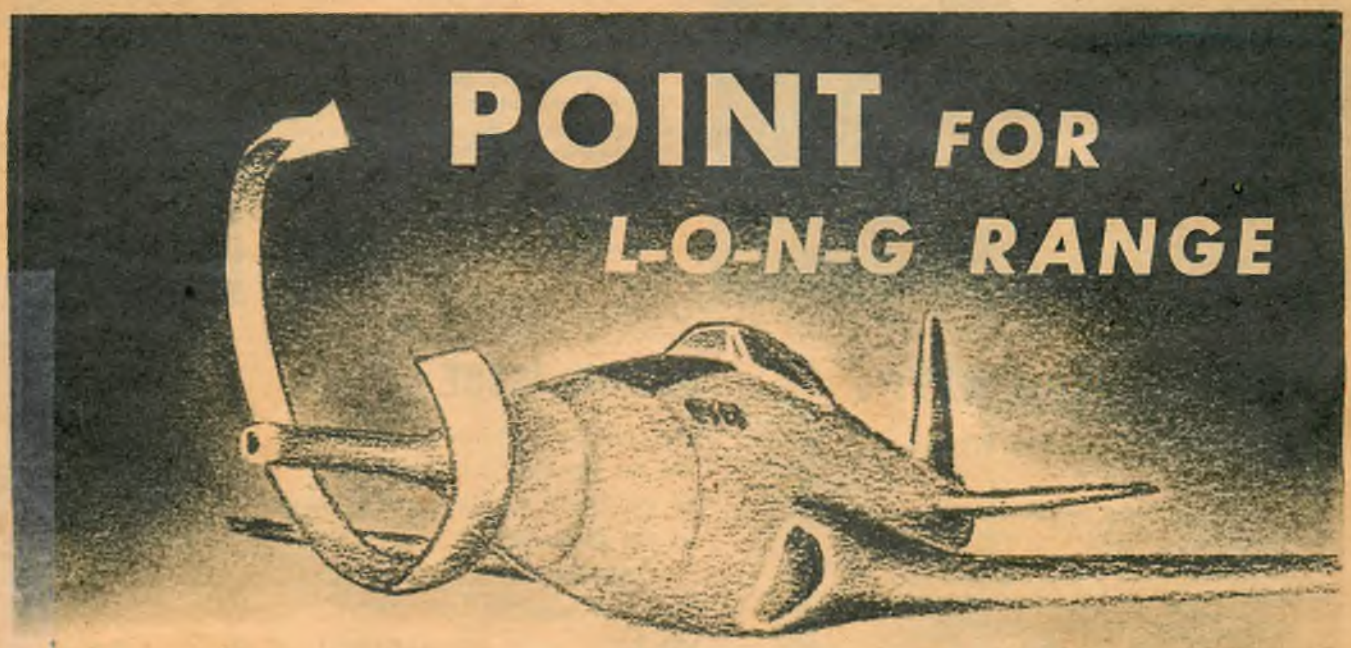
AIR TRAILS

NOVEMBER 1949

25 CENTS

ARE BIG BOMBERS CLAY PIGEONS?



Long range for jet aircraft may soon be attained by a point — a device for high-speed aerial refueling. Unable to use conventional methods, the jet plane refuels by flying its pointed "snout" into a funnel arrangement on the tail of the tanker plane. A recent English experiment with high-speed "aerial transfusions" is another important step forward in airborne maintenance.

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AIR TRAILS Pictorial

NOVEMBER, 1949 • VOL. XXXIII, No. 2

This month's cover pays a tribute to the Civil Air Patrol which is doing a superb job in preparing the youth of America for tomorrow's Air Age. The symbolic painting depicts the hopes of a young CAP Cadet whose eager eyes follow the swift flight of a Republic XF-91 which —thanks to CAP—he may some day fly.

THE READERS WRITE:

Who Shot Whom—and When?

Sirs:

I have just read reader Ned Evans letter in your September issue correcting "two mistakes" you made about some World War I pictures in your May issue. I have also read your invitation to argue the points with him—and that I will.

Mr. Evans states in his letter that Baron von Richthofen brought down his last victim *several days* before he himself was killed. If he wants to get technical, the Baron shot down his last plane *the day before* he was killed, on April 20, 1918. Von Richthofen was killed on April 21.

Secondly, Mr. Evans says that the Baron was shot down by Capt. A. Ray Brown. The correct name is Capt. A. Roy Brown. Also, there has always been some speculation as to whether or not Capt. Brown *did* shoot the Baron down.

"Wop" May not only was an instructor in World War II, but was credited with seven planes at the end of World War I, and later became one of Canada's airline pioneers.

Concerning Mr. Evans' statement about the Vickers "Gun Bus," I have only to say that of all the literature I have pertaining to the "Gun Bus" (which is quite a bit) it is listed as being built by Vickers and hence given the name—although I would not totally disagree with Evans' statement, because remember how long it was believed that the "Scouting Experimental-5" was Sopwith-built.

While looking over the "Famous Battles of World War I," I noticed that Douglas Rolfe said Major Hawker was shot down in a de Havilland DH-2. I was always under the impression that he was killed in an F. E. 8., a plane produced by the Royal Aircraft Factory.

Mr. Rolfe also says: "When Richthofen met his doom he had *more than 80*

(*Continued on page* 9)

Letters to the Editors
All communications to the Air Trails editorial offices should be sent to Air Trails, Box 489, Elizabeth, New Jersey.

IN THIS ISSUE:

HOW THE ROCKET EXHAUST BEHAVES 18
ARE BIG BOMBERS CLAY PIGEONS? 23
AIR PROGRESS: The AIR FORCE Story—Part II ..... Douglas Rolfe 26
WE FLY AT ELMIRA! ..... Alexis Dawydoff 28
C.A.P. NEWSLETTER 31
C.A.P. SUB SEARCH 32
MEET BECKY SMITH, THE LADY METALLURGIST ..... A. R. Boone 34
GEE BEE SUPER-SPORTSTER ..... Douglas Rolfe 35
THE '49 NATS 37
LETTER FROM OLATHE ..... "Dopester" 41
SAN DE HOGAN ..... Dennis Davis 43
METAL FORMING FOR MODELS ..... Roland Mayer 46
MORANE SAULNIER ..... Chester D. Lanzo 48
THE MIGHTY GNAT ..... "Oldtimer" 50
CUB SPORTSTER ..... Aubrey "Red" Kochman 52
MODEL OF THE MONTH: SNIFFER 54
RECORD REVIEW 58
FINLAND WINS THE WAKEFIELD ..... Frank Zaic 60

DEPARTMENTS

Showcase 10
Development Highlights 14
Air Notes 16
Solo Club 36
Airmen of Vision 42
Sketch Book 56
Contest Calendar 73
The Last Word 98

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• AIR TRAILS PICTORIAL published monthly by Street & Smith Publications, Inc., at 775 Lidgerwood Ave., Elizabeth, N. J. Re-entered as second class matter August 16, 1948, at the post office at Elizabeth, N. J., under the Act of March 3, 1879. Authorized as second class mail, Post Office Dept., Ottawa. Copyright, 1949, by Street & Smith Publications, Inc. General and executive offices at 122 East 42nd St., New York 17, N. Y. 25c per copy—$2.50 per year. $2.75 per year in countries of the Pan-American Union; $3.00 per year in Canada; $3.25 per year elsewhere.

• Subscription correspondence should be addressed to P.O. Box 494, Elizabeth, N. J.

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Smith Competitor - 1.95, Firecracker - 2.75
Dual 4.50

CONDENSERS
Regular - .20; Heavy Duty - .25
Aero Metal - .35; Heavy Duty
Metal - .45; Rogers .20

SPARK & GLO PLUGS
Champion V, V2, V3, VR1, VR2 .50
Sparkplug washers .05
Arden Glo (V2 or V3) .65 & .85
Ohlsson Glo (V, V2 or AA) .65
Champion Glo V, V2, V3 .75
McCoy Hot Point .85
O.K. Glo-plug (V2) .65
Infant Glo-plug (spl) .85

IGNITION ACCESSORIES
6 ft. Hook-up wire .25
Alligator clips .10
End Clips, 2 for .10
Tip Jacks (set) for boosters .80
Arden Booster Jack 1.25
Austin Booster Plug-in .30
Copper Lugs, 12 for .25
Midget Switch slide - 30¢ Turn .50
Ohlsson Snap-Pack .35
Arden Battery Cord kit .35

PROP SPINNERS
5/8" - 20¢; 13/16" - 25¢; 1-1/4 .65
1½" - 85¢; 1-3/4" - 90¢; 2" .95
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3" Needle Nose 1½" dia. 1.15
2" 1.20
Adapter Nuts (state eng.) .20
Plastic 1½" .50

WHEELS
Hely-arc Streamlined (pr) 1½" .45
2" - 50¢, 2½" .75
Pneumatic (pr) 2½" 2.50
3½" - 3.00, 4½" 3.50
Semi Pneumatic (pr) 2" .85
2½" - 1.00, 3" 1.50
Sponge Rubber, Dural hub (pr)
7/8" - 25¢, 1-1/8" - 30¢, 1-3/8" .30
1-7/8" - 45¢, 2-3/8" .60
Sponge Rubber, Wood Hub (pr)
2" - 40¢, 2½" - 50¢, 3½" .60
Treckler Pneu. (pr) 1⅜" or 1½" .40
1¾", 2" - 50¢, 2¼", 2½" - 40¢ [illegible]
3" 1.25; 3½" - 1.50; 4½" 1.75
Tail Wheels 7/8" - 10¢; 1-1/8" .15
Sparky Tail Wheel Assembly .25

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Metal, side by side, penlite .40
medium 40¢; regular .55
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Plastic, for 6 penlites 1.25
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Midget Screw Driver .10
Metal Motor Mounts, Sm-30¢; Lg. .50

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.010..012..014..016..018..020 dia. 2-70' lines .65
MERSTET control lines
.008..011..014 2-70' .65
2-150' 1.00
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Gasket Paper .25
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Socket Plug Wrench, 4-way .50
Universal Needle Valve .50
Flexible .75
Needle Valve Exten. flexible .35
Log Book .10
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Fillet Fill .35 Fill-It .45
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Brass Tubing 1/16", 3/32", 1/8" .15
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.020" - 55¢; .032" - 75¢; .064" 1.25
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1/16" - 25¢; 1/8" - 30¢; 1/4" .35
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3/4"x30 ft. .29
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Soldering Set 2.25

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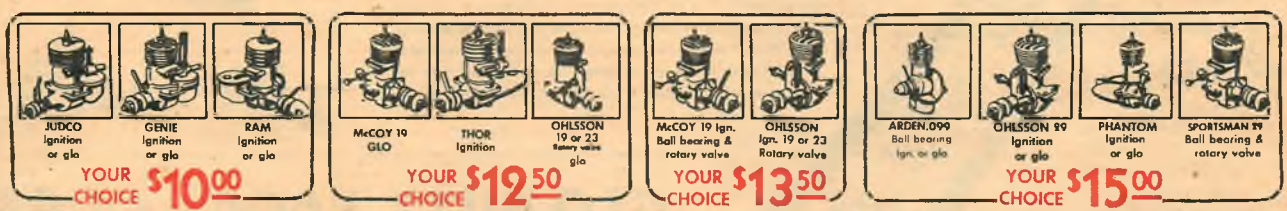

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Some facts about BUZZ Engines.....

SPECIFICATIONS:

	19	29	35	60	CO-2
Displ.	.199	.299	.350	.610	—
Bore	.660	.812	.880	1.000	3/16
Stroke	.562	.562	.562	.777	3/16
Horsepower	1/7	1/6	1/5	1/4	—
RPM	7,500	8,000	8,500	9,000	variable
Prop	8"	10"	11"	12"	5½
Weight	4	4½	4½	9	¾

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(*Continued from page 4*)

Allied planes to his credit." But the Baron actually had *exactly 80* planes *to his credit.* Of course he shot down a few more than 80, but these were not credited to him because they were unconfirmed. The same goes for any war pilot.

ART RONNIE

Hollywood, Calif.

Sirs:

Reader Evans may be right in his statements about Richthofen's last flight but the whole subject is so highly controversial that I for one would not care to argue the point. I don't know who Evans is or what he knows about it. He may merely have read the highly dramatized account which appeared in Liberty a number of years ago. On the other hand, he may have been in the fracas for all I know.

One thing that struck most people at the time was that though Richthofen was shot through the head he apparently landed just back of the British lines with an intact airplane. I saw the ship at Bertangles near Amiens and it was practically undamaged. These odd circumstances lend some truth to the claim made by Australian ground troops that they bagged the Red Baron. The Germans claimed he was murdered after making a forced landing in the British lines. Captain *Roy* (reader Evans take note unless the "*Ray*" was a misprint) Brown was credited in the Liberty article with the kill and it is true that this pilot was in the general locality of the action, but I have yet to hear that he received official credit for the victory. I can be wrong, natch, but it seems odd to me that although I was stationed only a few miles from where Richthofen was brought down that so famous a pilot should meet his death without any definite details being noised around in the pilots' mess.

As to the second mistake claimed by Evans, he is himself mistaken. Probably Sopwith did produce a pusher fighter; many firms did about this time. The original "gun bus" was a Vickers, and in fact the first R.F.C. fighter squadron, No. 11, stationed at Savy-Berlette, was equipped with these machines where the writer knew them intimately. Incidentally, the German pilots in making out their combat reports frequently designated any pusher biplane, Vickers, D. H. or F. E. 2b's, as Vickers.

DOUGLAS ROLFE

Norwalk, Conn.

Sirs:

. . . Evans is wrong. The "Gun Bus" was built by Vickers. In their "History of Sopwith," C. F. Andrews, A. R. Ae. S., and J. W. R. Taylor refer to the "Gun Bus" as a Vickers product: "Another solution to the problem of producing satisfactory aircraft to mount machine guns for air combat was the development of the 'Pusher' type which had the motor and airscrew mounted behind the crew in a nacelle, with outrigger booms to carry the tail assembly. British examples of this form of fighting aeroplane were the Vickers 'Gun Bus' and the F.E.2b two-seat type and the D.H.2 and the F.E.8 single-seat fighter." Nowhere in the "History of Sopwith" is the Sopwith Greek Gun Bus mentioned.

OBSERVER

New York, N. Y.

F2H-1 vs. XF2H-1

Sirs:

Published in the May issue of your magazine is a set of plans by H. A. Thomas of what is supposed to be our McDonnell Banshee. Having been actively engaged in engineering on this plane, I can truthfully state that these plans are incorrect . . . The plans shown are not those of the Navy Model F2H-1 Banshee. They are plans of the Navy Model XF2H-1 Banshee.

JOHN T. DEDEN
McDonnell Aircraft Corp.

St. Louis, Mo.

Merci!

Sirs:

. . . I'd like to say that as an old time Air Trails fan I appreciate what you have done and are trying to do with your magazine, both for the model enthusiast and the aviation bug. My friends and I congratulate you and beg you to keep up the good work. Thanks for a fine magazine, the best in the field as far as I am concerned.

JAMES H. GRAY
Kenyon College

Gambier, O.

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BIG BARGAIN BOX CONTAINING **$1.**

1 Solid Superfortress
1 Flying Kit Phantom Flash
3 bottles dope, yellow, orange, red
1 tube cement
1 knife
1 brush
2 sheets decals
2 sheets sandpaper

Prepaid in U. S. & Poss.

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1949 CATALOG
44 PAGES

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Showcase

See your hobby shop for the items shown here. Both the price and specifications subject to change.

New O&R 23→

A new de luxe version of the O&R 23 engine is announced by Ohlsson & Rice (Emery at Grande Vista, Los Angeles 23, Calif.). The new motor has roller bearings, rotary valve. Comes in 3 forms: De Luxe Engine Pak, $9.95; Glow Plug engine, $10.95, and Ignition engine, $11.95. The regular O&R 23 in all three forms will still be produced.

←It's the Colonial

For rough water or regular work, Dumas Products (now at new location: Municipal Airport, Tucson, Ariz.) introduces a wider and deeper model boat. Built with a heavier hull, it's the Colonial 36-ft. cruiser. Can be made into a sport fishing boat or an enclosed cruiser. Retails at $6.50. Outfit bringing out 5 new Chris-Craft scale model boats.

Sharp Cessna→

For engines from .020 to .099 cubic inch displacement, Brown Mfg. Co. (2818 E. 79th Ave., Chicago 49, Ill.) has 18" span all-plastic Cessna 195. Wings ready to mount, fuselage and tail in 2 pieces ready for joining. Modeled to ½" scale of .025 Plastic Form. Withstands hot fuels. Red and white finish. Costs $2.50. With bulkhead, firewall, landing gear.

←Handy Solder

A new product known as De Luxe Ribbon Solder is now being marketed by Proved Products Mfg. Co. (Drawer 1190, San Fernando, Calif.). It is a low melting ribbon of quality solder ⅜" wide containing a flux. It is melted by applying heat from an ordinary match or soldering iron. In 25c and $1 sizes (latter may be had by mail from mfr.).

Finger Guard→

Development Engineering Co. (Box 691, Hagerstown, Md.) is now producing the Deco "Prop-Stop" finger guard made of top-grade leather reinforced by a full-length spring steel insert. It is held snugly to finger by elasticized fabric band. Guard permits safe hand cranking of engines, protecting finger from cuts, blisters and bruises. Sells for 40c each.

Showcase

Try your nearest hobby shop for items presented here. Write the manufacturer if you can't find it.

Midget Racer→

A new race car making its appearance on the nation's tracks is the McCoy midget which sells for $16.95 complete with McCoy 19 glow plug engine. The car alone can be obtained for $7.50 complete with gears. Made by Duro-Matic Products Co. (Hollywood 38. Calif.). Dual ball-bearing rear axle: iridescent colors; for tracks 25′ and up.

←Some Tourist

Eastman Kodak Co's. new family of folding cameras includes the low price Tourist illustrated here. It sells for $24.50 which includes the federal tax. Takes #620 film and gives you 2¼″x 3¼″ pictures. Has Kodet fixed-focus lens in Flash Kodon shutter. Flash synchronization built into the shutter. Available in f/8.8 and f/6.3 models, too.

Shifty Fellow→

If you've been slow to get that new car this one will keep you amused. Upkeep is low since it's powered by an electric motor running off two flashlight batteries. The '49 Electro-car features full shifting—low, second, high, reverse. Sells for $2.98. Made by Electrocar Co. (59 E. 8th St., New York 3, N. Y.). Over 10″ long, durable red plastic body.

←Tuneful Container

Open the cover and it plays your favorite tune. That's American Handicrafts Co. Inc. (45 S. Harrison St., E. Orange, N. J.) music box kit with an imported musical movement and your choice of tunes. Sells for $3.95 with instructions; make your own personalized music box for jewelry, cigarettes, etc., by using paints, enamels, tooled copper.

Timertank→

The B & B Timertank is novel engine timer and tank which also serves as radial mount for Triumph, Ohlsson, Torpedo engines. Consists of 2 compartments; you can close main tank off from sub-tank, allow engine to run out fuel from timer sub-tank which has adjustable control. $2.95. By Atwood Mfg. Co. (4738 S. Durfee Rd., Pico, Calif.).

CONVAIR B-36B INTERCONTINENTAL BOMBER

What's a ZB-20H? A B-29M?? Or a ZF-24B??? Mystified???? . . . See . . .

U. S. AIR FORCE AIRCRAFT, 1947-1949

An Up-to-the-minute Supplement to Fahey's "Little Grey Book"

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Army Aircraft lists over 2000 models and modifications of Signal Corps, Air Service, Air Corps and Air Force airplanes. Has 440 illustrations. "A mine of info" . . .

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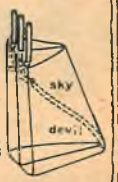

Because of finer production methods Tom offers you his Sky Devil fuel tank at this great saving. Aeronautically perfect for U-control, stunt, speed, also free flight Class B and C.

Send 60c plus 10c postage

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HARLEY-DAVIDSON 125

Sparkling with

NEW FEATURES

HARLEY-DAVIDSON 125

POWER RIDING FOR EVERYONE!

SEE it . . . ride it . . . and you'll agree . . . never before . . . so much personal transportation value at such little cost! Star-studded with mechanical refinements and ultra-smart in new finishes, the 1950 Harley-Davidson 125 brings you greater riding comfort, positive starting, finer all around performance and longer life than ever before! Thousands are now in use by boys and girls, men and women for riding to school, work, sports events, outings. Why not join in the fun? So easy and safe to handle you learn in one lesson. So economical, you get 90 miles and more per gallon. Small down payment, easy terms, immediate delivery. See your dealer today.

NEW four striking colors . . . Flight Red, Sportsman's Yellow, Riviera Blue, Brilliant Black

NEW bucket type, foam rubber saddle gives "easy chair" comfort

NEW generator assures maximum current output, positive starting

NEW drop-forged steering head for greater strength and safety, silver-brazed

plus 3-speed transmission, two-wheel brakes, big tires, bright headlight.

DEALERS: Valuable franchises available for the full line of Big Twins and 125 model. Write today!

MAIL COUPON NOW!

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Send colorful folder and full information about the NEW, low-cost, economical-to-operate 1950 Harley-Davidson 125.

Name_____

Address_____

City_____State_____

Showcase

See your hobby shop for the items shown here. Both the price and specifications subject to change.

Formula 22→

An all-purpose fast-drying cement that can be used for many hobby and craft purposes is Bob Roberts' (32 W. 5th Ave., Gary, Ind.) new Formula 22 model hobby cement. Formula 22 can be used as a color preservative when thinned with acetone. Companion cement, Roberts' Formula 11 is impervious to all fuels; is both oilproof, waterproof.

←U.S.S. Harriet Lane

The good ship *Harriet Lane* was built in 1857 for the U. S. Coast Guard and fired the first gun in defense of Ft. Sumter. She participated in the Atlantic Blockade and the capture of New Orleans. Kit available from Model Shipways (476 Main St., Fort Lee, N. J.), contains carved hull, wood parts, brass cordage, special fittings. Price is $14.00.

Decals for Trim→

Kasiner Hobbies (892 Clinton Ave., Rochester 7, N. Y.) has illustrated circular describing outfit's new 19″ long decal trimmings. Decals come in color combinations such as: red on white, red on silver, red on gold, black on white, silver or gold. With these types of decals most every modeler can now make professionally decorated planes, cars, boats.

←New Glow Fuel

Ranger Products (417 45th St., Brooklyn 20, N. Y.), a fuel concern in operation since 1935, offers new Dyna Glow fuel in pint cans selling for 75c. Contains nitrated methanol base with grade AA castor oil. Company says it was first to sell glow fuel; its chemists are active in contest field, working with flyers and clubs on fuels and lubricants.

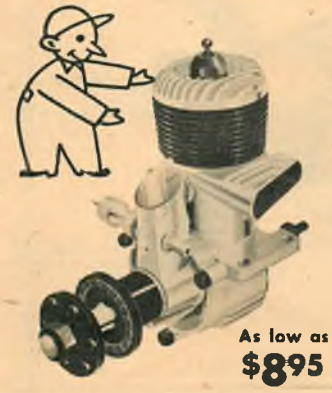
Wing Ding→

Leon Shulman returns to the designing field with a control-line sport and stunt model, Wing Ding, which is manufactured by Master Modelcraft (727 Westchester Ave., New York 55, N. Y.) Plane has 18″ span, takes engines from .025 to .099 cu. in. disp. Carved fuselage, "true-foil" wing, formed landing gear, shaped tail surfaces, plastic pilot. $2.

Ohlsson & Rice
Pow-OR-Team

MONTH-BY-MONTH Guide

ENGINES



GLOW PLUG ENGINE PAKS

Most economical method of owning a quality engine. Factory inspected parts identical to assembled engines. Ready to go in 5 minutes.

☐ **O & R 19** **$8.95**
Ideal for beginner. Max. Class A displ.

☐ **O & R 19 Deluxe** **$9.95**
Rollerized main bear'g. Deluxe features.

☐ **O & R 23** **$8.95**
Sleeve bearing. Rotary valve. Class B.

☐ **O & R 23 Deluxe** **$9.95**
1949 National Champion. Roller bearing. Deluxe features.

☒ **O & R 29** **$11.95**
Maximum displacement Class B. Rollerized crankshaft. Newest features.

☐ **O & R 60 (Sideport Ignition)** **$10.95**
Radio control favorite.

SIDEPORT IGNITION ENGINES

These long-popular engines are not being obsoleted.

☐ **O & R 19** **$9.95**
Easy starting. Max. Displ. Class A.

☐ **O & R 23** **$9.95**
Sturdy. Easy starting. Class B.

☐ **O & R 60** **$11.95**
Hi-torque powerhouse for Class D.

ROTARY VALVE GLOW PLUG ENGINES

Equipped wth O & R Platinum Heart Glow Plugs.

☐ **O & R 19** **$9.95**
Factory assembled and tested. Class A.

☐ **O & R 19 Deluxe** **$10.95**
Rollerized crankshaft. Maximum Class A power. Deluxe features.

☐ **O & R 23** **$9.95**
Sleeve bearing. Dependable.

☐ **O & R 23 Deluxe** **$11.95**
National Class B Champion! "Rollerized, Rotarized, Revolutionized"

☐ **O & R 29** **$12.95**
World's finest model engine. Maximum Class B displacement.

ROTARY VALVE IGNITION ENGINES

For those prefering ignition operation.

☐ **O & R 19** **$10.95**
Spark ignition. Fully enclosed timer.

☐ **O & R 19 Deluxe** **$11.95**
Rollerized bearing. Adjustomatic timer.

☐ **O & R 23** **$10.95**
Spark ignition. Fully enclosed timer.

☐ **O & R 23 Deluxe** **$11.95**
Rollerized bearing. Adjustomatic timer.

☐ **O & R 29** **$13.95**
Max. Class B Displ. Adjustomatic timer.

GLOW FUELS

Developed to give the modeler the utmost in performance with each type of engine. Besides lubricating qualities, these fuels act as powerful detergents against engine varnish, tar and carbon deposits. Compounded at O & R's Los Angeles, Calif., and Wilmington, Del., plants, world's largest model fuel labs.

☐ **O & R No. 1 Pint .75 Quart $1.40**
Supreme fuel for ignition-operated lapped piston engines.

☒ **O & R No. 2 Pint .75 Quart $1.40**
Supreme fuel for glow plug-operated lapped piston engines.

☐ **O & R No. 2 Economy FULL PINT .49**
Ideal "Sunday Flyer" fuel. Provides positive lubrication. Engine guarantee valid with this nitrated methanol fuel.

☐ **O & R No. 3 Pint .75 Quart $1.40**
Supreme fuel for ignition-operated ring-type engines. Also blending base for O & R 30-Plus.

☐ **O & R No. 4 Pint .75 Quart $1.40**
Supreme fuel for glow plug-operated ring-type engines.

☐ **O & R No. 4 Economy FULL PINT .49**
New nitrated methanol fuel for the "Sunday Flyer." For ring-type "glow" engines.

☒ **O & R No. AA Pint .75 Quart $1.40**
For all ultra-small engines.

☐ **O & R 30-Plus Pint $1 Quart $1.75**
Nitrated blending compound for racing mixtures.

GLOW PLUGS

Glow Plugs with Platinum Heart
For all sizes and types of engines. Heat balanced. Simplified construction. Maximum strength. Longer life expectancy.

☐ **Standard ¼" x 32**
☐ **Standard ⅜" x 24**

☐ **Racing ¼" x 32**
☐ **Racing ⅜" x 24**

☒ **Double A (AA) for OK Cub, Anderson Spitfire**

☐ **Infant for K & B and similar engines**

Each 65c

ACCESSORIES

MODERNIZATION UNITS

Roller bearing rotary valve "Modernization Units." For modelers with favorite engines to be brought up to date.

☐ **19, 23 Unit $5.50**
☐ **60 Unit $6.00**

FUEL TANK ENGINE MOUNTS

Aluminum alloy die-cast fuel tank with engine mounting lugs. Permits radial, beam, or combination mounting.

☒ **19, 23, 29 $1.50**
☐ **60 $1.75**

ADJUSTOMATIC TIMER

Designed to fit all O & R engines built since introduction of the 23. Adjustable points, positive contact.

$2.00

TWO-SPEED TIMER

Interchangeable with Adjustomatic Timer for radio control. Permits change from high to low speed.

$1.75

SNAP-OR-PACK

Prolongs battery life. Faster starting. A "must" for every modeler.

35c

FLY WHEELS

Entirely new O & R design improved fly wheels with trueing washer that insures wobble-free mounting on engine, eliminates vibration.

☐ **19, 23, 29 Fly Wheels with Trueing Washer, 1½" dia. x ⅞" thick. Wt. 6 oz. $1.25**

☐ **60 Fly Wheel with Trueing Washer, 1⅞" dia. x 15/16" thick. Wt. 9¾ oz. $1.50**

PROPELLERS

Made from straight grain birch hardwood. Airfoil and blade engineered for higher performance.

☒ **Pow-OR-Team Propellers** **.45**
Lacquer finished

☐ **Pow-OR-Pitch Propellers** **.35**
Wax finished

Each available in 18 sizes

Pledge

To every sports-minded hobbyist and model flyer in the new *Air Age*, Ohlsson & Rice guarantees not only the world's highest quality model engines and power accessories, but also constant research to insure that every modeler who buys O & R power equipment receives the latest and soundest advances in model engines and accessories.

Watch your Hobby-Dealer for Ohlsson & Rice "Specials"
See latest O & R announcement on back cover

OHLSSON & RICE, INC.
Emery at Grande Vista, Los Angeles 23, Calif.
Standard of the Model World

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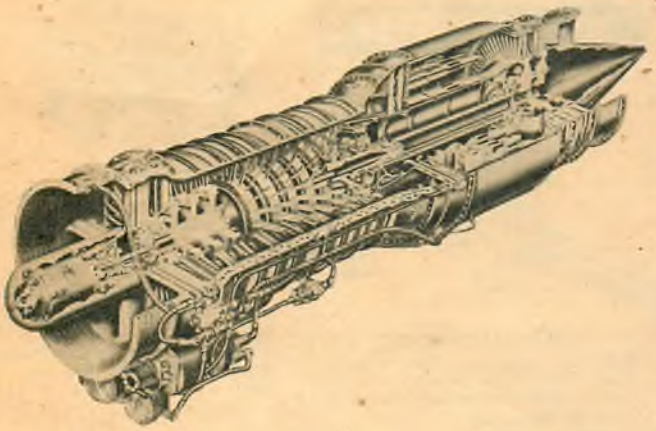
Development Highlights

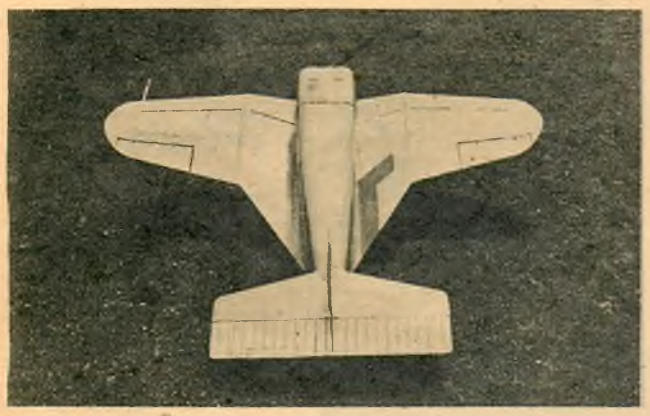


● Cutaway of the Westinghouse J-34 turbojet engine which powers such famous fighters as the Navy Banshee, F7U Cutlass, the AF's XF-85, XF-88 and many others. Plant develops 3,000 lbs. of thrust.

● Made especially for aircraft turbine engines, the Hamilton Standard Turbo-Hydromatic propeller has recently passed a 110-hour AF-Navy type test. Prop is fitted with electronic governing devices.

● Beechcraft's latest twin-engine light transport, the Model 50 Twin Bonanza. Carries five, is powered by two 185-hp Continental engines. Proposed delivery next year, tentative price $30,000.

● The Jamieson Jupiter, a 3-place personal plane which cruises at better than 150 mph, climbs at 1,049 ft. per minute, lands under 40 mph. Powered by a 115-hp Lycoming. Construction all-metal.



● The Lanier Paraplane. A newcomer to the field of safety-planes, still undergoing flight tests. Special wing with Vacu-jet airfoil gives plane landing properties of autogiro. Span 20', length 20'.

● Sikorsky H-5H helicopter equipped with Sikorsky-developed amphibian landing gear, which permits easy handling of craft on ground. This particular machine also has three litters for wounded.

There's a Big Future for YOU in AERONAUTICAL ENGINEERING —with NORTHROP Training

Aeronautical Engineering offers you a wide choice of creative and practical duties. Here two engineers install a guided missile model in the Northrop Aircraft, Inc. wind tunnel to study its aerodynamic characteristics.

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GOOD PAY FROM THE START

Northrop-trained men have drawn top pay brackets for starting jobs in *Aeronautical Engineering.* They have an enviable record for moving up fast, in both earnings and responsibility. Join them—by getting Northrop training—and gain this important advantage in starting YOUR career. Many types of *creative* duties mean there can be a place for you if you possess *imagination* and *originality.* Many *practical* kinds of work mean there can be a place for you if you like *action* and the *use of skill.*

In a huddle on their design for the rudder of a student project aircraft, these Northrop students study their assembly drawings—a scene they will repeat many times during their careers.

Wing-top classroom—an example of how engineering instruction at Northrop comes vividly to life in an actual aviation industry environment.

All-wing glider designed by Northrop engineering students—a typical training project for practical design and production experience.

NORTHROP TRAINING HAS WON CHOICE JOBS FOR GRADUATES

Many of even the more recent *Northrop* graduates are in such important specialized work as design, research, testing, stress analysis, aerodynamics, and power plant engineering. Helicopter and guided missile design are examples of the advanced projects for which *Northrop* graduates have been chosen.

It pays to get the "edge" *Northrop* training gives you. The *Northrop* name is respected for leadership and outstanding contributions to Aviation. Employers recognize the Institute's graduates as typical *Northrop* products—meeting the highest standards.

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This big, beautifully printed booklet contains many interesting photographs of Northrop planes and plant scenes... tells you about Aviation's big opportunities...and describes in detail Northrop's 2-year Aeronautical Engineering course. Send coupon for your free copy.

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Air Notes

AVIATION TODAY AND TOMORROW

Airy Research

A way to increase the range of airplanes by lessening the drag caused by the "boundary layer" of air next to the airplane's surface is being sought by engineers of Northrop Aircraft. If this boundary layer air, which develops miniature eddies and turbulences that claw at the surface of the plane, could be kept smooth, the drag on the plane could be greatly reduced. Northrop's program is to control the boundary layer by means of narrow slots in which a pump in the plane creates suction, whisking off the boundary layer into the plane itself and exhausting it to the rear.

Boundary layer control in a Flying Wing like the B-49 would permit travel non-stop for about 25,000 miles, by stretching gas mileage and speed, say Northrop's engineers. On an ordinary airplane, however, the fuselage and tail surfaces would present much more complex problems.

More airy research is going on at Convair's plant in Columbus, where a supersonic air jet that can create up to 1,200-mph gales is in use in basic air flow research. Principal feature of the air jet is a small three-inch nozzle through which the air is forced at 6,500 feet per minute. Researchers have to wear ear stoppers and headphones.

Seat And All

When you bail out of an airplane these speedy days, a chair chute is not enough, you take the chair too. Air Force seat-ejection bailout tests have recently resulted in successful bail-outs from a jet plane flying more than 550 mph. The seat-ejection device actually fires the pilot out of the aircraft while he is still strapped to the cockpit seat. From there on it sounds like something by Rube Goldberg. After ejection the seat is stabilized by automatic flaps and a small drag parachute. The drag chute opens the pilot's safety belt and pulls a seat retarder chute which keeps the seat from becoming entangled with the parachute worn by the falling pilot. A static line attached to the seat then opens the pilot's chute.

Fast Fueling

Multi-engine planes being refueled in only a fourth of the time now required is the prospect offered by a new single-point fueling system under development by the Boeing Company. The new system is forced feeding—cramming the gas from a single point throughout the entire system. A B-50 Superfort, it is claimed, could be fueled by a single truck in slightly more than 15 minutes. At present two trucks and more than an hour are required. It isn't planned to apply the system to commercial airliners, but it may make a big difference in event of military emergency.

Helicopter Happenings

Production of the world's first amphibious helicopter, the Sikorsky H-5H, has been announced. The H-5H has four wheels in the float mechanism for ground landings, a hydraulic winch to raise survivors into the cabin when seas are too rough for landing.

Successful results are reported by two companies in the task of achieving helicopter stability. Doman claims to have achieved full stability by simple improvements in blades and control system. Flights as long as 45 minutes have been made without the pilot touching the stick, pitch control, or throttle. Sikorsky, as a step toward automatic stability in large 'copters, has a hydraulic control system which minimizes the effort required of the pilot. Kits to fit the S-51 are available.

Something new in helicopter research is the 48-ton, 4,000-hp electric motor which the Air Force has installed atop a 30-foot steel tower at Wright Field. There it will be used to spin experimental helicopter propellers high over the disturbances of ground-level air currents. The 48-ton motor, if it were built into a 'copter, could lift a plane weighing 50,000 pounds.

Jets In Britain

Jet-propelled airliners are not here yet, but they are certainly on the way. The British de Havilland Comet jet airliner designed for 36 passengers has made its initial flights months ahead of schedule and is now engaged in a serious flight development program. Production of the Comets will proceed direct from the design stage; 16 have already been ordered. By 1952 they're expected to be in commercial service, cruising at 500 mph, 40,000 feet up, and shortening the trip from England to the U. S. to only six hours.

Private Blinkers

Flashing position lights for aircraft, which have proved their value on transport planes, are now being urged for private planes that fly at night. Inexpensive, easy-to-install versions are available for under $20. There have been narrow escapes from accidents in the air when steady aircraft position lights have been mistaken for stars. With lights that flash from 72 to 120 times a minute, such close calls won't happen, says CAA.

Snorkel Spotter

The Snorkel submarine is being made a less deadly menace by a new and secret radar device that is being fitted to Navy airplanes. By June of next year, 25 percent of the Navy's land-based planes and 10 percent of the carrier planes will be so equipped. In another year it will be about 39 and 31 percent, respectively.

Double Bonanza

A new twin-engine Beechcraft Bonanza is scheduled to make its debut early in 1950. The plane is designed as a five-placer, will carry six for short-range flights. It will be of conventional design, minus the familiar Bonanza V-tail. No more details of the twin Bonanza Model 50 until after flight tests are completed, says Beech. The plane will cost about $30,000.

Jack-Of-All-Trades

The most versatile plane in Uncle Sam's air arsenal is the all-metal Convair L-13 liaison plane which has been used for air rescue, observation, communication, artillery spotting, supply dropping, cargo transport, and photographic missions. It has several changes of landing gear the newest being floats for operations on water. L-13 can also wear ski-wheels for snow and double-wheel landing gears for desert missions.

No More Skidding

An increased life expectancy for the airplane tire is promised by a new automatic skid-preventer developed by the Boeing Airplane Company and just licensed for commercial production and sale. The attachment has been operated successfully on an XB-47 jet bomber and also on the YC-97A Stratofreighter. It is currently being tested on a Stratocruiser. Airplane tires are not the only beneficiaries. Stopping distances are shortened and the hazard of skidding eliminated.

Sky Boat Testing

Scheduled for this fall is the first test flight of a huge new experimental Navy patrol flying boat, the 60-ton XP5Y-1 being built by Convair. The new-type plane will have four turboprop engines designed to develop at take-off more horsepower per pound of airplane weight than some modern fighter planes. Convair is making two of the XP5Y's. The second is expected to fly next year.

More On The Channel Wing

A new boost for the Custer Channel Wing (see Air Notes for August) is due to come from an engineering research project being undertaken by the Parks College of St. Louis University. The East St. Louis school has contracted with the designer of the craft, Willard R. Custer, to build a channel wing plane in the college's aircraft maintenance engineering laboratory. Parks students will take an active part in the research program on the radical plane design which uses a U-shaped airfoil channel for lift instead of conventional wings.

MAKE 1950 YOUR YEAR OF OPPORTUNITY!

WHERE WILL YOU BE ONE YEAR FROM TODAY?

Bored and dissatisfied in your present job? — undecided how to use your high school education or GI benefits to best advantage? — still wondering when to start in this fascinating business of aviation?

Or, *as a California Flyers graduate,* will you be ready to embark on your aviation career as ground-crew supervisor, research assistant, junior engineer or in scores of other high-paying positions with a future.

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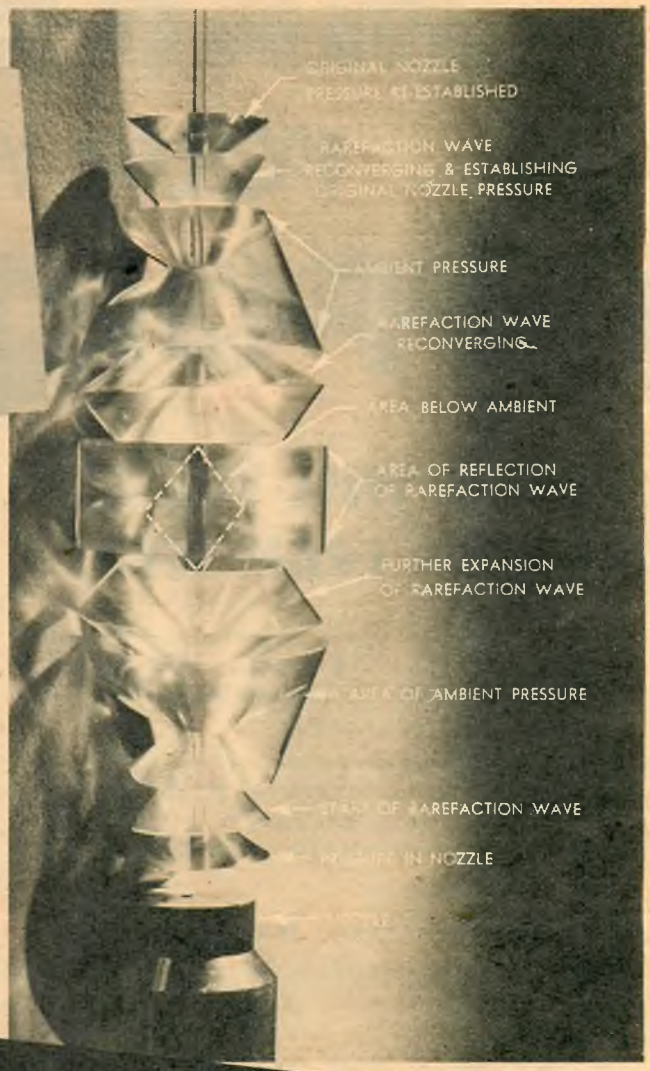
HOUSING AVAILABLE

How the Rocket Exhaust Behaves

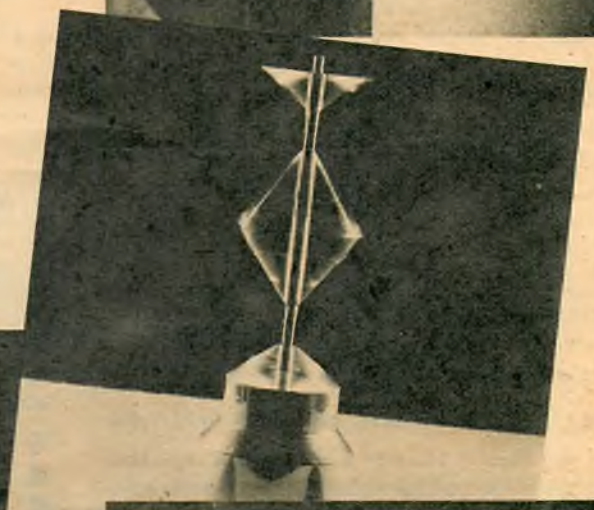


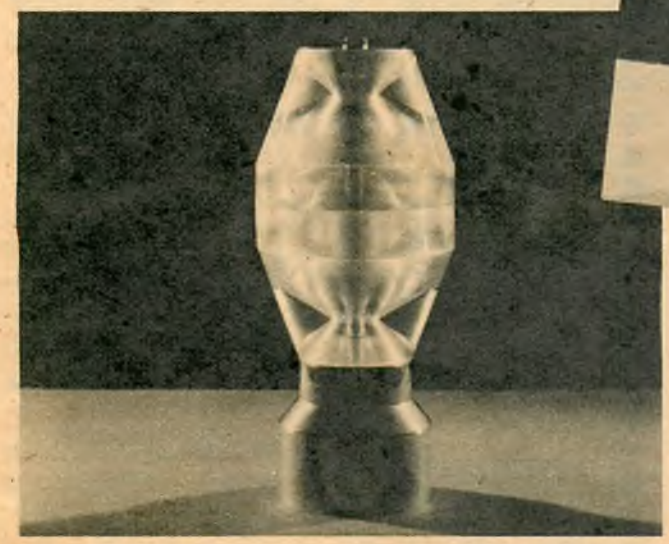
WHEN a rocket-driven missile or airplane streaks through the sky, it leaves a trail of gas and flame. It's not a smooth flow like water pouring from a pitcher.

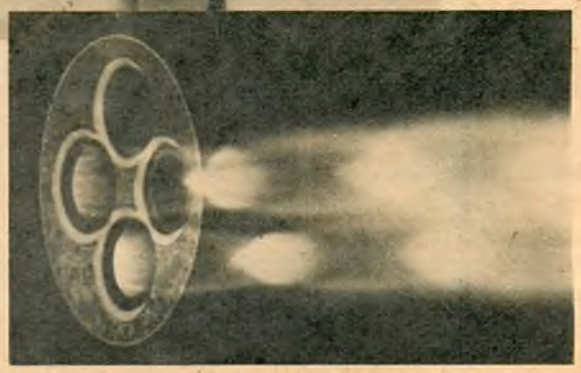
These photographs show exactly what takes place when a transonic speedball like the Skyrocket flies on a combination of jet and rocket power. Gases from the rocket motor rush at supersonic velocity into the atmosphere. Exhaust pressure expands until its waves of diminished pressure are reflected by the surrounding air pressure, causing the original nozzle pressure to be built up again.

This pattern of "blobs" repeats itself 11 to 12 times, according to observations by Navy and Douglas Aircraft engineers. In each, pressure varies from 15 times above atmospheric to one-fifteenth below.

● TOP: Plastic model of jet exhaust pattern disassembled into eleven parts to study flame and pressure patterns. CENTER: Three separate plastic forms show location of high and low pressure. Bottom cone represents pressure at nozzle; double cone where pressure drops below atmospheric; at top, waves reflected from atmosphere re-establish pressure. BOTTOM LEFT: Reproduction of one sequence of pressure pattern. Black base represents pressure at nozzle. BOTTOM RIGHT: Unlike steady stream of exhaust from car, gases emitted from rocket at supersonic speeds set up series of tapered pressure patterns.







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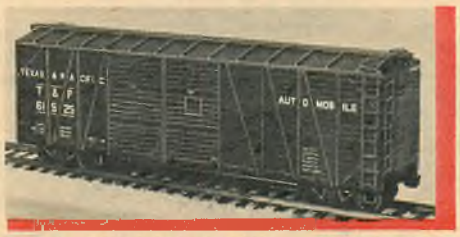
WABASH AUTO BOX CAR Kit No. R8

PLUTO WATER REEFER Kit No. R1



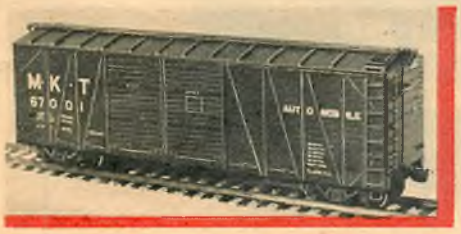
T. & P. AUTO BOX CAR Kit No. R10

HORMEL FOODS REEFER Kit No. R3

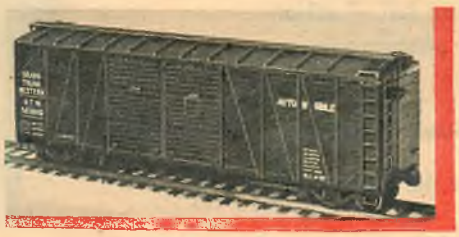
C. & N. W. FLAT CAR Kit No. R14

GREEN BAY REF. CAR Kit No. R5

A. R. T. REF. CAR Kit. No. R6



M. K. T. BOX CAR Kit No. R7



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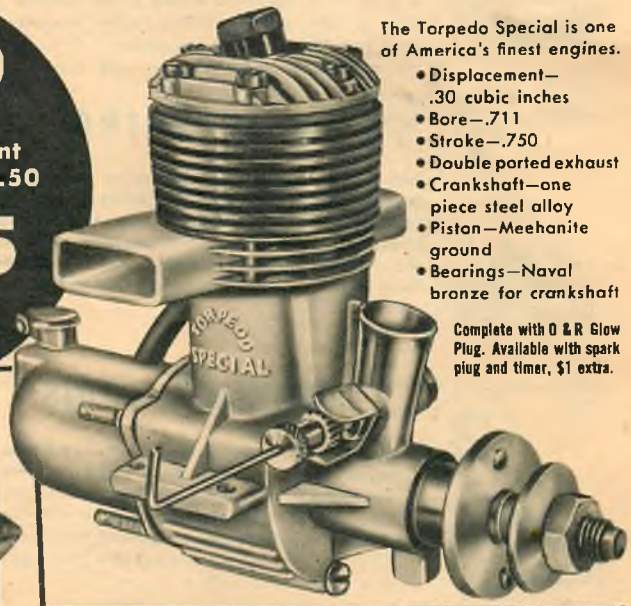

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TRAIN IN MIAMI -- AIR CAPITAL OF THE WORLD

AIR TRAILS
NOVEMBER, 1949

Are Big Bombers Clay Pigeons?

Here's the real story behind the famous B-36—the most powerful and formidable bomber in the world today

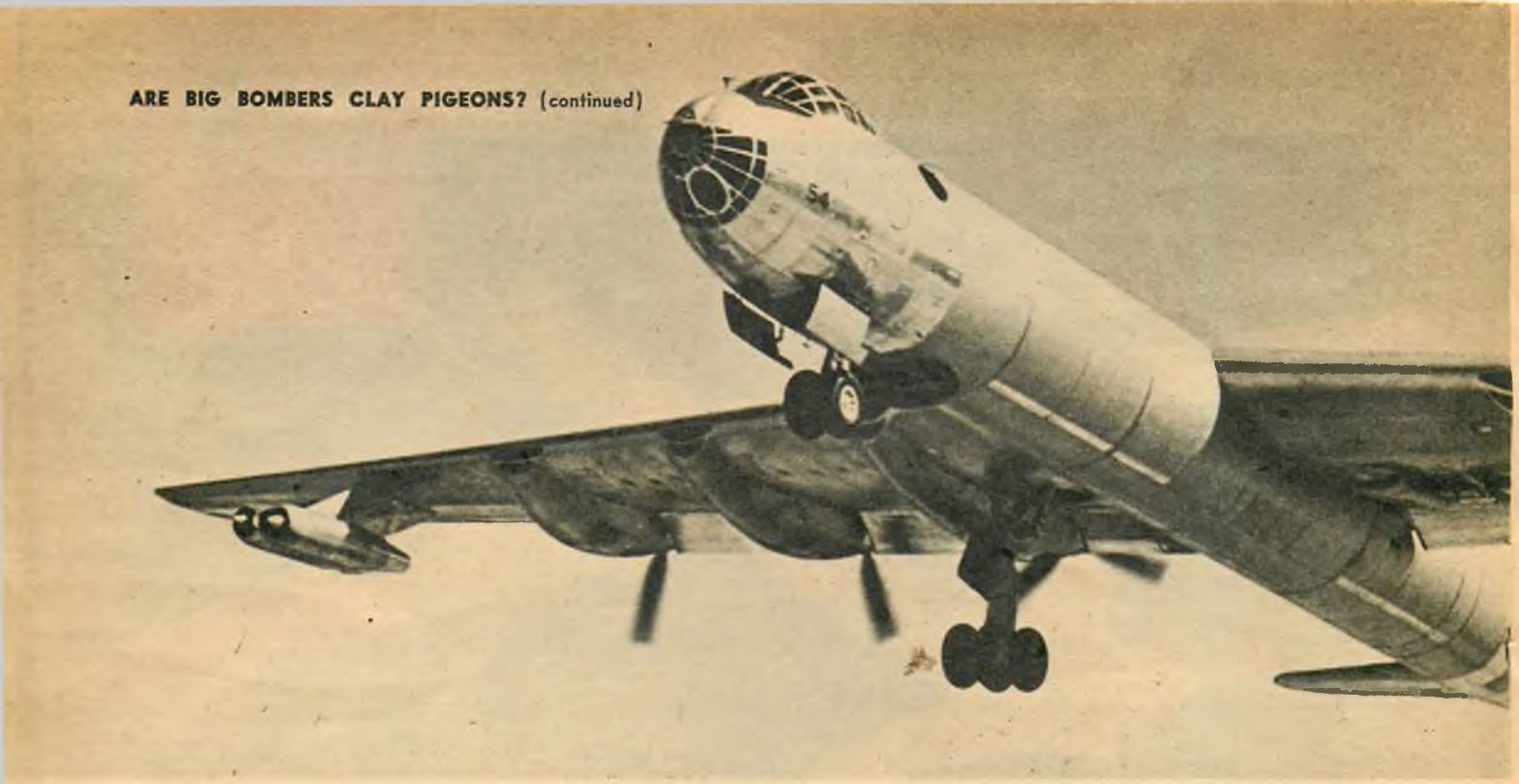
ONE HUNDRED AND SEVENTY-EIGHT tons of airplane. A wing span greater than the distance of the Wright brothers' first flight. Twenty-one thousand horsepower plus another twenty-one thousand pounds of jet thrust. Ninety tons of gasoline. Ten thousand pounds of bombs. Ten thousand miles of range. Eight miles in the air. A fifteen-man crew. Cost—*four million dollars each.* That's the B-36—the Air Force's huge intercontinental atom bomber.

But what *is* the B-36? Where did it come from and what has it done to cause all this commotion? Is the pride of the Air Force a clay pigeon? Speculation is one thing, but what are the known facts behind the "36"?

The huge bomber was conceived back in 1941 only a few months before Pearl Harbor. But it didn't lift its wheels and get into the air until August, 1946—five years later and after the war for which it was designed had been fought and won.

The whole thing started in the spring of 1941 when Germany was belaboring England from the skies. It seemed entirely possible that if and when we entered the fracas we would have to stand on our own shores and launch our attacks from this side of the Atlantic. England was tottering, and if she fell an unsinkable aircraft carrier would be denied us.

As insurance against this disaster, the Air Force called the best brains of the aircraft industry together to consider the immediate development of an ultra-long-range bomber—one that could strike deep into Germany from bases in the United States.



In April of 1941, the top ranking designers and builders of military craft sat down with the top military planners to discuss the situation. Douglas, Boeing, Northrop and Consolidated-Vultee answered the call, sat and listened, went back home, worked up preliminary designs, and reported back. The original requirement was for 12,000 miles of range, carrying 4,000 lbs. of bombs. But at a high level conference in Washington in August the requirements were changed to 10,000 lbs. of bombs to be carried 10,000 miles—thus leading to the catch phrase, a "ten-ten" bomber.

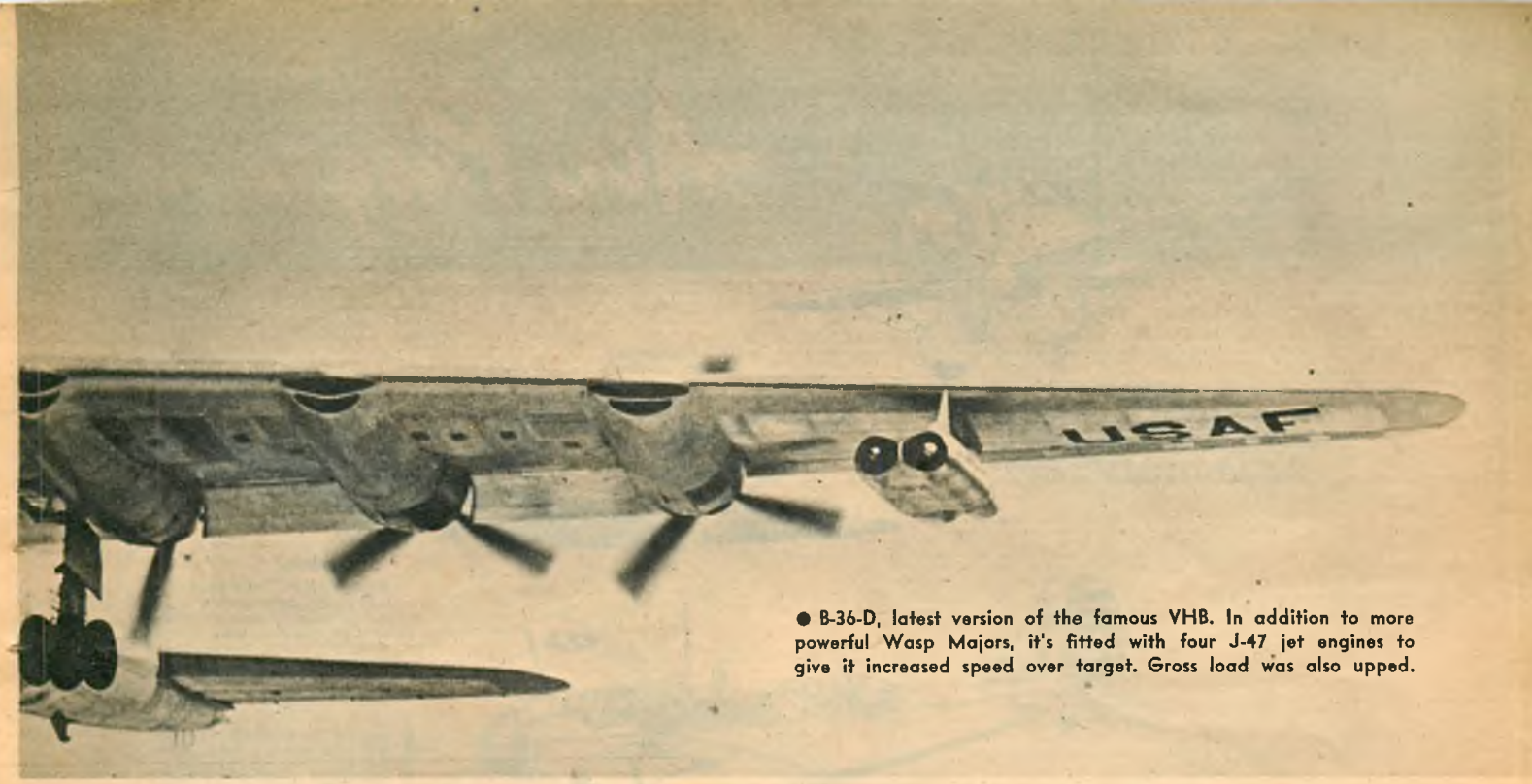
Such range was staggering from a design point of view and obviously demanded the most skillful manipulation of all technical factors to come up with anything even close to the requirement. In fact, it was commonly thought at the time that 10,000 miles was probably the absolute theoretical maximum range that an airplane could fly—regardless of size. The slightest slip-up in design would be disastrous. It was very clearly understood that weight control was an important key to the riddle and that all equipment not absolutely necessary for the completion of a mission would have to be ruthlessly ripped out. Never before in the history of aircraft design was such a penalty placed on weight. In fact, it was believed that for every ten pounds added, one mile of range would be sacrificed; for a ton added, 200 miles of range would be lost.

But light weight was only one of the tough problems. Equally important was low aerodynamic drag, low fuel consumption, and high engine durability—since non-stop flights of two days or more would be necessary to cruise the 10,000 miles. In other words, the plane had to be extremely light, with very little drag, and burn very little fuel—no mean feat!

Consolidated-Vultee Aircraft Corporation was given a contract in November, 1941, for two experimental models to cost $150,000,000—two XB-36's with six powerful 3,000-horsepower Pratt & Whitney four-row air-cooled engines mounted on the wing trailing edge. And then began the most intensive and exacting research development program ever associated with an Air Force plane. New materials and processes were investigated. Magnesium, plastics, the

● Tremendous size of the B-36 is clearly indicated here in comparison to the dwarfed B-29. Shown here is the first model, XB-36.

● Two 42,000-lb. bombs like the above were dropped by the bomber last January on bombing range at the Muroc Air Force Base, Calif.



● B-36-D, latest version of the famous VHB. In addition to more powerful Wasp Majors, it's fitted with four J-47 jet engines to give it increased speed over target. Gross load was also upped.

miracle metal—75 ST aluminum alloy, all were used with new fabrication and manufacturing techniques especially developed for the huge bomber.

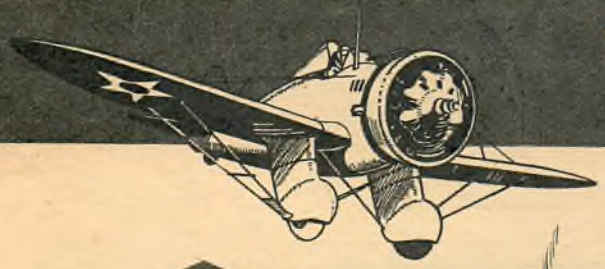
Aerodynamic problems also arose to plague the designers. Twin tails were scrapped in favor of a single huge rudder. Wing tip anti-stall slots were built into the first XB-36's outer wing panels after N.A.C.A. wind tunnel tests predicted poor stalling characteristics on the sweptback wing. But the slots were later riveted shut when it was proved in flight that the stalling characteristics were satisfactory. Two-speed cooling fans were developed to keep the submerged engine temperatures within safe operating limits; a two-speed propeller gear box was considered, but discarded when it was found that it would take years to develop. Propeller vibration, a basic difficulty with pusher propellers, was thoroughly investigated. Full-size engine nacelle tests were carried out with the entire unit placed in a wind tunnel to check the intricate cooling ducts which pass through the wing and carry cooling and carburetor air to the engine. (*Continued on page* 70)

● Four-wheel main landing gear distributes weight over relatively large runway area enabling B-36 to operate from many fields.

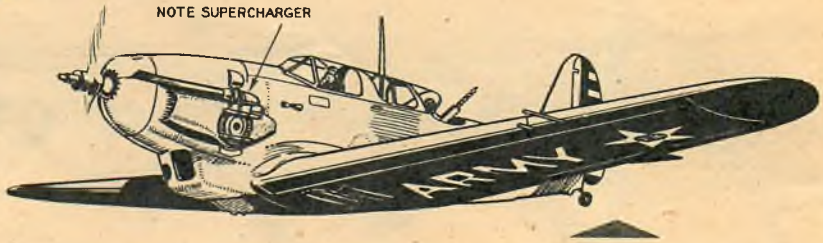
● One of the most distinctive features of the airplane is the slim cigar-shaped fuselage and the midship location of the 230-ft. wing.

● Sweptback planform of wing proved to be stable. Pusher engine installation keeps leading edge clean, increasing wing's efficiency.

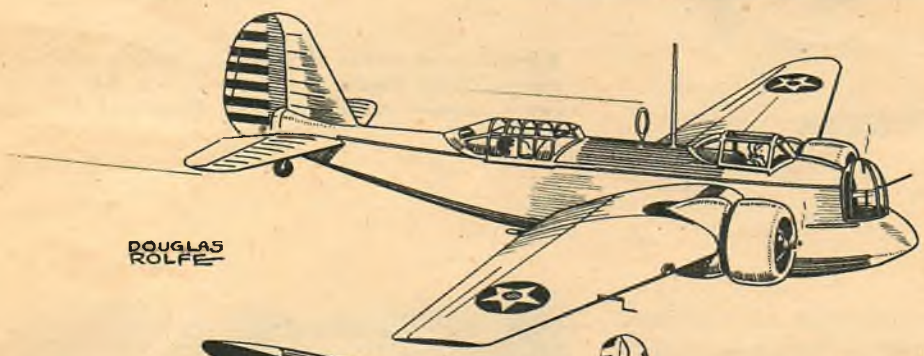
Air Progress



PRE-WAR PURSUIT — 1933 BOEING P-26 ALL-METAL SINGLE-SEAT FIGHTER — 600-H.P. AIR-COOLED RADIAL. MAXIMUM SPEED 234 M.P.H. FOR YEARS STANDARD A.A.F. FIGHTER AND IN ITS DAY BEST OF ITS KIND IN THE WORLD...

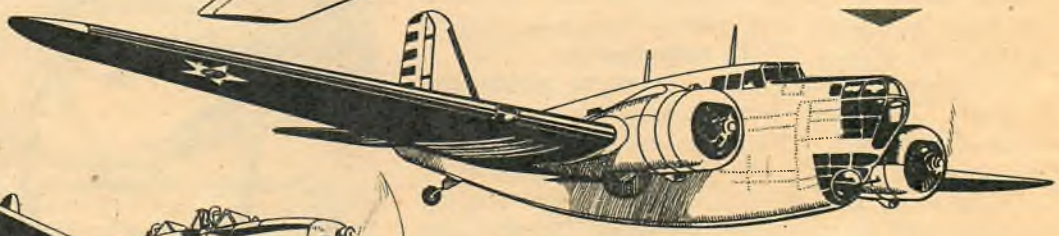


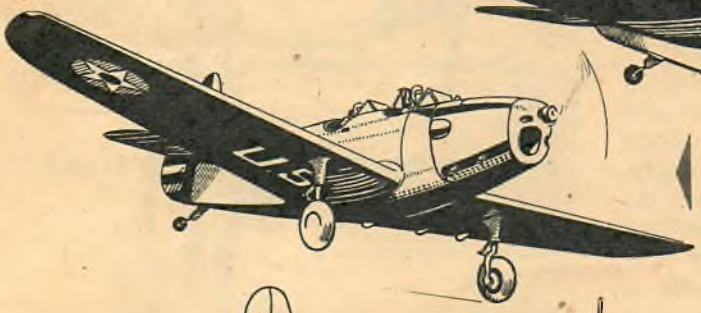
PRE-WAR ATTACK PLANE
1935 CONSOLIDATED PB-2A — A 2-SEAT FIGHTER AND LOW-LEVEL ATTACK PLANE — WITH SUPER-CHARGED 700-H.P. CURTISS ENGINE MAXIMUM SPEED WAS 232 M.P.H.



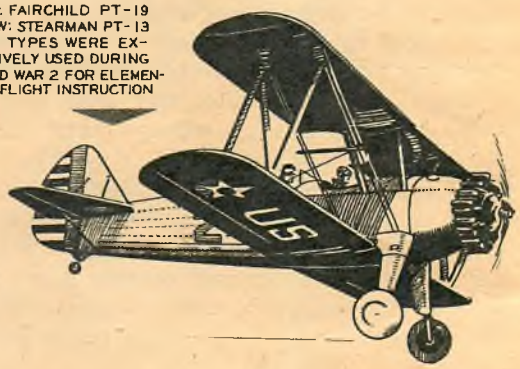
DOUGLAS ROLFE

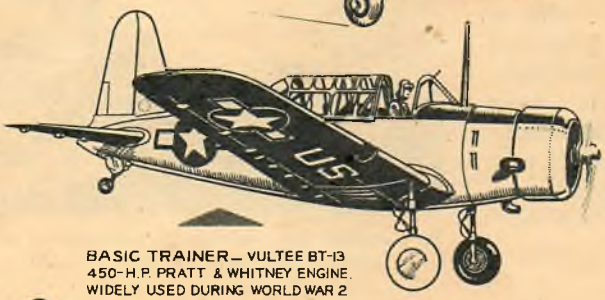
PRE-WAR HEAVY BOMBERS
LEFT: THE 1934 MARTIN B-10B, ONE OF THE WORLD'S BEST PRE-WAR MILITARY AIRCRAFT. WITH TWO 740-H.P. RADIAL ENGINES IT HAD A TOP SPEED OF 213 M.P.H. THE DOUGLAS B-18A (BELOW), A 1937 DESIGN, HAD A TOP SPEED OF 214 M.P.H. AND WAS THE MILITARY DEVELOPMENT OF THE DOUGLAS DC-2 CIVIL TRANSPORT (AIRLINER)



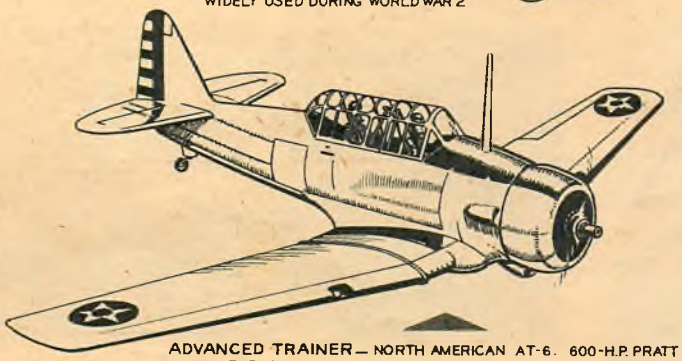


PRIMARY TRAINERS
LEFT: FAIRCHILD PT-19
BELOW: STEARMAN PT-13
BOTH TYPES WERE EXTENSIVELY USED DURING WORLD WAR 2 FOR ELEMENTARY FLIGHT INSTRUCTION





BASIC TRAINER — VULTEE BT-13 450-H.P. PRATT & WHITNEY ENGINE. WIDELY USED DURING WORLD WAR 2



ADVANCED TRAINER — NORTH AMERICAN AT-6. 600-H.P. PRATT AND WHITNEY RADIAL. ONE OF THE BEST KNOWN TYPES IN THIS CLASS.

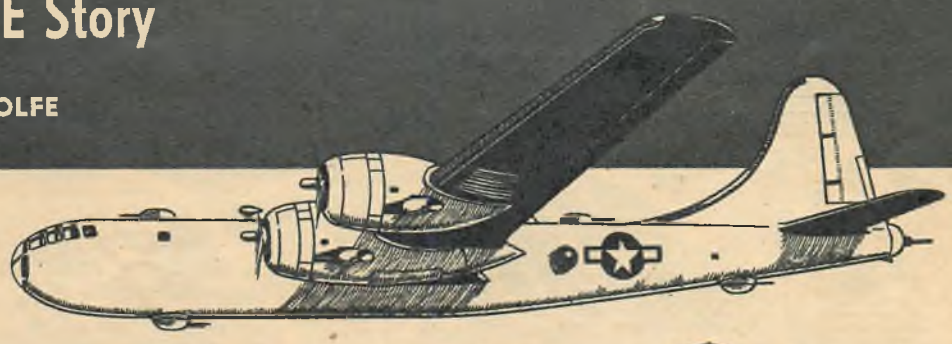
In 1935 the Air Corps had less than 1,200 serviceable combat planes on hand. When, in 1941, the old Air Corps became the Army Air Forces, its strength had been considerably increased, and by the time of Pearl Harbor total strength of the newly named air arm was about 23,000 officers, 275,000 enlisted men, and 12,000 planes. There were also around 16,000 cadets undergoing flight training.

Throughout the war, in which the AAF played a dominant role in practically every theater of operations, the number of personnel and planes was constantly increased until V-J Day, when total strength was no less than 2,412,000 officers and men and over 230,000 planes of all types. Nearly 23,000 AAF planes were destroyed in combat missions, either by flak or by enemy action. The total number of planes written off during the war by either combat, accident, or obsolescence reached

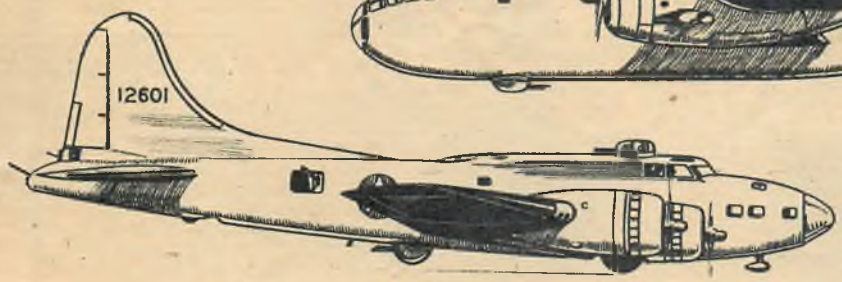
The AIR FORCE Story

PART II

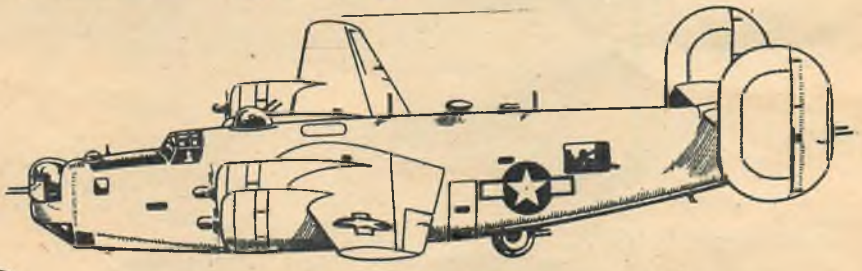
By DOUGLAS ROLFE

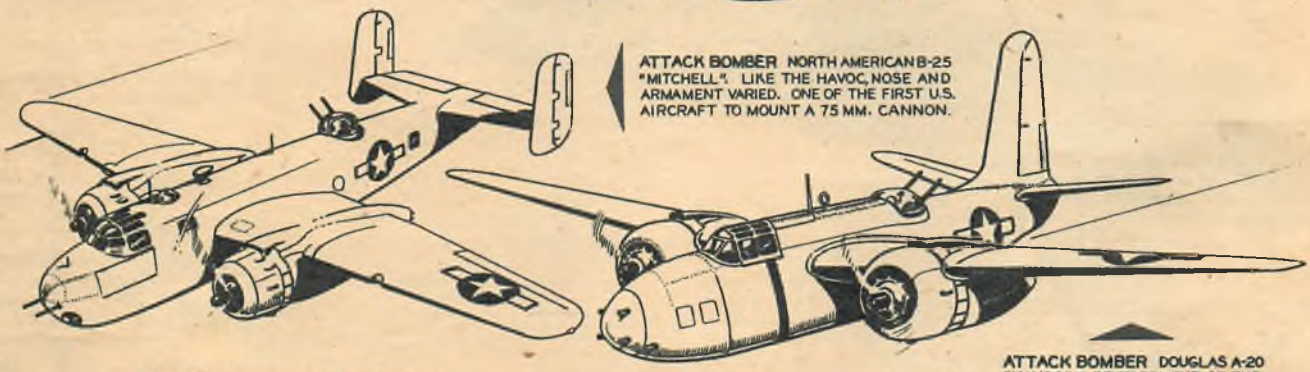


SUPER-FORT BOEING B-29. FIRST U.S. HEAVY BOMBER TO EMPLOY REMOTELY CONTROLLED DEFENSIVE ARMAMENT AND SPEARHEAD OF THE ATTACK ON JAPAN



HEAVY BOMBERS ABOVE: BOEING B-17F, THE FABULOUS "FLYING FORTRESS". FIRST U.S. HEAVY BOMBER TO SEE EXTENSIVE ACTION IN WORLD WAR 2. TOUGH AND SPEEDY, IT WAS STILL IN SERVICE WHEN HOSTILITIES CEASED. — AT RIGHT: CONSOLIDATED B-24 "LIBERATOR", PROBABLY THE MOST WIDELY USED A.A.F. HEAVY BOMBER DURING THE WAR (MORE THAN 18,000 WERE ACTUALLY COMPLETED)

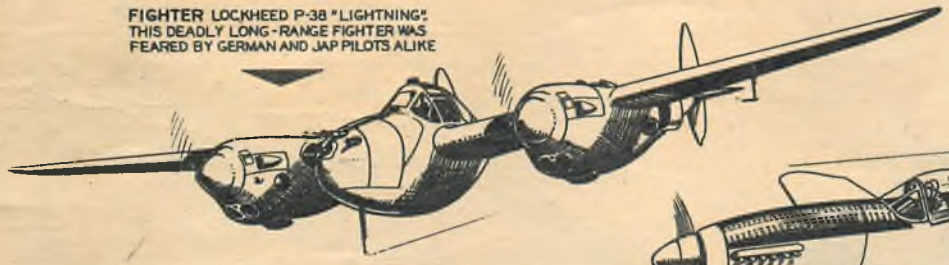


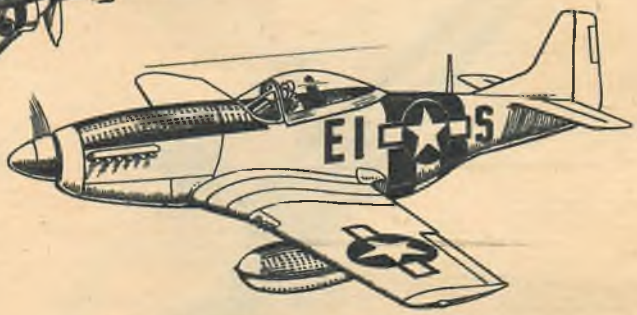


ATTACK BOMBER NORTH AMERICAN B-25 "MITCHELL". LIKE THE HAVOC, NOSE AND ARMAMENT VARIED. ONE OF THE FIRST U.S. AIRCRAFT TO MOUNT A 75 MM. CANNON.

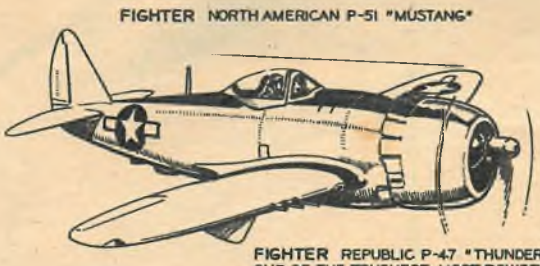
ATTACK BOMBER DOUGLAS A-20 "HAVOC". A DEVELOPMENT OF THE BASIC DB-7. NOSE DETAILS AND ARMAMENT VARIED CONSIDERABLY

FIGHTER LOCKHEED P-38 "LIGHTNING". THIS DEADLY LONG-RANGE FIGHTER WAS FEARED BY GERMAN AND JAP PILOTS ALIKE





FIGHTER NORTH AMERICAN P-51 "MUSTANG"



FIGHTER REPUBLIC P-47 "THUNDERBOLT" ONE OF THE TOUGHEST, MOST POWERFUL PISTON-ENGINE FIGHTERS EVER PRODUCED.

the staggering total of 65,000. The AAF in turn was responsible for the destruction of about 28,000 enemy planes.

Illustrations on these pages show a selection of pre-war Air Corps equipment and representative types of trainers and combat planes used in World War II. Space prevents showing more than a handful of the many excellent combat types introduced during the war, and none at all of the war-tried transport and liaison planes which played an enormously effective, though less glamorous part in the struggle.

Since the end of the war a new Air Force has come into being. The best planes of the war period are now obsolete, what with the development of jets, and of bombers which make the famed B-29 a moderate-speed medium bomber instead of the swift long-range bomber it once seemed.

We Fly at Elmira!
HUBERT ROGERS
ELMIRA, JULY, 1949

● Above: Paul MacCready, Jr., 1949 National Soaring Champion in his Orlik over Harris Hill. Below, left: Kim Scribner's 1-23.

Although not as large as usual, the 16th National Soaring Contest proved that good things often come in small packages

By ALEXIS DAWYDOFF

FARM folks within a radius of 150 miles of Elmira, New York, are no longer surprised when they see a silent, slim-winged aircraft deposit itself gently into their wheat field, bean patch, or pasture—nor do they bother to ask its pilot whether he ran out of gas. For fifteen years the National Soaring Contests have been held at Elmira (except the '47 meet in Texas), and by this time the majority of New York, New Jersey and Pennsylvania counties have been visited by sailplane pilots vying for the title of National Soaring Champion.

Thus again this year the 16th Nationals were held at America's glider capital, where from July 2 through July 10 thirty-six sailplane pilots and thirty-two gliders gathered to try their skill. The contest this year was not as large and elaborate as previous ones. Nevertheless, in those nine days participants made 154 take-offs, and flew a total of 5,381 miles. Nineteen flights were over 100 miles in distance and one was over 200 miles.

Leading the field in points, Paul MacCready, Jr., of New Haven, Conn., won the title of National Soaring Champion for the second consecutive year through his usual brilliant flying technique and thorough understanding of weather conditions. In second place was Richard J. Comey, 1947 National Soaring Champion. Third place went to William Coverdale, who in our opinion is a man to watch next year. Bill will probably be on hand for the 17th Nationals flying a Schweizer 1-23. This new sailplane, which made its first appearance at last year's contest flown by Bill Frutchy of Elmira, has since been considerably improved and was in no small measure responsible for E. J. Reeves, of Dallas, Texas, winning seventh place.

● Participating pilots of 16th Nationals. Ctr., Woman Champ, Ruth Petry.

● Below: José Ortner of Argentina, only foreign entry, took ninth place.

● Left: Air Trails' Alex Dawydoff presenting Minerva watch to Paul Bikle.

● Below: E. J. Reeves, president of Soaring Society poses before his 1-23.

● Left: Wm. Coverdale, Jr., third place winner, getting set for take-off.

● Below: Secretary of the Air Force Stuart Symington, principal speaker.

● Left: Barney Wiggins, contest meteorologist, believer in weather omens.

Not that E. J. isn't a capable pilot in his own right, but the sleek all-metal soarer has speed, penetration, maneuverabiliy and good stability. To top it off, it also has plenty of comfort. We can vouch for it, as our 6-ft. 2-in. frame fitted nicely into its cockpit with leg and head room to spare.

Fourth-place winner was Francis B. Compton, who during the winter completely rebuilt his Laister-Kauffmann sailplane, removing all controls from the rear seat, altering fuselage contours, and generally lightening up and streamlining the ship. Fritz carries a two-way radio in the sailplane with which he communicates with Mrs. Compton who drives the trailer while Fritz is flying. She was pronounced the best crew member at the contest.

For gaining most points among women, Ruth Mary Petry of New York earned the title of National Woman Soaring Champion. Miss Petry is a former WASP and the daughter of Professor Loren C. Petry of Cornell University, a well known figure in soaring circles. Miss Petry was the only entrant to arrive for the contest by glider, having been towed over from Wurtsboro, N. Y., 135 miles, in a Pratt-Read sailplane. The other woman contestant, Mickey Browning of Keystone, Fla., retired from participation early, due to an injury suffered when she made a rough landing on the Hill.

The dry, hot weather which prevailed during the eight days of the contest produced favorable conditions for soaring. Although the thermals were not exceptionally strong they nevertheless assured sustained flights which on most occasions were in the vicinity of 100 miles, and during two days, well over that.

This year saw some radical changes in the operational end of the meet, inasmuch as the point award money was eliminated and an effort was made to conduct the contest on a more economical basis. For the last few years the cost of the Nationals has been steadily going up, to such an extent that sponsoring communities could not raise sufficient money from gate receipts and concessions to cover the expenses. A soaring contest has little to offer in spectator-appeal, and doesn't attract large crowds. Not because a sailplane in search of sustained lift is dull to watch, but because its pilot's main purpose is to get away for a distance flight as soon as he is assured of sufficient altitude. Spectators arriving (*Continued on page* 90)

● On first day of meet take-off order was according to contest numbers. On each day thereafter the order was rotated to give all equal chance.

Civil Air Patrol Newsletter

News and highlights of Senior and Cadet activities from coast to coast. Cadet membership is open to boys and girls from 15 to 18 years of age.

CAP Weather Network

A comprehensive plan to produce a nationwide network of visual weather reporting stations by the Civil Air Patrol to assist in closing some of the gaps in today's weather reporting system has been discussed by National CAP officials, and experiments are already underway in Pennsylvania and Indiana.

The plan was discussed by National CAP Commander Maj. Gen. Lucas V. Beau and staff with officials of the CAB, Weather Bureau, and National Association of State Aviation Officials.

CAP personnel in two states are now being utilized on an experimental basis which, if successful, could lead to extension to all 51 Wings of CAP in 48 States, Hawaii, Alaska and District of Columbia. The experiments are designed to produce a network of visual reports to augment existing weather reporting stations.

The plans envision also the use of the CAP's National Radio Net, covering the entire country, which last winter proved of tremendous value in the plains and far western states when blizzard conditions paralyzed normal communications channels.

Active South Bend Sq.

How does a Squadron become well known in the community, gain prestige, build itself importantly to the community, state and nation? The South Bend Squadron is an example.

The unit consists of 40 adults and 35 Cadets, all active, and a number inactive simply because facilities haven't been developed as fast as enrollments. The L-4 on loan from the AF is flown full time.

Maneuvers are actually planned to the minutest detail by the Cadets, and the Squadron boasts 30 pilots.

Last spring two Cadets received special commendation for heroism, from Squadron CO Capt. Claude Gerlach. The Cadets, Jerry Brownbridge and Bernard Broaddus carried a badly injured companion to help after administering first aid to save his leg.

Recently the Cadets appeared on three radio stations on three different shows, all in the same day, resulting in sizable increases in recruitment.

"A little enthusiasm, a little work, a good active program for Cadets—these are the little things that add up to a CAP unit becoming a big part of the city," is the way they explain it.

Big Battle in Ohio

Operation Penetrate was one run off by officers and cadets of Columbus, Ohio, Squadron CAP. Cadets flew in shifts in an L-4J observation plane trying to spot a penetrating force of other Cadets. As an L-4J approached headquarters of defending force, Cadets of that unit used "pogo-stick" type radio transmitter and receivers to maintain contact with other members of the defending force. The penetrating force was successful in being able to approach the defending force unseen and to report their approach by phone.

Squadron of the Month

It's amazing what a local CAP Squadron can do in gaining community notice and prestige, but it requires work and planning.

The Ayer, Mass., CAP Squadron, activated only last May, held an open house at Ayer Municipal Airport which attracted 3,500 spectators and representatives of Massachusetts's 38 CAP units.

When the group was activated it was loaned some of the unused building at

(Continued on page 88)

Cross Country with C. A. P.

BY WASHINGTON OBSERVER

National Headquarters announced appointments of 40 CAP'ers as Pilots and six Observers in State Wings of Michigan, Kansas, South Carolina, Ohio, Florida, Texas, Kentucky and Alabama. . . . Air Medals have been presented to Shelley S. Edmondson of Selkirk, N. Y., John Robinson, Jr., Dover, Del., Jack E. Bagon, Training Officer, Group 2, New York Wing CAP.

Lt. Col. Frank E. Hope, Mississippi Wing CO, Maj. John R. Edwards, and Lt. T. M. Quinn, assisted by Lt. J. P. Smith of Jackson Squadron, upon request by Mississippi Aeronautics Commission searched for hours for a reported crashed lightplane near Pinola, and finally determined that someone had reported the plane "buzzing" the area. The false alarm was chalked up to "experience"! . . . Moses Lake Flight, Wash., CAP Wing, will soon be officially activated with veteran pilot Max M. Ott as Acting Flight Commander.

Plattsmouth, Neb., CAP Flight is now constructing its own small airport . . . California Wing and Washington Wing CAP came out respectively first and second in the Regional Drill Competition in July at Hamilton AF Base . . . Missouri Wing increased its Cadet enrollment by 37, but Nebraska jumped theirs by 105—both in one month.

Washington Wing CAP has moved its headquarters to George Wright AF Base, Spokane, and at same time has made arrangements for CAP courses to be given in the Seattle High School curriculums . . . Nebraska Squadrons are having amazing success with a system of breakfast flights, but Squadron PIO's report "everyone's so darned hungry."

An unclaimed but severely damaged Culver Cadet at Branson, Mo., may be taken over by members of the Branson Flight and rebuilt for active duty . . . CAP Air Inspector advises, "don't wear CAP Wing Insignia on leather flight jackets" . . . Kimball, Neb., is planning to start a CAP unit this fall . . . Insurance on CAP liaison type aircraft on loan to CAP may now be taken out for twenty-six cents per hour.

Two Kansas City, Mo., CAP'ers were elected president and v.-p. of Kansas City unit Women's Nat. Aeronautic Assn.: Capt. Elizabeth Hynd and Lt. Marie Kuhlman . . . Cadets of Omaha, Neb., Squadron have been praised by National CAP CO Maj. Gen. Lucas V. Beau for outstanding work in last spring's floods in that area.

Commercial Benefit Insurance Co. of Phoenix, Ariz., has prepared a special life, accident and medical policy for CAP personnel; applications have been sent to all Wing CO's for distribution. . . . Col. Benjamin J. Moeller is the new CO of the Wisconsin Wing, replacing Col. Harry W. Schaefer who moved to Florida . . . Definition of an "active" CAP'er: must possess a valid ID card in good condition, must have attended at least one meeting each month or equivalent amount of time for last six months (socials don't count), must be paid up in dues. Definition supplied by California Wing.

White Plains Squadron, N. Y., provided its Cadets with a realistic search-and-rescue mission. Maj. C. B. Colby fashioned a wreck from fabric of an old plane and Cadets flew on a course they had plotted from someone who had supposedly seen the plane go down. Yep, they sighted same . . . This summer witnessed one of the greatest schedules of CAP activities in Colorado history, with air shows, breakfast flights, "rainbow trout breakfast," rodeos, carnivals, chuck wagon breakfasts, flying jamborees, dinners and dances all put on by various Colorado CAP units.

Civil Air Patrol *Newsletter*

(CONTINUED)

● Left: Two CAP Cubs fly over the Atlantic Ocean in search of the submarine. Right: The submarine Argonaut which participated in maneuvers. Lt. Col. Crowly spotted it from aloft before it surfaced.

Sub Search . . .

An "attack" on the shores of Long Island, N. Y., was averted recently by two small CAP planes who spotted the snorkel-equipped submarine off Jones Beach. The underseas craft was sent by the U. S. Navy to participate in the N. Y. Wing CAP maneuvers held over the weekend at Zahn's Airport, Amityville, L.I. Each CAP search plane carried a pilot and observer who were given an approximate location of the sub. Planes flew in petal pattern covering a 50-mile area. Lt. Col. Joseph Crowly, C. O., was first to spot the sub by smoke from its snorkel tube.

● Before and after: A BT-15 taking off on search mission from Zahn's *Airport*. A few minutes later the plane crashed in sea. Pilot and observer (arrows) were unhurt. Light spot on water is from dye marker.

● A CAP Luscombe Silvair taxies past a walkie-talkie radio operated by two Cadets. Extensive radio facilities were provided during the maneuvers, for communication between headquarters and planes engaged in submarine search. Observers on planes acted as radio operators.

● Lt. Col. Joseph Crowly, Commanding Officer, checks with field operation using a "Pogo Stick" walkie-talkie radio. Kneeling is Corporal H. Willets; left, Sergeant T. Higgins; right, Corporal W. Poit. The enlisted men were all members of National Guard and handled Field Security on the search.

● Crash procedure is discussed (below) prior to mission. Lt. Jack Bagon gave some worthwhile information from actual ditching experience. Little did the listeners realize that "Operation Retrieve" would mean a search and rescue of the BT-15, shown above just before the crash.

● Above: Plotting Board on which position of search planes was mapped. Shown here are the operators—left, Mrs. M. Nutt, a former Wasp; center, Lt. A. Malone; right, Lt. Jack E. Bagon. Below: Lt. Col. E. C. Isom, Deputy Wing Commander, ready in Luscombe, with Maj. E. Lyons in the Mooney as fighter escort!

If you think the world of aviation engineering is for men only, you're in for a surprise. That's why we want you to . . .

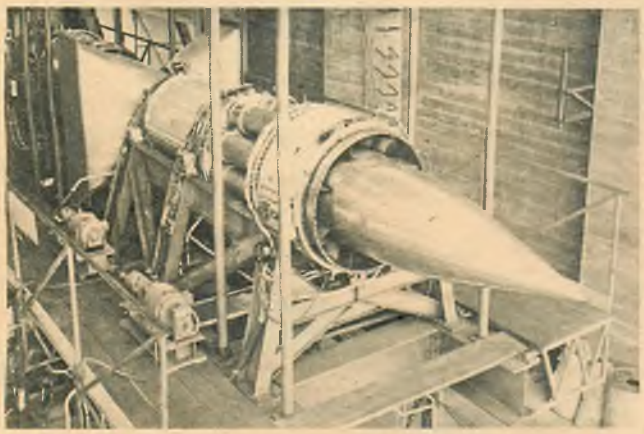
meet Becky Smith the lady metallurgist

By A. R. BOONE

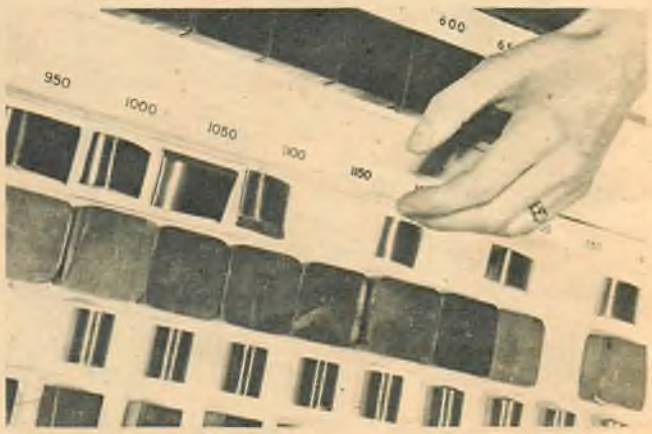
WITHIN the not-too-distant future, aircraft will be capable of hauling sizable payloads half-way around the world and back again—which is another way of saying circumnavigation of the globe is definitely within view. A few difficulties remain to be overcome. One has to do with adequate power and fuel, another with metals tough enough to withstand searing temperatures and stresses, and still another with boundary layer control which will lessen power demands. Yet such flights are in the cards, at speeds far above those we know on the airlines today.

This prognostication is offered by way of an introduction, not so much to a story, as to a personality—"R. H. Smith." R. H. S. is chief metallurgist for The Turbodyne Corporation in Hawthorne, California. Those initials have appeared on numerous technical papers. Their owner is well known and respected in engineering circles of the aircraft industry. As you already have guessed from the accompanying photos, R. H. S. is a woman—perhaps the only ace female metallurgist engaged in perfecting aircraft engines. Her specialty is the powerful Turbodyne. How powerful? "This power plant," you learn from a company source, "was designed for an output of 10,000 horsepower—and we have not been disappointed by test runs." That's as close to an exact statement of performance as you can get.

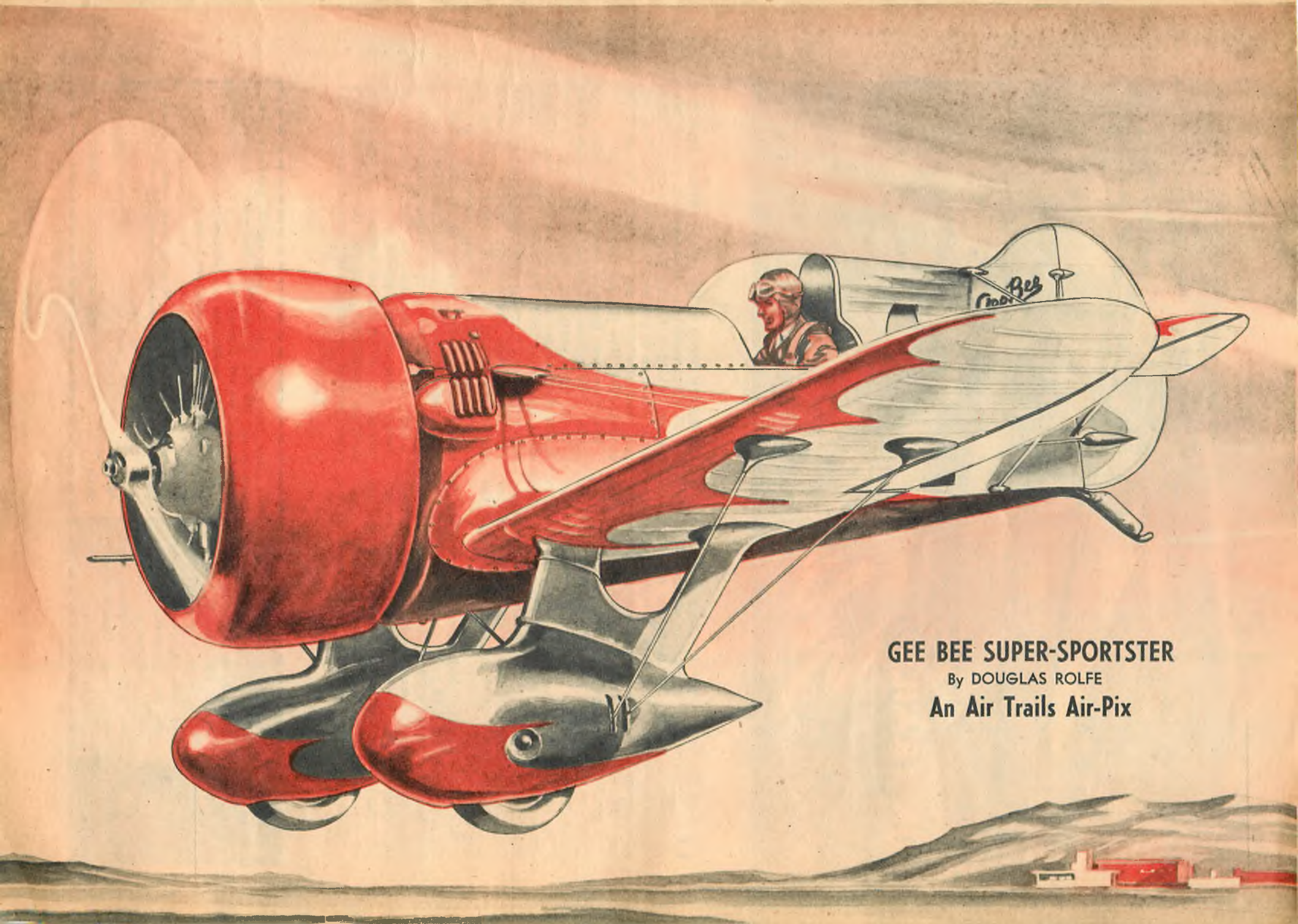
But back to our subject, and let's call her Becky, for that's the way she's known around Turbodyne, and Northrop, the parent (*Continued on page* 66)



● This 10,000-horsepower Turbodyne is Becky's specialty. Power is delivered on shaft, with jet thrust additional. Tail cone nearest camera.



● Closeup view of sample boxes used by Mrs. Smith to determine operating temperatures of engine metals. Numbers show temperature.



GEE BEE SUPER-SPORTSTER

By DOUGLAS ROLFE

An Air Trails Air-Pix

AIR TRAILS Solo Club

● New Cessna 140. Single-strut taper-wing ups performance.

ONE of the most surprising things about the Solo Club is its wide acceptance abroad. It is hard sometimes to realize that there are such things as borders, nationalities, and wars. Private flyers everywhere seem to talk the same language. Having the same interests and goals, this should be no surprise.

"I would like to become a member of the Solo Club," advises student pilot, W. R. Miles, of North Southampton, England. "I see you welcome Canadian pilots and was wondering if you would be willing to extend membership to include an English pilot." Indeed, we do, Miles, for you are not the first from across the sea. Membership is open to anyone who can give proof of having soloed. Your name is already in the membership file!

"My age is 25 years," Miles goes on, "and I served 5½ years with the RAF as a fitter, two engines, was demobilized in January, 1948. Had a few months rest and joined the Air University at Hamble as an aircraft engineering student. Since then have obtained an aircraft maintenance engineer's C license (engines) and am now studying for an A license (airplanes).

"Have joined the Hampshire Aeroplane Club and had my first lesson on the 14th of October, 1948, in a DH 82 (Tigermoth), an open-cockpit, biplane basic trainer. Soloed on the 24th after six hours, 10 minutes dual. Went on to get my qualifying time, then test, and eventually was issued my private license in December, 1948. Now just keeping my hand in."

Here's another: Robert J. McDonald, Halifax, Nova Scotia. "Have been a member of the Halifax Flying Club for three years and have put in about 70 hours in one of our Piper Cub J-3 aircraft." And still another, this time from K. Buckner, a Canadian student, who sends along mimeographed sheets from his RCAF Pilot's Log Book Endorsations, which show better than 50 hours dual and more than 37 hours solo on DH 82's and Cornell 2's. These sheets, by the way, have some interesting features for stateside pilots.

Besides space for date and signature, there are two columns, labeled "when" and "circumstances." Under "when" are such notations as "before solo flying," "before acting as safety pilot," "before acting as captain of the craft on mutual instruction, either instrument or navigation." Opposite these notations are other printed comments (*Continued on page* 62)

HOW TO BECOME A SOLO CLUB MEMBER

This club is open only to those who have actually soloed a heavier-than-air craft, either powered or motorless. It does not matter where or when the flight was made. Applicants must furnish the membership committee with a satisfactory proof of their qualification for acceptance. There are no dues. Once a member, always a member.

To obtain sterling silver Solo Club wings and life membership card, send coupon, with 75¢, to Solo Club Membership Committee, Air Trails Pictorial, Box 489, Elizabeth, N. J.

Proof of qualifications as a Solo Club Member:

1. CAA Airman Certificate, number and rating.....
2. F.A.I. license and number.....
3. Evidence of: Service in Army, Navy air forces, either as a rated pilot or having received flight training including solo time (attach).

Applicant ..... Age.....

Street..... City or Town.....State.....

● Where did you get that hat? Two outstanding examples of what's new in headgear for the Nationals.

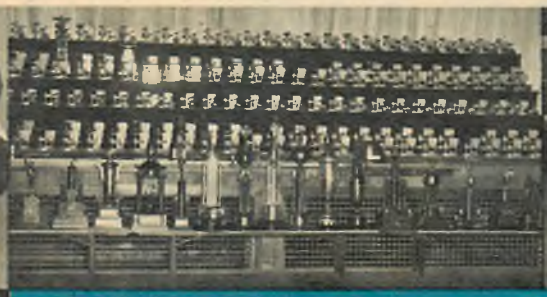
● Joe Culver ('29 Indoor champ) gets pointers from son Dick who won Junior CO_2. Mom takes no sides.

● Each contestant had his kit and each kit contained at least one camera (or St. Ives up to date!). Here are some lensmen at work.

● Impressive array of the permanent trophies (at back) and the famous perpetual awards (foreground) which went to top winners.

● Comm. Russell B. Jones (3rd from left) gets down to cases. He was observer from Washington.

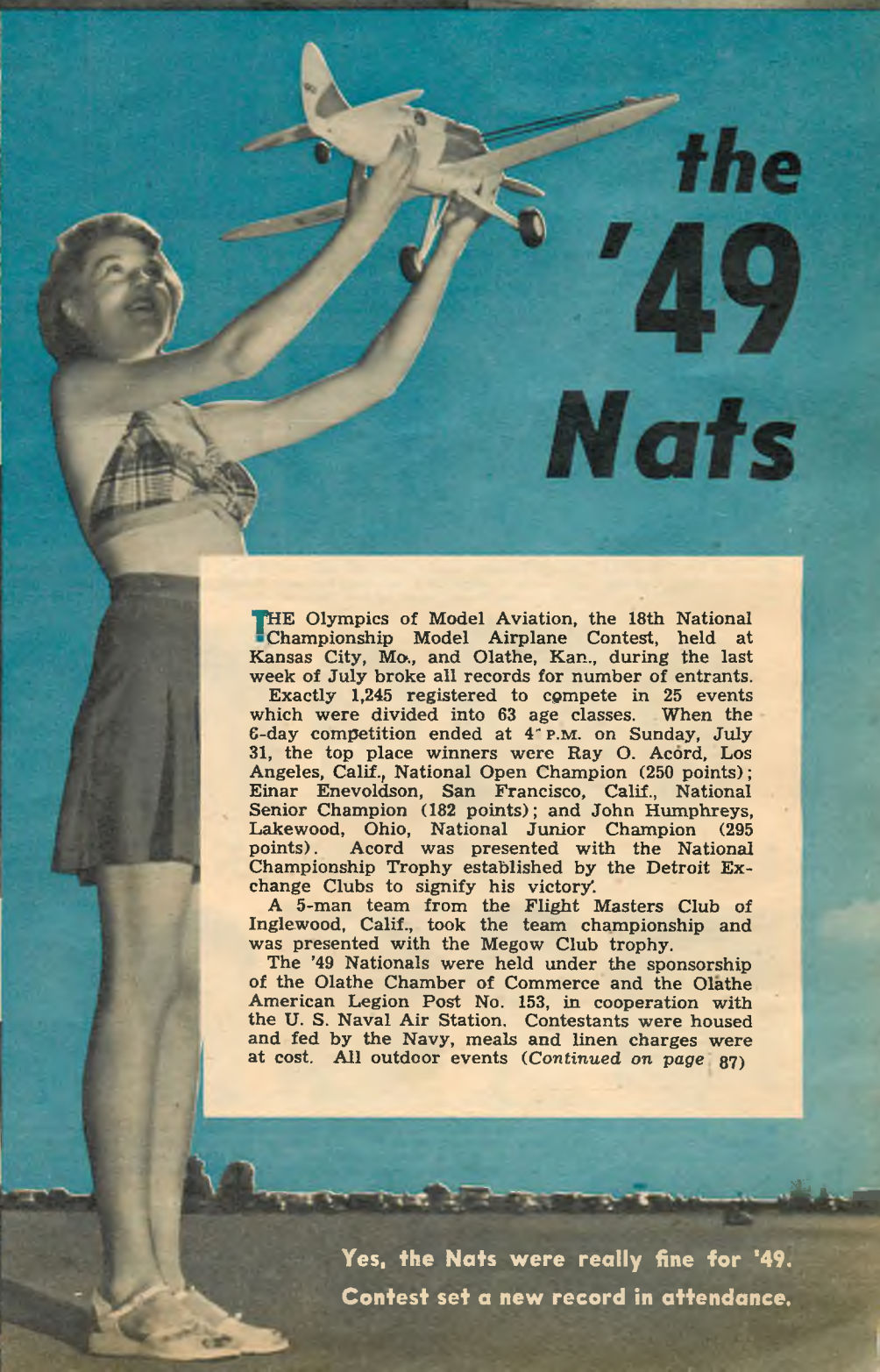
● A few of the Army, Air Force, Marine and Navy contestants with some of their outstanding models.



● Contestants were housed in Kinnick Hall. Here 4 a.m. scene shows many are already out testing.

● A nice feature of the meet were the lovely young ladies from Olathe who took charge of recording.

● Olathe outdid itself in hospitality. Store windows all over carried messages welcoming modelers.



the '49 Nats

THE Olympics of Model Aviation, the 18th National Championship Model Airplane Contest, held at Kansas City, Mo., and Olathe, Kan., during the last week of July broke all records for number of entrants.

Exactly 1,245 registered to compete in 25 events which were divided into 63 age classes. When the 6-day competition ended at 4 P.M. on Sunday, July 31, the top place winners were Ray O. Acord, Los Angeles, Calif., National Open Champion (250 points); Einar Enevoldson, San Francisco, Calif., National Senior Champion (182 points); and John Humphreys, Lakewood, Ohio, National Junior Champion (295 points). Acord was presented with the National Championship Trophy established by the Detroit Exchange Clubs to signify his victory.

A 5-man team from the Flight Masters Club of Inglewood, Calif., took the team championship and was presented with the Megow Club trophy.

The '49 Nationals were held under the sponsorship of the Olathe Chamber of Commerce and the Olathe American Legion Post No. 153, in cooperation with the U. S. Naval Air Station. Contestants were housed and fed by the Navy, meals and linen charges were at cost. All outdoor events (*Continued on page* 87)

Yes, the Nats were really fine for '49. Contest set a new record in attendance.

● The new club champions posed alongside the Ohlsson & Rice DC-3 which flew Californians to Olathe: front l. to r., Bill Tharp and Ray Acord; standing l. to r., Bill Wisniewski, Don Kennedy and Jack Butler. Top, rt., Mayor Tom Poor of Olathe with John Humphries, Lakewood, Ohio (holding Sun-Times trophy), junior champ, and Einar Enevoldson, San Francisco, senior champion. Lower, rt., contest director Jim McClelland presents open class champ Ray Acord, Los Angeles, holding Exchange Nat'l champ trophy. Inset: Acord.

● Winners (from left to right): Howard Robinson, Shelby, Ohio, CO_2 open (613.2 sec.); Donald Hollfelder, Oakland, Calif., indoor sr. glider (59.2 sec.); Erwin Rodemsky, Detroit, indoor stick sr. (892.8 sec.); George Xenakis, Detroit, indoor cabin sr. (885 sec.); Mervyn Schell, Chicago, Class D free-flight gas sr. (923.6 sec.); Bob Costigan, Kansas City, Mo., outdoor hand-launched glider sr. (736.6 sec.); Roger L. Barron, Springfield, Va., Class D free-flight gas jr. (1118 sec.). 1st place winners shown on these pages unless otherwise noted.

● Left to right: Richard Gerner, St. Paul, Minn., half of team winning Class C free-flight gas sr. (552.8 sec.); Lou Andrews, Norwood Mass., U-control novelty 1st.; Norman Mayeda, St. Paul, Minn., other half of sr. free-flight C team; Jimmy Jorski, Oklahoma City, Class C free-flight gas junior (562 sec.); Louis Torna, Cleveland, Class C free-flight gas open (928 .8 sec.); Charles Sotich, Chicago, carbon dioxide powered free-flight senior (735.5 sec.); Raymond Shearer, Little Rock, Arkansas, Class B control-line speed senior (130.43 mph).

● Left to right — Pop White, Akron, advisor to Rubber City Aeronauts team; James Freshman, Berkeley, Calif., control-line precision stunt junior (328 points); Merle Koebernick, Beloit, Wis., 2nd place jet speed; Lew Mahiew, Long Beach, Calif., U-control speed Class B open (132.84 mph); Dr. J. R. Warden, Little Rock, Ark., 2nd U-control speed Cl. A (112.50 mph.). Right, Russ Nichols presents Berkeley chronograph award to Tex Witherspoon of KPRS.

● Upper left: Al Lewis, AT ed, presents Air Trails speed D open perpetual trophy to Harold deBolt. Upper rt.: W. Howard Thombs, Warren, Ohio, gets AJ novelty award from Jim Walker (rt.). Bottom, left: Wm. Burgess, Muncie, Ind., (lt.) holds Comet Perpetual award for his 1st place in Class A free-flight senior division and Bill Wisniewski, member of the Flight Masters championship team, with the Air Trails' Harold Kulick Memorial Trophy for 1st in Cl. D sr. speed. Bottom, rt., Geo. Gardner of PA and PAA-Load winners.

●Left to right, Phillip Laney, Little Rock, Ark., control-line speed class C junior (125 mph); Fred Miller, Oklahoma City, Class A free-flight gas open (726.5 sec.); Paul Simon, Detroit, indoor stick junior (906.4 sec.); Manuel Andrade, Oakland, Calif., indoor glider open (61.2 sec.,); Mark Brown, Stockton, Calif., control-line speed Class A senior (113.92 mph); Raymond Shearer, Little Rock, Ark—here's that boy again, he also won Cl. B—c.-l. speed Cl. C sr. 135.85 mph); Paul Gilliam, Glendale, Calif., 2nd ROW (1061 sec.).

●Marvin Allen, Akron, Ohio, towline glider junior (530.7 sec.); Richard J. Fox, Akron, towline glider senior (837 sec.); Robert Dunham, Tulsa, Okla., open rubber cabin outdoor (623.6 sec.); Warren Tomme, Little Rock, Ark., control-line speed Class B junior (124.14 mph); Charles W. Mathews, Alameda, Calif., half of team winning control-line speed Class C open (137.40); Joe Stadelman, Pittsburgh, Class A free-flight gas junior (675.6 sec.); Anfelo Lo Castro, San Francisco Calif., senior rubber cabin outdoor (873.2 sec.).

●Left, Red Hillegas, '48 winner, congratulates Johnny Clemens (right), winner of Berkeley industry award. Above, l. to r.: Bob Dailey, Ferndale, Mich., control-line precision stunt open (369 points); Bob Cart, Des Moines, Iowa, 1st jet speed (145.16 mph); Don Still, Alta Loma, Texas, control-line precision stunt senior (377 points); George W. Sweet, Beloit, Wis., 3rd place jet speed (140.08 mph); Erwin W. Huth, Alameda, Calif., speed C open team.

THE '49 NATS (Continued)

FAIRCHILD PT-19
Keith Lightfoot, St. Paul, Minn.

NORTH AMERICAN B-2H5
Dale Kirn, Salina, Kans.—1st, Senior

MINNOW (Scaled-up AT Plans)
Pfc Allyn C. Johnson, Keesler AFB

BOEING B-29
J. T. Matthews, Atlanta, Ga.—1st, Open

BOEING B-17G
B. Thompson, Keesler AFB—2nd, Senior

N. AMERICAN BLACK WIDOW
F. Sage, Independence, Mo.—2nd, Open

FOCKE-WULF 190
Harry M. Hamilton, Kansas City, Mo.

NAVION
F. W. Dunn, Jr., Warren, Ohio

CURTISS P-40F
Maker unknown—Miniature Aircraft Plans

BEECHCRAFT
J. Clevenger

De HAVILLAND DH-4
Bob Sutton, Hillsboro, Texas—AT plans

GRUMMAN JR2F ALBATROSS
F. W. Topping

HOWARD PETE
B. Coffin, Kansas City, Kans.—1st, Junior

PIPER SUPER CRUISER
John E. Burgin, Birmingham, Ala.

CURTISS AT-9
Tom S. Andrews, Bolling Field, D. C.

FOKKER TRIPLANE
James Smith—Air Trails plans

GLOSTER GLADIATOR
Murray Hamilton, Kansas City, Mo.

CURTISS HAWK P6-E
Dale W. Root, Berkeley, Calif.

● As might be expected, this year's control-line flying scale event attracted a record number of entries and produced some extremely fine flights. The multi-engined ships did better than in previous competitions; fine flying weather aided contestants. Johnny Matthews flew his B-29 before a large number of spectators. After several tries, Bryant Thompson, the AF's pride and joy, had his B-17 performing on two engines with marked success. But the best stunt patterns were still flown by the single-engine jobs. S. Calhoun Smith did fine job with AT's Long Midget.

● Ted Enticknap, Auburn, Wash., won ROW free-flight with Super Cyke Gool (above) and Class D ROG.

● First place winner in rubber-powered flying scale, Delbert Swartz, of Burbank, Calif., with his 0-49. Amassed 77.9 points.

● George de la Mater, St. Louis, Mo., and 500-square-inch towline. Won indoor cabin open.

● Don Donahue, Montrose, Calif., won Springfield indoor stick trophy (open) with this 160-sq.-in. model.

● This PAA-Load event "flight cover" flew by model, then by regular airmail across Pacific.

Letter from Olathe

By "DOPESTER"

AS is the annual custom, this month's effort is devoted to the National corn-test (referring to those Kansas crops, o' course). We should really start out by quoting that famous bit:

"Neither rain nor snow nor heat nor gloom of night stays these contestants from the swift completion of their official flights."

Who was the fellow we heard claim Olathe was out of the high-wind belt? Send him around, we want to belt him wind-zor twice. After the control-line rules meeting one free-flight chap opined that these U-controllers not only fly in circles, but they talk in circles!

Probably most of these puns came from Johnny Clemens (Dallas) or Val Luce (Washington, D. C.). Carl (Cumulus) Goldberg was heard quoting Johnny to the effect that the Olathe weather was fine for ducks because of all the quack-ups. All we can say is somebody must have let the big wind from Winnetka in through the front door. Shut the door-r-r-r, McClelland!

Let's amble around the field, first. We'd like you to meet Joe and Betty Culver from Tennessee. Joe was the National indoor champ back in 1929. He's returned to modeling but is having a hard time keeping up with the wife, and son Richard. Dick took 1st in the Co_2 event for Juniors while the best the old man could (*Continued on page* 82)

● Val Sherrard, Topeka, Kan., ex-pres. Mid-States MAA did a splendid job announcing at control-line contest.

● Dick Everett, San Diego, Calif., took 3rd in ROW with 650-sq.-in. entry. Float bottoms are celluloid.

● Bob Bienenstein, Detroit, with 149-sq.-in. indoor "Jaguer"; he captured outdoor Mulvihill stick trophy.

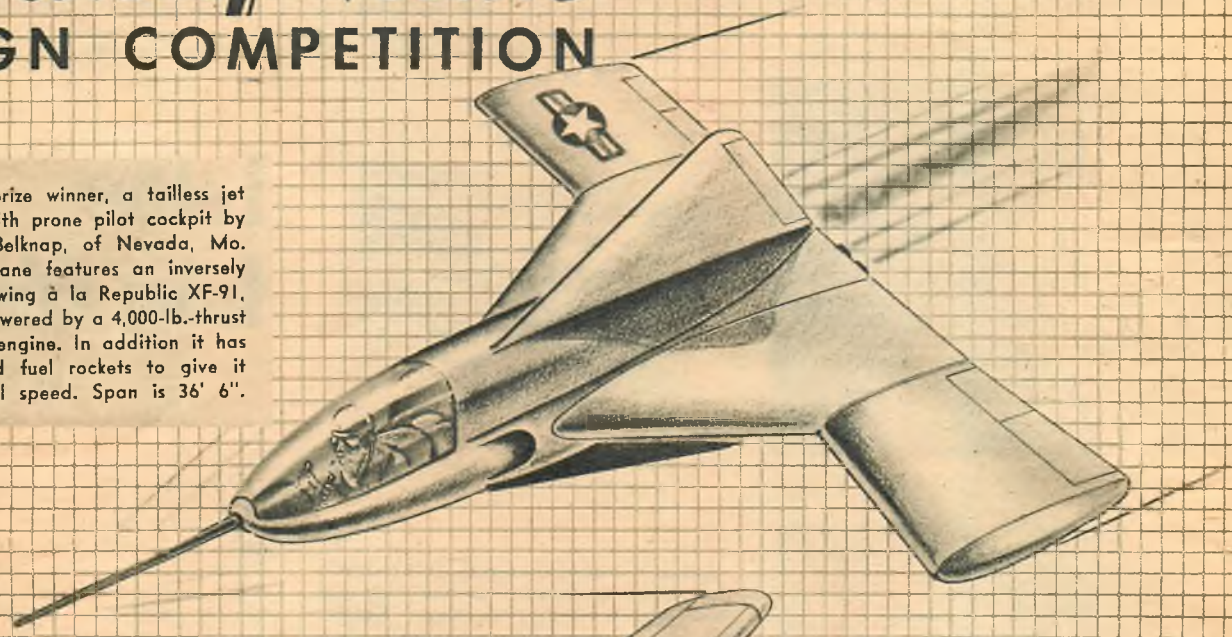
● Fourth time winner in radio-control flying (twice with his brother William) was AMA contest board chairman, Dr. Walter Good.

● Nan Taibi, Indianapolis, with husband Sal's 5th place ROW model; he was 3rd in Class D free-flight open with 1295 seconds.

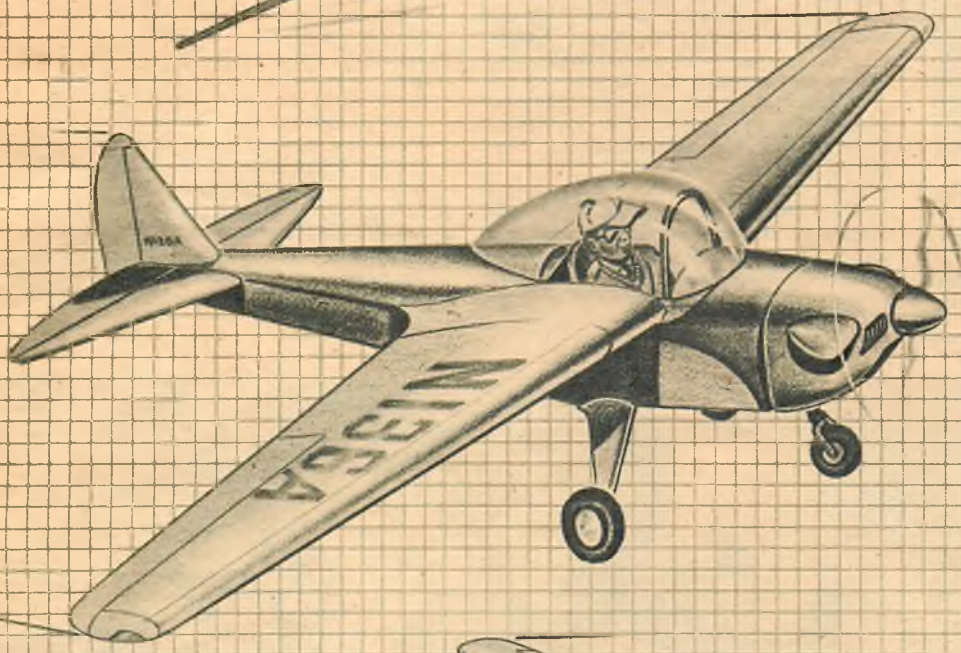
● Ray Arden (rt.) of Micro-Bilt, sponsor of the sound system, with announcer Carroll

● Bill Tharp, Santa Monica, Calif., and his 2nd place rubber flying scale Rearwin entry.

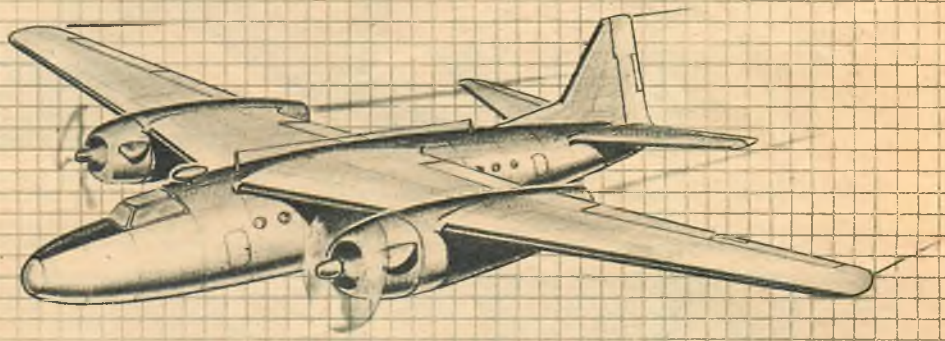
Airmen of Vision
DESIGN COMPETITION



● First prize winner, a tailless jet fighter with prone pilot cockpit by Gilbert Belknap, of Nevada, Mo. The airplane features an inversely tapered wing à la Republic XF-91, and is powered by a 4,000-lb.-thrust turbojet engine. In addition it has four solid fuel rockets to give it additional speed. Span is 36' 6".



● Second prize by R. Prizeman of London, England: a single-place lightplane of small span and wing area. It is equipped with slots and Youngman flaps (similar to our Fowler flaps), which cut down the landing speed to 30 mph and considerably shorten the take-off run, thus permitting operation from very small fields. The fuel capacity is 20 gallons, which gives it a range of close to 5 hours. Top speed, 100 mph.

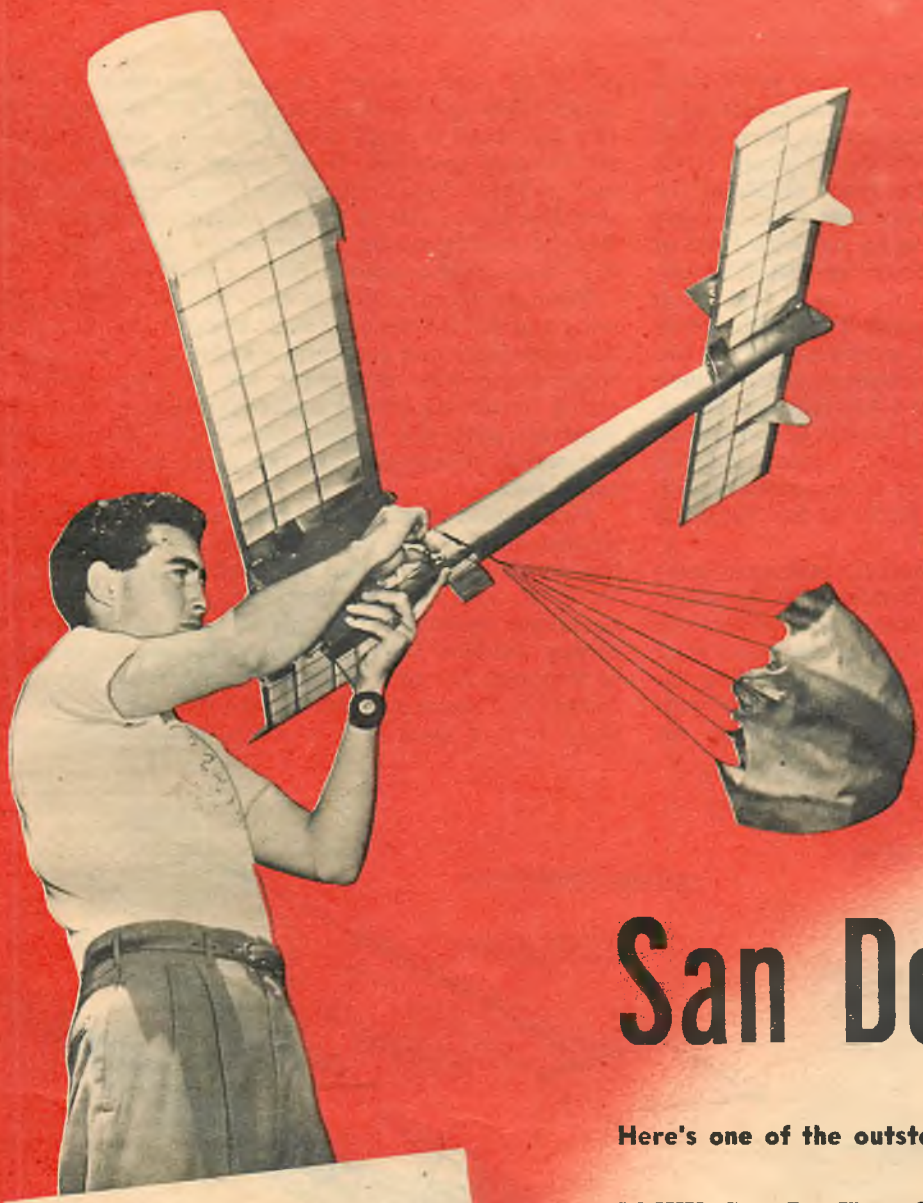


● Third prize by Gerald Merrill of Hastings, Mich. A 36-passenger transport powered by two 3,500-hp turboprop engines. A very neat design featuring shoulder wing configuration which gives unobstructed visibility to passengers. Wing span is 112 feet. Top speed is 375 mph.

Air Trails has opened its columns to those who are interested in presenting plans for aircraft of the future.

Rules governing the competition are:

1. Three-view sketches of the proposed aircraft will be required. These should be not less than 8½ x 11 inches for the entire three views.
2. Give sketches of the complete airplane in three-quarter front and rear position.
3. Photos of a model of proposed design may be included.
4. Information on power plant (s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed by the editors and judges.
5. Entries will not be returned and for that reason those participating should retain copies of all material submitted.
6. The editors regret they cannot enter into correspondence concerning entries.
7. Designs may be of any type: commercial aircraft, military planes (fighters, bombers, troop transports), planes for the private flyer and single-place sporting craft.
8. Mail entries to Airmen of Vision, c/o Air Trails, P. O. Box 489, Elizabeth, N. J.
9. The entry each month judged by the editors as the most practical or of the greatest significance will receive an award of $25. Awards of $5 will go to runners-up.



By DENNIS DAVIS

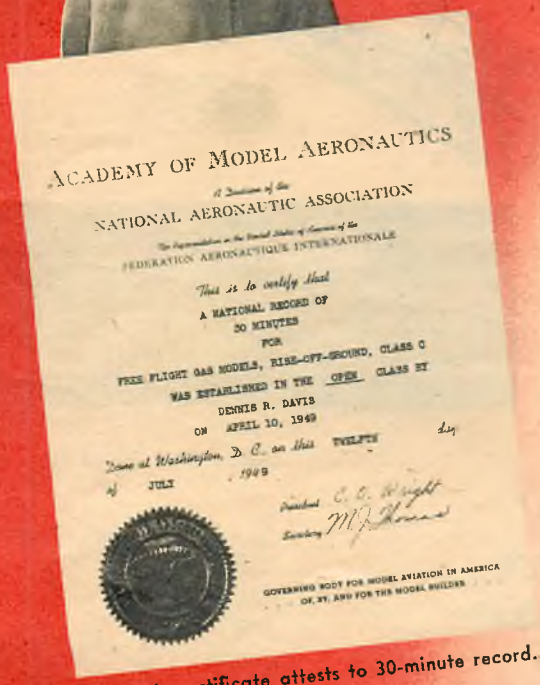
San De Hogan

Here's one of the outstanding free-flights of all time

WHY San De Hogan? It's a combination of "San Diegan" and Hogan—the latter inspired by a now famous local California disc jockey, the former handle in honor of the ship's hardy ancestors.

The job was designed, flown, rehashed and generally run through the mill before the plans presented here were drawn. An important contribution was the local all-year-round flying weather which made it possible to literally fly the dope off the ships; not only by me but by some promising young junior and senior modelers who gave the design a great deal of help and contest proving. The youngsters have done very well with the ship too—needless to say the design was arrived at largely with them in mind.

Consistent competition demands a lot of any model design with ruggedness a most important factor. Achieving strength yet light weight was *the* consideration which finally led to the finished, ready-to-build product presented here. A low-drag factor was achieved by incorporating a thin, flat undercamber wing section and a minimum fuselage profile with very small cross section. The low drag shows up in the climb, which incidentally is the ship's middle name. Altitude and hardware are synonymous with this baby. Install a hot .29, put in some preliminary test time, then start opening it up. Don't be



ACADEMY OF MODEL AERONAUTICS

A Division of the

NATIONAL AERONAUTIC ASSOCIATION

The Representative in the United States of America of the

FEDERATION AERONAUTIQUE INTERNATIONALE

This is to certify that

A NATIONAL RECORD OF

30 MINUTES

FOR

FREE FLIGHT GAS MODELS, RISE-OFF-GROUND, CLASS C

WAS ESTABLISHED IN THE OPEN CLASS BY

DENNIS R. DAVIS

ON APRIL 10, 1949

Issued at Washington, D. C. on this TWELFTH day

of JULY, 1949

President C. E. Wright

Secretary M. P. Thomas

GOVERNING BODY FOR MODEL AVIATION IN AMERICA

OF, BY, AND FOR THE MODEL BUILDER

● A.M.A. certificate attests to 30-minute record.

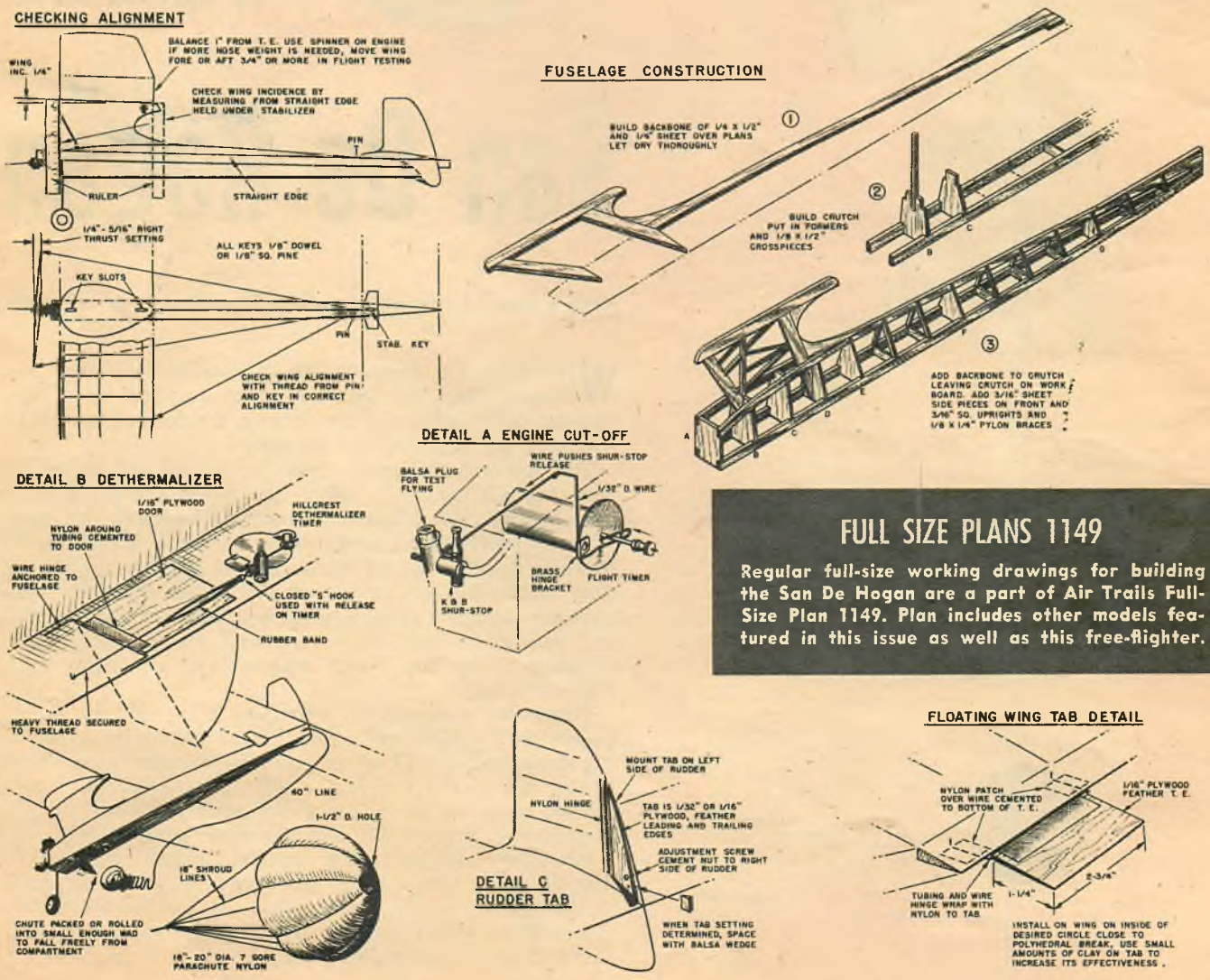
afraid to use plenty of downthrust and some more right thrust, but we'll say more on adjustments later.

The ship has quite a reputation on the West Coast, the latest achievement being the Class C record (with K&B 32) of 30 minutes total for three flights at the Bakersfield meet this year. It also netted 1st in Class C and won the Sweepstakes trophy for high time of the day. A Class A version (flown by Bill Trumble, one of the youngsters I spoke of) placed 2nd. First in Class C open at the '48 Detroit Plymouth Internationals was its first major achievement. Also, it has many 1sts, 2nds, and 3rds to its credit in contests here on the coast, including our rugged All-Western Opens. Tom Moffitt, another youngster who has added laurels to the design, placed 1st in Class A junior and 2nd in Class D junior at the Detroit Internationals with the design, and 2nd in Class A junior at the Nationals in Olathe last year.

Construction of the model is largely orthodox, some of the important points being illustrated on the plans. Wing and tail construction is simple and needs little explaining. An aluminum template of the main wing and tail ribs should be cut out and used in cutting out the ribs (cut around template on $\frac{3}{32}''$ sheet with blade). Pin ribs together after they have been cut out to cut spar notches. This is a big help and time saver (skip spar notches on tip ribs). Don't put the two top spars in until wing has been assembled and all dihedral installed. Don't forget spar and leading and trailing edge reinforcements and triangular gussets. Use light balsa in the tail assembly construction. Weight consciousness is important here. Use light $\frac{1}{16}''$ mahogany plywood for the sub-rudders.

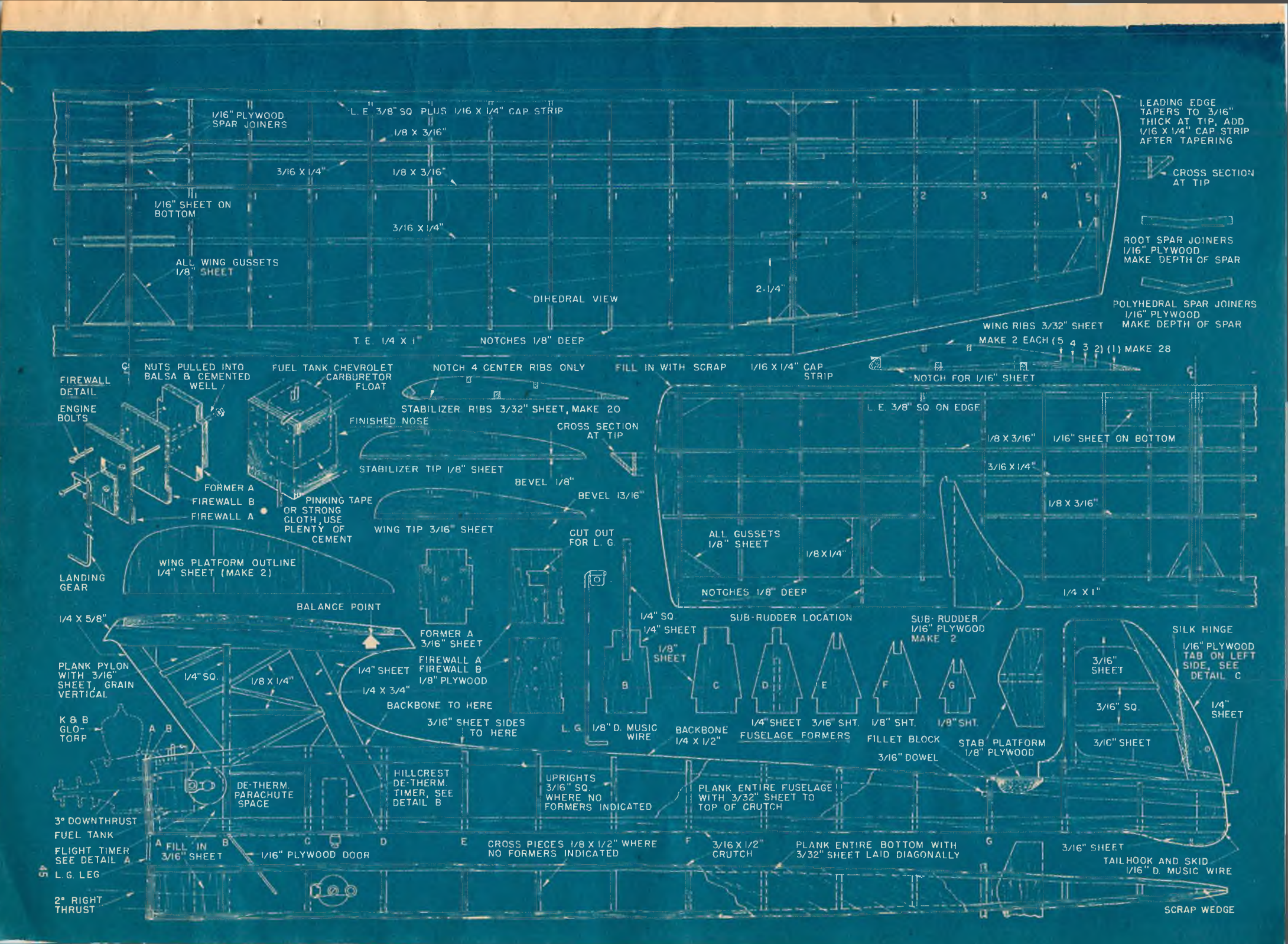
Fuselage construction is easy and interesting. The wing and tail incidence is built in right from the start. The simplicity and accuracy possible with this type of construction was responsible for its incorporation. I call it "crutch-Goldberg interceptor-Davis" type construction with due respect for Carl Goldberg whose pioneering shines all over the place as far as I am concerned.

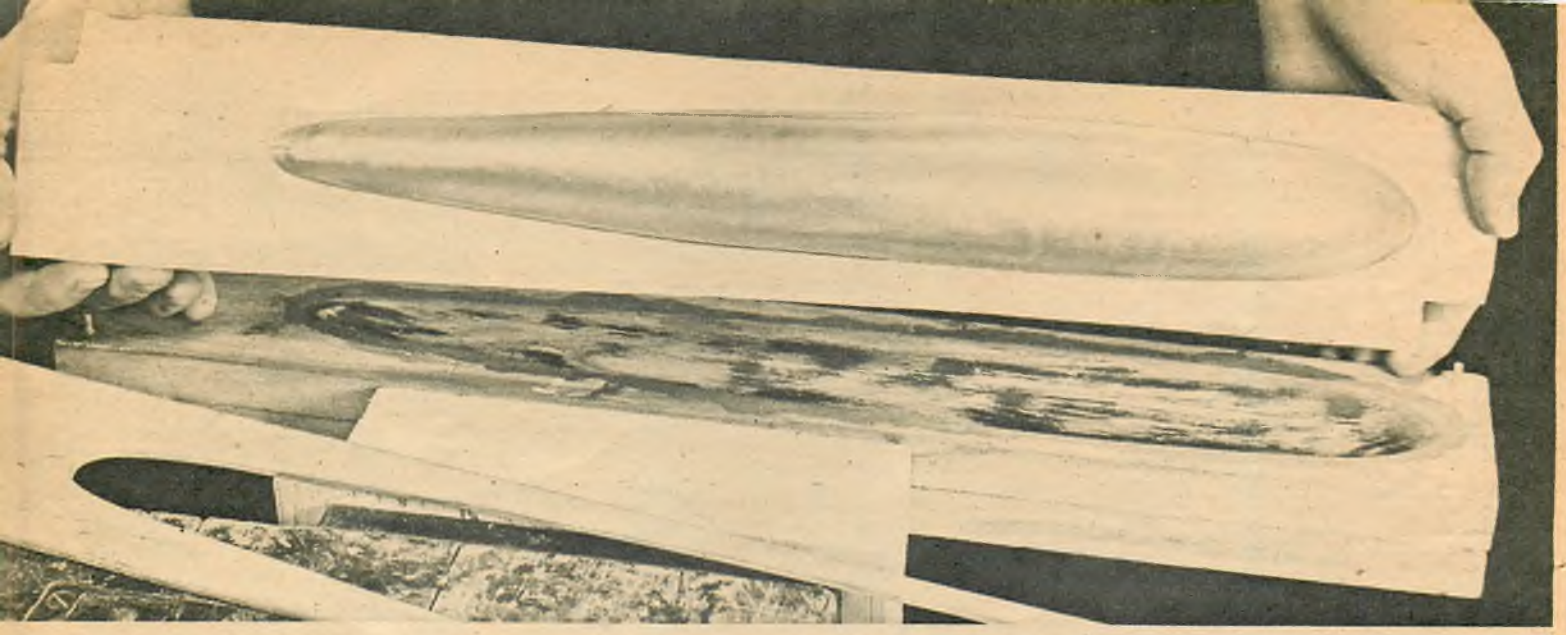
First: build fuselage backbone and pylon outline as illustrated over the plans. While this is drying build the crutch over the plans and install formers A, B, C, D, E, F, and G. Let them dry, then remove the backbone assembly from plans and set in place on former notches. Add $\frac{3}{16}''$ sheet side pieces, tapering so they will fair into $\frac{1}{4}''$ x $\frac{1}{2}''$ backbone at former E. Install $\frac{3}{16}''$ square uprights and pylon braces. At this point it is a good idea to (*Continued on page* 76)



FULL SIZE PLANS 1149

Regular full-size working drawings for building the San De Hogan are a part of Air Trails Full-Size Plan 1149. Plan includes other models featured in this issue as well as this free-flighter.


1/16" PLYWOOD SPAR JOINERS
L. E. 3/8" SQ PLUS 1/16 X 1/4" CAP STRIP
1/8 X 3/16"
3/16 X 1/4"
1/8 X 3/16"
1/16" SHEET ON BOTTOM
3/16 X 1/4"
ALL WING GUSSETS 1/8" SHEET
DIHEDRAL VIEW
2-1/4"
T. E. 1/4 X 1"
NOTCHES 1/8" DEEP
LEADING EDGE TAPERS TO 3/16" THICK AT TIP, ADD 1/16 X 1/4" CAP STRIP AFTER TAPERING
CROSS SECTION AT TIP
ROOT SPAR JOINERS 1/16" PLYWOOD MAKE DEPTH OF SPAR
POLYHEDRAL SPAR JOINERS 1/16" PLYWOOD MAKE DEPTH OF SPAR
WING RIBS 3/32" SHEET
MAKE 2 EACH (5 4 3 2) (1) MAKE 28
NOTCH FOR 1/16" SHEET
FIREWALL DETAIL
ENGINE BOLTS
NUTS PULLED INTO BALSA & CEMENTED WELL
FUEL TANK CHEVROLET CARBURETOR FLOAT
NOTCH 4 CENTER RIBS ONLY
FILL IN WITH SCRAP
1/16 X 1/4" CAP STRIP
STABILIZER RIBS 3/32" SHEET, MAKE 20
FINISHED NOSE
CROSS SECTION AT TIP
STABILIZER TIP 1/8" SHEET
BEVEL 1/8"
BEVEL 13/16"
FORMER A
FIREWALL B
FIREWALL A
PINKING TAPE OR STRONG CLOTH, USE PLENTY OF CEMENT
WING TIP 3/16" SHEET
CUT OUT FOR L. G.
L. E. 3/8" SQ. ON EDGE
1/8 X 3/16"
1/16" SHEET ON BOTTOM
3/16 X 1/4"
1/8 X 3/16"
ALL GUSSETS 1/8" SHEET
1/8 X 1/4"
NOTCHES 1/8" DEEP
1/4 X 1"
LANDING GEAR
WING PLATFORM OUTLINE 1/4" SHEET (MAKE 2)
BALANCE POINT
1/4 X 5/8"
FORMER A 3/16" SHEET
FIREWALL A
FIREWALL B
1/8" PLYWOOD
1/4" SHEET
1/4 X 3/4"
BACKBONE TO HERE
3/16" SHEET SIDES TO HERE
1/4" SQ.
1/8 X 1/4"
PLANK PYLON WITH 3/16" SHEET, GRAIN VERTICAL
K & B GLO-TORP
A B
L. G.
1/8" D. MUSIC WIRE
BACKBONE 1/4 X 1/2"
1/4" SQ.
1/4" SHEET
SUB-RUDDER LOCATION
1/8" SHEET
B
C
D
E
F
G
1/4" SHEET
3/16" SHT.
1/8" SHT.
1/8" SHT.
FUSELAGE FORMERS
FILLET BLOCK
3/16" DOWEL
SUB-RUDDER 1/16" PLYWOOD MAKE 2
STAB PLATFORM 1/8" PLYWOOD
SILK HINGE
1/16" PLYWOOD TAB ON LEFT SIDE, SEE DETAIL C
3/16" SHEET
3/16" SQ.
3/16" SHEET
1/4" SHEET
DE-THERM. PARACHUTE SPACE
HILLCREST DE-THERM. TIMER, SEE DETAIL B
UPRIGHTS 3/16" SQ. WHERE NO FORMERS INDICATED
PLANK ENTIRE FUSELAGE WITH 3/32" SHEET TO TOP OF CRUTCH
3° DOWNTHRUST
FUEL TANK
FLIGHT TIMER SEE DETAIL A
L. G. LEG
2° RIGHT THRUST
A B C D E F G
FILL IN 3/16" SHEET
1/16" PLYWOOD DOOR
CROSS PIECES 1/8 X 1/2" WHERE NO FORMERS INDICATED
3/16 X 1/2" CRUTCH
PLANK ENTIRE BOTTOM WITH 3/32" SHEET LAID DIAGONALLY
3/16" SHEET
TAILHOOK AND SKID 1/16" D. MUSIC WIRE
SCRAP WEDGE



Metal forming for models

By ROLAND MAYER

Those all-metal speed fuselages are not so hard with these instructions

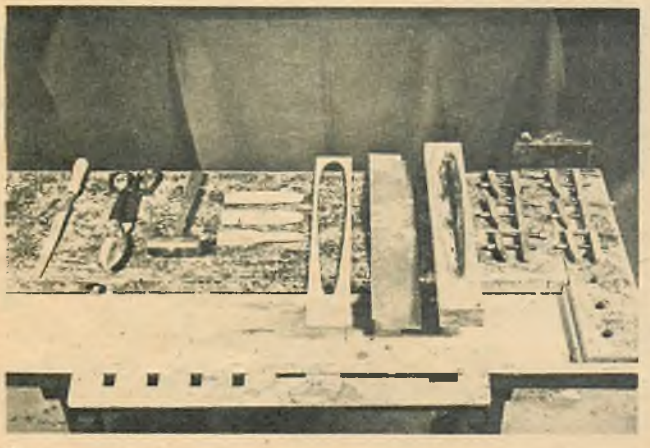
SINCE the introduction to the model world of high powered paint remover under the guise of hot fuel, it has become increasingly more evident that certain model airplane structures as we knew them several years ago are no longer completely adequate for the jobs they are expected to do. Our present day "Glow Juice" and "Racing Soup" not only remove an unprotected finish at an alarming rate, but also have an uncanny faculty for reducing wood structures to useless junk in practically nothing flat.

The use of formed metal construction is proving to be a practical and efficient solution to the problem. It completely eliminates all fuel corrosion worries and offers an added bonus of greater strength and lighter weight as well.

The success of this type of structure is evidenced by the ever increasing number of metal models seen at today's contests and the fact that several of our most popular kits feature complete or partial metal construction. The only reason why many more ships of this type are not being flown is the lack of knowledge among model builders which would enable them to turn out their own jobs of this type.

Here is a method of forming sheet aluminum which is simple enough for any model builder to follow without difficulty and offers several distinct advantages over present methods of construction.

For the step-by-step pictures a semi-circular, streamlined shape was selected for the purpose of best illustrating the type of work that may be turned out by this method. Actually, two pieces made from this mold fitted together over (*Continued on page* 75)

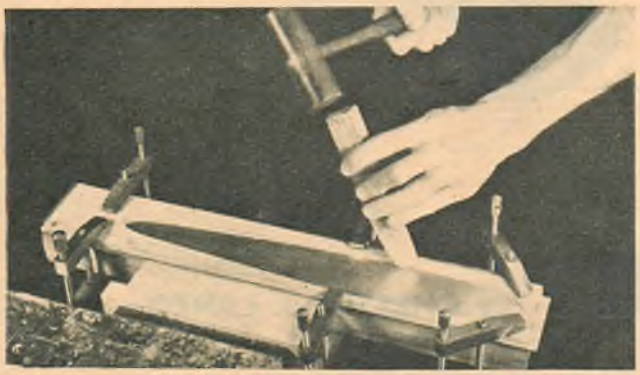


1 Here are ingredients for making metal fuselages: file, tin snips, light cellulose mallet, wood bumping tools, cover plate, Alclad 24SO (sheet aluminum), mold, clamps, vise.

2 Close-up of wood bumping tools; working ends are rounded so no sharp edges cut the metal. Made of same hardwood as the form. Large faced tool is for smoothing.

3 Cut aluminum sheet with ¼ in. overlap on all sides. Snip out opposite corners to permit passage of dowels. One shown by arrow. Make "sandwich" with cover plate.

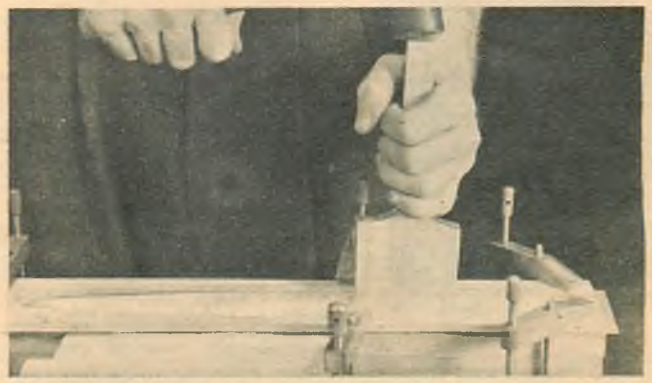
7 Try to keep the wrinkles as small as possible at this point. Don't let them get concentrated in one spot. Note use of clamps to hold "sandwich" together firmly.



4 Idea now is to tap metal gradually down into mold. Tapping is started around the edge with "duck bill" tool. Many light blows are better than a few heavy ones.

8 When metal has been worked all the way down into the mold, use the tool as shown, working it on the bottom and sides, up and down the entire length of the mold.

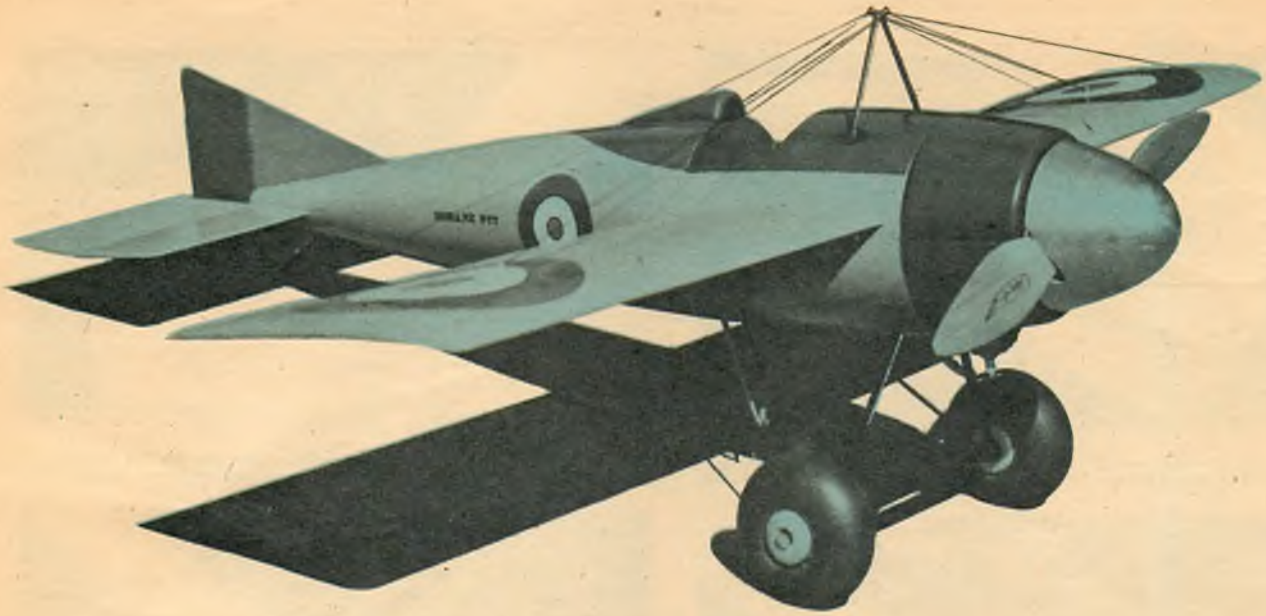
5 Continue tapping, using the smaller faced tools at the narrower sections of the mold. Make several circuits until metal has been depressed into the mold as shown.



9 Finally, before removing the finished shape, we come to the smoothing operation. On this will depend the finish of the part. Use wide faced tool illustrated here.

6 Use tool in photo to tap metal flush against sides and draw it towards bottom. Small wrinkles will appear, but don't worry—that's normal, they'll come out.

10 When satisfied with smoothness of surface, remove shell as shown in lead photo. Then trim off excess metal with shears. Leave small lip around edges for fitting.



Morane Saulnier

By CHESTER D. LANZO

Famous French fighter returns as Class A or B control-line flying scale beauty

● Designer Lanzo

HERE is an early World War I monoplane that could very easily be mistaken for a modern super-streamlined Goodyear Trophy racer. One could say that the engineers of this famous "oldie" were 33 years ahead of their fellow aeronautical designers. The large streamlined spinner, followed by the completely cowled engine and symmetrical fuselage leaves nothing to be desired in drag reduction. Raked wing and stabilizer tips are similar to those used on the latest high-speed pursuit planes. Wing warping wires that were used in the early days of aviation made necessary the unusual amount of struts outside the fuselage.

Probably one of the most famous planes in French aviation history, the Morane Saulnier monoplane of 1915 was the first to mount a machine gun that fired through the arc of the propeller. The pilot was thus enabled to feed ammo strips into the gun ahead of him. Steel wedge-shaped plates were attached to the propeller blades to obviate damaging the propeller.

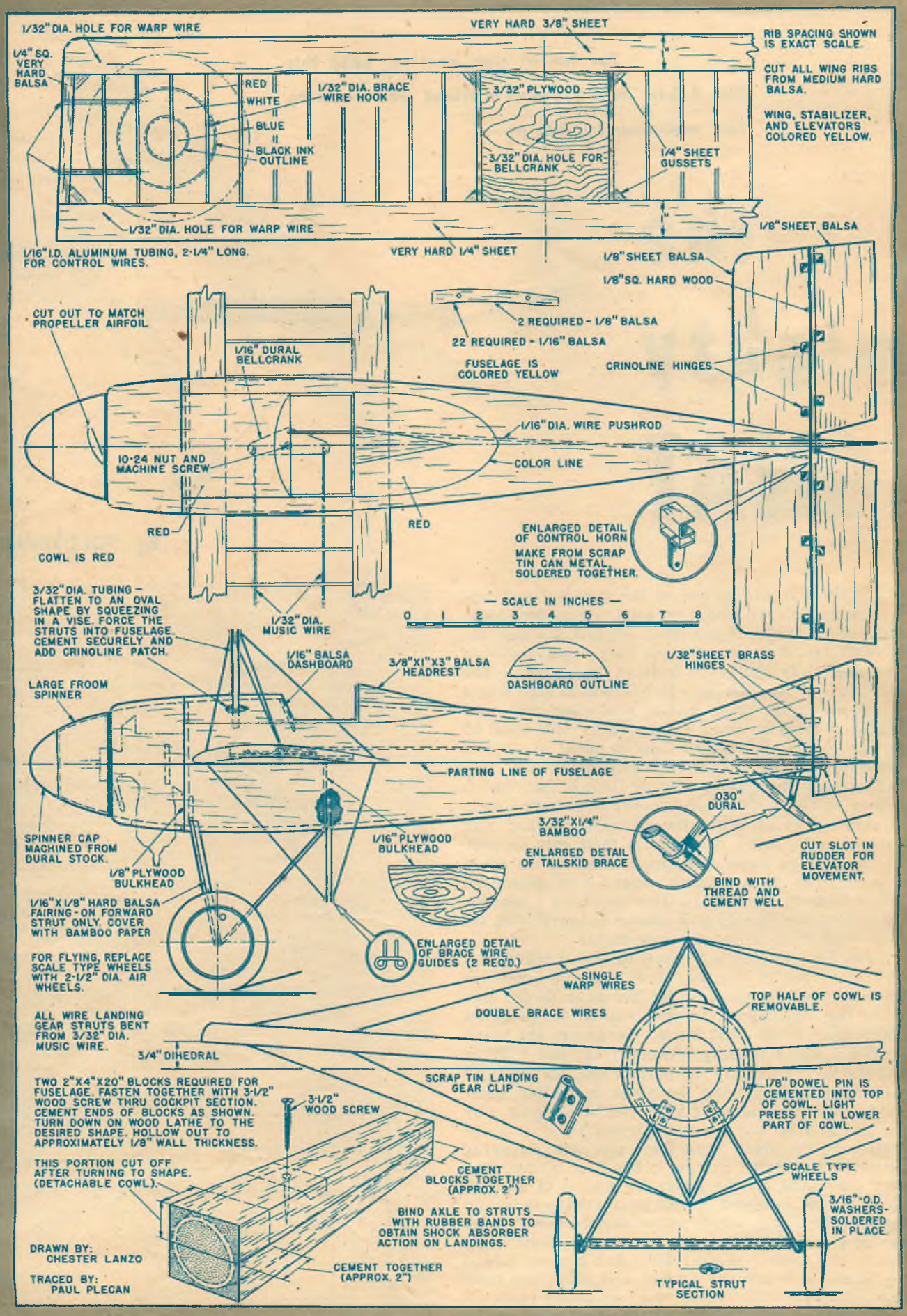
The wing span of the plane was 26 feet, 9 inches. Gross weight was 1,080 pounds. Empty weight was 738 pounds. Top speed was 80 miles per hour. The machine was powered by an air-cooled 110-hp LeRhone rotary engine.

Now let's get back to the model. The plane is an excellent one for a beginner to start on as it handles well in the air and is simple to construct.

You can power this ship with any "A" or "B" engine you have lying around. An Arden .199 was chosen because of the simple radial mounting and ease of cowling. The Arden also runs well inverted. If an engine other than the Arden is used, be sure to change the distance from (*Continued on page* 73)

● Cockpit details on Chet Lanzo's original Morane. Ship lends itself to dressing up details. Bracing is not difficult, adds to looks.

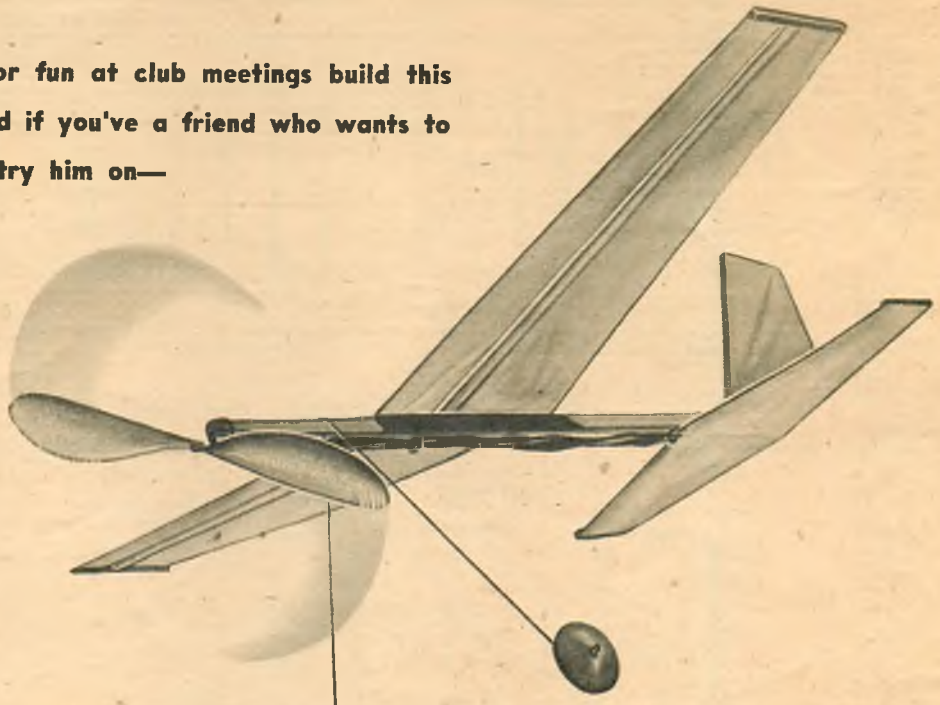
● Sharp looking character is the M.S. even though it was designed before World War I. Note cowled engine, big spinner, clean lines.



● Full size working drawings for building Lanzo's Morane are a part of Air Trails' Full-Size Plan #1149

For fun at club meetings build this little R.O.G. And if you've a friend who wants to start modeling; try him on—

the mighty GNAT



By "OLDTIMER"

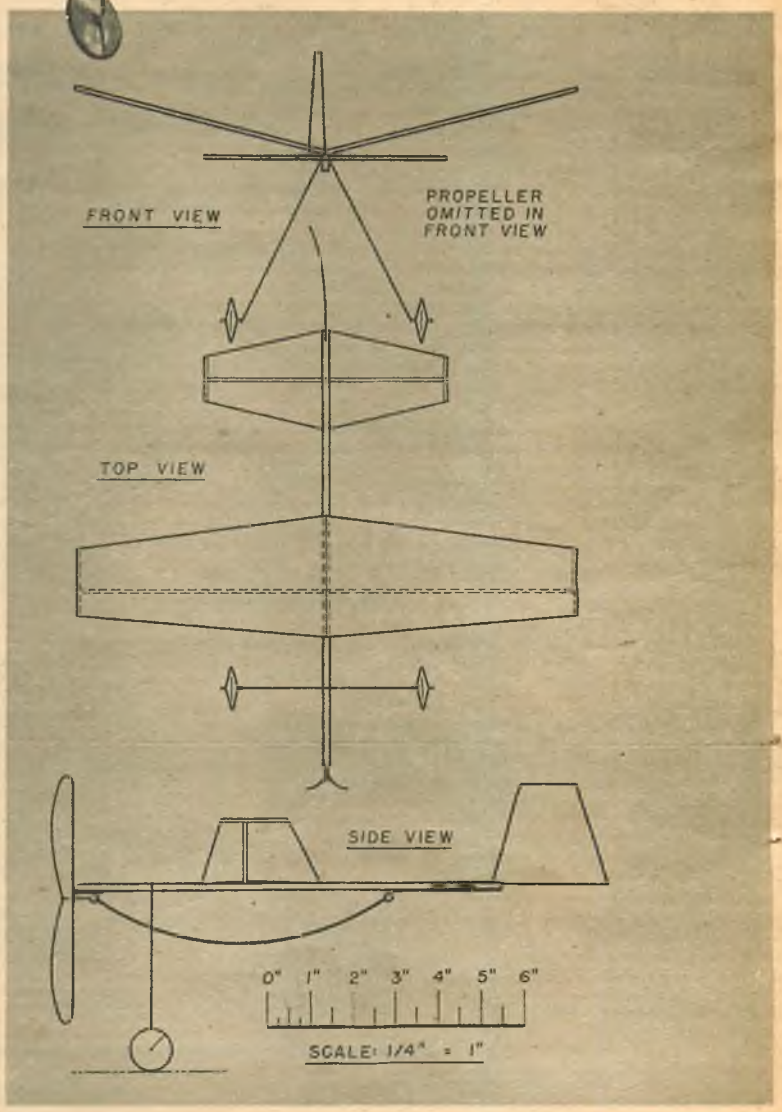
THIS little R.O.G. is one of the simplest and best flying models we have ever seen. As modern looking and capable as it was when we first saw one like it years ago, it is one of those rare never-grow-old jobs that really amuse and instruct the beginner. The first time we saw this baby R.O.G. was in high school —and we aren't going to tell you when that was! Matter of fact, the senior class used to raffle them off to raise funds. So Mighty Gnat is about as close to those early R.O.G.'s as we can remember.

The nicest thing about Mighty Gnat is that "he" is so easy to make. The prop is easily bent from a piece of steamed sheet balsa; the tissue wings and stab have no edges and a thin spar is their only support. The wheels are paper cones made from an old envelope or from thick writing paper. And despite its flimsy appearance, Mighty Gnat can take a beating. Its very lightness makes it almost indestructible for some rugged in-the-parlor free-flight.

Since the propeller is the only item that takes time, let's get it out of the way first, then we can finish the model while we wait for the prop to dry out. Using the template on the plan, cut out the propeller blank from 1/16″ sheet balsa. Sandpaper the blank until it is about midway between 1/16″ and 1/32″ in thickness. Try to leave the narrow hub portion thick for strength. Now soak the blank in boiling water for at least 15 minutes. (While this is going on, why not get on with the directions below.)

Remove the blank from the water and, following details of the sketch on how to bend the blades, support the blank on the bench by means of straight pins, and use weighted objects to create the twist and camber. This is as simple as the sketch shows. After the prop has dried out, sandpaper the blunt edges round, and smooth the surfaces. Rub cement behind the blades to retain the camber and pitch, and bend and install the .020″ music wire propeller shaft.

The rubber hook portion of the shaft need not be bent until the shaft slides through the thrust bearing



later on. When the shaft is in place, slide a small washer over the shaft and glue it *evenly* to the rear of the propeller hub. Balance the blades by removing wood from the heavy blade, or by placing cement on the light blade near the hub. (Check balance after cement dries, for it is lighter then.)

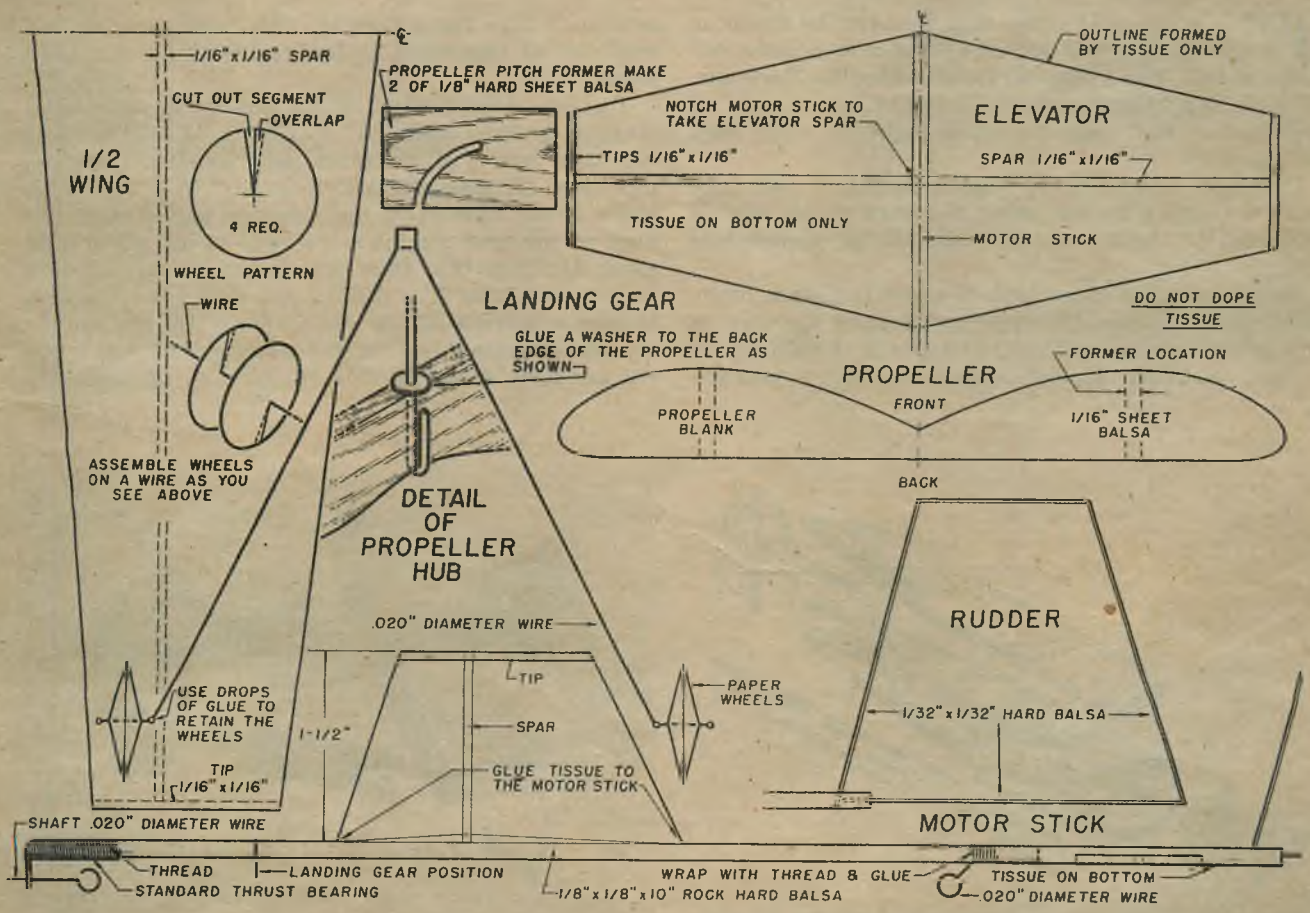
The motor stick is a piece of hard ⅛″ square balsa. The thrust bearing is glued to the motor stick and the joint is reinforced with a few windings of thread. Bend the rear rubber hook from .020″ wire and cement it in position, again reinforcing with a few loops of thread. The stabilizer spar is cut to length from 1/16″ square balsa and cemented to the motor stick; note that a notch is cut in the bottom of the stick for this spar. (Wing covering is atop the stick, but stabilizer covering is under the stick.) One-inch-long tip pieces of 1/16″ square balsa are cemented to the ends of the stabilizer spar. If you find this hard to do, just place the stick with spar in place on the work bench, hold in position with pins (don't drive them through the wood!), and then glue on your little tip pieces.. The rudder is made of 1/32″ square balsa.

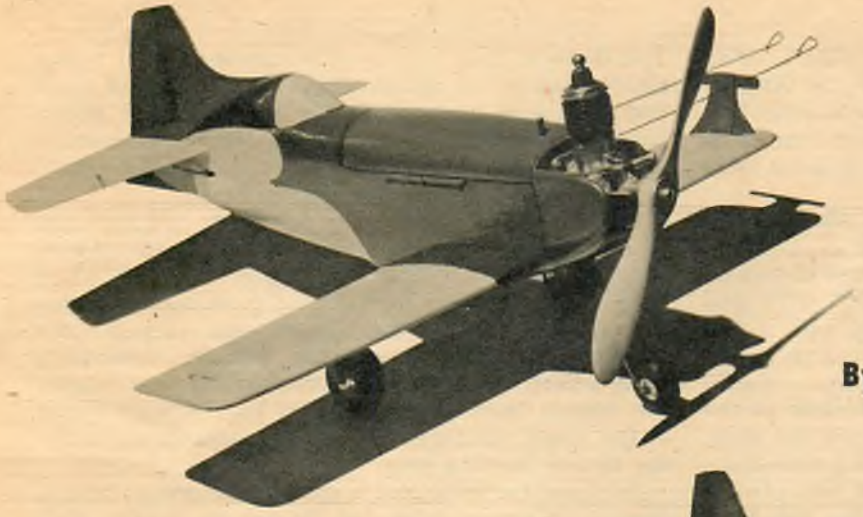
The landing gear is made from .020″ wire. Just bend it to shape as shown on the plan, and cement in place. The wheels are simple and fast to make. Just describe four circles of the right size on heavy bond paper or an old envelope. Cut out these discs and from each remove a little wedge-shaped sliver, running from the rim to the hub. Now place cement on this edge and overlap the two edges, holding until dry. This makes a shallow paper cone.

The trick is to make four such cones and then put them together in pairs to form wheels. To do this, slide one pair at a time over a piece of wire, place cement on the edges of one, and push the cones together, holding until the cement sets. If you don't use the wire, your wheels may wobble excessively. Place a drop of cement on the ends of the axle to keep the wheels from falling off, and on the wire inside of the wheel position to keep the wheels from working up the landing gear.

To make the wing, cut a spar to the proper length from 1/16″ square balsa and the two tip pieces which are 1½″ long. Lay the spar on the bench—holding it with pins placed on either side but not through the wood—and glue the tip pieces in place. When dry, crack the spar at the center and raise *one* tip three inches above the board. Support it in that position with a block of wood or some appropriate object, and cement the cracked center (*Continued on page* 68)

• These plans are exactly 2/3rds actual size (2" equals 3" on the full-size model). You get full-size drawings on Plan 1149.





Take your choice of a speedy low-wing monoplane or a stunt bipe—change from one to the other within a few seconds.

By AUBREY "RED" KOCHMAN

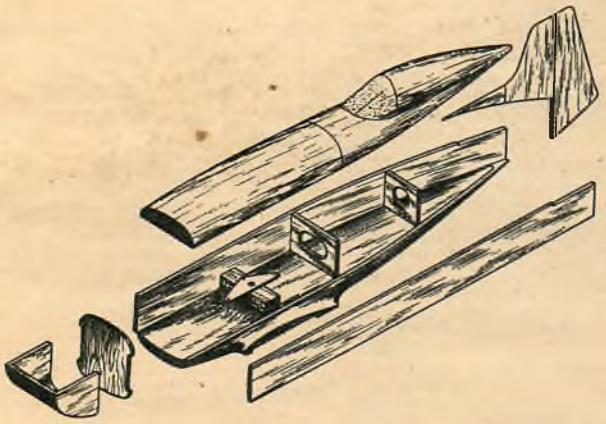
Cub Sportster

HERE is a versatile little ship that can be flown as a low-wing speed job or changed to a stunt biplane in less than a minute. Powered by the Herkimer OK Cub and flying on about 15 feet of line, there's no end to the fun you can have right in your own backyard.

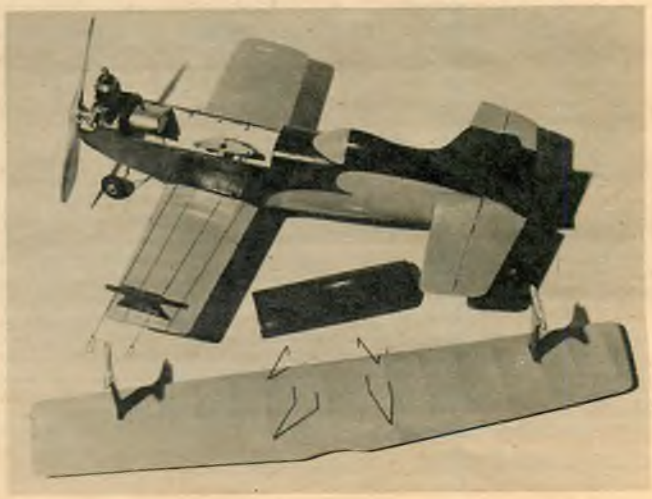
Designed as a simple, rugged model, it can take quite a beating before going the way of all models subjected to the rigors and mishaps of control-line flying.

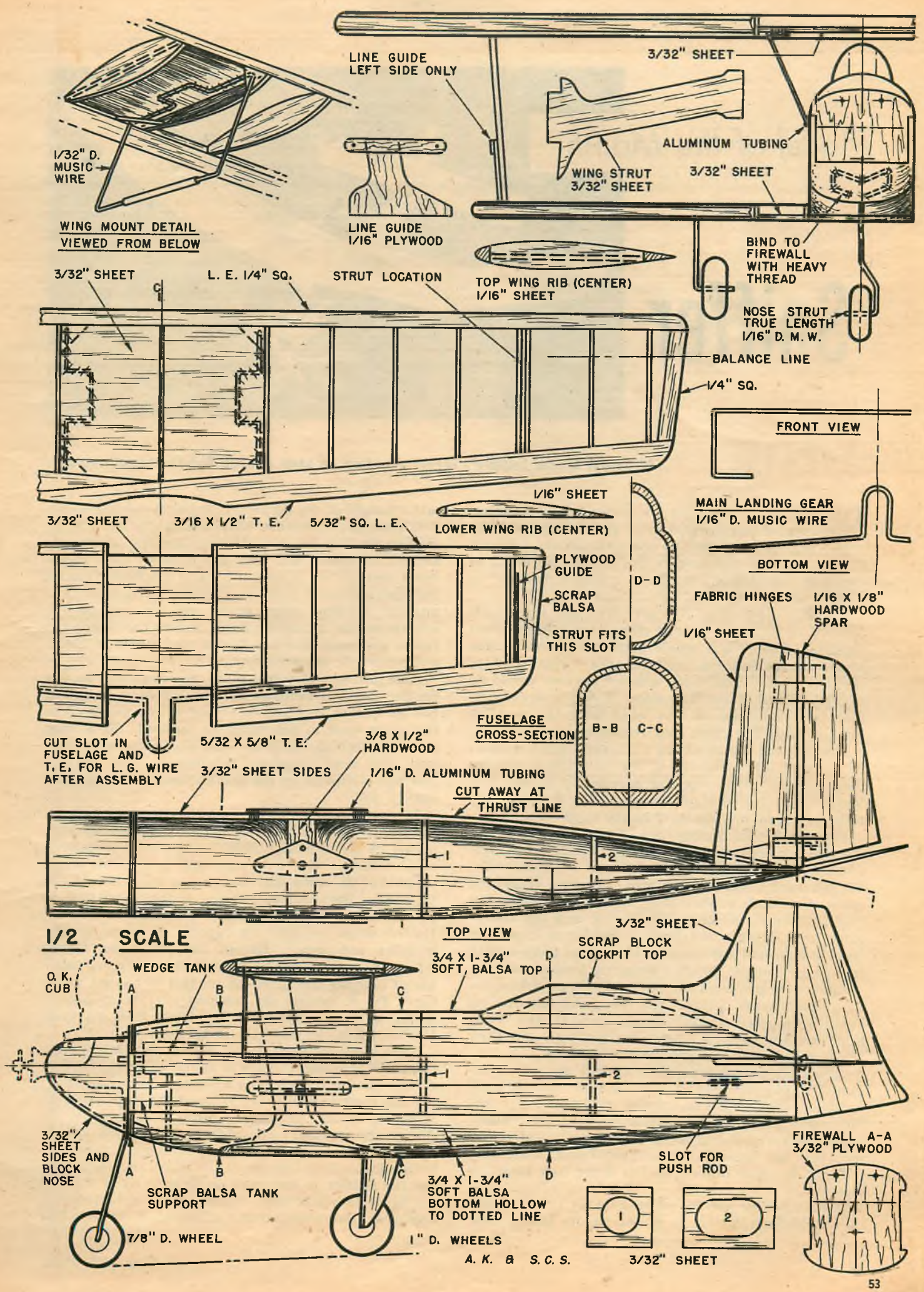
Before starting construction, study the plans carefully. Make certain that you understand the way in which the fuselage is built. Actually it is built up on a keel, insuring perfect alignment and a positive reference line for checking zero incidences on all surfaces, so important to the performance of a good stunt model.

To begin construction, select a piece of very light, straight-grained balsa ¾″ x 1¾″ x 36″. This piece will take care of all the block parts needed. Trace the top view on this and carefully cut to shape. This block is the bottom of the fuselage and acts as the keel, so the next step is to carve it to its proper side view. Make certain that you do not do any carving between sections B and C as you may spoil the zero incidence setting of the lower wing. Hollow out as shown by dotted line on the plan. Formers #1 and #2 are now added to this (*Continued on page* 69)



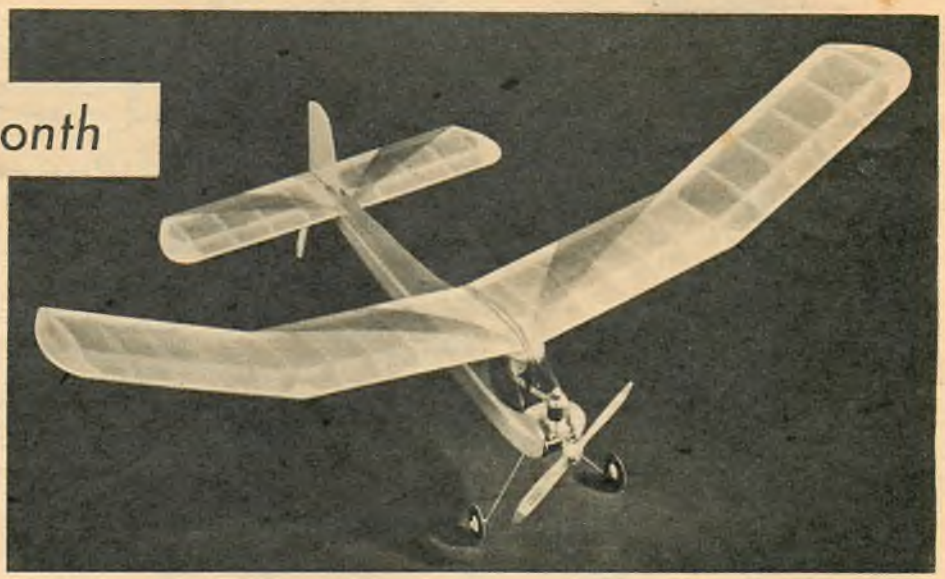
● Exploded view of the fuselage for Red Kochman's Cub Sportster. Regular full-size drawings are a part of Air Trails Plan # 1149.




1/32" D. MUSIC WIRE
WING MOUNT DETAIL VIEWED FROM BELOW
LINE GUIDE LEFT SIDE ONLY
LINE GUIDE 1/16" PLYWOOD
3/32" SHEET
ALUMINUM TUBING
WING STRUT 3/32" SHEET
3/32" SHEET
BIND TO FIREWALL WITH HEAVY THREAD
NOSE STRUT TRUE LENGTH 1/16" D. M. W.
TOP WING RIB (CENTER) 1/16" SHEET
3/32" SHEET
L. E. 1/4" SQ.
STRUT LOCATION
BALANCE LINE
1/4" SQ.
FRONT VIEW
MAIN LANDING GEAR 1/16" D. MUSIC WIRE
1/16" SHEET
LOWER WING RIB (CENTER)
3/32" SHEET
3/16 X 1/2" T. E.
5/32" SQ. L. E.
PLYWOOD GUIDE
SCRAP BALSA
STRUT FITS THIS SLOT
D-D
BOTTOM VIEW
FABRIC HINGES
1/16 X 1/8" HARDWOOD SPAR
1/16" SHEET
FUSELAGE CROSS-SECTION
B-B
C-C
CUT SLOT IN FUSELAGE AND T. E. FOR L. G. WIRE AFTER ASSEMBLY
5/32 X 5/8" T. E.
3/8 X 1/2" HARDWOOD
3/32" SHEET SIDES
1/16" D. ALUMINUM TUBING
CUT AWAY AT THRUST LINE
1/2 SCALE
TOP VIEW
3/32" SHEET
SCRAP BLOCK COCKPIT TOP
3/4 X 1-3/4" SOFT, BALSA TOP
WEDGE TANK
O. K. CUB
3/32" SHEET SIDES AND BLOCK NOSE
SCRAP BALSA TANK SUPPORT
7/8" D. WHEEL
3/4 X 1-3/4" SOFT BALSA BOTTOM HOLLOW TO DOTTED LINE
1" D. WHEELS
SLOT FOR PUSH ROD
FIREWALL A-A 3/32" PLYWOOD
3/32" SHEET
A. K. & S. C. S.

Model of the Month

Sniffer



Midwest Model Supply's latest creation: a semi-prefab for the small engines.

TECHNICALLY speaking, the model airplane industry is one of the few that lived up to those beautiful post-war promises. For the past three years a stream of new major developments has created an effect of continual, breathless revolution. "Chain reaction" is a more apt description.

Take the glow plug. Not only are there more fuels today than there are brands of hair tonic in the local tonsorial parlor, but small airplanes have become practical. No coil and batteries meant smaller ships could be made. For them, smaller engines would be needed. Then, in one fell swoop, K & B knocked displacement tradition in the head with the wee .02 Infant. Both Herkimer and Anderson produced excellent hot engines of about 1/20 cubic inch displacement. And this brings us to the question of kits for these popular little engines, specifically to the new Midwest Sniffer, designed around the engines, and selling at $1.50 in your local hobby shop.

Midwest Model Supply, one of our older concerns, is noted principally for two things. First, the reputation its products enjoy for performance and, secondly, the fascinating names of its kits. You may forget the cabin and stick rubber jobs Midwest put out, but you'll never forget the Jabberwock and the Gollywock! Or Snorky and Porky! Sniffer is especially aeronautical and appropriate, in view of baby-engine free-flight models' thermal snagging tendencies.

Like other kits from the southside Chicago firm, the Sniffer is a team design. The plans say that Roland Schmitt designed it, Dick Struhl drew it, and Wally Simmers approved it. Actually, the boys put their heads together on all proposed new items.

"We anticipated popularity of kits for small engines," explains Wally. "Small engines meant small airplanes that could be carried easily in a car and flown in a park. In the Sniffer we shot for realism, ruggedness, and flying ability." Four progressive test models of the Sniffer were built and two of these were lost out-of-sight before all the bugs had been removed.

The Sniffer kit you see on your dealer's shelf makes up a 29½-inch span ship, of 135 square inches area, and a weight of 4½ ounces. It is partly prefabricated. The two cabin sides are fully and neatly cut out, including the slot for the stabilizer and the windshield section. Formers and ribs are printed. The sheet-balsa vertical tail is die-cut. As to materials, the kit includes a formed wire landing gear, strip wood, triangular trailing edge stock, cut-out windshield, wheels, engine mounting bolts, and so on. Inside the rather generous plan are folded two sheets of tissue, one white, the other colored.

Like previous Midwest plans, the drawings for the Sniffer follow a familiar pattern. Nothing elaborate, but competent and easy to follow with a sizable portion given over to directions for building. Both wing and stabilizer are built-up with single spar construction; the wing employs polyhedral. The finished fuselage is sheeted on top and bottom, making a rigid, sturdy unit.

In common with other manufacturers of kits for the small engines, Midwest has been pleasantly surprised by the typical builder's experience in Half-A class models. The baby-engined free-flight job is capable of the same still-air time as the prewar Class C models, then considered the biggest and best in performance. When properly trimmed and flown, Half-A ships are proving capable of times of four minutes and more. Except for the wind factor, which takes them out of sight sooner, they are capable of pushing the larger A models in contest work. Since the A models are pushing everything bigger, including the D monsters, it follows that any good Half-A job packs its share of thrills.

Should the present trend of interest in just two classes of free-flight result in actual rules, the makers of kits for the Half-A jobs will get a great big break, for the most logical division point for displacements seems to be the .09 engine. More small engines are due on the market, ranging from .035 to .065, which, by the way, are the suggested limits for the Sniffer.

One interesting feature of the directions for building the Sniffer is the notes on flying. While the job can be flown either way—left or right—in both power and glide, the manufacturer (*Continued on page* 67)

FLASH!

from Nationals

Again, "O.K." CO-2 sweeps the field placing first, second, third, fourth, fifth in all CO-2 classes including Junior, Senior and Open Classes. But — although no classification for its category has as yet been set up—the talk of the Nationals was the "O.K." Cub.

BIG NEWS!

"O.K." Cub now available in .049 and .074 displacement. Same low price. Same mounting dimensions—with extra "umph" for control line flying.

Weight of new .074 engine—only 1⅝ oz. Best power weight ratio of any infant engine—a bear for power.

ONLY

$5.95

Including the famous OK Glow Plug

Develops up to 15,000 RPM!

"O.K." Cub engines are naturals for free flight and control line flying. Small front area offers low wind resistance. No limitations in installation either—you can use radial or lug mounting.

Higher power on weight ratio basis—result of unique, patented port design which provides radial fuel injection—higher turbulence—more effective scavenging.

Specifications:	.049	.074
Bore:	.390	.480
Stroke:	.415	.415
Weight:	1½ oz.	1⅝ oz.
RPM	up to 15,000	

OK

The *Only* Complete MINIATURE ENGINE LINE

An Engine for Every Class
A Model for Every Purse

NEW!

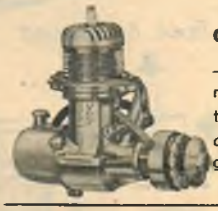
The Improved 1950 Models are Here! Now at your dealer's—the new advanced Hot Head, Super 29 and Super 60. Redesigned with ebonized cylinders and gold anodized cylinder heads. Smoother performance! Higher output!

Class A "O.K." BANTAM

—an improved 1950 model of the record smashing engine, designed by Ben Shereshaw, noted model engine designer. Wt. 3¼ oz. RPM 2,500 to 11,600. Complete with spark plug and tank for only **$11.95**

Class A "O.K." BANTAM

—GLOW PLUG MODEL. Features all the championship performance and construction details that won world-wide fame for its brother spark plug model. Complete with plug, less tank.....**$9.95**



Class B "O.K." SUPER 29

—with high-compression head, rotary valve and ram induction. Complete with spark plug and tank, an outstanding bargain at only.....**$11.95**

Class B "O.K." HOT HEAD

—extra rugged for the extra stresses of pre-ignition firing. Will exceed spark ignition speed when "O.K." Hot Head Fuel is used. Wt. 7 oz. Complete with plug, less tank, only **$9.95**

Class D "O.K." SUPER 60

—aluminum crankcase for lightness. Large size ball-bearing and new domed cylinder head for smooth performance. With 3-position timer located at rear for easy access. Complete with spark plug and tank.....**$11.95**

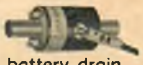
Class D "O.K." SUPER 60—

—GLOW PLUG MODEL. With steel cylinder, hardened crankshaft and hardened and lapped piston for long wear. Complete with plug, less tank. You can't beat this value at only...**$9.95**

"O.K." TWIN

—an experimental engine for large models and radio-controlled ships. Wt. with tank 23 ozs. RPM 1,000-6,000. Complete, less coil..... **$49.00**

"O.K." COILS



—fat spark, low battery drain. Models for A to D Class engines. Complete with lead..... **$1.75**

In coil pack with lead and matched condenser..... **$1.95**

Twin Coil with leads and matched condenser.....**$5.00**

"O.K." CO 2

—the basic trainer in the compressed gas class. No gasoline, battery, timer, coil or spark needed. Wt. bare ¾ oz. RPM 3,000-7,000. Complete, ready to run.....**$4.95**

"O.K." CUB

—a new class glow plug engine that "revs up" to 15,000—far beyond what you'd expect from such a tiny power plant. Wt. 1½ oz. Including plug, only a low, low.....**$5.95**

Engines and complete parts service at your dealer's. See him today, or write for catalog and hook-up instructions to:

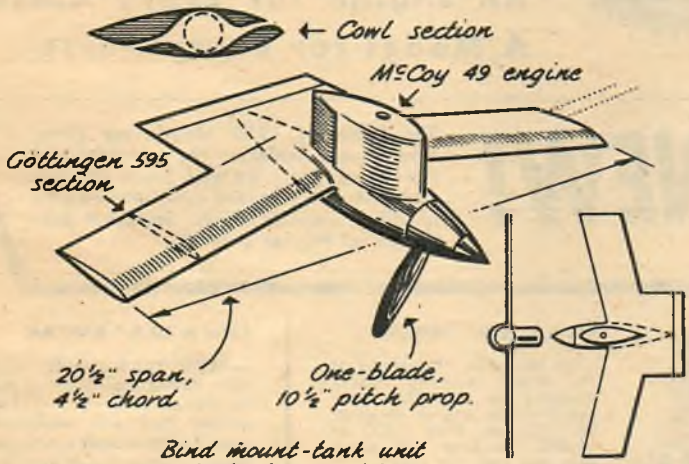
HERKIMER TOOL and MODEL WORKS, Inc.

1311 Harter St., Herkimer, N. Y.

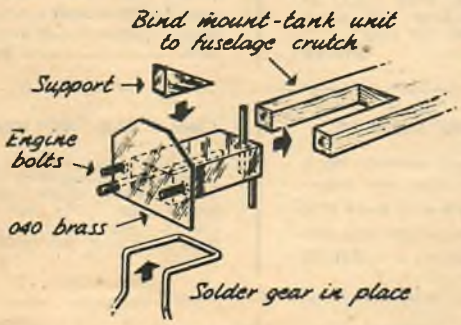
CANADA: Herkimer "O.K." Engine Co., 511 Hermant Bldg., Toronto
EXPORT: 120 Wall St., New York 5, N.Y. (All cables: Concordia, N.Y.)

Sketch Book

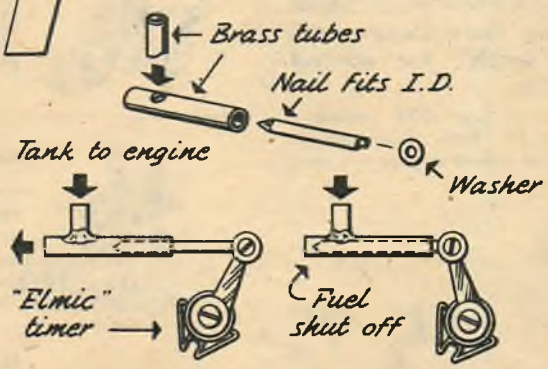
HAVE YOU DEVELOPED SOMETHING NEW IN CONSTRUCTION, CONTROL, OR FLYING THAT MIGHT INTEREST OTHER MODELERS? SEND A ROUGH SKETCH—WE'LL REDRAW IT AND PAY $2 FOR EACH ONE ACCEPTED



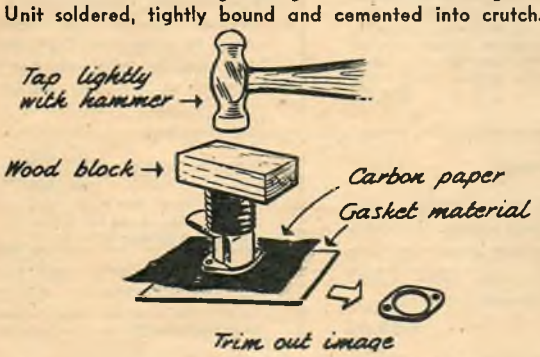
● Not just another dream ship, this unusual speedster has been built and flown over 140 mph. Designer Herbert Izuno, Chicago, Ill., credits speed to reduced drag of ship as compared to conventional arrangement with separate tail surfaces. McCoy 49 was souped up and run with only 1 piston ring. "No Glo Slow" is name designer gave ship. When the NGS flies it looks like a bat. Fuel is 1 part Hi-Thrust, 2½ parts O&R Plus 30. A standard O&R glow plug is used in the engine.



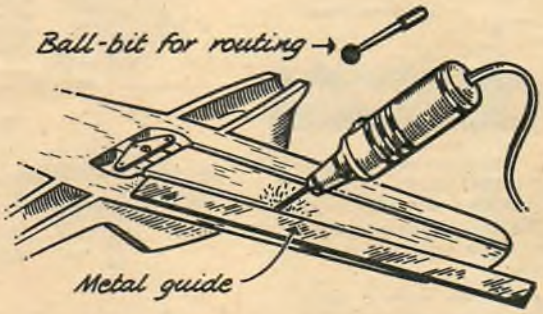
● Pfc David Kovensky, Chanute Field, Ill., comes up with a workmanlike mounting arrangement for Arden engines. Unit soldered, tightly bound and cemented into crutch.



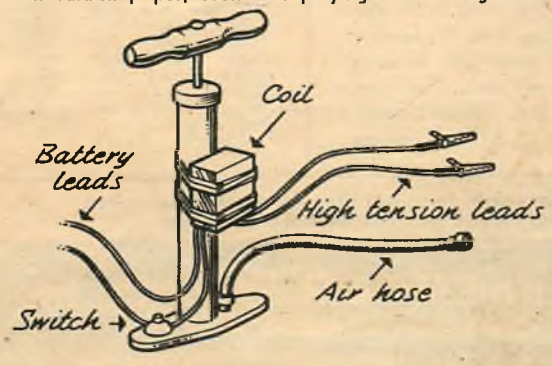
● British-made Elmic timer is utilized by Bob Stone, St. Paul, Minn., in this fuel cut-off for limiting run of glow plug engines. Bits of tubing and nail are materials needed.



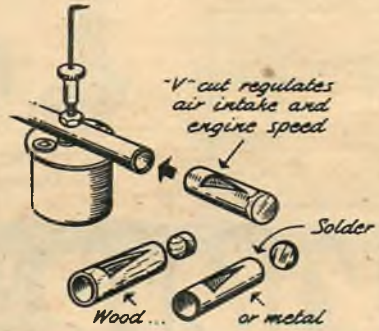
● Lack of replacement gaskets doesn't slow up Bob Buragas, East Orange, N. J. He stamps outline impression with carbon paper, even uses playing cards for gaskets.



● Here's a handy tip for grooving solid balsa wing for control lead wires. Use power tool with ball bit and rout along metal rule, says J. DeAngelis, Hershey, Pa.



● Jet model crew can be cut to one man says Gregg Conlan, San Francisco, Calif., by rigging ignition starting accessories to pump. Foot switch enables one to do it all.



● Throttle your glow plug engine for reduced power with this gadget of Ed Whalley, Woonsocket, R. I. Varying positions of tube with "V" opening controls intake, speed.

Advertisement for McCoy

It's here!

a real DURO-MATIC *McCOY* "9"

for small planes *with* New DUROGLO

Exclusive McCoy development, an improvement in ignition as far advanced as the glow plug was over spark ignition.

Only **$7.95** complete with integral gas tank

Illustrated Actual Size

The IDEAL Engine for the novice to easily and quickly learn to fly U-Control and Free Flight with small planes.

• The new McCoy "9" is a REAL McCoy. A duplicate in miniature, this little engine is built to the same precision standard as its bigger brothers. And when you run it you will be amazed at the power this little fellow has, just like the bigger McCoys it's a real champion thru and thru. You can get a Testor Freshmen kit, propeller and all-purpose fuel, all perfectly matched for top-notch performance. Learn the thrill of flying your own model plane today!

AT YOUR HOBBY SHOP

Checkered Flag Line

DURO-MATIC PRODUCTS CO.
HOLLYWOOD 38, CALIFORNIA

Holder of MORE AMA Official Records — than ALL OTHER MAKES COMBINED **FIRST** IN THE AIR ON THE LAND ON THE WATER

It takes power to win—McCOY Engines supply MORE POWER than any other engine available today!

McCOY ADVERTISEMENTS stress the fact that although the new McCoy "9" is a small midget size engine, it is a real McCoy, built to the same precision standard to develop more power. The reason McCoy engines hold more Official AMA Records than all other makes combined.

McCoy does it again!

Makers of the famous line of model engines announce a real precision-built McCoy for only $7.95.

Last October a bombshell burst upon the long established model engine business when Duro-Matic Products Company, Hollywood, announced the McCoy "19" Engine at $9.95. In a few weeks news of a real McCoy engine at such a sensationally low price swept the model business like wildfire. Although Duro-Matic had been building the McCoy engine for only three years, these engines in the hands of novices and experts alike, had already captured a major share of all Official AMA Records, and popularity of the McCoy had zoomed to No. 1 position as the leading contest winner.

But modelers felt the need for McCoy power in a small engine, and they immediately began clamoring for a midget size McCoy engine.

To McCoy engineers this presented a knotty problem. To preserve the exclusive design that had made the McCoy the undisputed leader among all model engines in such a tiny engine, presented what appeared at first to be an almost unsurmountable engineering feat. Could parts be made in such fantastic small scale, requiring piston rings that measured .500? And even if they could be manufactured, would not assembly requiring watchmaking precision make the final cost prohibitive?

After months of exhaustive engineering work and ceaseless experimentation McCoy engineers solved the most intricate problems. Working with Perfect Circle engineers, the smallest piston ring ever made was finally perfected and in collaboration with Testor chemists a one all-purpose fuel was perfected. Finally to enable any novice to easily and quickly learn to fly this small engine in U-Control and Free Flight, a perfectly matched tailor-made Testor propeller and airplane kit were perfected through the joint efforts of Testor and McCoy engineers.

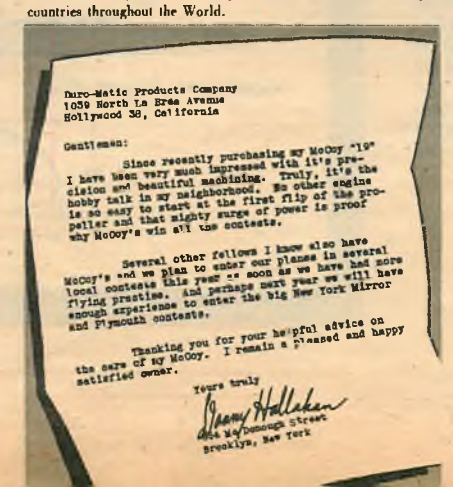
Last month the new McCoy "9" passed its final flight tests in a Testor Freshmen Trainer. In the meantime McCoy engines had flown as winners to amass for their delighted owners, every single AMA Official Record. In addition McCoys took 16 "first" places at the New York Mirror meet and became the undisputed winner at the National's. With straightforward advertisements (left) the new McCoy "9" was introduced at an amazing low price of $7.95.

The manufacturers who had captured the hobby field with a McCoy engine in every contest class, now had a real McCoy engine for the general public, the greater portion of whom had never tried building or flying model airplanes, that would undoubtedly influence many of them to learn the thrill of flying their own plane. With this new combination of perfectly matched engine, airplane kit, propeller and even fuel, the novice for the first time had everything he needed to get started, with every assurance of success without previous experience.

It looked as though the hobby business had at last an appeal for the great general public and in sales the leader might be as difficult to catch, as was his McCoy engines in the nation's model contests.

PROUDEST POSSESSION of Duro-Matic Products Company is the file of Official AMA Contest Board releases of National Records won by contestants using McCoy engines.

SATISFIED OWNERS letters come to Duro-Matic from happy owners of McCoy engines in every one of the 48 states and foreign countries throughout the World.



Duro-Matic Products Company
1039 North La Brea Avenue
Hollywood 38, California

Gentlemen:

Since recently purchasing my McCoy "19" I have been very much impressed with it's precision and beautiful machining. Truly, it's the hobby talk in my neighborhood. Its other engine is so easy to start at the first flip of the propeller and that mighty surge of power is proof why McCoy's win all the contests.

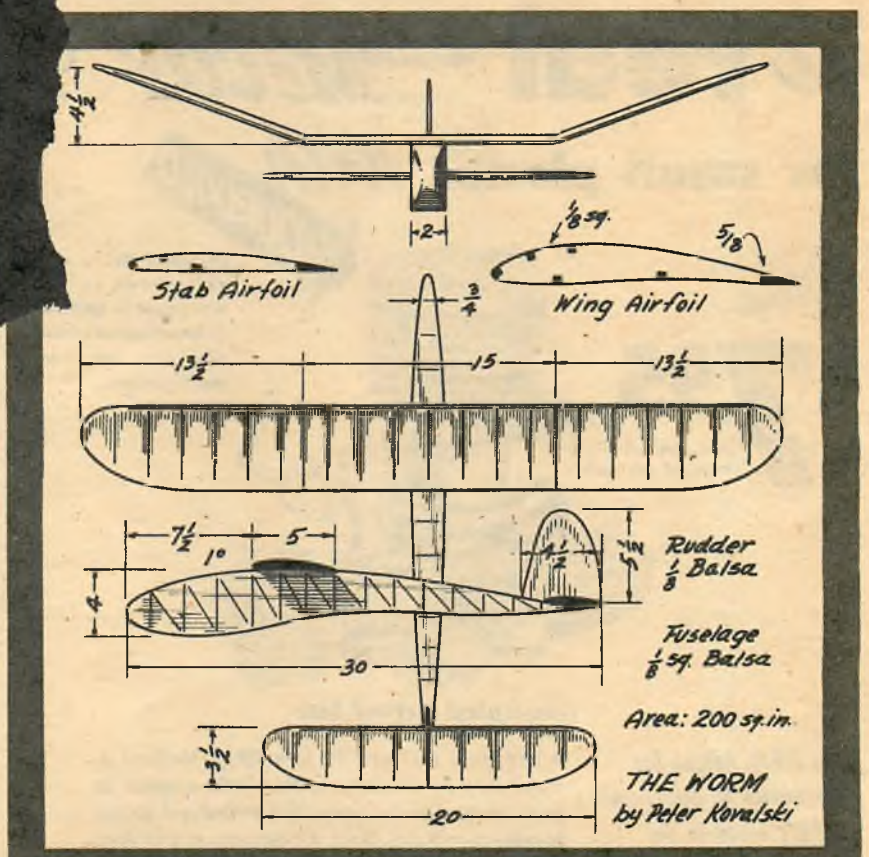
Several other fellows I know also have McCoy's and we plan to enter our planes in several local contests this year -- soon as we have had more flying practise. And perhaps next year we will have enough experience to enter the big New York Mirror and Plymouth contests.

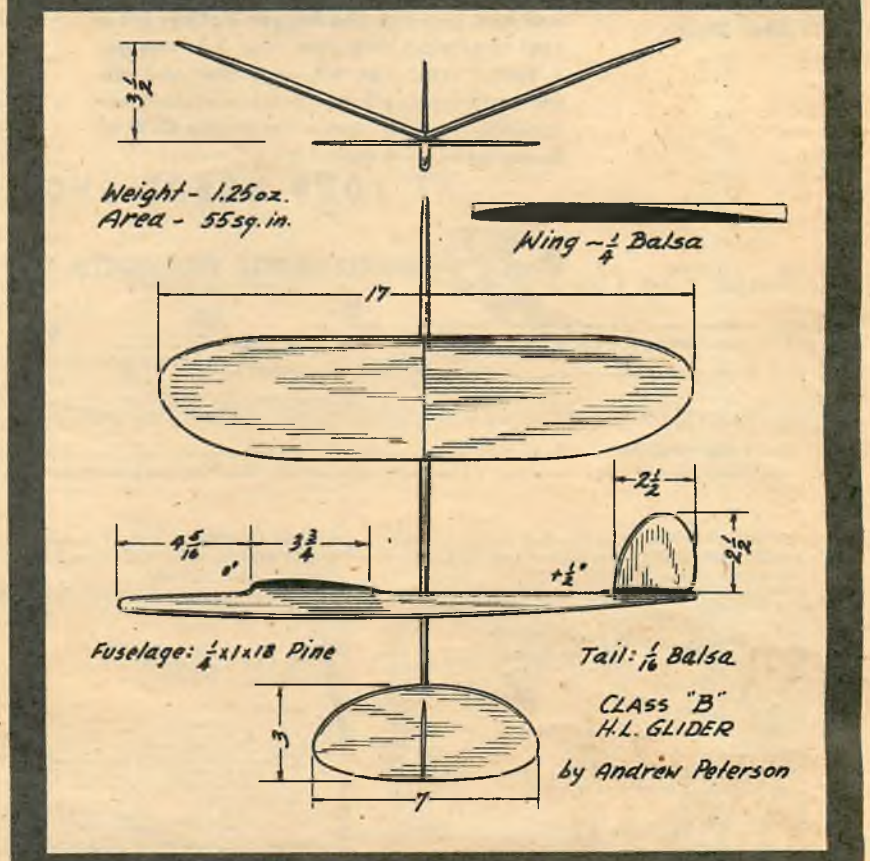
Thanking you for your helpful advice on the care of my McCoy. I remain a pleased and happy satisfied owner.

Yours truly
Jerry Hellekan
[illegible] Monroe Street
Brooklyn, New York

PRECISION is the measure of accuracy of every step in building McCoy engines, that assures accuracy rivaling the highest standards of watchmakers.

RECORD REVIEW





Here are Kovalski's towline and Petersen's hand-launched gliders.

PETER KOVALSKI of Clifton, N. J., set a new national record in the junior class for D size towline gliders with his "Worm" illustrated here. Glider weighed 8 oz.; cross section is 8 square inches. Wing ribs are from 1/16-inch sheet; stab construction is similar. The entire plane is covered with white gas model Silkspan and given 5 coats of clear dope. The only flight adjustments needed were 1 degree of positive incidence in the wing and left turn. Pete's record was made at Schenectady, N. Y., under poor conditions. Total time was 6:20.0.

Andrew Petersen of Burbank, Calif., established an outdoor hand-launched Class B glider record with a total time for 3 flights of 19:32.8 with model shown.

All the designs presented in "Record Review" are models which have established official National (American) records certified by the Academy of Model Aeronautics, the governing body for model aviation in America.

There are no other "records" other than those recognized by the A.M.A. as far as the national picture is concerned. The Academy is empowered to supervise international record attempts by the Federation Aeronautique Internationale (F.A.I.), the world-wide sporting aviation authority. The Academy gains this right by being a divisional affiliate of the National Aeronautic Association, the senior aviation organization which is the representative in the U. S. of the F.A.I.

When individuals speak of "world" records, they usually mean "American" records. Until recently the United States held no international records at all—now we hold one established on the West Coast by a modeler with the cooperation of the Plymouth Motor Corp., and the U. S. Navy. The majority of international marks were set by Russian modelers, with French and Italian model flyers holding a lesser share.

OLD TIMERS!

GOING STRONGER THAN EVER!

These colorful, historic planes—the 1931 Gee Bee (top), a 17¾" span "M" kit at $1.75—the 1917 Fokker D-7 (left), a 21¼" span "M" kit, also $1.75—the 1916 British SE-5 (right corner), a 20" span "E-Z" kit, at 50c and the 1918 Fokker D-8 (right, below), a 30" span "IT" kit at $1,—are among the most favored models of all time. No modeler is really "in" until he has built them from C-D kits. Their realism is beyond belief and they are really fine flying models with rubber, also C-O-2 and miniature glow plug motors in all sizes, depending on whether free flight or control flight is desired. All kits complete, except for liquids and power units. The SE-5 at 50c has die cut curved parts ready for assembly. (At least two "E-Z" kits must be ordered, as minimum order is $1)

HOW TO ORDER: SEE YOUR LOCAL HOBBY DEALER FIRST. HE HAS THESE MODELS AND OTHER CLEVELAND DESIGNS AS WELL. If you are then unable to get C-D's, do not accept substitutes or imitations, but order direct, including 25c for packing-postage. Minimum order $1.00. No C.O.D.'s. Special Delivery in U.S.A. is 25c extra. (Ohio residents: add 3% sales tax). Military men stationed outside continental U.S., Possessions, Canadian and all foreign customers, add 20% for special handling, etc. in addition to 25c packing-postage charge.
SEND 5c or (2) 3c STAMPS FOR VERY LATEST ILLUSTRATED CATALOG

Get The Latest From Cleveland Too!

CHOOSE THE BEST — CHOOSE CLEVELAND FOR EVERY TASTE

Cleveland-Designed flight-engineered, super-detailed kits come in all sizes and prices, for all uses. Space restricts full description of these fine models. You can't go wrong when you buy from the oldest "same management" model aircraft kit manufacturers in the world. Our 30 years of designing assures good flying results! Ask old-timers about C-D's! Send 5c or two 3c stamps for very latest illustrated catalog.

LUSCOMBE SEDAN
Free-Flight-Control-Radio
Giant 76" Span $7.50

Giant R. C. Kit!

Racers!

MINNOW — $1
24" Span. An IT Model

EZ "MIDGEST MUSTANG" 16" Span Die-cut-wood 50c

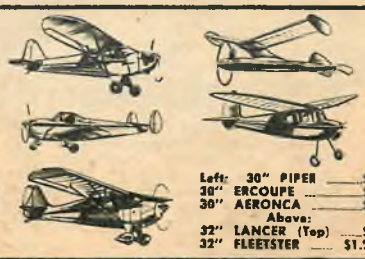
Two Goodyear jobs that provide all the flying thrills of the real planes. Both easy to make.

Jets!

30" Shooting Star" $1
16" E-Z Thunderjet 50c

Swell, realistic jets —rakish and sleek —fast too! Strong, light and stable. Try Jetex

Pick Your Next Miniature Glow Plug Kit From These Specially Selected Free Flight Designs. SWELL FLYERS!
They're real "floaters" with the K&B "Infant" and are really hot performers with "Cub" or "Spitfire"



Left: 30" PIPER $1
30" ERCOUPE $1
30" AERONCA $1
Above:
32" LANCER (Top) $1
32" FLEETSTER $1.25

CLEVELAND MODEL & SUPPLY CO., 4515L2 Lorain Ave., Cleveland 2, Ohio . — SINCE 1919

Finland Wins The Wakefield

● Here's Wakefield champion Ellilä with his 10-year-old model. The only contestant from Finland, he was a dark horse entry, winning the classic trophy by 3.4 seconds!

● A happy smile on the winner's face signals the end of blue ribbon event of the model aeronautical world. Contest was run off at Cranfield Aerodrome, 50 miles northwest of London. Host to the flyers was the Society of Model Aeronautical Engineers, English equivalent of America's AMA.

● Warren Fletcher of New York City, top U. S. contestant, won third place.

● The American Team in front of its tent: l. to r. standing—Andrew Petersen, Burbank, Calif.; Fletcher; Robert Hanford, Ocean Park, Calif.; Edward Naudzius, Highland Park, Mich. Kneeling—Frank Zaic, team mgr.; Edward Lidgard, South Bend, Ind.; and Joseph V. Boyle, Jr., Hampton, Va. Naudzius placed 4th.

● Second place winner, E. Sadorin who flew as member of Italian team.

Poor weather conditions hamper 90 contestants from 19 countries in the 14th running of the Wakefield Meet.

IN a dramatic surprise finish, Aarne S. Ellilä of Finland won the Wakefield Cup for 1949 by flying a ten-year-old model for an average time of 183.3 seconds in the 14th international competition held in England on July 31.

Competing in gusty weather against 90 contestants from 19 countries, Ellilä captured the coveted trophy with a slab-sided, 10-ounce model that had tandem rubber motors and double gears at the rear of the fuselage.

Second place went to E. Sadorin of Italy, with a time of 179.9 seconds.

Warren Fletcher of America, who had been rated the favorite, took third place with 179.8 seconds.

Another American, Edward Naudzius, won fourth place with 177.43, while the remaining members of the U. S. team, Joe Boyle, Ed Lidgard, Andy Petersen, and Bob Hanford, place 14th, 20th, 24th, and 36th, respectively.

The victory of Ellilä, a 26-year-old chemistry student from Helsinki, means that the 1950 Wakefield competition will be held in Finland—which now becomes the fourth country ever to have won the trophy.

Winners of the past thirteen competitions were:

1928: T. H. Newall (G.B.)
1929: R. N. Bullock (G.B.)
1930: J. H. Ehrhardt (U.S.)
1931: J. H. Ehrhardt (U.S.)
*1932: G. Light (U.S.)
1933: J. W. Kenworthy (G.B.)
1934: J. B. Allman (G.B.)
1935: G. Light (U.S.)
1936: A. A. Judge (G.B.)
1937: E. Fillon (France)
1938: R. Cahill (U.S.)
1939: R. Korda (U.S.)
1948: R. B. Chesterton (G.B.)

**Declared no contest on technicality.*

Letter From London By FRANK ZAIC

IF anyone had planned a special melodramatic finish to the 1949 Wakefield Competition, it couldn't possibly have been better than what actually happened. Until a few minutes before closing time, it was almost a foregone conclusion that Warren Fletcher of the U. S. would win the event. But when the reports of the last flights were released, Aarne S. Ellilä of Finland had a lead of 10 seconds. His total time was 549.9 seconds, compared to Fletcher's 539.4. As more flights were reported, Fletcher was eased into third place by E. Sadorin of Italy, whose last flight of 218.8 gave him a total time of 539.7 seconds. When news of Ellilä's victory spread over Cranfield Aerodrome, scene of the meet, most of us were stunned, as the full import of the event came home. No one thought this could have happened. It was a dramatic moment. Here was a lone flyer from one of the smallest countries, flying a ten-year-old model against the best in the world, and winning this most sought-after prize.

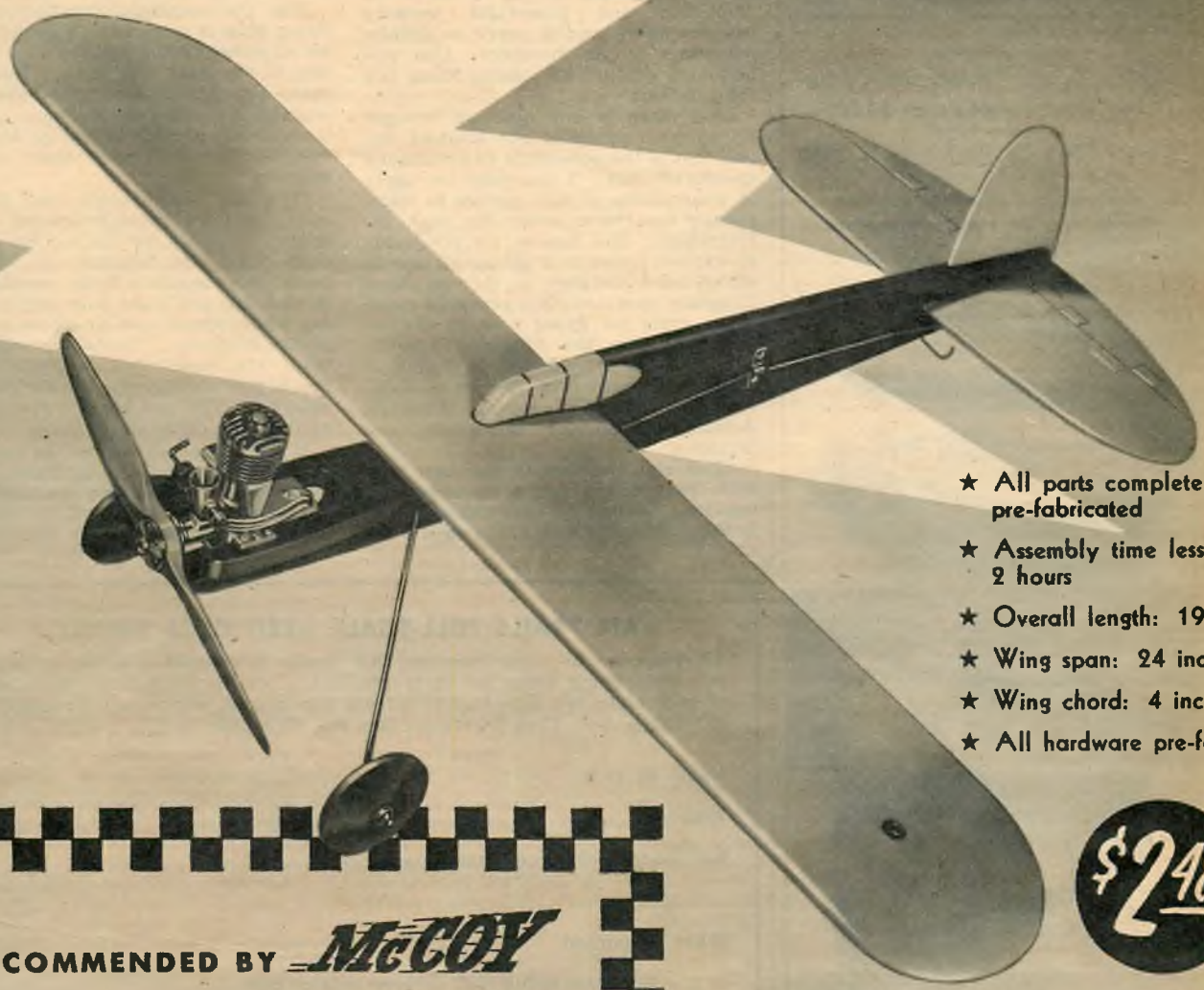
Though there were many disappointments, it is certain that no one left with bitterness in his heart against the turn of luck. Finland's surprising victory clearly demonstrated that everyone had an equal chance. Could one ask for more?

Ellilä racked up good steady times. He was as surprised as any one else that he won. He entered the meet just for the fun, hoping for the unusual. Although his motor was (*Continued on page* 90)

TAILOR-MADE FOR THE NEW McCOY "9"

TESTORS FRESHMAN

(TRAINER)



★ All parts completely pre-fabricated

★ Assembly time less than 2 hours

★ Overall length: 19 inch

★ Wing span: 24 inches

★ Wing chord: 4 inches

★ All hardware pre-formed

$2.48

RECOMMENDED BY McCOY

Duro-Matic's Engineering Dept. has made thorough tests of the Testor Freshman "9" Kit, Freshman "9" Propeller and Testor's "39" Fuel in combination with our new McCoy "9" Engine.

We find this combination of Engine, Kit, Propeller and Fuel to be perfect for the amateur modeler who wishes to learn the exciting hobby of control-line flying.

We also find the Freshman "9" Kit extremely easy to build requiring less than two hours for completion, and equally easy to fly for even the rankest novice.

DURO-MATIC PRODUCTS COMPANY

★ See your hobby dealer for complete details on *oth* Testor FRESHMAN (trainer) kits, tailor-made for th McCoy "19" (and other Class A engines) . . . for th McCoy "29" (and other Class B engines) . . . and fo very small bore "Baby" engines (up to .05 cu. in. displ. Remember, too, that Testor's "39" — developed b Testor chemists and McCoy engineers — is your *be fuel for all engines!*

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(WOODWORKING DIVISION)

ROCKFORD • ILLINOI

7 MOTOR BOATS

Six two foot Models at $5.50 ea.
Colonial 26" Sedan—at $6.50
Chris-Craft 46'—26" Model
Chris-Craft 25'—25" Model
Chris-Craft 20'—25" Model
Owens 42'—26" Model
Harbor's 40'—25½" Model
Vinyard 40'—25" Model
Colonial 36'—26" Model

Full size plans, drawn from actual factory plans. Models are built same as large boats with frame construction and strip planking. Kit contains all printed parts and planking, sanding sealer, blade, brush, copper shaft and trim wire, metal display propellers, cement, flag, sandpaper, plastic sheet, 5 page instruction booklet, etc. Not included are finish paints or material for inside furnishings, although detailed plans of inside are on the master plan. Speeds to 50 M.P.H. with ¾ H.P. engines. Send for literature on models, drive units and fittings. We have only the finest!

Electric Drive—Motor, shaft, housing etc., Complete at $4.00

5 New Chris-Crafts for early 1950

See your nearest hobby store or
Write for illustrated literature

Dumas Products
Municipal Airport Tucson, Arizona
World's largest manufacturer of model power boats. (U. S. A. orders only.)

Solo Club

(*Continued from page* 36)

which the pilot is required to read and sign. Next to "before flying solo," is the sentence, "I have read and understood C.A.P. 303"; next to another comment, the statement, "I have been instructed in, and fully understand the operation of the hydraulic gear, gasoline and brake system . . ." and so on. Still another statement reads, "I have noted and know where the authorized low flying area, and the authorized forced landing field are located . . ." Not much chance for a misunderstanding here, no fumbling with the unfamiliar, or assuming you know all new circumstances, or of bluffing your way through something. Thanks, member Buckner, for letting us see your log endorsations.

"I have been both a member of a flying club and a partner member in a single plane, neither venture being especially satisfactory," says Leonard E. Kons, Milwaukee. "It is my sincere desire to organize a club among my fellow employees which, by its sound principles and downright working practicability, would prove a definite advantage to its members. Can you help this venture by passing along any information?"

Len, there is one question brought up by you which is not allowed for, and that is the possibility of a company sponsored club. If this does not apply to your group, it still applies to many groups that have asked for such information. The figures we are going to explain concern a group of twenty which owns, and pays for, its own plane. Company operated clubs generally mean lower costs for flying time to the individual. For the following scheme, headquarters is indebted to Frank J. Shelton, president of Anderson Aviation Co., Inc., Sky Harbor, Phoenix, Arizona, distributor of Pipers and Stinsons.

"This club has twenty members who each paid $62.50 for a membership," explains Shelton. "The airplane was financed and 20 times $62.50 equals the down payment of $1,250 on a 1947 Super Cruiser, picked because it offered an airplane that would serve as a trainer as well as a cross-country ship for the advanced members.

"In addition, each member pays $7.00 a month for dues. $6.67 of this goes to the finance company as payment for the airplane and crash insurance. The remainder covers the payment of the $50,000/$100,000 P.L. and P.D. policy the club carries. This takes care of the fixed yearly expenses of the airplane leaving the direct per hour operating costs of the airplane.

"To cover this, each member pays a flat $3.00 an hour. This works out very well," continues Shelton, "as it takes care of the gas, maintenance, and other expenses that are incurred from operation of the aircraft. Due to the fact that the club started operation with a used airplane, this hourly charge is somewhat higher than it would be on a new airplane. As an example, they have only 400 hours to build up a reserve for a major engine overhaul, rather than the 1,300 hours a new airplane would have given them."

Now the successful functioning of a flying club is more than a good buy of an airplane, or the mathematical splitting of expenses, and so on. There are many practical aspects that have been learned by hard experience. When these things remain unknown, the club can very easily come apart at the seams.

"I would like to point out," Shelton adds, "that we stress two items in the bylaws as musts for the success of any club. First—the director. He must be completely separate from membership in the club and must have authority to say when, where, and by whom the airplane is flown. Secondly, whatever rules are established regarding payments that the members owe, must be enforced. This can break a club quicker than any other single thing."

If any members happen to be near, or stop off at Phoenix, let Frank Shelton know in person how the Solo Club appreciates his information. And if interested members will list specific

AIR TRAILS FULL-SCALE AERO CLUB SURVEY

IN response to many requests, Air Trails is compiling a list of active *full-scale* flying clubs for early publication in the magazine. Secretaries of such clubs are requested to fill out this coupon and mail it promptly to Air Trails Aero Club Directory, Box 489, Elizabeth, N. J.

Name of club.....

Address.....

Name and address of contact man.....

.....

When organized.....

Is it a full-scale flying club or aero service club.....

Equipment.....

.....

Airport.....

Number of members..... (1149)

.....

A Sensational CHRISTMAS OFFER!

A

ONE YEAR SUBSCRIPTION TO

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Regular Price $2.50

Plus....

A FULL SIZE **WATERMAN *ball point pen***

regular price $1.00

BOTH *for only* $2.50!

You Save $1.00

This handsome Waterman ball point pen makes the ideal Christmas gift for Dad—Brother—Friend or yourself—and it costs you absolutely nothing!

You'll be reading, enjoying America's favorite aviation and model magazine. You'll be thrilled with your Waterman ball point pen.

ACT TODAY

The earlier your order is received the quicker you will receive your gift...

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P. O. BOX 494
ELIZABETH, N. J.

Please rush my Waterman ball point pen and enter a one year AIR TRAILS subscription for:

Name.....

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( ) I am already a subscriber. I enclose $2.50 to extend my subscription. Please send me the Waterman pen.

Additional Postage: Canada 50c, Pan-America 25c, elsewhere out of U.S. 75c.

(1149)

SNIFFER

Length 20"
Wing Area 135 sq. in.

Featured in this Issue
KIT OF THE MONTH

Easy to build - - Easy to fly - - That's the thermal SNIFFER - - Tried and proven design for the small bore events. Elevator Climb - - Feather Glide - - Stable as a rock
Die cut fuselage sides, Formers, windshield, motor mounts, etc. Selected full strength wood - Plenty of tissue - Streamlite wheels - formed landing gear - "Aw-heck - - Build one - - You can't go wrong."

KIT ONLY $1.50

FOR ENGINES UNDER .05 DISPLACEMENT

NITRO-X
GLO-FUEL
TAKES 5 FIRSTS IN NATIONAL CONTESTS
Including the Jimmie Walker High Point Stunt Trophy

NITRO-X, Midwest's prize winning Glo-Fuel, is definitely the best you can get. NITRO-X is a nitrated, highly rated, superbly blended Glo-Fuel.
The finest ingredients available make the finest engine performance possible.

IF YOU GOTTA GLOW!
TAKE A TIP FROM MOE,
"use NITRO-X"
PINTS .75
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JAMCO
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Successors to
GMCO MODEL SUPPLY INC.
is now ready to serve all your
Model Airplane, Race Car and Ship needs.
In our own building
90-04 168th Street, Jamaica 3, New York
"YOUR SATISFACTION IS OUR HOBBY"

questions on forming clubs, headquarters will incorporate the answers into future meetings. As Shelton says, "Flying clubs are the answer to getting more people flying."

Jack K. Brown, a 19-year-old pilot holding both a commercial ticket and an instructor's rating would like to know where, near Dallas, Texas, he can take some time in twin-engined seaplanes, to build for a Multi-Engine Sea Rating. Jack also would like to correspond with other members under 21 years of age. Address is 3311 Gunter Avenue, Dallas 10, Texas.

"I happen to live out here in the Pacific Northwest," announces Luther Andrew, #8143, climbing down out of a Stratocruiser on which he was working for Pan American, "flying mostly in the summer months because, in the winter, instrument flying here is a lot better than flying by the seat of your pants.

"I took my under-the-hood flight training from former Army Pilot Francis Moon. Like to fly puddle jumpers but am getting ready to fly something bigger. I flew a J-3 Cub on which Maxie Witters, of Renton, had just installed a new Smyer nose gear and everybody flew it to see how it performed. You can see swell out front from front or rear seat. The gas gage works better, and the gear saves props.

"Flying costs are steep out here," (weather will do that, Luther, so move to the southwest!) "but I get a bit of time, some flying, some hangar. Weekends I take up friends for rides. This country has lots of airports and lakes, with Puget Sound thrown in. If you ever fly into Seattle and want to land at Boeing Field, just find Lake Washington, the field is right near."

Warren W. Inglese, New Rochelle, N. Y., is a newspaper photographer for Westchester County papers, and has made some swell shots of his home town with a Speed Graphic and an F-8 aerial camera. Soloed an Aeronca Champ in February, 1949, and hopes to own his own ship some day and to get into the aerial photography business. Long a reader of Air Trails, Warren has been building model planes and taking pictures since a kid. With a start like that, Warren, you should have a good chance of realizing your wish.

Then there is Alex Nagy, Jr., Lansing, Mich., who soloed in a T-Craft at the Francis School of Aviation; R. C. Amaden, now in the Army, who soloed a Luscombe in Little Rock, back in '46; Thomas Spitzo, Jr., on a J-3 Cub, on his sixteenth birthday—you didn't waste a day, did you, Tom—at the Eagle Flying Service, Bristol, Pa.; Harold Baker, Liverpool, England, Bob Judge, Fort Dix, who is teaching the boys their soldiering, and wants to know if he can get his CAA medical certificate renewed by an Army physician now that he is in the Army (don't know offhand, Bob, but try the Director of Public Information, CAA, Commerce Bldg., Washington, D. C.); Robert Chanslor, who soloed after seven hours and 40 minutes, at Kenneth Starnes Aviation Service, Little Rock, Ark.; A. P. Welch, Alameda, Calif., who soloed a Champ in '46 under the G.I. Bill and is now after his water wings at Norton's Marine Air, Oakland, Calif.; Judson Brice, Palatka, Fla., who soloed in '47 and wished flying was more popular; and hundreds more, all ratings, ages, and points of the compass.

The Solo Club has been a staunch supporter of the Safe Flight stall warning indicator since way back. Now that the gadget is standard on so many planes, the inevitable stories roll in. Around the airport it's a wonderful means of communication between ground crew and pilot. When the attention of a Convair pilot is needed, the ground man just touches the little vane that sticks through the leading edge, then the warning horn goes beep in the cockpit. A California flying club member, reluctant to share the cost of such a gismo, took a demonstration ride, then treated the club by paying the full cost. But a less fortunate private flyer, already sold on the indicator, told the mechanic who was making the installation to hold on while one last, quick flight was made. The pilot stalled in and washed out one wing.

BULLETIN BOARD: The Helio Corporation, Norwood, Massachusetts, announced their revolutionary Helioplane, a two-place, 85-hp job that can fly at 30 miles an hour, if need be, and is capable of landing and taking off from an area hardly larger than a tennis court. This is no get-rich-quick scheme, but a sound airplane designed by Professor Otton Koppen, of MIT, working with Doctor Lynn Bollinger, of Harvard. Both men are widely known in aviation circles. The machine not only looks good, but is stated to be as quiet as an auto, and incapable of stalls or spins. The cross-wind gear permits operation from close-in landing strips. Performance is attained through leading edge slats, full-span flaps, split rudder to give both three-control and two-control operation. Headquarters expects to fly the Helioplane later this fall and a report will be forthcoming during the winter.

The Fairchild Engine and Airplane Corporation has been licensed to use the "helioplane" principles in designing military and commercial craft.

Two places to go: nifty leaflets from Skyhaven, Inc., P.O. Box 42, Lakeport, N.H., and from Keystone Ranch and Airpark, P.O. Box #C, Keystone Heights, Florida. Former is close by Lake Winnepesaukee (Laconia Airport) and has been a favorite among private flyers, land or sea, for at least two decades; latter is in the high ridge section of Florida, in the northwest part of the state. Write direct for your leaflet if contemplating trips in either of these areas.

They fly for food: Louisana Air Tour got off to solid start with breakfast at New Orleans Airport, followed by luncheons, dinners, cocktail parties, motorcade, cold drinks, barbecues throughout state. In Danbury, Conn., they flew north to Great Barrington, in the ski area of Massachusetts for breakfast. Then the Louisiana Flying Farmers held "old-fashioned dinner on the ground" at Fenton. This goes on all the time, according to news from at least 14 states, with fishing, strawberry festivals, clam bakes, fish dinners, hunting, and every conceivable wrinkle thrown in. We don't have much money, but don't we have fun!

Four-wheel gear developed by Art Whittaker, well known Pacific Northwest operator, has passed CAA drop tests and promises greater utility on small, rough strips. Will be made for

NOW!! the ARDEN

and Championship Performance is YOURS for only $8.75

CONSTRUCTION NOT MATCHED BY ANY OTHER MINIATURE ENGINE.

FULL ANNULAR BALL BEARING CRANKSHAFT. STARTS ON FIRST FLIP!

ARDEN WINNERS MAKE CLEAN SWEEP IN RECENT CLASS A — FREE FLIGHT COMPETITIONS

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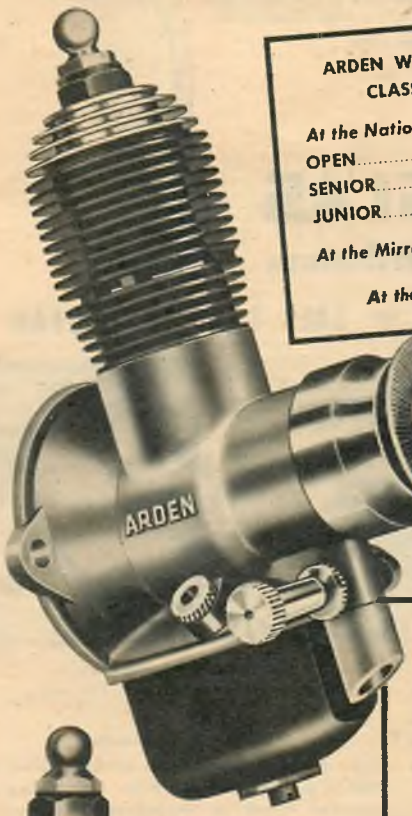
OPEN..... 1st — 2nd — 3rd — 4th
SENIOR..... 1st — 2nd — 3rd — 4th — 5th — 6th — 7th
JUNIOR..... 1st — 3rd — 4th — 5th — 6th — 7th

At the Mirror Meet
1st — 2nd — 3rd — 4th — 5th

At the Plymouth Meet
1st JUNIOR — SENIOR and OPEN



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ARDEN GLOW PLUGS

create a new type of flying and increased rpm and hp. Stand up longer because of superior element. Assure easier and quicker starting.

E-8001S	(short) ¼"—32	65c
8020L	(long) ¼"—32	65c
8015	Glow Plug Adapter, for class C engines ⅜" — 24	25c

How to order ARDEN ENGINES

available in Special Glow Plug Model—or in Standard Spark and Glow Plug Model. When ordering be sure to specify catalog number.

Catalog No.		Price Each
1-B-099G	Special .099 engine. Glow Plug ignition only	$8.75
1-B-099S	Standard .099 engine. Spark or Glow Plug ignition	$9.75
1-B-199G	Special .199 engine. Glow Plug ignition only	$9.75
1-B-199S	Standard .199 engine. Spark or Glow Plug ignition	$10.75

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The Honorable Elmer Thomas, speaking in the Senate, outlined the value of the airplane in agriculture. Among the more spectacular examples, were the possibility of controlling within five years the growth of brush in Oklahoma which already has consumed 10,000,000 out of 35,000,000 acres. By normal methods this job would require 200 years. In Texas and Louisiana, airplanes have been extensively used in planting, fertilizing, and weed control of rice crops. In eight hours of flying one plane can plant, fertilize and control the weeds in 1,500 acres of rice. On the west coast, about 80% of the entire rice crop is handled in the same way by airplanes. Thomas outlined many possibilities, such as wide scale control of malaria, and grasshopper plagues.

The Lady Metallurgist

(*Continued from page* 34)

plant. Her task is one of the toughest in the industry. It is she who tests and approves all the new alloys that go into the powerful engine. Up to now, she knows how they function only from test-stand runs. Within a few weeks, she'll learn for a certainty their virtues and weaknesses. A Turbodyne is slated for flight tests, attached to a YB-35 Flying Wing converted into a jet. The Air Force awaits the results with scarcely less interest.

Becky's away ahead of the flight engineers. She asks herself two questions every time the engine flames on: What goes on inside, and how hot does it get? She knows that for every 100 degrees the temperature goes down within the blades, an appreciably greater power output is achieved at less cost in fuel. That means savings all along the line—weight of the engine, less fuel load required, lighter-weight blades. And Becky can tell you what metals best withstand the punishment of temperature and high speeds. She analyzes the colors of heat to get the answers.

Her system, developed from a published suggestion of a General Electric scientist, is simple. She knew at the outset that when heat is applied to metal it acquires a microscopically thin oxide film. After cooling, alloys of ferrous metals display varying shades. These colors indicate the maximum temperature applied to the metal. For example, she found that if a particular sample were heated to 900 degrees for two hours, exposed to 1,100 degrees briefly, then brought back to any temperature appreciably less, it will display the light blue shading characteristics of the peak 1,100. This is an exaggerated case, but points up her method.

Having analyzed the colors of heat, she applies a system of color tabs to each blade. She calls these prepared sample boxes her color chart—small blocks of metal heated to various temperatures for various periods. By comparing a turbine blade with the color specimens, she can determine within 50 degrees the maximum temperature at various points. And thus she knows, at a glance how each blade has fared. Her shade gauge for X-40 cobalt alloy,

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to take a single example, shows: 900 degrees, light straw; 1,000 degrees, bronze; 1,100 degrees, light blue; 1,200 degrees, blue-to-straw; 1,400 degrees, mildewed straw. No need for thermocouples here!

You'd never think of Becky Smith as a chief metallurgist—not this feminine daughter of the Old South. Yet she's had heart and mind set on this sort of career since she departed from Vanderbilt University in 1931 clutching a master's degree in physical chemistry. She asks no favor of men—in fact her two assistants are men. She competes with males on equal terms. She has worked in a steel plant at Birmingham, Ala.; consulted on metallurgical problems for a malleable iron manufacturer in Racine, Wis.; experted on brake drums at a Detroit plant, and served as staff metallurgist at the Naval Gun Factory, Washington.

Becky believes in the gas turbine. It is to the gas engine what the steam turbine was to the steam engine, she says. She believes in the American aviation engineering policy of aiming at higher temperatures and power outputs, developing metals to attain those ends, rather than trying, as do the British, to improve one alloy (Nimonic 80) until it attains the desired perfection. She believes hollow blades may replace solid blades, and thinks there's a considerable future for blades coated with either a ceramic or a ceramic mixed with metal particles. "Ceramic materials protect the metal and help cool them," she tells you. You can be sure of one thing: if it's new and fairly promising, Becky will have a look-see. Her color charts will help her prove whether the new stuff will stand up to its early promises.

Sniffer

(*Continued from page* 54)

recommends a left turn of about 50 foot diameter in the glide. This is accomplished by means of slight offset in the rudder tab. Climb is then to the right, with washers behind the left-side motor lugs to obtain right offset thrust. About one degree of down thrust is employed to stop power-on stall tendencies. These settings are worked out during test flights and only then is the nose completed to cover in the engine mounting.

While Midwest works every bit as hard as the "big boys" in the industry, the firm continues to get its leisure time fun out of modeling. Like Frank Zaić, Wally Simmers keeps his interest in contests and contest models on a high level. Not only is this interest reflected in the types of kits produced, but it is evident from the technique in presenting those kits. While some bigger manufacturers have gone into complete prefabrication of U-control models, Wally and his boys have a successful operation based on a mixture of prefabrication and let-the-guys-do-some-work-on-their-own.

You find interesting people dropping in at Midwest to chew the rag. Many of them remember their first contact with Midwest at those Chicago Nationals when Midwest rented a room in the Sherman and hung up a mysterious sign in red dope which said simply "Midwest." A cryptic arrow mystified regular guests but meant to worried contestants that rubber, wood, and glue could be had down the corridor.

Midwest got its start way back in 1934, the first year that Simmers attended a Nationals. He has not missed one since. That year the firm began to cut balsa wood, and developed slowly until 1941, when the war halted its activity until 1946. The firm's recent products include: Jabberwock, a 145-square-inch fuse job; Gollywock, a 135-square-inch stick; Dynamoe, another 145 fuselage; Porky and Corky, 135-square-inch models for the CO_2; Snorky, 24-inch span, and Super Snorky, a 44-inch trainer; and the Cosmo, a 48-inch towline glider. Besides kits, Midwest has a fuel proofer, Nitro-X fuel, and control-line wire for Infant size jobs.

Wally himself got his start seven years before the firm, in 1928 to be exact, when he made gliders and r.o.g's. In 1934 he won a Moffett medal at the Akron Nationals. In 1937 he took first in indoor stick, winning the Stout trophy. He snared a second in the Mulvihill on three other occasions, competed in the old Junior Birdmen contests, and held several cabin and glider records. From 1942 to 1946 he was with an Air Force navigation school. A unique record which probably very few people can match is Simmers' winning of a place at every Nationals. He managed to hang on this year by picking up a seventh at Olathe. Asked how Midwest really got its start, Simmers recalls with a grin that the firm first sawed wood so that club members could build models.

Last winter the brains behind Midwest were preoccupied with policy: should they make hybrid models, suitable for various types of power plants, or stick to their guns with special kits for special power plants. In the Sniffer, Midwest continues their concept of specific planes for specific power plants.

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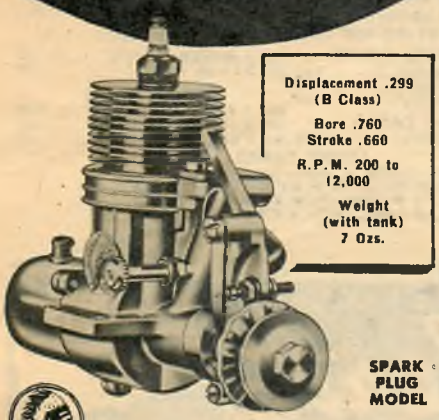

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The Mighty Gnat

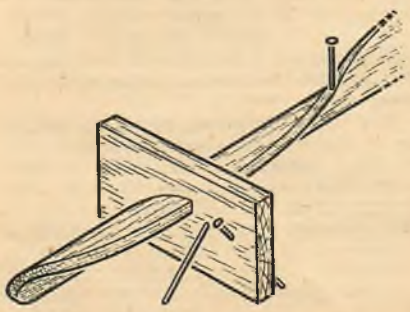
(*Continued from page* 51)

until it sets rigidly with the dihedral angle desired. Then glue the finished spar to the motor stick. Be sure it is on straight, as viewed from the front of the airplane, as well as from above.

To cover, cut out the wing and stabilizer patterns from a light grade of good white tissue—or pick any color you want!—and dope the tissue to the motor stick. Be sure that you do not run the dope out on the paper. The paper is not to be doped! Then fasten the paper to the tips of both stab and wing with a little dope. A few spots of dope along the wing spar will hold the paper in place. Covering the rudder calls for a real trick. We used our dope brush and cement (the brush can be cleaned with dope). Have your paper pattern ready—but cut a bit oversized. Brush cement quickly along the wood outlines of the rudder, then lay on the paper and press in place. It goes on just as easily as this is said. When dry trim with a very sharp razor blade.

It is vitally important not to overpower this model; the tendency of any but the indoor builder is to make these novel models fly like pursuit planes. Too much power will roll this airplane, or at least make it fly in a straight line with the left wing low, the airplane yawing to the right as the rudder fights the excessive torque. A loop of ⅛" T-56 rubber is too heavy. A loop of 3/32" rubber is plenty powerful and two loops of 1/16" is on the strong side. The ideal is to play around with loops of thread rubber, starting with the model underpowered and working up until it climbs. Fore and aft trim is obtained by removing the landing gear and sliding it to a new position. (Slight adjustments can be made by bending the wire gear.) Move it forward if the model is tail-heavy (if it zooms) and back if the model is nose heavy (if it dives). Considerable twist will have to be given the rudder to get the model to circle to the right, or against torque. Moderate right rudder will result in a left turn due to torque and the glide will be to the right. Other possibilities for adjustment are to loosen the thrust bearing and set it in a new position so that the thrust is slightly offset toward the right (as you look from the tail toward the nose) or to crack the tip pieces to gain "aileron" control, or washin or washout, as desired. These cracks can be cemented to hold the shape. However, our model flew okay on rudder alone and balanced perfectly with the wheels in the position shown.

Mighty Gnat is lots of fun for impromptu little contests. Try flying *r.o.g.* off the garage (or living room) floor for duration. The ship is too potent, of course, for garage flying but it is a real test of skill to avoid the walls and ceiling as long as possible. In halls or gyms this ship is a riot. Anybody can build it and get into the act. For this is not a delicate microfilm indoor model. A little competition at a club meeting will enliven things. So if you want something easy to make that's different and lots of fun—here's Mighty Gnat to the rescue!



● Putting pitch in propeller blades

Cub Sportster

(*Continued from page* 52)

keel. When these are firmly cemented in position add the sides. By slightly dampening these side pieces and using plenty of pins, no trouble should be encountered, as the curve employed is not great. Allow these side pieces to extend beyond the front of the block about ⅛" so the plywood firewall will fit between them.

Before adding the top sections, install the bellcrank, the firewall (with the nose gear bound and cemented in place), and the completed stabilizer. It will be wise to install the push rod, too, as the slight amount of bending necessary is much easier accomplished without any interference from the top sections. Do not be satisfied with the installation and operation of the bellcrank and elevators until you have smooth movement. This ease of operation is absolutely necessary since any model powered by these very small engines, weighing in at around four ounces and flying at comparatively lower speeds, will exert only a very slight amount of pull on the lines. A combination of very little pull and sticky controls will result in an uncontrollable model in the event of sudden gusts or engine failure.

The top of the fuselage is carved and hollowed in the same manner as was the bottom. On the original, the section between the firewall and former #1 was left as a removable hatch. By making this piece removable you will be able to check the bellcrank and tighten the engine mounting nuts and bolts if necessary. If this hatch is really snug fitting, it will not be necessary to use dress snaps to hold it in place.

Now sand the entire fuselage until it appears as though it was carved from a single block while working the sides down to about 1/16" in thickness. Add the rudder, giving it about ¼" offset to the outside of the circle.

The wings are of the simplest type and need no explanation, except perhaps their method of attachment to the fuselage. The lower wing is built in two halves and joined by a sheet of 3/32" medium hard balsa. To assemble the lower wing to the fuselage, simply cut a slot across the bottom of the fuselage 3/32" deep and the width of the center section joining sheet of the wing. Cement the wing in place with the two center ribs flat against the fuselage sides.

Form the main landing gear of 1/16" music wire, and after forming, trace the outline onto the fuselage and trailing edge as shown on the plan. Cut a groove just deep enough to allow the wire to fit flush with the surface of the trailing edge. Use plenty of cement—at least two coats. Incidentally, the ribs on both wings were sanded to shape after

assembly rather than being cut to shape beforehand.

The top wing is built in one piece—leave out the center rib. Cut a sheet of 3/32" balsa to fit snugly between the two center section ribs but do not cement it in place yet. Form the wire wing mounts making certain that the lengths are identical. Cement and sew them to the sheet as shown. Now cement this unit between the two center ribs and check, on a flat surface, to see that the wing is level and at zero incidence. Add the false center rib top and bottom and then the corner gussets. Cement and bind a piece of 1/16" aluminum tubing to each side of the fuselage just below the hatch line as shown, parallel to it and to each other. Bend these mounting wires so they are always under tension in the tubing and do not have any tendency to slide out by themselves.

With both wings in place, cut out and fit the struts. These are cemented firmly to the top wing, sandwiched between the double ribs as shown and fit very snugly into the slots provided in the lower wing, but not too tightly, for don't forget that the top wing is removable.

Go over each wing and sand out any imperfections that would spoil the covering job. Cover both wings with light weight Silkspan. Then shrink with water and apply at least two coats of clear dope. With the hatch removed it is a simple matter to install the engine but you will find it necessary to cut the bolts fairly short in order to get them through the Cub's radial mount. Three 2-56 nuts and bolts provide the answer, with the nuts going on behind the firewall.

With the engine now in place, install the stunt tank by cementing it to a piece of balsa that has been cemented to the rear of the firewall between the mounting nuts. Add to the filler and overflow tubes so that they extend outside the model. This will keep the inside of the ship free from fuel and make for easy refueling. Add the engine cowl pieces and sand smooth, being careful to keep the balsa dust out of the engine.

You are now ready to decorate. It might be wise to weigh the completed model before applying colored dope so that you will know just how much weight you can or cannot afford to add. The ideal finished weight, including paint and hot fuel proofer, is about four ounces. If you still haven't found a wood filler to your liking, try something that I hit upon purely by accident. Simply add enough "Cerfex" spachtling compound to some clear dope until it assumes the consistency of heavy cream. Brush on a coat and allow it to dry about twenty minutes, sand it smooth with very fine sandpaper. This one coat should give you a workable surface for painting. For a super finish, use two to three coats sanding in between. "Cerfex" is inexpensive and can be purchased in any paint or hardware store. If you have been using dope and talcum powder and probably catching the dickens from your mother or wife for using her finest bath powder, "Cerfex" is the answer.

Before attempting any flights, check the point of balance as shown, making any necessary corrections by adding weight. On no account should any flight be made if the engine is not revving fully.

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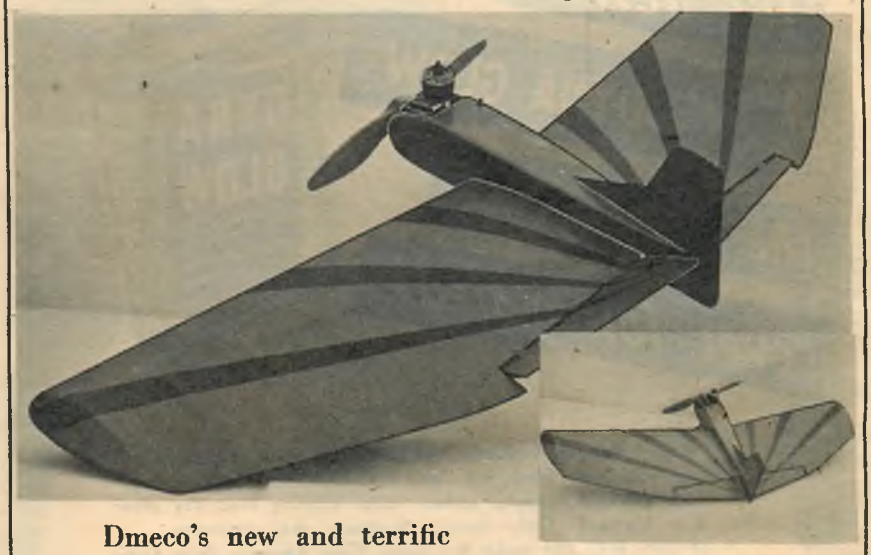

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Are Big Bombers Clay Pigeons?

(*Continued from page* 25)

Before the XB was out of the factory, however, it was obvious that certain changes had to be made before the giants could roll off a mile-long production line with split-second timing. Consequently, the second XB was changed to a YB—a service test airplane, identical to the first production model. The fuselage nose was changed from a smooth windshield to a raised bubble type to allow the flight engineer to face aft and scan the propellers in flight.

Meantime, the world-wide military picture changed. It appeared there would always be an England, but with the United States deep in the war after Pearl Harbor, it seemed likely that there might be a need for such a bomber to strike Japan from Hawaii in the event we were pushed back in the Pacific. Development of the huge craft, however, lagged under the many obstacles inherent in a wartime economy. Manpower and materials were scarce and higher priorities were given to other planes more likely to see combat. It wasn't until late 1943 that a final appraisal of the big bomber was made and a contract given Consolidated for 100 airplanes. Note that the "36" was the first and only pusher airplane the Air Force has ever bought in quantity.

In the meantime, during 1942, major sections of the first XB-36, ready for assembly, were moved by flat car to the huge government plant at Ft. Worth operated by Consolidated. Also in 1942, a cargo version of the bomber—the XC-99, now flying—was approved for construction at San Diego. The wing, engine and main landing gear assembly are identical with those of the bomber, but the double-decked fuselage is fattened out to carry 100,000 lbs. of cargo.

It wasn't until August, 1946, that the XB-36 first flew. It was closely followed by the YB—the first production type, or model B-36A. Soon after, it was decided that the first 22 airplanes would use Pratt & Whitney R-4360-25 engines rated at 3,000 horsepower at take-off, but that the rest would use improved -41 engines at 3,500 horsepower with water injection. All of the 22 B-36A's have now been built and production is concentrated on B-36B's with the larger engine. A modification program calls for replacing the -25 engines with the more powerful -41's on all B-36A's—thus converting them to B-36B's. All B-36A's have been returned to Consolidated for this purpose.

In early 1944, the idea of a "parasitic" fighter was proposed. This was visualized as a small jet fighter with folding wings which could be carried in one of the mammoth bomb bays and used to ward off enemy fighters. A proposal was submitted by McDonnell Aircraft in early 1945 to build what is now the XF-85 fighter. Two models have been built and one has been successfully air-launched from a special trapeze slung from the bomb bay of a B-29. Plans to use it with the B-36 have been abandoned.

Extensive flight tests were carried out on the first production model B-36A's throughout 1947, ironing out the many bugs inherent in any new

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ship. Since problems apparently come by the pound of airframe, the early B-36's had plenty of them. 1947 was a year of hard work, disappointments, and many detailed changes. Electrical difficulties arose from the special alternating-current system used to power the accessories (and saving weight by reducing cable sizes) and especially from the alternator (which generates the A.C. power). A new type landing gear—a four-wheel design—was used instead of the original single wheel to save weight.

In late 1947 a radically rearranged B-36—the model "C"—was proposed by Consolidated for powering with the promising Pratt & Whitney VDT—Variable Discharge Turbo engine. The propellers were to be moved to the leading edge but the engines were still to be back at the trailing edge and drive the props through a series of shafts. The 4,300 horsepower was expected to give greatly improved performance. However, in the summer of 1948 this program was cancelled when it was decided that the plan was impractical.

The cancellation of the B-36C in midsummer of 1948 represented the low point in the fortunes of the giant bomber. Apparently the Air Force was inclined to scuttle the "36" and stick to B-50's and the new jet bombers. Production of B-36's was to be cut back to 62 from the original 100. In fact, the Air Force budget submitted to Congress in June, 1948, included no new B-36's. Instead, more B-49's, B-50's, and B-54's were bought.

Almost immediately after, however, in the fall of 1948, the B-36 made an amazing comeback. The calendar of events shows that from this time on the B-36 really started to do things in the air. A series of long-range flights made in the fall of 1948 apparently caused the Air Force leaders to pause in their procurement program—and then to reverse themselves. In September, 1948, the original order for B-36's was reinstated—95 were to be bought after all (cut back from 100 to 95 at the time of the VDT B-36C order to pay for development costs). In November and December of 1948 the B-36 came back into the picture strong. More long-range hops were made and flights above 40,000 ft. were logged without incident. Three long-range flights made between April 13 and July 18 demonstrated the seven-league-boot capabilities of the big bomber.

In late 1948 improved B-36B's were rolling out of the huge Ft. Worth plant and improved performance of the larger engines was immediately appreciated. In fact, performance was apparently so good that the plane's gross weight was increased from 311,000 lbs. to 326,000 lbs., although the original design only called for 278,000 lbs. Late 1948 saw B-36's operating in the stratosphere, and above it, for extended flights of twelve hours or more.

In early December, 1948, tactical interception tests with Air Force jet fighters were carried out over Eglin Field, Florida, and the high-altitude maneuverability of the "flying cigar" apparently surprised even the Air Force, which felt for the first time that the B-36 was anything but a sitting duck—in fact, it showed its heels to the heavily loaded jet fighters as they stumbled around in half-stalled condition with their jet engines gasping for breath.

And then on December 7, the anniversary of Pearl Harbor, a "36" made a non-stop flight from Ft. Worth, Texas, to Hawaii and back, paralleling the flight of a B-50 which was refuelled three times in mid-air from a B-29. Their average speeds were about the same. A B-36 slow? Apparently no slower than the famed Superfort!

More long-range flights were made. On March 10, 1949, a B-36 took off from Carswell Air Force Base, Ft. Worth, and 43 hours and 37 minutes later dropped back on the runway with a 9,600-mile flight tucked under its belt, and with reserve fuel—proving it could meet the 10,000-mile range requirement for which it was built. A 10,000-lb. bomb load was carried, as well as simulated ammunition for its fourteen 20-mm cannons.

In the spring of 1949 a new model B-36 was announced—a B-36D carrying four Allison J-35 5,000-lb.-thrust jet engines slung in double nacelles below each wing tip—nacelles identical to those used on the B-47 bomber. This model first took to the air on March 26, 1949. General Electric J-47 engines, with over 5,000 lbs. thrust each, are planned for production models and a modification program has been announced to install jet engines on all B-36 models. All B-36's will eventually be 10-engined airplanes!

Last spring a man-made storm broke around the B-36 that is still raging. "All-the-nation's-eggs-in-one-basket" criticism became particularly strong after Secretary of Defense Johnson ordered the cancellation of the Navy's pride and joy, the 65,000-ton

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super aircraft carrier. The design, performance and procurement procedures of the "36" are being closely scrutinized and some of its innermost secrets bared. But what sort of plane *is* the B-36? What unique design features give it the tremendous range and awesome ceilings reported?

The "36" is certainly unconventional—not only in its arrangement but in a myriad of design details as well. The first pusher type airplane ever placed in service, the "36" is certainly a textbook example of how to get low drag, low weight and extreme cruising range.

Perhaps the prime reason for the low drag is the huge wing, dwarfing the slender boom-like fuselage so that the "36" approaches a flying-wing type of craft both aerodynamically and structurally. The 230-ft. wing, with 4,770 square feet of area, gives it both a high aspect-ratio and hence low drag for cruising, and a low wing loading for high-altitude flying as well. The wing and its arrangement are the secret of the success of the B-36.

The wing section is relatively thick at the fuselage—about 22% of the chord—and to keep the drag low, a laminar-flow section is used. The pusher arrangement then follows as a matter of course since the low drag of a laminar-flow wing can't be achieved behind tractor propellers. Only pusher propellers can keep the airflow over the wing smooth and flowing in layers.

The weight distribution and location of the main masses and weights is the secret of the B-36's low structural weight. The wing structure and the engines, fuel, and main landing gear probably account for some 80% or more of the gross weight—that is, *the "36" appears to be about 80% flying wing with the favorable structural loading of that type.* The masses are strung out along the wing structure and hence relieve bending loads caused by the air lift.

The wing structure itself is an exceptionally clean-cut structure without the usual cutouts for landing gears and engine nacelles that characterize the conventional multi-engined bomber. A deep closed box spar constitutes the backbone of the wing. It extends unbroken by splices or joints from wing tip to wing tip. The fuel is contained in this member which also acts as an integral fuel tank, caulked to prevent leaks and covered with leak-proof bullet-sealing blankets. Upwards of 30,000 gallons of fuel—90 tons—can be carried in the wing structure aside from several droppable bomb bay fuselage tanks of about 3,000 gallons each. The wing structure ahead of and behind the box spar is very lightly built—magnesium is widely used and a new bonding process is used to form large panels to avoid riveting. This process increases the fatigue resistance of the structure to engine vibration.

The "36" is undoubtedly the most heavily armed bomber ever to carry the Air Force insignia. No less than fourteen 20-mm cannons, twelve of which are mounted in retractable turrets along the upper and lower fuselage, provide a tremendous concentration of fire power to attacking fighters. All guns are remotely operated and are controlled, sighted, and fired by the latest electronic equipment available.

With the foregoing information at hand, we can better decide whether the big bomber—meaning right now the B-36—is a clay pigeon. Our belief is that at the present there is nothing available to stop the B-36. It can do the job it was designed to do. It is being improved steadily. If the best fighters of the Air Force cannot cope with the giant—but those of the Navy can—then what should be investigated is not the B-36 but the policy that enables one service to secure a better airplane than the other.

Today the B-36 is no sitting duck. Tomorrow any big bomber can become one, if the development of air-to-air and ground-to-air guided missiles continues at present rates. The B-36 represented a strong ace in the American hand during the Berlin blockade. It will so continue until a better vehicle for carrying destruction from one spot to another comes along.

Rather than rant about a bomber that has fulfilled its requirements, those charged with the defense of this nation should be concerned with what we will have in the skies in that not too distant future when the big bomber will indeed be an easy target.

Coming Air Events and Contest Calendar

Contest directors are invited to send listings of meets to Contest Calendar, c/o Air Trails, Box 489, Elizabeth, N. J. Such announcements must be received at least 90 days before contest date.

To secure more information on a contest, write to the individual listed. His or her city and state address is same as location of meet unless otherwise noted. Where different city is listed in address, the state is the same.

Air Trails makes every effort to check listings. It should be noted, however, that contests carried in this Calendar are subject to change without notice.

Oct. 9—Modesto, Calif., Control-Line Flying Circus.
Oct. 9—Millville, N. J., State Exchange Clubs meet.
Oct. 16—Gilroy, Calif., free-flight meet.
Oct. 29-30—Adelanto, Calif., Soaring regatta (8th heat), El Mirage Field.
Oct. 30—Fresno, Calif., free-flight meet.
Nov. 11-19—Philadelphia, Pa., World Hobby Exposition at Commercial Museum.
Jan. 13-15, 1950—Miami, Fla., All-American Air Maneuvers.

Morane Saulnier

(*Continued from page 48*)

firewall to the cowling to accommodate it.

The body of the Morane is made from a solid block of wood. Begin by cutting two pieces of medium hard balsa to the dimensions of 2" x 4" x 20" or 24". Actually the finished body is only 19¼" in length, but a small excess is allowed for turning on a lathe. Next apply a generous amount of glue to about 2" of the end of those blocks on the 4" faces. Bind the blocks with rubber bands and allow to dry. Drive a heavy wood screw through the portion of the block where the cockpit opening is to be and you are ready to turn the body. (If you do not have a lathe available, a model supply house advertises that they will handle the job for you for a nominal sum: Aero Design Model Mfg. Co., Lincoln, Nebraska.)

Check the body diameter and when it is down to size, sand to a very fine finish while still in the lathe. Next give the fuselage 4 coats of shellac, being sure to sand well between each coat. The shellac gives the body a great deal of strength and also acts as an excellent base for the finish coats of pigmented dope. While the body is still in the lathe, run a round-nosed tool ⅛" into the body at the rear of the motor cowling. This will be beneficial later when removing the upper portion of the cowl for installation of the engine.

Remove the screw from the cockpit, slit the glue joints and the body is ready to be hollowed out. Hollow out to a thickness of ⅛" with a concave gouge.

Next cut a piece of ⅛" plywood to a diameter of 3-5/16". This is to be used as the front bulkhead for mounting both the motor and the landing gear. Glue this in place in the bottom portion of the fuselage, 2" from the front of the cowl. Apply about 3 good coats of glue.

Next cut out the cockpit in the top portion of the fuselage with a penknife. Also with a razor blade slit the top cowl from the rest of the body and glue two pieces of ⅛" wood dowel pins

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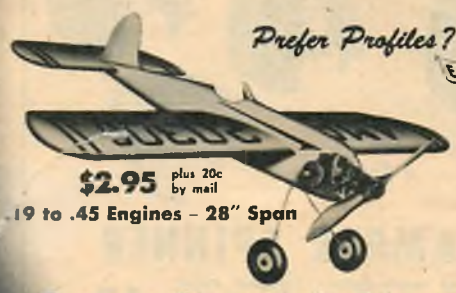

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into the removable portion of the cowl. Drill identical holes to match in the bottom half of the cowl for a tight fit, so that motor vibration will not cause the cowl to loosen. Another bulkhead of 1/16" plywood 1-⅝" in radius is made and glued in place 3-¾" behind the motor bulkhead.

Bend the landing gear to shape from 3/32" music wire and mount on the plywood bulkheads with the metal fasteners shown on the plans, use plenty of cement at these spots.

Construction of the wing may now be begun. Cut out 22 ribs from 1/16" hard sheet balsa and 2 from hard ⅛" sheet, glue these in place between the ⅜" x 1" leading and ¼" x 1" trailing edge. Use 1/16" strips of balsa under the rear of the leading edge to get the necessary undercamber. The tips are of ¼" square very hard balsa. Round the outside corners of the tips on a 3/32" radius. Next shape the leading and trailing edges with heavy sandpaper to the proper contour. Add the 3½" square of 1/16" or 3/32" plywood to the center section, flush with the bottom of the ribs. The control plate is then mounted on this 1/16" plywood base with a small machine screw. Insert the 1/16" I. D. aluminum tubes in the left wing tip and glue well. Fasten 2 lengths of 1/32" diameter wire 16" long to the control plate, after running them through the two aluminum tubes and through 1/16" diameter holes drilled into the right panel wing ribs. The wing except for the center section is now covered with silk and given three coats of clear dope.

Cut out the top portion of the body to clear the wing profile and after installing the coil behind the firewall, the wing may be glued in place.

The tail assembly is constructed from hard ⅛" sheet balsa. Sand to a streamlined shape with heavy sandpaper, then finish up with a fine sanding. Coat the rudder and stabilizer with Japanese tissue and then apply 3 coats of clear dope. Remove enough wood from the rear of the fuselage so that the elevator will be a snug fit and glue it into place. Hook up the control wire from the bellcrank to the tail control horn. Insert the bamboo tail skid in its proper position and glue firmly in place. Next glue the top of the body over the bottom, applying plenty of cement. Do not add the rudder until all of the pigment doping is done.

All that remains to be done now is the final finish doping. This consists of 4 coats of yellow applied to the body, wing, and stabilizer. The insignia are easily drawn on the model with an inking compass. Thin out the dope until it runs easily. Add the remaining details such as the head rest and the wing wire brace mounts.

The Arden engine is mounted inverted, so allow about ⅛" clearance around the fins to keep the body paint from catching fire. The battery box (an Austin 2-pen cell box) fits neatly into the cockpit for ignition.

Flying notes: The model should balance on the leading edge of the wing. When it was first flown the center of gravity was about 2" from the leading edge of the wing; this produced very erratic flights. The opinion of the experts was that the high undercamber in the wing ribs was causing this. Upon moving the center of gravity to the leading edge of the wing, excellent results were obtained.

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Ted Enticknap knocked off three cloud-busting ten minute flights in a row to win "D" Free Flight open with a Top Flite. Ted hails from Auburn, Wash.

Dick Culver, Oak Ridge, Tenn., son of the 1929 National Indoor Champ, Joe Culver, proved his own championship qualities by winning first in CO^2 Junior with a Power Prop.

In "C" Free Flight Jr. Jimmy Jorski of Oklahoma City won first with a Top Flite.

Fred Whiting, Oklahoma City, last year's second place winner, came through this year in first place in "B" Jr.-Sr. Payload using a Top Flite.

Top Flites came through again when Sonny Murphy of Anderson, Ind., won "B" Free Flight Jr.

In Precision Stunt Open, Bob Dailey of Ferndale, Mich., took first with a Top Flite.

The Precision Stunt Junior Championship was won by James Freshman of Berkeley, Calif., with a Top Flite.

Bill Burgess of Muncie, Ind., last year's "C" Free Flight Champ, repeated this year with a Top Flite in winning "A" Free Flight Senior.

And last year's National Junior all 'round champion, Charles Sotich of Chicago, Illinois, used a Power Prop to win this year's CO^2 Senior.

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Metal Forming For Models

(*Continued from page* 46)

a hardwood crutch form an excellent Class C or D speed model fuselage.

The variety of shapes that may be produced by this method is virtually unlimited. The only factors that must be taken into consideration when designing your molds deal with sudden changes in curvature and depth of mold. Remember to make your curves fairly gradual with no sharp bends and do not make your mold so deep that the metal cannot stretch enough to fill it. If more complex shapes are desired a little thought in the designing of the molds will enable you to make them in two or more parts so that they can be finally assembled with small aluminum rivets.

Another important feature offered by this method is the fact that although the working is started on an annealed (softened) piece of aluminium, the final product comes out of the mold in a hardened condition, having been work-hardened by the gradual tapping that is used to force the metal down into the mold.

Once your mold is completed (having been gouged from hardwood) it may be used over and over again, to make replacements for damaged parts, to build duplicate models, or to lend out to the fellows in your club. You might even get a few friends together and each make a mold for a different class ship, then pass them around so that everyone ends up with a complete set of planes from A to D.

The making of the mold is a simple woodworking process that any model builder should be familiar with. However, let me offer a few bits of particular information that may help.

When a good clean fit between parts is desired, take into consideration the thickness of the metal in the design of the mold, also make allowances for trimming off the excess metal from the finished part. The mold itself should be made from a hard wood, such as maple or oak. Much of the time and energy that goes into gouging can be saved by using planks about ½" thick, cutting out a rough profile in each at its particular section and then gluing the cut-out planks together with a good hard wood glue. The remaining excess may be removed with gouges and finally the mold surface is sanded smooth. During these final operations the mold should be checked periodically with templates to insure a true shape. To toughen the mold, the entire surface should be given a coat of shellac.

The cover plate is cut from ⅛" plywood with the center cut out slightly oversized with respect to the top profile of the mold, the inside edges of the plate are rounded off and it is held in place with two dowel pegs placed conveniently in the mold as shown in the pictures. The tools are made from the same hard wood as the mold, their particular shapes being more or less arbitrary, depending on the shape of the mold being used. For the average job, tools similar in shape to those shown should do nicely. The working ends of the tools should be finished carefully as any rough spots will tend to scratch or score the metal you're using.

The aluminum to be used is of the common aircraft skin variety that goes under the trade name of Alclad, and can be obtained at any sheet metal shop or good hardware store. There is one important thing to remember when buying your metal—you want annealed (soft) stock, so ask for "Alclad 24SO." The "ST" variety which undoubtedly will also be on hand is the same metal in the hardened form but will not take working without fatigue and cracking, so be absolutely sure to get the soft "SO" type. As for the thickness of the metal, anything from .010" to .032" should do, depending on the size and use of your part. An average class "C" speed model fuselage should be made from sheet of about .015" thickness.

Do not drill holes in the aluminum, as they tend to constrain the movement of the metal which to a certain extent feeds in towards the center as the metal at that point is stretched down into the mold. Cut out diagonal corners instead.

Use small "C" clamps or machine clamps to hold the mold, metal and cover plate firmly together and finally place the entire assembly in the vice and tighten securely.

During the tapping operation the metal will stretch much more than you had probably thought possible. An extra heavy blow at any one point will stress the metal past its elastic limit and failure will occur. So try to remember that you are not a blacksmith and you will be surprised at the ease with which the operation can be performed.

When the metal is in fairly close contact with the mold at all points, complete the shaping operation and remove some of the wrinkles. By the sound and

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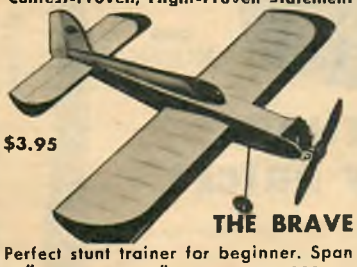

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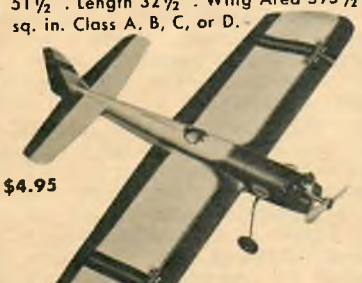

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feel of the blows, it is a simple matter to tell when the metal is in contact with the inside of the mold.

Take your time and do a good job. Start at the edges of the mold and work down along the sides. Use some of the smaller tools for points inaccessible to the large one. Work out wrinkles wherever they appear, always working away from the edges towards the center of the mold. As a check, you may remove the piece from the mold occasionally to see how the outside is shaping up. Some of the smaller wrinkles that are hard to spot on the inside may be detected in this manner.

When trimming, be sure to leave a little excess around the edges of the part, to be taken down with a file later when fitting your pieces together.

Wing and tail surfaces may be made from either wood or metal depending on individual taste. If you want an all-metal job, the flying surfaces are most easily made by cutting thin aluminum sheet to a desired pattern and bending it over ribs to give it the proper airfoil shape. Since they have very little depth, it is not practical to make a mold for wing or tail surfaces.

San de Hogan

(*Continued from page 44*)

glue on the double ⅛" plywood firewall. Cut out for landing gear wire and bolt the landing gear in place. Locate engine on firewall and drill holes for bolts, cement and draw nuts into balsa former A. *Don't remove engine* until nuts are thoroughly dry.

Next cement gas tank (with filler, vent, and lead-out installed) in place. Secure with pinking tape or fabric. Fill in sections around gas tank and back of engine with 3/16" sheet. Plank fuselage with 3/32" sheet, and pylon with 3/16" sheet (grain vertical). The wing platform is cemented on after dihedral angle is set in platform. Run the grain parallel to length of wing. Install tail platform and fillet blocks. Be sure wing and tail platforms line up with each other.

Plank bottom of fuselage with 3/32" sheet with grain diagonal to crutch as shown. Install parachute door and hinge and compartment. Be sure inside of chute compartment is smooth and unobstructed so chute will fall out with ease. Install timers and fuel cut-off gimmicks. Timers should be flush with planking for less drag as illustrated in the detail sketches.

Cover fuselage with Silkspan and Jap tissue after using 3-to-1 dope-talcum solution as filler. Use 50/50 sanding sealer, dope solution as first coat on fuselage after covering. Increase percentage of dope to sanding sealer until a "filled finish" is attained. Then fuel-proof (Butyrate dope is fine). Wing and tail should be covered with light Silkspan or Jap tissue, especially the tail. Four or five thin coats of dope on wing, three or four on tail are sufficient (including fuel-proofer). Install rudder tab on left side of rudder and "floating tab" on left wing as shown in the detail illustrations.

Everything all set? Check for warps, incidence and alignment. To key surfaces in correct alignment use string and measure from center of back of fuselage to check as illustrated. If the ship balances farther back than 1" from the trailing edge, add weight to the

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nose (spinner, lead, etc.). Check the glide by hand gliding. It should be fairly fast and slightly to the left. Stick a plug drilled with a 1/16" hole in the engine intake for the first few power hops. The ship should climb to the right about one revolution in 15 seconds. Install more right thrust with 1/32" thick washers between engine and firewall for more right turn on climb. Use small amounts of modeling clay on floating tab for more left turn. With added power the climb sometimes tends to straighten out (torque). Counteract this with downthrust, if looping tendency is observed, and right thrust.

A word about direction of climb: Left turn in the climb is pretty dangerous due to the high torque of glow engines. If such a direction of climb is attempted, right turn on the glide is necessary. Another precaution: Left rudder tab should be used sparingly in achieving left glide. Use the floating tab, small shims of 1/16" or 1/32" may be used under leading and trailing edges of the tail in correcting stall tendencies or dives. Exercise caution in altering angle of incidence between wing and tail.

As for props, I use an 11" Airo on K & B 29's and 32's. Similar props of medium low pitch (4" or 5") are good. However, take it easy when changing from one type of prop to another! Tail tilting or raising one side of tail in relation to wing also is useful in obtaining turn on glide.

Statement of the Ownership, Management, etc., required by the Acts of Congress of August 24, 1912, and March 3, 1933, of Air Trails Pictorial, published monthly, at Elizabeth, N. J., for October 1, 1949.

State of New York, County of New York (ss.)

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared H. W. Ralston, who, having been duly sworn according to law, deposes and says that he is Vice President of Street & Smith Publications, Inc., publishers of Air Trails Pictorial, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: *Publishers*, Street & Smith Publications, Inc., 122 East 42nd Street, New York 17, N. Y.; *editor*, Albert L. Lewis, 122 East 42nd Street, New York 17, N. Y.; *managing editors* none; *business managers*, none.

2. That the owners are: Street & Smith Publications, Inc., 122 East 42nd Street, New York 17, N. Y., a corporation owned through stock holdings by Gerald H. Smith, 122 East 42nd Street, New York 17, N. Y.; Ormond V. Gould, 122 East 42nd Street, New York 17, N. Y.; Allen L. Grammer, 122 East 42nd Street, New York 17, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities are: None.

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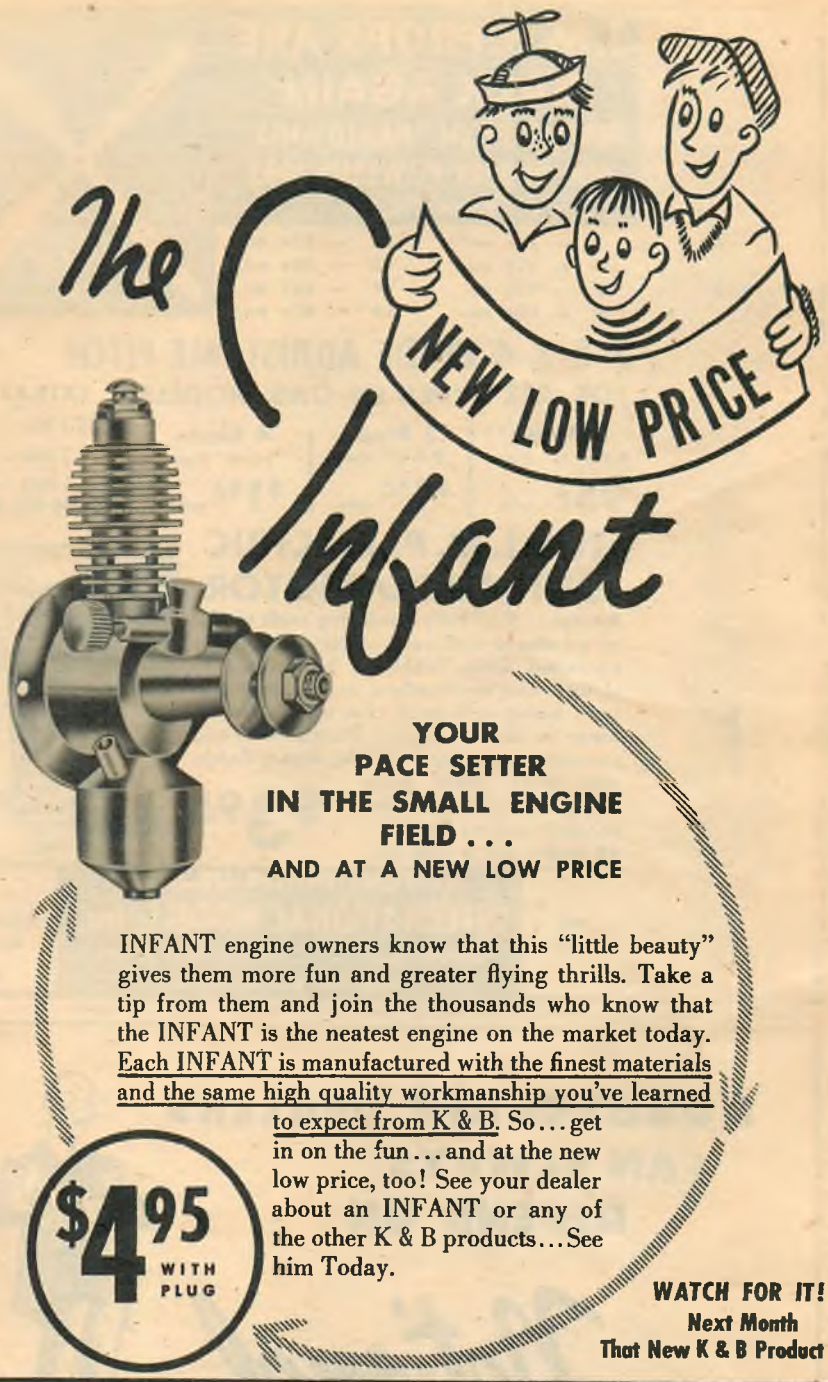
H. W. RALSTON, Vice President,
Of Street & Smith Publications, Inc., publishers.

Sworn to and subscribed before me this 30th day of September, 1949, Edward F. Kasmire, Notary Public No. 60-2039700, New York County. (My commission expires March 30, 1951.)



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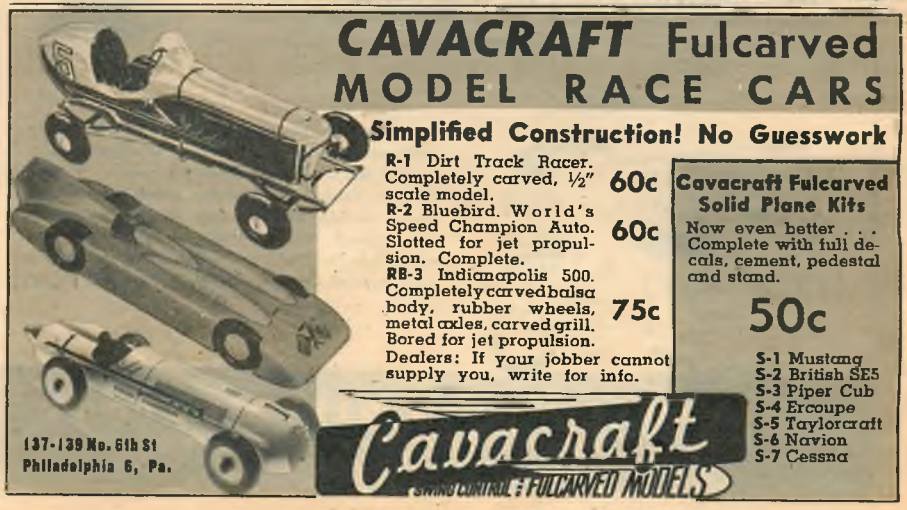

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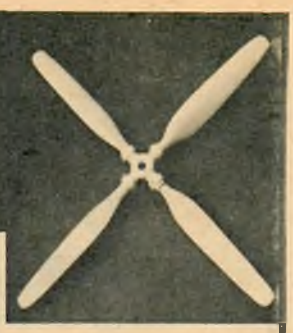

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The '49 Nats

(*Continued from page 37*)

were run off on the air station, while the indoor flying took place in the Municipal Auditorium in Kansas City.

On the last day of the contest 58,000 spectators turned out to see the concluding events and the fine precision flying of the Blue Angels, the Navy's crack exhibition stunt team. This, incidentally, was a record for the NAS at Olathe as far as number of people on the base at one time was concerned. Sunday saw three of the most exciting events of the annual contest which drew contestants from almost every state. These special categories were control-line flying scale, rise-off-water free-flight and Pan American World Airways PAA-Load.

Radio-control flying, which was scheduled for every day of the contest, brought forth more entries than any previous Nationals and a record number of r.c. flights were chalked up.

Poor weather plagued contestants during the first four days of outdoor flying—first high winds and then rain. Relatively poor times in general could be blamed on the weather, yet most of the entrants took this handicap in their stride and did the best they could under the circumstances. Fair skies marked the final day's flying, cheering contestants and bringing out the spectators.

The meet, of course, could never have been run off on any such scale without the full support of the Navy and the cooperation of every man "aboard" the base. Enlisted men and CPO's handled the timing of flights; the regular officer personnel took a hand in all the arrangements for the meet. Each event was handled by a different contest director who was responsible to Jim McClelland of Independence, Kan., who also directed the '46 meet, the first post-war Nationals, in Wichita, Kan.

The top officials besides McClelland (who had the title of contest supervisor) were Jesse Hall, Olathe, contest manager; Dale Dorst, Olathe, assistant contest manager; Tex Witherspoon, Olathe, promotion manager; Richard Wallace, Wichita, director of rubber and glider flying; Jean Seele, Topeka, Kan., director of free-flight gas; Richard Gelvin, St. Louis, director of U-control speed; M. J. Thomas, Pittsburgh, director of radio-control; Roy Mayes, Berkeley, Calif., director of control-line stunt; Leo Rutledge, Wichita, director of PAA-Load event; Bill and Ginger Sparks, Kansas City, Kan., recording and timing supervisors; Art Carroll, Topeka, chief announcer; and Louis Caton, Kansas City, Mo., field manager.

IN addition a number of other well-known aviation, model aviation and Navy figures participated in the lengthly planning sessions and the execution of the contest. These individuals included Capt. Campbell Keene, commanding officer of the Olathe Naval Air Station; C. O. Wright, president of the Academy of Model Aeronautics; G. Richard Challinor, aviation commissioner for Kansas City, Mo., Chamber of Commerce; Tom Poor, Mayor of Olathe; Howard McKee, president of the Olathe Chamber of Commerce; Joe

Nickel, Kansas state commander of the American Legion and Walter Russell, commander of the Olathe post; Russell W. Nichols, A.M.A. executive director: Val Sherrard, Topeka; Lt. Lee Stanley, public information officer at the Olathe NAS; and a host of others.

Not only high winds but bad luck seemed the order of the day at the meet's outset. Leo Rutledge, well known and highly liked activities leader who was the director of special events, was in an automobile accident just off the base but fortunately did not suffer serious injury and was able to return to his duties at the meet. Next June Pierce, greatly beloved Mid-States Coordinator for the A.M.A. and a moving force behind the Mid-States Model Aeronautical Association, who was serving as chief judge of radio-control, was taken seriously ill and died at a Kansas City hospital during the meet. Although Mr. Pierce had been known to be in ill health for many years his passing was deeply felt by all who knew him or knew of his work in model aviation which culminated in the National meet's going to Olathe last year. A fitting period of silence was observed on the field and all flying ceased for a short time.

Trouble always coming in three's, seemed evident when Maurice Roddy, aviation editor of the Chicago Sun-Times, and meet manager for the 1940 and 1941 National contests in Chicago, was taken ill. Mr. Roddy, a former president of the Aviation Writers Association and spark plug in modeling activities in his home area, was forced to return to Chicago for hospitalization. A Chicago model team sponsored by the Sun-Times continued in the meet, winning its share of prizes.

So gigantic an operation was the contest that it was impossible to see everything. A typical example: On Sunday, July 31, while the PAA-Load event was being run off on one section of the field along with hand-launched gliders, the ROW flying was going on in another corner of the base which featured a good sized pond. And all the time the radio-control boys were competing off by themselves, the jet speed demons and the control-line flying scalers battled. Not to mention demonstrations of team racing!

Using that as a sample operation and multiplying that by the 5 days of outdoor flying it soon became apparent that to win in a contest of such size one is almost required to have an inexhaustible supply of helpers and retrievers, an auto or motor scooter to speed from one event to the other and a knack of going without food during the day and without sleep at night.

The magnitude of the meet complicated somewhat the recording and tabulating processes on the final day so that the presentation of awards was stalled for awhile. But this is nothing new to the Nationals. At first it was understood that the Oakland, Calif., Cloud Dusters had repeated their previous year's team victory, but a rechecking of points put the Flight Masters in first place.

Because of the large number of events in which prizes had to be procured, awards got a little thin at times in the opinion of some contestants. It is apparent that if the National meet is not to be limited in number of entrants and is to continue on a wide open basis

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(as contest director McClelland contends it should), then certainly the number of events should be cut down.

As an example, the rubber-powered flying scale category attracts few flyers because the prizes seem small for the amount of work required. If sufficient awards cannot be secured far in advance and publicized, better the event should be cancelled. Fewer events might take the exciting edge off the meet for some of the old-time entrants, but it would simplify the contest and streamline the necessary paper work.

This year's management board received many compliments on a fine recording and timing system which saw the timers using ticket punches to record flights. Each entrant had a duplicate receipt form for each flight. Without such a system and with more than 1,200 competitors, chaos would have resulted.

This year a new system of sponsorship was devised whereby a concern or individual was permitted to sponsor a uniform set of trophies and pins for one event. These awards, added to the traditional perpetual prizes, made a lavish display during the presentation ceremonies. The perpetual awards include the Air Trails trophy for open Cl. D speed; the Air Trails Harold Kulick Memorial trophy for senior Cl. D speed; Berkeley trophy for senior rubber cabin; Stout outdoor cabin trophy; Mulvihill trophy; Tiger products; Comet; Model Craft; Rite-Pitch; Chicago Park District-Sun-Times; Ohlsson & Rice; Edward Roberts; Bloomingdale; Stout indoor cabin; Atwood; Springfield and the Jim Walker trophy for novelty and precision U-control flying.

Event sponsors included the following firms or organizations: United Aircraft Corp., Douglas Aircraft Co., Fairchild Engine & Airplane Corp., North American Aviation, Inc., Piasecki Helicopter Corp., Junior Aeronautical Supplies Co. (Jasco), McDonnell Aircraft Corp., Herkimer Tool & Model Works, Inc. (OK), Kansas City Chapter of National Aeronautic Association, Meyers Sanitary Milk Co., Tudor Ford Co., Duromatic Products (McCoy), M. J. Goetz Co., Testor Chemical Co., Josten Mfg. Co., K&B Manufacturing Co., A-J Aircraft Co. (3 events), Midwest Model Supply Co., American Hobby Specialties, Ohlsson & Rice, Beech Aircraft Corp., Air Age Inc., Monogram Models, and Fifty Crosswords, Inc.

The winners of each event follow; these are listed in first, second and third place order after the name of the event. Figure given represents total or average seconds, miles per hour or points, depending on how the A.M.A. rules score the event:

INDOOR STICK. Junior—Paul Simon, Detroit, 906.4; Ronald Plotzke, Detroit, 649.8; John Humphreys, Lakewood, O. 465.0. Senior—Erwin Rodemsky, Detroit, 892.8; Charles A. Sotich, Chicago, 746.4; Einar Enevoldson, San Francisco, 737.5. Open—Don Donahue, Montrose, Calif., 1347.8; Michael Demos, Oakland, 1303; Robert Bienenstein Detroit, 1302.

INDOOR CABIN. Junior—John Humphreys, 325.4; Paul Simon, 270; Lyman Slack, Cleveland, 120.2. Senior—George Xenakis, Detroit, 885; Carl Redlin, Detroit, 835; Erwin Rodemsky, 618. Open—George De La Mater, St. Louis, 1156.6; Manuel Andrade, Oakland, 1105.4; Joe Bilgri, San Jose, Calif., 1062.5.

INDOOR GLIDER. Junior—Jack Butler, Inglewood, Calif., 51.5; Arthur Jens, Beth-

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page, N. Y., 42; Paul Simon 37.8. Senior—Donald Hollfelder, Oakland, 59.2; Don Jagger, N.Y.C., 55.4; Charles Hallum, Oakland, 54.6. Open—Manuel Andrade, Oakland, 61.2; F. J. Lilly, Kansas City, Mo., 60.4; Michael G. Demos, 58.8.

OUTDOOR STICK (RUBBER). Junior—Ronald Plotzke, 341; John Humphreys, 240.5; Sherrill Bredfeldt, Hutchinson, Kan., 183.2. Senior—Carl Redlin, 420.3; Don Jagger, 400.6; George Xenakis, 397.6. Open—Robert Bienenstein, 595.6; Dick Everett, San Diego, 536.1; Dick Korda, Euclid, O., 486.

FREE-FLIGHT GAS CLASS A. Junior—Joe Stadelman, Pittsburgh, 675.6; Jack Butler, 530; Lyman Slack, Cleveland, 395.6. Senior—William Burgess, Muncie, Ind., 532.8; Robert F. Darrah, Des Moines, 530; Don Hermestroff, Chicago, 422. Open—Fred Miller, Oklahoma City, 726.5; Dick Everett, 579.8; Merl Shammo, Freemont, O., 532.2.

FREE-FLIGHT GAS CLASS B. Junior—Sonny Murphy, Anderson, Ind., 727.9; Roger L. Barron, Springfield, Va., 527; Jimmy Jorski, Oklahoma City, 488.7. Senior—Einar Enevoldson, San Francisco, 705.8; Eugene Bonenberger, Oklahoma City, 632.4; James H. Brakefield, Washington, D. C., 600. Open—Ray Acord, 627; Harold Tremps, Anderson, Ind., 595.8; Joe Culver, Oak Ridge, Tenn., 570.5.

FREE-FLIGHT GAS CLASS C. Junior—Jimmy Jorski, 562.2; Richard Tremps, Anderson, Ind., 452; Jack Butler, 445.7. Senior—Norman Mayeda-Richard Gernar (team), St. Paul, 552.8; William Burgess, Muncie, Ind., 539; Bill Clark, Denver, 535.2. Open—Louis Torno, Cleveland, 928.8; Dennis Davis, San Diego, 722.8; Paul Van Sant, Chicago, 680.1.

FREE-FLIGHT GAS CLASS D. Junior—Roger L. Barron, 1118; Jack Butler, 810.1; Dan Dougherty, Tulsa, 608. Senior—Mervyn Schell, Chicago, 923.6; Kenneth Dougan, Lawrence, Kan., 904.2; Ivan Wimp, Kress, Texas, 824. Open—E. L. Enticknap, Auburn, Wash., 1800; Harold Tremps, 1378.6; Sal Taibi, Indianapolis, 1295.

TOWLINE GLIDERS. Junior—Marvin Allen, Akron, 530.7; Clifford Teleford, Decatur, Ga., 515; Don Shriver, Quincy, Ill., 262. Senior—Richard J. Fox, Akron, 837; Don Jagger, 717.1; David Bell, Mission, Kan., 645.4. Open—Manuel Andrade, 766.1; Michael Demos, 725.2; Whitley M. Roberts, Jr., Atlanta, Ga., 682.

CONTROL-LINE SPEED CLASS A. Junior—Warren Tomme, Little Rock, 105.88; Everett Gray, Wichita, 103.75; Bob Carnes, Neosho, Mo., 101.12. Senior—Mark Brown, Stockton, Calif., 113.92; Robert Rawe, Kenmore, N. Y., 112.15; Jack Breen, Lakewood, O., 109.76. Open—Harold deBolt, Williamsville, N. Y., 116.88; Dr. J. R. Warden, Little Rock, 112.50; Erwin Huth-Charles Mather (team), Alameda, Calif., 110.43.

CONTROL-LINE SPEED CLASS B. Junior—Warren Tomme, 124.14; Everett Gray, 109.26; David Coates, Hialeah, Fla., 100.98. Senior—Raymond Shearer, Little Rock, 130.43; Bill Mitchener, Peoria, Ill., 129.96; Richard Rigney, Long Beach, Calif., 127.66. Open—Lew Mahiew, Long Beach, Calif., 132.84; Verne Hudson-Frank Manley (team), Wichita, 132.11; Charles Schuette, Los Angeles, 131.39.

CONTROL-LINE SPEED CLASS C. Junior—Phillip Laney, Little Rock, 125; John F. Hice, Flint, Mich., 121.62; Everett Gray, 115.20. Senior—Raymond Shearer, 135.85; Jack Friedland, Oakland, 134.33; Richard Rigney, 133.33. Open—Erwin Huth-Charles Mather (team), Alameda, Calif., 137.40; Frank Manley-Verne Hudson (team), 134.58; Dr. J. R. Warden, 133.33.

CONTROL-LINE SPEED CLASS D. Junior—Pat McGahan, Terre Haute, 129.5; Lyman A. Slack, Jr., Cleveland, 122.4; Bob Carnes, 121.62. Senior—Bill Wisniewski, Hawthorne, Calif., 140.63; Raymond Shearer, 139.53; Eugene Stiles, Alameda, Calif., 136.36. Open—Harold deBolt, 147.54; Lew Mahiew, 146.34; James E. Jennings, Dalton, Ga., 138.46.

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CONTROL-LINE FLYING SCALE. Junior—Ben Coffin, Kansas City, Kan., 217½; James Freshman, 203½; Sherrill Bredfeldt, Hutchinson, Kan., 163. Senior—Dale Kirn, Salina, Kan., 369; Cpl. Bryant Thompson, Keesler AFB, Miss., 317½; James Smith, El Cerrito, Calif., 310. Open—Mr. and Mrs. John T. Matthews, Atlanta, Ga., 359; Fred Sage, Jr., Independence, Mo., 358; Charles Hollinger 343.

RADIO-CONTROL. Dr. Walter Good, Silver Spring, Md., 119; Paul Johnson, Des Moines, 109.2; Jim Walker, Portland, Ore., 94.2.

FREE-FLIGHT, CARBON DIOXIDE POWER. Junior—Dick Culver, Oak Ridge, Tenn., 431.8; John Humphreys, 404; Larry Erickson, Omaha, 305.2. Senior—Charles A. Sotich, 735.5; Richard Culp, Miami, 682.2; William Ehrlich, Chicago, 588.4. Open—Howard L. Robinson, Shelby, O., 613.2; Bob Wright, Topeka, 588.3; Dick Korda, 583.9.

OUTDOOR HAND-LAUNCHED GLIDER. Junior—John Humphreys, 723.8; J. D. Foster, Kansas City, Mo., 382; Luther Hayes, Frankton, Ind., 366.9. Senior—Bob Costigan, Kansas City Mo., 736.6; A. W. De Valx, Kansas City, Mo., 735.3; Donald Hollfelder, Oakland, 559.4. Open—Ray Acord, 885; David Kneeland, Sunflower, Kan., 805.6; Robert J. Dunham, 742.7.

FREE-FLIGHT GAS, RISE-OFF-WATER. E. L. Enticknap, Auburn, Wash., 1293.5; Paul Gilliam, Glendale, Calif., 1061; Dick Everett, 838.9.

PAN AMERICAN WORLD AIRWAYS PAA-LOAD CLASS A. Junior-Senior—Leo Caton, N. Hollywood, Calif., 196.6; Fred Whiting, Oklahoma City, 99.3; Gordon Hilton, Lubbock, Texas, 70.4. Open—Ray Matthews, Oklahoma City, 797; Paul Gilliam, 428; Fred Millder, Oklahoma City, 420.

PAN AMERICAN WORLD AIRWAYS PAA-LOAD CLASS B. Junior-Senior—Fred Whiting, 1695; Roland Lynch, Tulsa, 1312; Norval Hale, Tulsa, 144. Open—Carl Rambo, Oakland, 2141; Dennis Davis, 2003; Hubert Entrop, Seattle, Wash., 1863.

JET SPEED. Bob Cart, Des Moines, 145.16; Merle F. Koebernick, Beloit, Wisc., 142.86; George Sweet, Beloit, 140.08.

Coverage of the 18th Nationals will be continued in forthcoming issues of Air Trails. A special National Meet Sketch Book, an analysis of winning designs, and special pictorials are among the features scheduled.

Letter from Olathe

(Continued from page 41)

do was garner a 3rd in Class B free-flight open event. At that he beat an old fellow by the name of Dick Korda who placed 10th!

Sal Taibi, the Indianapolis flash, re-entered the contest wars with a number of beautiful models—none of which came close to comparing with his attractive wife, Nan. She's one of the hardest working helpers we've seen. As a matter of fact, more gals seem to have put in an appearance this year than ever before. There's a trend we favor strongly.

Hard-working C. O. Wright, Academy pres., sure showed the younger boys how to keep going. He was up practically all night long every night and yet each morning he'd be out on the flying field bright and early with his

ships. One of the Kansas City papers mixed some telephoned results one evening and had "CO" winning the open class CO_2 event. He told those extending congratulations that he felt an error had been made and sure enough in the final listings he dropped to 9th place to be bested by such ancient contenders as "Robbie" Robinson (1st), son Bob Wright (2nd), and Dick (My Arches Ache) Korda (3rd).

The Navy's giant transport, the Lockheed Constitution, came into the field on July 29 and was open for inspection during the day. One modeler was heard to remark as he passed through the giant craft, "Gee, what a wonderful place to fly indoor models!"

Solo Clubbers Irv Ohlsson and Harry Rice flew the O&R DC-3 in from L.A. with 20 contestants. These 20 ended up winning—among other things—the National Champion trophy (Acord), the National Club Championship trophy (Flight Masters Club) and Air Trails Kulick Memorial trophy (Wisniewski). Some haul! The freight going back consisted of about 17 trophies!

Keith (the "Key" man) Storey came all the way from California to help put on team racing demonstrations and work on the team racing committee. As a member of the F.A.S.T. (First All Speed Team) club he was taken aback by the appearance of S.L.O.W. club T-shirts. Seems initials stand for Southwest League Of Winners!

Alfred Van Wymersch, an old friend of ours from Holland, now working at Grumman, bobbed up long enough to point out that Gollywock Wally wasn't the only one simmering in the Kansas heat. Send the lad back to the low countries. . . .

If you were at the Nationals you probably noticed a gratifying number of A.T. designs around. But we were really stopped by one job—it was a glow-plug-engine-powered, Everett-designed Catamount (and Dick thought that was his nicest rubber-powered Wakefield design!) Speaking of unusual designs, Hubert A. Entrop really collected the crowds with his 20-foot Orwick-powered gas job. Had interchangeable tips so he could cut down the span to a mere 14 feet on windy days (2 mph breeze, that is). Shades of Vernon Boehle; but how it does fly on a calm day!

Those West Coast "E" men gave us a little difficulty. First there was Entrop (he had the monster free-flight designs and hailed from Seattle), then there was E. L. "Ted" Enticknap (he had the "Gool" free-flight ships and came from Auburn, Wash.), and finally there was Einar Enevoldson (he's from San Francisco and won the senior meet championship). Thank goodness for some names easy to remember: Xenakis (George, from Detroit), Yarbough (Bill, from Atlanta), and Zarkis (Clyde, from Chanute).

Each year at the National meet, Bill Effinger, Jr., on behalf of Berkeley Models, presents two fine chronograph watches to individuals who have done much to advance model aviation—one recipient is outside the model plane industry, the other within. This year's non-industry winner was genial Tex Witherspoon, former public information officer at the Olathe NAS and now president of KPRS, Olathe's first radio station. For two years Lt. Commander Witherspoon (USNR) has acted as pub-

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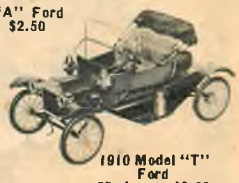

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lic relations manager for the Nationals.

The Berkeley industry award went to John E. Clemens, Dallas model distributor. It was presented by last year's winner, "Red" Hillegas. Calling Johnny up to the stage, Red allowed as how he figured John was surprised (Clemens admitted he was) and for once wouldn't be able to think of something funny to say. JEC said he could think of one thing. Said Red, "Go ahead, say something funny!"

Clemens: "Red Hillegas!"

As is usual contestants came to Olathe in just about anything and everything that could roll. Cars, buses, motor scooters, planes (private and commercial), trains—only thing missing was a guided missile. Roy Hurtig, EM1 from the Navy repair ship, *U.S.S. Vulcan*, got a trip from Providence, R.I. He was sponsored by the Providence Journal and qualified by winning the Rhode Island state championship. After Roy left for Olathe his ship shoved off for Bermuda. But an obliging and model aviation minded Navy told him not to get excited and to report to Norfolk, Va., after the contest was over. From there he'd be transferred to Bermuda! Some Nationals trip: Providence-to-Olathe-to-Norfolk-to-Bermuda.

We broke down the events and found that there were 8 control-line events at this year's Nationals, 11 free-flight divisions, 3 glider categories, 1 radio-control, and 3 indoor power events. Apparently free-flight is still alive. The f.f. boys took keen delight in ribbing the pylon pushers after a downpour had stopped all U-control flying while the heave-'em-and-hope crowd kept right on operating—water and all.

The speed team of C. W. Matthews and Erwin Huth from Alameda, Calif., had a sharp looking entry in Class D. It featured new type Hornet engine and a fuselage that is machined in 3 sections and flush riveted. This beauty did 138.46 mph. Going great guns in the speed circles were the 1949 Little Rockets. These were refinements on last year's designs which first appeared in Air Trails. The Little Rock, Ark., gang got a big hand for the way club members assisted one another. It was a delight to see the mob rally round when one of its members came up for an official speed flight. Doc Warden gave each engine that final touch, someone else handled the starter, a third member was delegated to clear the leads—the whole operation indicated how much more can be accomplished when modelers work together instead of separately.

This year the Navy set aside one of its largest hangars for the exclusive use of contestants as a round-the-clock workroom. And somebody was always cutting and cementing regardless of the hour. A refreshment stand kept open day and night which certainly helped. In case some contestants worried about the inflated price of some articles there, let them be happy with the knowledge that monies collected by the Legion-operated refreshment stands went toward defraying the expenses of the meet.

Considerable discussion centered around the control-line flying scale event. Some contend that all entries should be able to stunt or suffer the consequences in loss of points. Others argue that if the full-size plane—say a B-17—was not built to stunt, why should a model of it be required to complete a stunt pattern for maximum number of points.

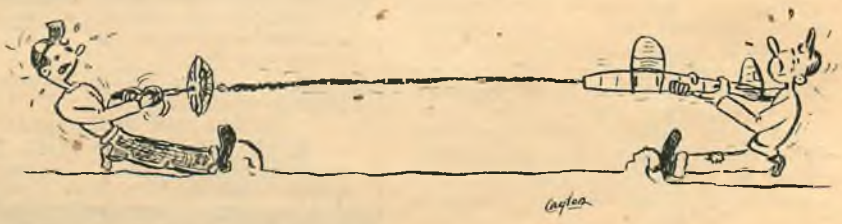
From that point the bull sessions usually branched off into: "is a multi-engined ship fair competition for a single-engine job?" Most of the strong stunt men who want to put a single-engine model through the entire stunt pattern look down their noses at the low-and-slow multi-engine entries. On the other hand, the chaps who have put in hundreds of hours synchronizing 2, 3 or 4 engines feel their investment in time and money should be considered in any flying scale affair.

One thought we heard expressed was that the horsepower rating of the full-size prototype could be brought into the picture for some additional "equalization" points. Something like this (speaking very roughly): every entry gets 1 point per horsepower up to 100 hp; if original was over 100 hp, but not over 200 hp, add .75 points per hp for each hp above 100 to the basic 100 points; add .50 points per hp from 100 to 400; .35 points per hp from 100 to 800; .20 points per hp from 100 to 1,600; .10 points per hp from 100 to 3,200; .05 points per hp from 100 to 6,400; and so on up through the B-36.

This might—and we emphasize that "might"—sort of equalize the B-29 entry and the DH-4. With its bonus points compiled from the prototype's total horsepower rating a B-29 could then put in its 3 level laps and a DH-4 could hustle through a fairly complete stunt pattern to keep in the money.

(If you've any ideas on this subject shoot them into the Dope Can and we'll bring 'em to the attention of one and all.)

Lt. Harry G. Vogler, Jr., of Chanute Field, who was active in the Nationals' scale model events, feels that the rubber-powered scale advocates should be given a better chance to fly their ships. This year the same rules applied as for the more rugged and less valuable non-scale rubber models (cabin, stick, etc.). You got a timer and that constituted an official flight even though your model didn't get off the ground. That's exactly what happened to Chet Lanzo. He released the prop, something was wrong, the model didn't begin to take off—bingo, one official



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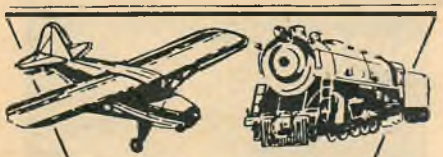

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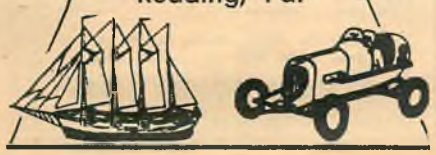

flight lost. Anybody who has ever built rubber-powered flying scale models will tell you that a contestant flying in that category deserves more consideration than that!

Service teams, Navy, Army and Air Force modelers, came to the contest in great big droves. They came in C-47's, PBY's, twin-engine Beeches—they came from Pensacola, Corpus Christi, the Canal Zone—to mention only a few ships and a few home bases. We thought the service turnout was terrific. Here's hoping interest keeps building up among the military.

Leland Summers of York, Neb., is one modeler who doesn't let anything get him down. Summers has been building planes for 13 years; he had a nice Stinson entered in the rubber-powered scale event and brought a number of other ships along, too. Polio hit him at the age of 3, but it couldn't keep him down and now he gets around at meets by means of a slick tricycle that's designed to give him maximum freedom in winding and releasing models. At home Leland uses a motor scooter to good advantage. His sister Reta acted as his mechanic at the meet.

A highlight of the general assembly which preceded the presentation of awards was the appearance of 17-year-old Eugene Stiles of Alameda, Calif., who recently broke the world's record (and we do mean the *official world's record*) for speed models over a 100-kilometer course. Stiles flew a model designed and built by ex-National champ Henry Struck and powered by an Atwood Triumph for an average speed of 81 mph. This upped the previous record held by a Russian by 20 mph.

This was a free-flight performance in which Stiles flew Struck's model (that's permissible under Federation Aeronautique Internationale rules) on a straight line course, in opposite directions within a 30-minute period. Against wind the model did 66 mph, down wind it went 94 mph, giving the 81 average. The record was established through the cooperation and aid of the U. S. Navy, the Plymouth Motor Corp., the National Aeronautic Association and the A.M.A.

World-record holder Stiles (America's first in many years) did right well for himself at the Nationals taking a 3rd in Class D U-control speed and an 8th in Class C speed. That averages out to two 5½th's, we think, and we'd like to see any contestant from behind the Iron Curtain better that performance!

One of the most interested spectators at the Nationals was Bob Phelps of Washington, D.C., the executive vice-president of N.A.A. Bob learned plenty about modeling in quick time by helping out on the free-flight processing table. Then he put in a stint on one of the retrieving trucks and discovered a couple of farm boys were hiding "lost" models under a haystack. He brought back a truckload of missing ships and was successful in putting a stop to the hijacking operation.

Among the half-dozen Navy P.I.O. men acting as official observers at the meet was Lt. Joe Schuh of the Akron Naval Air Station. Lt. Schuh was the public information officer who last year handled many of the arrangements for the Wakefield contest. At Olathe he was pressed into service as camera toter for the Pan American photographic team. It is our understanding that the international airline had a com-

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plete motion picture record made of the meet—let us hope the film will be available to model and aviation groups over the country.

A number of flying wings put in an appearance for the U-control stunt events. One entrant referred to his creations as part of a "slap-dab" series. Turned out he kept moving his stabs up nearer the wings until they became a part of the wing and were slap-dab on the lifting surface. We got a chuckle from one stunt job that had 3 holes in the side of the fuselage (à la Buick) and was named the Dyna Flop.

The "rebel" states were well represented by a number of contestants who wore the Confederate flag on their backs. What with the foreigners from Texas and the die-hards from the South the Nationals took on an "international" aspect.

Lou Andrews of Trixter fame had a bad break when the wing tips of his Rumpler Taube washed out just as he was completing a near-perfect stunt score in the U-control flying scale event. We expect to hear more from this model when Lou strengthens the wing. Chuck Hollinger also had his entry bite the dust when one of his lines broke. Just can't keep spectators from walking on the wires. Another heart-breaking crack-up came during the indoor events when Hank Cole's beautifully constructed cabin job was demolished during the wind-up.

Jose G. Velmonte, a rabid model fan from the Philippines, was a welcome observer at the meet. He was compiling a full account to be sent back to the active model clubs in the P.I. Velmonte was particularly impressed by the radio-control flying and the scale model entries. He reports lots of club and contest activity in the Islands.

"San Antonio Rose" was the moniker Charles Mullins gave to his big 850-square-inch Glo-Hornet powered stunt job. Ship featured stab right up next to the wing. During official flying the outboard wing half snapped off and Charlie kept the craft in the air while hopping the snow fence around the U-control runway so he could land the remains in the grass after the tank ran out. To Mullins goes the special calisthenics award of the year.

Val Sherrard, former president of the Mid-States Model Aeronautical Association came out to the meet to lend a hand for a few hours and found himself pressed into service as the full time announcer at the control-line site. Val did a magnificent job and had some high class help from Johnny Clemens on the last day just as the Sherrard voice started to go. The public address system was the finest we ever encountered; Art Carroll who mastermind it and Ray Arden who had Micro-Bilt engines sponsor it deserve a world of thanks.

The PAA-Load contest was given a novel slant when a number of contestants carried aloft small first-flight "covers" (regular airmail letters addressed to President Truman and other notables) under the supervision of Paul Aiken, second assistant Postmaster General from Washington, D. C., who is in charge of airmail service. After soaring over the air base, the tiny letters were retrieved by a regular post office truck and taken to the Olathe office to be dispatched by regular airmail. This was the first instance that models have been employed to "carry the mail."

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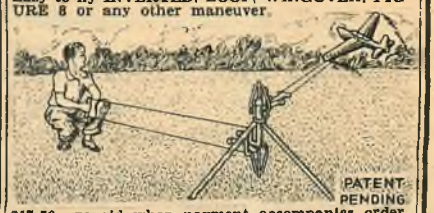

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Air Briefs

Lightplane Revolution

A plane that may revolutionize private flying—that can take off or land on a tennis court and fly as slow as 27 mph—has been developed by two Massachusetts college professors. It is the Helioplane, built by Dr. Lynn Bollinger of Harvard and Prof. Otto Koppen of M.I.T., and first flown last spring. Between 10 and 25 Helio planes will be built for service testing, with the Helio Corporation buying components from other manufacturers and having them assembled. The company plans to concentrate on research and development and eventually will license existing manufacturers to build its planes.

The Helioplane, so named because it combines the advantages of the helicopter and present lightplane, is conventional in appearance, except for an extra-large propeller and outsize flaps. It can fly with perfect control at 27 mph, whereas present lightplanes cannot safely go much below 50. It can land at 17 mph and stop in 16 yards, and can take off in 30 yards, in both cases only a fifth of the space needed by other lightplanes.

The Helioplane will not be on the market for at least a year, but its development will be closely watched.

Noiseless Makers

Along with being slow and safe, the new Helioplane is said to be relatively silent. It uses mechanical devices to reduce prop noise and a patented "hush box" to cut down exhaust noise. But silence doesn't have to wait on the Helioplane. Things are being done about it right now. The Luscombe Company recently began installing stainless steel mufflers as standard equipment on its entire line of planes, the first company to do so. TEMCO has announced two new soundproofing kits for field installation on the Swift. The kits include a muffler assembly and a sound deadening and sealing assembly adaptable to all cabin-type Swifts.

Highest 'Copter

The official world's altitude record for helicopters has been pushed up to 21,220 feet, more than 2,000 feet higher than the previous record which was set two years ago. Highest flying 'copter is the same Sikorsky S-52-1 that recently set a helicopter maximum speed record of 129.6 mph.

Safety Plus

After we cited figures to show the relative safety of air travel over the past five years (2.02 fatalities per 100,000,000 passenger miles for the airlines; 2.65 for automobiles), the National Safety Council released newer figures that are even more impressive. In 1948 the airline accident rate was only 1.3 per 100,000,000 passenger miles, to about 2.3 for private autos. Twenty-seven U. S. airlines completed the year without a fatality, flying a total of more than 4,000,000,000,000 passenger miles. One, Hawaiian Airlines, finished 19 years of safe flying; another, Colonial, 18 years.

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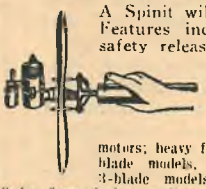

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CAP Newsletter

(Continued from page 31)

the airport. Mops, paint brushes and that magical lubricant called "elbow grease" transformed bare space into one of the finest CAP facilities in the old Bay State. To be added shortly will be an elaborate athletic field complete with swimming pool, hobby shop and recreation hall.

The open house was a complete and diversified program that brought out the entire community as well as folks from miles around. A competition of gas-powered model airplanes brought International Champion Lou Andrews to the city to demonstrate his model craft. Cadet drill teams displayed their abilities, and formations of Navy, AF and National Guard planes buzzed the airport and flew in maneuvers.

Headquarters Operations

How much do you know about your National Civil Air Patrol Headquarters at Bolling Air Force Base, Washington, D. C.?

To help you understand how your National Headquarters functions, Air Trails will bring you each month a description of the staff sections and how they function. Clip these articles and put them on your bulletin board.

This month we present A-1 of National Headquarters, the administrative and financial section of CAP. Under the supervision of Lt. Col. Carl W. Adams, Asst. Chief of Staff and formerly executive officer at Tempelhof Airdrome in Berlin, A-1 controls all military personnel and finances of the CAP. The section is made up of one officer and seven enlisted men, two master sergeants, two technical sergeants, two staff sergeants and one "buck" sergeant.

The duties and responsibilities of A-1 are to formulate policies and supervise the execution of administrative arrangements concerning the military and civilian personnel of CAP. In practice, however, the civilians come under supervision of the Adjutant and A-1 busies itself only with the military.

A-1 plans for the supervision, procurement, assignment, classification, pay, demotions, promotions, transfers, retirement, discharge and replacement of all military personnel. A-1 also advises the Commanding General on problems of morale.

Among the manifold responsibilities of A-1 are to coordinate activities of other staff sections of National Headquarters; originate and supervise personnel regulations concerning members of CAP Wings; prepare the budget and okay bills; and find suitable replacements for Wing Liaison USAF officers whose terms of duty are expiring.

Another staff section of National Headquarters is the Adjutant's section, in charge of Capt. Jerome H. Keating, who is, in effect, Headquarters Commandant. Capt. Keating as National Adjutant of CAP handles all civilian personnel in National Headquarters and reports directly to Col. James W. Thomson, Chief of Staff.

Capt. Keating maintains a four-man staff, a sergeant-major, a technical sergeant and two "buck" sergeants. In a sense, Capt. Keating is the Commanding General's "straw boss" in Headquarters operations.

Specifically the Adjutant's duties are to coordinate staff operations at Na-

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Eberhart Pens Credo

What does the Civil Air Patrol mean to *you*, as a Member or Cadet? Lt. Ralph W. Eberhart, Wing PIO of the Indiana Civil Air Patrol has written what he calls a "Concordat" to express his feelings, as follows:

"We—all of us—are the CAP.

"As we appear before you—either in person or through these words—know that we are proud!

"Proud of our name, the Civil Air Patrol; proud of our record, a record of going down to sea in airborne ships; proud of our niche in the Air Force family, Auxiliary to the U. S. Air Force; yes, we, all of us, of the CAP, are proud.

"Look, mister, look! We are the CAP. We clerks, we business men, we lawyers, we young men and women, we doctors, chicken raisers, housewives, mechanics, laborers, from every walk of life.

"We left quietly under orders, it had never been done before; we could not talk, from our homes to defend our homes, in our own ships; we who fly, we—the CAP.

"Mister, did *you* ever hunt a German sub, in a single-engine landplane, one hundred long miles from sight of land, one hundred short feet from angry seas? Then you were never really lonesome.

"We did forty-two million miles of lonesome sweat, as many as twenty thousand miles in a single day, when all other aircraft were grounded. We flew! We—the CAP.

"That was our part of the job. That was our mission. That was our assignment, our great cause. Spotting forest fires, working with the Red Cross in flood or tornado, towing targets for anti-aircraft, tracking for searchlights, catching spies or saboteurs, policing the Mexican border. We did this.

"And then—Home!"

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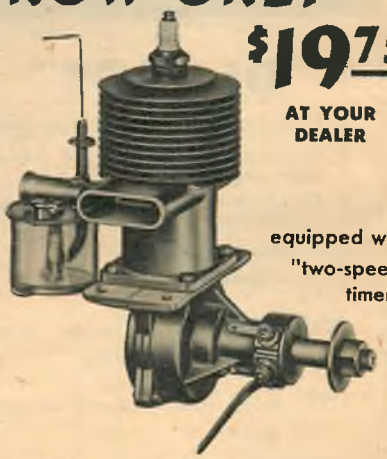

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(Continued from page 30)

after noon are disappointed to find a virtually empty field and no activity.

The contest committee, therefore, decided this year to make the meet more attractive to both the public and the contestants by putting on a military air show greater in scope than before, and by setting up several classes of competition at least one of which would have definite spectator interest.

Three categories were finally established: Class 1—Distance in straight line or distance to pilot-designated goal. Class 2—Distance, with return to point of departure. (This was either to a goal designated by the Contest Board with return to Elmira or one or more circuits around a triangular course). Class 3—Speed. (This could be combined with Class 2 events, or be a speed dash to a goal designated by the Contest Board). The Board determined the "set task" for the day during the pilot meeting in the morning.

The Contest opened with an address by Admiral John D. Price, vice-chief of Naval Operations, who personally arranged for the Navy's famous aerial exhibition team "The Blue Angels" to put on a show at Harris Hill July 2, 3 and 4. Led by Commander "Dusty" Rhodes, famous Navy ace, the four Grumman Bearcats put on a thrilling display of close formation aerobatics which ended in a dog fight with a yellow SNJ trainer, during which a dummy with a parachute was bailed out. An unscheduled thrill was furnished on July 4, when the dummy's chute fouled in the trainer's rudder, partially ripping it off the fin. "Beetle-bomb," as the SNJ was nicknamed, made a safe landing at the Chemung County Airport.

The best flight on the opening day was made by Paul MacCready, Jr., when he flew his Orlik sailplane 140 miles, which put him in the lead for the '49 championship title.

July 3 was announced a Class 2 day with a goal flight to Cortland, N. Y., airport, where the contestants were to circle in order to be identified and return to Harris Hill. Points were to be awarded for distance and speed, with bonus for completion of task. But the weather played a trick on the soaring pilots and the only contestant who got close to Elmira on the return trip from Cortland was E. J. Reeves, president of the Soaring Society of America, flying his brand new Schweizer 1-23 sailplane. Reeves landed at Newfield, having covered 25 of the 48 miles between Cortland and Elmira.

July 4 was another "set task" day with a speed dash to Tri-City Airport, Binghamton, N. Y., 50 miles from Harris Hill. A freak squall blew up around 11 A.M. which surprised even the unfailing meteorologist Barney Wiggins, and it prevented a number of pilots from reaching the goal. A fast flight by Francis B. Compton, Eastern Airline Captain of Miami, flying in his converted single-place Laister-Kauffmann sailplane "Osprey," put him in the lead over MacCready—but he retained it only until the next day, losing it to Paul when the latter flew 208 miles from Elmira to Breton Woods, N. J.

Second best flight of the day was made by Bill Coverdale, of Chattanooga, Tenn., who landed his Minimoa sail-

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plane at Bethlehem, Pa., a distance of 138 miles. Richard J. Comey, Jr., general manager of the Soaring Society of America, in a Schweizer 1-21 sailplane, flew 91 miles to Daleville, Pa.

The only foreign participant at the Nationals this year was José Ortner of Buenos Aires, Argentina, that country's leading soaring pilot. Joe could not bring his own sailplane from South America and had to depend for his flights on a borrowed Schweizer TG-2 sailplane. Despite the handicaps of an unfamilar craft and an unfamiliar topography (in Argentina all his flights are made over the flat pampas country), he made out remarkably well. On July 4 he flew 41 miles to Liberty, Pa. On July 7, a task day for flights to Buffalo, a distance of 110 miles, he covered 85 miles of the course to land at Varysburg.

Exceptionally good soaring weather on Friday, July 8, made possible distance flights of over 100 miles. Taking off at noon from Harris Hill, Paul MacCready, Jr., brought his Orlik sailplane down for a landing 185 miles away at DeKalb Junction, near Ogdensburg, N. Y. Richard Comey climbed into second place with a flight of 168 miles to East Greenbush, near Albany. Bill Coverdale, holding third, landed at Duanesburg, N. Y., airport after a flight of 149 miles. Other top performers of the day were Howard Burr, 108 miles to Utica, N. Y.; Joe Ortner, 110 miles to Richland, N. Y.; Stanley Smith of Tonawanda, N. Y., in a Lawrence sailplane, 129 miles to Fort Plains, N. Y.; E. J. Reeves, 96 miles to Oswego, N. Y.; Francis B. Compton, 88 miles to Bear Creek, Pa.; Harland McHenry of Sayre, Pa., 94-mile goal flight to Syracuse, N. Y.; Emil A. Lehecka of Long Island City, N. Y., 94 miles to Syracuse, N. Y.; and Kimball K. Scribner of Flushing, N. Y., Pan American Airways master pilot, who landed his Schweizer 1-23, especially built for violent aerobatics, at Tunkhannock, Pa., 64 miles distant.

Scribner reached an altitude of 11,000 feet inside the clouds. He had previously put on a breathtaking acrobatic show at Harris Hill during which he rolled the 1-23 while still on tow and upon releasing did a couple of outside loops, ending the show with a buzz job in an inverted position reaching a speed of over 160 mph.

Bad weather prevented contest activities on July 9. The next day no flights were made for championship points, but a speed dash to the Blue

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Swan Airport, Sayre, Pa., for the Beechcraft Award was announced. Winner of the event was Kimball Scribner who covered the distance of 20 miles in 24 minutes at an average speed of 49.8 mph. Second-place winner was Paul MacCready, Jr., and third was Stanley W. Smith.

Attracting a great deal of attention on Harris Hill was Ted Nelson's powered sailplane "The Humming Bird" (Air Trails, Sept., 1949). Nelson and his chief engineer, Harry Perl, demonstrated the ship every day by making power take-offs and on reaching a 1,000-ft. altitude retracting the engine and demonstrating the soaring capabilities of this very fine machine. The Humming Bird is an excellent sailplane. Time and again, carrying two people, it would soar with the best. There is no doubt that Nelson's claim of a sinking speed of 3 ft. per second and glide angle of 20-to-1 is correct. As a power plane it has quite a short take-off, for this type of craft, and a good climb. The small engine, weighing only 50 lbs. dry, develops 34 hp at 4,500 rpm, seems free of all bugs, and starts remarkably easily—no mean achievement for a two-cycle power plant. Being a two-cycle engine, the propeller always stops in vertical position, ready for retraction.

Probably one of the most unusual utilizations of a glider took place on July 4 when Paul Schweizer took up artist Hubert Rogers in a 2-22 glider over Harris Hill for sketches of the site. From the "roughs," pencilled by Rogers during the flight, he made the final painting which appears on the opening pages of this article.

Last day of the contest saw a number of distinguished visitors at Harris Hill, among whom were Secretary of the Air Force W. Stuart Symington and his son James, who took a ride in a glider with Contest Director Paul Schweizer. Bill Odom, who flew from Hawaii to New York, landed on the Hill with his famous Beechcraft Bonanza "Waikiki Beach" to present the Beechcraft award that night at the banquet.

Ten thousand spectators watched the thrilling exhibition of the famous Air Force stunt team "The Acrojets" who put on a hair-raising exhibition of formation stunting at 500 mph with four Lockheed F-80's.

The latest AF glider, Chase YG-18, was towed aloft by a Fairchild Packet and a snatch pickup of a Waco G-15 cargo glider with a Douglas C-47 closed the military show.

Other activities included the election of officers of the Soaring Society of America. E. J. Reeves of Dallas, Texas, was reelected for the third consecutive time. A joint meeting of the Institute of the Aeronautical Sciences and the Soaring Society of America was held, during which papers were read on aircraft design, sailplane characteristics, meteorology, and soaring abroad. Chairman of the meeting was Dr. August Raspet, in charge of the sailplane project of Mississippi State College.

Main speaker at the awards banquet was Secretary of the Air Force W. Stuart Symington, who paid a tribute to the Soaring Society of America for the part it played in the history of American aviation. "The history of World War II," he said, "contains ample evidence that the Soaring Society of America served this nation well in the

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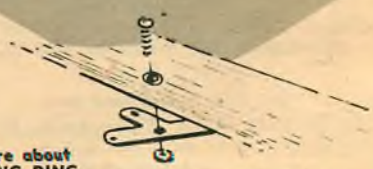

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war just passed and the nation knows that it can count on you again, should future need arise." Symington paid tribute to two members of the Soaring Society who played an important role in the Air Force Glider Program—the late Lewin B. Barringer and Richard C. duPont.

For amassing the greatest number of points and thus earning the title of National Soaring Champion, Paul MacCready, Jr., was awarded the Richard C. duPont Memorial Trophy. MacCready also received a check for $150 for his flight over Trenton, N. J., on the way to Breton Woods. This prize was to be donated by Michael Stroukoff, president of Chase Aircraft Corp., for a landing at Trenton. Inasmuch as no one reached this goal, Mr. Stroukoff decided to award it to MacCready who at least flew over it.

The Air Trails prize, a Minerva chronograph for fastest goal flight, was presented by Alexis Dawydoff to Paul Bikle of Dayton Soaring Society for his flight to Tri-City Airport, Binghamton, N. Y.

The Warren E. Eaton Memorial Trophy for the most outstanding contribution to the art, sport, and science of soaring was awarded to Harland Ross and Bob Simmons of Bishop, Calif., for their work on the Standing Wave. In their absence the Trophy was given to Richard Johnson of California who will transmit it to Ross and Simons.

The Donald W. Douglas Trophy for the championship glider club went to the Airhoppers Gliding & Soaring Club of New York, and was presented by Capt. Ralph Barnaby to Emil A. Lehecka, vice-president of the club.

Bendix Aviation Corp. Distance Award, 1st prize, went to Paul MacCready, Jr., for his 208-mile flight, while second prize went to Richard J. Comey, and third to William H. Coverdale Jr.

Stroukoff Aerobatic Award of $50 was earned by Kimball Scribner.

The Northrop Youth Award for best performance by pilots under the age of 21 went to Betsy Woodward of California who reached an altitude of 9,940 feet, and to Alan Schimdt of the Philadelphia Glider Council for his 54-mile flight from Wurtsboro, N. Y., to Westchester County Airport, Rye, N. Y. Miss Woodward and Schmidt each received a check for $100. Other prizes and awards were:

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3rd ($50) ..... Stanley Smith
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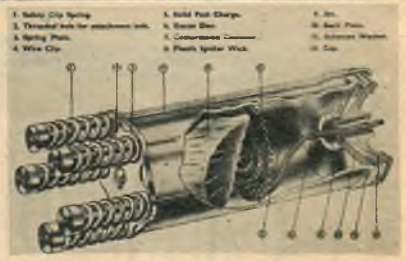

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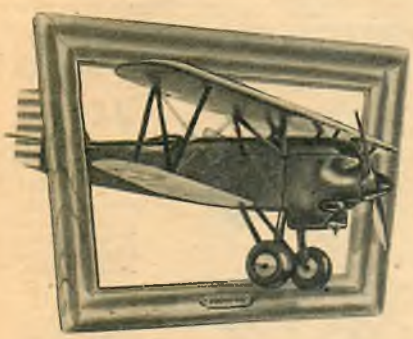

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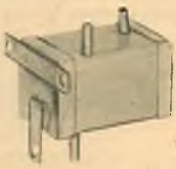

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Finland Wins the Wakefield

(*Continued from page 60*)

capable of many more turns than 1,200, he played it safe, for he had just picked up the rubber on his arrival in England. He used a return gear system and had practically no slack. By modern standards his model seemed under-powered —14 strands of 3/16" on 16" dia., 21" pitch. However, this low power may have been his salvation. The model had only to use its inherent stability to take care of the wind, as the prop did not have too much torque. We watched several of his take-offs and flights and they were neat and steady. As you may know, the model was ten years old. He had decided that his later models were not as reliable, and he didn't want to take chances on them.

Here's the story of the 1949 Wakefield.

The American team was met in England by Percy Chorley, the Academy of Model Aeronautic's coordinator in London, and the writer—who had arrived a few days earlier. It should be mentioned here that Percy rendered the American team invaluable service in arranging all the details of their stay in England. London is crowded with tourists and finding a room in a hotel is practically impossible. But the Americans were well billeted and had nothing to worry about except flying.

We met other teams on Friday afternoon at Londonderry House, over coffee, tea and cake. We also found that 19 countries were entered with a total of 90 contestants—largest entry ever recorded for the Wakefield.

After five we set out for Cranfield Aerodrome, about 50 miles northwest of London. Accommodations there turned out to be quite a surprise. We had expected dormitory facilities. Instead, everyone had a private room with running hot and cold water. We were also highly pleased with the meals. To appreciate the food, you really had to have spent a few days in London hunting a place to eat and have been through a couple of breakfasts there (where your choice was between spaghetti, beans on toast, or kippered herring). The Senate of the Aeronautical College, whose facilities were put at our disposal, should be commended for their efforts and hospitality.

Some of the boys made test flights early Saturday morning, and in the afternoon—the day before the contest. Few models made out-of-sight flights and everyone felt that he had a good chance. Models were checked in the afternoon and returned to the contestants—which seemed to us like a good idea.

The weather? It was simply "gorgeous" for months before we came and during the days we were in London. One need only look at flight times made during the British eliminations. When I got up for breakfast at 8:30 on Sunday, however, I was surprised to see how dark the room was. A quick look showed dark overcast and a trace of rain. It should not have happened on this special day, but it did. The "gorgeous" weather England had had for months turned over night into wind and rain.

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When we arrived at the flying site we found that every country had an individual tent, a welcome shelter on a day like this. With the drizzle continuing, Joe Boyle brought out his rain preparation, zinc oxide, and the boys began to coat their models with it to keep them from becoming soaked when exposed.

Before eleven o'clock the drizzle stopped and the wind began to clear the skies, and we started looking forward to a fine day. Little did we realize that the wind would freshen up to 20 and 30 mph by the time the flying started.

Since the Americans were seventeenth on the starting list, we had a chance to observe how the other boys managed the high and gusty wind. It was murder—especially since they had to abide by the wing tip and prop rule. The stabilizer would keep on bouncing the ship into wind-flow, tending to tear the model out of control. Those with retracting single-wheel designs had fun all their own. Just when the model was set, a gust would come along and the strut would pop up. Then another session to get the model set would start. After the model was finally ready, the wind might have changed its direction. By now the sole aim of the flyer was to get rid of the plane and get it over with. The result was that the early starters had an unusual number of take-off crack-ups. Later on, friends would indicate the wind direction with handkerchiefs or dry grass. As a matter of fact, the contest developed into one of take-off ability.

Edward Naudzius was the first American to take off. He did us proud by getting his ship up in a powerful climb. He clocked 155.6 and his model cleared the mile-long field.

Andy Petersen was next but he had hard luck. Wind got under one of the wings and hurled the model back to the ground. This happened in less than 5 seconds so Andy didn't lose the round. However, he almost washed out his

AIR TRAILS
ADVERTISERS' INDEX

November, 1949

A

Academy of Model Aeronautics..... 80
AC Spark Plug Co.—Div. General Motors Corp..... 89
Acme Model Eng. Co..... 94
Aero Spark..... 88
Aeronautical University..... 70
Alan Sales..... 10
All American Model Motor Exchange... 92
A & M Super Products (Kap-Pak)..... 76
American Handicrafts Co., Inc..... 95
American Hobby Specialties, Inc..... 75
America's Hobby Center.....6, 7, 8, 9
Theo. Audel & Co..... 85

B

Berkeley Models, Inc..... 98
Boyle-Midway, Inc..... 88
Brayton Flying Service, Inc..... 66
Broad Ripple Hobby Supply..... 95

C

Cal-Aero Technical Institute 5
California Flyers..... 17
Campus Industries, Inc..... 97
Cavacraft Model Planes..... 77
Charlotte Hobby Center..... 95
John E. Clemens..... 84
Cleveland Model & Supply Co..... 59
Comet Model Hobby Craft, Inc.....19, 87
Consolidated Model Engineering Co.... 91
Corr's Nation Hobby Supply..... 88
L. M. Cox Mfg. Co..... 88
Crosby's Hobby Centre..... 95

D

Dallas Aviation School..... 91
D.D.C. Model Mfg. Co..... 90
deBolt Model Engineering Co..... 69
Denver Hobby Shop..... 90
Development Engineering Co..... 97
Douglas Model Dist..... 66
Dumas Products..... 62
Duro-Matic Products Co..... 61
Dyna-Model Products Co..... 90

E

Edwards' Hobbies..... 95
Embry-Riddle School of Aviation..... 22
Enterprise Model Aircraft & Supply Co. 73

F

Federal Supply Co..... 88
Fischer's Hobby Service..... 95
Florida Aviation Academy..... 97
Forster Brothers 89
Tex. Foster..... 95
Francisco Laboratories..... 79
Froom Mfg. Co..... 81
The Fun Shop..... 95

G

Good's Hobby Shop..... 95
Gotham Hobby Corp..... 86
Paul K. Guillow..... 91

H

H & P Plastic Products Corp..... 74
Haines Hobby House..... 85
Harley-Davidson Motor Co..... 12
Hawk Model Co..... 86
Hay's Hobby House 95
Henry Engineering Co..... 76
Herkimer Tool & Model Works, Inc....55, 92
Highway Hobby House..... 95
Hobby Haven Reg'd. 86
Hobby Land..... 95
Holden's Model Craft Hobbies..... 95

I

Indiana Technical College..... 97
International Models..... 78

J

JAMCO (Jamaica Co.) Hobbies, Inc... 64
Jarvis Battery & Electric Co..... 86
Junior Aeronautical Supply Co..... 76
Joy Products..... 87

K

Kasiner Hobbies..... 91
K & B Mfg. Co..... 77

L

Lehr-O-Plane Wholesale Distributors... 94
Lincoln Hobby Supply..... 93

M

Master Modelcraft.....87, 89, 92, 97
Meckling's Hobby Center..... 95
Menkin's Specialty Shop..... 95
Mercury Model Airplane Co..... 74
Micro-Bilt Corp..... 65
Midwest Model Supply..... 64
Miniature Aircraft Corp..... 81
Miniature Motors..... 21
Minnesota Engine Works, Inc..... 92
Modelcraft Distributors, Inc..... 10
Model Craft Hobbies, Ltd..... 86
Model Shipways..... 86
Mohawk Engineering Co. 68
Monogram Models..... 71
Moro Craft..... 93

N

National Model Distributors..... 78
Northeast Hobby Center..... 95
Northeast Hobby Distributors..... 88
Northrop Aeronautical Institute..... 15

O

O'Brien Guncraft..... 89
Ohlsson & Rice.....Back Cover, 13

P

P. & C. Model Mfg. Co..... 79
Park Hobby Center..... 95
D. C. Parker..... 89
Parks College of St. Louis University.. 3
Phil's Radio Service and Hobby Shop.. 95
Pico Model Co..... 95
Henry E. Piltz..... 90
Polk's Model Craft Hobbies, Inc..... 93

Q

Quaker City Hobby Shops, Inc..... 95

R

Radio Control Headquarters..... 85
Ranger Products 70
Rever Products 90
Bob Roberts..... 67

S

Scientific Model Airplane Co..... 80
Scranton Hobby Center..... 83
Seal Sure Chemical Products..... 72
Serio Model Products..... 92
Ships & Aircraft..... 11
The Ship's Bell..... 79
Sky Hobby, Inc..... 97
Soaring Society of America..... 93
Sparton School of Aeronautics...2nd Cover
J. Spokane & Co., Inc..... 91
Bob Steele Hobby Center..... 95
Sterling Models..... 83
Streed Electric Co..... 87
Virgel and Marie Swift Model Shop.... 95

T

Taylor Hobbycraft 95
Testor Chemical Co.....3rd Cover, 57
Thomas Associates..... 94
Sol Toubin's Model Store..... 95
Trost Model Airplane & Hobbies..... 94
Trymo..... 90

V

Vic's Hobby Supply..... 95

W

Walthour & Hood Co..... 86
R. S. Wentworth..... 91
Westchester Hobbies, Inc..... 11
Whitfield Paper Works, Inc..... 92

Y

Young Bros., Inc..... 93

While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this November, 1949, index.

model and had to spend his lunch time repairing it. Because of lack of testing opportunity he had to make his tests as official flights. Boyle finished the American flights before lunch.

In the afternoon Ed Lidgard started the American tries. During the previous night he had increased his power by shortening his motor and he really had something powerful. He climbed almost straight up and had good altitude by the time his motor stopped. However, during change-over from right power to left glide his model developed into a spin. It is hard to say what caused it, but over the same area many models had lost considerable altitude.

Robert Hanford had a try and ran into a mess of take-off troubles which used up his first chance.

Warren Fletcher was the last man up on the first round. His ship had a good start and a smart climb into the wind. (By now the entire team was helping the take-off man, to assure into-the-wind launching.) His flight time was 295.8—exceptionally high under the wind conditions, and it remained the highest time of the meet until after six o'clock when a New Zealand model built by J. St. Clair Woodley and proxied by W. E. Dallaway marked up 308. But what really made Fletcher's flight interesting for the Americans—and especially Warren—was the fact that his model was lost!

On the second round, however, the Americans picked up considerably. At about five or so, word came that Fletcher's model had been found. The retrieving service, incidentally, was superb. There were lads scattered all over the field and well into a nearby village. Models kept turning up all day, and most contestants were able to complete their quota of flights.

Although Fletcher's second flight was only 127 seconds, the model landed just outside the field and was returned in time for the last flight. As the score stood then, he didn't have to do anything exceptional to stay on top. But now you know what happened.

Joe Boyle of Hampton, Va., had the longest flight of the second round, 269.3. But his model was lost and even the excellent retrieving service failed to locate it.

As you may note, Naudzius was our steady boy. He used the same model which won the eliminations under similar high wind conditions.

I WOULD like to describe the flights made by R. B. Chesterton, British winner of the 1948 Wakefield trophy. He did very well at the British eliminations, as did other members of his team. In fact, they had to come through the local eliminations to be eligible for the finals in which one hundred participated. Chesterton had the top score in the finals with all three flights over five minutes—the perfect score. However, this was done during the "gorgeous" weather period. Perhaps this fact explains why England's standing was lower than expected.

But back to Chesterton: He got off well in the first flight and the spectators gave him a good round of applause. His flight of 151.2 was above the average for the time of the day he was flying. The wind tumbled his machine and wrecked the tail assembly, so that on his second try the model was definitely out of trim and instead of

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flying in the characteristic large Jaguar circles, it developed into power stalls. That killed his chances of getting up into smoother air and the model landed in the downdraft area after 109.8. Although this time may seem short, he was still in the running. Take-off looked fine on the third attempt and the Jaguar climbed very steeply, then gradually developed a left bank which steeped into a power dive. All this happened in 9 seconds.

All through the contest it was any man's cup. The day was full of "ifs" and "buts." F. Holland of Great Britain lost his model on the second flight. It was returned just in time to wind it up and fly it. However, he may have been a bit over eager. Something or other happened with the result that his free-wheeling stop on the prop shaft was torn loose and he had no way of connecting his power to the prop. A bit of time to change props might have altered the picture. Our own boy, Boyle, would have had a chance if his model had been returned in time.

It was during the last three-quarters of an hour before 7:30 that the boys put up some exceptional times. The wind smoothed a bit and there were gaps of comparative mildness, if you can call 10 mph mild. Besides better flying conditions the boys had by then a clearer idea of where they stood. Since so many could win, you can imagine the "do or smash" spirit that prevailed at this time. I wonder how many are now wishing that they had tried their luck with a few more turns.

The rest of the story can only be appreciated by those who were there—those little things that you remember for a long time, things that make it worthwhile trying to place on the Wakefield team year after year, and that send us home with the determination to start building a new ship the moment we step on home soil.

The meet was officially closed Monday night with the presentation of the Cup to the winner and mementos to all participants and managers. We left Cranfield Aerodrome Tuesday morning with the sky full of clouds and the wind still blowing at 20 to 30 mph.

In behalf of the American team and myself, I would like to give sincere thanks to the Society of Model Aeronautical Engineers and its staff for taking such good care of us during our stay in England. We are especially grateful to Mr. Houlberg, SMAE president, and Eddie Cosh, C. S. Rushbrooke, Henry Nichols, and many more. Also, many thanks go to the "Aeromodeller" and its managing director, D. A. Russell, for the excellent send-off dinner.

Just what next year will bring as far as Wakefield is concerned, no one knows. But we are working under a strong temptation to forget about putting a down payment on the house, and instead making reservations for Finland in 1950.

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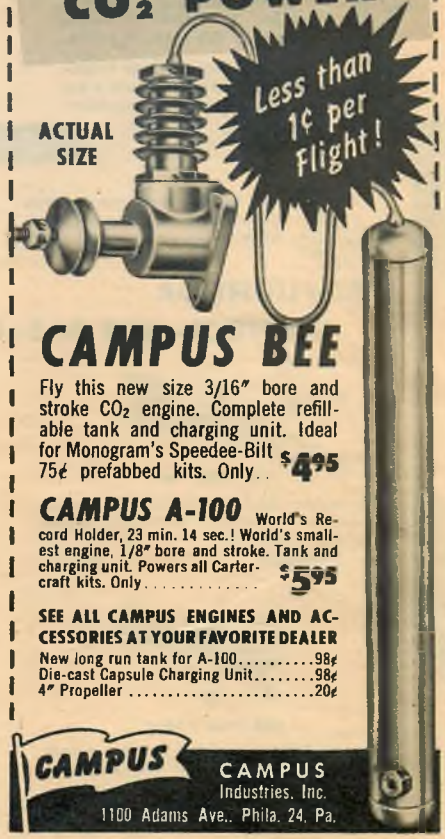

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The Last Word

Mighty Nice Folks: Speaking of all those who made our work at the Elmira National Soaring contest and the Olathe Model Nationals so pleasant. Special thanks to H. F. Sheffield of Ridgewood, N. J., who loaned us his Stinson Station Wagon for the Elizabeth, N. J.-Olathe and Elizabeth-Elmira hops. In addition to being a long-time pilot, "Shef" is now getting deeply into radio-control models. Shot below shows Lt.

John Burton, USN, from Washington, D. C., giving the Sheffield-AT Stinson the once over with chief test pilot, operations manager, modeler, photographer Cal Smith.

Then, we are greatly indebted to John Kisinger and Tom Poor for the use of a brand new Hudson from their Olathe Motor Co. for the week of the model Nationals. That's John (left) and Tom affixing an Air Trails press car sign to the windshield.

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Quaker City objections arose from a circular in which we opined the next annual convention and trade show of the model industry would probably go to Chicago next January. Philadelphia citizens write to remind us that suggested locations (on which action had not been taken by the Model Industry Association at the time we headed pressward) were New York, Chicago *and* Philadelphia.

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So Much for This Month, What About Next Issue? "Burnelli Fights Back" is a behind-the-scenes account of how Vincent Burnelli stuck to his long-time contention that airfoil-shaped fuselages for transport planes are [illegible] The history [illegible] detailed through Doug [illegible] Progress drawings, is something you won't want to miss. You get a $12-seat view of the National Air Races through a pictorial and word report.

The Civil Air Patrol activites get special coverage in the CAP Newsletter. Model plane enthusiasts will find the Plymouth International contest reported in article and picture form. The old Stinson Detroiter is a special model featured for free-flight or control-line flying. An updated report on team racing by Les McBrayer shows how this new U-control activity has caught on.

Lots more—but that should whet your appetite. —THE EDITORS