Glo Plug Clip	.15
Belt. Box Pan., Medium, Regular	.40
Brass Tubing 1/16", 3/32", ⅛"	.20
Copper Tubing ⅛" OD. per ft.	.20
Finger Guard .25 — Vibratec	3.00
Fuel Pump (pt. or ½ pt.)	.65
Pylon Nylon Pump	.60
Pylon Fuel Bulb Pump 2 oz.	.59
4 oz.	.39
Handy Box Fuel Dispenser	1.00
Prestie Disc Starter	.25
Pylon Engine Starter 1.75;	2.50
Metal Motor Mounts. Sm	.25
Large	.50
Black Neoprene Tubing, per foot	.30
Transparent (reg. or AA) ft.	.15
Spitfire Timer	2.95
Austin Fueloff Timer	1.95
Hillcrest Fuel Shutoff	1.35
O.E. Shutoff Valve	1.25
No. 70 oil, 3 oz—25c—pint	.60
Plastic Fuselage 19" set of 2	.50
Plug Wrench, 4-way	.25
Plywood 16"x12" 1/16"—25c; ⅛"—30c; ¼"	.35
Silk per yd. Red, blue, yel., orng.	1.50
Nylon (White or Yellow) yd.	2.25
Socket Plug Wrench, 4-way	.60
Flexible Needle Valves: Cub, Royal Spitfire, Spitzy—49c; Wasp, Baby Spit, Infant, Torp Jr., Torpe 49—39c; Universal Needle Valve (A-B-C engines) 50c; Flexible	.75
Needle Valve Extension flexible	.25
McCoy Speed Needle Valve	.50
E-Z Running Stand	1.75
E-Z Minimount (½A)	1.25
Berkeley (½A) Test Stand	.35
Pilot Heads	.05, .10, .50
Sandpaper Packs	.10 & .20
Glue Gun .50 — Plane Kleener	.50
Landing Gear Spade Bolts	.15
Landing Gear J Bolts	.25
Bolts ½", ¾", 1", 1¼", 1½", 2"	12/.20
Grant's Model Airplane Design	3.75
⅝" A.M.A. Decals	.10
Scoremaster Decals (100)	.15
Small Parts Case	.50
Aerogloss Plastic Balsa Tube	.30
4 oz.	.60
Rubbing Compound	.25 or .40
Aerogloss Wax	.40

DOPES (Con't U.S.A. Only)

We carry all lines of dope and cement: Aerogloss, Comet, Monogram, Testors.

Aerotrol Escapement Kit	2.95
Super Aerotrol Receiver Kit	12.95
Super Aerotrol Rec. Assb'ld	22.95
Super Aerotrol Transmitter Kit	19.95
Super Aerotrol Trans. Assb'ld	27.95
Super Aerotrol Escapement	3.95
Babcock Transmitter	39.95
Babcock Receiver	29.95
Citizenship Receiver 24.95 &	29.95
Citizenship Transmitter	34.95
Citizenship Escapement	5.95
Control Master #27 Transmtr.	29.50
Control Master #FS3 Meter	14.95
Control Master #27RH Rec'v'r	19.95
Good Bros. Escapement	13.50
ECC Transmitter (complete)	27.95
ECC Transmitter or Receiver	18.95
ECC Escapement	5.00
ECC 3A Relay	6.50
Twin Tube Rec'v'r Kit	7.95
Test Meter (Citizenship)	19.95
Motor Control Unit	14.95
Bellcrank & Horn (RC)	.75
U-15 Battery Box	.50
No. 7 Battery Box 1 Cell	.30
No. 7 Battery Box 2 Cell	.40
No. 7 Battery Box 3 Cell	.60
No. 7 Battery Box 4 Cell	.75
3A5 Transmitter Tube	2.25
XFG1 Receiver Tube	3.50
Zero 3 Milliammeter	3.50
Zero 50 Milliammeter	3.25
Whip Antenna	3.00

Also All R.C. Parts and Batteries and anything advertised

U-C ACCESSORIES

Adjustable Push Rod Set	.25
BERKELEY control lines	
.024 or .026—3-15	.15
.008—52	.50
.011 .010 .012: 2 .65	.52
.016 .010 .012 .014 2 .70	.68
.012 .016 2 .100	1.00
Stranded .015 .021 .35' 1.00. [illegible] 200	[illegible]
Berkeley Metal Flight Reel	1.25
Berkeley Metal Handle	1.00
Controliner Flight Reel (with wire) AA—.99 A-1	2.60
Elevator control horn Veco	.25 & .30
Elevator hinges 4 for	.10
E-Z Plastic Control Handle	.85
Flex Lead-in Wire AA or AB 1 ft.	.15
Lamp Cord A, B, C or D Ft.	.10
PYLON control lines .008 .010 .012 .014, .016 [illegible] 2-52 lines	.66
.010, .012 .014 .016 dia. 2-70 lines	.75
Flexible 2-52 [illegible] 2-70	[illegible]
Cable Pushrod Nesses	[illegible]
[illegible] Lines AA	.25
Pylon Bellcrank 2 —.20 3	[illegible]
Pylon Conn. Class A, B or C 3 for	.15
Pylon Flex Lead-in Wire 8 ft.	.25
[illegible] Plastic Handle 5	.88
T. D. Handy Reel & Handle ½A	.98
T. D. Conquer Reel & Handle	2.49
Stunt Bellcrank & Elev. Horn	.35
Swivels small 15c or 2 large	.25
Handle Reel (Consol)	3.95
Handle Safety Thong	.25
U Reely Control—3 50 cable	8.52
Veco Bellcrank 2 —25; 3"	.30
[illegible] Control Handle	.25

RADIO CONTROL

Super Aerotrol "Ready to Operate" Includes Transmitter, Antenna, Receiver, Escapement, Motor, Tubes. Everything to operate & maintain except batteries	49.95
Aerotrol Manual	1.00
Aerotrol Kit	21.95

RACE CARS

Atomic with Wen Mac Engine	12.95
Half-pint	3.95
Pedro Complete with Engine	11.95
Jetex Race Car w/o engine	4.75

DECAL BARGAIN $1.00

Just look what you get. 1-2.8" AMA decals, 67 black decals (2 complete sets of numbers plus alphabet and extra letters), 1 set of 4 star & bar 3", 6 picture decals 2" x 4", 3 sheets of solid colors, 1 sheet checkerboard decals, 6 strips of solid color, plus Tips and Hints on use of decals. A REAL BARGAIN ... WORTH MANY $$$$

WE ALSO SELL TO DEALERS

Did you know that Mod Ad Agency, Inc., the wholesale affiliate of America's Hobby Center, Inc., is one of the fastest growing jobbers in the business?

We know your problems because we have your problems! Write for sample catalog (ready for your imprint) and our famous 9 point program – the reasons why more dealers are doing business with us. Includes our 60 day return privilege, etc. Special data if you are going into business. We ship anywhere in the world.

Send 10¢ for catalog, etc.

Write to
MOD-AD AGENCY, Inc.
156 West 25th Street,
New York 1, N. Y.

ENGINE TRADE-IN SERVICE

While America's Hobby Center, Inc. does not sell used engines, we have a constant request from schools, clubs and overseas soldiers for second-hand engines for experimental work. If you have a used engine, we will be glad to accept it in trade for any merchandise (motors, planes, boats, accessories, etc.) except Flying Outfits and a few other exceptions, listed in our ads or catalog. Just send in your engine (with your name and address) as the following schedule indicates:

Your old Engine PLUS			Credit towards your Purchase
	$3.75 = $5.00	11.25 = 15.00	
	7.50 = 10.00	15.00 = 20.00	
	22.50 = 30.00		

We will match any offer in this magazine. Just enclose their ad.
You will receive the usual free premiums, subscriptions, etc.

ENGINE PARTS! EVERY PART for EVERY ENGINE listed on these pages is IN STOCK at America's Hobby Center. Send today for the parts you need to keep your engine in flying condition.

ENGINE BARGAIN

O & R 60 SIDEPORT ENGINE REG. $16.50 **6.95**

SAVE almost $10.00 on this discontinued engine. Take your choice of Ignition or Glo.

BRAND NEW and FULLY GUARANTEED

And with engine you can buy 6 matching 45c PROPS for $1.00

SPECIAL SOUVENIR BARGAIN

The manufacturer of a well-known engine, after selling 30,000 at $9.95 has decided to go out of production. We made a special purchase of his remaining 1,000 complete sets of finished and unfinished CASTINGS and PARTS: cylinder, piston, piston pin, connecting rod, needle valve, gas line, timer crank shaft, crank case, cam, etc., including screws, gaskets, nuts, etc.

You get a complete set, except spark plug and tank. An interesting souvenir of a model engine in the raw for your den or desk.

No. .19 . . . $1.00 per COMPLETE SET

SPECIAL BARGAIN IN PROPELLERS

15 ASSORTED FOR $1.00

We have purchased 50,000 assorted GAS MODEL PROPELLERS from the country's largest prop manufacturer.
They are all PERFECT and range from Champion semi-finished (listing at 5 for $1.00) to finished and lacquered props that sell up to 45c each regularly. Various pitches, in sizes from 7" to 14".
No selections, please, but we will send you a fine assortment of 15 for $1.00, if accompanied by an order for anything advertised in this magazine. MONEY BACK GUARANTEE.

HOW TO ORDER

Send payment in full. No stamps, no C.O.D.'s.
Address your order to us at the branch office nearest to you:

Dept. M-84 156 West 25th St., New York 1, New York
Dept. M-84 55 E. Washington St., Chicago 2, Illinois
Dept. M-84 Room 230, 742 Market St., San Francisco 2, Cal.

WE DUPLICATE ANY OFFER made by any other advertiser. Attach ANY ad to your order—and take advantage of the AHC "extras."

READ THIS ENTIRE MAGAZINE FROM COVER TO COVER . . . EVERYTHING ADVERTISED CAN BE ORDERED FROM AHC.

Branches Coast-To-Coast

AMERICA'S HOBBY CENTER, Inc.
1931 23rd YEAR 1954

America's Largest Source of Models & Supplies

4 STAR GUARANTEE

★ To give complete satisfaction or your money refunded
★ To insure safe delivery anywhere in the world
★ To save you money
★ To deliver what we advertise

BIG $10. VALUE

Take your choice of one of these scale U-Control models. Each is completely prefabricated — easy to assemble and fly!

NOW ONLY $7.50


FOCKE WOLFE


P-51 MUSTANG


TYPHOON


JAP ZERO


VOUGHT CORSAIR


SPITFIRE

PLUS  ATWOOD .049

OR  O.K. CUB .049

PLUS ALL ACCESSORIES AND BONUS EXTRAS

COMPLETE FLYING OUTFITS

Worth Twice Our Combination Price!

Man . . . what a buy! Imagine—you get a COMPLETE FLYING OUTFIT at less than half price. That's right, a U-Control PLANE plus your choice of a well-known factory assembled ignition or Glo ENGINE plus ALL ACCESSORIES plus all the BONUS "extras" listed below. Here's everything you need, complete with easy-to-follow full size plans and instructions, in one purchase that SAVES YOU MANY $ $ $ $. Thousands of hobbyists have already taken advantage of these sensational values. Choose yours NOW!

SPECIAL BONUS OFFER

ITEMS WORTH OVER $5.00 **FREE** at extra cost with every complete flying outfit of plane and engine.

Correct Size Finished Propeller — Spark or Glo Plug with Gasket — Complete Engine Instructions — Engine Handbook — Metal Fuel Tank and Gas Line — Metal Battery Box — Wilco Quality Coil — 12" Hi-Tension Lead Wire and End Clips — 18" Insulated Ignition Wire — Ignition Slide Switch — Coil Holder and Mount — Everlast Condenser — SAE 20 Oil — 4 Ignition Wiring Lugs — 72 Insignias — Giant Book on Control-Liners — How to Build and Fly Them — Cement — Sandpaper — Metal Bell-crank with Bolt, nut and Washer — Elevator Horn — Elevator Hinges — Lead-In Wire — Push-Rod Wire — U-Control Handle — 100 ft. U-Control Stainless Steel Wire and Reel — Membership in Modelcrafters of America — 128-page 2-color Catalog — Postage — Packing — Insurance — Ignition parts not needed with glo-engines not included.

NOTE! You may substitute any plane or engine of equal value for any plane or engine included in these offers. Take your choice from listings on opposite page.

ORDER NOW! Get all these AHC "EXTRAS"

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


F-86 SABRE

PLUS 
F-51 MUSTANG

PLUS 
SPACE BUG JR., .049

PLUS ACCESSORIES AND BONUS EXTRAS

BIG $10 OUTFIT FOR ONLY $5.49
With O.K. Cub .049 – $6.39

BIG SAVINGS Deluxe Flying Outfits

Your choice of


MUSTANG P-51

SPITFIRE

CURTISS P-40

Monarch's famous "SPITTIN' IMAGE" 20" wingspan control-line models. Extra deluxe kits PERFECTLY and COMPLETELY PREFABRICATED. Beautiful models you will be proud to fly. A cinch to build and fly!

PLUS  SKYFURY .049 ENGINE

PLUS ACCESSORIES AND BONUS EXTRAS

$15. VALUE FOR ONLY $9.95

SPECIAL!

Chris-Craft

RIVIERA RUNABOUT

Your CHOICE of the SCIENTIFIC 12" model (featuring one-pc. carved balsa hull) or BERKELEY'S 12" model (prefabricated parts) . . . both terrific Speed-boat "thrillers".

PLUS O.K. CUB .049 ENGINE or ELECTRIC MOTOR 

PLUS Every accessory you need, including: all metal parts—flywheel and propeller, drive shaft, etc. PLUS 15 bonus "EXTRAS" at no extra cost!

BERKELEY RIVIERA	
with Cub .049	with Electric Motor
$7.95	$4.50

SCIENTIFIC RIVIERA	
with Cub .049	with Electric Motor
$8.50	$4.95

VISIT OUR FABULOUS "HOBBY CITY" in the heart of New York

Everything under the "modeling sun" . . . under one roof. If it's available anywhere in the world, you'll find it here. Choose from the world's largest stock - including the smallest engine parts.

156 West 25th Street, New York 1, N. Y.

EXPERTS ON HAND AT ALL TIMES . . . THEY'RE HERE TO HELP YOU!

SOLDIERS! SAILORS! MARINES!

Orders placed through us get special attention. We understand your problems and take special care of your orders. No postage or packing charges on orders for over $1.00.

CANADIANS & FOREIGN MODELERS!

You save plenty by ordering from us. We accept your currency at market value. Add 10% for postage and packing (minimum 50¢).

EVERYTHING

anywhere in this magazine can be ordered from AHC

24 HOUR SERVICE

SAVE TIME! USE THIS HANDY ORDER FORM

Branch offices conveniently located coast-to-coast airmail your orders to our N. Y. headquarters for immediate shipment.

GUARANTEED *Safe Delivery Anywhere in the WORLD*

FREE AHC "BARGAIN BULLETIN"

Lists dozens of big bargains. Send a postcard today for your FREE copy.

DELUXE HOBBY CATALOGS

25¢ 128 page 2-color 9" x 6" catalog fully illustrated. Over 10,000 items, including cox, glo, diesel, and jet engines, rubber power jet planes, boats, cars, scale jet kits, tools, engine parts, etc., etc.

10¢ 64 page 2-color 9" x 6" illustrated catalog. Free flight and U-Control planes, engines, accessories, rubber powered planes, solids, boats, cars. Over 2000 items.

FREE Rules — Free jumbo catalog of thousands of hobby items: Plane kits, car engines, accessories, solids, gas, rubber, etc., etc.

HOW TO ORDER

Send payment in full. No stamps, no C.O.D.'s. Address your order to your nearest AHC branch office. Include 25c extra if order is under $1.00.

Please RUSH me the following: DEPT. M-84
PLEASE PRINT

Name _____

Street Address _____ Amount Enclosed _____

City _____ Zone _____ State _____

AMERICA'S HOBBY CENTER INC.

156 West 25th St., New York 1, New York
55 E. Washington Street, Chicago 2, Illinois
Rm. 230, 742 Market St., San Francisco 2, California

Page	Quantity	Name & Description of Items	Cost Each	Total
			Total	

24 HOUR SERVICE AT ALL TIMES

ONLY 25¢ EACH

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

MAN at Work

(Continued from page 2)

Load event tried for the first time this year at the Mirror Meet, Floyd Bennett Field, Brooklyn, N. Y., May 15, the often fought-over AMA pull test rules came up. (Chris Schuck, New York, flew for one hour and 33 minutes, running a quart of fuel through his K & B .23J. Pan Am had stipulated a 3-lb. load for every model. Schuck's answer was a non-such U-control that looked like an RC job in the wrong event. If a job like this weighed 3 lb. empty, plus 1 lb. for fuel, and 3 lb. for payload, it would gross 7 lb. The pull test calls for a load of 20 times the weight of the model, or 140 lb. No comment! This also reminds us of a blast from Tom Oliver, Beaumont, Tex., who does a slow burn every time he sees a speed job pull tested.

"Sure, I know it is necessary," says Tom, "but I think someone ought to come up with a solution to these ships that fly apart in mid-air. When a model is pull tested, the owner grips it with both hands around the fuselage. This will prove that the lines and controls will take the centrifugal force, but what about the parting of top and bottom in mid-air? Too many builders are tying top and bottom together with nothing more than a bicycle spoke through a balsa cowl with a tie-down bolt at the rear. This is definitely unsafe and should be outlawed.

"How about having a safety committee inspect all planes at the time of processing and rejecting all ships that are unsafe?" Oliver goes on. "In the case of top and bottom tie-downs, all systems are structurally unsound, would have to be wrapped with a safety wire before flight." Tom also mentions a single line jet that caused the timers to seek refuge behind their chairs.

It seems to us that something should also be done about the jet rules because an underwinged jet which dives toward the deck when traveling downwind is more susceptible to disintegration than any motor job because of the method of installation of the power unit. Put a crowd close by on the downwind side and you have something to think about.

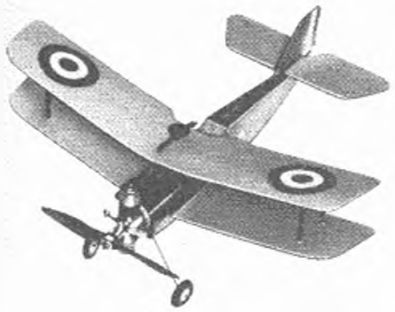
• • •

▸ Recently mentioned how one of the family taught himself to fly with a Guillow profile trainer. Until he was told that you used "up" to land, he was breaking all the props in the house. Since we are a bunch of bunglers in this family, the trial did prove that .19-powered (this happened to be one of good RC Torp .19's, alas and alack) all wood profile is a natural beginning point. With the same power, made a Sterling Ringmaster. Still uninstructed, our guinea pig (pardon, R) proved the transition was easy. His first attempt at upside down was wild. Having covered our eyes, did not see how he missed the ground, but he got away with it. Fools rush in where angels fear to tread, so, not being a ukie man, we don't hesitate to offer a theory on going inverted. Seems to us that in either U-control or radio it is a mistake to think in terms of left or right, or up and down, and what you must do to apply controls. Things happen too fast to do any reasoning—action must be instinctive. Have noted that many people get fouled up with a beep box—right becomes left when the ship is coming toward me and what do I do now? Have watched expert fliers, professional plane pilots, too, turn their backs on a tone job so that they make the stick coincide with the turn of the airplane. Similarly, it is torture to keep figuring, when flying a stunt job, that when I go upside down, up becomes down and vice versa. Why not simply fly the airplane? Down is down, always, and up is up. Give it down and the ship will always move in the direction of

(Continued on page 46)

TRADE SHOW

MONTHLY REVIEW OF NEW PRODUCTS, OTHER INTERESTING ITEMS WORTH ATTENTION

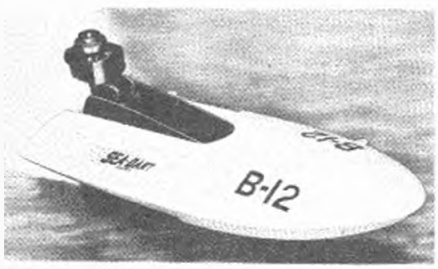


▸ *Half A Scale and Sport Type Fliers:* (Springfield Models, Inc., 964 Springhaven Rd., Springfield, Pa.) Have all-balsa construction, fully die-cut. The SE-5 is one of three. Wings precambered with dihedral. Takes .020 to .035 engines. Sample tested flew well. Decals, formed gear. For $1.50.

▸ *Twin Mustang, North American F-82:* Made for engines of .035 to .074 displacement. Twin pre-carved fuselages, airfoil shaped wing, two plastic canopies, die-cut parts, metal cowlings. Flies one or two engines. Scientific Model Airplane Co., 113 Monroe St., Newark, N. J. Retail $2.95.

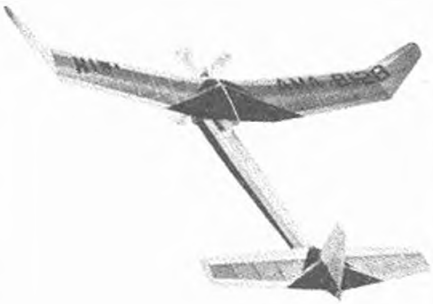
▸ *Plastic Balsa:* Fuelproof, easily workable plastic material for fillets, moulding, filling holes. Looks and feels like wood and can be sanded. Comes in tube (shown) at 30¢ for 1-1/2 oz., or in 4 and 8 oz. cans. Hardens quickly. Pactra Chemical Co., 1213 N. Highland Ave., Los Angeles, Calif.

▸ *Sea Dart:* 16 in., 6-1/2 in. beam, racing outboard type for those hot new marine motors by Allyn and Atwood, is prefabricated from plastic. Kit complete with fin-



ished hull, plastic die-cut cockpit fairing and motor mounts. Decals, integral bridle mounts for round-the-pole racing. Also electric motors. Sterling Models, 153034 N. Hancock St., Philadelphia, Pa. $3.95.

▸ *Kiwi Free Flights:* Big News in world of free flight is purchase by Paul K. Guillow, New Salem St., Wakefield, Mass., of K & B Mfg. Co.'s kit designs by Lew

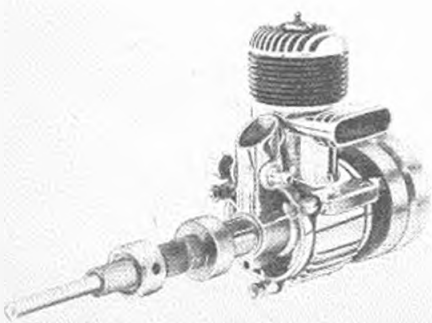


Mahieu. Kiwi 1/2-A, $2.50; Kiwi A, $4.50; Kiwi ABC (to be released later). Contest type free flights designed for maximum endurance. Die-cut parts, etc. Half-A 35 in., 200 sq. in. area; Kiwi A, 48, 375

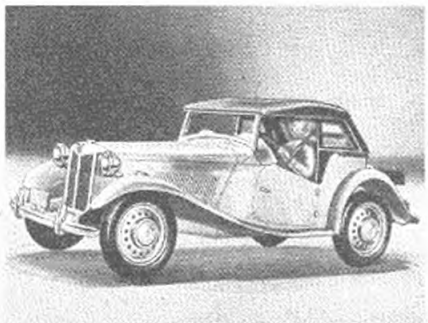
▸ *Chris Craft 16 Outboard Cruiser:* By Berkeley Model Supplies, W. Hempstead, N. Y., 1 in. to foot scale. Hull, foredeck formed from vinyl plastic. Kit includes cast

deck hardware, plastic cement. Electric type or any of the new gas engined outboards easily fitted. Real boat from which this kit is copied is Chris Craft's newest boat kit. Lightweight construction, model speedy.

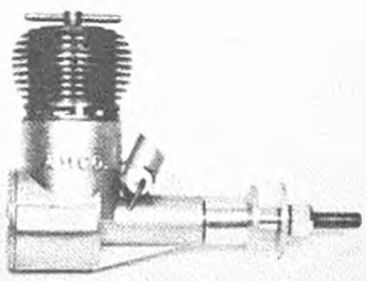
▸ *Cheminol's O & R Marine Engine .299:* Designed expressly for rugged demands of power boats. Wobble free front end heavy, dual counterweight crankshaft. Ball type thrust bearing, crankshaft equipped with roller bearings. Cheminol Corp., 9307 E. Bermudez St., Rivera, Calif. For $14.95.



▸ *British MG 1953 Sports Car:* (Revell, Inc., 4223 Ocean Park Ave., Venice, Calif.) One of two models in foreign car series being added to Revell Highway Pioneers. Finished plastic model accurate in all details, including figure of driver. Other: Renault, French World War taxi, 69¢, 89¢.



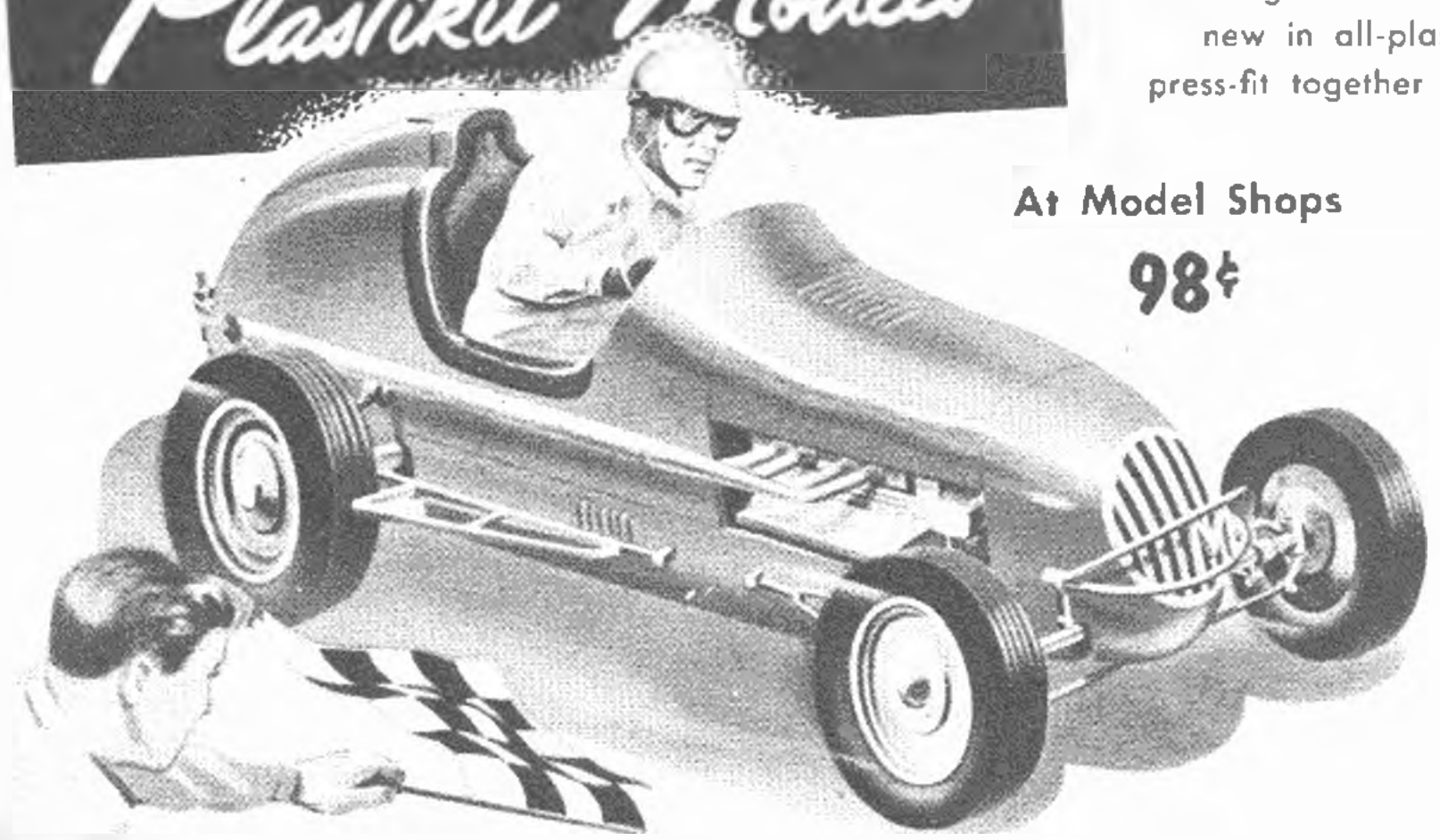
▸ *Amco 3.5 Diesel:* Plain bearing version, imported from England by International Hobbies, Albuquerque, New Mexico. Near constant power between 9,000 and 13,000 rpm permits prop selection for controlline, free flight, radio. Weight is 3.75 ounces. US equivalent displacement is .2005. $14.95.



EVERYBODY HAS FUN BUILDING

MONOGRAM

Plastikit® Models



* All Parts Molded to Shape in Finest Acetate Plastic

Quick, Easy Assembly

Amazing detail and realism. Something entirely new in all-plastic kits. Parts snap-fit and press-fit together for perfect jiffy assembly.

At Model Shops

98¢

ALL PLASTIC

Midget Racer

Driver Included

Kit P-1. Authentic Model of Popular midget racer. Details include Offenhauser engine and exhaust, removable hood, pump, brake lever, instrument panel, etc.

Authentic Scale Models

See Your Dealer

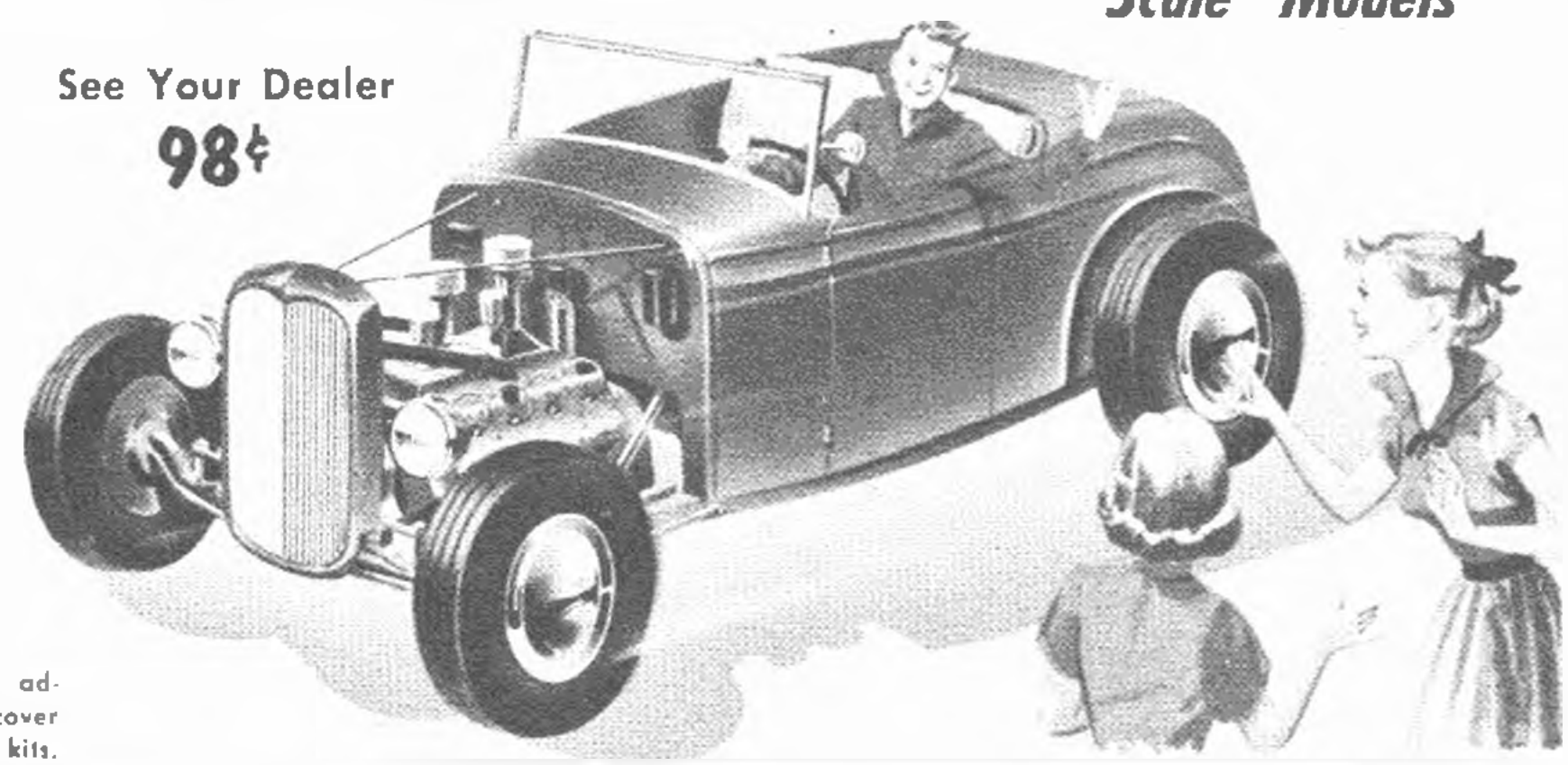
98¢

ALL PLASTIC

Hot Rod

Driver Included

Kit P-2. 1932 Ford V-8 with channeled body, dropped front axle, racing head engine, gear shift, twin carburetors, instrument panel, head lamps, etc.



If no dealer near you order from address below. Send 25¢ extra to cover postage and packing for one or both kits.

Monogram Models, Inc. 3421 WEST 48TH PLACE, CHICAGO 32

MODEL AIRPLANES • SHIPS
JET POWER RACERS

Perfect Companions for Monogram All-Plastic Models

Build and finish your all-plastic models with these fine products, developed especially for use with Monogram kits. A quick-drying, perfect job every time. Mono-Dope, 19 colors and finishes, one ounce jars 15¢. Mono-Glue, Large Tube 15¢. At your dealer.

1929: First issue of MODEL AIRPLANE NEWS appeared during the 1929 Nationals, held in Detroit. Then owned by MacFadden. Written note really appears on copy in layout.

HERBERT HOOVER was President, Babe Ruth was in his hey day, and the Great Depression (and that is ancient history) had not yet begun when Bernarr MacFadden, the famous publisher, decided that the nation's sprouting modeling movement needed a rallying place and put the first issue of MODEL AIRPLANE NEWS on the stands in the summer of 1929.

And what of the model field? The twin pusher was king pin. Gas engines were undreamed of. Jo Kotula, who later would do 22 years of fine cover paintings for MAN—he is still going strong—had yet to make his mark. Charlie Grant, fiery, visionary editor of the thirties, was busy manufacturing ready-to-fly airplanes that have yet to be surpassed. Capt. Loftus Price was editor—your present "old timer" editor (MAN's fifth) was a school boy. But, as always, there was a National Contest and there was MODEL AIRPLANE NEWS.

Plastic models? Prefabrication? Unheard of. Cleveland Model Products Co.'s super-detailed flying scale kits were the rage: there is nothing like them today. The Ideal Model Aeroplane & Supply Co. had kits that were a match for the best flying model kits of present day prefabrication. Price wars were raging. Solid model kits got down to two for a nickel. Some advertisers would sell you 16 strips of wood for a cent.

Within a few years, in the depth of the depression, MacFadden sold the MAN title to the present publishers. And in the years that followed, great

25th ANNIVERSARY

1929-1954

After quarter century of continuous publication, MAN has a history that virtually is the history of model plane building. This collection of "birthday" covers is reproduced with humility and considerable awe. To the many faithful readers who have made MAN, thanks.

1954: Color cover photography and radio control models unheard of in 1929.

1930
Aviation education, pioneer feature.

1931
Junior mechanic idea found wanting.

1932
Stockton Ferris modeled Hawker Fury.

1933
MAN sponsors first modern Nationals.

1938
4,500 IGMA members given to the AMA.

1939
U.S. wins Wake.; Zipper, Ohlsson .23.

1940
Jim Walker shows U-control Fireball.

1941
Goldberg's Comet Zipper a revolution.

1946
Vets founded many companies—prefabs.

1947
First K & B Torps a wow at the Nats.

1948
Infant appears, then other Half-A's.

1949
Jetex, Dynajets, radio gain ground.

things happened at MAN. MAN jumped into the breach to organize the first of the modern Nationals, a two-day affair held in New York in 1933, when, after the 1932 Nationals, the old Aviation Model League of America tossed in the towel. One day for outdoors at Roosevelt Field (now gone forever), and one for indoors at a city armory. Making the occasion memorable was Maxwell Bassett (now a transport designer) and his gas model, with an engine by Bill Brown. Bassett ran away with the meet and new rules had to be rushed for 1934. Carl Goldberg, now of Top Flite, and frequent indoor record holder, through the years, wrote up the Nationals Indoor story for MAN. Years later, he invented the pylon gassie and designed Comet Model Hobbycraft, Inc.'s, immortal Clipper, Zipper, Sailplane, Interceptor series. When, a few years later, a spite group sought to have gas models banned throughout the country, MAN organized the International Gas Model Assn. with chapters in numerous cities. Once the magazine and the IGMA had won the battle,

1934
Hawk producing its 1/4 scale solids.

1935
Gas model ruled a Class E fuselage.

1936
107 entrants first IGMA gas contest.

1937
Atwood Baby Cyclones were in demand.

1942
Berkeley's flying scales take lead.

1943
War cuts contests, materials, kits.

1944
Herkimer plugging their .60 engine.

1945
Industry attained $30,000,000 sales.

1950
465 is first examination-free band.

1951
Testor's Freshman kits begin series.

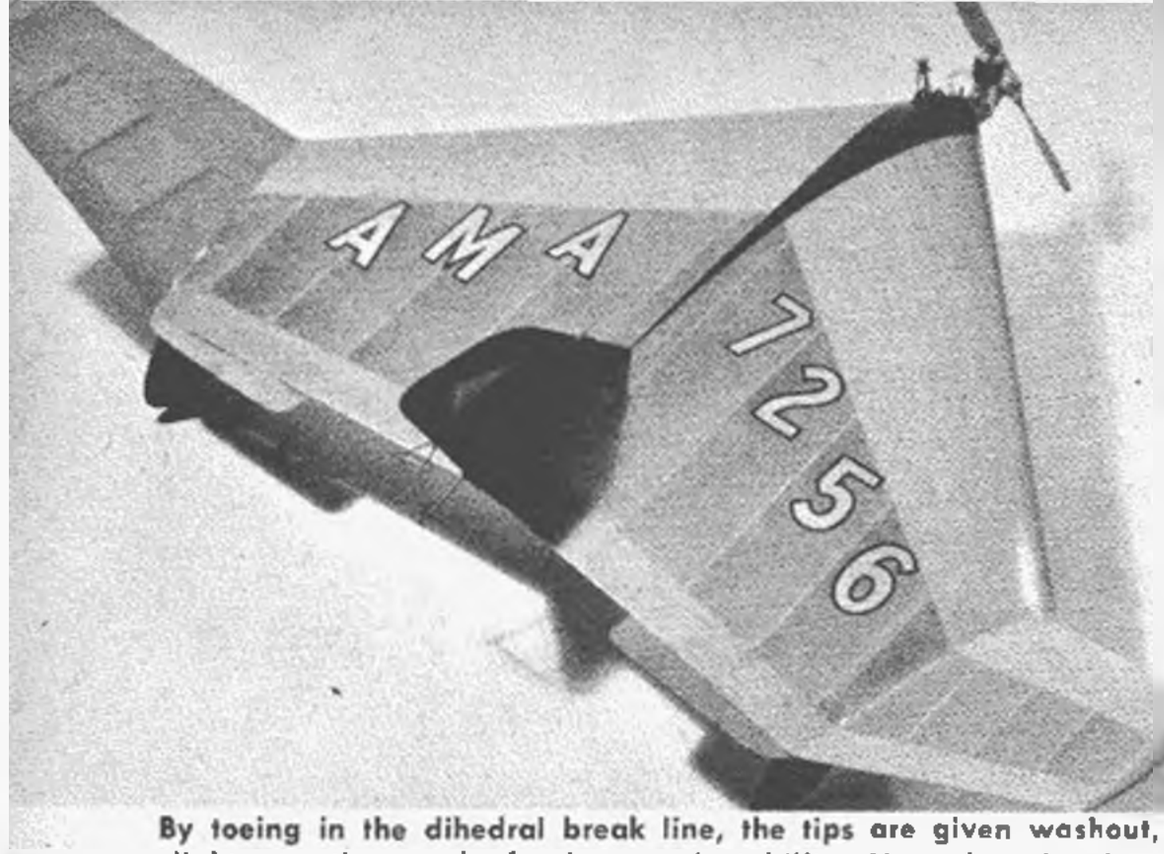
1952
America "discovers" FAI gas events.

1953
U.S. wins first in Wakefield, FAI gas.

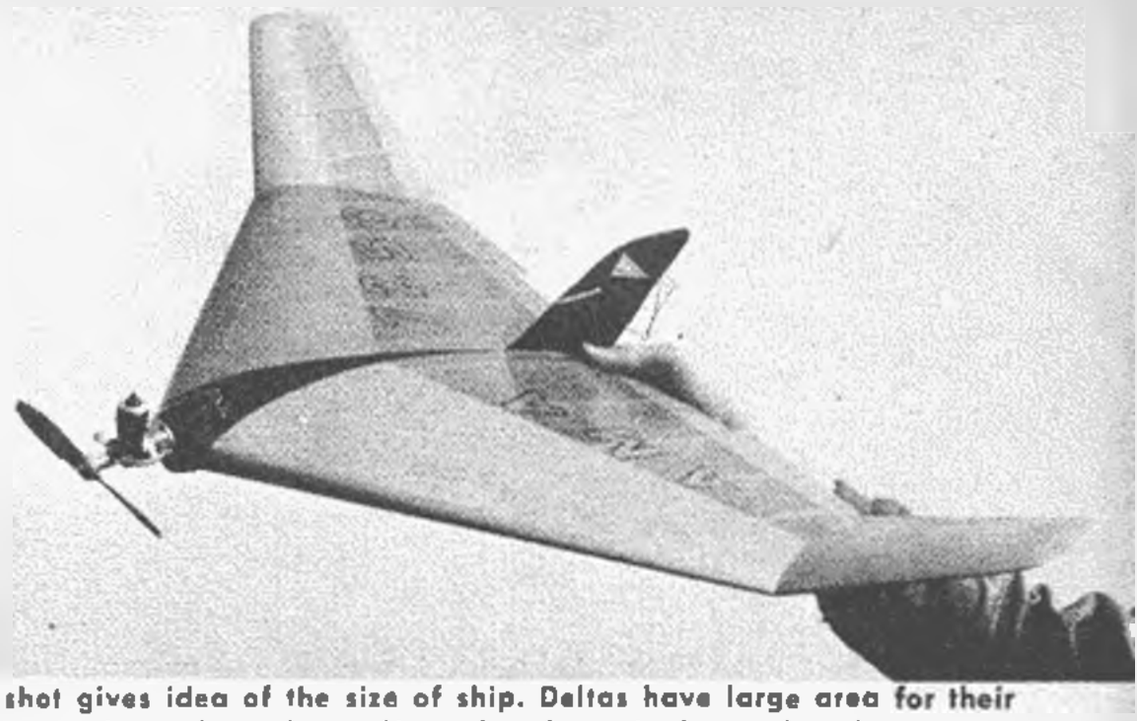
the roster was given to the Academy of Model Aeronautics then taking its first shaky steps.

To recapture even just the highlights of the first quarter century would be a hopelessly presumptive task in a single issue. What better way, then, to reflect these 25 years than with the gallery of 24 covers, one for each year, reproduced above? For the first and the latest covers, see page 9. Incidentally, the written note on the first cover is not an editorial trick. These highly appropriate words were written, it is believed, by George Tweney, for many years an engineer, but then just a youthful modeler.

If there is a mysterious key to this pleasant success story made possible by MAN readers, it can be found in the two dozen samples cover above. While economic eras changed and great wars were fought—in other words, ceaseless change—MAN has remained basically the same. By 1931, MAN had found (note "and Junior Mechanics" under the title on the July, 1931 issue) that (*Continued on page 48*)



By toeing in the dihedral break line, the tips are given washout, or a slight negative angle for increased stability. Note the trimming tabs.

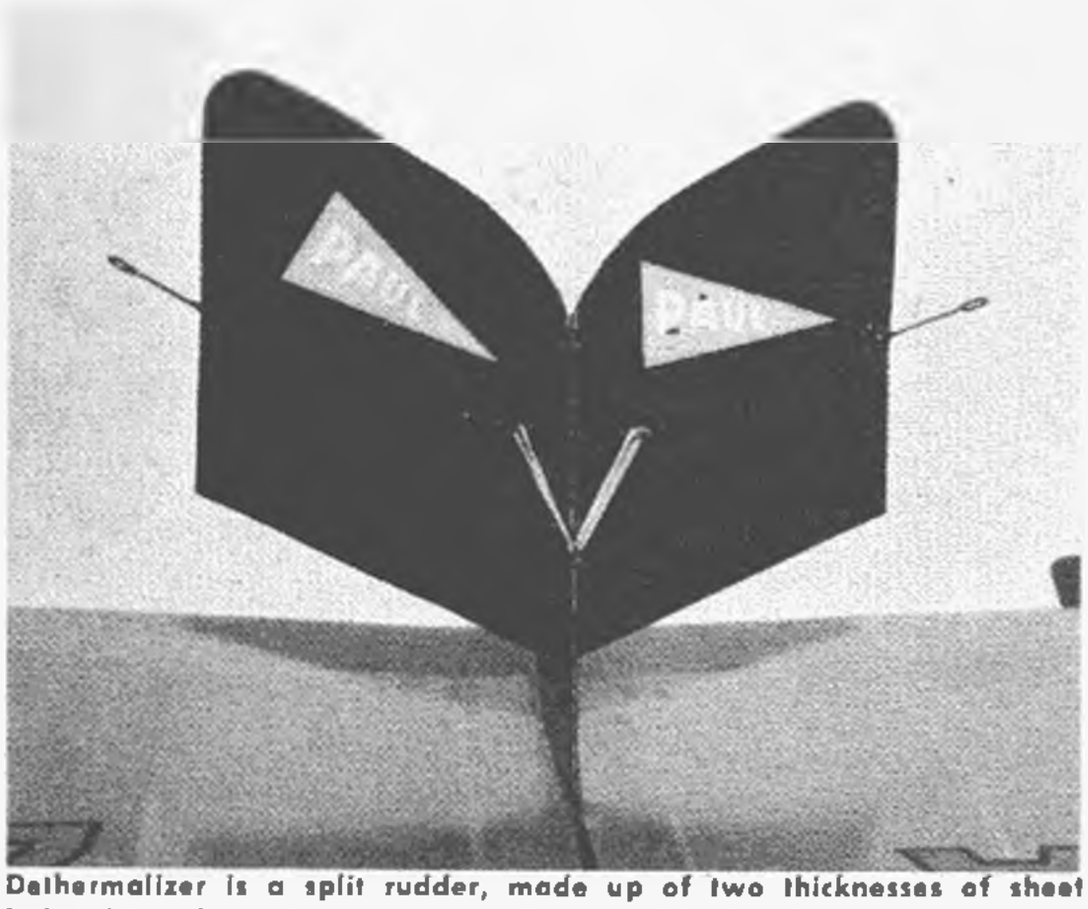


This shot gives idea of the size of ship. Deltas have large area for their span, yet have low drag. Size, therefore, is large for the power.

half-A Delta

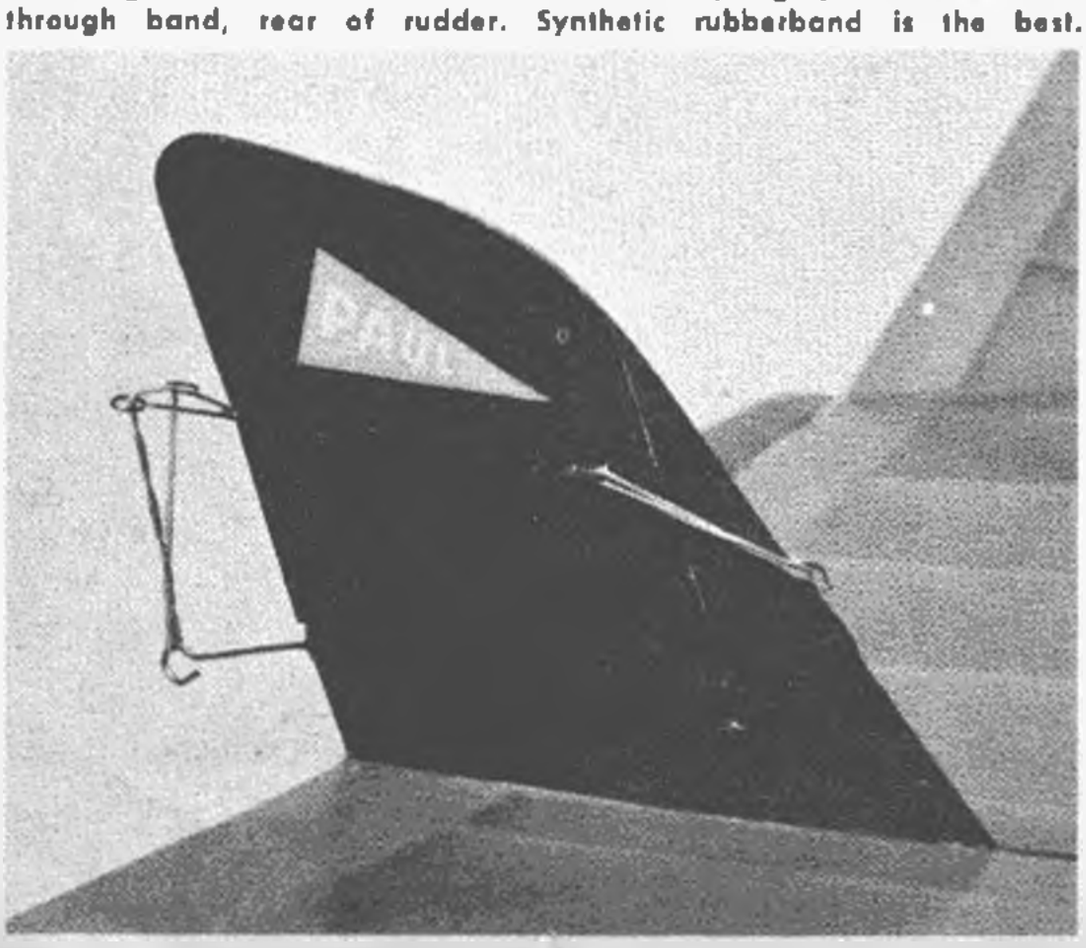
The flying triangles have made their mark in the full scale air world. As models, they offer many novel possibilities and, of course, no fuselage, tail to build.

by PAUL E. DEL GATTO



Dethermalizer is a split rudder, made up of two thicknesses of sheet balsa, hinged together to open as shown. Rubberband swings them open.

Fuse length determines duration before brakes spring open. Fuse inserted through band, rear of rudder. Synthetic rubberband is the best.



Within the last few years Delta configurations have been utilized with increasing frequency in the controlling phase of model designs, and in many instances with considerable success.

Having enjoyed some measure of success in the field of controlling Deltas, our own enthusiasm was sufficiently aroused to venture into the abysmal void of free flight Delta design.

In other words, we were venturing into the unknown, and fools that we are, we loved it.

Yet we weren't so foolish as to venture into it without taking some elementary precautions, so we set about to design a hand-launch Delta approximately half the size of what we estimated would be the size of the free flight gas version. This proved to be a sensible approach for, as it turned out, we were able to foresee several modifications, which, when incorporated into the gas version, would produce a better performing model.

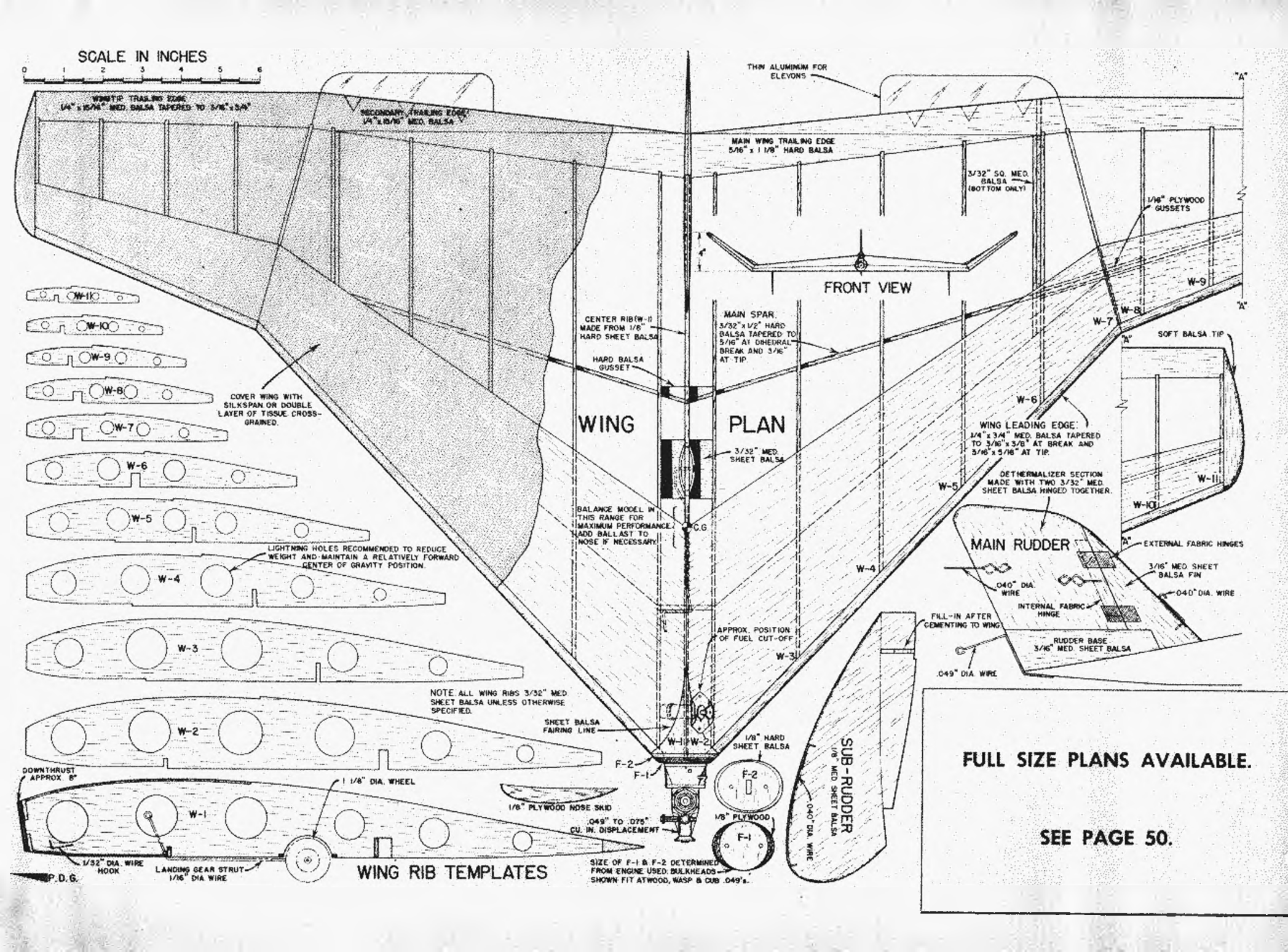
The lack of directional stability in the glider was immediately detected as well as some difficulty in obtaining longitudinal trim. Of course, the latter could be attributed in part to the less stable airfoil cross section obtained through the use of the sheet balsa construction.

To rectify the situation we added a center rudder in addition to the underslung rudders to obtain the needed directional stability. Then, too, we increased the dihedral of the tip panels from 1-1/2 in. to 2 in., which by virtue of the toed-in dihedral break, increased the negative angle of the tips, aiding us in reducing the longitudinal trim sensitivity. In effect, the raised tips also added to our rudder area, necessary for directional control, and to our lateral stability which, while satisfactory to begin with, might give us added difficulty in a free flight gas with its torque problem.

After these modifications were made and the hand-launch glider version was once again flown, performance was considerably improved and on the strength of its performance we felt assured of the model's success, so we quickly got rolling on drawing up the design of the free flight gas version. Construction was to be simple, strong and efficient, without any emphasis on ornamental doo-dads of fixings to clutter it up.

To see just how simple it is requires only a quick glance. All one has to do is leave off the engine, firewall and landing gear and what you have got is a functional wing. Come to think of it, that gives us an idea we haven't exploited yet: its possibilities in the towline field.

Simmering down our enthusiasm for the moment, let's review some of the points of interest in the construction of this model. Beginning with the wing ribs, it is suggested that the lightening holes indicated on the ribs be cut out unless you plan to use (*Continued on page 42*)

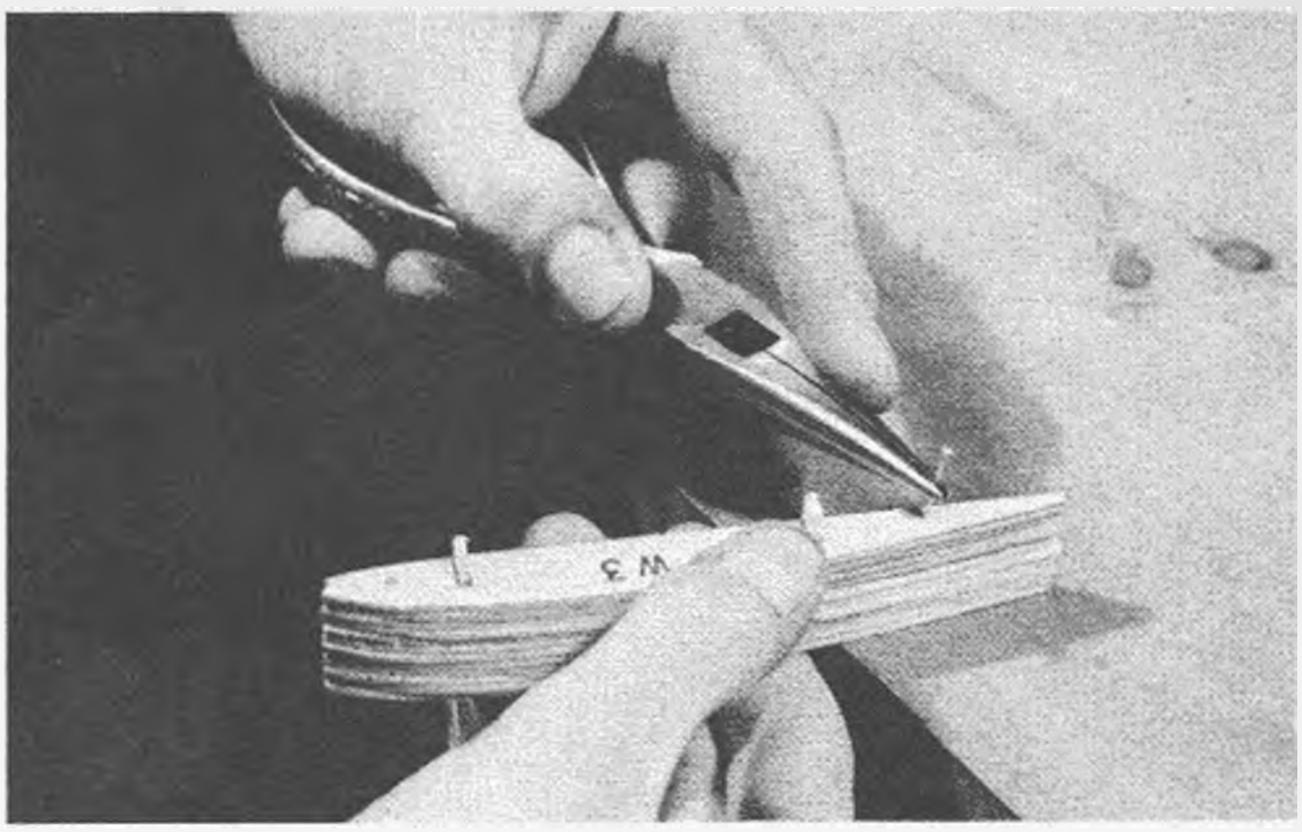


FULL SIZE PLANS AVAILABLE.

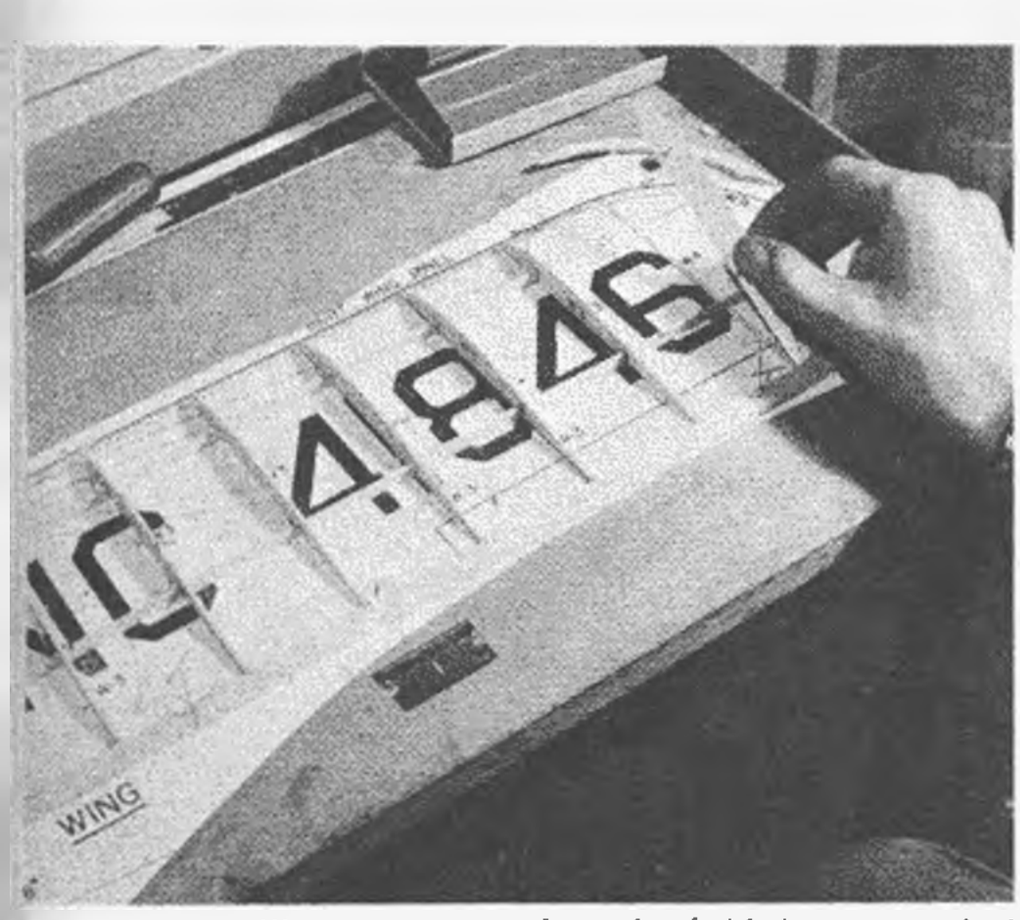
SEE PAGE 50.

HOW to make a WING

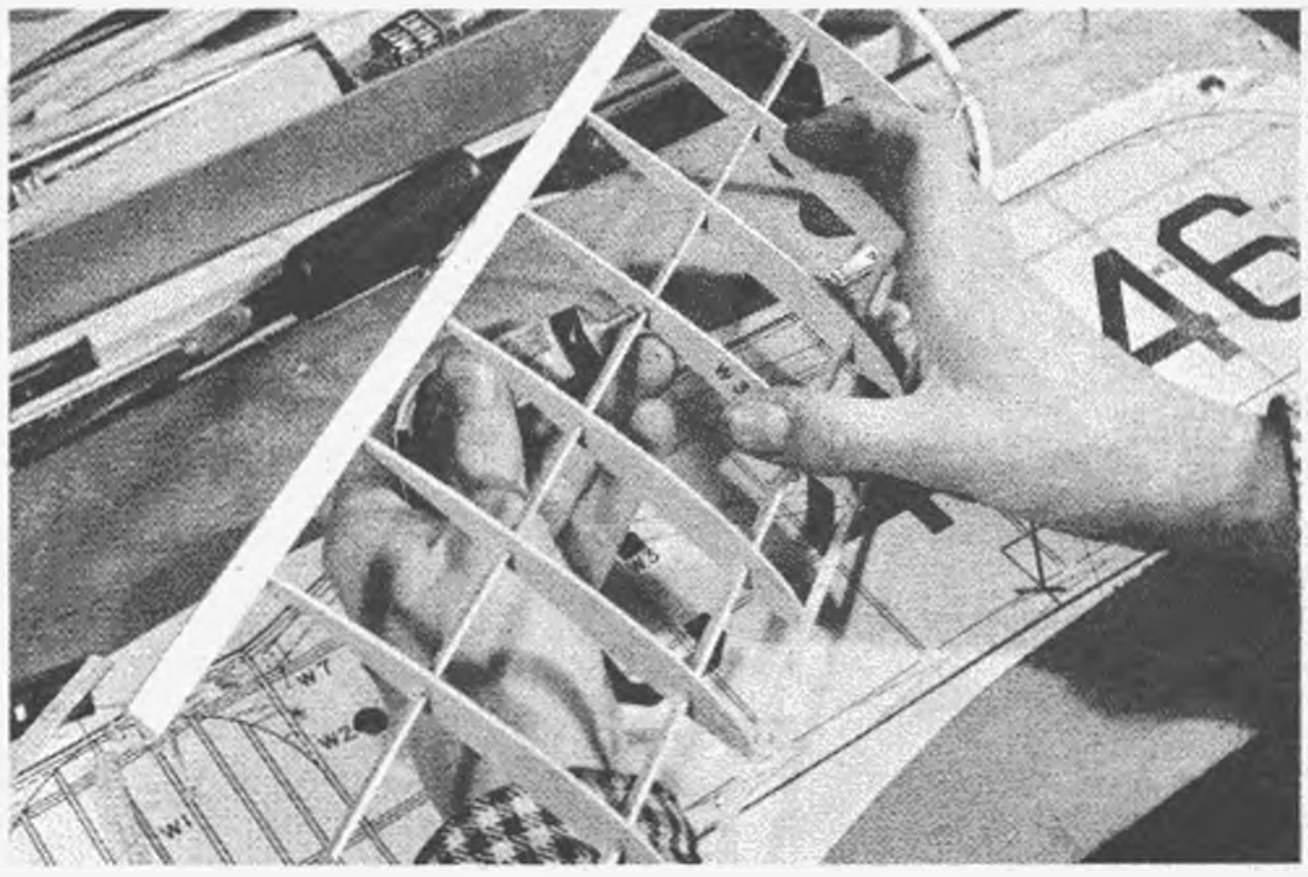
by ART SILBERBERG



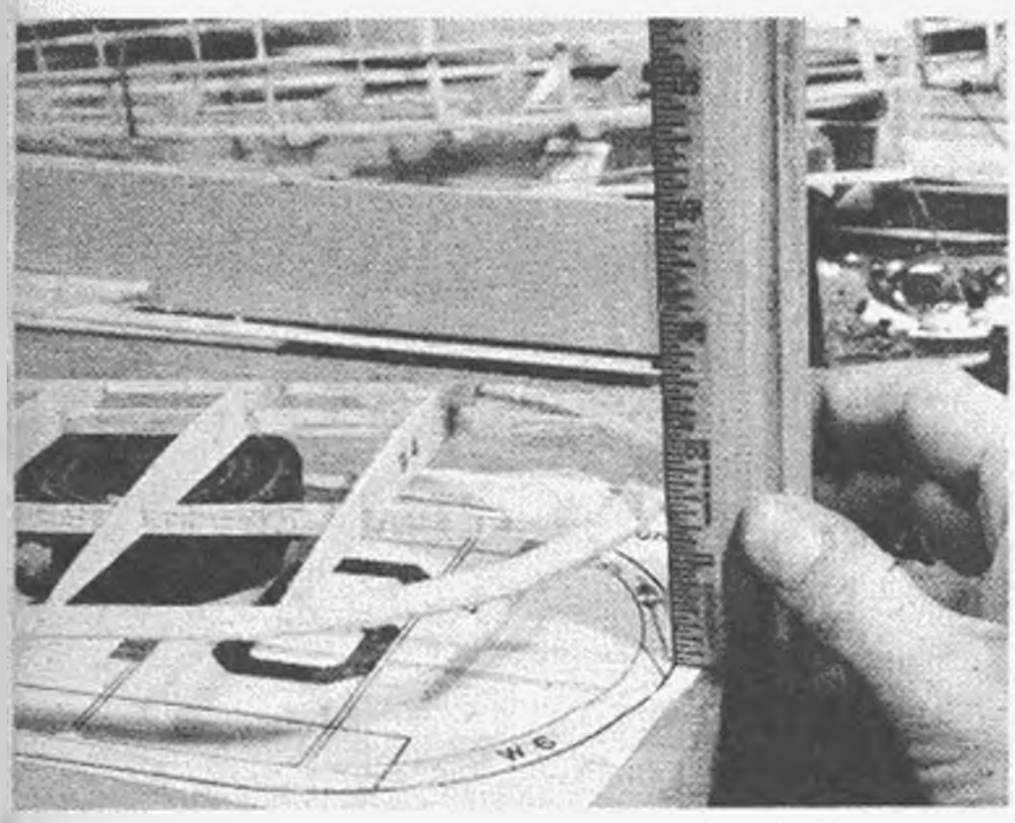
Assemble ribs of similar size on scrap wood same size as the wing spars. Pin ribs together. Use pliers to push in pins little at a time to avoid bending the pins.



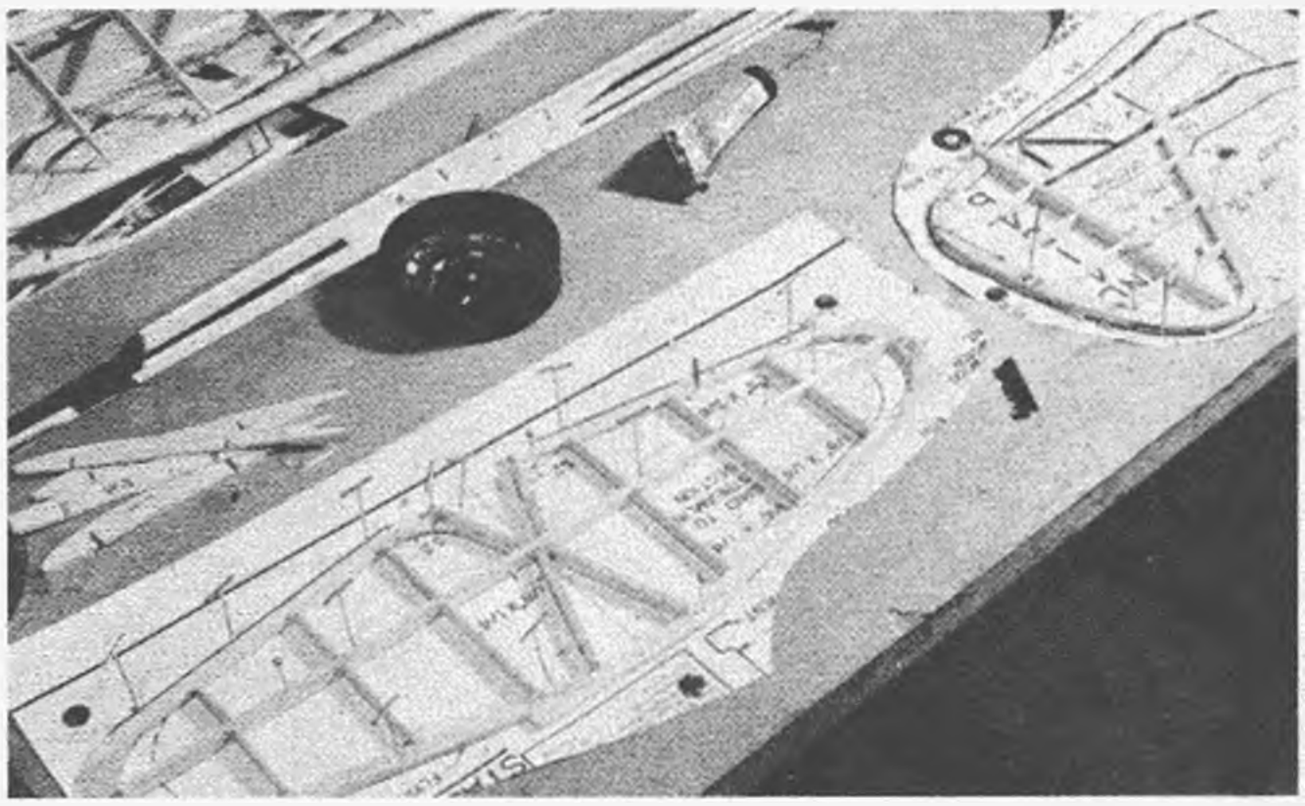
Wax paper over plan, pins hold down spars (not through wood), cement ribs, and then the edges.



When wing panel, including tips, has dried, remove from board and gusset all joints with a slight amount of cement. Helps prevent warps and too easy breakage.

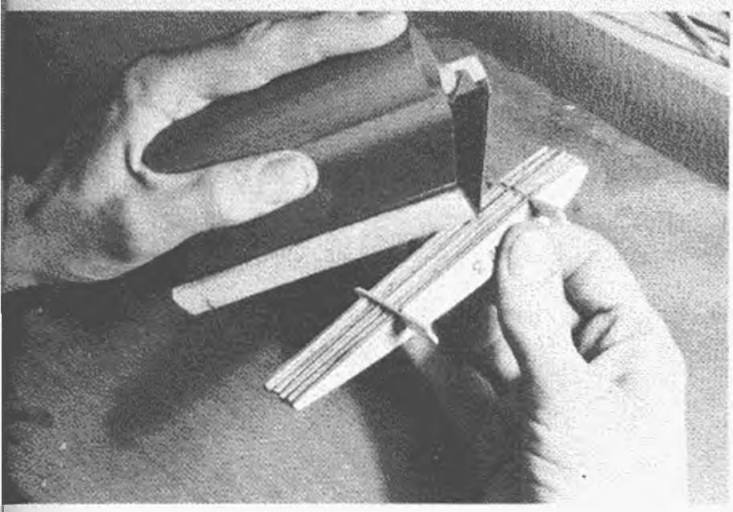


Assemble the two halves together. Hold center section down, prop up the tips to obtain correct dihedral.

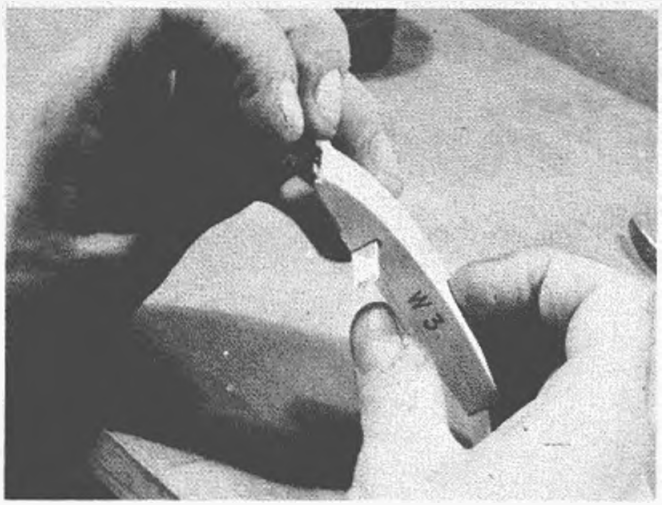


For convenience, plan can be cut into sections. Stabilizer and fin are assembled by pinning edges in place, then fitting and cementing cross pieces as indicated.

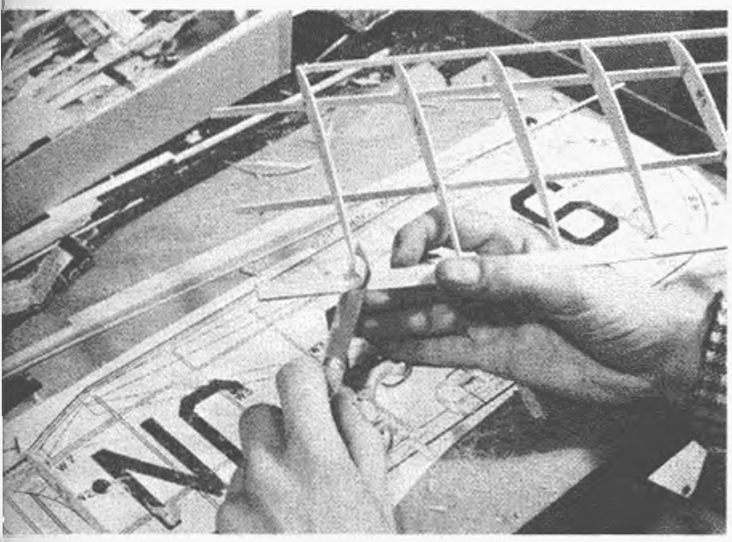
This how-to-do-it picture sequence was made using a representative kit, which happens to be a Berkeley Fairchild. The construction of the built-up fuselage was shown last month. Subsequent pictorials will show that tricky business of getting a good covering job, other details.



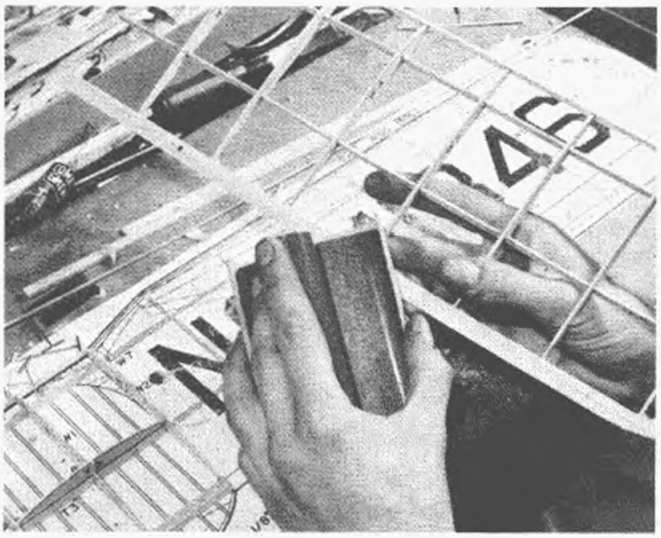
Sand the ribs as unit until they are smooth surfaced and identical. Be careful to hold the sanding block at the right angle. And don't rush.



When the ribs are identical and spar notches lined up, cut the notch for the leading edge. Front and rear ends of ribs should be cut even.

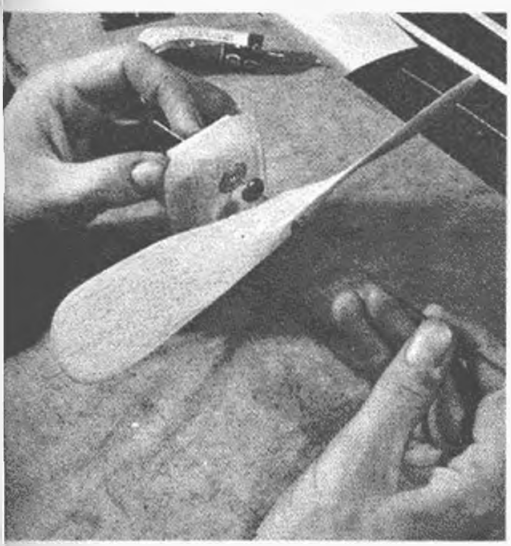


Using a balsa knife or single edge razor blade, shave the trailing edge to a triangular cross-section. Don't make it a knife edge—too weak!



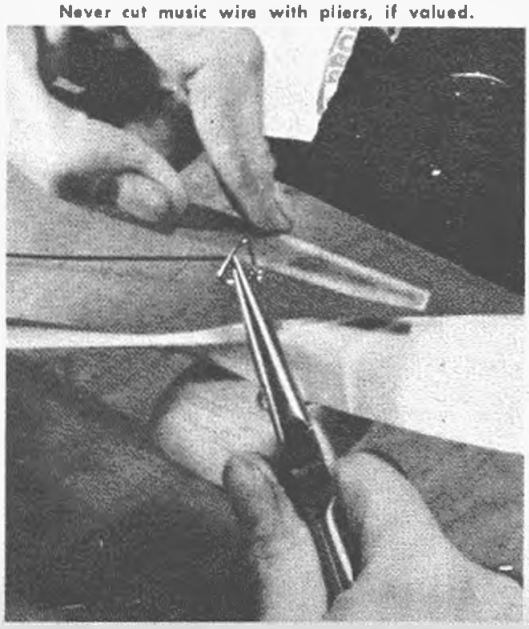
Smooth leading and trailing edges. Use medium paper at first, then finish with fine sandpaper. Covering depends on neat sanding.

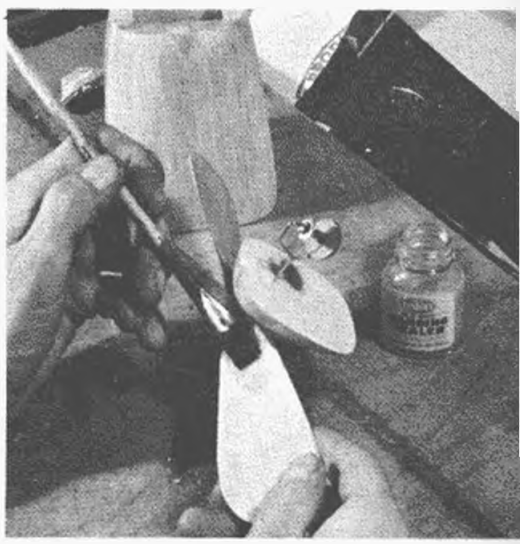
Propeller



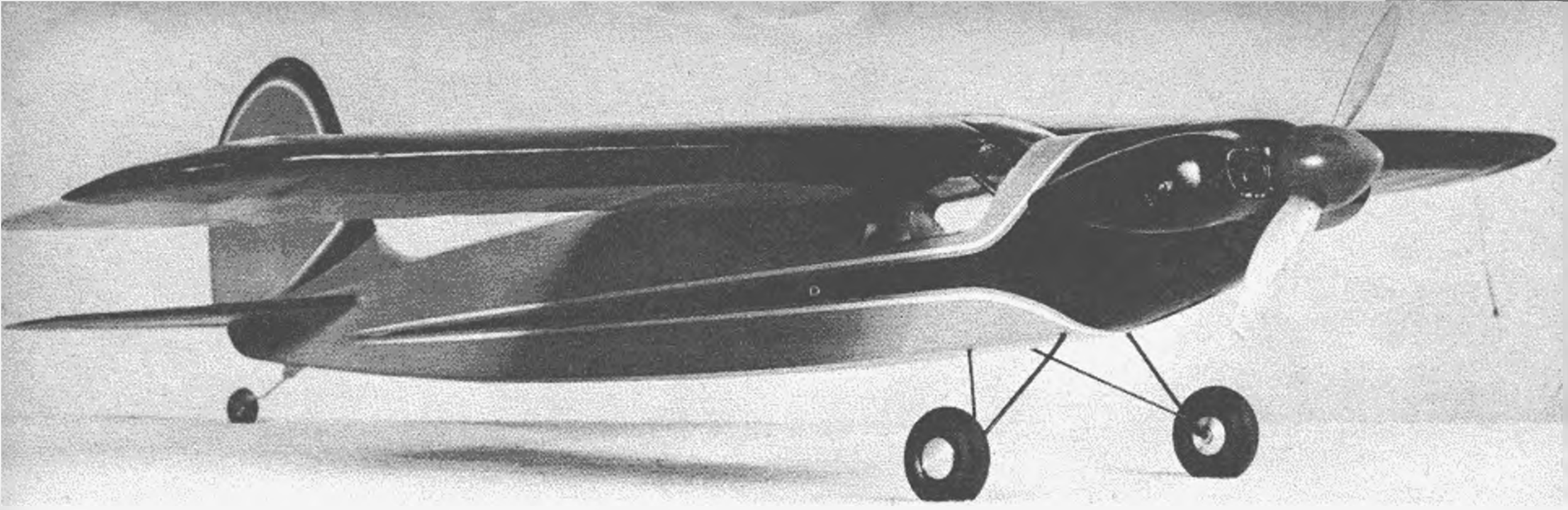
Nose block removed from nose; prop, washer, bearing, assembled on shaft. Before bending shaft, make sure prop is balanced. Sand side that swings down until balance is obtained.

After free-wheeling loop is bent, excess wire is bent off by nicking wire with small file. Never cut music wire with pliers, if valued.

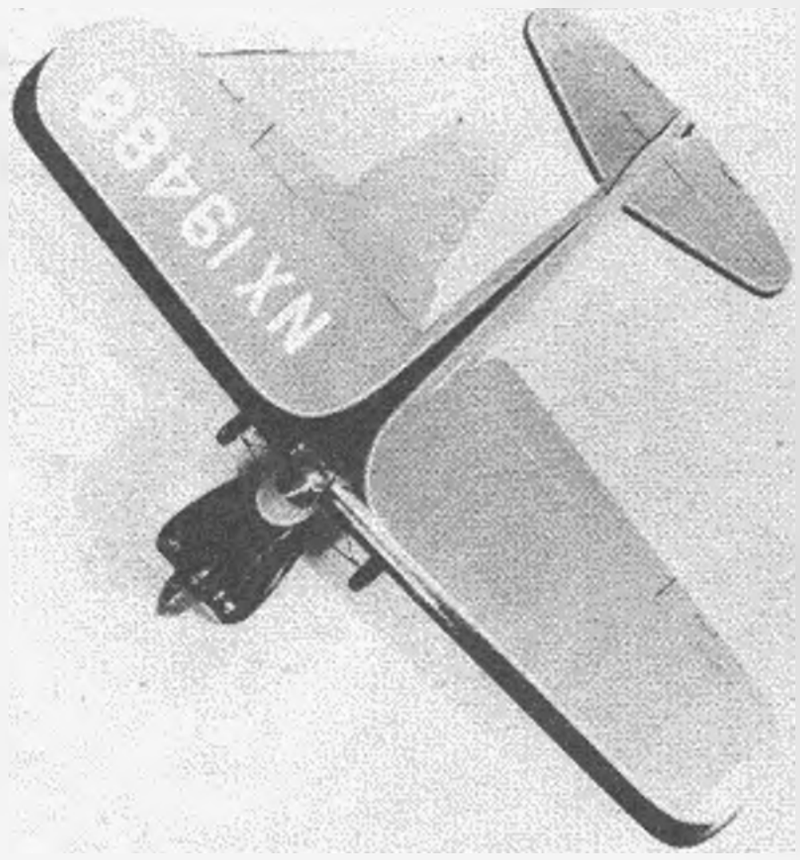




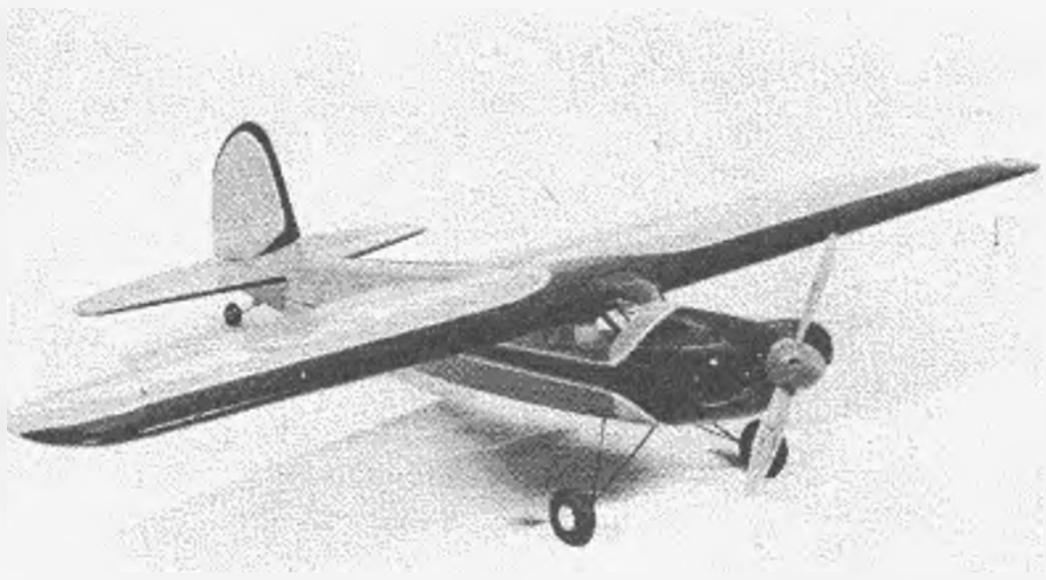
Sanding sealer applied to the finished propeller and the nose block. After one coat sand until the roughness disappears, then recoat, sanding lightly when dry for a smooth finish.



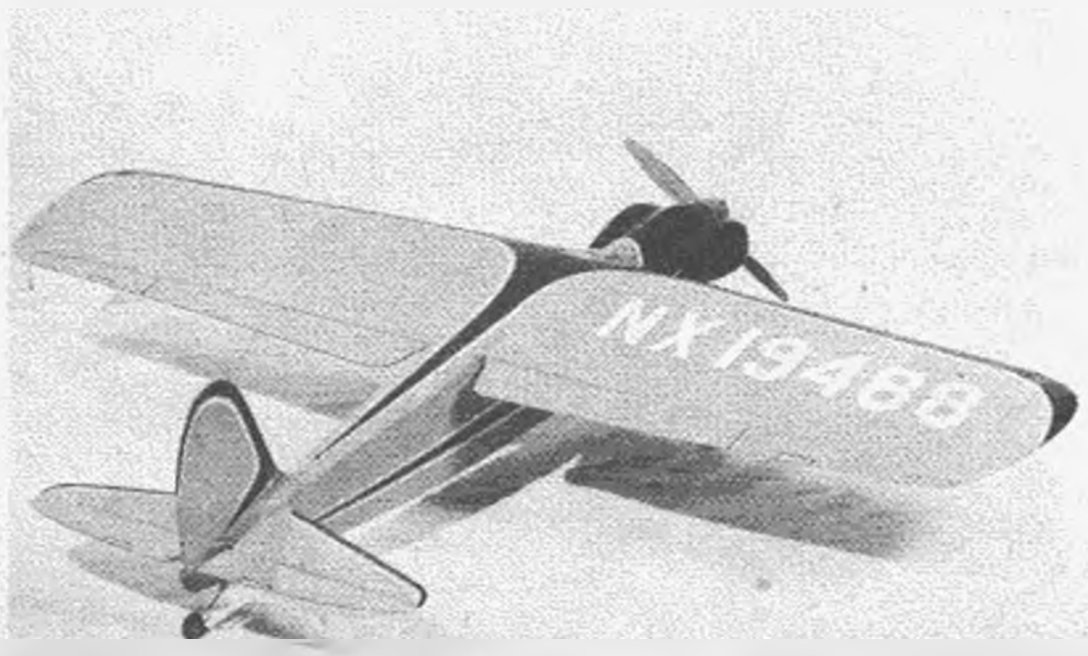
How would you like to see this one at the end of the lines? Engine is shown side-mounted in pictures, but inverted version shown on plans.



Flying surfaces are typical stunt design, featuring flaps which Palmer has used so successfully. The performance is not sacrificed in any way.



As change from in-the-rut low wings, this cabin high wing is welcome relief. High wing scoffers will eat crow after putting this ship in air.



Looks good from any angle. Long tail and nose moments make this airplane "groovie," as the stunt boys say, and it is thoroughly stable.

HI BOY!

by BOB PALMER & TED GOYET

The first really new stunt plane design in five years, this high-wing cabin job was perfected by two West Coast experts. Maneuverability is tops.

▶ We're going to introduce to you a completely new stunter: wing area approximately 400 sq in., span 46 in., length 44 in., weight with Fox .19, 2 lb.

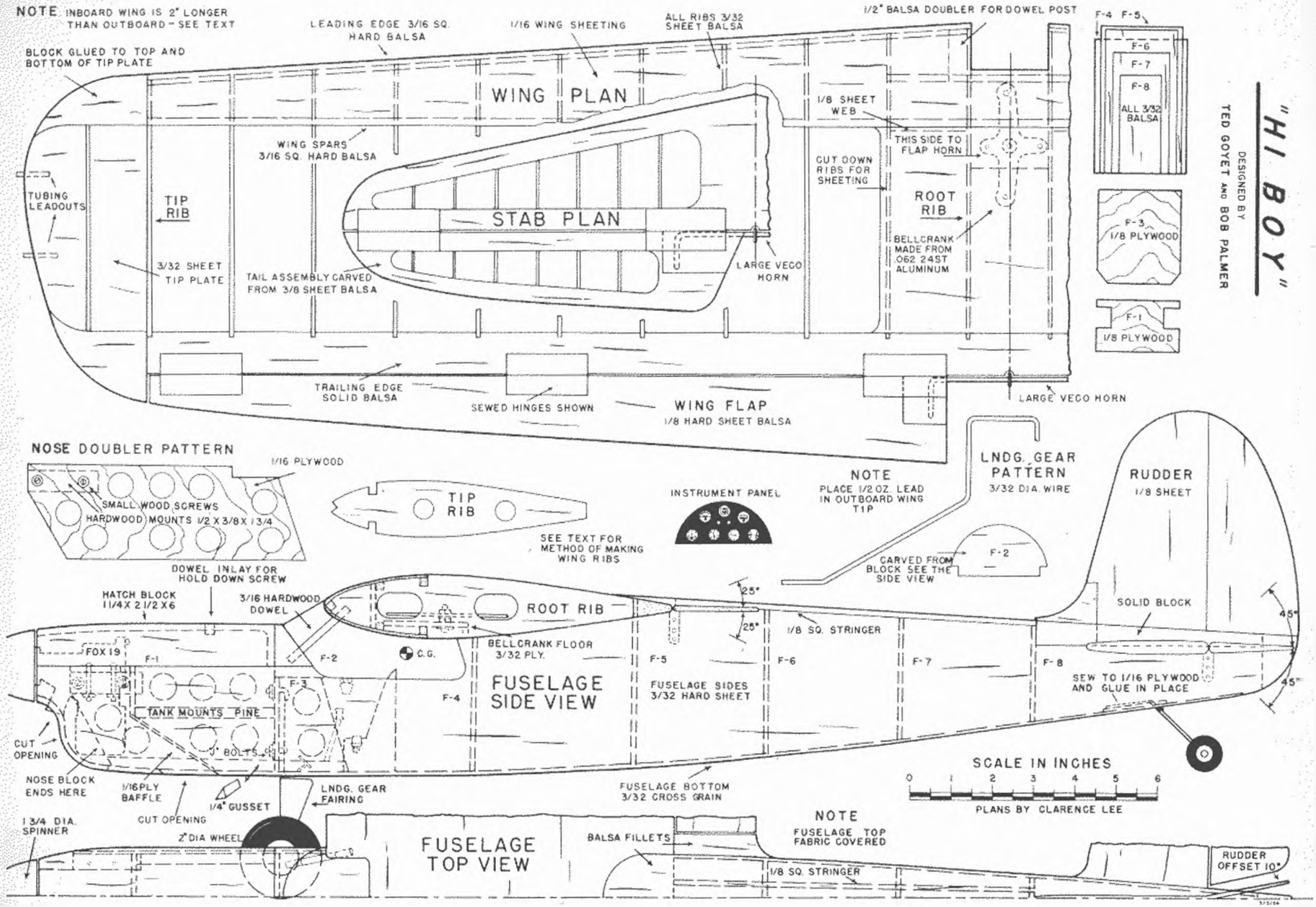
Almost every model has a little story behind it, and here's how this little jewel came about. Every year, I (that's Bob Palmer) usually attend two of the contests of the season in the Frisco area and on one of these occasions, I became acquainted with Ted Goyet, one of the better pilots there. As we conversed, the idea of trying a high wing stunter came to both of us. We discussed its problems, and what you would need to be able to fly it through the pattern.

A low winger lends itself to stunting as a natural. In stunting, if you have experienced a low winger doing tighter stunts upside down than right side up, the reason is that a high winged plane will do tighter loops than a wing on the bottom. This is because the wing is above the center of gravity. Now when you turn a low wing over into inverted flight, you have a high wing, so we've done the same thing, only in reverse, and flying the Hi Boy bears this out. It does tighter inside loops than outside loops.

At a later contest, I received word that Ted had come down with polio. I wrote him a letter and found that he had almost finished a high winger and wanted to know if I would be interested in finishing it and trying it out. I told him I would be very interested.

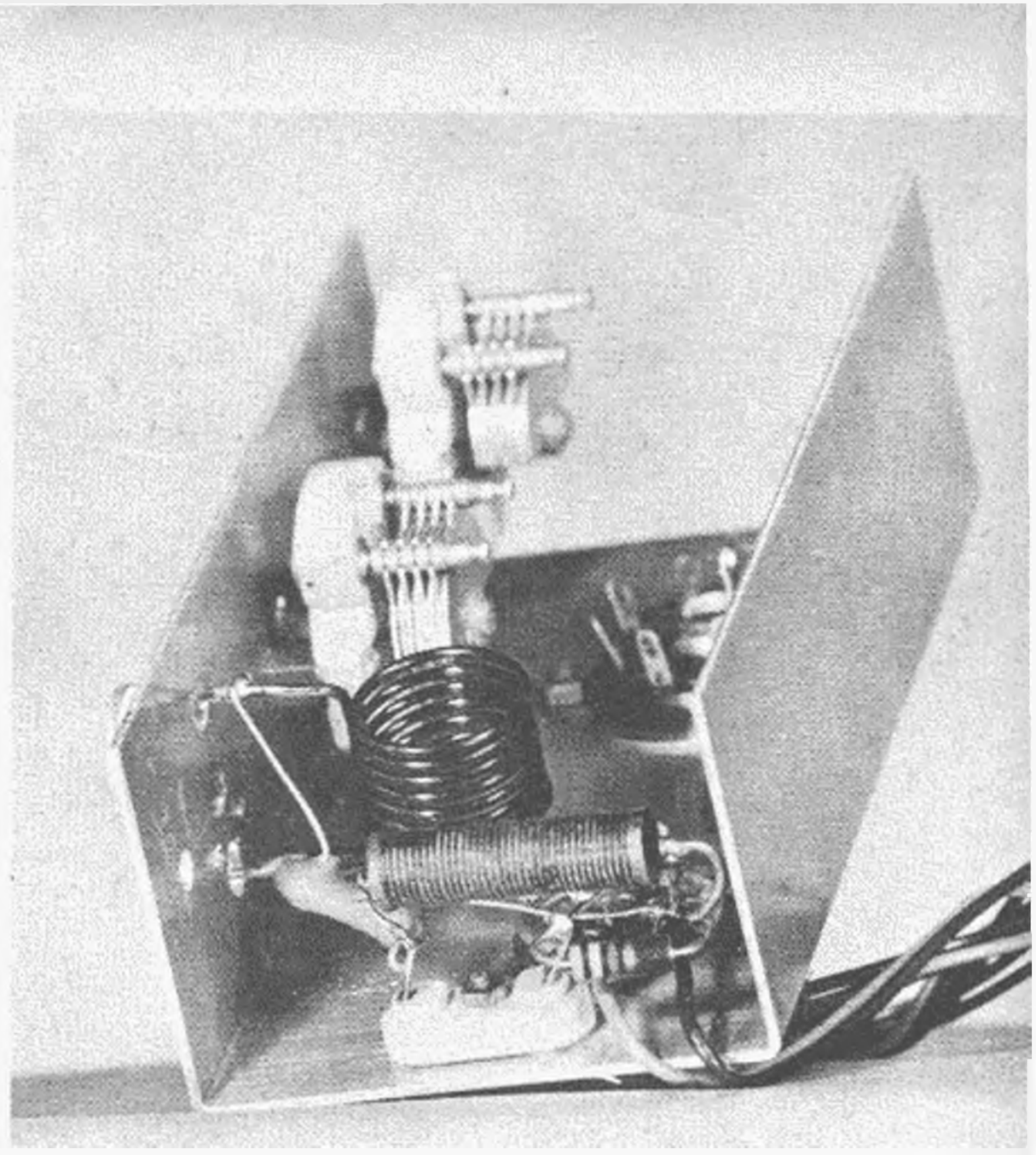
Ted had done a wonderful job on the plane, and I made very few changes. However, we did decide to change the engine installation to one I had used on the Pow Wow and Smoothie. I think highly of this method. You're not bothered with turning the ship upside down to check out your tank, etc. We are actually giving you a choice between the cheek cowl system you see in the picture and the one on the drawing. The one on the picture is a little harder and costlier, being composed of balsa blocks.

This plane flies very well, accomplishing the stunts with ease and assurance. Its long tail moment and engine moment make it a very groovie and stable model. For a sport model, this is very good. V braces from the fuselage up to the wing would really enhance the appearance. (*Continued on page 50*)



FULL SIZE PLANS AVAILABLE. SEE PAGE 50.

Mr. Lorenz with finished transmitter during one of its field trials. The transmitter is an MOPA type, or master-oscillator-power-amplifier.



This photo shows oscillator hook-up. Filament voltage is 1-1/2; filament current, 270 mils. Plate voltage is 90-180; current (total), 32-40 ma.

The Lorenz Transmitter

This is the transmitter you have been waiting for, a reliable unit incorporating many important features found desirable for airplane control. Designed for conversion to tone.

by E. J. LORENZ

▶ Here is a transmitter that we think you'll find very versatile. No, it isn't a five-watter because we don't need 5 watts of blasting power to work a mere thousand yards. And incidentally, we challenge anyone to do any really accurate controlling of a 50 in. model at that distance. In analyzing what we needed, we used not only the knowledge of our own experience, but that of many experienced RC fliers. The results were as follows:

1. A transmitter with an RF output of 1-1/2 watts is more than sufficient for any RC flight provided that the receiver and transmitter are tuned properly.

2. For maximum efficiency and all around performance, the transmitter should be of the MOPA, or master-oscillator-power-amplifier, type. This means a two-stage unit whereby the oscillator output is not coupled directly to the antenna, but rather goes through an amplifier.

3. For versatility, as when converting to tone control, a MOPA type is practically a must as far as good design practice is concerned.

4. The average oscillator/transmitter is detuned when objects touch or are in the vicinity of the antenna. With a MOPA unit, this effect is eliminated or greatly minimized.

5. Last, but not least—and read this well ye novices and experts alike—tests and consensus show and prove that 80 per cent or more of fly-aways or out-of-control flights could be avoided by proper tuning of the transmitter and receiver. Normal frequency tolerance of our 27.255 mc spot can extend from 27.230 to 27.280 mc. At close range, a transmitter tuned to 27.230 mc may actuate a receiver tuned to the other end of the band at 27.280 mc. All is well at close range, but this difference is the reason, very often, for lack of control at a distance of several hundred feet or more. As we've mentioned before, 1/2 watt of RF is sufficient for reliable control provided the tuning is correct. The only way to be sure is to put as much distance between the receiver and transmitter as possible when tuning; a minimum of 250 ft. usually is adequate.

Now how about taking a look at our unit, which may be converted for tone control (details in a later issue). Here are a few vital statistics on the unit before we go into construction details: filament voltage, 1-1/2 volts; filament current, 270 ma; plate voltage, 90 to 180 volts; plate current, 32-40 ma (total); RF output, 1-1/4—2 watts; very stable design through MOPA; Pi-network, to enable loading various length antennas.

Read the article and study the drawings and photographs well before beginning construction. Then begin by laying out the .040 in., half-hard aluminum chassis as in Fig. 1. A 1/16 in. soft aluminum chassis may also be used. The socket holes were punched in with Greenlee socket punches and your local "ham" friend possibly could help out here. After all holes have been drilled, bend edges *down* 90° at dotted lines. Holes marked "X" are for mounting to case and the dimensions are not critical. Mount crystal socket by a bolt or eyelet, being sure the center mounting hole will fit the fastener. Mount the 4-30 (*Continued on page 43*)

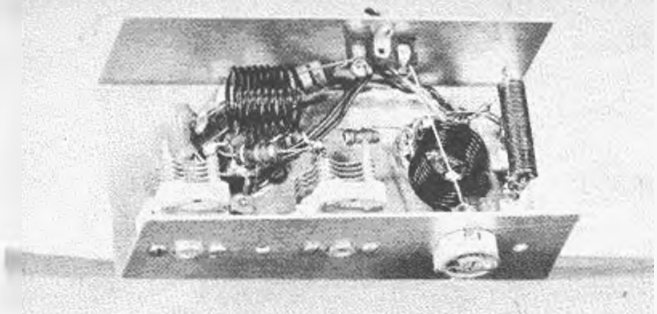
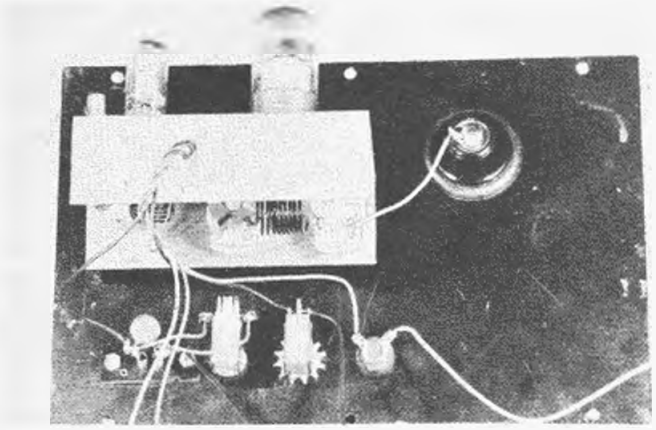
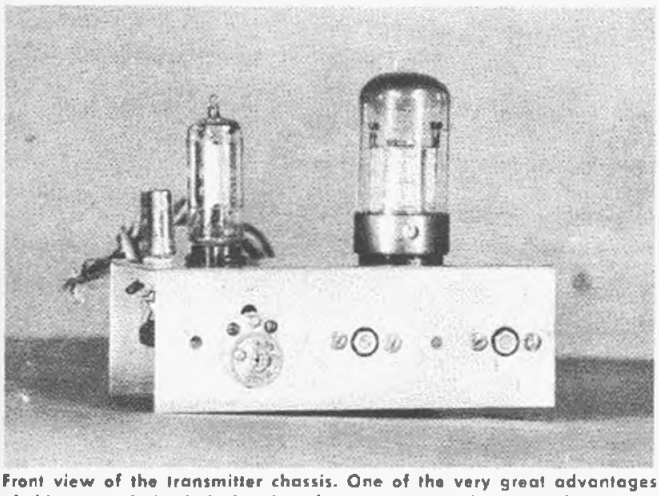


Photo B will help follow the steps in the directions. RF output is 1-1/4-2 watts, ample to fly any airplane with a decent receiver out of sight.

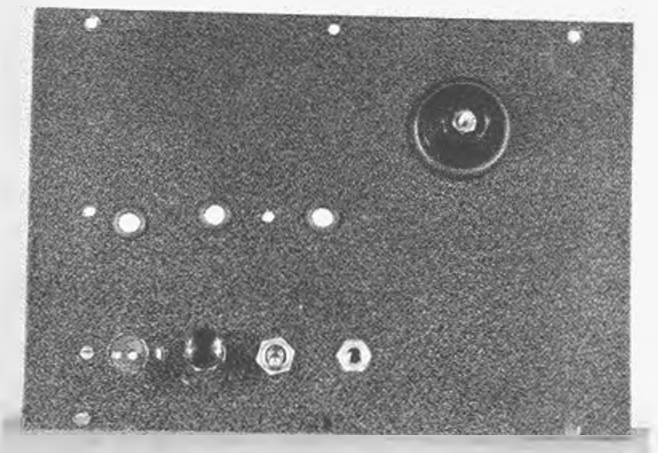


Location of the switches, jack, two-pin socket for keying lead, the antenna post, looking toward the top of the case. Oscillator is sure fire.



Front view of the transmitter chassis. One of the very great advantages of this type of circuit is freedom from accidental detuning of antenna.

Compare this photo of the top of the case with the second picture above. The tubes are a 3A4 and a 3D6. Also compare the picture with Figure 3.



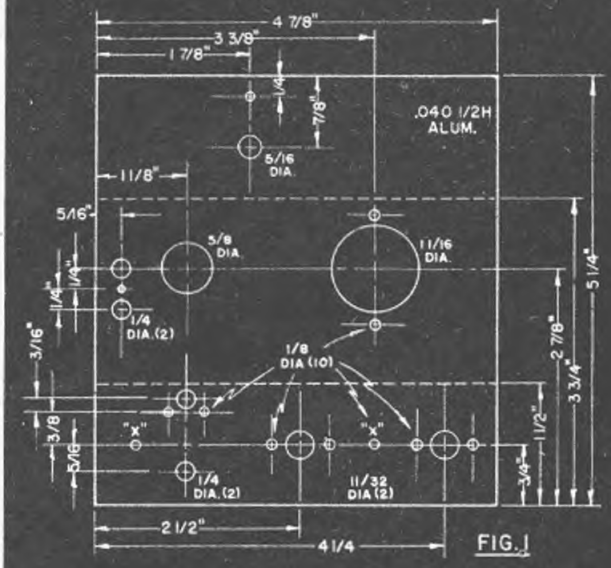


FIG. 1

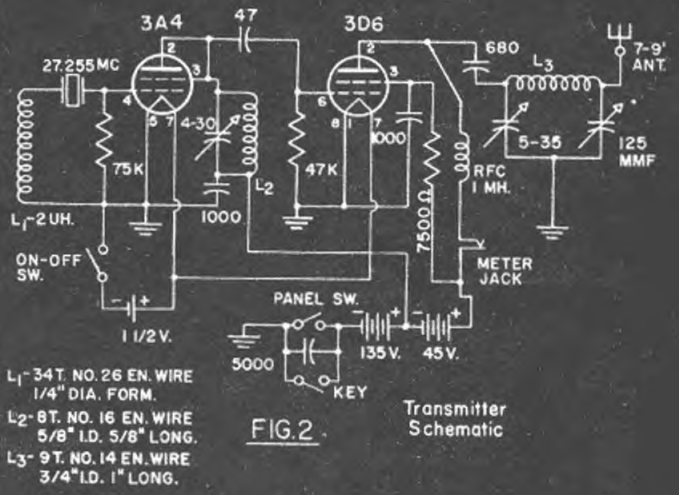


FIG. 2 Transmitter Schematic

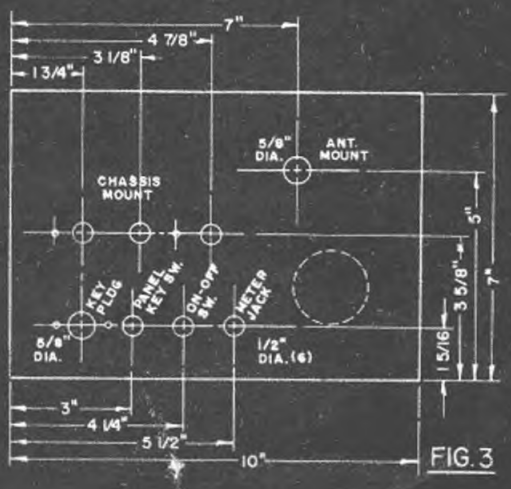


FIG. 3

WING PLAN MAY BE DRAWN AS A SPAR LAYOUT WITH RIB LOCATIONS AT RIGHT ANGLES. RIBS MOUNTED ON SPAR WILL PROVIDE PROPER CHORD LENGTHS AND TAPER IN THE OUTBOARD PANELS.

5-1/2" POLYHEDRAL AT RIB

SOFT BLOCK

3/32" SHEET WING RIBS

2-1/2" RIB SPACING

19"

3/16" SHEET WING FLOAT REST

7/8" TAPERED TRAILING EDGE

WIRE HOOK TO PULL FLOAT ATTACHMENT RUBBER BANDS THROUGH HOLE IN SPAR.

1" DIHEDRAL AT RIB

3/16" SHEET SPAR GUSSET

1/4" X 7/16" WING SPAR

MACH. SCREWS THRU FIREWALL

3/32" ALUM. ADAPTER PLATE

REFER TO THIS DETAIL FOR CENTER SECTION GUSSETS.

WALKER PRESSURE TANK LOCATION

9-1/8"

3/32" SHEET TOP AND BOTTOM

DOWEL

15"

1/2" X 5/8" LEADING EDGE

MAKE ONE RIGHT AND ONE LEFT.

1/16" ALUM. SHEET LANDING GEAR. ROUND EDGES TO PREVENT SCUFFING.

CHECK ALL HATCHES TO MAKE SURE THEY ARE PULLED DOWN TIGHT BEFORE FLYING.

SOLDER WIRE BRACKETS TO BOLT HEADS, AND PRESS ENDS INTO FIREWALL.

3/16" PLY FIREWALL

DRILL OUT FOR TIMER

1/2" GRID

1/8" SHEET TOP PLANKING

1/2" SHEET BALSA HATCH

3/16" DOWEL

RECEIVER

DOWEL

1/2" BALSA HATCH

LAUNCH DIRECTLY INTO WIND WITH TRANSMITTER SET TO MAINTAIN STRAIGHT TAKE-OFF RUN.

LASH GEAR AROUND HULL WITH RUBBER

FOAM RUBBER GASKET STRIP CEMENTED TO THE RADIO COMPARTMENT CUT-OUT

JACK

SWITCHES

1/4" SQ. CORNERS

SOFT BLOCK

WALKER PRESSURE TANK

FOAM RUBBER SHOCK PADS

FOAM RUBBER

RHEOSTAT

1/4" X 3/4" REST

.15 TO .23 ENGINES (GLOW PLUG) MOUNT ENGINE ON ADAPTER PLATE

3/16" DOWEL

FOAM RUBBER GASKET STRIP

HEAVY RUBBER BANDS TO DRAW HATCH TIGHT TO PREVENT LEAKS.

C.G. LOCATION

PYLON

3/16" DOWEL

3/16" SHEET FORMER

SIDE VIEW PLANKING OMITTED

1/4 SCALE PLANS

OPTIONAL PAA-LOAD DUMMY

OPTIONAL CANOPY

RADIO SWITCH EXTENSIONS

3/32" SHEET PLANKING

ROLLED PAPER

ESCAPEMENT RUBBER

CEMENT CELLULOID OVER OPENING

SILK OR NYLON HULL COVERING

BATTERIES

1/8" SHEET SIDE PLANKING

WATER LINE

1/2" GRID

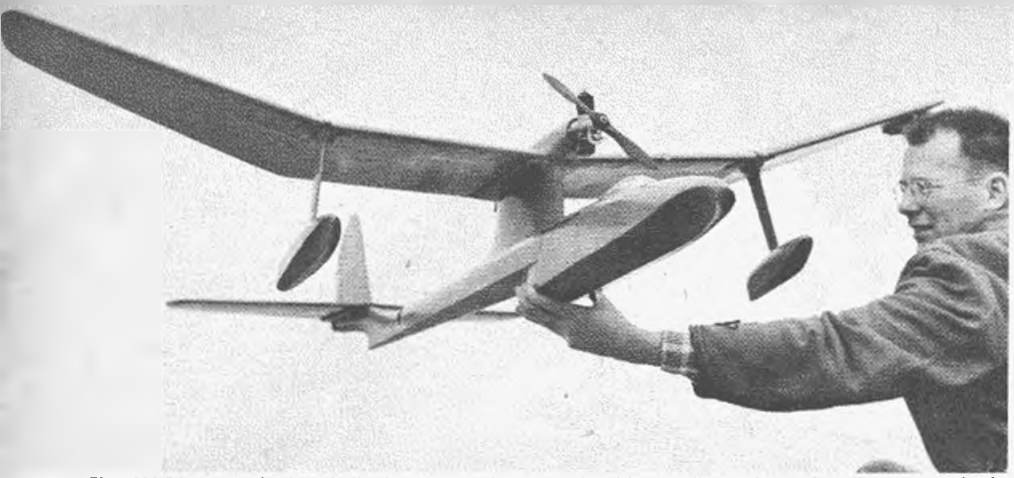
1/8" SHEET

1/4" SHEET PYLON TRAIL EDGE

WING FLOAT LOCATION

TRACED BY: DON McGOVERN

ENLARGE NECESSARY AREAS OF THE HULL SIDE VIEW WITH DIVIDERS. USE WATER LINE AS A REFERANCE LINE. IT IS NOT NECESSARY TO ENLARGE MOST OF TOP VIEW.



The NACA-type planing hull shows to advantage in this excellent photo. Tip floats are shock mounted; slight polyhedral in wing reduces float strut length. High thrustline makes good power flight.

SEA CAT

by HENRY STRUCK

If you live near water you do not have a flying site problem. This RC or free flight amphib a beautiful flier.

Are you looking for a mile square, level flying site? Well, there are plenty of them around, and no permits are required for their use. Of course, there are a few minor discomforts you must endure, such as spending days out in the warm sun, away from crowds, poison ivy covered trees, rocky fields and housing developments.

All of which is just one way of saying that you haven't really enjoyed model flying until you have tried flying boats.

To participate in this ultimate in sport, we present the Sea Cat, developed through the years. The original configuration of hull and engine in pylon mounted wing was built and flown 'way back in 1941, with its water characteristics revealing the ignorance of its designer.

However, in the air, it promised much. When in 1945 the NACA planing tail hull designs were developed, the basis of a really high performance flying boat became available. These long, narrow, deep draft hulls, besides offering greatly reduced air drag, maintain an almost constant trim angle throughout the take-off run, eliminating the necessity of rocking up on the step. Further, with the long tail of the hull in the water until sufficient air speed for control is reached, the tendency to yaw off course is reduced, and with two point planing, porpoising is eliminated.

With these fine hull designs available, the next real problem was lateral stability on the water. Sponsons projecting from the hull seemed to be the immediate answer, but their small righting moment necessitated extreme large size. An added disadvantage was their rigid attachment to the hull. So we came to the old reliable "tip float," which was not practical at the tip because of the large amount of dihedral a free flight flying boat would require.

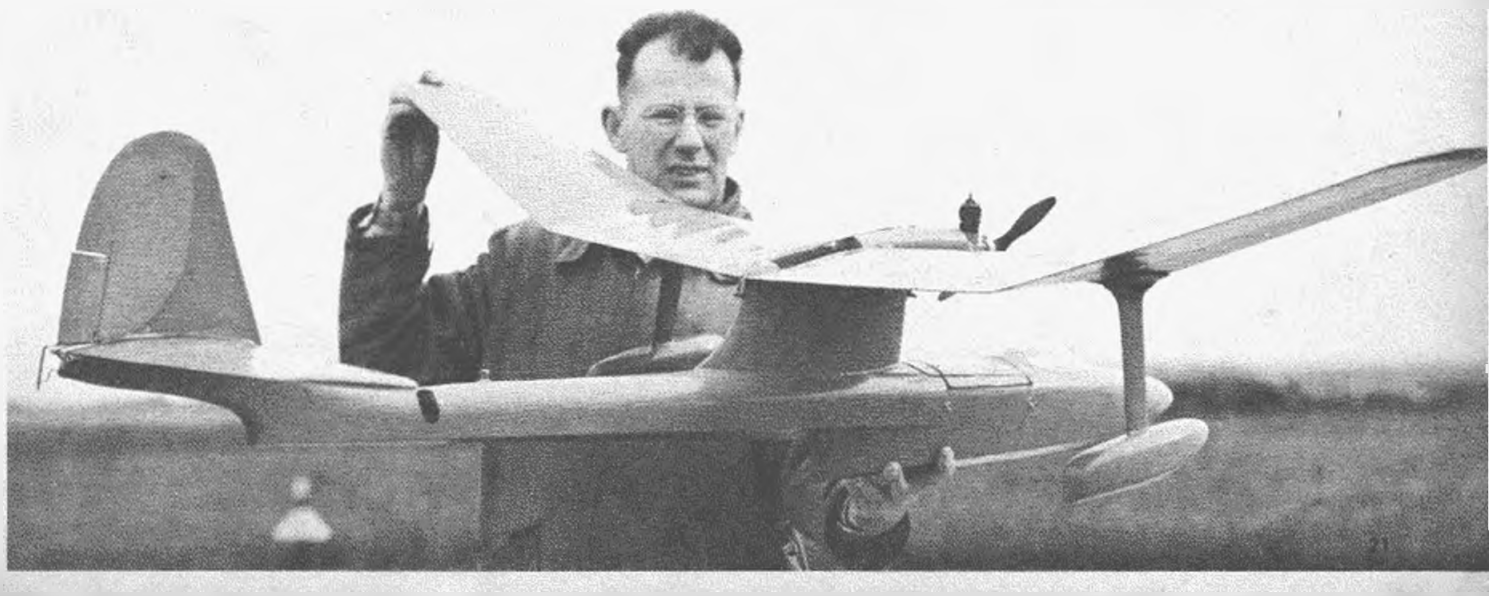
Years of research and development went into development of a design with excellent ROW characteristics. Model weighs 64 oz., gets off in 50 ft.

The compromise arrived at on the Sea Cat is to use very little center dihedral. The rubber shock-mounted method developed makes the float assemblies virtually unbreakable and also permits them to be removed easily for land plane flying.

When a bid came from the sponsors of the Plymouth Model Plane Contests to design a plane to fly from the U.S. to Canada to advertise their annual (*Continued on page 23*)

PLANS CONTINUED ON NEXT PAGE

For land plane use, a sheet metal gear straps in place. Plane lands smoothly on grass without nosing-over. Has great spiral stability.



7/8" TAPERED TRAILING EDGE
LAYOUT STAB PLAN IN SAME MANNER AS WING
3/32" SHEET TOP AND BOTTOM
3/32" SHEET STAB RIBS
3/16" X 3/8" SPAR
1/2" SQ. LEADING EDGE
SOFT BLOCK
WATER LINE
CROSS-SECTIONS
WITH TIP FLOATS REMOVED, MODEL MAY BE FLOWN OVER GRASSY AREAS WITHOUT GEAR
1/4 SCALE PLANS
1/8" PLY ESCAPEMENT MOUNT
ESCAPEMENT
1/4" SHEET GASKET SUPPORT
ESCAPEMENT
CONTROL SHAFT BEARING
1/8" SHEET
1/16" X 1/8" HARDWOOD
HARDWOOD SPRAY STRIP
1/8" SHEET
WING FLOAT
1/8" SHEET
MOISTEN AND FORM OVER FLOAT BEFORE CEMENTING
20 REQUIRED
WING FLOAT CROSS-SECTIONS
1/16" X 1/8" HARDWOOD
10A
11
11A
12
12A
13
LASH BATTERIES SECURELY WITH RUBBER
1/2" SQ. LEADING EDGE
3/16" SHEET TRIM TAB
7/8" TAPERED TRAILING EDGE
1/2" GRID
3/16" SHEET CONTROL TAB
N.A.C.A. 6412 BASIC SECTION
OPEN CHANNEL FOR CONTROL ROD
BATTERIES
RECEIVER
ENLARGE RUDDER WITH SIDE VIEW OF HULL
3/32" SHEET RUDDER RIBS
1/4" SQ. SPAR
1/8" SHEET TAIL BOOM SIDES
9/16" TAIL BOOM CORE
1/8" SHEET
3/32" SHEET RIBS
1/8" SHEET
WATER LINE
DOWEL
PHOTOSTAT ALL RIBS AND CROSS-SECTIONS TO FULL SIZE
1/2 GEAR FRONT VIEW
USE GEAR IF TERRAIN IS CONCRETE OR ROUGH.
1/2" SQ. LEADING EDGE
1/4" X 7/16" WING SPAR
1/2" X 5/8" LEADING EDGE
SIDE VIEW MAY ALSO BE ENLARGED IN TWO PHOTOSTATS IF YOU PREFER. REQUEST 4 TIME ENLARGEMENT MATTE POSITIVE STATS

Sea Cat

(*Continued from page 21*)

meet, one more design change was necessary—to install radio gear! This had to be easily accessible and sealed from the water. Our first attempt wasn't. When the ship failed to take off on its first flight, salt water poured in through the carefully fitted hatch and instantly ruined one RC installation. A foam rubber gasket was put around the hatch and since then no ducking has harmed the RC gear.

On the day of the International flight the wind, of course, swept through from Canada. Late in the day the attempt had to be made. To make certain the engine wouldn't cut out part way across while bucking the wind, we filled the pressure tank to capacity. In about four minutes the ship was across the water, and over the landing spot.

But the engine was still running, the ship climbing, and just barely holding against the strong wind! Ten minutes later, after several spin-downs and consequent loss of headway, the engine stopped, with the model far inland over Canada. After many tense minutes we brought the speck back into plain view and seemed to be coming in for a successful landing in a small cove. It was not to be, however, for we ran out of altitude and smacked into a large tree near the shore. But the first International radio controlled flight was accomplished.

Since then the Sea Cat has been flown many times, both from the water and land, in free flight and under radio control. Landings on grassy fields revealed an unexpected benefit as the ship slides smoothly into a landing without any of the usual nosing-over tendencies. In the air, turns can be made easily with little tendency to spiral dive even with rudder held over for a complete turn, while stall recovery is extremely gentle. These smooth handling characteristics have enabled us to win several places in competition against more conventional contest type radio control craft.

Construction is quite simple considering the advanced design of the model. Cut out the hull former halves of 1/8 sheet and cement at center line, reinforcing with 1/4 sq. stiffeners. Note the 1/2 dia. holes in formers 5 to 10 to accommodate paper tube escapement rubber guide. Cut fuselage sides from 1/8 sheet and mark position of formers. Attach bottom planks, moistening outside of forward planks to form sheets into concave section at bow. Bevel edges of top and side planks and add 1/4 corner plank. Reinforce side of tail boom with sheet applied with grain diagonal.

Cut upper and lower tail boom sections from 9/16 thick balsa. Join sections with 3/16 x 1/4 strips to form passageway for control rod. Fit tail boom assembly in hull. Cement balsa blocks to nose and shape to blend with contours of hull. In sanding down the hull keep corners of bottom sharp to induce water to break from surfaces while ship is planing.

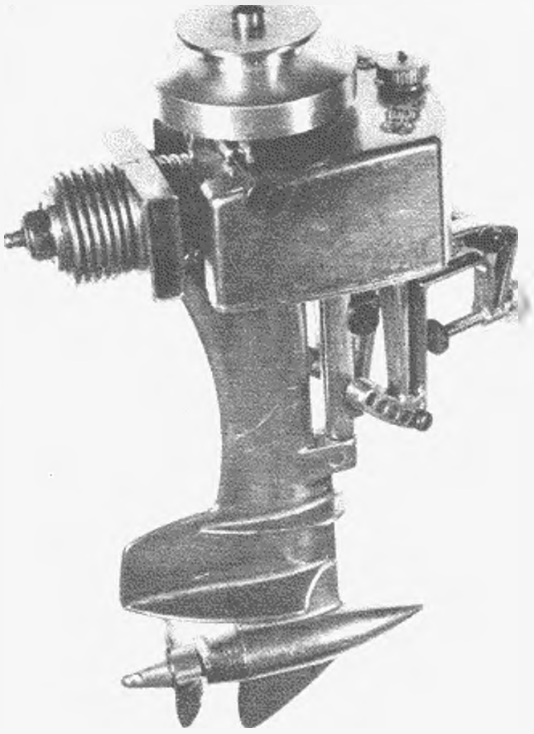
Shape the hatches of soft balsa, 1/2 thick. Fit hatches carefully, beveling edges to provide a good seat on gaskets.

The wing and tail are of rugged construction. Assemble the wing panels on the plan. Join the tip panels to the inboard panels. Note that filler blocks are fitted between the spars at dihedral break to keep wing watertight after drilling for tip float attachment rubber. Join the wing halves at center with gussets, blocking up tips to the correct dihedral while drying.

Cut firewall from 3/16 plywood and drill for engine mounting bolts. Insert bolts from rear of firewall and anchor with bent pins soldered into heads of screws. Shape nacelle from medium balsa block and fit between

(*Continued on page 41*)

ENGINE REVIEW



Biggest thing that has happened in boats so far was the appearance of Half-A outboards. Allyn Sea Fury appraised.

by E. C. MARTIN

If you get a kick out of noise and spray and the smell of screaming engines, this little outboard is a must. There is something about violently agitated water that gives a special kind of thrill, and we earnestly recommend the experience to all tired and jaded aeromodelers.

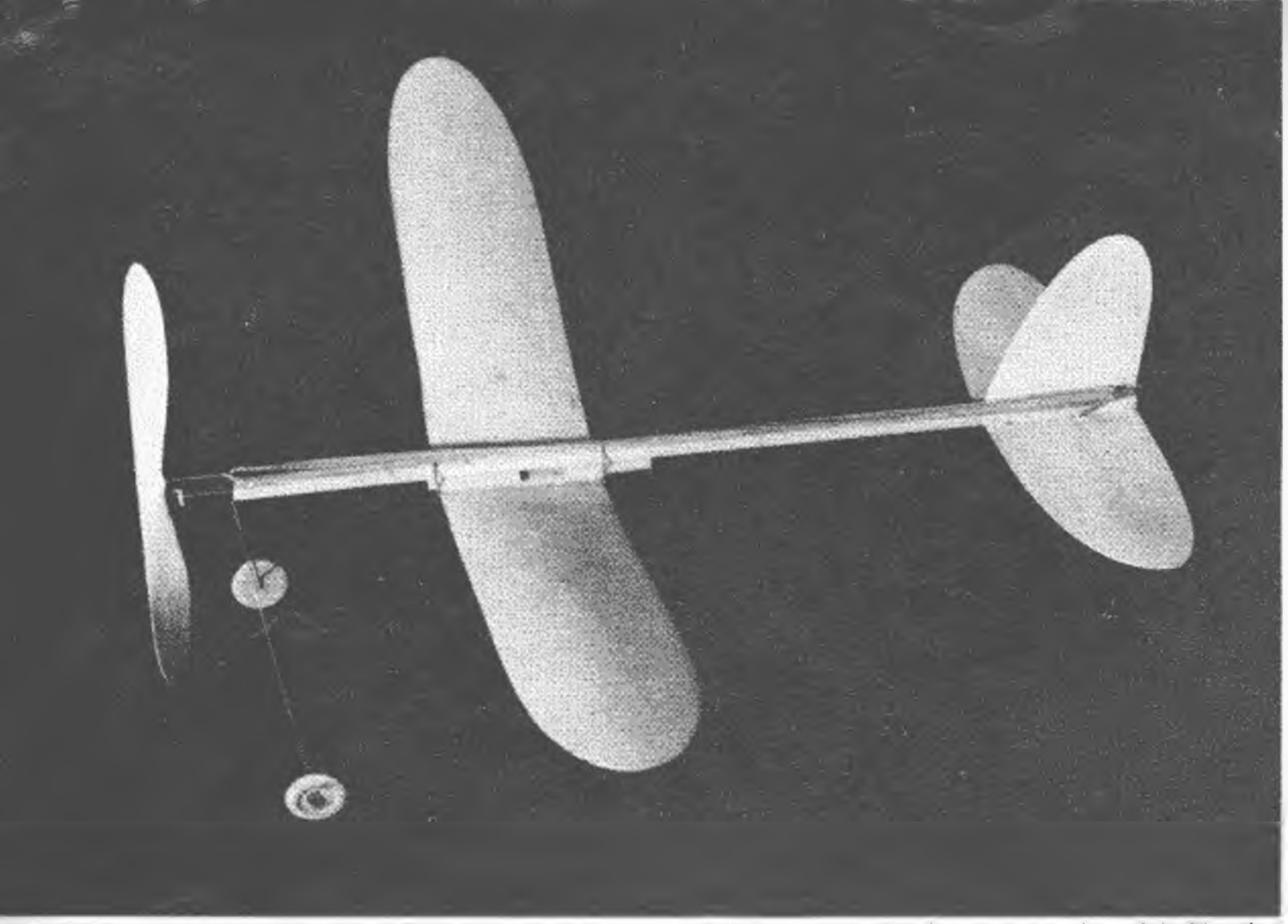
For boat fans of long standing, the Sea Fury provides a power package that merely requires clamping to the transom to be ready for action. Hull construction is therefore simplified, and drive shafts, couplings, etc., are forgotten worries. Experiments in hull design become cheap and easy, and planing trim is simply a matter of mounting adjustment. For the small fry constructing his first boat, less work is required before getting action, and for the full sized outboard pilot, a great deal can be learned about hull design without going to the expense of experimenting with full scale prototypes.

Having, we hope, passed on our own enthusiasm, let us get down to details. The first impressions on taking the Sea Fury out of its attractive window box are the scalish realism, excellent finish and light weight. Next is the fact that it is based on the Sky Fury engine recently tested in the May, 1954 issue of MAN, and finally, the discovery that rotation is clockwise.

Out comes the screwdriver and, sure enough, the crankshaft is modified, having reverse port timing, and an extended crankpin which drives a hardened steel disc, in similar manner to a disc rotary valve, for power take-off to the prop. Clockwise rotation has the signal advantage of permitting the use of right hand threads throughout. The large die cast fuel tank into which the engine is recessed has a bottom plate, resin bonded to the tank, with a boss forming the rear cover onto which the crankcase seats with a paper joint gasket. The boss is reamed to a good fit for the drive disc stub shaft bearing, and has clearance holes around it for three radial engine mounting screws which screw it into the lower end housing which seats on the lower end of the tank plate and boss.

The lower end housing carries the drive shaft (*Continued on page 49*)

CLOUD TRAMP



For forty years, Charlie Grant has experimented with fundamental rubber-powered models like the Cloud Tramp. The proportions and areas in this photograph make for sport performance second to none.

by CHARLES H. GRANT

▼

This may be a beginner's model but its performance commands respect. Put one together and fly it whenever all the complicated stuff gets you down. All balsa.

▶ Why are you a model fan? Is it because you enjoy the frustration born of balky gas engines with only an occasional flight; because you enjoy the labor of building intricate structures; because you thrill to the tug of a motorized "yo-yo," roaring through repeated circles at the end of restraining control lines; or is it because you reap deep satisfaction from *repeated, realistic, completely stable free flights* requiring *minimum construction effort* and *damage repair?* If you prefer the latter, build this simple model. It will give you as many as 20 to 30 thrilling flights in an afternoon, without breakage, and all within the bounds of a baseball park.

Longer flights of a minute or more to altitudes of more than 300 ft. can be obtained by lubricating the motor with glycerine, stretching it 2½ times its length and winding it to 900 turns. The motor should not be wound *more* than 400 turns when it is dry and wound by hand.

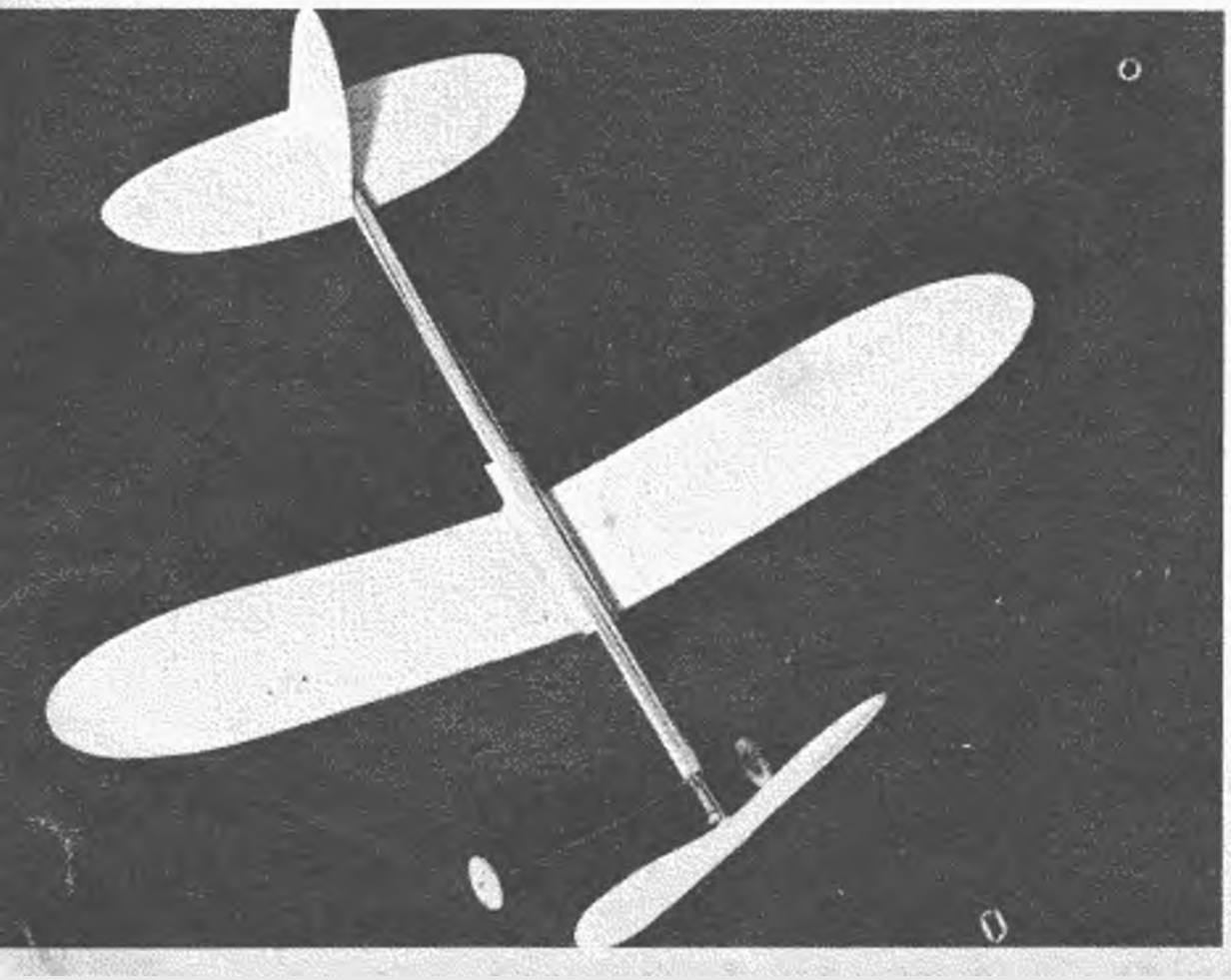
Study the plans carefully and before you start building be sure you know the exact function, material, size and shape of each part and how all parts are placed and held together in the assembly.

Start with *balsa sheet:* medium hard, 40 in. total length, 3 in. wide, 3/64 in. thick. From this, cut the wing, 22 in. long; the stabilizers, 10 in. long; and the fin, 3-3/4 in. high. Shape the wing tips, the stabilizer and fin outlines all according to the patterns given full scale in the plans.

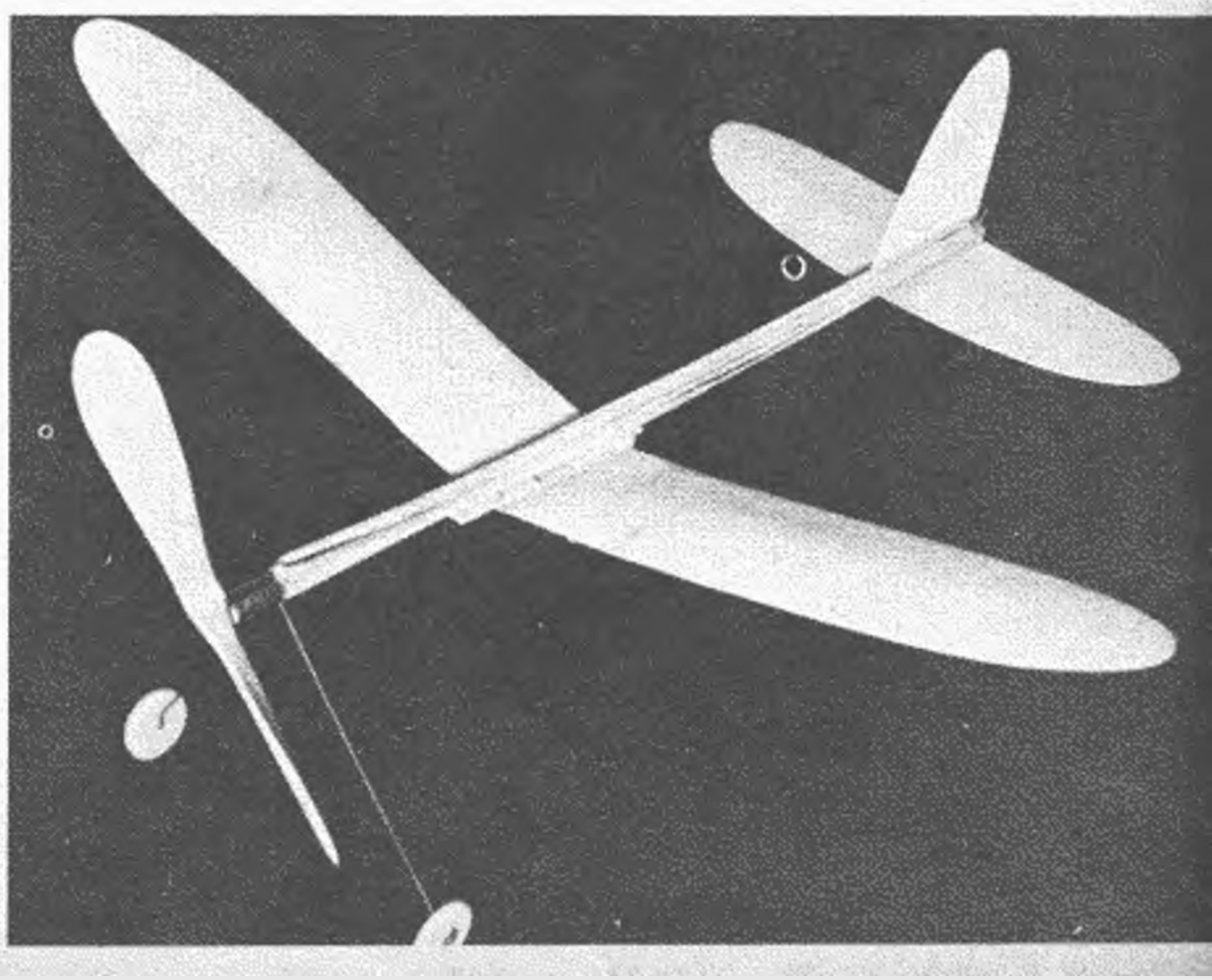
From *balsa sheet,* medium hard, 4 in. long, 3 in. wide, 1/8 in. thick, cut wing incidence block and four ribs to the exact outline given in the plans. Then use:

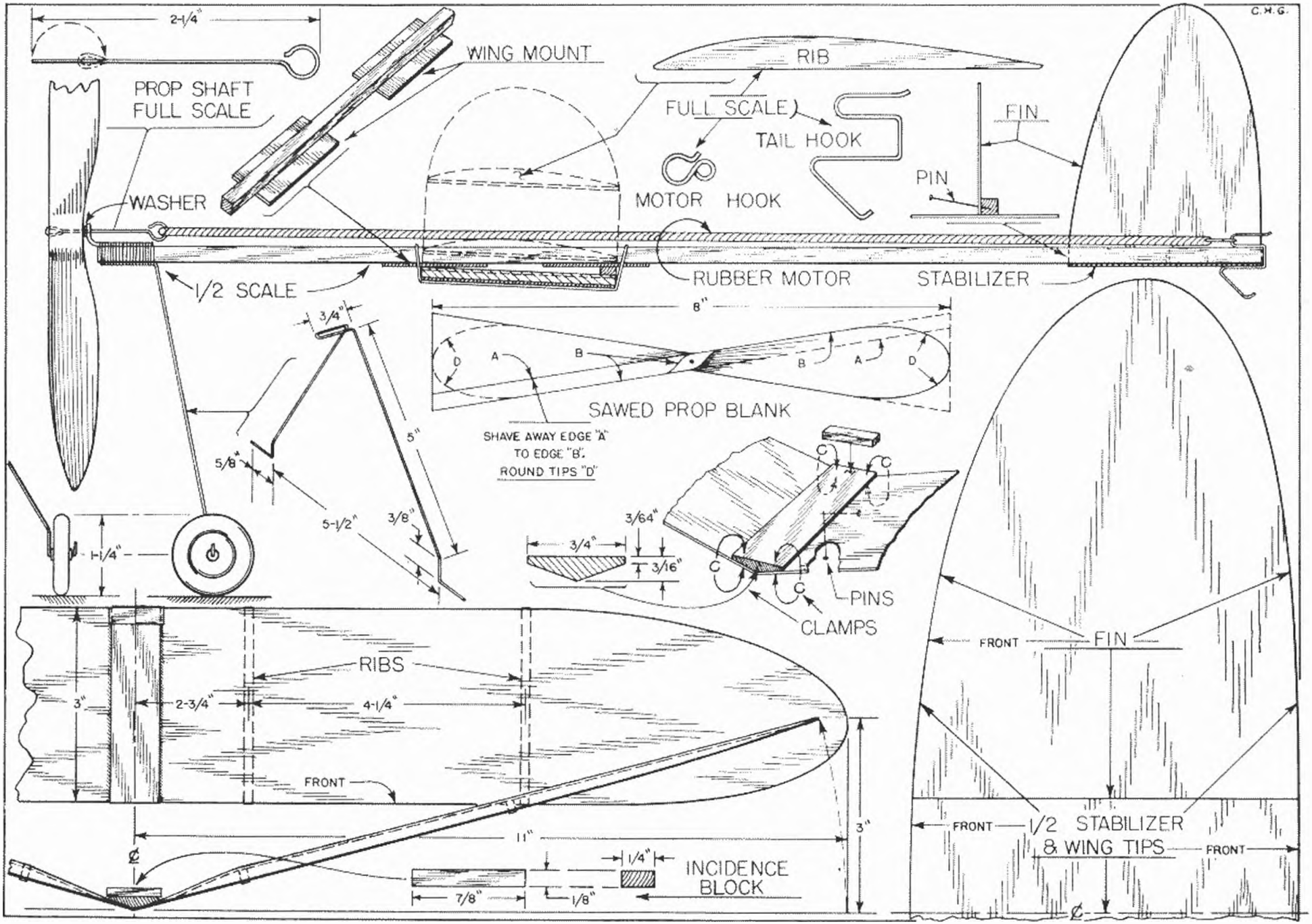
Balsa: medium hard, 4 in. long, 3/4 in. wide, 3/16 in. thick. Cut wing center block from this to length and cross-section shown in (*Continued on page 48*)

Cambered sheet balsa wing that makes the ship so efficient is easy to make if directions are followed. The prop is made from hobby shop blank.



Method of cementing fin to stick side is simplest. Allows rubber to run length of stick. Wing attaches by rubberband, slides to adjust model.




C.H.G.
2-1/4"
PROP SHAFT
FULL SCALE
WASHER
WING MOUNT
RIB
FULL SCALE
TAIL HOOK
MOTOR HOOK
FIN
PIN
RUBBER MOTOR
STABILIZER
1/2 SCALE
3/4"
5"
5/8"
5-1/2"
3/8"
1-1/4"
8"
D
A
B
B
A
D
SAWED PROP BLANK
SHAVE AWAY EDGE "A"
TO EDGE "B".
ROUND TIPS "D"
3/64"
3/4"
3/16"
C
C
C
C
PINS
CLAMPS
RIBS
3"
2-3/4"
4-1/4"
FRONT
11"
3"
1/4"
7/8"
1/8"
INCIDENCE
BLOCK
FRONT
FIN
FRONT
1/2 STABILIZER
& WING TIPS
FRONT

Elisea Scotto with the Argentine Wakefield, comparatively simple, old fashioned, which, with minor material changes, can compete in '54.

The Argentinan

by BILL DEAN with ELISEO SCOTTO

▶ At the '53 Wakefield Contest at Cranfield, England, no less than three entrants scored three-flight maximums of 15 minutes—with America's Joe Foster placing top in the subsequent fly-off, to collect the famed Blue-Riband rubber trophy. However, in accordance with the existing rules, the official result was that the Wakefield *Contest* was won jointly by the U.S.A., Great Britain and Argentina—the three countries which tied at the end of the third round. Foster's model has already been featured in MAN and now we give you Eliseo Scotto's Argentine design—a sleek polyhedralled slabsider with a two-bladed folding prop.

The one-quarter scale plan on the adjoining page is fully dimensioned for enlarging—while full size root and tip ribs for wing, stab and fin are given at the end of this article. The original model had a very light airframe, but now that rubber weight for future contests has been cut to 2.82 oz., harder balsa may be used to bring the all-up weight to the required minimum of 8.113 oz. Bearing this weight question in mind, the *larger* of the nearest fractional sizes have been chosen in converting material sizes from millimeters to inches. For flying under the new rules, Scotto specifies about 40 ft. of 1/4 x 1/24 Pirelli arranged in 14 strands (tensioned to the 31-1/4 in. distance between hooks)—turning a 19 in. dia. prop of 27 in. pitch.

At the Cranfield Contest, the model was flown on a 32 strand motor of 1/8 x 1/24 Pirelli. The prop used was a 19-1/2 in. dia. x 30 in. pitch, as shown on the plan. Number of turns in each of the three rounds were 1300, 1320 and 1380. Unfortunately, this killed the motor, and for the fly-off, a new unbroken-in one had to be used, which was only given 920 turns. Tests in as near as possible still-air conditions have shown an average duration of 4:30 for this model.

After preparing full size working plans, start off by cutting out all the sheet parts and selecting good tough balsa for the spars and longerons. A few small pieces of 1/32 in. and 1/16 in. ply will be needed for reinforcing various vulnerable points.

Build two fuselage sides in the usual way, joining pieces of 1/8 in. strip aft of the take-off peg location to obtain the 40 in. longerons. Use 3/32 x 1/8 in. strip for the cross pieces and diagonals. Leave out the 1/32 in. sheeting at the stab. position for the time being. When sides are dry, lift up from the plan, carefully slice apart with a razor blade and join with the horizontal cross braces at the parallel portion of the fuselage. Allow to set firmly, then pull in at the nose and tail, adding the 1/8 in. sheet nose pieces (note 1/16 in. right thrust) and the remaining 3/32 x 1/8 in. cross pieces.

Cement the 1/32 in. ply facing (X) to the nose and add the 1/32 in. sheet fill-in at the tail end. Shape the 3/16 in. dia. take-off peg from an 11-1/4 in. strip of 1/4 in. sq. hard balsa and cement a length of thread to the leading edge. If the peg breaks, the stub can then be pulled out by the thread. Roll a paper tube to take the peg, then cement the tube in place—reinforcing with triangular 1/8 in. sheet pieces. Make the underslug "blister" by cement- (*Continued on page* 39)

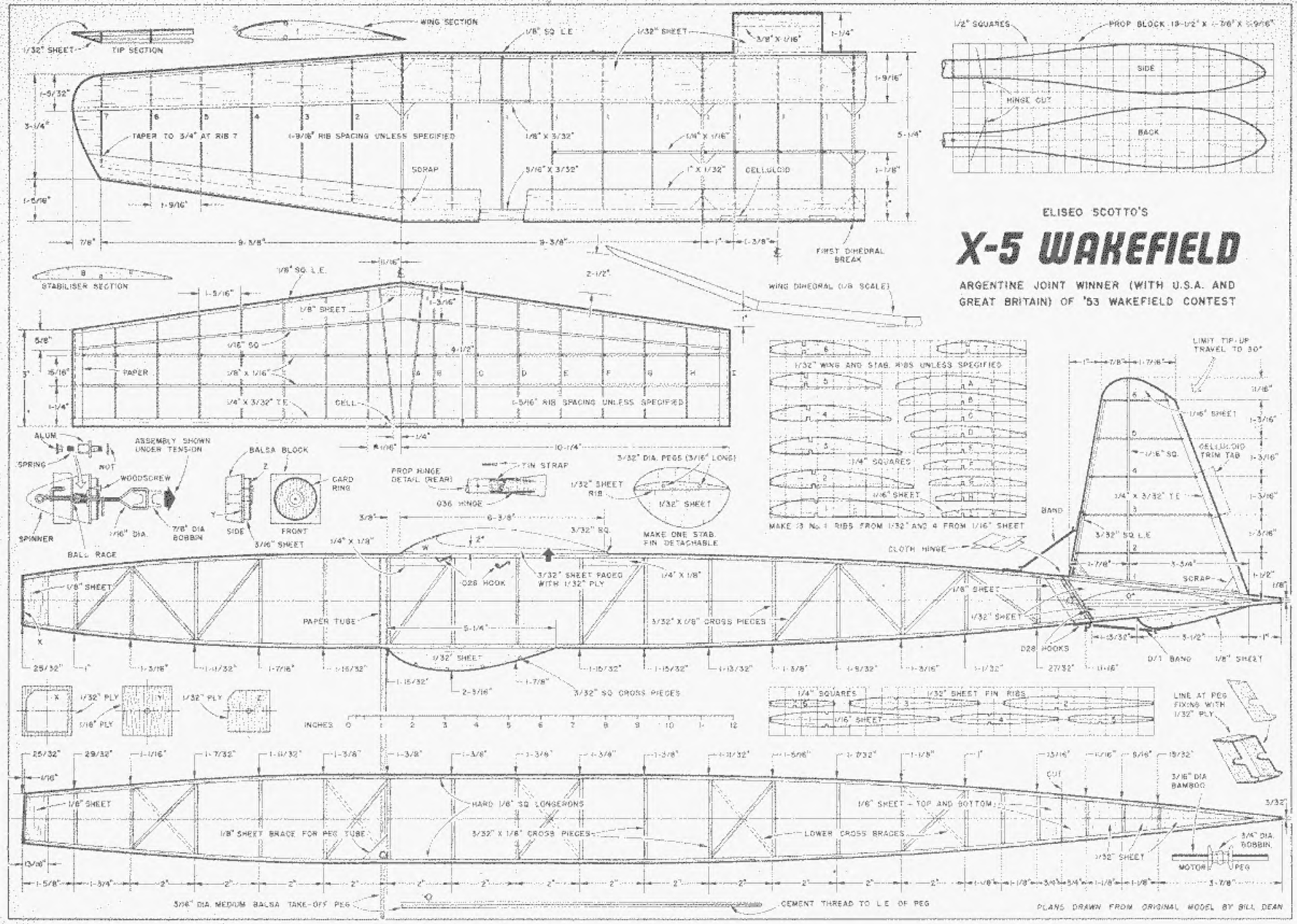
After three maximum flights, this model had to make the famous fourth round last year, with new motor wound 75 per cent. Averages 4:30.

The Great South American model that tied Britain and America in the last Wakefield contest. Rubber event fans will find it easy to enlarge quarter scale plans, opposite.

ELISEO SCOTTO'S

X-5 WAKEFIELD

ARGENTINE JOINT WINNER (WITH U.S.A. AND GREAT BRITAIN) OF '53 WAKEFIELD CONTEST



PLANS DRAWN FROM ORIGINAL MODEL BY BILL DEAN

TOP POWER *formance*

FOR YOUR STUNT, CONTEST, OR JUST-FOR-

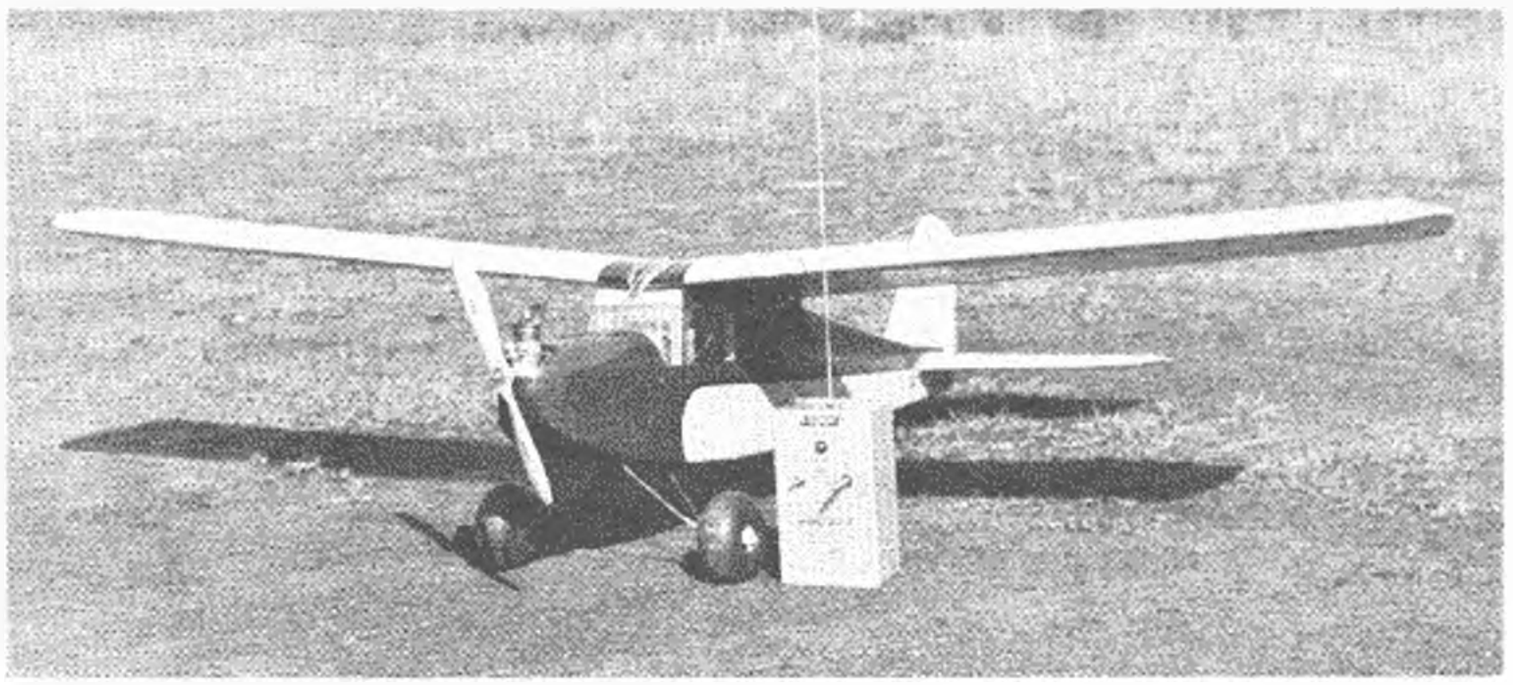
THE OUTSTANDING *All-Purpose* FUEL FOR EVER

TESTOR CHEMICAL COMPANY • ROCKFORD, IL


...
UN FLYING!
TESTORS
"32"
CAUTION
INFLAMMABLE
MIXTURE
DO NOT USE
NEAR FIRE
OR FLAME
THE PERFECT AVIATION FUEL
FOR All MODEL ENGINES
A Product of
TESTOR CHEMICAL COMPANY
ROCKFORD, ILLINOIS
RY STANDARD MODEL ENGINE...
LLINOIS

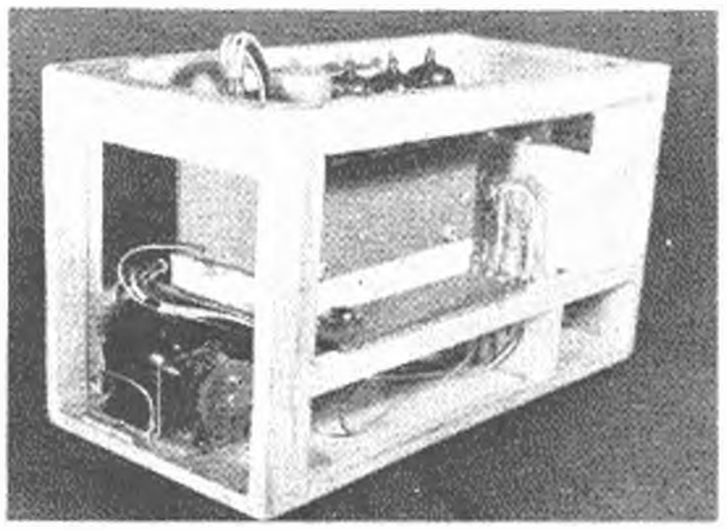
Radio Control News

by E. J. LORENZ



The 1954 Mirror Meet winner, built by Carl Schmaedig of New Jersey. Used multi-channel Babcock with compound escapement and new Bonner elevator trim servo. Engine was Fox .35 with throttle.

Rounding up last minute dope on new gadgets, products, and ideas. Club news and run-down on the Mirror Flying Fair.



DeBolt installation of single-channel Babcock and DMECO servo in a Live Wire removable unit.

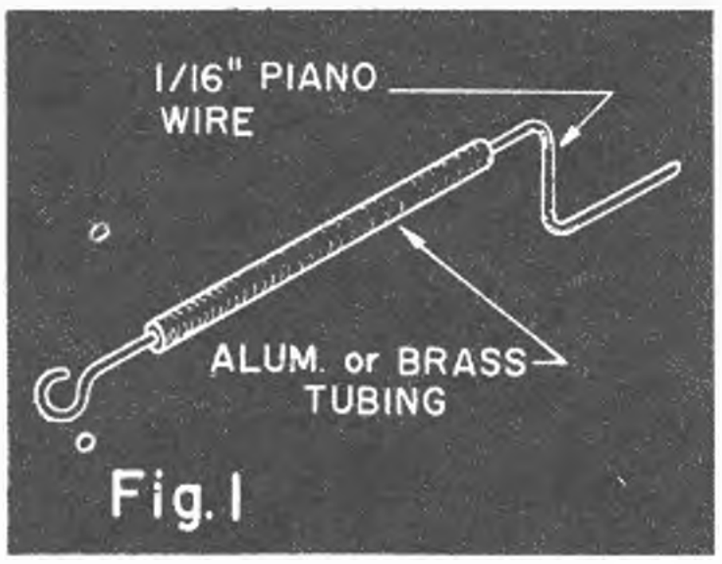


Fig. 1

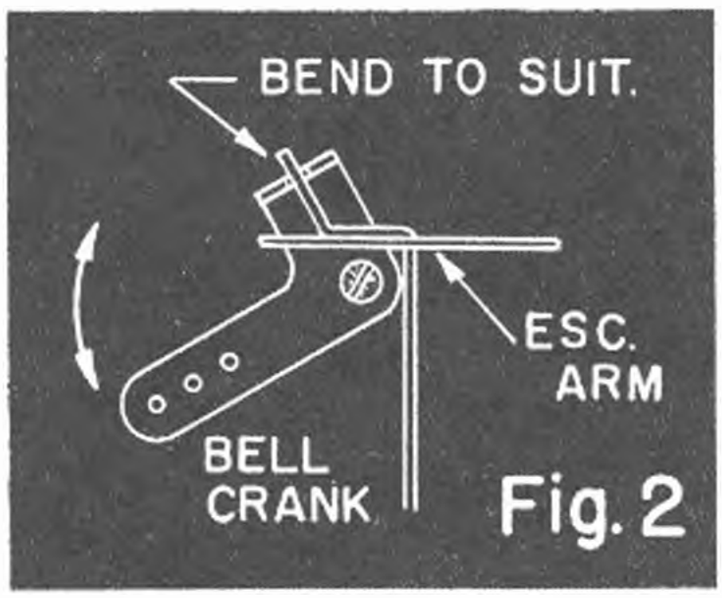


Fig. 2

▶ Ever lose your escapement winder or think that carrying a hand drill around was too bulky? From Ken Hall of Kingston, N. Y., we have a simple winder (Fig. 1) made up from a scrap of tubing and a length of wire. Compact, simple and efficient.

Our pet escapement twist is shown in Fig. 2 and is very useful with the bellcrank unit as supplied in the Live Wire series. Bending the crank throw on the escapement arm as shown in the sketch will eliminate binding in the bellcrank. The angle should be such that the crank throw is perpendicular to the bellcrank yoke when in full left or right position.

Fig. 3 shows how Herman Rau of 421 E. 84th St., New York City, has adapted a Super Aerotrol escapement, working from a Bonner Compound escapement, to give engine control. The Aerotrol escapement is mounted in the cabin of the plane with a simple torque rod linkage running through the firewall to the engine. A small disc is fastened to the end of the linkage, at the engine, to cover the venturi when closed. A small hole should be placed in the disc to allow for the correct amount of air to suit your particular engine. Does it work? The maiden flight of Herm's Rudolph, powered with a K & B .15, was perfect.

In Fig. 4 we have the brain child of E. R. Simpson, E-10 Cabaniss Field, Corpus Christi, Tex. and Del Oiler. This is a clever combination based on the D & D multiple escapement, the Bonner compound, and employing a 10,000 ohm GE relay coil. Mr. Simpson uses this unit with a Lorenz receiver which has a 1V5 in the second stage, 67-1/2 volts (*Continued on page* 50)

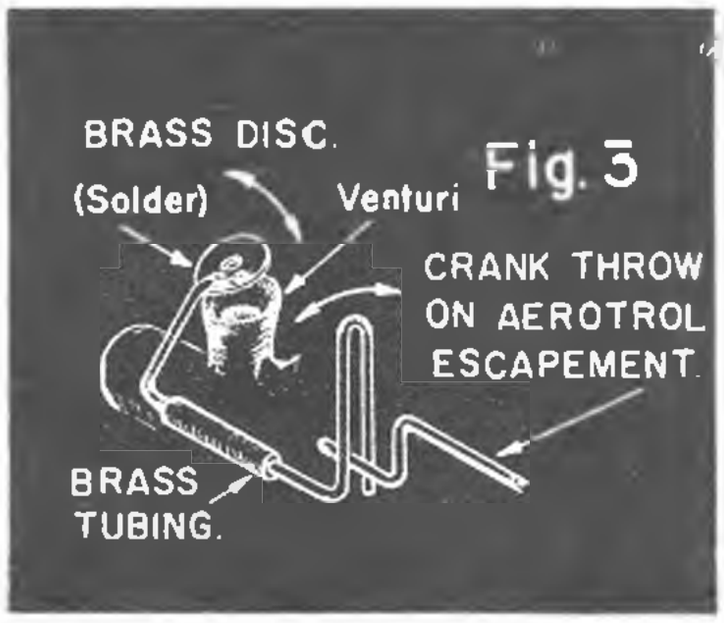


Fig. 3

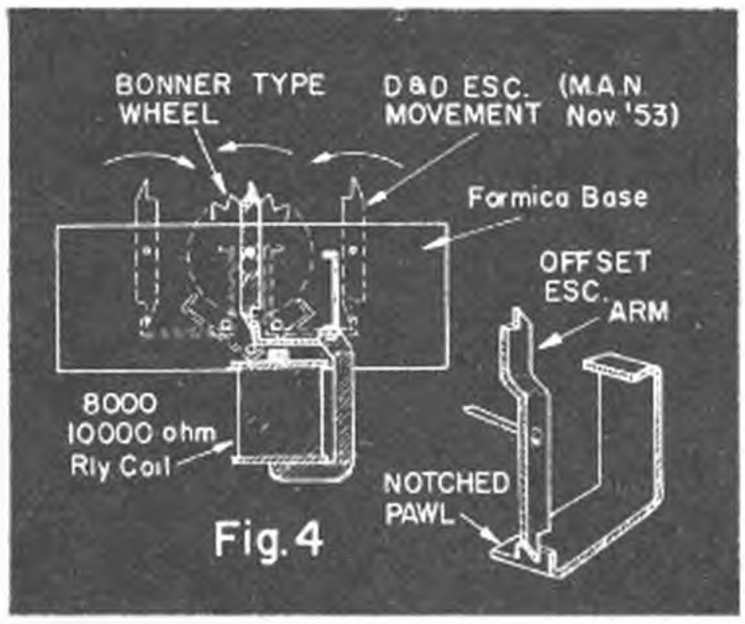


Fig. 4

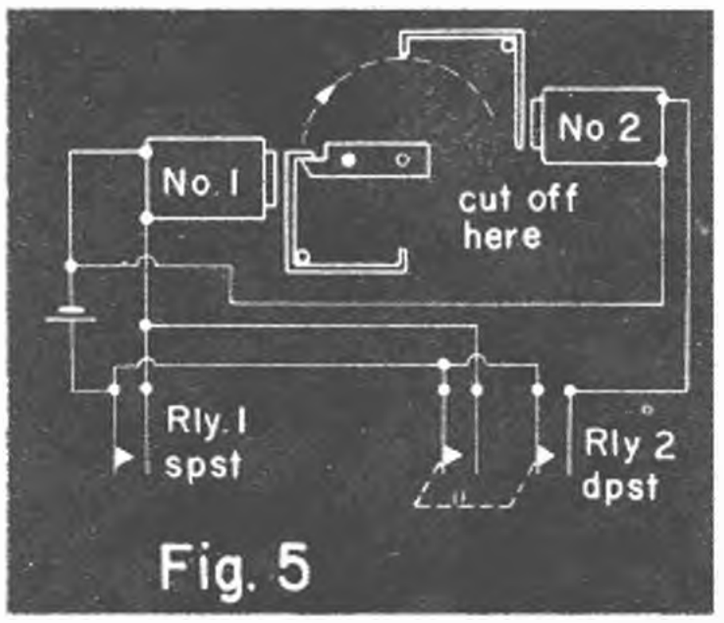


Fig. 5

AMERICAN BOY $1.00
SPAN: 18" For .020 to .074 Eng.
Our U-Control trainer . . . the biggest dollar's worth of model airplane in the world. It's a sleek profile job, 100% complete—100% prefabbed.

MONOCOUPE 90A $1.50
SPAN: 18" For .035 to .074 Eng.
Scale model of America's favorite private plane. Prefabbed kit includes carved balsa fuselage, formed metal cowling, U-Control, etc.

Sun Time is Fun Time

. . . with these action-packed Scientific model thrillers.

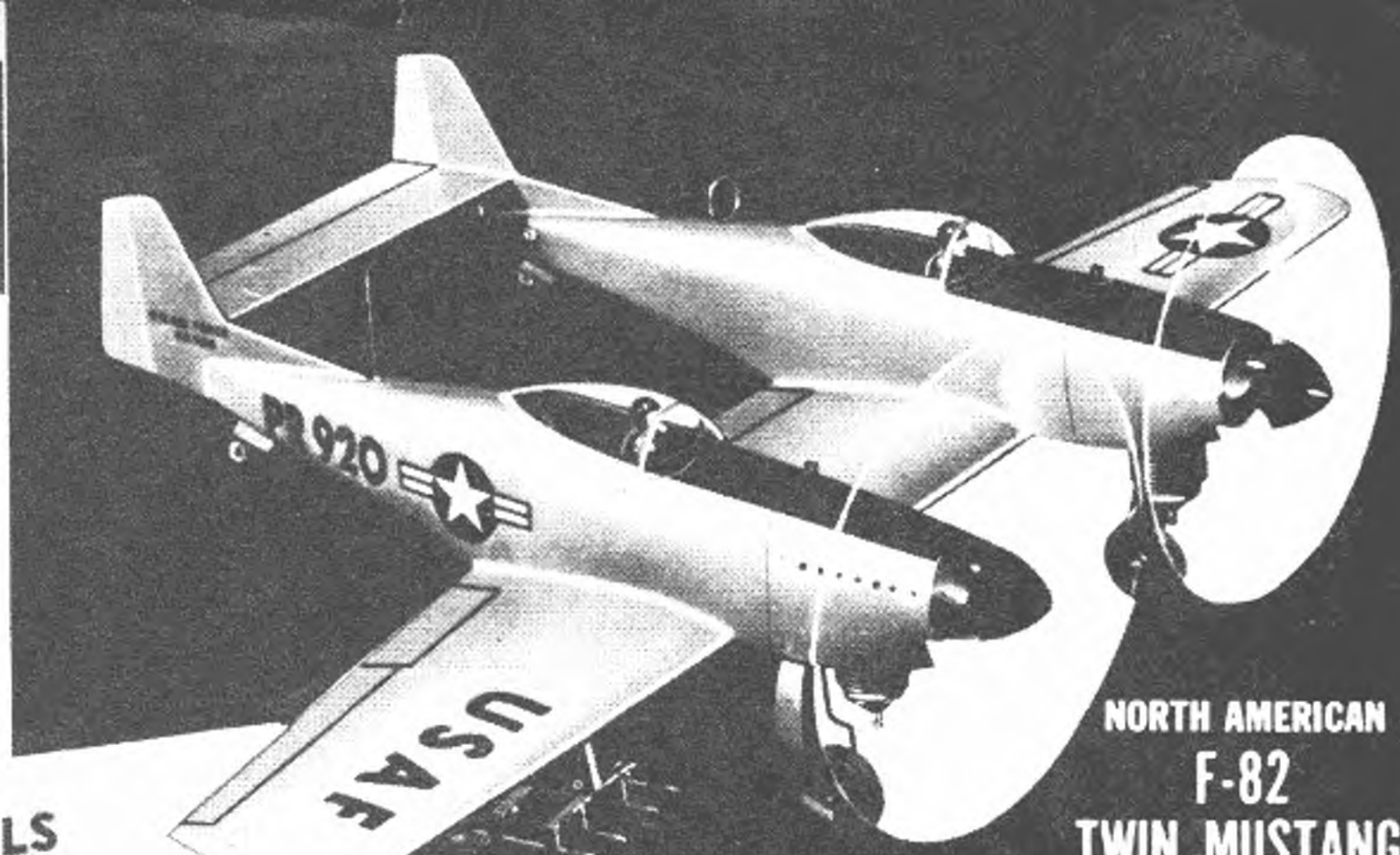
SEE THESE SCIENTIFIC MODELS AT YOUR FAVORITE HOBBY SHOP

BE SPECIFIC SAY—

SCIENTIFIC

SCIENTIFIC MODEL AIRPLANE COMPANY
113 M8 Monroe St., Newark 5, New Jersey

If no dealer is available, add 10c (postage & packing) to cost of model



NORTH AMERICAN F-82 TWIN MUSTANG

WINGSPAN: 18" FOR .035 TO .074 ENGINES

Just released . . . and already one of our record smashing sellers! It's our fabulous F-82 . . . first time as a control-line, fly-it-yourself scale model. Powers with ONE or TWO gas engines. Many hours of test flying prove this! The model flies like a "dream" . . . and it's a downright cinch to assemble. The super-prefabbed kit includes: Two (2) carved balsa fuselages, Airfoil shaped balsa wing, Two (2) formed plastic canopies, Two (2) pilots, Two (2) metal cowlings, etc. etc. **2.95**

PITT'S SPECIAL LITTLE STINKER

WINGSPAN: 16" FOR .020 TO .074 ENGINES

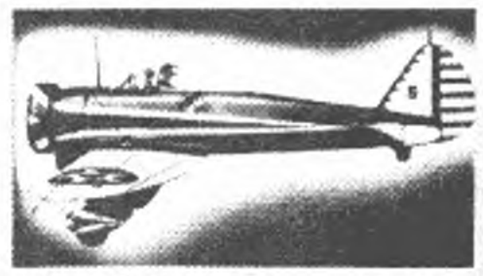
Betty Skelton's championship stunt flyer . . . never before at this low, low price. It's highly colorful — a terrific performer. Prefabbed kit contains carved balsa fuselage, colorful decals, etc. **2.50**

LITTLE BUCKEYE

Our brand-new speedboat sensation! This sleek beauty powers with any "½A" engine, electric motor or Jetex. Prefabbed kit includes 12" carved balsa hull, brass metal fittings, etc. **1.95**

FREE! Scientific Catalog . . . Contains all our exciting action models: Airplanes, Speedboats, Race Cars, etc.

NO. AMER. AT6 $1.95
SPAN: 18" For .035 to .074 Eng.
Our extremely popular scale model of the AT6 Trainer. Prefabbed kit features carved balsa fuselage, etc.

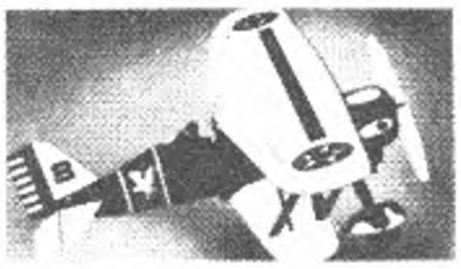


BOEING P-26A $2.95
SPAN: 18" For .020 to .074 Eng.
An excellent control-line flyer. Prefabricated kit is complete in every detail . . . all parts finished.

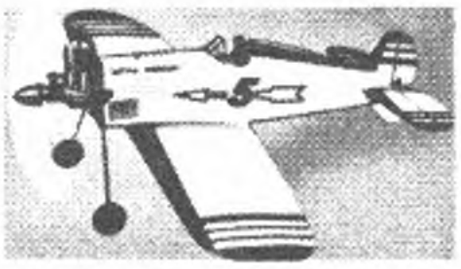
RIVIERA $3.50
For "½A" Eng., Electric Motors
Authentic Chris-Craft replica with a 12" carved balsa hull and brass metal fittings. All parts finished. Completely prefabbed model.

SEA HAWK $2.50
"½A" Eng., CO_2, or Elec. Motors
Features our exclusive aeronautical fin and rudder design. Prefabbed model has a 12" carved balsa hull, brass metal fittings, etc.

BUCKEYE JR. $3.95
LENGTH: 14" For .020 to .074 Eng.
Full speed ahead for thrills with this "beaut" of a speedboat. Prefabbed model is 100% complete—carved balsa hull, brass fittings.



CURTISS HAWK $2.95
SPAN: 17½" For .020 to .074 Eng.
Deluxe U-Control model of the U.S. Army's famous "Hawk" fighter. 100% complete . . . 100% prefabbed. Contains carved balsa fuselage, etc., etc.



LITTLE MERCURY $1.50
SPAN: 18" For .039 to .074 Eng.
Carved fuselage model — at this sensational low price. It's completely prefabbed . . . easy to assemble, easy to fly. Jim Walker's U-Control.

BOEING F4B-4 $2.95
SPAN: 17½" For .020 to .074 Eng.
Deluxe U-Control model. 100% complete—100% prefabbed . . . with carved balsa fuselage, metal cowl, rubber wheels, pilot, etc.

WACO CABIN $1.50
For .020 to .049 Engines
Imagine! This carved fuselage biplane "beauty" for only $1.50. It's semi-scale. Features Jim Walker's U-Control, all prefabricated parts.

LITTLE MUSTANG $1.95
SPAN: 18" For .020 to .074 Engines
Famous escort fighter model. Completely prefabbed. Features carved balsa fuselage, formed balsa wing, etc., etc.

LITTLE DEVIL $1.50
SPAN: 18" For .020 to .074 Eng.
An economically priced U-Control model. Easy to build and fun to fly. Prefabbed parts include: carved balsa fuselage & wing, etc.

FOREIGN NOTES

P. G. F. CHINN

New and fascinating ideas are a dime a dozen. Many of them hold possibilities for the American modeler to try out something new and different.

by P. G. F. CHINN

British 6-Channel RC

George Honnest-Redlich, well known British RC man and designer of ED equipment, has released to us some details of the ED six-channel gear which, it is hoped, will be available before the end of the present season.

Unlike most receivers, which are assembled on a single panel, in the new six-channel job the entire receiving equipment, including six-reed-bank and six relays, is contained in a closed metal box which measures 4-1/2 x 3 x 2-3/4 in. Weight is approximately 9 oz. and battery consumption is lower than that of a single hard-tube type receiver. The three receiver tubes are Mullard deaf-aid type.

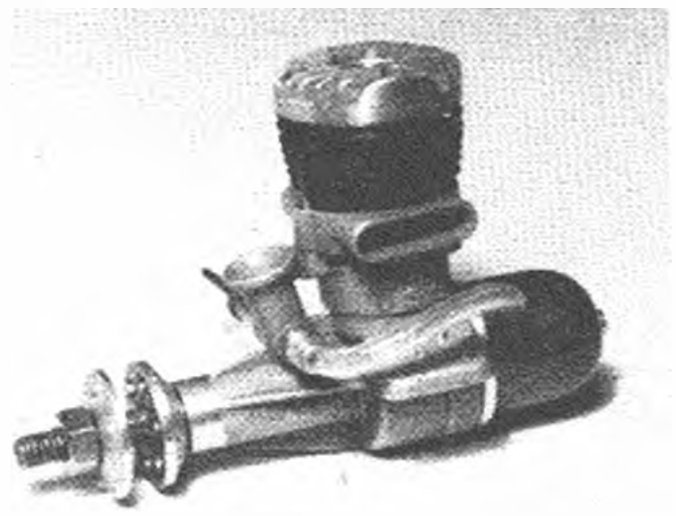
In most other respects, the equipment is similar to the currently available three-channel ED illustrated. Instead of a single self-centering lever switch and one push-button, however, the control box will have two lever switches and two push-buttons.

Speed in Czechoslovakia

As we have remarked before in this column, some fine speed performances have been put up in Czechoslovakia, which are all the more outstanding for the fact that their motors are virtually home-made jobs. But the Czechs have long been noted for their mechanical engineering ability, an example of which is to be seen in the famous Czech-designed, British-built Bren machine-gun, while these notes, in fact, are being written on a Czechoslovakian typewriter.

The extent to which some Czech enthusiasts will go to produce a speed model is quite remarkable. Consider the case of Ervin Napravnik of Prague, pioneer of controlline models in Czechoslovakia. He built a Speedwagon-50 from a deBolt plan in British Model Aircraft magazine. Balsa for it was hacked from lumps salvaged from wartime de Havilland Mosquito fighter-bombers. A McCoy being unobtainable, he built his own motor, including the glow plug.

Nitromethane is also unobtainable in Czechoslovakia, which leads Napravnik to apologize for reaching a speed of *only* 128 mph, a figure which, in the circumstances, we think is pretty good.



New Japanese-built O.S. .099 resembles big brother, O.S. .29. Annular ports, soundly made.

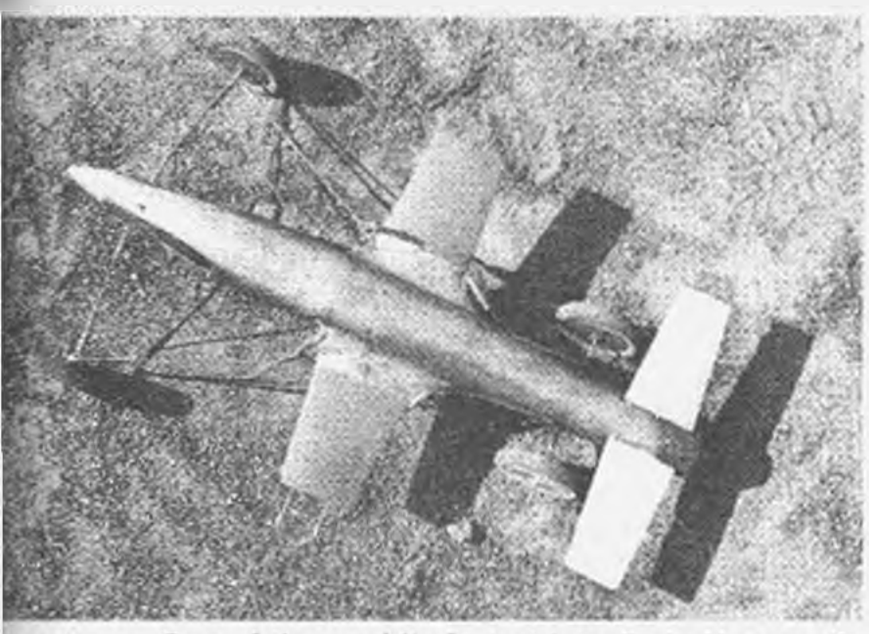
Foreign Reaction to O-Ring Diesels

An appreciative word from us about Argentina's "gomeros" (rubber specialists) and, in particular, of the fine effort of Eliseo Scotto in last year's Wakefield, brought forth a word of thanks from Rooky Carlstein in Buenos Aires, who points out the difficulties under which Argentinan hobbyists labor, such as lack of plans, kits and magazines, props and accessories. Importation of American and other modeling supplies is difficult and subject to considerable delays by government restrictions on the movement of currency—as in so many other countries nowadays, of course.

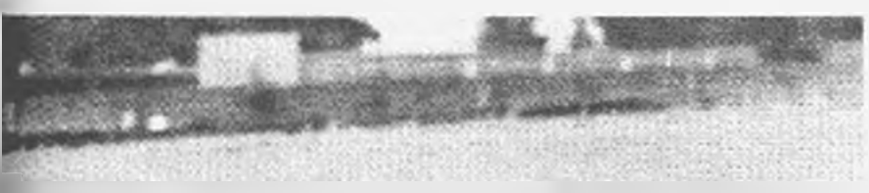
This gave rise to a complaint about the plastic compression ring, employed by the new American Diesels in place of the lapped surface contrapiston used by compression-ignition engines of other countries. Personally, our impressions of the plastic O-ring have been entirely favorable: it has given a better seal and smoother compression adjustment with none of the "freezing" tendencies associated with some lapped contrapistons. Our correspondent's complaint, however, (which is also that of some other foreign users) is that when the ring wears out or breaks, the motor is put out of commission until a replacement can be obtained —and this may take weeks or months.

Possibly the answer to this is for the

Thai Air Force Day saw this turn-out of stunt jobs for annual competition in Siam. High quality of design and building apparent. Hobby popular despite expense. U. S. motor worth two weeks' salary.



One of the world's fastest jets, Ervin Napravnik, Prague, encloses jet within all-metal body.



Front view of Napravnik's jet reveals one of the two air intake orifices. Speeds equal our best.

And here is the Czech ukie pioneer himself, Ervin Napravnik. Made engine and the glow plug.

manufacturer to include a spare O-ring with each motor, as do some manufacturers with spare gaskets. On the other hand, Keith Storey tells us that, using a redesigned ring groove, the life of the Silastic O-ring on the McCoy Diesels is prolonged almost indefinitely. One recommendation that we should like to add is a warning against unnecessary removal of the O ring from the bore once the motor has been run. We suspect that breakages, as apart from normal wear and tear, are almost invariably caused by disturbing the ring needlessly.

Competition for the Torp. 15

The .15 cu. in. German Webra Mach 1 disc-valve, ball-bearing Diesel, which is now claiming attention in Europe, will be boosted to approximately .35 bhp next year, if necessary, the manufacturers inform us. Continued development of the current production model have shown this to be practicable.

Dutch Flying Saucers

Novelty flying saucers have been built both as free flight and controlline models, but mostly to travel horizontally. The free flight saucers of Dutch modeler Claude deVries, however, go up and down vertically and spin

The Argentine 1954 Wakefield team, left to right—Royle, Altamirano, Colombo, Mursep, Benavidez. Royle is a resident Englishman and not eligible. Rules called for 15 flights on eight days' running.

round in the approved comic strip fashion. They are, in effect, helicopters, having up to 16 rotor blades interposed between the center section and outer rim. They are driven, either by two Jetex motors attached to the outer rim, or by a single .03 cu. in. Diesel, such as the Frog-50, mounted in the center-section and driving the disc by contra-rotation.

News from Austria

A new model commission has been formed in the Austrian Aero Club to handle model aircraft competition activities.

Oskar Czepa, who won the world model glider championship in 1951, thinks that his chances of getting into the 1954 Austrian A.2 team, to fly in Denmark, are slim. He cites high times now being put up by fellow countrymen who will be competing for team places. Czepa's new A.2 is, once again, an out-of-the-rut design, has high aspect-ratio wing of nearly 9 ft. span!

A quantity-built Austrian engine has yet to appear, but a small number of Vitus Diesels and another, as yet unnamed, Viennese .15 cu. in. Diesel, have been built.

News from Thailand

Modeling is on a small scale in Thailand (Siam) but what they lack in numbers, Thai modelers seem to make up in energy and enthusiasm. Every year the Thai Air Force sponsors a competition on Air Force Day. A good deal of emphasis is on controlline, notably stunt, and much U.S. influence is evident in the design of models seen. Sport, scale, rubber and glider categories are also well supported but lack of flying sites (this seems to be a world-wide affliction) discourage free flight. Speed, too, is not favored through lack of enclosed flying space and unruly crowds invading the flying field.

Main trouble facing Thai modelers, however, is the relatively high cost of engines and materials. Cost of a .29-.35 American stunt engine, for example, equals two weeks' earnings of average worker. Japanese engines are cheaper but most builders would prefer U.S. types.

Argentine Team Selection

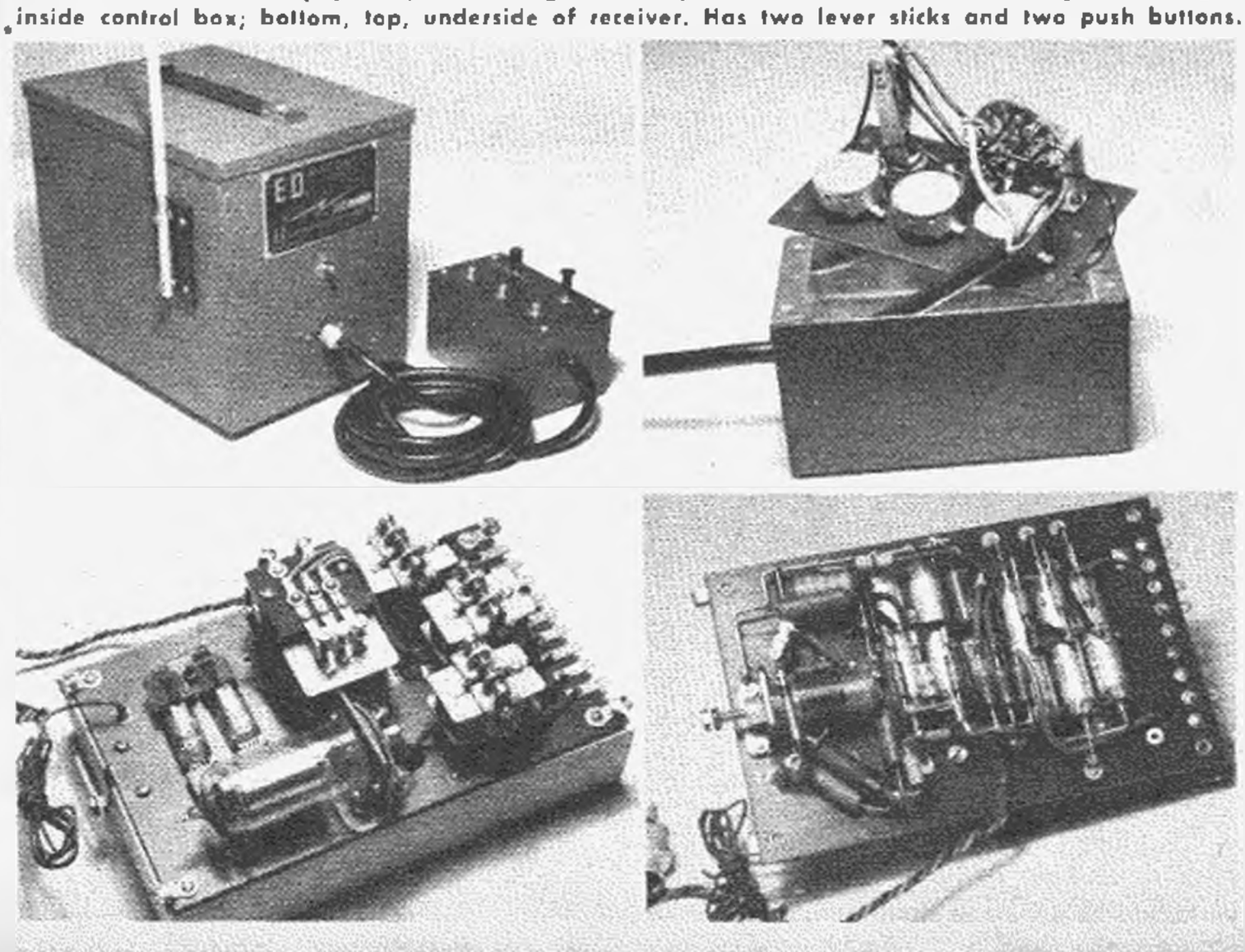
To Senor Fabi Mursep, president of the Federacion Argentina de Aeromodelismo, we are indebted for details of the 1954 Argentine Wakefield Team eliminations. An unusual procedure was adopted, each competitor having to make a total of 15 flights during eight consecutive days. All flights were made after 7 p.m. and with a three-minute maximum.

Under these conditions, the former British Wakefield team member, John (Pop) Royle, who is currently resident in Argentina, placed first with an aggregate of 44 min. 41 sec. Royle flew for fun, not being eligible for inclusion in the official Argentine team. Next four place men, who will fly in the Wakefield in the U.S., were Cesar Altamirano (44:29), Ernesto Colombo (43:03), Fabi Mursep (40:19) and Eduardo Benavidez (40:00).

It is not stated how many three-minute maximums were included in these times, but it will be noted that the top time is only 19 seconds outside the time needed to make *every* flight a maximum—a little more than one second per flight—which seems to con-

(*Continued on page 42*)

E.D. 3-channel tone equipment, to be augmented by new 6-channel, similar design. Top, right, inside control box; bottom, top, underside of receiver. Has two lever sticks and two push buttons.



GUILLOW'S Gas Model Kits

Control Line! Free Flight! Radio Control!

THE OUTSTANDING PLANES IN EVERY CONTEST

$5.95

Wing Span ..... 47 in.
Engine ..... .23 to .35 disp.

National Champion BARNSTORMER

- '50 & '51 National Stunt Champion.
- Winner of many other state and local contests.
- Beautifully engineered kit — all parts pre-fab for faster assembly.

Enter the winner's circle by flying this proven performer. Widely recognized as one of the nation's tip-top stunt ships.

Baby BARNSTORMER

Wing Span ..... 23½ in.
Engine ..... .035 to .049 disp. **$2.95**

- A junior version of the champion Barnstormer.
- The perfect ship for the new ½ A engines on the market.
- A full stunt job capable of the most intricate maneuvers.
- Completely prefabricated kit features accurate die-cut parts and crystal-clear plans and instructions.

FOR SPORT OR COMBAT FLYING

Trixter PROFILES

CLASS A · B

Wing Span ..... 32 in.
Engine ..... .19 to .35 disp. **$2.50**

CLASS B · C

Wing Span ..... 32 in.
Engine ..... .29 to .35 disp. **$3.50**

- Ideally suited for both combat and sport flying.
- Pre-fab two piece fuselage with hardwood motor mount — can be assembled in a jiffy.
- Performs all the stunts in the official A.M.A. stunt book.
- Flown by many clubs and individuals throughout the country.

NOTE: Engines and hardware not included in Trixter Kits

KIWI

SENSATIONAL FREE FLIGHT KIT

Designed by LEW MAHIEU

Formerly manufactured by K & B Manufacturing Co. Compton, California

GUILLOW KIWI ½ "A"

Wing Span 35 inches
Wing Area 200 sq. inches
Stabilizer area 67 sq. inches
Length 27 inches
Weight 5½ oz.
Engine .049 cu. inch disp.

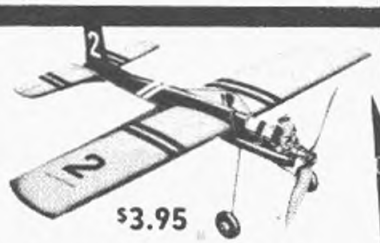
Retail **$2.50**

GUILLOW KIWI "A"

Wing Span 48 inches
Wing Area 375 sq. inches
Stabilizer area 125 sq. inches
Length 38 inches
Weight with K&B .15 15 oz.
Engine .14 to .19 cu. inch disp.

Retail **$4.50**

Engines not included



$3.95

PROFILE TRAINER

Wing Span ..... 32 in.
Engine ..... .19 to .29 disp.

Complete bellcrank assembly.
Elevator horn with mounting bolts.
Wheels. Wheel locks.
Hinging material. Finished push rod.
Finished landing gear.
Finished wing tip line guide.

Trixter BEAM

First Place winner 1953 International RADIO-CONTROL EVENT

$6.95

Radio-controlled for both 465 MC and 27.255 MC License-Free Bands

Wing Span	50.25"	Wing Loading	14-16 oz.
Wing Chord	8.25"	Power	.09 to .14
Effective Area	372"	Category	Radio & Sport
Body Length	35.25"	Ability	Contest & Trainer
Flying Weight	36.5 oz.		

Wheels, liquids, receiver and motor unit not included

NOW ON THE SAME TEAM

LEW MAHIEU

Guillow can now proudly boast of the 2 outstanding designers in the model aviation field. Lou Andrews, twice a champion in national contests, took first place in international competition with the Trixter Beam. Lew Mahieu, designer of the Kiwi, is an internationally known free-flight designer and is former holder of 14 world records. Their combined skills are available to you in these Guillow models.

LOU ANDREWS

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

PAUL K. GUILLOW WAKEFIELD. MASS.

FLASH NEWS

by ROBERT McLARREN

With the DH Comet hamstrung by mystery crashes, Boeing's 707 Jet Stratoliner is revealed.

And still more missiles—this month the Firestone *Corporal*, Douglas *Honest John* and Sperry *Sparrow*. *Corporal* is a huge surface-to-surface guided missile developed from the well known "WAC Corporal" originally tested by California's Institute of Technology. The rocket-powered missile is a long-range artillery weapon capable, of course, of mounting an atomic warhead. *Honest John* is also a surface-to-surface artillery missile but is unguided. It is merely aimed at its target, much as an artillery rifle, and its rocket motor provides several times the range of an equivalent artillery shell. *Sparrow* is a supersonic air-to-air tactical missile carried aboard fighter planes. All three missiles are now in quantity production.

Newest fighter to join the parade of air-to-air refueling is the unique Vought F7U-3 *Cutlass*, which has passed its tests using the "probe and drogue" method developed by Flight Refueling, Inc. The F7U features a retractable nose probe, which is flown into the funnel of a fuel line trailed from a North American AJ-2 *Savage* refueler. The new F7U-3 also mounts a special belly housing containing a large number of 2.75-in. air-to-air rockets in addition to the standard 20 mm aircraft cannon armament. The F7U is the first fighter designed from the start for afterburner engines and its two Westinghouse J46 turbojets carry it to 700 mph speeds.

Republic Aviation has test flown its new F-84J *Thunderstreak* swept-wing jet fighter. The new model is powered by a 9,200-lb. thrust General Electric J73 turbojet engine, replacing the 7,200-lb. Wright J65 used in the standard F-84F model. Two F-84J aircraft have been built for test purposes and the bigger engines require larger air inlets, a larger fuselage and larger dive brakes to handle the increased speed. The big, new GE J73 engine is also used in the North American F-86F *Sabre*, now in quantity production at the company's Columbus, Ohio plant.

Not content to have the world's most powerful engine in quantity production, Pratt & Whitney has now revealed the afterburner version of its famed J57 turbojet. More than 26 ft. long, the new version is claimed to produce 14,500 lb. of thrust—nearly three times the output of our current standard jet engines. The big J57 is going into the North American F-100A *Super Sabre*, the Convair F-102, the Douglas F4D-2 *Skyray* and the still unrevealed McDonnell F-101 *Voodoo*.

America now has a jet transport. Boeing has amazed its competitors and even its friends by completing its magnificent new 707 *Jet Stratoliner* two months ahead of schedule and it will be in the air as you read this. The swept-wing, four-jet transport was rolled from its Renton, Wash. hangar in the middle of May and revealed a dazzling yellow and brown paint scheme. Powered by four Pratt & Whitney JT3-L (civil versions of the potent J57 turbojets), the big new jet transport can provide scheduled transcontinental service in less than five hours and cross the Atlantic in under seven hours. The $15-million transport is also being groomed as an Air Force jet *Stratotanker* but, as yet, no orders for either version, as potential purchasers eye the $3.5-4.5 million price tag.

The Ford Tri-Motor is going back into production, believe it or not. That is the announced plan of a group of investors ready to back veteran designer William B. Stout, who created the famed plane back in the 'twenties. Stout plans an initial production of 100 of the immortal tri-motors in Southern California in response to a wide demand for the reliable, safe transport. The new version will be powered by three Pratt & Whitney R-985 *Wasp Junior* engines. Although no longer in production, about a thousand of these engines are available in their original packing cases, having been declared surplus late in World War II. Stout plans minor improvements in the famed design and estimates sales price at about $100,000 each.

The Navy is conducting flight tests on a Grumman F9F-4 *Panther* jet carrier fighter equipped with boundary layer control. This is a system of speeding up the sluggish boundary layer, a thin sheet of slow-moving air next to the wing skin, by spraying the area with high-pressure air. The air is released from the compressor section of the jet engine and piped to slots along the rear portion of the wing upper surface just forward of the ailerons and flaps. This energizing of the boundary layer air permits the sleek *Panther* to take off and land at a speed 20 knots slower than the standard *Panther* and to carry 3,000 lb. additional load. Flight tests are being carried out aboard the carrier *U.S.S. Bennington*.

You'll probably have to admit that all B-36 bombers look just the same to you but Convair reveals the fact that only about 20 per cent of the parts used in the B-36A are still used in the new 200-ton B-36J model, indicative of the continuous development of the world's longest-ranging strategic bomber. Despite these improvements, however, the first production airplanes took an average of 350,000 man-hours to complete, whereas the current model requires only 142,000 man-hours.

An interesting battle between aeronautical science and man's labor rules is going on in the glamorous non-stop transcontinental service of the big, fast Douglas DC-7 on American Airlines. The DC-7 cruises at 360 mph and American schedules call for a flight time of 7 hr. 55 min. for the trip. Going from Los Angeles to New York the flight is made often in as short a time as 6 hr. 30 min. with good tailwinds, but stiff headwinds often delay the west-bound flight well past eight hours. This raises the problem of the Civil Aeronautics Board regulation that no pilot shall remain on duty longer than eight hours, regardless of overtime pay or other compensations. American can either carry a complete spare crew to operate the plane no longer than 30 minutes at the end of the flight, or make a stop for a crew change halfway across the country, which would destroy the dramatic appeal of the service. While American attorneys and executives study the matter with CAB officials, engineers are working feverishly with flush-mounting antenna, drag clean-up throughout the plane and automatic pilot procedures to squeeze only the few more mph required from the plane to make the New York-Los Angeles flight in a flat eight hours.

North American Aviation has developed the first new idea in metal-cutting in many, many years. Called "chemical milling," the system uses an acid to etch away the areas of the part it is desired to remove while a special chemical coating protects the remainder. The new process is electronically controlled to an accuracy of two-thousandths of an inch and a large number of parts can be chemically milled in the tank at the same time. The system has demonstrated its ability to mill out complex "waffle" and "sandwich" skin plating and to produce tapered sheets.

The Russians have displayed a new four-jet bomber with swept wing. This rounds out the line-up of Russian jet bombers with the well known twin-jet and six-jet bombers previously reported. Also reported are both four and six turboprop-powered swept-wing bombers. General Nathan Twining, Air Force Chief of Staff, describes the new four-jet bomber as being comparable to our Boeing B-47 *Stratojet*, although he believes us to be some two years ahead of the Russians in the production of this class bomber. Nevertheless, he states that the Russian Air Force is still substantially larger than any other in the world and that it is growing at a faster pace than any other.

Sikorsky is now experimenting with a gas-turbine-powered helicopter, designated the Model S-59. It is powered by a Continental-licensed French Turbomeca Artouste gas turbine engine. The engine was tested last year in a modified S-52-2 machine but disassembled and redesigned into the new configuration. Meanwhile, the new Sikorsky S-58, something of a cross between the well known S-55 (H-19, HRS) and the big XHR2S-1, has a top speed of better than 150 mph, making it the fastest helicopter in the world.

Piper Aircraft Corp. has delivered its first PA-23 Apache twin-engine executive transport and announced firm plans for the production of 300 of the new model. Priced at $32,500 each, the four-place monoplane cruises at 167 mph.

Lockheed reveals it is accepting the gauntlet tossed by the rival Douglas DC-7 and is developing an improved Super Constellation to compete for the transcontinental travel market. The new Model L-1049G features strengthened landing gear, stainless steel engine nacelles and improved soundproofing. The use of later model Wright *Turbo Compound* engines featuring an additional 100 hp for cruise raises the Super Connie cruising speed 8-10 mph. However, Lockheed president Robert E. Gross admits that under certain range and load conditions the Lockheed transport can never be as fast as the DC-7.

Preparing for the eventual debut of civil jet transports on the nation's airlines, the Air Force has invited 12 airline pilots to take the regular jet instrument indoctrination course at Moody Air Force Base, Ga. The airline captains will take the course alongside regular Air Force students. If the new idea proves successful, the opportunity may be offered to additional groups of 12 airline pilots.

Most authoritative statement yet made about nuclear-powered aircraft comes from Lockheed vice president of engineering Hall L. Hibbard, who predicts they will be flying within 10 years. Hibbard says they will look no different from current aircraft, nor will they be any larger. He sees the first nuclear-powered aircraft as strategic bombers with supersonic speed capabilities. A few years later should come the first supersonic commercial transport using atomic-powered propulsion. These transports will have a speed of at least two and perhaps three times that of sound, enabling them to cross the nation in "minus one hour" in the westerly direction. END

AMA Sanctioned Contests

JULY

3 & 4—*New Orleans, La.*: Class AAA 13th Annual Gulf States Model Airplane Contest for FFG, OR, CL, CLS, combat, RC, and scale. Paul A. Burvant, C.D., 77 Spanish Fort Blvd., New Orleans, La.

3 & 4—*Salt Lake City, Utah*: Class AA Salt Lake Active Modelers' Third Annual Meet for CL, FFG, PL, TLG, scale, and combat. James P. Yardley, C.D., 2836 S., 15 East, Salt Lake City, Utah.

3 & 4—*Jacksonville, Fla.*: Class AA Dixie State Model Meet (U-Control) for CL, CLS, CLFS, and combat. C. A. Powers III, C.D., 4757 Beverly Circle, E. Jacksonville 10, Fla.

3-5—*Ft. Lewis, Wash.*: Class AAA 1954 Northwest Model Airplane Championships for CL, CLS, combat, CLFS, FFFS, PL, RC, OHLG, and FFG. Earl F. Witt, C.D., Box 134, Lakeview, Wash.

4—*Concord, N. C.*: Class AAA Modelairs' Championship Contest for CL and FFG. James M. Kilgore, C.D., 232 Guy St., Concord, N. C.

4—*Tulsa, Okla.*: Class AA Tulsa Glue Dobbers' Fifth Annual Free Flight Meet for OR, OHLG, TLG, FFG, and RC. Willard H. Kehr, C.D., 4940 North Johnstown, Tulsa, Okla.

4—*Rock Island, Ill.*: Controlline Meet. Pending.

4—*Southington, Conn.*: Class AA Free Flight Contest for FFG and OHLG. Chester A. Orrill, Jr., C.D., 47 Carpenter Ave., Meriden, Conn.

11—*Hackettstown, N. J.*: Class AA Second Annual Musconetcong Aeronauts' Model Plane Meet for CL, CLS, combat, beauty-scale, FFG, OR, TLG, and RC. Louis F. Schierbaum, C.D., Willow Grove St., Hackettstown, N. J.

11—*Pittsfield, Mass.*: Class AA Third Annual Berkshire Model Airplane Contest for CLS, CL, combat, and CLFS. Robert L. Elliott, C.D., 48 Curtis Terr., Pittsfield, Mass.

11—*Joliet, Ill.*: Class AAA Joliet Flying Circus for CL, CLS, combat, TR, and CLFS. Glenn F. Stearman, C.D., 604 Abe St., Joliet, Ill.

11—*Chicago, Ill.*: Class AA Second Annual Chicago Prop Nutz Flying Meet for FFG, OR, and OHLG. Peter J. Sotich, C.D., 3851 W. 62nd Pl., Chicago 29, Ill.

11—*Spartanburg, S. C.*: Class AAA All-Dixie Championships for CL, CLS, CLFS, combat, OHLG, TLG, and FFG. C. Hill Hutchins, C.D., Box 403, Spartanburg, S. C.

11—*Dallas, Tex.*: Class AA Cliff Model Club Third Quarterly Meet for FFG. Joel B. Hargis, C.D., 1102 W. Saner Ave., Dallas, Tex.

11—*Pittsburgh, Pa.*: Class A Greater Pittsburgh Model Air Show 1954 Nationals Qualification Meet for FFG, OHLG, and OR. Entry is restricted to residents of Allegheny, Beaver and Washington Cos. M. J. Thomas, C.D., 246 Morrison Dr., Pittsburgh 16, Pa.

18—*Milwaukee, Wis.*: Class AA Milwaukee Flying Electrons' Radio Control Meet. Victor Weissbrodt, C.D., 2100 E. Webster Pl., Milwaukee, Wis.

18—*Greenville, O.*: Class AA Jaycee Model Plane Meet for FFG, OHLG, RC, and CLS. Jim Trissil, C.D., 215 Wayne Ave., Greenville, O.

18—*Clinton, Ia.*: Contest for TR, combat, and CLFS. Pending.

18—*Washington, D. C.*: Class AAA National Capital Model Air Show. Pending.

18—*Kohler, Wis.*: Class AA Second Annual Free Flight Contest for FFG, OR, OHLG, and TLG. Wilbur A. Lea, C.D., 1030 N. 14th St., Sheboygan, Wis.

18—*Omaha, Neb.*: Kiwanis Model Airplane Contest for OHLG, FFG, CL, CLS, OR, and RC. Carl Richte, C.D., 5035 Bedford, Omaha, Neb. Pending.

18—*Pittsburgh, Pa.*: Class A Greater Pittsburgh Model Air Show 1954 Nationals Qualification Meet for CLS, combat, and TR. Entry is restricted to residents of Allegheny, Beaver and Washington Cos. M. J. Thomas, C.D., 246 Morrison Dr., Pittsburgh 16, Pa.

18—*Willow Grove, Pa.*: Class AA Eastern States Team Racing Championships. Albert E. Abrams, Jr., C.D., 1031 Pond St., Bristol, Pa. Pending.

19-23—*Biggs AFB, Tex.*: Air Force Model Airplane Championships. Lt. Richard Moorhead, Project Officer, 5616 Pollard, El Paso, Tex.

25—*Gettysburg, Pa.*: Class AA Gettysburg Model Airplane Club's Third Annual Model Air Meet for CLS, combat, TR, CL, FFG, and beauty. John H. Pitzer, C.D., 9 Hanover St., Getrysburg, Pa.

25—*Fresno, Calif.*: Fresno Gas Model Club Record Trials for FFG. Jim Scheidt, C.D., 225 Brown, Fresno, Calif.

28-Aug. 1—*Chicago, Ill.*: Class AAAA National Championship Model Airplane Contest. For entry blank and details, send self-addressed, stamped envelope to: AMA, 1025 Connecticut Ave., N. W., Washington 6, D. C.

AUGUST

1—*Bristol, Pa.*: Class AA First Annual Eastern States Hydro Championships for ROW, RC and ROW c/1 stunt. Albert E. Abrams, Jr., C.D., 1031 Pond St., Bristol, Pa. Pending.

8—*Cleveland, O.*: Class AA Seventh Annual 1/2A Free Flight Contest. John W. Grega, C.D., 355 Grand Blvd., Bedford, O.

8—*DeKalb, Ill.*: Class AAA DeKalb Cloud Dusters' Flying Circus for OR, FFG, and RC. Dutch Hess & Dale Hindenburg, C.D.'s 137-1/2 E. Lincoln, DeKalb, Ill.

8—*Davenport, Ia.*: Contest for TR and combat. Pending.

8—*Frederick, Md.*: Class AA Frederick Exchange Club Meet for FFG, FFFS, combat, CLFS, CL, RC, CLS, and TR. Ike Brendle, C.D., 104-A E. Fourth St., Frederick, Md.

8—*Pittsburgh, Pa.*: Class A Greater Pittsburgh Model Air Show Championship Meet for CLS, combat and TR. Entry is restricted to residents of Allegheny, Beaver and Washington Cos. M. J. Thomas, C.D., 246 Morrison Dr., Pittsburgh 16, Pa.

15—*Detroit, Mich.*: Class AA Eighth Annual Model Plane Contest for CL, CLS, CLFS, and combat. Warren E. Bartlett, C.D., 14515 Asbury Pk., Detroit 27, Mich.

15—*Waynesboro, Pa.*: Waynesboro Exchange Club Model Airplane Meet. Pending.

15—*Tulsa, Okla.*: Class AA Third Annual Tulsa Glue Dobbers' U-Control Contest for CLS, combat, CLFS, and TR. Willard H. Kehr, C.D., 4940 North Johnstown, Tulsa, Okla.

15—*Waukesha, Wis.*: Class AA Second Annual Waukesha Model Airplane Contest

for CL, combat, CLS, CLFS. William J. Deffner, C.D., 839 Gaspar St., Waukesha, Wis.

22—*Albuquerque, N. M.*: Class AA Second Annual Rio Free Flight Meet for FFG, OR, and TLG. R. G. LEE, Jr., C.D., 2618 Wyoming Blvd., N.E., Albuquerque, N. M.

22—*Kenmore, N.Y.*: Pending.

22—*Manitowoc, Wis.*: Class AA Air Pirates' Control Line Meet for CL, CLS, CLFS, and combat. Wilbur A. Lea, C.D., 1030 N. 14th St., Sheboygan, Wis.

22—*Waterloo, Ia.*: Class AA Midwest Model Airplane Meet for CLS, CLFS, combat, RC, CL, and OHLG. M. H. Larrabee, C.D., 1901 Springview, Waterloo, Ia.

22—*Brooklyn, N. Y.*: New York Aeronuts' Meet for RC, OHLG, and FFFS. Sid November, C.D., 593 Lenox Rd., Brooklyn 3, N. Y. Pending.

28 & 29—*Amarillo, Tex.*: Class AA Second Annual Amarillo Globe-News Model Airplane Contest for FFG, CL, OHLG, RC, TR, CLS, combat, and CLFS. Earl W. Parge, C.D., 1919 Cherry St., Amarillo, Tex.

29—*Lancaster, Pa.*: Class AAA Pennsylvania State Exchange Clubs' Meet for CLS, FFG, TLG, OR, TR, RC, OHLG, beauty, PL, and combat. Al Geltz, C.D., Landisville, Pa.

29—*Fresno, Calif.*: Fresno Gas Model Club Record Trials for FFG. Jim Scheidt, C.D., 2225 Brown, Fresno, Calif.

29—*Los Angeles, Calif.*: Class AA Fifth Annual Inglewood Flightmasters' 1/2A Free Flight Scale Meet. Robert E. Moncrieff, C.D., 2108 Santa Fe Ave., Torrance, Calif.

29—*Woonsocket, R. I.*: Class AA Fifth Free Flite Fair for FFG, OR, and TLG. Thaddeus W. Wenclawik, C.D., 5 John St., Woonsocket, R. I.

KEY TO LISTING OF EVENTS: FFG—Free Flight Gas; CL—Controlline Speed; OR—Outdoor Rubber; TLG—Towline Glider; IR—Indoor Rubber; OHLG—Outdoor Hand-launched Glider; IHLG — Indoor Hand-launched Glider; CLS—Controlline Precision (Stunt); CLFS—Controlline Flying Scale; RC—Radio Control; TR—Team Racing; FFFS—Free Flight Flying Scale; PL—PAA Load; CC—PAA Clipper Cargo; NC—Navy Carrier.

Contests designated "Pending" mean the application is before the proper authorities as we go to press; "Record Trials" mean no prizes, but a chance at cracking the records; "Class A" is a meet with restricted entry; "Class AA" is a meet with unrestricted entry; "Class AAA" is a state-wide or regional meet; "Class AAAA" is a national or international meet. END

The Argentinan

(*Continued from page 26*)

ing pieces of 1/32 in. sheet to the lower longerons and adding 3/32 in. sq. cross pieces.

The entire fuselage tail-end tips up for dethermalizer purposes, so carefully cut through the four longerons at the points indicated. Line up the motor peg fixing with 1/32 in. ply and attach the tail end again by means of a strong cloth hinge. Add the lower 1/8 in. sheet fin and install the small hooks for dethermalizer, stab. and wing bands, using plenty of cement. Make the motor peg from a 3 in. long piece of 3/16 in. dia. bamboo.

Start the symmetrical fin construction by cementing the leading and trailing edges to the root and tip ribs (1 and 6). Check side and top alinement, then add the remaining four ribs (2-5). Cement the 1/16 in. sheet

tip to rib 6, add the scrap gussetts and complete with the two 1/16 in. sq. spars. Cement a small wire hook to the leading edge as shown on the plan. The fin is cemented to the fuselage *after* covering.

The nose block assembly incorporates a novel method of tensioning. This consists of a spring fitted inside an aluminum bush, which is compressed—by a second bush, which slides inside the first—when the rubber is wound. As the motor unwinds and tension slackens, the spring pushes the shaft forward until an arm (on the end of the shaft) engages with a woodscrew "stop" in the back of the nose plug, thus preventing complete unwinding and consequent motor slackening.

After the prop has been carved (and bushed), take care to cut the blades free at exactly the angle shown on the plan, as this is vital to the correct folding. The hinges consist of wire bound to the blades and tin straps bound to the hub. Cut a circular hole in the nose block and line with a ring of card before cementing to the ply backplate (Y). Cement the 3/16 in. sheet nose plug to the back of Y and face with 1/32 in. ply (Z). Bolt the alum. bush to the nose plug.

Bend the front end of the 1/16 in. shaft first, then install the prop, followed by a ball race, the front alum. bush, spring and nose block. Now bend the hook, install the bobbin and bind and solder the shaft ends together. Make the spinner cap from hard balsa and hollow out to 1/8 in. wall thickness.

The wing consists of a flat center section, constant chord inner panels and tapered outer panels. Start with the center section, pinning the trailing edge and lower spars down over the plan. Add the five number 1 ribs, angling the 1/16 in. sheet ones slightly, to allow for the dihedral angle. Sand the T.E. to a triangular section, then complete by cementing the leading edge, upper spar, L.E. sheeting and T.E. sheeting in place.

Build the inner wing panels in a similar manner and join them to the center section with 1 in. dihedral under the outermost ribs. The tip panels are joined on to provide an extra 2-1/2 in. of dihedral. Note that the actual tips consist of 1/32 in. sheet, top and bottom. Add scrap 1/8 in. sheet gussets to the L.E., T.E. and spar dihedral joints. The wing mount is attached *after* covering.

The stabilizer construction is quite standard. Pin the L.E., lower spar and T.E. to the plan. Cement ribs A-1 in place, then add the two upper spars. When dry, remove from the plan, cement the central L.E. brace in position and sand the T.E. to a triangular section. Cement 5/16 in. wide strips of note paper over the tips. One of the 1/32 in. tip fins must be made detachable, so that the stab. can be inserted in the fuselage slot. The fixed tip fin is added *after* covering the stab.

Before covering with Japanese tissue, go over the entire model with fine sandpaper. Double cover (for three panels) the fuselage nose and tail-end (forward of the motor peg). Apply plenty of spanwise tension when covering the underside of the wing to insure that the tissue attaches firmly to the undercambered ribs. Give three coats of dope, pinning the flying surfaces down flat until dry, to prevent warps from developing. Cement small pieces of celluloid to the wing and stab T.E.'s where the assembly bands rest.

Cement the W wing pieces to the underside of the first two center section ribs, then add the 3/8 x 1/16 in. cross piece and cover the top surface with 1/32 in. sheet, fairing the latter into the wing L.E. sheeting. Cement the built-up fin to the fuselage tail and the one fixed sheet fin to the stab. Add a small celluloid trim tab to the fin T.E. and limit the dethermalizer tip-up movement to 30° with a piece of thread.

The assembled model should balance at the point marked by the large black arrow on the plan, the wing being slid backwards or forwards until this has been achieved. Glide test and make final trim adjustments. The model must turn right under power and left on the glide. Work up to maximum turns slowly and always remember to light that dethermalizer fuse! END

Sea Cat

(*Continued from page 23*)

center ribs. Cement firewall to front of nacelle and reinforce with fabric strip doped in place. Fill in bottom of wing with sheet balsa at outboard dihedral break to support tip float assembly. Drill 1/4 hole through spar for float attachment rubberbands. Drill hole in leading edge and install 1/8 dowel to receive bands after they have been pulled through holes in spar. The stabilizer is similar in construction to the wing. Assemble fin and hinge trim tab with soft wire. Hinge the rudder control tab and check for free operation. Cement fin assembly to stabilizer.

Assemble the tip floats, joining sides with formers as in the construction of the hull. Add bottom and top planks, soft balsa blocks to each end, and shape to finished contours. Cut through top and insert struts of hard balsa. Fit platforms to upper ends of struts to match dihedral angle reinforcing joint with corner blocks. Apply several coats of cement and fit fillets of 1/16 sheet balsa. Experience proved this rugged attachment to be necessary, with extremely high loads imposed on the strut root in spite of rubber shock mounting.

Sand the entire framework to remove all bumps that may show through the covering. Apply a coat of dope to the entire structure to prime the surfaces. Cover with silk, applied wet, to all surfaces, including those of sheet balsa. Brush on at least three coats of butyrate dope, to be sure the surfaces are completely sealed.

Hardwood spray strips may be cemented to the corners of the hull to provide the sharp chines essential to break the water cleanly from the bottom. These also protect the hull and can be easily replaced if damaged.

Install the forward control rod bearing in former in escapement compartment. Form forward end of control rod and spring through passageway in tail boom. Add rear bearing and form crank in end of shaft. Mount escapement on 1/8 plywood, reinforcing with corner blocks. Assemble receiver chassis and mount components. Lash hatches in place with rubberbands and test for leaks by submerging hull, increasing tension of bands if any water should find its way into the hull. Drop the escapement rubber through the tube in the hull and install receiver chassis in the radio compartment. Attach the stabilizer with rubberbands pulled through hole in boom and hooked at rear on dowel. Make a wire hook to facilitate pulling rubberbands through holes in nacelle and tail boom.

In flying the Sea Cat a few simple rules of procedure should be observed. Although the ship can be flown from the shore, a small power boat is desirable, since then the wind need not be "on shore" for take-offs and, should trouble develop in the equipment, the model can be quickly recovered. For take-off, the ship should be launched directly into the wind, with the transmitter handy to give a quick beep if the ship should veer from a straight course in windy weather. The weight of the model necessitates about a 50-ft. run to become airborne, affording a most realistic sight. The ship has taken off many times as a free flight, unassisted by radio control. Should the model seem reluctant to leave the water, slip a shim under the trailing edge of the stabilizer to increase the negative incidence.

The original ship, finished with colored butyrate dope, weighed 64 oz. For contest work, from hard-surfaced runways, a sheet aluminum landing gear strapped to the hull affords beautiful take-offs. For the experimentally inclined modeler, we feel the basic configuration of the Sea Cat, high thrustline, low center of resistance and moderate polyhedral, can be developed into exceptionally performing free flight as well as radio control designs operating from land or water.

END

Foreign Notes

(*Continued from page* 34)

firm the view that the new rule Wakefield will exceed a three-minute maximum a lot more easily than the old type, with its unlimited power, reached five minutes.

Royal Recognition for Modeling

Once again modeling has received the recognition of royalty. Prince Philip has consented to the annual award of a silver tankard, to be known as the Duke of Edinburgh Challenge Trophy, at the London Model Engineer Exhibition. The Model Engineer Exhibition is where railroad, ship and airplane modelers have exhibited through three decades and the presentation of this new award follows the occasion of the 1952 exhibition which was opened by the Duke. Royal patronage for model aircraft exclusively has already been shown in the presentation of the King Peter Cup (King Peter of Yugoslavia in 1939) which was for gliders, the Queen Elizabeth Cup (1948) for rubber and, later, free flight gas, and the newly presented Belgian international trophy (King Baudouin, 1953), for radio control. END

half-A Delta

(*Continued from page* 12)

an engine of .065 displacement or larger. This will remove some of the unnecessary bulk to the tune of approximately 1/2 oz. The main wing spar is constructed in one piece prior to any assembly work, to include the tip dihedral angle. Assemble the basic wing frame one panel at a time as you would any other wing. The most important thing to watch here is that the tip sections retain the correct angular setting with respect to the center panels, and each tip has the same dihedral angle.

Once the basic wing frame is completed, apply the wing sheeting to the upper and lower camber and add the balsa wing tip. The sub-rudder is then made and cemented in place on the wing.

Cut the nose former to shape and cement in position. Using the former as a guide, cement small balsa blocks behind it and shape them to form the nacelle. The firewall is then made and the bolts inserted from the rear and fixed in position. Then cement the completed unit to the nose former.

A single strut retractable landing gear is recommended as indicated on the plans. However, if you prefer a fixed landing gear, or none at all, your choice will make little or no difference.

An engine cut-off unit is a must, and suitable installation is indicated on the plan.

The method used for dethermalizing the model is as effective as it is simple. In practice, when the dethermalizer pops, part of the center rudder rotates perpendicularly into the airstream. We've tried it and it is quite successful. Other methods that can be employed are the parachute type dethermalizer or having the center rudder fall flat.

Construct the center rudder as a single unit and when complete, cut it as shown and cement the leading edge and base of the rudder in place. Then complete the rudder assembly by adding the dethermalizer section.

Adjusting the model is very easy, but before doing so, check the location of the center of gravity. In all probability, it will be located within the range indicated on the plan. If it isn't, then proceed by adding some ballast forward of aft to bring it within this range.

The elevons, as they are called, because their function takes the place of elevator and aileron control, are used to obtain the correct gliding turn.

Once the glide trim has been established, try a power flight with the prop on back-

ward and the engine running rich. The model normally turns to the left with "power on," so if you've established a left turn glide, use a spiral climb to the left. If the glide is to the right try adjusting for a fast shallow climb to the right. We tried adjustments in both directions and wound up with the right-left combinations However, don't try to force a particular pattern on the model.

If you're having difficulty adjusting, check for excessive wing warps, improper washout, or one wing heavier than the other. Chances are your difficulty will be within this group, and when it is ironed out you'll have a top notch free flight gassie. END

The Lorenz Transmitter

(*Continued from page 26*)

ceramic variable, the 5-35 mmf air trimmer and the 125 mmf air trimmer.

With the type we used, the rotor is grounded to the mounting studs. Mount the seven-pin miniature socket so the pins 1-7 face toward the front of the chassis. We used the ring mount type; otherwise, two extra holes will be needed for the saddle mount type. Mount the Locktal socket so that pins 1-8 also face forward. Fasten a small solder lug on the front of the socket flange at pins 1-8. Mount the two lug terminal strip on the rear side and place a rubber grommet in the 5/16 in. hole. This completes the hardware on the chassis and now we are ready for placing in the components.

Filament and plate supply wires should be about 16 in. long and should be color coded for ease of hook-up later. Connect filaments first, using pin 7 on the oscillator socket (7-pin min.) and pin 7 of the Locktal amplifier as the A-plus lead. Pin 5 on the oscillator and pins 1-8 on the amplifier are the A-minus connections.

Bring separate leads out through the grommet, after attaching to the A-plus and A-minus connections. Photo A shows the hook-up of the oscillator. Wind the oscillator coil of No. 16 wire on a 5/8 in. diameter form and pull out to a 5/8 in. length. This is soldered to the lugs on the 4-30 variable. A short piece of wire is soldered between pins 2-3 on the socket and the lug on the variable, closest to the bend on the chassis. Another short piece of wire is soldered from the other end of the coil-capacitor lug to one of the lugs on the terminal strip. Photo B shows this. A 1,000 mmf tubular ceramic is soldered between pin 5 on the oscillator socket to the end of the coil nearest the open side of the chassis. The 2 microhenry choke is soldered between one side of the crystal

socket and pin 5. From the other side of the crystal socket, a short wire goes to pin 4 of the socket. The 75K resistor also goes from this side of the crystal socket to pin 5 of the tube socket. Connect a wire to the terminal lug, where the tank wire connection is made, and bring it out through the grommet. This completes the oscillator section.

In order to reduce testing and "debugging" time, we'll now test the oscillator. With the 3A4 tube and crystal in place, connect the filaments, making sure the wire from pin 5 goes to A-minus and the wire from pin 7 goes to A-plus. Using 90 volts for the plate supply, run a wire from A-minus to B-minus and connect a 0-50 ma DC meter between B-plus and the lead coming from the terminal strip. Now, slowly rotate the tuning capacitor until a dip in current is noted. This should drop to about 7-8 ma. Increasing the capacity will cause a further drop until a point is reached where the current will suddenly shoot up again. At this point, back off until the capacity is reduced enough to obtain a reading of 7-8 ma. If a drop cannot be had, check the wiring and possibly the tube and crystal. This oscillator circuit is a sure fire thing and, when properly wired, will not fail to oscillate.

Now we're ready for the amplifier. Solder a 1 millihenry choke between pin 2 of the amplifier socket and the other lug on the terminal strip. The 680 mmf tubular capacitor is soldered between pin 2 and the stator, or stationary, lug of the main 5-35 tuning capacitor (Photo B). The 47K grid resistor is soldered between pins 1-8 and the ground lug, and pin 6 of the socket. The 47 mmf coupling capacitor is soldered between pin 6 of the amplifier socket and pins 2-3 of the oscillator socket. A 7,500 ohm screen dropping resistor is soldered between pin 3 of the amplifier socket and the same lug on the terminal strip to which the choke is connected. The screen bypass (1,000 mmf) capacitor is soldered between pin 3 and pins 1-8 and the ground lug. Another wire is brought through the grommet to this same ground lug. This is the B-minus lead. The tank coil is wound as follows and is soldered between the stator lugs of the 5-35 and the 125 mmf trimmer. Wind nine turns of No. 14 enameled wire on 3/4 in. form and then stretch to 1 in. length.

To test, insert the 3A4 and the 3D6 tube and the crystal and connect the filaments as before. Check the oscillator to be sure it is functioning; in fact, reduce the capacity setting a little more. Set the amplifier tuning capacitor (5-35 mmf) to minimum and ground the antenna lead side of the 125 mmf capacitor to the chassis with a short piece of wire. Now apply 135 volts to the amplifier. The current reading on the amplifier will be about 20-25 ma. Rotate the tuning capacitor until a dip is obtained. This dip indicates that the oscillator is feeding a signal to the amplifier and that the amplifier is then tuned to resonance. A No. 47 or No. 48 brown bead flashlight bulb connected to a two-turn, 3/4 in. diameter loop of insulated wire makes a good indicator of RF power when held near the end of the tank coil. It may also be inserted berween several turns near the end of the coil. If a dip does not occur, reduce the capacity setting on the oscillator capacitor and retune the amplifier. When the minimum dip is obtained, the oscillator setting should be increased further to increase the amplifier dip.

Drill the cover of the box as shown in Fig. 3 and mount the switches, jacks, etc., as shown in Photo D. Use insulated washers when mounting the meter jack. The dotted circle on Fig. 3 shows a suggested placement if permanent mounting of a 0-50 ma DC meter is desired. The transmitter chassis is mounted away from the cover by two 1/2

in. brass or fiber spacers. Be sure the mounting holes on the cover and the holes on the chassis marked "X" line up. Rubber grommets are placed in the 1/2 in. holes used for tuning. Then you are ready for final tuning.

After connecting the batteries to the proper leads (use 90 volts on the oscillator and 135 volts on the amplifier), place transmitter assembly in the box and attach the antenna, which should be 8-9 ft. long. With the 0-50 ma DC meter in place, turn the filament switch on and depress the keying button. The amplifier current should read about 20 ma. If the reading is in excess of 30 ma, it means the oscillator is not operating properly, in which case retune the oscillator as previously described. Bringing the oscillator into resonance will drop the amplifier current to a lower value. To obtain the best results in loading the antenna, using the Pi-network, a field strength meter is highly desirable. With the amplifier current tuned to minimum, increase the capacity of the 125 mmf antenna tuning capacitor until the field strength meter reads maximum. Adjustment of the 5-35 main tuning capacitor may be necessary as the loading on the antenna is varied. Set the FSM about 35-40 ft. away and tune the transmitter for maximum deflection of the FSM needle. A ham friend should be of some assistance to you in building and tuning this unit. Once tuned, it will hold its adjustments, and while it is not necessarily the most powerful, it is stable, and best of all, it can be readily converted for audio tone work at a later time.

Following is a parts list for this transmitter. The parts may be obtained from various suppliers of model RC components and your local radio supply house. Do not use surplus parts and stick to the types and values as given:

Lorenz Transmitter—Parts List

1 3A4 tube (RCA)
1 3D6 tube (Sylvania)
1 seven-pin miniature socket, saddle or ring mount (Amphenol 78-7P)
1 Loktal socket (Amphenol 78-S8L)
1 27.255 mc crystal (Petersen)
1 crystal socket (Johnson 126-105)
1 National 2 microhenry choke (or form and wire to wind same)
1 4-30 mmf ceramic variable capacitor (two eyelets or bolts)
1 5-35 mmf air trimmers (four mounting screws)
1 125 mmf air trimmer (four mounting screws for this and 5-35)
1 7 x 8 x 10 case or suitable equivalent (ICA 3802)
1 8-9 ft. antenna
1 closed circuit jack and insulating washers (ICA 1871)
1 push button switch (ICA 1282)
1 on-off switch (ICA 1296)
1 keying cable plug-socket (Cinch)
1 75K 1/2-watt resistor (IRC)
1 47K 1/2-watt resistor (IRC)
1 7,500-ohm, 1/2-watt resistor (IRC)
1 1-millihenry RFC choke
1 47 mmf tubular ceramic capacitor (Centralab)
1 680 mmf tubular ceramic capacitor (Centralab)
2 1,000 mmf (.001 mf) tubular ceramic capacitors (Centralab)
1 5,000 mmf (.005 mf) tubular ceramic capacitors (Centralab)
2 ft. No. 16 enameled copper wire
2-1/2 ft. No. 14 enameled copper wire
1 antenna mount to fit antenna used
1 four-lug terminal strip
1 No. 6 dry cell OR RCA-type VS-004 battery
3 or 4 RCA VS-013 45-volt batteries
Hardware as needed: two 1/2-in. spacers, two 3/4-in. No. 6 bolts, eyelets, etc. END

MAN at Work

(*Continued from page 6*)

its wheels — if it has them — and vice versa. Didn't even mention the ground to the guinea pig and he survived the first attempt. We are reminded of Madman Yates, the greatest-stunt man that lived, who told us that he washed out 14 ships learning to go inverted. Where were we? Oh, the Ringmaster. It does the pattern with ease on a .19. A stunt man showed us. Covered with silk. Couple of wild dive-ins have not washed it out. Paper would have left a bag of sticks. Oddly enough, the really big drawback is the difficulty a kid has learning how to run an engine properly. A lean engine loop and the old man supervises repairs.

• • •

▸ Been flying Vecos and Torps lately. While we don't recommend any one engine over another, for all engines work fine today (though it wasn't ever thus, remember?) do want to say something about the Vecos in passing. Originally, the Vecos were made by another machine shop for Henry Engineering. After being off the market for some time, Henry resumed production, this time making his own parts and incorporating many improvements, particularly in the direction of preventing overheating trouble (see Martin's report in April, 1954 issue). One .29 test engine is in a 7 lb. RC job, turns an 11-5 Tornado (or a 12-4) like nothing at all. Starts very well and is getting more and more compression with service. After six months of use, this engine indicates a really long life ahead. Overloading and long engine runs work havoc on RC engines, as a rule. When Spring came, thought the engine showed signs of overheating (actually it was leaning out a little more than realized and was running on a hot plug and a hot fuel both). This led to an education from the manufacturer on fuels.

Like numerous other modelers who want less power and cooler running for sport, we tone down our fuel by adding castor and, if necessary, go to a colder plug. This is not necessarily the best way to cool an engine, says Henry.

"It is better to use a fuel with less nitro, such as K & B 100 or Testor 39, and stay with the plug we furnish with the engine," he explains. (It is a hot plug.) If you wish to cool down the fuel, add methanol and castor oil in a 3 to 1 mixture. This will naturally reduce the nitro ratio properly.

"We have experienced many times during hot weather the problem of a fuel that ordinarily runs perfectly but will cause the engine—ours and others—to cackle and run poorly. This is a characteristic of methanol fuel and is particularly noticeable with high compression engines. Our recommendation is to select the fuel to match the weather; cold fuel for hot weather, and hot fuel for cold weather."

The man has something, mates. P.S.: We stopped blowing gaskets!

• • •

▸ Just when the hot battle over flying scale rules is simmering down, along comes Ken Hamilton, El Segundo, Calif., who hews to a line and lets the chips fall where they may. Ken says it is the intent of the rules that the model be scale. Because departures from the rules are permitted, dihedral changes, etc., the resulting airplane may be anything but scale and, indeed, some Nationals winners were as much Wakefields as they were scale. Reminds us of Chet Lanzo's big Puss Moth at the 1947 Minneapolis Nats when we timed its three flights. Its DH ancestry was faintly discernible, but oh—how it flew! Deviation from scale should result in outright disqualification, states Hamilton.

"Most models in this area," Hamilton charges, "are undersized washouts. Because the Half-A engine is small, the models are made

tiny. What is wrong with U.S. modelers that the idea of building a model heavy enough and large enough to give scale appearance and scale appearing flight does not catch on?

"Last Fall, I flew Dick Ealy's Dragonfly Half-A to third place in the Inglewood Flightmasters' Meet. It was big and weighed 16 oz. on its Wasp. It outflew all the kits and made perfect take-offs each time. Recently, at the Convair Half-A scale contest, the outstanding flier was also the biggest and slowest, a Fiesler Storch." If we have to stand up and be counted, Ken, we'll vote for the bigger jobs.

• • •

▸ Speaking of modeling in the schools (June issue), R. F. Poore, Chairman, Waynesboro Exchange Club, tells of a model aircraft building contest held in the sixth, seventh and eighth grades, with categories for solid, gas powered, and rubber powered planes. Bicycle, table radios, model merchandise for prizes. Mr. Marsby Little, Superintendent of the Waynesboro-Mont Alto School District, said the contest was liked because it "teaches the students to identify the many types of airplanes, and their parts—the elementary principles of aerodynamics and flying—shop practice and develops an interest in hobby craft. We correlate it with reading, writing, mathematics and even history." Entrants numbered 65 and each boy was required to spend at least part of the shop period on the project. Mr. Poore will furnish information to interested parties (127 Frick Ave., Waynesboro, Pa.)

• • •

▸ Odds and Ends: Mankato, Minn., Modeleers have, since start in 1951, completed two grassed and concrete circles at municipal airport, built club trailer, held meetings at airport administration. Publish monthly news bulletin, sent to members in armed forces. Have a $50,000-$100,000 liability policy. Sponsor, the Exchange Club, will sponsor a city-wide model program using older club members as instructors. William B. Thomas, C.D, Box 713, Lake Crystal, Minn. . . . Eagle eyed critics of color scheme on Kingfisher, recent issue: cowl band should be white, not red. Took liberry for picture . . . Lynchburg, Va., Model Airplane Club just organized. Lester Ellett, Jr., 4708 Oxford St., Lynchburg. Sorry, no room for the pic, Les . . . Twenty-first National Soaring Contest, Elsinore, Calif., July 27-Aug. 5, includes model events Half-A flying scale and HL glider on July 31 and, on Aug. 1, Nordic and Limited Towline (Lloyd Licher, 767 Haverford Ave., Pacific Palisades, Calif.

The 128-page Summer 1954 edition (25¢) of America's Hobby Center, Inc., 152 W. 25th St., New York City, covers 10,000 items, is illustrated, with sections devoted to model plane building, railroads, crafts, etc. . . . Kenora Minoca Flyers (Jack Hendy, 1022 Ninth St., N., Kenora, Ont.), rubber, RC, stunt, FF. Pic too fuzzy, Jack . . . Servicemen in Nagoya, Japan, have formed 16-man club called Sky Screamers. Thanks, Dwight Brooks, for the info, and the swell pix Jap jet models used recently Foreign Topics . . . Flying Rebels (Bob Barton, 9922 Eden Ave., S. E., Atlanta, Ga.) introduced modeling program to Exchange. "Many Exchange members seem to be in favor of model aviation, but are not sure what they are sponsoring. Many model builders' problems spring from lack of understanding of the hobby" . . . Any ideas for Conrad cartoons? $5 waiting for every idea used . . . Tipton, Kan., Modelairs, 14 members want members (Bill Wiese, Tipton) . . . First Annual Eastern States Hydro Championships, Aug. 1, Silver Lake, Bristol, Pa. Planes, boats, RC, both planes and boats. This is a real dilly and no one in area should miss it. ROW stunt for the first time! (Al Abrams, Flypaper, 1031 Pond St., Bristol, Pa.) Don't forget your bathing suit! END

Cloud Tramp

(*Continued from page 24*)

plans. Sand the "V" bottom to precise shape.

Balsa sheet: hard, 2 x 2 x 1/16 in., from which cut two wing mount strips, 1-5/8 in. long and 3/4 in. wide, *with grain running crosswise.*

Balsa stick: hard balsa, 18 in. long, 1/4 in. square cross-section.

Sawed balsa propeller: 8 in. long. Shave down blade faces, round tips, sandpaper all surfaces and "balance" on pin through shaft hole. Cut trailing edge at hub to concave shape shown in *side assembly view.*

Molded plastic propeller: 8 in. long. (This may be used if balsa propeller is not available but flights will be shorter because of greater weight and lower pitch of types now on market).

Wheels: hard wood, 1-1/4 in. dia., 1/4 in. thick.

Hanger-bearing for prop: steel, "L" shape, legs 13/16 and 5/16 in. long, cross-section half round 3/22 in. wide.

Washers: two, brass, 3/16 in. outside dia., 3/64 in. hole (min.), on propeller shaft between propeller and bearing.

Steel wire: hard (not annealed), 21 in. long, .032-.035 in. dia. From this make landing gear, prop shaft, tail hook, and motor hook according to size and shape given in plans. (Prop. shaft, tail and motor hooks are shown full scale).

Rubber for motor: 10 ft. long, 1/8 x 1/30 in. (Brown 1/8 in. flat is common designation).

Quick drying, waterproof model cement.

Miscellaneous implements, as pins, clothespin spring-clamps, sandpaper, pliers, knife, razor blade, etc.

To assemble, crease wing sheet at exact center and cement "V" center block in the crease. Hold in place until dry with pins and clamps as indicated, and support wing tips at dihedral angle shown until dry.

Cement four wing ribs to under surface of wing: hold with pins and clamps until dry.

Cement incidence block to wing "V" block rear edge.

Cement stabilizer and fin to motor stick: hold until dry with pins.

Cement prop hanger-bearing to *top* of motor stick and bind firmly with thread.

Bind landing gear to underside of stick below bearing with thread, using plenty of cement to coat joint.

Put wheels on axles and bend up wire ends with pliers.

Cement tail hook to rear of motor sticks.

Pass end of prop shaft through prop, bend over end into loop and drive loop back into front face of hub after applying cement to loop.

Cement wing mount strips to motor stick at location shown.

Fasten wing in place on mount with 2-1/2 in. rubberband (use two if required).

Place washers on prop shaft and hook shaft into bearing.

Hook motor "S" hook over tail hook and string *four strands of rubber* through the prop shaft hook and the "S" hook, without tension. Tie ends of rubber together and locate knot at rear end of motor by adjusting the rubber loops.

The motor should include four strands of rubber, (two loops). One extra strand may be used with *Sawed Balsa Prop when ROG take-offs and high climbing rates* are desired.

Care in constructing, finishing and alining your Cloud Tramp will give you the most reliable and best performing model plane you have ever built. Don't let its simplicity fool you.

To fly, balance plane on *ends of two fingers,* supporting plane at two points, each about 2 in. from and on opposite sides of the center wing chord from one another and just half way between leading and trailing edges.

If plane does not balance level, move the wing back and forth along the stick as required to bring plane in balance when supported on fingers.

When in balance, glide plane gently from hand launch.

When glide is smooth and even, wind motor by the propeller about 100 turns and hand launch gently. If plane flies without stalling or diving, wind about 300 turns and launch for a long flight.

If plane stalls, move wing back 1/4 in. If it dives, move wing forward 1/4 in. Then wind it again and fly, adjusting wing on stick until flight is even.

Maximum winds by hand are 400; with winder, 900.

25th Anniversary

(*Continued from page 11*)

the air-minded hobbyist wanted no diversions in his magazine. And that has been the way ever since. Nevertheless, editorial policy has to be out in front at all times for technical progress is a stern test of policy. Striving as hard as ever to report the new and worth while to its readers, MAN looks forward with hope and confidence to another 25 years of serving the model plane flier. END

Engine Review

(*Continued from page* 23)

down to the prop shaft bevel gears, and is a realistically shaped hollow die casting with cavitation plate and streamlined gear box. A slot is milled in the disc stub shaft to receive the flatted end of the floating 3/32 in. dia. stainless steel drive shaft, and a bearing at the lower end just above the hardened steel vertical bevel gear screwed onto the shaft, absorbs thrust and radial loads.

The short stainless steel prop shaft is mounted in a nickel plated bronze housing which screws into the gear box. A second hardened bevel gear giving a 1:1 ratio is screwed to the prop shaft at one end, and the 7/8 in. dia., 7/8 in. pitch diecast prop and locking spinner at the other. Thrust is handled in both directions by suitable projecting faces, and a packing of special grease.

Unit mounting to the transom is a scale replica of full sized practice having a pivoted bracket for directional control with two swivel clamps to allow the unit to hinge upward upon striking an underwater obstruction. The clamps have five alternate stop positions to allow longitudinal thrustline adjustment for correct hull planing attitude, and all pivots have tension adjustments. The transom clamp screws are extremely neat, having 5/16 in. dia. knurled heads and gripping pads that actually revolve on the screws. All nuts and bolts are blackened brass, and in common with all other exposed parts, are therefore rustproof.

A 1-1/4 in. dia. lightweight aluminum flywheel is mounted on the crankshaft by mating tapers and a screw, and features a deep, wide pulley groove for starting purposes. By suitable counterboring, the heaviest part of the flywheel is arranged to rotate outside and over the bearing housing, so that the heavy loads imposed on the pulley by pull starting are supported directly by the crankshaft bearing with minimum overhang.

Fuel is conveyed from tank to carburetor by a length of plastic tube, and perhaps the only adverse criticism that can be directed at the entire unit is the fact that it is virtually impossible to avoid a kink in the fuel line unless the tank outlet is moved. Another seeming shortcoming is the inconvenient position of the intake under the flywheel; however, if it were made any longer, it would tend to suck in water spray and cause uneven running.

This leads to the reasons for designing the unit in reverse to the usual full size arrangement and having the tank in front of the engine. In operation an appreciable amount of spray hits the cylinder and crudely but effectively cools it, and also the exhaust is expelled behind the boat instead of into it. A secondary advantage is that the battery leads can be kept safely clear of the flywheel so that, taken all around, this departure from realism is well justified.

On test it was found that with three turns open on the needle, one choked turn of the flywheel, and an exhaust prime, the unit would start from cold at the first pull of the cord. Three turns around the pulley with a shoelace worked admirably, and there is no question of tearing the unit away from the boat, as it cranks over with very little effort, and when hot will often start from a flick of the flywheel with finger and thumb. Needle control is excellent and once set for peak revs, the power is constant right through the tank.

An important point to bear in mind is that this engine will scream up to fantastic revs with no load, which is not conducive to long life, and in view of the ease of starting, it is a good habit to fire up only with the prop submerged. Where this is not possible, the needle should be opened an additional two to three turns before starting and then leaned out after the boat is on the water.

ADVT. INDEX, AUGUST, 1954

A small bonus to hobbyists who like unusual models is offered by the clockwise crankshaft of the Sea Fury. By putting one in a Sky Fury, but first removing the prop shaft drive pin, you will have an ideal Half-A for pusher installations that will take standard props. Or the use of this and a conventional Sky Fury in a twin engined free flight, with suitably outward set thrustlines, will eliminate torque and make an interesting scale job.

Engines like this will create a lot of new boat interest. END

Hi Boy!

(*Continued from page* 16)

The plans are very clear, but one of the things to look for is the method of cutting the ribs. The wing is tapered. To have shown each rib would have used up too much space.

Take 11 pieces of 3/32 sheet balsa wood, and cut larger than the root rib. Place the tip rib template (template should be made from 1/8 plywood) over root rib template with chord lines and trailing edge lined up and drill two clearance holes for 6/32 bolt, one at each end of the tip rib template within 3/4 in. of trailing edge, and 3/4 in. of leading edge. Now stack the balsa wood and drill these holes. Insert the bolts and tighten. You are now ready to carve half of the wing ribs. By carving the balsa in a straight line from one template to the other, including the spar slots, you will have completed the ribs. Remember, for the right wing, use only 10 pieces, for the right wing is 2 in. shorter. Trailing edge is spliced in the center, and wing spars are spliced. You will notice a 1/2 in. thick balsa doubler on the root rib. This is very necessary as the wing has no support in the LE. Also, F2 is a solid piece. We have a connecting dowel between these pieces to give strength to this area.

Please note that you will have to make a special bellcrank. Make from .051 or .062 aluminum.

Recommended motor for this plane is Fox .19, Torp .19, Cameron .19, Veco .29, Torp. 29, Orwick .29, or Fox .29. I would advise sticking to a .19. The original had a Fox .19 installed and was flown on 55 ft. of line and speed was up to almost 60 mph.

After building and flying the ship, drop a note to Ted Goyet, Route 1, Box 565, Woodland, Calif. and send along a picture of your model. He's a very interested and ardent modeler, and would be pleased to hear from you. Ted s recovery has been very good, and news about this model and what you think of it will give him no end of pleasure. We both wish you good luck and good flying. END

Radio Control News

(*Continued from page* 30)

as plate supply and which pushes about 4 ma through the coil, which really gives some snappy action. This is not a construction article but we hope there is enough information supplied to allow you to construct such a unit, or perhaps work something out on your own. Each single pulse will give right or left rudder in sequence, with one neutral. When elevator is desired, two quick pulses, with the last one held, will give up or down in sequence.

From somewhere in the sunny Pacific, Lt. jg. H. F. Hillman—W8NSQ, USS Agawam AO6-6, c/o FPO, San Francisco, Calif., writes in regarding an actuator which will give independent left or right rudder, when used with a multi-channel receiver. Fig. 5 shows the basic system. One side of the escapement arm is removed and too escapements are mounted, as shown, on a piece of plywood or micarta. Pulsing No. 1 will allow the arm to rotate three-quarters of the way around and give left or right rudder. Pulsing both escapement No. 1 and No. 2 at the same time, through a double contact relay actuated by one of the radio channels, allows the arm to rotate only one-quarter of the way and we then have the opposite rudder. This method will give independent left or right by pushing only one button at a time.

For those of you who have purchased the new RCA alkaline batteries, we wish to caution that, even though you have obtained a brand new battery, do not expect it to read as high as the standard carbon-zinc type of dry cell. The individual cell voltage is 1.4 volts, when new, as compared with 1.5 to 1.6 volts on the regular carbon-zinc type. This means that a 22-1/2-volt battery will actually read about 21 to 22 volts. Despite this lower reading, these new cells have a longer life and a higher current capacity than similar standard type cells.

From Carl Schmaedig we learned that it just doesn't pay to push voltages too much. Carl discovered that when a certain cell, with an output voltage of about 1.6 volts, was used for the filament supply on his three-channel Babcock unit, the receiver became oversensitive, producing irregular operation of the relays. Upon replacing the supply with regular pencell batteries, the voltage dropped to 1.4 shortly after turning the set on, remained at that level during the normal operating period, and gave excellent results. No more over-sensitivity or tendency to make the set critical in any way whatsoever.

CLUB NEWS

With the coming of Spring we decided to do something wild and impetuous in the RC field. Straight flying was out; an endurance flight would probably put a permanent kink in our neck. After much thought, a long distance flight was decided upon. The AMA rulings call for the transmitter to

remain in a fixed position throughout the flight and landing must be made within approximately one-half mile of the designated landing spot. Our first test, in the hills of the Hudson Valley, proved that radio reception could be maintained over a distance of about 3-1/2 miles. This was done with the receiver out of sight of the transmitter and with the receiver about two feet off the ground. We're sure the feat can be performed and as soon as a few bugs are ironed out, we'll announce the outcome.

Glad to hear of the many clubs around the country that are putting up perpetual trophies for RC work. The main thing, however, is to make the rules tough enough so that the trophy really means something. One problem around our neck of the woods, and it seems to be the same all over the country, is that of getting new fellows into radio work. Freeflighters and ukies have the urge and desire to fly radio but they always come up with the story of: "I don't know anything about radio." To this we can only say that some of the best RC fliers in the country couldn't tell a tube from a keying switch when they started. Clubs should put on *convincing* demonstrations and follow up with simple talks on the subject. After all, those doing the flying know how simple it is and we think it's their duty to help the newcomers. Dealers should also make it a point to become more familiar with the nationally advertised sets on the market, so they can intelligently answer the neophyte's questions.

Had a surprise visit from Carl Schmaedig of the New Jersey group of RC'ers recently. Carl's 6 ft. beauty uses the new Babcock three-channel set with escapements and servos by Bonner. In the multi-channel race, Carl, Fran McElwee, and others have been running reeds and tone filter sets to the point where we should have some interesting info on the subject for you soon. It is a little too early to make a definite statement on the merits of the two basic types of multi-channel sets but you'll hear about it as soon as possible. While on this subject, there is also the question of using single-channel or multi-channel for the beginner. We still maintain the beginner's best bet is to buy a reliable set for single-channel work, from one of the nationally advertised manufacturers.

From the Salt Lake City area comes the Voice of the Ute Aeromodeler. Paul Buchanan has a Live Wire Sr. with a Torp .19 and Macnabb 27 mc equipment. Should be an excellent combo. Jim Gilbert finished up his Half-A job with a Lorenz receiver and should be well on his way to convincing the rest of the club members that RC work is a great sport. Here's another chap, Barney Taft, who has proved the Live Wires can take it. Practically crack-up proof. He has over 160 flights on his trainer.

Dick Snyder of the newly formed Skydippers RC Club of High Rock, Pa., would like to hear from other, exclusively-RC, clubs around the country. They have a workshop with jigsaw, drill press and other electrical and electronic gear for club members' use. This is a good idea for other RC clubs. Pool your finances and buy some of the otherwise unobtainable equipment such as scopes, special meters, etc.

To prove that the average RC fan is making some attempt to learn radio terms, we now hear of the Flying Tank Circuits from 1435 S. Bidwell Ave., Freeport, Ill. This club of 10 really active members are making excellent progress in their flying and desire correspondence with similar clubs

around the country. Being in the hometown of the Burgess Battery Co., maybe they can do a little suggesting as to a real RC battery combination.

The Buffalo area radio fans are flying everything from .09 powered Live Wires to a .60 powered, five-channel, 8 ft. Buccaneer. The Macnabb 465 equipment is quite popular in the radio line and the .14 size engines seem to be on the preferred list. And get this, fellas, a Mr. Fadel of that area has flown his .09 powered L. W. Trainer with Macnabb equipment for three years without a crack-up. (And he makes 15 minute flights —Editor.) Can anyone prove he can do better than this? Quite a record, we'd say. Before we leave the Buffalo area we want to mention a bit of trouble encountered up that way. It's something we've mentioned before and we'll say it again: you can't operate tone equipment two at a time any more than you can carrier jobs. A reed transmitter will interfere with a tone filter receiver and vice versa.

Just got back from the Sixth annual New York Mirror Flying Fair and while there hasn't been time fully to analyze the trends, ideas and flying we witnessed, we'd like to recount some conversations we had. First of all we ran into Frank Schmidt of Erie, Pa., manufacturer of five-channel reed equipment. Frank stated that, when tuning your reed unit, follow the instruction manual carefully. Reeds should not be tuned for maximum amplitude of vibration but should be set, like the tuning capacitor on a crystal oscillator, on the "upslope" side. Tune for maximum amplitude; then back off on the pot a trifle. Frank also has the vibration problem licked. This was mentioned in our column about seven months ago and since it is too late for a sketch this month, we'll present it in the September issue.

Next we met Hal deBolt and heard his views on flying in general. Seems as though the master at inverted flying is still trying to improve on his symmetrical wing job—only problem is how to reverse the dihedral when flying normally and then inverted. However, we've seen his vertical S's, outside loops and inverted flight, and there isn't anyone who can touch him in this phase of flying. What does he suggest? First and foremost, improvement is needed in the "pilot" department. Whether it be a simple escapement job or a multi-channel outfit, there is still someone on the ground pushing a button. Just when to push it may mean the difference between first or last place and the only way to know "just when" is to get in plenty of flying time.

NEW ITEMS

Our first item, the Aero Gloss Spray can, by the Pactra Chemical Co. of Los Angeles, has been on the market several months now. At first hand this may not sound like an RC item, but we're of the opinion that an RC job is worth spending some time on. This involves painting the inside of the fuselage, before installing the RC equipment. This prevents oil and water from soaking into the structural members, thus weakening them and possibly causing electrical shorts. What could do a better job of getting in the tight corners than a spray coat of fuelproof paint, preferably a light color, from one of these new Aero Gloss Spray cans?

Relays, relays, relays—who can do without them? For the advanced builder we recommend looking into the new relays, types KH and RSH, by the Allied Control Co. of 2 East End Ave., New York 21, N. Y. The KH type measures about 1 in. high, 3/4 in. wide and 11/32 in. thick and has seven pins coming out of the base, and is similar in appearance to a standard 27 mc crystal. Weight is but .32 oz. The RSH is 3/4 in. in diameter and 1-3/4 in. long and weighs 2 oz. This is a fairly sensitive type, operating on as little as 22 milliwatts. Both types may be had in either DPST or DPDT. Considering the increased price of these sub-miniature relays, they will probably appeal more to the serious minded RC designer.

Before other items of interest to the novice fan, we've got another one for the experienced builder. Transistor Products, Inc., of Snow & Union Sts., Boston, Mass., has a fairly complete line of transistors which may be employed in our field of RC work. These include units which are claimed to operate up to 50 mc. and also those for use in audio and pulsing circuits. It's a bit too early to state the "transistor trend" in RC work but sooner or later we'll have something for you in this line.

Ace Radio Control of Higginsville, Mo., has the right idea with both the customer and dealer in mind when they came out with their packaged components board. This fulfils the long need in our field since it allows the builder, especially the beginner, to see the component he is buying. Your local hobby dealer should be getting this unit on his counter as you read this. Also from Ace comes news of their new High Resistance actuator, designed for the Lorenz, North American and Deltron receivers. This unit eliminates the relay, escapement and usual batteries, and thus makes for a simpler installation. In fact, this makes it ideal for Classes A and Half-A models.

The following items are a review of those given in previous columns and are being presented for newcomers or for those who

(*Continued on page* 54)

may have missed them. The MPC-1 tube (Raytheon 1AG4) handled by Essco, Ace and Control Research, is gaining in popularity as a "second" tube for various versions of our two-tuber. While on this subject, we might mention that a slight increase in first stage idling current (up around .6 to .7 ma) may be needed to bias this tube to cut-off, when it is used in place of the XFG-1 or RK-61. The small Pitman motor as advertised by Control Research is widely acclaimed by the East Coast boys. Plenty of power and positive starting on 3v. The wing/stab kit by Model Aircraft Co. of E. 15th St., New York City, is very instrumental in putting more ships in the air since all the designer has to worry about is the fuselage to house his RC gear. A number of planes built with these wing/stab kits have been observed by staff members. Questioned about these kits, the builders expressed satisfaction in all cases. The planes flew well and the flying surfaces were sturdy and warp resistant.

Two sample Buzzer'd and a Leaping Lena kit given out by the staff have turned out to be creditable airplanes. The Buzzer'd, when powered by K & B .19, proved a stately flier, one of the finest precision sport jobs we have seen. On the first test flight the ship was up for 10 minutes. Cruising flight attitude is unusually flat, although normal climb is present, presumably through the lifting type stabilizer. Great resistance to spirals. The particular builder incorporated ply front cabin bulkhead, ply floor with battery boxes underneath, and a ply facing beneath the nose. The Leaping Lena appeared out of trim at first, took 4-1/2 oz. nose ballast and considerable downthrust. However, the ship is extremely aerobatic, will do snap rolls at the drop of a hat, and consecutive loops until taken out by the pilot. Touch rudder on the spiral recovery and you get an Immelman—no corrective control and loops result. Pilot took ship out after third automatic loop and diameter was tightening.

Aerotrol is developing new, plug-in receiver. Single gas tube type.

Tests on the Fenners-Pike actuator unit extremely promising. With minor changes and adjustments, unit has operated continuously for nearly two hours without miss. Gives proportionate rudder and *simultaneous* second control. Polk's, the importers of the device, were informed of test developments that insure good escapement action on second control with pulse system. Ed Yulke has developed an electronic pulser for use with the Fenners-Pike that gives three pulse rates on pilot demand.

Pittman Panther and Super Panther electric motors for boat use, made by Pittman Electrical Development Co., handled by Polk's Model Craft Hobbies of New York City, are improved versions of the same motor we mentioned several months ago. Complete with nylon bearings, built-in reversing switch, copper/graphite brushes, and rubber insulated die cast mountings, these motors are sure starting and are exceptionally powerful for RC boat work. The model 9001 sells for $6.50 and the more powerful 9002 lists at $8.50. A set of 2:1 reduction gears is also available to fit these motors and lists for 75¢.

From boat motors to covering material, we have a new covering for Class Half-A up through Class B RC models. Markered also by Polk's, this really new covering is made of spun rayon and is known as Rayspan. Use it like regular paper and get vastly increased strength. When wet, it has about three or four times the strength of most papers. Very light in weight, it comes in red, yellow, blue, green and white and should be doped with regular *nitrate* dope. END

Berkeley MEANS THE BEST RADIO CONTROL EQUIPMENT & MODEL KITS!

27 m.c. Crystal Control

"SUPER AEROTROL"

RADIO CONTROL

NO OPERATORS LICENSE REQUIRED!

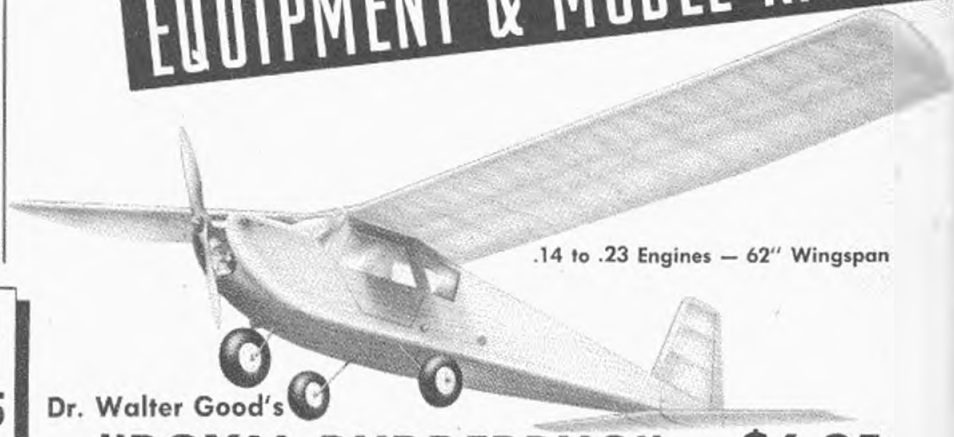
"Super-Aerotrol" is the original 27.255 Citizens Band Radio Control. Since its introduction, it has outsold all other makes. We have tested many modifications of the original "Super-Aerotrol" but present "Super-Aerotrol" under equal conditions cannot be out-performed by any similar type equipment.

COMBINATION OFFER

DE-Super Aerotrol Combination Kit—#201-K

Combination Receiver-Transmitter Kit that sells for **$29.95**

Includes everything found in both DE-202K and DE-203K Kits. By buying them together it saves you **$3.95**



.14 to .23 Engines — 62" Wingspan

Dr. Walter Good's

"ROYAL RUDDERBUG" $6.95

The entire model building world knows and respects Dr. Walt Good, many-time National R.C. Champion and re-knowned physicist. His new design is the best size for all-'round performance with single channel equipment.

The newest version of one of the most popular R.C. jobs ever designed. Simplified in construction, and improved in performance. A fine kit, produced to Berkeley's standards of completeness and engineering exactness.

READY-TO-OPERATE

SUPER AEROTROL

Including: **$49.95**

TRANSMITTER; ANTENNA; RECEIVER; ESCAPEMENT; & O-3 MILLIAMMETER.

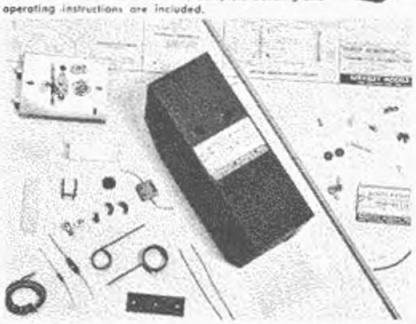
Super Aerotrol Crystal Controlled

TRANSMITTER

In Kit Form less tube **$19.95**

- Portable — Self contained — No separate antenna — No external Batteries!
- Operates on 27.2 mc. • Weighs 3.5 lbs.

Kit includes all necessary parts (except tube and batteries) Precision Ground Crystal; Painted Metal Cabinet; Finished Sectional Antenna; stamped and formed chassis with all holes punched; all necessary components, resistors, condensers, coils and chokes; color coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included.



"Super Aerotrol" Dust Core Tuned

RECEIVER

In Kit Form less tube **$13.95**

- NEW "locked-channel" dust-core tuning.
- Light in Weight, 2¼ oz. less batteries.
- Super-regenerator circuit, dependable.

Kit includes: Finished, tested sensitive relay; finished dust-core tuner; drilled bakelite base with condensors and eyelets attached; all electrical components, condensors, resistors, coils, chokes and potentiometer; all necessary contacts, and color-coded wiring. Can be assembled in less than two hours. Complete instructions are included.

$3.95

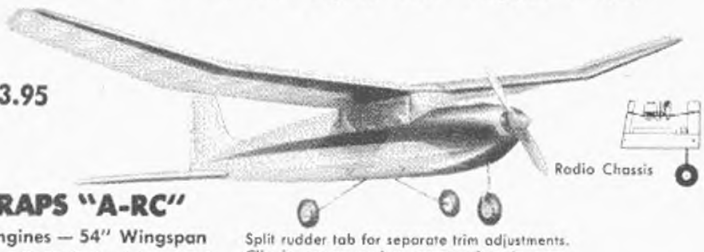
Variable Camber Wing for Radio Control Flying!

Slotted flaps may be depressed 10° for free-flight; depressed 25° for slow speed radio control flying; or raised 5° for high speed radio control flight.

Army Liaison YL-24

"HELIOPLANE"

For .049 to .14 Engines 38¾" Wingspan—1" Scale



$3.95

Radio Chassis

BOOTSTRAPS "A-RC"

For .09 to .14 Engines — 54" Wingspan

(Empty weight 21 oz. — Radio, Equip., 14 oz. max.)

Split rudder tab for separate trim adjustments. Clip-in prone engine mount, tri-cycle gear.

SEA BIRD "RC-28"

"A-B" Race Boat —

For .09 to .35 Engines — 28" Length

$3.95

- Pre-Fabricated Mahogany Veneer Covering
- Completely Pre-Fabricated Balsa & Plywood
- Full Size Plans Including Radio Control Details

Designed for Radio Control!

The Sea Bird "RC-28" was designed for use either with or without radio control. Simple to build, it enables the builder to race the boat the next day after he buys the kit!

buy **BERKELEY** at your local dealer!

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

NEW CALIFORNIAN FREE-FLIGHT...

Just in time for the Contest Season...

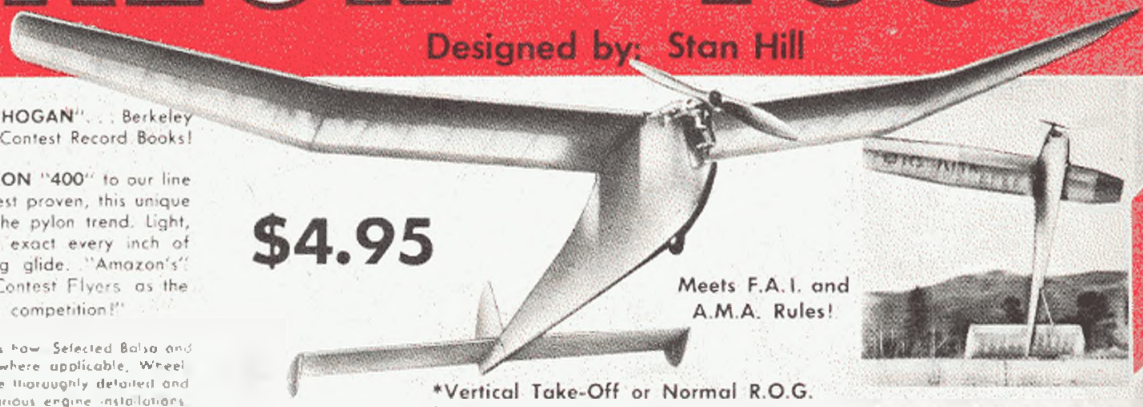
Berkeley's V.T.O. AMAZON "400"

Designed by: Stan Hill

"BUCCANEER"... "POWERHOUSE"... "HOGAN"... Berkeley has made these names a legend in the Contest Record Books!

Now we take pride in adding the **AMAZON "400"** to our line of contest craft. Thoroughly tested, contest proven, this unique aircraft is a refreshing departure from the pylon trend. Light, rugged and efficient, it is designed to exact every inch of altitude possible for its thermal soaring glide. "Amazon's" near vertical ascent acclaimed by British Contest Flyers as the "Fastest climbing aeroplane ever seen in competition!"

The kit is Pre-fabricated as only Berkeley knows how. Selected Balsa and Plywood, Die Cut Notched and Shaped Parts where applicable, Wheel Hardware, Covering etc., and above all Full Size thoroughly detailed and lettered Plans with construction sketches and various engine installations. Construction time is low a point to consider in the pre-contest rush.



$4.95

Meets F.A.I. and A.M.A. Rules!

*Vertical Take-Off or Normal R.O.G. for .14 to .23 Engines—62" Wingspan

Vertical Take-Off

NEW! Chris-Craft 1" Scale OUTBOARDS...

"16' OUTBOARD CRUISER"

Formed Vinyl Hull and Foredeck

Formed, not molded, from sheet vinyl—the fuel proof, fire and shock-resistant wonder plastic.

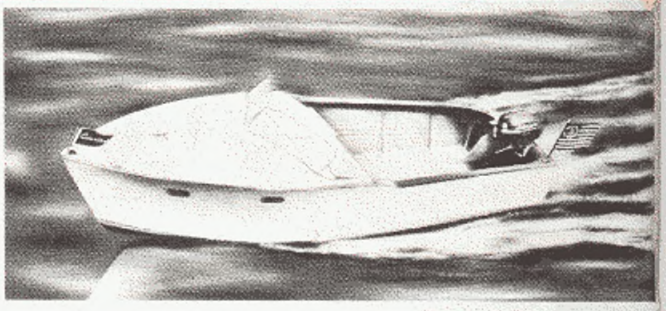
For "½A" & Electric Outboard Engines 16" Long

Featuring: **Formed Vinyl Hull and Foredeck**

(Manufactured under U.S. Patents No. RE 23,171 and 2,357,806)

- Full Size Plans, Instructions
- Die-Cut Balsa Bulkheads
- Die-Cut Plastic Windshield
- Special Plastic Cement
- Plywood Transom Insert
- Cast Deck Hardware

This is the model of Chris-Crafts Newest Kit Boat. It's a perfect design for Electric or Gas powered Outboard Motors. New light construction makes it a top performer with either type power. See it today!



Build it in a little over One Hour! **$3.95**

READY-TO-FLY

NEW! "SUPER YANK"

.035 to .049 Engines—27" Wingspan

READY TO FLY... **$1.95**

Nothing to Build!

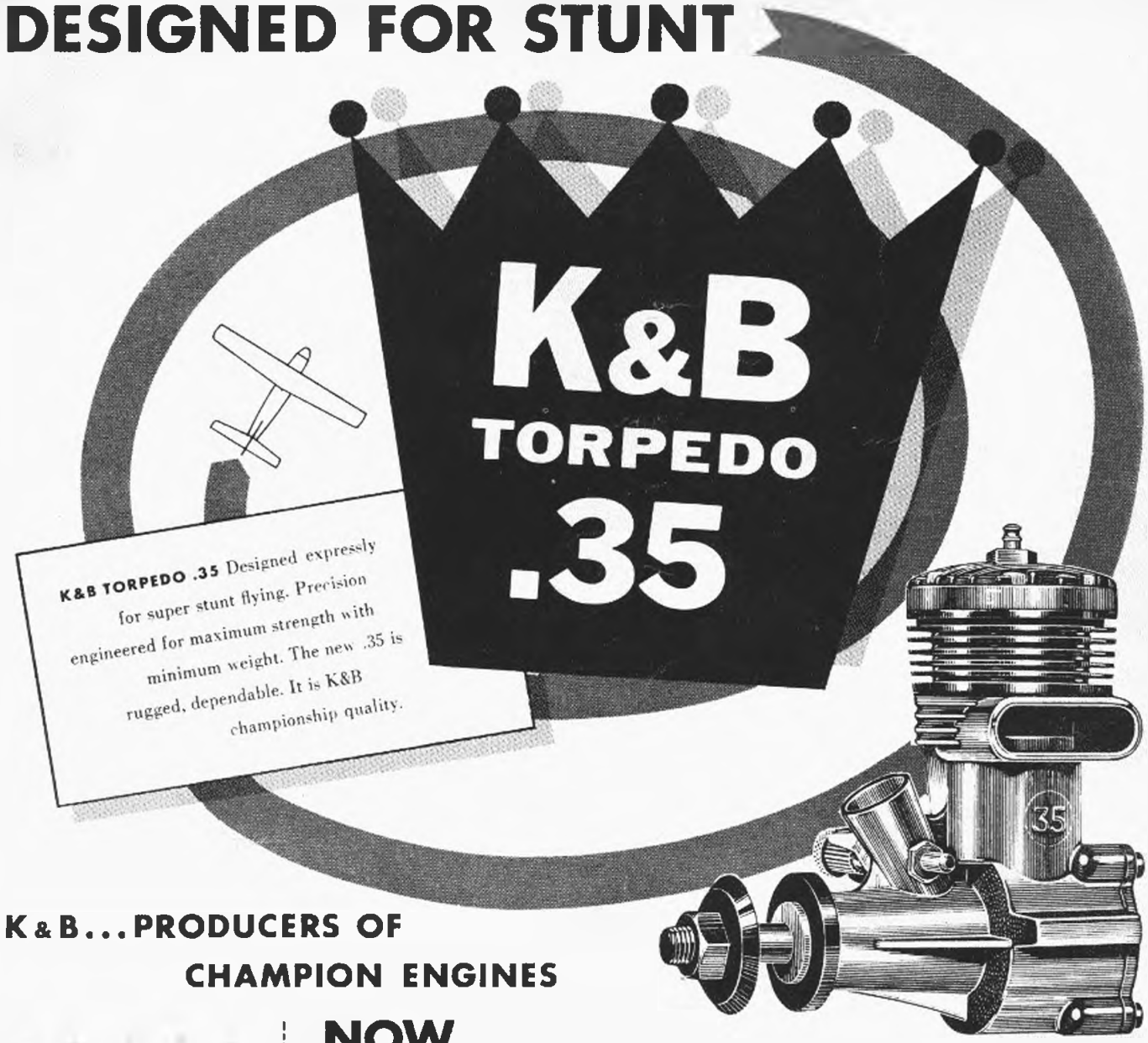
Everything completely finished, colored. Even the engine mount is drilled for you.

Bolt in your engine, slip on the nacelle, wing and stab. Flip prop and fly it!

buy BERKELEY at your local dealer!

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

DESIGNED FOR STUNT



K&B...PRODUCERS OF CHAMPION ENGINES

K&B TORPEDO .15

WORLD FF POWER CHAMPION

K&B TORPEDO .19

WORLD SPEED CHAMPION

NOW... Introduces a NEW CHALLENGER

We of K&B Manufacturing Company are proud of our world champion engines. As you know, our Torpedo .19 holds the Class "A" open speed record. Our Torpedo .15 holds both the individual and team power records. Now we introduce a new engine, the Torpedo .35 to challenge the stunt events. Our engineers have put their many years of engine "know-how" into the design of this great new engine. To meet the exacting demands of today's stunt fliers many advanced features have been incorporated into the .35. We are proud of it. We proudly invite you to test it.

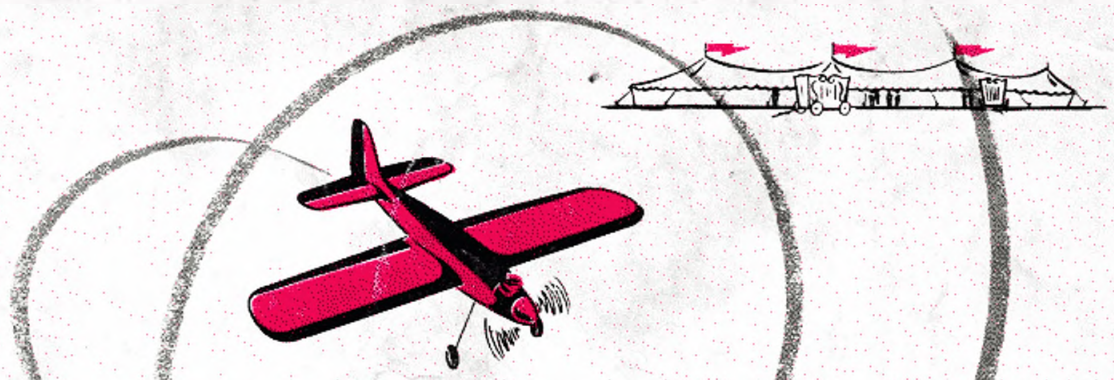
SPECIFICATIONS

Bore .790 Stroke .720
Displacement .35 Weight 7½ oz.
Peak H.P. .60 at 14,000 RPM
Recommended prop 10" diameter 6" pitch
Price $14.95

TORPEDO K&B ENGINES

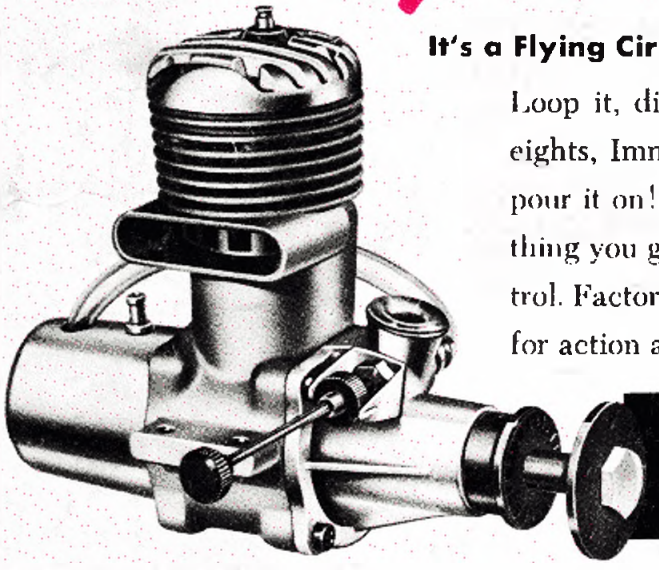
K&B MANUFACTURING CO.

224 East Palmer St., Compton, California



Acrobat of the Air!

McCOY Super Stunt "29" SPORTSMAN



It's a Flying Circus... the Sport Engine that does Everything!

Loop it, dive it, steep climb it or power dive it... do figure eights, Immelmanns, snap rolls or fly inverted. In fact... just pour it on! The new McCoy "29" *Sportsman* will take everything you give it in stunt, free flight, team racing or radio control. Factory flight tests under contest conditions make it ready for action and assure you the best in flying.

Note new design front plate with longer crankshaft. Superior port timing means quicker starts, extra power. Greater fuel suction makes intricate maneuvers easy.

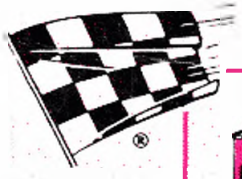
A STUNTING MARVEL BECAUSE:

A two-ringed aluminum piston with hollow wrist pin and forged aluminum con rod make the "29" a balanced, smooth-running engine. The carefully micro-honed sleeve delivers higher compression and extra power in this longer-lasting, trouble-free performer.

With new front plate design and bronze bearing, plus non-critical needle valve... the "29" *Sportsman* proves a sensational aerialist.

ALL THIS EXTRA FLYING FUN AND STILL...

ONLY $11.95 Complete with fuel tank.



McCOY® PRODUCTS COMPANY

8509 HIGUERA STREET, CULVER CITY, CALIFORNIA

Buy and Fly a Checkered Flag Line Engine

For top performance make sure you use McCoy *Glo Fuel*. Pts. 90¢. ½ Pts. 50¢.

Prop Suggestions

Stunt . . . . . 9" x 6"
Free Flight . . . 9" x 4"
Radio 9" x 4", 10" x 4"
Team Racing
9" x 7", 9" x 8"