

# AIR TRAILS<sup>®</sup>

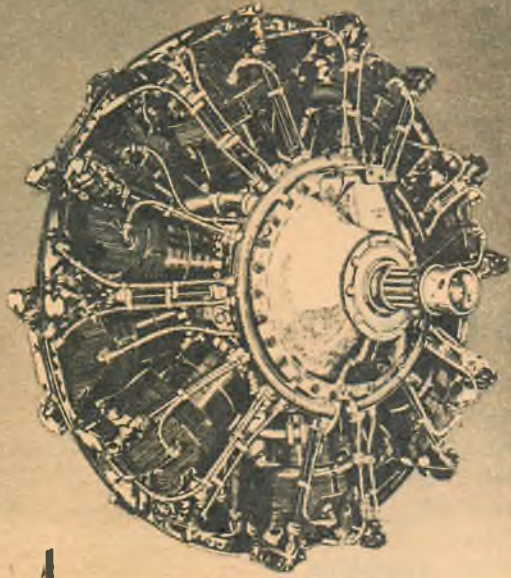
JULY 1949

25 CENTS

*Pictorial*



*More* C.A.P. NEWS



# 2000 HORSEPOWER ... READY

A 2000 horsepower engine hangs from a chain hoist ready to replace an engine on an airliner now landing. Within a few minutes the change will be complete and the airliner will be on its way. This procedure is only one of many phases of scientific maintenance now saving the flying hours and dollars necessary for economical and efficient operations.

The aviation industry today demands that young men have the educational background to recognize the many problems of air transportation and cope with them efficiently. The graduate of Parks College of Aeronautical Technology of St. Louis University will obtain this background. His Bachelor of Science degree in Aeronautics in Aircraft Maintenance Engineering, Aeronautical Engineering or Air Transportation will bring ready acceptance for his abilities in the Aviation Industry.

After three years of schooling at Parks College of Aeronautical Technology, students will be graduated with a Bachelor of Science degree in Aeronautics from St. Louis University, the oldest University West of the Mississippi.

Dances, musical organizations, sports, fraternities . . . all these provide relaxation for off-study hours. As Parks College is a school of St. Louis University, all Parks students may take part in any of the activities of the University. All of this contributes to the type of college life every student desires.

Parks College offers students participation in the Air ROTC Program. Upon completion of training, the student is commissioned a Second Lieutenant in the Air Force Reserve.



## ENTRANCE REQUIREMENTS

Applicants must be graduates from a 4-year high school and must have ranked in the upper two-thirds of their graduating class.

It is necessary that the applicant present high school credit in not less than 3 units in English, 2½ units of Mathematics (Algebra, Geometry and Trigonometry), and 1 unit in Physics. Entrance examination is required.

# PARKS COLLEGE OF AERONAUTICAL TECHNOLOGY OF ST. LOUIS UNIVERSITY



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PARKS COLLEGE OF AERONAUTICAL TECHNOLOGY  
279 Cahokia Road, East St. Louis, Illinois

I am interested in:

- Air Transportation
- Aeronautical Engineering
- Aircraft Maintenance Engineering

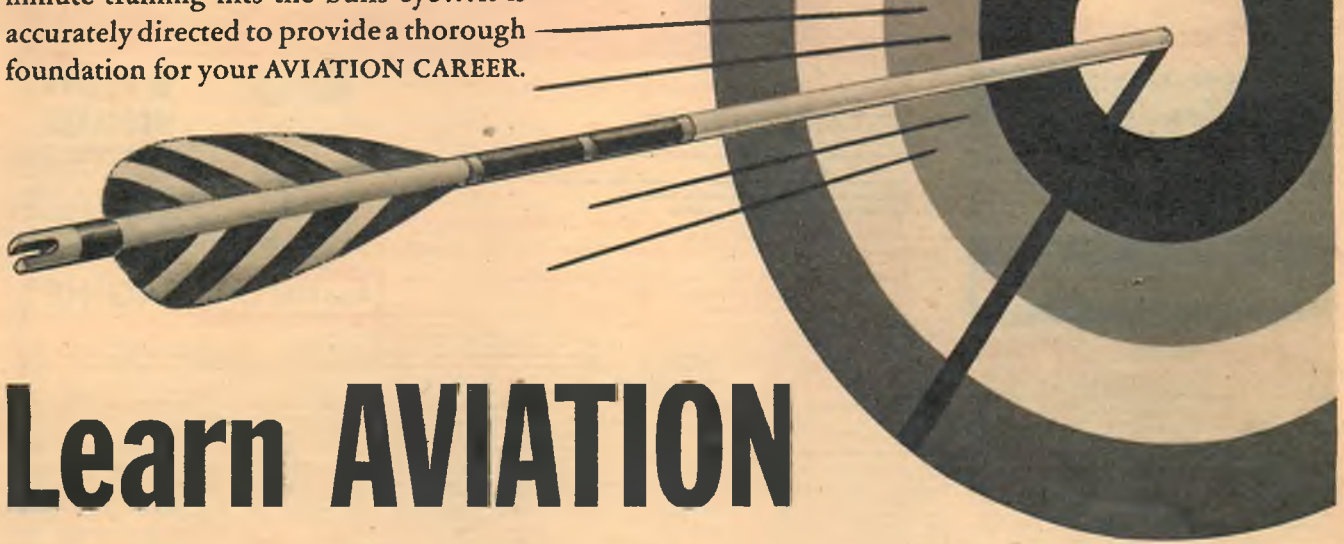
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Name..... Age.....  
Address..... Zone.....  
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# THE SHOT THAT COUNTS

Cal-Aero Technical Institute's up-to-the-minute training hits the bulls-eye...it is accurately directed to provide a thorough foundation for your AVIATION CAREER.



# Learn AVIATION

AN ESSENTIAL INDUSTRY IN PEACE OR WAR

CAL-AERO SPECIALIZES IN

## AERONAUTICAL ENGINEERING • MASTER AVIATION MECHANICS

(NO FLYING INVOLVED)

**MAXIMUM TRAINING IN MINIMUM TIME . . .** with "live" modern training equipment, including helicopters, jets, rockets, wind tunnel and other aircraft devices. The courses are intensive, complete, interesting and highly concentrated, with non-essentials eliminated. Established in 1929, "Cal-Aero" is one of the oldest and largest aeronautical schools in the world. It is located on its own huge airport, Grand Central Air Terminal in the Hollywood-Los Angeles Metropolitan Area, in Glendale, in the heart of Southern California's giant Aircraft Industry. Over 7000 successful civilian graduates in addition to 26,000 pilots and 7,500 mechanics trained for the British and U. S. Army Air Forces.



**CAL-AERO STUDENTS ACTUALLY DESIGN ORIGINAL MIDGET JET PLANE. IN ADDITION THEY HAVE DEVELOPED AND ARE BUILDING ITS JET POWER PLANT.**

This actual development of a forerunner of possible future jet powered personal planes, is only a part of our modern streamlined training program that prepares "Cal-Aero" graduates to step directly into the best pay jobs—"Cal-Aero" graduates are in demand.

**CAL-AERO'S JET AND ROCKET LABORATORY IS ONE OF THE MOST COMPLETE IN THE COUNTRY**

**CAL-AERO IS APPROVED BY—** National Council of Technical Schools, Civil Aeronautics Administration, California Board of Education, U. S. Dept. of Justice, Immigration and Naturalization Service and the Veterans Administration. In addition Cal-Aero's Engineering Curriculum is approved by Engineers Council for Professional Development.

**WE HAVE THE EXPERIENCE—THERE IS NO SUBSTITUTE FOR IT** Board and Room available right here on Grand Central Airport—transportation is no problem, this saves you money.

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TECHNICAL INSTITUTE

GRAND CENTRAL AIR TERMINAL  
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APPROVED FOR  
VETERANS

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**AT-7**



# SPECIAL! BARGAIN!

## Complete FLYING OUTFITS

WORTH TWICE OUR COMBINATION PRICE!

**IT ISN'T OFTEN** that you get the chance to buy, at less than half price, with your own choice of 24 well-known **FACTORY ASSEMBLED** ignition or g/o engine. Everything carries the famous America's Hobby Center guarantee.

Even if you are a beginner, you won't have trouble building and flying any of these flying outfits, full-size plans of an easy-to-build and fly plane, every accessory you will need, complete instructions, etc., etc. If you are an old-timer at building and

flying model planes we don't have to tell you what these bargain outfits are really worth.

Thousands of these complete units have already been sold. They have met with enthusiastic reception because they represent a value unheard of before in the modeling field. The price is so low that we cannot sell to dealers. You really save from \$10 to \$12 by buying the complete, packaged unit - everything is engineered by experts for a perfect flying combination.

*Your own choice* of 24 well-known, factory assembled engines, all guaranteed by the manufacturer and America's Hobby Center.

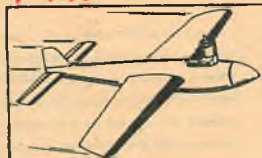
**YOUR CHOICE \$10.00**

**YOUR CHOICE \$12.50**

**YOUR CHOICE \$13.50**

**YOUR CHOICE \$15.00**

**\$8.50**



TRAIL BLAZER Model Plane

TRAIL BLAZER Model Plane with carved lower fuselage-half, fully formed aluminum upper half. Balsa sheet wing, no tissue used. Balsa tail surfaces, plywood engine mount. Schematic drawings with step-by-step plans. Rubber wheels, detail paint schemes.

**Plus** not 75, not 100 but **ALL ACCESSORIES** including:

• PLUS: Correct size finished propeller • 3-way plug wrench • Presto Engine starter with handle and cord • Speed indicator tables • Log Book • Motor cover • Spark or g/o plug with gasket • Complete engine instructions • 24 page Gas Engine Theory Manual • Engine adjustment chart • Metal fuel tank and gas line • Metal Battery box • Wilco Quality Coil • 12" Hi-tension lead wire and clips • 18" insulated ignition wire • Ignition slide switch • Coil holder and mount • Everlast condenser • SAE # 70 Oil • 4 ignition wiring lugs • Spark plug gauge set • 2 plane identification tags • 72 insignias • 72 page book on Control-liners, How to build and fly them • Cement • Sandpaper • "Pro" all-metal knife and blade • Metal bellcrank with bolt, nut and washer • Elevator horn • Elevator hinges • Lead-in wire • Push-rod wire • U-Control handle • 100 feet U-Control stainless steel wire and reel • Membership in Modelcrafters of America • 24 page giant catalog • Postage • Packing • Insurance.

Ignition parts not needed with g/o engines not included.

YOU WON'T GET OTHER BARGAINS LIKE THESE!

### Complete RACE CAR OUTFITS

COMPLETE OUTFIT AT ABOUT 2/3RDS THE ACTUAL COST IF ITEMS WERE PURCHASED SEPARATELY!!

Everyone is racing the new Thimble-drome race car, the little 10" model that cannot be beaten for realism, craftsmanship, speed and lasting pleasure. Speeds from 15 to 70 miles per hour. You can race this car in a schoolyard or any small, level space.



THIMBLE-DROME RACE CAR

*Your own choice*

with **BUZZ ENGINE** only \$10.50

with **OHLSSON ENGINE** only \$15.50

**Plus all accessories**

Your choice of two well-known engines, ready to run • G/o plug for new, ignitionless engine operation • Metal fuel tank • Neoprene gas line • Complete engine instructions • Battery connecting wire • Mounting bolts • Mounting nuts • Motor cover • Pamphlet on g/o fuels • Plug wrench • Thimble-drome race car complete includes rubber race tires • Complete instructions for installing and running engine • Motor mounting bracket • Fly-wheel • Yoke • Tether cord • Membership in Modelcrafters of America • Postage • Packing • Insurance • Full A. H. C. Guarantee • 24 Page Giant Catalog.

Everything you will need except a 1 1/2 volt battery, fuel and a small file for cutting away parts of the body to install the engine. In addition, mounting and motor shaft holes must be drilled.

#### TWO MARVELOUS CATALOGS (# 19)

The best hobby model catalogues ever issued. One is free, the other costs you 10c. For a tiny dime you get a giant two-color 24 page (each 8 1/2" x 11") book listing thousands of items. Hundreds of illustrations, special articles on plane and engine selection, flying, wiring, trouble-shooting, control line tips, launching, etc., etc. Gas, rubber and display planes, gliders, cars, boats, accessories, supplies, etc., etc.

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Dept. TC-79 156 West 22nd Street, New York 11, New York

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### Scoop! Complete PEE-WEE FLYING OUTFITS

These are the new pint-size g/o engines that are so tiny (1 to 1 1/2 ounces) but develop plenty of power for free-flight or U-control flying.

*Your own choice*

of 3 of the best, all fully guaranteed:

**\$7.95**

**\$9.95**

**\$9.95**

**Plus** your choice of planes:

All planes prefabricated, easy to build and fly

Powerhouse free-flight

Circle King 30" U-control

Puddle Jumper 19" U-control

**Plus all accessories**

You get the same accessories listed in our other flying outfits (excluding those not needed in a g/o engine, of course). Everything needed to build and fly planes shown! except fuel and starting battery.

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### Complete CO-2 FLYING OUTFITS

For the younger set, their Fathers and big brothers, there's nothing like the thrill of CO2 flying. You don't need much space for free-flights (100 feet square or windless days), and less than a twenty foot circle for tethered flying.

**THERE'S NOTHING TO LEARN AND PLENTY OF FUN!**

BUZZ CO2 Engine

**\$6.45**



O.K. CO2 Engine

**\$6.95**



CAMPUS A-100

**\$7.95**



**Plus all accessories**

CO2 Engine, ready to run • CO2 Capsule holder • 2 CO2 Capsules • Correct propeller • Complete Engine instructions • Complete suitable airplane • Landing gear • Wheel • Complete plane plans • Cement (if needed) • Flight log • Insignia • Identification tags • Packing • Postage • Insurance • Membership in Modelcrafters of America • 24 pg. Giant model Catalog • Full A.H.C. Guarantee.

**NOTHING ELSE TO BUY!!**

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Send remittance in full (we prepay packing and insurance) or send \$1 and we ship collect C. O. D. same day for balance. Address your order to us at your nearest branch office.

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 ESTABLISHED 1931  
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America's Hobby Center is the country's LARGEST motor and gas model headquarters "where your interests come first"

1949 LARGEST MODEL & SUPPLY FIRM IN AMERICA

# NOW!! BUZZ GLO ENGINES . . . . .

.....have been produced by popular demand! BUZZ Engines have been used in every type of model flying, U-Control, Free-Flight, Radio Control, and now the same high-quality engines are available as Glo-Engines. These engines are the simple, dependable BUZZ engines that in the past year have been time and field-tested by over 20,000 modelers! You'll enjoy more hours of flying per dollar investment with BUZZ Engines!



*Rising Costs...*

have been offset by the tremendous demand for BUZZ ENGINES. That's the only reason we are able to continue to offer you these Ignition BUZZ Engines at only \$4.95! Note we have been able to reduce the price of the "60"..... It, too, is only \$4.95!

## The BUZZ 19, 29 & 35



EACH \$4.95

Thousands of modelers all over the world have depended on these ruggedly-constructed, easy to start BUZZ A, B & C Engines. They've changed engines on the field and have flown the same model in all three events, not once, but repeatedly, contest after contest. Four screws to change and your plane flies in a different class...the crankcase mounting flanges and screw holes are identical in all three engines.

## Use the BUZZ "60"

for the same dependable, easy starting smooth power that thousands of modelers have been enjoying since this engine was first offered a year ago. This is the engine that powered field-command radio sets during the last war.

Use the Buzz 60 for your large Class D Free-Flight or Control-line model. Each engine is factory tested and will provide you with smooth, dependable power that will avoid crack-ups and disappointments in contest or sport flying.



NOW! \$4.95

Some facts about BUZZ Engines.....

**SPECIFICATIONS:**

	19	29	35	60	CO-2
Diapl.	.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"	5 1/2"
Weight	4	4 1/2	4 1/2	9	5

The BUZZ Engines are manufactured by a company that for years has been the world's largest maker of automobile replacement pistons and other precision gasoline engine parts. Thousands of gas engines and parts were made during the war by this company for the War Dept. for use in walkie-talkies, field generating sets, etc., etc. Since the war, thousands of gas engines have been made for scooters, lawn mowers and other industrial uses. When we say unconditionally that the BUZZ engine is well engineered and well constructed will give you plenty of good service, this is no idle boast, but a fact!

## AT NO INCREASE IN PRICE! BUZZ IGNITION ENGINES

**Order today!** HOW TO ORDER: Send remittance in full (we prepay packing and insure) or send \$1 and we ship collect C. O. D. same day for balance. Address your order to us at your nearest branch office.

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A GENERATION OF FAIR DEALING GUARANTEES YOUR SATISFACTION

## GLO BUZZ 19, 29 & 35

\$4.95 EACH

The interchangeable Class A, B and C Buzz Engines in glo-plug operation! The BUZZ 19, 29 & 35 Engines lead the field in low-cost FLYING FUN! Thousands of modelers all over the world depend on the rugged construction and easy starting of BUZZ Engines every day for their FUN in FLYING. Can be interchanged on the field so you can fly the same model in Class A, B or C.....the crankcase mounting holes are identical.



NOW!  
 EACH ENGINE ON THIS PAGE.....

## GLO BUZZ "60" \$4.95



.....for large Class D models in Free-Flight or U-Control or as a simple way to avoid ignition interference for radio-controlled flying! Wherever you have a lot of airplanes to haul skyward, use this power-packed "60". It's the engine that generated power for the field-command radio sets with the Army during the last war. A flip will start it and you'll have continuous, smooth power for every flight.

## THE "GLO-WEE" NEW!

Just as we go to press, the factory superintendent advises us that the new GLO-WEE will be ready for shipment by the time you read this. Completely field tested, this new "Pee-Wee" six engine (.045 displ.) is ready to haul any of the new 18 to 24 inch span models skyward. Its steel piston and cylinder are power-packed. You'll have many hours of fun with this economical engine.....not only is the original price low, but the fuel consumption is practically microscopic! You can fly to your heart's content on a can of gas fuel.

## BUZZ CO2



ONLY \$4.95

The BUZZ CO-2 Engine is the first 3/16" bore 2 stroke engine on the market. Thousands have been sold and thousands of modelers have enjoyed the dependable power and economical operation of this intermediate-size engine. The refillable tank allows five flights per CO-2 Cartridge..... less than 2c per flight! Engine is complete with refillable tank connected to engine and a separate tank-charging unit that is die-cast.

## ACCESSORY UNITS For IGNITION Engines...only \$2.49

Spark Plug & Gasket & Valve Quality Coil & 10-Tension Lead Wire & End Clips & Sparking Compound & Correct Size Insulated Propeller & Ignition Switch Switch & Battery Wire Wrench & 4-Wire Plug & 10-Counting Balls & Hairs & Propeller Engine Shorter, with card & handle & Spark Plug Gasket Set & Meter Cover & 24 Page Gas Engine, The Handbook & Log Book & 24 Page Engine Theory Manual & Fuel Formulas & Metal Fuel Tank & Metal Fuel Tank & Gas Line & Metal Fuel Tank & Insulated Ignition Wire

## For GLO Engines...only \$1.49

Glo Plug & Gasket & Ignition Advance Wire & Correct Size Propeller & 4-Wire Plug Wrench & Mounting Ball & Hairs & Propeller Engine Shorter, with card & handle & Meter Cover & Log Book & 24 Page Engine Theory Manual & Fuel Formulas & Metal Fuel Tank & Gas Line

## For CO-2 Engines...65c

Contact Propeller & Meter Cover & Lubricating Oil & CO2 Cartridges

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Berkeley's

## COBRA "45"



The COBRA "45" is the only low-priced Class "C" engine. Quality built with lapped piston plus ring. For both glow plug and ignition operation.

**NEW "49" MODEL**  
1/2" shorter — More rugged and powerful. Less plug and tank. **\$12.50**

**"1948" MODEL**  
Takes 3/8" plug. (Limited quantity) **\$9.95**

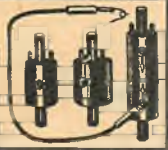
**SPECIFICATIONS:**

Mfd. by Air-O Model.  
Displ. .45 cu. in.  
Over 1/2" Horsepower.  
17,000 R.P.M.  
Weighs 7 1/2 ounces.

SOLD THRU  
**BERKELEY**  
DEALERS & DISTRIBUTORS

## SENSATIONAL SAVINGS!! MODELECTRIC HI-EFF. COILS

Sparked Ignition's	World's Speed Record
Precision 1 1/2 oz	Now \$1.75
Master 1 1/2 oz	Now 2.25
DeLuxe 1 3/4 oz	Now 2.50
Racer 1 3/4 oz	Now 2.50
Two Spark 2 3/4 oz	Now 3.95
Vib-Jet-3 V 3 oz with "LOCK-LEAD"	Now 6.50



### A \$15.00 Value Both for \$4.95



2 V. Booster Wet-Cell & 115 V. Home Charger. Save many dry Batt. costs. For GLO-PLUG. Higher volts means bright glow, easy start.

Order direct if unavailable  
**MODELECTRIC PRODUCTS CORP.**  
ASBURY PARK, N. J.

### For All Your Model Electrical Needs

Alligator Clips.....	\$.05
Ins. Allig. Clips.....	.10
HT Lead Plastic.....	.10
HT Lock-lead Pt.....	.15
Gas Line CV'r Ft.....	.10
Glo-Plg. Boost Ld.....	.49
Glo-Plg. Booster	
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Pop'd Twin Jack.....	.10
Pop'd Twin Jack.....	.25
Batt. Box all size.....	.40
Toggle Sw. SPST.....	.50
" " SPDT.....	.65
" " DPST.....	.85
" " DPDT.....	1.00
DPDT Sw. Cent-off.....	1.20
SPDT Sw. Cent-off.....	.85
Slide Switch.....	.20
6 HT Terminals.....	.10
Flux Solder Lugs.....	.25
Ins. Tip Plug.....	.20
Ins. Tip Jack.....	.20
Coil Mount.....	.15

# Showcase

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

### Wee One →

To go with the new small engines, Sterling Models (406 Vine St., Philadelphia, Pa.) has a class A and B stunt model of 24" wing span called the Maverick which sells for \$1. Ship is prefabricated and includes a complete hardware kit. Assembly time is said to be about 3 hours. Wing leading and trailing edges come ready-carved. Other parts die-cut.



### ←OK's Cub

A new small engine of .049 cu. in. displacement is the Cub produced by the Herkimer Tool & Model Works (Herkimer, N. Y.) to retail for \$5.95 with glow plug. Weighing 1 1/2 oz., the engine turns up 15,000 rpm with a 5 1/2" low-pitch prop. High power output, on a weight ratio basis is due, says HT&MW, to port design. For either radial or lug mounting.



### Carburetor →

Strobo-Streak racing carburetor made by Stanglin Engineering Co. (5423 Lindsley, Dallas, Texas) was used by designer Stanglin & Clem on their famous Whammy models (Air Trails, Jan. 1949). Fits McCoy 49, McCoy 29 standard backplate, and McCoy 29 with a "36" backplate. Retails for \$3.50. Firm says properly used carburetor adds 500-1,000 rpm.



## THIS IS THE SEASON FOR

# 25¢

## FINISHED LACQUERED PROPELLERS

SUPER SPEC AND PROPER PROF available for immediate shipment in the following sizes:

8-6	9-6	10-6	11-6
8-8	9-8	10-8	11-8

Model builders—There is no reason to pay more when the best sport and stunt props are available for only 25¢

HAVE YOUR DEALER WRITE TO



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DEPT. A, PHILADELPHIA 6, PA.

## The Best DOPE KIT Buy of the Year!



Here's the touch-up kit you've always wanted. Dope colors: silver, black, red, blue, yellow and white. PLUS fast-dry cement, clear dope, and two brushes!

**8 ONE-OUNCE BOTTLES** ONLY **\$1.00**  
**2 BRUSHES** IN HANDY KIT

Order your dope kit now! Cash or C. O. D. Our catalog of specials comes with it.

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## POWER BOAT MODEL'S CONSTRUCTION KITS

25" to 26" length ea. \$5.50



### Model of 25' Express Twin Electric Engines

Available at all Hobby stores are six beautiful construction kits of the Chris-Craft Cruiser 46', Owen's 42', Chris-Craft 25', Harbor's 40', Chris-Craft 20' and the new Vinyard 40' Cruiser.

Full size plans and all material needed available, also metal fittings and electric motors and drive units.

Write for illustrated literature.

**DUMAS PRODUCTS**  
2222 N. FARWELL MILWAUKEE 2, WIS.

# Showcase

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

## Always Cloning →

PDQ Products Co. (Tulip and Dauphin Sts., Philadelphia, Pa.) has new 28" wing span stunt model called the Flying Clown. Ship was designed by Matt Kania, well known contest flyer and winner. All parts are pre-fabricated, ready for assembly. Wing area is 200 sq. inches; ready-to-fly ship weighs 12 oz., has wing loading of 9 oz. This kit retails at \$1.95.



## ← Import Job

If you've been trying to get one of those English diesels, G. S. T. Hobbies (Box 885, Los Angeles 53, Calif.) has just the job. It's the Bee, a diesel of .061 cu. in. displacement which has disc induction, variable compression, twin transfers and ejector type exhaust ports. Height is 2½"; with spinner it weighs 2¾ oz. Clean design is feature. \$9.95.

## TD Fuel →

A special mixture to facilitate easy starting of the Thimble-Drome 15 and other high-rpm engines is the Thimble-Drome Fuel for racing cars and aircraft mixed by L. M. Cox Mfg. Co. (730 Poinsettia St., Santa Ana, Calif.). Sells for 75c a pint. Firm says fuel contains high percentage of the expensive chemicals needed for a high-performance product.



## NEW HOT-POINT Glow Plug



Latest addition to the Checkered Flag Line (Duro-Matic Products Co., Hollywood 38, Calif.) is their new stronger and smaller HOT-POINT wireless ignition Glow Plug. Field tested as stock equipment on 10,000 of the first 20,000 McCoy "19". With longer-lasting new type element wire. Enthusiastically recommended by field testers. Each plug protected by a plastic capsule in a Checkered Flag Carton. Sold by all hobby shops.

## BIG NEWS!

### NEW HOBBY SHOP OPENS IN MIDTOWN NEW YORK



The Ship's Bell, located at 50 East 34th Street near Madison Avenue, is now offering a full line of kits and supplies for airplanes, ships, trains and gas engines.

**LIGHTNING Jr.** is a model of the world famous Lightning class sailboat. Fastest sailing model of its size. The kit makes a model 18" long — 6¾" beam — 30¾" height. Custom made with 90 finished fittings.

KIT \$4.95 Add 25c postage

## THE SHIP'S BELL

50 EAST 34th ST. • NEW YORK 16, N. Y.  
MU. 6-2467 - JACK BROWN, Mgt.



**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"

**U. S. ARMY AIRCRAFT, 1908-1946**

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" . . .

The supplement explains new USAF designations, lists all released post-war models with new and old symbols. Modifications, cancellations. Forty new illustrations.

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Separate Supplement (If you have the Book): 35c

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With 1948 Supplement on the Post-War Navy PRICE: ONE DOLLAR POSTPAID

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Berkeley's

TEST - PROVEN

## "D-E AERO-TROL"

Featherweight RADIO CONTROL

"AERO-TROL", so light it can be used in Class "A" models, offers the optimum in compactness, dependability, and ruggedness. Unit is complete, factory tuned, ready to install.



**RECEIVER**  
1½" x 1¾" x 2¾"  
Wgt. 5 oz. 4.5 volts.  
oz. RK-61 tube in new circuit.  
Power: One pen cell and two hearing aid batteries. The flying weight: 4½ oz.

### ESCAPEMENT

Size: ¾" x 1" x 7"  
Wgt. 5 oz. 4½ volts.  
Self-neutralizing, rubber powered.



### TRANSMITTER

1½" x 2" x 4½"  
Wgt. 5 oz. Frequency 50-54 mc. (6 meter band). Range: 2.5 miles. Power 1½ and 135 volts. Complete finished dipole ant.

Complete - \$49.50 (Less Batteries)

NEW! Club Unit - \$29.50 (Receiver, Relay and Escapement only)

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# Showcase

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

### New Sportsman →

Success of the McCoy 19 has convinced Duro-Matic Products Co. (Hollywood 38, Calif.) of the need for a Class B McCoy in the popular-price sport flying field. New McCoy Sportsman 29 weighs 6 oz., has displacement of .295 cubic in. Bore is .764 in., stroke is .670 in. Rated horsepower is .46. Engine features 2 piston rings, aluminum fins. \$11.95.



### ← Little Fellow

Harold deBolt's smallest kit model to date is the "dmeco" Infantwagon which sells for \$1.75. This is a miniature version of deBolt's well known Stuntwagon. DeBolt Model Engineering Co. (Williamsville, N. Y.) reports the small ship will take any diesel, glow plug or CO<sub>2</sub> engine from .02 to .09 cu. in. displacement. Goes together fast; ship weighs 2¾ oz.



### Kasiner Clips →

Kasiner Hobbies (892 Clinton Ave., S., Rochester, N. Y.) has a new line of clips for control-line flying available in 4 sizes. These are for use with models powered by engines of .02 to .19, .20 to .29, .30 to .49 and .50 to .65 cubic inch displacement. Clips sell for 10c a pair. Can be opened from either end, will stand any pull tests and have low wind resistance.



### ← Another Era

Baby Era is smaller brother of the New Era, both manufactured by Enterprise Model Aircraft and Supply Co. (5107 Avenue D, Brooklyn, N. Y.) It's a completely prefabricated job for engines of .020 to .099 cu. in. displacement and retails for \$2.50. Wing span is 18 inches; length, 12 inches. For sport and stunt. Consists of 6 finished pieces.



### C-size Engine →

Available for both glow plug and ignition operation is the Cobra 45 manufactured by Air-O and sold through Berkeley Model Supplies (138 Greenpoint Ave., Brooklyn, N. Y.) Displacement is .45 cu. inches. Weight is 7½ oz. The 1948 model takes a ¾" plug and sells for \$9.95. The '49 version is ½" shorter and is more powerful. Retails for \$12.50.





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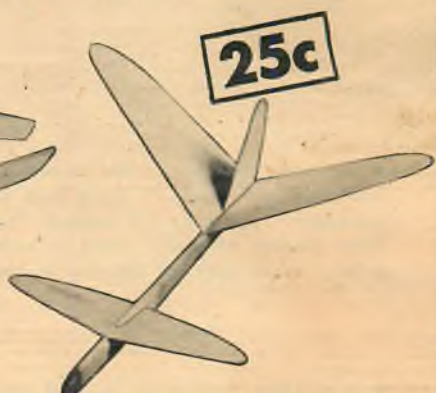
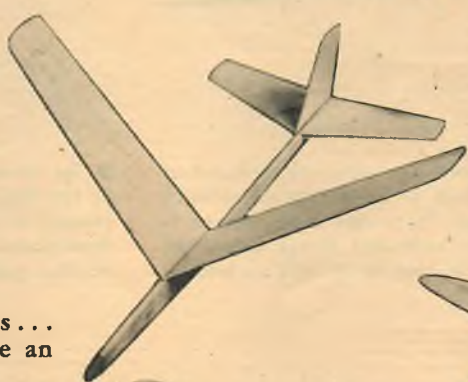


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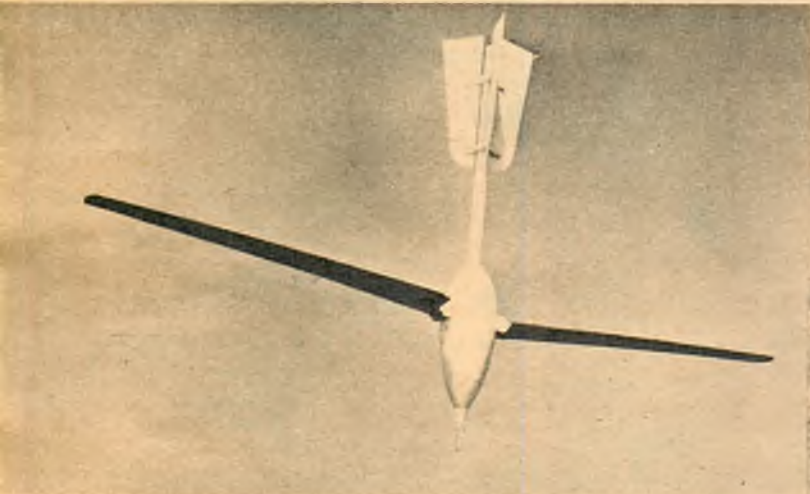
# DEVELOPMENT HIGHLIGHTS



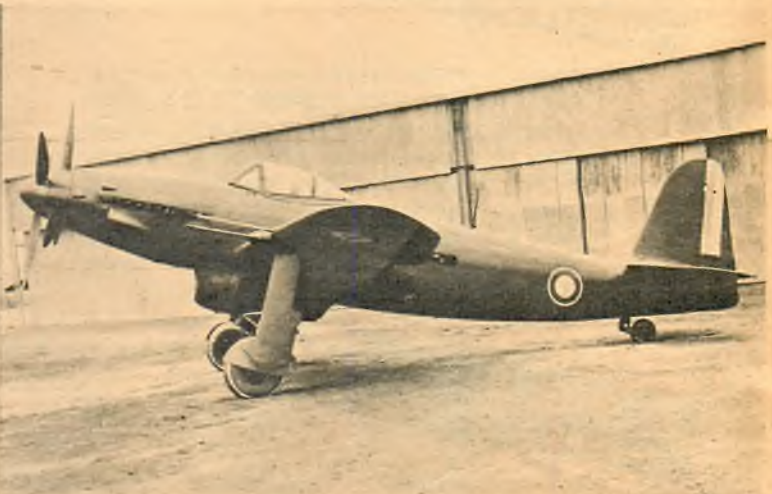
● SCAN 30, French light amphibian transport, is a copy of the Grumman Widgeon. Differs from its American sister in the use of two Mathis G & R 8-cylinder air-cooled engines developing 210 hp for take-off and having a normal rating of 170 hp. Performance of the aircraft is similar to that of the Widgeon.



● Prototype of the French airline transport, the Sude-Est 2010, the largest of kind built in France. Span 160 ft. Pressurized cabin will have seats for 84 or berths for 78 passengers. Has freight compartment under cabin floor. Gross weight of the plane is 150,000 lbs. Has four P & W engines, 3,500 hp each. Speed, 350 mph.



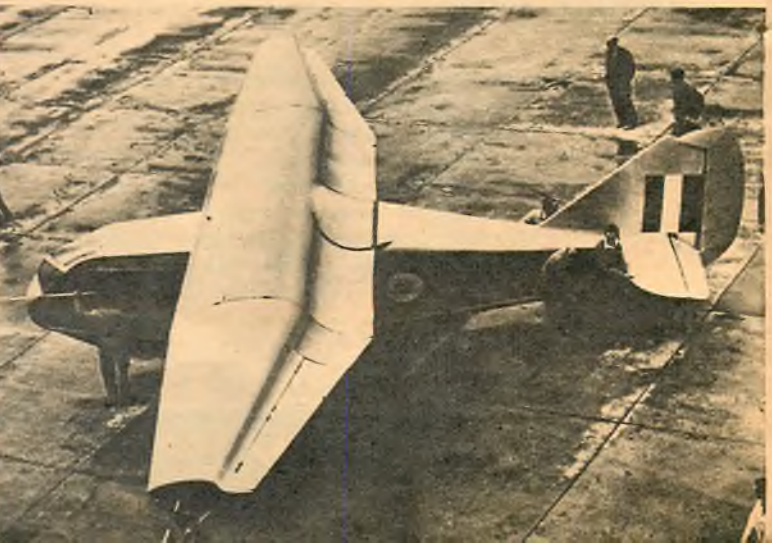
● Supersonic Parachute. This device was especially designed at General Electric plant to bring back to earth delicate research instruments carried by V-2 rockets. The rocket expels the chute which reaches supersonic speed in earthward plunge before the spinning vanes open up and slow it down to 27 mph on landing.



● The Arsenal VB 10, French single-seat fighter bomber. Powered by two Hispano-Suiza 12z liquid-cooled engines of 1,500 hp, each coupled in tandem fore and aft of cockpit, driving two coaxial three-bladed propellers. Span is 50' 10". Armament six 12.7-mm machine guns. Carries two 1,000-lb bombs externally under wings.

● Navy blimp landing on deck of aircraft carrier U.S.S. Sicily, during recent maneuvers in the Caribbean, to test anti-submarine warfare tactics. Using a carrier as its base the blimp can extend its range considerably by refueling at sea. One shown here refueled, took on food and fresh combat crews twice daily.

● A number of methods to control boundary layer of wing have been experimented with, for the purpose of increasing efficiency. Recently in Australia a radical wing was constructed for a De Havilland G-2 glider incorporating "Tadpole" airfoil. A centrifugal pump, driven by a Ford engine, provides suction for the wing.



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**BIG JOB** for engineers was inspection of completed 57-foot-high tail fin on Air Force's XC-99 Consolidated Vultee transport, world's largest land plane... an example of the interesting and varied duties performed by aeronautical engineers.



Models and contestants in one of the frequent meets held by Northrop Model Club. Through model building, students express the expanding knowledge of aircraft design and construction acquired during their aeronautical engineering training.



As a practical training project, Northrop engineering students developed this lightweight turbojet aircraft engine by adapting a fighter plane turbo-supercharger, the students themselves designing and building the combustion chamber, ducts, tail pipes, and electric controls.

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*Northrop* student engineers consult on dual control arrangement for student-designed and built private plane. Complete metal mock-up shown here was fabricated and assembled by students as part of practical training project.

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# Air Notes

## AVIATION TODAY AND TOMORROW

### Airlift Lesson

New attention has been focused on air cargo operations by the Berlin Airlift's dramatic demonstration of the past 10 months. Wartime C-47's and C-54's have done a big job, but they have also made it clear that a large-scale airborne army will require bigger, more efficient, and specially designed cargo planes. Some are on the drawing boards, a few in prototype stage, but most of them are still far in the future.

Convair's 400-passenger XC-99 is still flight-testing more than a year and a half after its initial flight . . . The Douglas C-124, a giant new cargo prototype, is due to fly for the first time next November. Public loading demonstrations have been held, showing how V-2 type rocket missiles, medium tanks, field guns, derricks, bulldozers and similar equipment can be loaded through a large nose entrance. The plane is built to carry 50,000 pounds . . . Fairchild is working on the XC-120 Pack-Plane, which will have detachable cargo pods that can double as trailers, field offices, hospital stations, cargo depots, when on the ground . . . But all this in some distant tomorrow.

For the immediate future, best possibilities are: more Douglas C-74's (12 are now in service); cargo versions of the DC-6 and Constellation; Boeing C-97 Stratofreighters (119 have been ordered but only 10 delivered). The difference such planes can make is demonstrated by the Connie C-121's which MATS put on transatlantic trips this spring. They can complete four round trips with 352 passengers in less time than a C-54 takes to make three trips with 180 persons. One C-97 on the airlift could carry as much in a day as three and a half C-54's.

### B-36 With Jets

Convair's 10-engine prototype B-36D has been flying since March, several months ahead of the original schedule. It has four jet engines slung in pairs in underwing pods located outboard of the normal six piston engines. In the prototype, jets are Allison J-35's, but production models will use GE J-47's. Pod nacelles will be built by Bell Aircraft. They'll be the same as those used by Boeing on the B-47 Stratojet.

On first test, the jet B-36's takeoff was shortened by about 1,500 feet. Other performance details were kept secret. It's hoped jets will increase speed and raise operating ceiling above 40,000 feet. At that level, B-36's have successfully evaded present Air Force fighters. Some observers are wondering, however, if the big bomber could also elude Navy fighters, which are built to different standards, powered for quick climb, and equipped with afterburners that give a double push in emergencies. Air Force may make tests to answer this query.

### Fighters for France

France has announced two new jet fighters of her own design—the SO-6020, a heavily armed, sweptwing plane powered by a French-built Nene; and the Dassault Company's Ouragan MD-450, which uses a Rolls Royce Nene. The MD-450 is considered by many French airmen to be the most promising jet fighter yet developed in France.

These two planes are among some 15 jet prototypes that have been built in France since the war. None are in production, however, so for the time being fighters will have to be imported. France has already bought some British de Havilland Vampires, and just recently an agreement has been completed whereby Vampires will be built in France.

### Planes of Tomorrow

First news of a new Air Force bomber and a new Navy fighter slipped out in the annual reports of the Glenn L. Martin and Douglas Companies. USAF confirmed Martin's development of the B-51 but gave no details. Douglas' report said design studies of a new high-performance combat fighter have been going forward and a contract with Navy BuAer provides for construction of a small number of test airplanes. Douglas also mentioned a new experimental attack bomber, probably the A2D, on which Navy has been keeping mum.

### British Forecasts

A British air authority predicts that advances in four fields will make 1949 a notable year for aviation in Great Britain. First, size. If everything goes right, the Bristol Brabazon, largest passenger-carrying landplane ever built, is scheduled to make its initial flight. Bristol's chief test pilot has visited the U. S. for indoctrination in handling heavy aircraft at Convair's Fort Worth plant. The 127-ton Brabazon is slightly larger than Convair's XC-99, transport version of the B-36. Two models of the Brabazon have been built. The first, with eight reciprocating engines, will fly this summer. Brabazon II, with turbo-props, will be ready early in 1951.

Weight saving by use of light metals should also see a crucial test in Britain this year. A small touring plane, the Planet "Satellite," has been built using magnesium, which is 40 percent less dense than aluminum. Structure will be much lighter than normal, allowing more useful load.

British hovering craft are also expected to make outstanding advances, along lines of the speedy Fairey Gyrodyne and the 24-passenger Cierva Air Horse.

Rate of climb will be stepped up in jet fighters. Twin-jet Gloster Meteor has already climbed 7½ miles in 7½ minutes.

### National Air Race Plans

Continuation of all the classic trophy races and the probability of more jet events are on the tentative schedule for the 1949 National Air Races to be held in Cleveland September 2-4. Reciprocating division of the Bendix will be flown, probably for the last time. Service planes will be invited to fly a jet division. The Thompson race course will be reduced from 300 miles to 225. Revival of a jet division is proposed, over a circular closed course of sufficient size to eliminate dangers. Tinnerman and Sohio will again sponsor races. Goodyear Trophy midget races will be flown as in 1948.

It is hoped the Navy or Air Force will again participate in both the Bendix J division and the Allison event. In addition, jet units of the Air National Guard may be invited to participate in a special inter-city event.

Builders of 190-cubic-inch planes for the Goodyear Trophy Race and other midget contests in 1949 must follow a new set of official specifications.

### Navy Atom Bombers?

The Navy is collecting operational data on the use of large multi-engine bombers on aircraft carriers, by tests with big Lockheed P2V Neptunes. The experiments are to pave the way for two new types of carrier-based heavy bombers, the North American AJ-1, with two piston engines and one jet; and a sweptwing multi-jet bomber still in preliminary design stages. P2V has not landed on carrier yet, but has made a number of takeoffs. On one, a 4,000-mile mission was flown, with a 10,000-pound bomb load dropped at the halfway point and landing made at a naval shore base.

### Important Missiles

That guided missiles play a major role in defense plans of both the Air Force and Navy is becoming increasingly clear from reports of research now in progress. Many new rockets are already being tested—the Army missile which went 250 miles into the air over White Sands recently; North American's needle-nosed NATIV missiles, test vehicles for aerodynamic research; and the Martin Company's new Viking rocket for Navy research in the ionosphere.

At present virtually every West Coast aircraft factory is at work on guided missiles of various sizes and types. Hughes is developing a supersonic missile, the JB-3, designed to attack aircraft and missiles in the air.

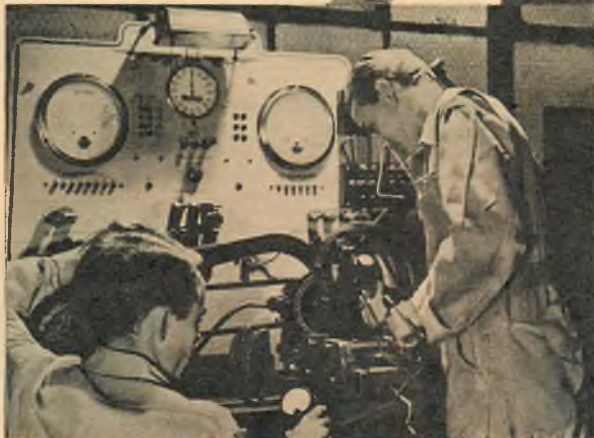
Both the U. S. and Russian navies are applying the missile carrying idea to another medium. From Point Mugu, California, specially equipped submarines move out to sea frequently to fire various types of missiles developed by Navy scientists.

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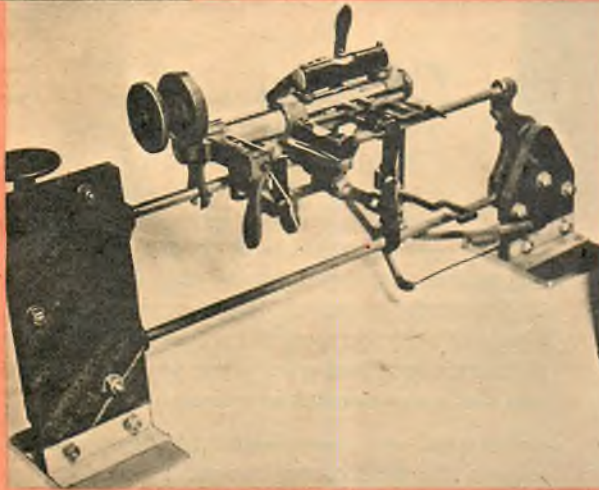
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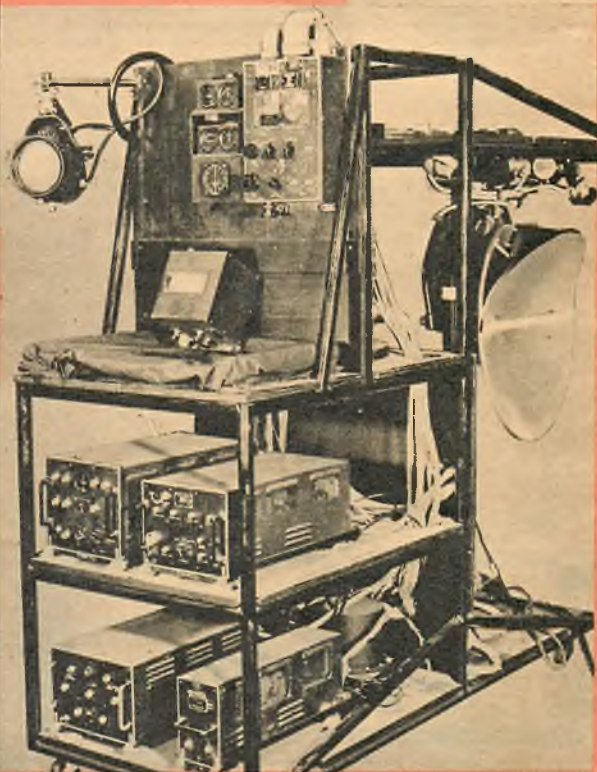
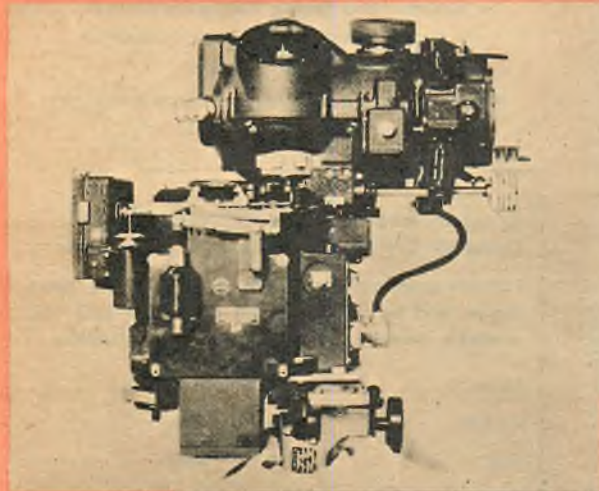
# 30 years of bombsights

From crude line-of-sight devices, bombsights kept pace with development of military aircraft and changing bombing tactics. Faster planes required more complex sighting mechanism to assure precision regardless of weather or human error. The answer—radar



● World War I sight, similar to that used for guns. A fairly high average of hits was made with 125-mph planes.

● Famous Norden sight. Highly accurate in daylight. Night bombing made it obsolete, and radar took over.



● This type (above), used in bombing of Japan, combines radar and optic sights. Target can be recognized miles away.



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# 4

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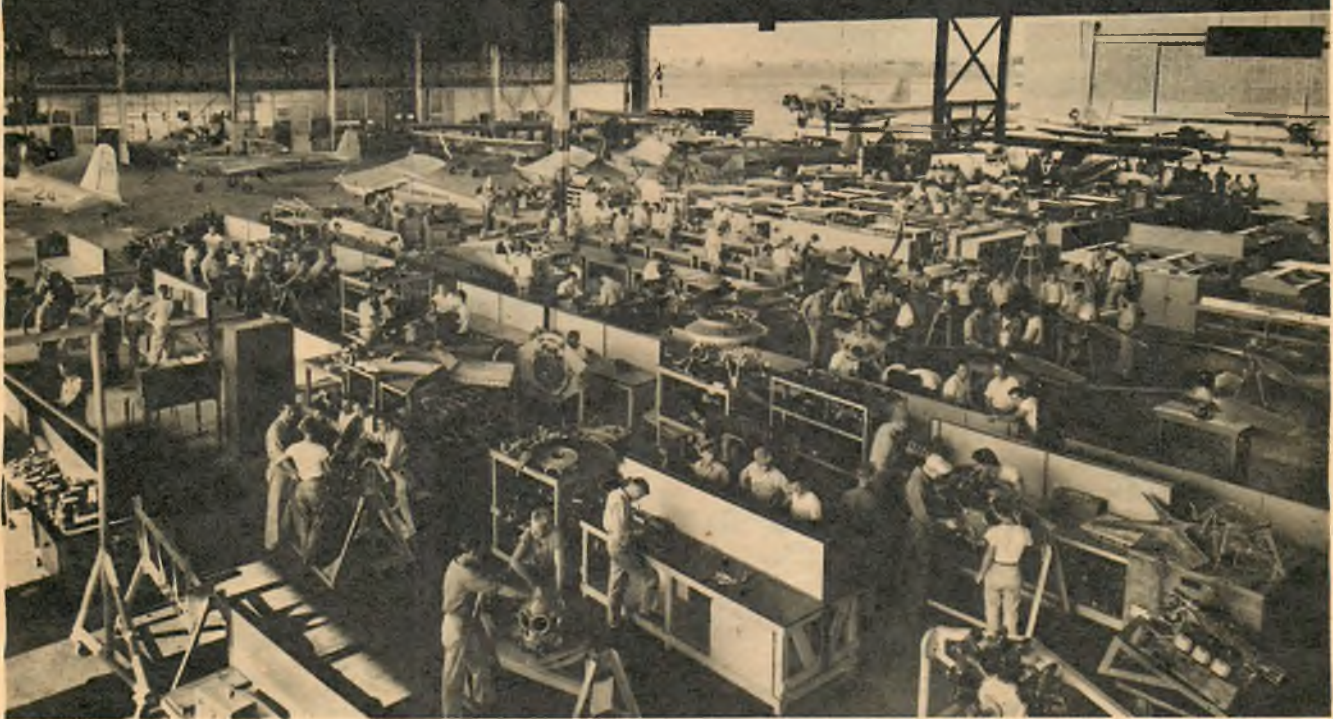
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# AIR TRAILS

JULY, 1949

THIS WINGED WORLD:

## Cliff Hangers



The old-time Saturday afternoon serials ("cliff hangers" to the trade) have nothing on West Coast gliding enthusiasts when they gather every weekend at Torrey Pines, 12 miles south of San Diego. From their plateau field, members of the Associated Glider Clubs of Southern California soar along the cliffs above the blue Pacific. Here are held the West Coast championship meets.



THIS WINGED WORLD:  
**Cliff Hangers**

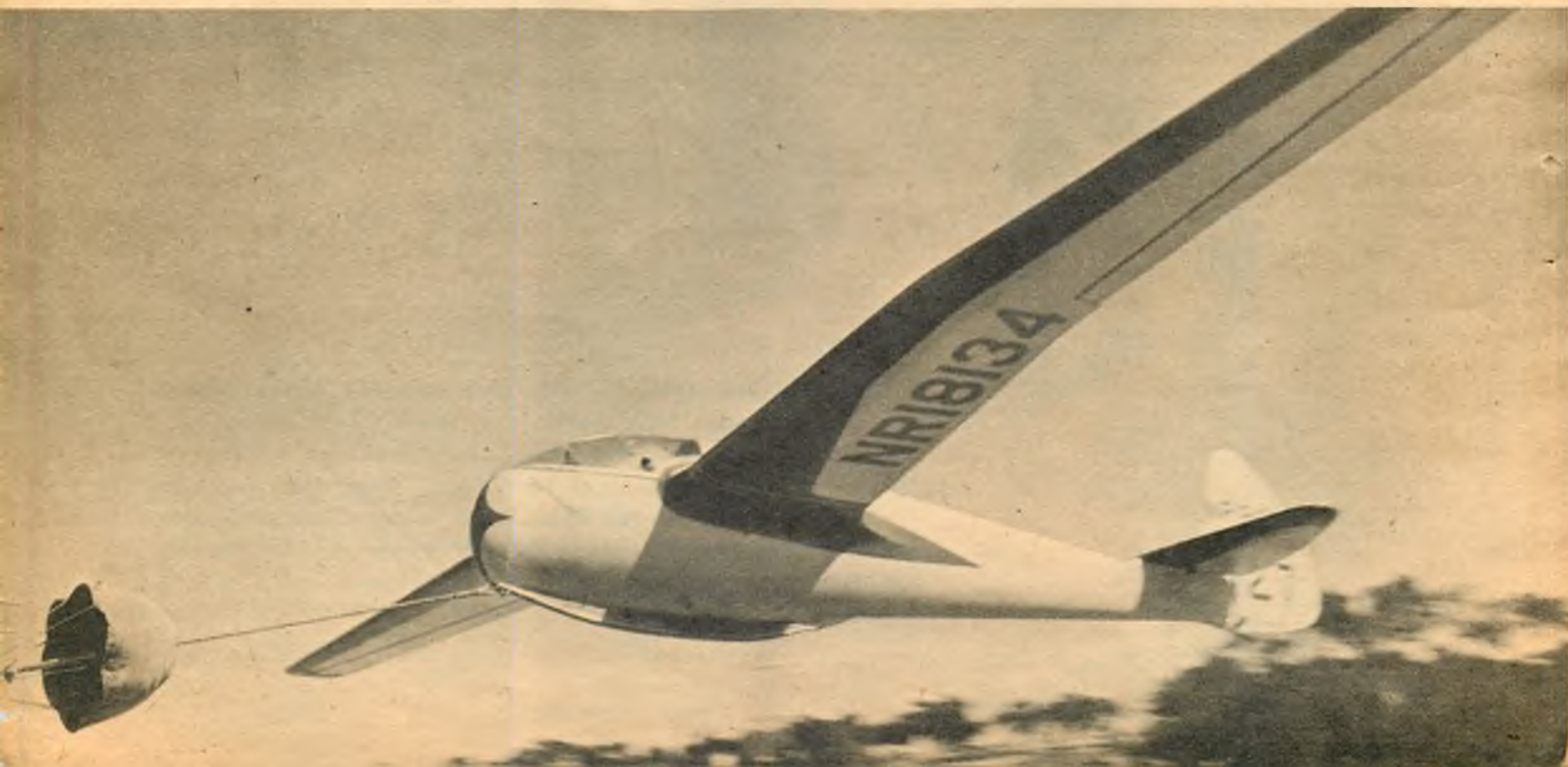


● A Briegleb BG-7 sailplane skims over the heads of the spectators.



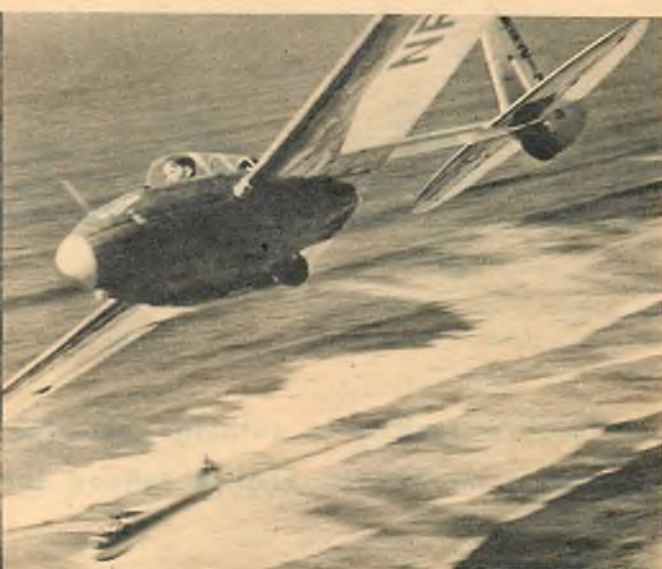
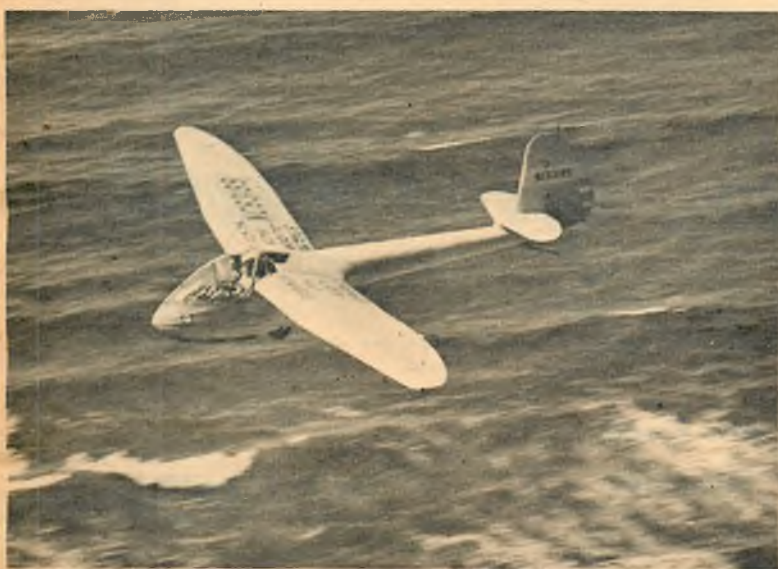
● Torrey Pine glider field is located 350 feet above the Pacific.

● The famous Zanoia flown by record-holder John Robinson, in which he recently established a national altitude record of 24,000 feet.





● Myron Wells in the Bowlus Super-Albatross is doing 100 mph while trying to hook a handkerchief held on a stick by Paul Tuntland.



● Herman Stiglmeier in Pratt-Read. At high tide sea covers beach. ● Super-Albatross overtakes Champion McCready's Orlik, below.

● Winch take-off by Dick Johnson in Schweizer. Chute keeps wire straight after release.





# The Gas Station Goes Aloft

• . . . as shown in this shot of Lucky Lady II (lower plane) being refueled by a B-29 tanker during one of its practice flights.

**Air-to-air refueling is nothing new—the Air Force started it in '29, the English refined the technique**

**By R. G. NAUGLE**

**A**T 11:21 A.M. on February 26, a Boeing B-50 bomber of the 43rd Bombardment Group, Carswell Air Force Base, Fort Worth, Texas, took off from its home base and headed northeast on what casual observers thought was a routine flight.

Ninety-four hours and 1 minute later—at 9:22 A.M., March 2—this bomber, the “Lucky Lady II,” touched down on the long Fort Worth runway having covered 23,452 miles in the first non-stop flight around the world. To the “Lady’s” commanding officer, Capt. James Gallagher, and her crew of 13, this was a routine flight. To the makers of military strategy it was the fulfillment of many years’ of hard planning to extend the range of our bombers so they could strike into any corner of the earth and still return to their bases.

Although the “Lucky Lady” had been modified and carried extra gas tanks in its bomb bay, this alone did not extend its range even to the 10,000-mile mark. What enabled this “medium” bomber to fly non-stop around the world was a series of aerial gas stations—12 B-29 tanker planes—contacted over the Azores, over Dharhan, Arabia, over the Philippine Islands

and over Hawaii. Two “tankers” refueled the Lucky Lady during each contact while a third B-29 “stood by.” Total gas consumption for the trip was 56,000 gallons.

Sensational? Well, yes. But the British have been doing this sort of thing commercially over the Atlantic for several years now. Refueling in mid-air from flying tankers is one of the hottest ideas in aviation right now—attracting the attention of trans-oceanic airlines as well as the military. It may well scramble all previously conceived ideas of aerial operation and bring about a revolution in aircraft design.

It’s a stubborn but irrevocable fact that an airplane can carry only so much weight. About one-half of its take-off weight can be in the form of cargo, passengers, bombs, or fuel—the rest is structure. The load-carrying capacity then, is strictly limited. The more bombs or cargo, the less fuel, and the less fuel, the less range. It’s that simple. But present-day global operations demand that the greatest possible loads be carried the greatest possible distances. To squeeze the last mile of range from our military planes then, we have to carry every drop of gas that can be lifted off the ground.

To find space for all this fuel, external auxiliary tanks are attached—large streamlined containers slung underneath the wing. And when the chips are really down, and a large load must be carried much

Author Richard Naugle was one of the engineers at Wright Field who worked on air-to-air refueling. He is now Chief Project Engineer, B-36 Unit, Bomber Branch, AMC, Dayton.

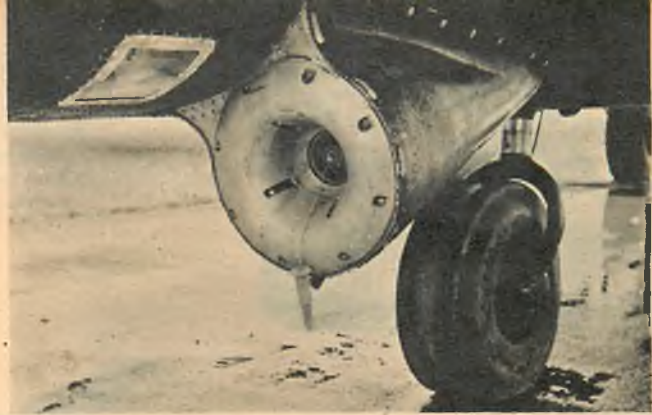
farther than just over the next hill, a series of such tanks are carried. To lift such overloads off the ground, JATO—Jet Assisted Take-Off rockets—give the extra push. But there's obviously a limit to the actual load in pounds that a given airplane can carry. Landing gears, tires, the wing structure, and the like all have certain maximum strengths that cannot be exceeded. We can only go so far until we must strengthen the structure, increase the size of the tires and the landing gears, and thus carry around a lot of dead weight we don't otherwise need. With landing-gears weighing half as much as the bombs themselves, we want to lighten them, not make them more ponderous and heavier.

One trick thought up during the war but never used operationally was to tow a glider loaded with gas behind the bomber. The bomber then doesn't have to be strengthened and the gas can be transferred through the towing line, or bar, whenever needed. The glider is then cut loose to crash as an expendable piece of equipment, or, in some cases, to be landed by a pilot. One such glider was, in fact, developed by our Air Force—the Cornelius tailless fuel-glider designed for use with B-29's.

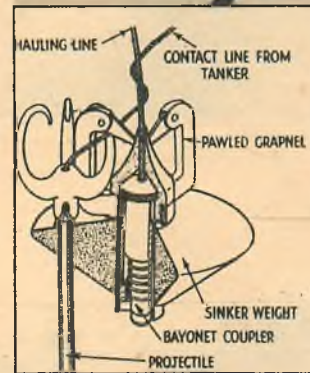
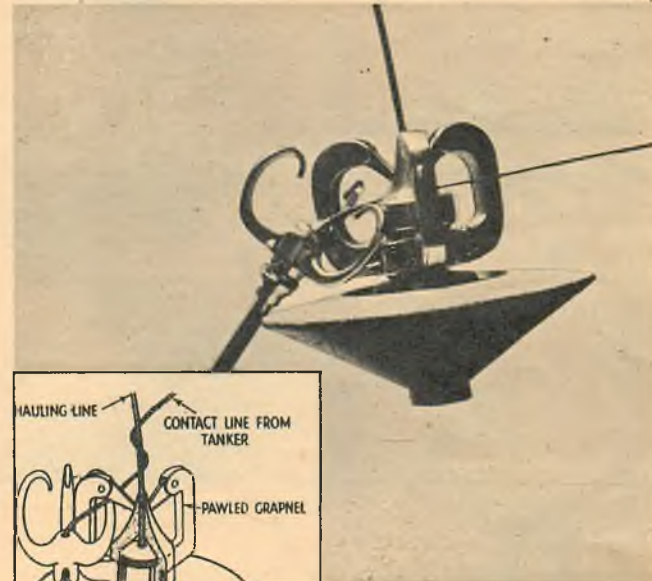
Such schemes avoid the strength problems but still require additional power from the towing plane. All of these schemes, then, have limitations and obviously increase the hazards of take-off. If only we could get the gas aboard after we take-off, when the plane is in the air! After all, a plane can carry a much heavier load in flight than it can lift off the ground. And that's where air-to-air refueling comes in.

Take-offs can then be made at a very light weight, with just the bombs, cargo, or passengers aboard, and with just enough fuel to get to the rendezvous point with the refueling tanker. Runways can be shorter and take-offs less dangerous. Landing gears and tires can be lighter since take-offs and landings are always made at less than maximum gross weights. Wing strength is actually increased by placing the fuel in the wings since it directly counteracts the wing's lift and thus the stresses are relieved. Large loads of gas can thus be carried, if loaded aboard the plane while in flight. A bomber designed for a normal gross weight of 100,000 lbs., for example, may be overloaded by as much as 25%—up to 125,000 lbs. It's simply a question of how many refuelings are made and how much fuel is transferred each time. The range is now measured not from the original point of take-off, but from the point of contact with the flying tanker, which can be anywhere. There's no reason why we can't refuel time and time again, or until the engines wear out. The idea (Continued on page 63)

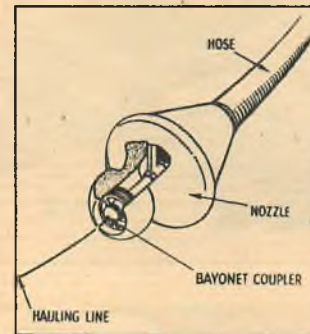
● British Avro Lancaster tanker with hose unreeling after contact. Note the small drogue attached to hose which keeps it taut.



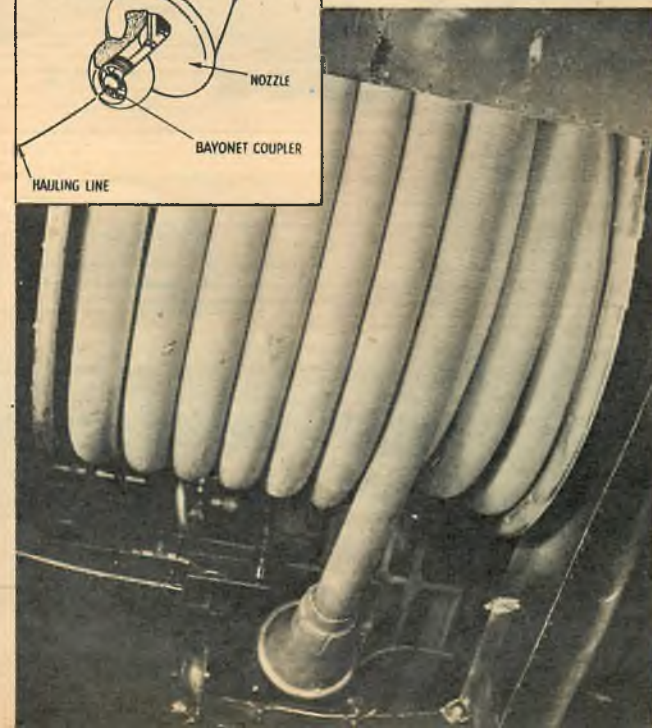
● Reception coupling of receiver aircraft showing the coupler on end of hauling line. Sinker is attached before hauling line is let out.



● Sinker weight on hauling line with contact line held in pawls of grapnel. Left, contact hook with projectile fired from tanker.



● Hose on reel in tanker. Left, hose nozzle with bayonet coupling to which is attached hauling line trailed by the receiver.



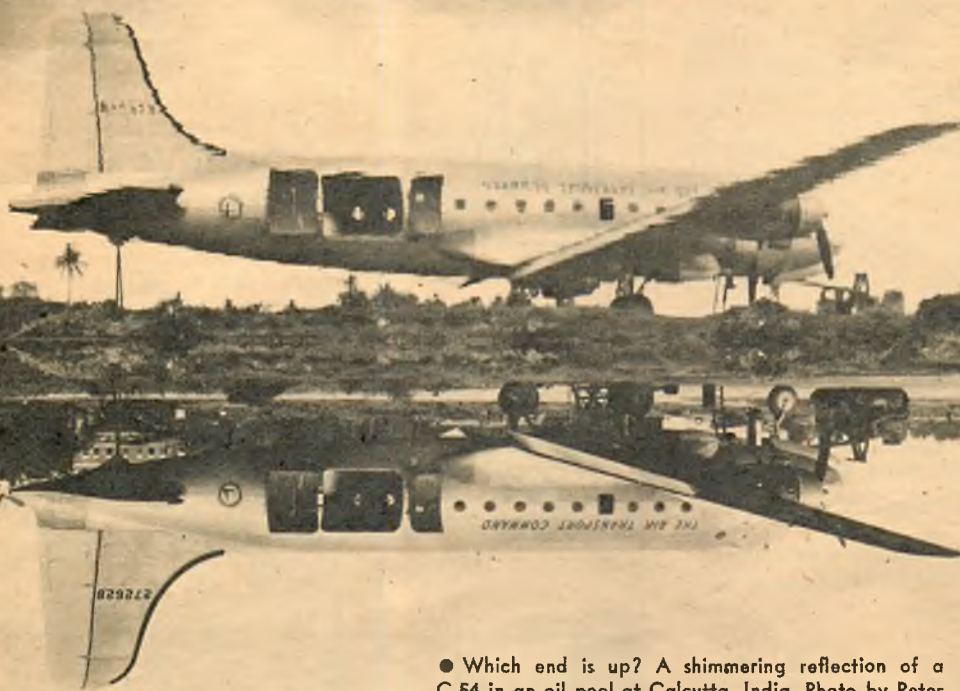


## AIR TRAILS

# Air Pix

## PHOTO COMPETITION

● Marauder over the clouds. This fine shot was taken by George Moon of Port Arthur, Texas. Camera 4x5 Speed Graphic, exposure 1/1,000 at f/8, using Eastman Super XX film pack. Aero 2 filter picks up clouds.



● Which end is up? A shimmering reflection of a C-54 in an oil pool at Calcutta, India. Photo by Peter M. Bowers of Seattle, Wash. Taken with an Eastman Junior 616 on Verichrome film at 1/50 sec. f/11.

### CONTEST RULES

This competition is open to all photographers—amateur or professional. Payment of \$10 will be made on or before publication to those whose photographs appear.

Entries may be concerned with any phase of aviation, and should be glossy prints *not less than* 5 x 7 inches in size. Prints should be well wrapped and protected in the mails by stiff cardboard. Entries must be accompanied by name

and address of photographer. Mail to Air Pix, c/o Air Trails, Box 489, Elizabeth, N. J. Because of the large number of participants, entries will not be returned.

Include full data on subject, camera and film used, exposure, lens setting, and conditions under which picture was made. List equipment for enlargement, printing paper, and all other pertinent information. Air Trails does not assume responsibility for entries. The editors regret they cannot enter into correspondence concerning contributions.

# 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.

## Youth in Aviation

By Major General Lucas V. Beau  
National Commander, CAP



● Gen. Beau is a USAF Command Pilot with long air career.

I CANNOT emphasize too strongly the importance of the Civil Air Patrol Cadet Program which includes the teaching of the theory and operation of air flight. Our courses are designed to train the men on the ground who keep the pilot in the air and to teach the prospective pilot all the theory he will need when he actually takes flight instruction—which the Civil Air Patrol Cadet Program does not teach.

Our Senior members are giving unstintingly of their time and knowledge to assist air-minded youths in their quest for wings and the Cadet program is integrated very closely with the Senior flyers.

If the United States is to maintain her position of leadership in conquering the atmosphere, the youth of the nation must be given every chance to learn all it can of the theory of being airborne, and it is my aim to have 100,000 Cadets enrolled in CAP units by 1950.

This is the age of air, and as the youngsters of today grow older on them will devolve the responsibility for retaining and directing this country in its air superiority.

We have again expanded the long legs of man in the new B-50 non-stop around-the-world flight. As the horizon for use of the air in this air age is unlimited, so do I want to see our training program for Cadets as unlimited.

The summer encampments will soon be here and I am sure that every one of the 51 Wings will show a large increase in membership, for at the encampments the Cadet gets the only intensive training we have a chance to give him.

No Cadet is obligated to enter the U. S. Air Force, as some parents have feared. All Civil Air Patrol Cadets are taught theory only in Civil Air Patrol and given a chance to become "acquainted with the air."

## CAP DIRECTORY

### Part II

● If you're interested in joining the Civil Air Patrol, write to the Flight or Squadron nearest your home for information. Units are requested to advise Air Trails of changes in names and addresses for this directory.

#### ALABAMA

Anniston—Capt George W Holloway Bx 565  
Birmingham—Maj B L Parsons 454 19th Terrace N  
Birmingham—Capt Letha Birchfield 1349 41st Belview Hgts  
Birmingham—Maj Ray M Jackson 1530 41st Belview Hgts  
Dothan—Capt Phil B Shuey Bx 180  
Jacksonville—Capt Lucille Branscomb Jacksonville State Teachers College  
Mobile—Maj H P Black 59 St Emanuel St  
Montgomery—Maj Harry T Sims Maxwell AF Base  
Montgomery—Maj Chas Womack Bx 1104  
Montgomery—Capt Joseph R Chancy 612 Forest Av  
Prattville—Lt James A Ward Rt 3  
Tuskegee—Lt T J Braswell Bx 375  
Tuskegee—Lt C A Anderson Bx 8 Tuskegee Institute  
Tuscaloosa—Capt Fred C Rozear 1914 Broad

#### ALASKA

Anchorage—Robert C Reeve  
Annette Island—R A Bird c/o CAA  
Fairbanks—Jim Dodson  
Juneau—Mike Finster  
Ketchikan—R M Bartholomew Bx 1138  
Nome—Bill Munz

#### ARKANSAS

Conway—1st Lt Dennis Cantrell 1904 Robinson  
El Dorado—1st Lt Emmett Paxton Bladgrave Av  
Fayetteville—Capt Raymond Ellis 359 Washington  
Ft Smith—Maj Arthur Journey 611 Rogers Av  
Hot Springs—Capt John H Stover Hot Springs Airport

Little Rock—Maj Leonard A Sosebee 1301 Bdwy  
Little Rock—Capt Edward L Durbin 500 E 14th  
Pine Bluff—1st Lt Kenneth C Parsons Bx 94 Redfield  
Stuttgart—Maj Leland J Hatt 407 Anna  
Tulsa—Capt George L Cash  
W Memphis—Capt Joe Bowen Bowen Flying Service

#### CONNECTICUT

Bristol—Lt Louis E Lasnier 52 Lawndale Av  
Bridgeport—2d Lt Joe Condi 220 N Bishop Av  
Canaan—1st Lt Joseph G Stillson Lakeville  
Cheshire—Lt Raymond E Drouin Bx 272 Waterbury  
Thompsonville—Lt Russell A Maylott 48 S River  
Hartford—1st Lt T L Hamilton 16 Lennox Av Windsor  
Manchester—Capt Clayton W Ammon 52 Colonial Hartford  
Meriden—Maj Ernest L Markham Bx 33 So Meriden  
Middletown—Lt Raymond A Petrosky 86 Winthrop New Britain  
New London—Maj Robert S Thornton 324 Thames Groton  
Norwalk—Philip D'Alessio Riverview Dr  
New Haven—Lt Donald J Davies 98 Gordon Hamden  
Norwich—Lt Paul Werth 28 Orchard  
Stamford—Lt H A Stoldt 47 Middlesex Rd Darlen  
Williamantic—Capt Harold A Warren Rt 1 Storrs  
Waterbury—Capt R C Jennings USNR Training Ctr Huntington Av  
Winsted—Lt Augustin Lizotte 162 Gilbert Av

#### DELAWARE

Dover—Lt Welden E Curl 115 N State  
New Castle—Lt Hugh Fairclough Bx 111  
Rehoboth—Capt Harry E Derrickson 11 Rehoboth Av

#### GEORGIA

Albany—Lt A W Barrett Jr Barrett Farms Leesburg  
Athens—Henry M Perry 568 N Harris  
Atlanta—Capt Buford H Jakes 2357 Blvd Dr SE  
Augusta—Capt David H Holladay c/o Southern Airways Municipal Airport  
Columbus—Capt J W Register Bx 1177  
Dalton—Capt William Garrett 234 N Hamilton  
Gainesville—Capt Edward B White 316 E Spring  
Macon—Cleveland Hyatt 314 Arnold Blvd Warner Robins  
Savannah—Capt W G Hobbs 510 Maupas Av  
Waycross—F/O Robert J Brewster Municipal Airport

#### HAWAII

CO of Hawaii Wing requests that inquiries as to CAP units in the territory be addressed to Hawaii Wing Hq PO Bx 3288 Honolulu T H

#### IDAHO

Blackfoot—J L Howell 1070 S Shilling Av  
Boise—E J O'Donnell 5107 Peg  
Burley—J M McClure 823 D St Rupert  
Coeur d'Alene—J W Wayne 315 Garden Av  
Idaho Falls—Dean Tucker Bx 85  
Focatello—Neil Wright Bx 44  
Twin Falls—Lloyd Shewmaker Rt 2 Kimberly

#### INDIANA

Ft Wayne—Capt Richard A Werling 2814 Parnell  
Ft Wayne—Lt Robert P Young 331 W Packard  
Ft Wayne—Lt James E Faulkner 1705 Freeman  
Franklin—Lt Ray E Primmer 399 Madison  
(Continued on page 74)

# Civil Air Patrol Newsletter

(CONTINUED)

## England-U. S.-Canada Swap

One Cadet from each of the 51 CAP Wings will be selected for the Summer Cadet Exchange Program with England and Canada, National CAP Headquarters announces.

Cadets eligible for nomination must have a minimum of 18 months service in CAP and be 15 to 18 years of age.

National Commander Maj. Gen. Lucas V. Beau has urged that Cadets of each unit in all Wings nominate by popular vote one Cadet to represent their unit. After nomination the unit commanding officer forwards such applications to Wing Headquarters.

National Headquarters has explained that it reserves the right to reject the nomination of any Cadet considered below standard, and will determine which country the Cadet will visit.

## Montana Recruiting Planned

Montana Wing CAP has embarked upon an intensified drive in organizing Squadrons and Flights throughout that state under direction of Wing CO Col. Richard A. Kullberg.

Group Commander Maj. Gordon Meisel, Training and Operations Officer Keefe Arrio, Cadet Training Officer Joseph Chitwood and Communications Officer Earl Crowder will travel about the state to stimulate interest in the Montana Wing and will work for closer cooperation among Squadrons and Flights.

## Jet Training For N. J. Cadets

More than 300 Cadets and Seniors of the New Jersey Wing CAP are now familiarized with the principles of jet propulsion as a result of a recent special lecture and demonstration for them at LaGuardia Airport, New York.

Operating models of the ram and pulse jets were observed by Cadets of the New Jersey Wing under the command of Col. B. Hunt Smith, Wing CO.

Following a basic lecture on the principles of jet power plants, a movie and an actual demonstration, the Cadets were afforded the opportunity to inspect firsthand various operating parts on display.

**SEARCH-RESCUE MISSION HANDLED ENTIRELY BY CADETS** of the Perry Sq., Iowa Wing CAP, was part of a week's training maneuvers. Below, Cadets of the group gathered for the exercises.

## Boy Scouts Work With Patrol

Michigan Wing CAP carried out a successful joint operation with Michigan's Air Scouts recently, in observance of National Boy Scout Week.

The operation, with Capt. N. K. Jepson of Lansing in charge, consisted of an air rescue in the Brighton Recreational area.

The Air Scouts hiked into the area until 'lost.' They prepared panels asking for food and other items ordinarily required by a stranded group.

CAP pilots and Cadets located the 'lost' Scouts and dropped the rescue and relief items by parachute. Air Scouts units who participated in the operation were from Adrian, Ann Arbor, Bay City, Saginaw, Detroit, Flint, Lansing, Monroe and Pontiac.

## W. Va. Program a Model

How does a Civil Air Patrol Wing set up a well planned program that will keep all state units on their toes?

Many Wings could benefit from study of the training program and schedule of activities worked out in minute detail by the West Virginia Wing CAP.

At a special meeting of the members of the W. Va. Wing staff recently, a complete program for all of 1949 was hammered out, put on paper, adopted officially. To make it effective and practical, specific duties were assigned, and results demanded from the Wing Commander down through every echelon of the entire Wing.

Membership, meetings, records, housing, adult and Cadet participation, uniforms, social activities, finance, publicity, education and public relations, special events, supplies, are the more important subjects covered in detail, with all the "who, what, why, when and where's" explained in such fashion that every CAP'er in West Virginia will know what is expected of him or her.

Under the duty and responsibility of Wing staff members, officers were appointed to eight specific regions into which the state has been divided, with orders to report direct and frequently to the Wing CO.

## Denver Cadet Sq. Some Stuff

The biggest 'little' squadron in the Colorado Wing Civil Air Patrol is Squadron 4 of the Denver Group, where the Cadets have almost taken over 'wings, prop and engine.'

The Cadets issue their own miniature size newspaper. All of the unit's plans and activities are developed and put into operation by the Cadets with a minimum of help from Senior members.

## CAP'er of the Month

A 61-year old physician in Colorado has been nominated by the Colorado Wing CAP as "CAP'er of the Month."

Maj. Floyd H. Weidlein had no idea at 4:30 one morning in February, in snowbound Grand Junction of going anywhere. But a phone call from the CAA observation tower at Hanksville, Utah, relayed through CAA communications station at Grand Junction, Colo., to "Doc" Weidlein had him ready for a dawn emergency flight for "Operation Stork."

A Piper Cruiser piloted by Bill Wells of the Price, Utah, Squadron, flew 150 miles through mixed rain and snow, and at times only 50 feet above the floor of the uninhabited desert.

At Hanksville a snow plow truck carried Maj. Weidlein through huge drifts to a lonely and isolated ranch, where he delivered a baby.

Maj. Weidlein has served as Medical Officer of Group 4 Colorado Wing CAP since 1944, and his work has been largely in behalf of the Cadet program. He donates freely time, money and professional services.

As one Colorado CAP'er put it, "Can you blame Group 4 for being prideful of Maj. Weidlein's 'beyond the call of duty' mission?"

## Airport Ops Are Important

The important part played by the nation's airport operators in the success of the various units of the Civil Air Patrol is not always recognized.

A survey by Air Trails indicates that many units of CAP could not exist without such cooperation since the activities of various units require airport facilities being available.

The New Jersey Wing CAP recently extended its thanks and appreciation to all airport operators in that state for their 'outstanding cooperation.'

A typical example is the Sky Harbor seaplane terminal on the Hackensack River in Carlstadt, New Jersey. Operator Jack Dzendzel permits the Bergen County Squadron to use his terminal for its air base. The Squadron training program now includes docking procedures and general care and maintenance of aircraft.

Vacant land at the seaplane terminal will be used for drill and as a maneuver field, and Mr. Dzendzel has granted a concession to the Squadron for a luncheonette.

● A plane crash is reported, so a Piper L-4 liaison plane, loaned to CAP by the AF, is dispatched as spotter. Senior member Sayles and Cadets Knight, Roland and Kuebler study the locale on a map.



## Cadet Drill Championships

Cadet drill teams are now hard at work in every unit of the Civil Air Patrol looking toward the National Drill Contest to be held at a yet undesignated Air Force Base on July 4. At that time the winning team will be selected to compete in the International competition in Toronto, Canada on August 30.

Contests will begin first in the states, then throughout the eight CAP regions and finally culminate in the National contest.

A drill competition committee has established rules governing the contests. Each Wing selects, by intra-wing competition, a platoon of 33 CAP Cadets and one Cadet officer who is the drill master.

In 1948 Maj. Gen. Lucas V. Beau, Commander of CAP, established a perpetual trophy for drill competition for Cadets. It was won last year by members of Canada's Air Cadet League in New York.

## Proper Credentials Required

All CAP pilots operating Air Force aircraft will henceforth be required to wear the official CAP uniform and carry their ID cards, National Headquarters has advised all Wings.

The official CAP uniform while flying AF planes will be any similar type clothing in the same colors as used by AF pilots—that is, summer flying suits, gabardine or cotton, or any other similar flying equipment.

A CAP patch must be worn on the flying suit and it is desirable that pilots have their insignia of rank on their shoulders. Regulation uniforms are also permissible.

## Bishop New PIO Officer

National Headquarters CAP announces the appointment of Public Information Officer Maj. Freeman C. Bishop, World War II veteran and longtime newspaperman.

Maj. Bishop, prior to the war, was associated with the Wilmington, Del., News Journal Co., the Washington, D. C., Star and Philadelphia Ledger Syndicate.

Entering the Corps of Engineers in 1942, Maj. Bishop became Chief of the Public Relations Branch of the Northwest Command and was stationed in the Yukon.

Following release from the Army in 1946 he returned to the News Journal Company and on February 1 was recalled to active duty for a three-year tour of service.

# MERCY FLIGHTS ACCLAIMED

## CAP NOTES

Cadet encampment of the Wisconsin Wing CAP is definitely set for June 19—July 2. . . . National Headquarters officials are now making annual air inspections of all Wings.

CAP girls should not wear G.I. coats until Army buttons have been removed and replaced with plain brown ones; caps must have braid removed, no high heels with uniforms, and skirts must be three inches below knees and not longer than 14 inches from floor.

Wisconsin Wing CAP has commended three of its units for excellence in activity reports during '48: Milwaukee Squadron 3 and Shawano and Eau Clair Squadrons. Near perfect records were made by Milwaukee 1, West Allis, Burlington, Lake Mills, Marshfield, La-Crosse and Black River Falls Squadrons, Group 3 and Medford Flight.

In a national radio broadcast on CAP, Maj. F. K. Mougey of National Headquarters staff praised the efforts of CAP'ers in the California Wing who located a missing plane after five days' search. He particularly extolled the CAP Members and Cadets who operated 35 CAP planes throughout Christmas Day. . . . When Cadets of the Boise, Idaho, Squadron wear their uniforms to school on Tuesdays it stimulates recruiting. . . . Idaho Falls Squadron now boasts 65 Cadets, still increasing.

Asbury Park, N. J., Squadron CAP has inaugurated an extensive and elaborate recruiting and publicity campaign. . . . Trenton, N. J., Squadron has reorganized its staff and appointed June E. Van Derveer as PIO. . . . Montana Wing CAP now has a full-time plane mechanic, T/Sgt. Thomas E. Furrey of USAF.

Huntington, W. Va., Squadron Cadet Commander Lt. Carl Murdock reports Marshall College has granted his Cadets use of two rooms as classrooms. In addition, Cadets of this Squadron have formed a 40-piece band, later will form an eight-piece orchestra. . . . Cut Bank Squadron, Montana, Wing CAP has regular Cadet meetings every other Sunday, and a new medical officer, Registered Nurse W/O Mary Fagan.

Cadets of the Stonewall Jackson Flight of Charleston, W. Va., recently earned more than \$100 to be used toward their activities.

## Almost 700 Emergency Hops Made During Western Blizzard

Although you may not have a thought in the world about snow these warm days, there's a hardy band of CAP pilots and Cadets in Nevada, Utah, Wyoming, Colorado, South Dakota, Nebraska, Idaho and northern Arizona and New Mexico who won't soon forget their hundreds of mercy missions throughout those snowbound areas only a few short months ago.

The CAP Newsletter has previously recorded some of the missions. A special Air Trails survey indicates that nearly 700 were flown and thousands of persons and hundreds of communities aided. A grateful public has expressed itself in scores of editorial columns, personal letters and in other ways that have made members of the CAP in these areas grateful that they could be of such service.

The activities of the CAP in these states did not stop as the heavy snows began to melt. The majority of the units in the hard-hit Western area began planning for the dangerous spring floods that usually follow such heavy snowfalls.

In the words of National Headquarters, "This service to humanity, the giving up of holidays and leisure time, the unselfish devotion to duty, the hardships that many of the Members and Cadets suffered, these are the things which test the mettle of any organization, however good, that build the words *Civil Air Patrol* into a revered, respected and appreciated organization."

## Calif. Operation Bucsom Set

One of the most comprehensive training programs for Members and Cadets of the Civil Air Patrol will be held early this fall in Northern California. It is expected that several thousand CAP'ers will participate.

Plans for "Operation Bucsom" are already shaping up as various CAP units in Northern California meet and work out the various details.

The exercise, to last three days, will be held at Buchanan Field in Contra Costa County. Practical experience in communications, particularly between motor convoys and planes aloft; navigation of planes by dead reckoning; loading, unloading and handling of air  
(Continued on page 77)

● Crash was spotted by the L-4 which directed ground search party to the scene, where first aid was given to victims. Cadets Roland and Roberts help evacuate Cadet Houseman, an "injured victim."

● Just reward! The exercises are over and the Cadets are treated to a weiner roast prepared by staff members. Such maneuvers, as put on by the Perry Squadron keep Cadet interest at a high level.



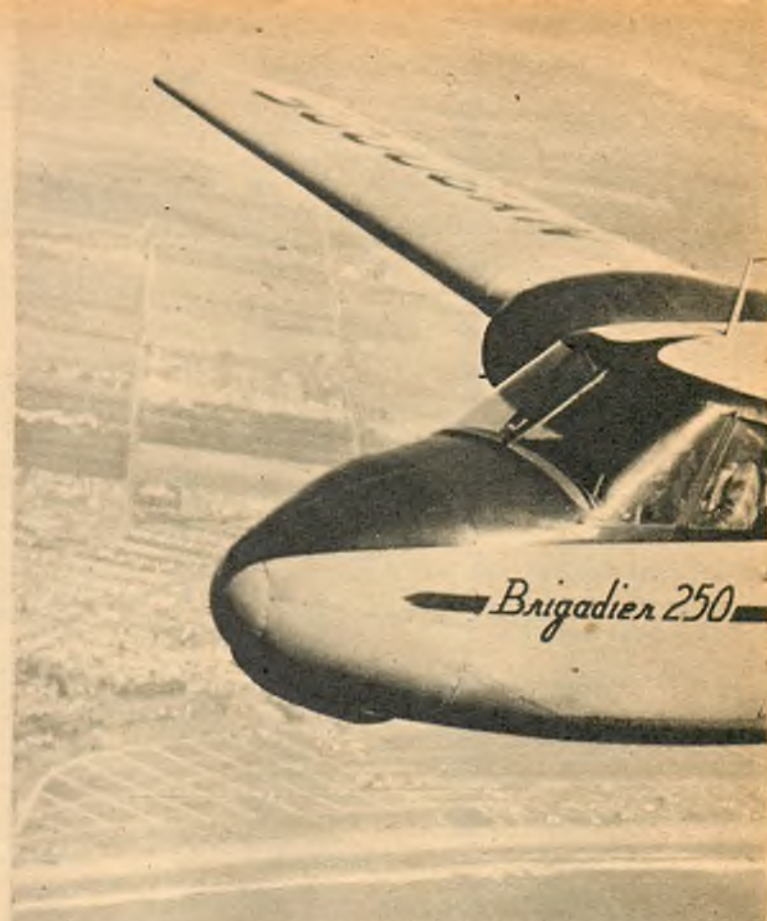
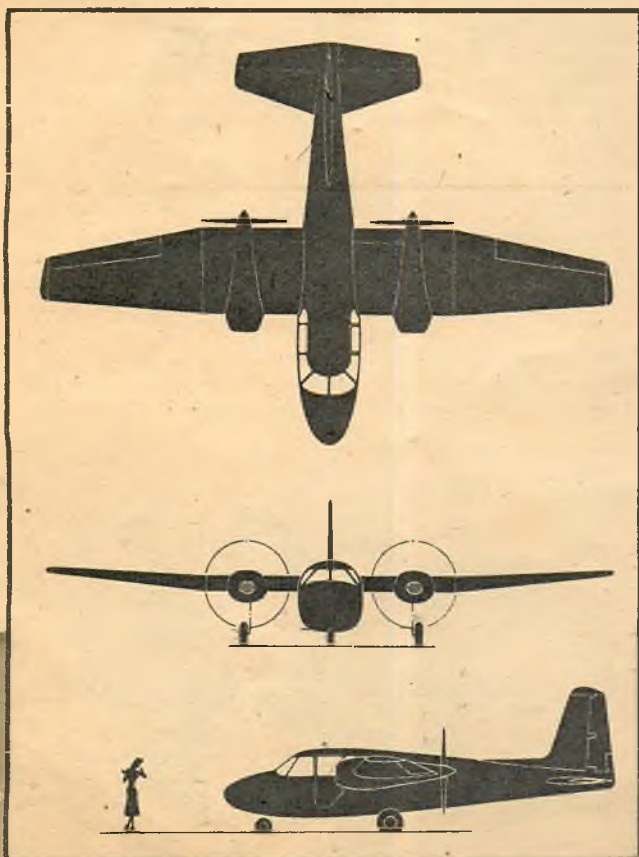
# Brigadier



● Designer Baumann.

THE Brigadier 250, designed and built by Baumann Aircraft Corp., Burbank, Calif., is a five-passenger executive transport which embodies some interesting features. The cabin is about as roomy and accessible as an automobile. The pusher engine installation makes it a quiet airplane, and the fact that it can come home from anywhere on one engine is a big selling point. Its two 145-hp flat-six Continental engines give it a top speed of 176 mph and a cruising speed of 155 mph. Landing speed, with flaps, is 55 mph

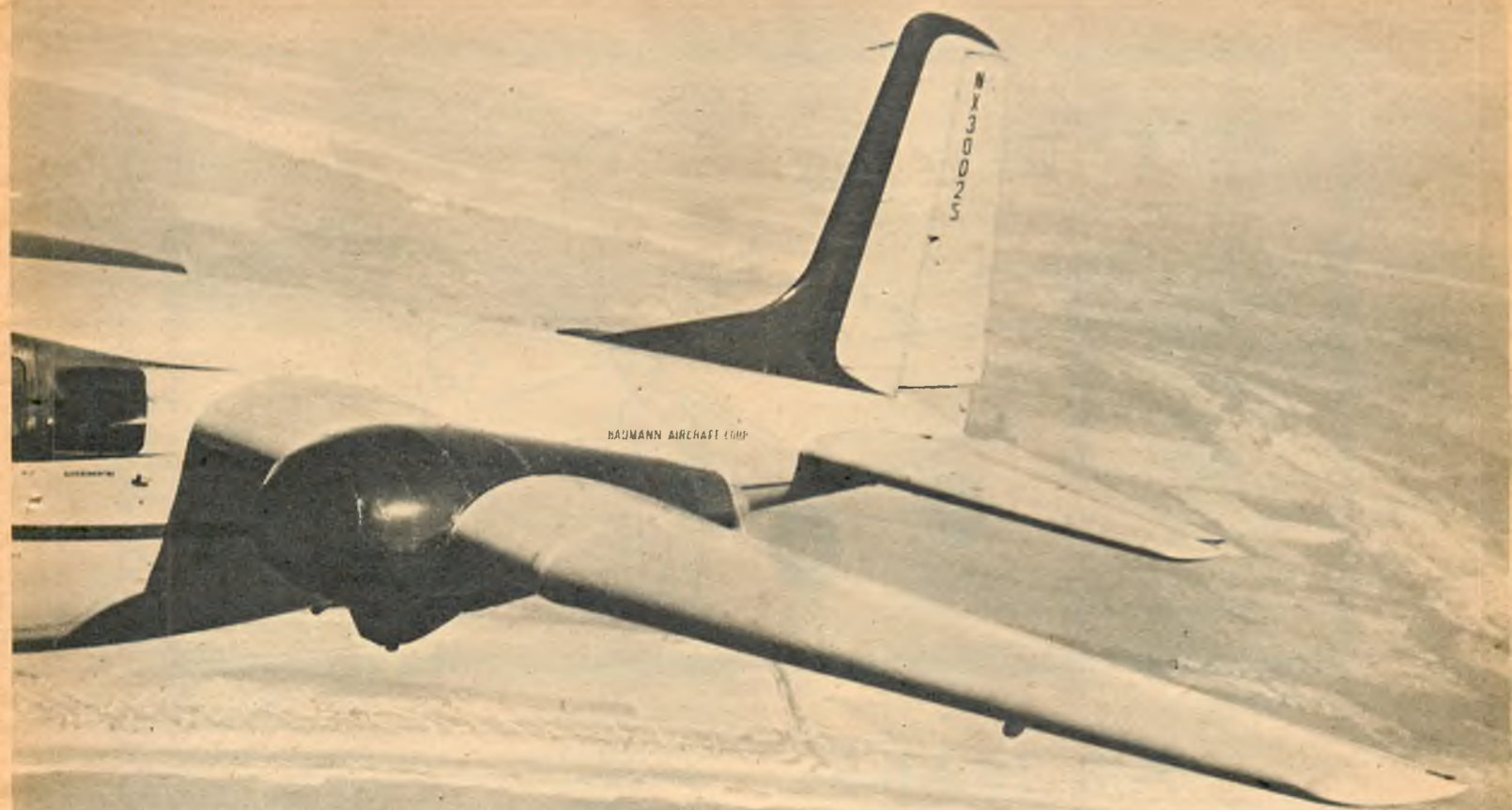
while cruising range is 750 miles. Of all-metal construction, the Brigadier has a wing-span of 41 feet, and fuselage length of 27 feet, 6 inches. The airplane first flew in June, 1947, piloted by designer Jack Baumann's 23-year-old cousin Billy. The first flight proved that the faith of the investors was well founded. The ship was so good that it was necessary to spend only five dollars for a rudder change. Baumann production plans call for turning out five airplanes which will be "shaken down" in the field to iron out the bugs, of which luckily there are very few.



● All tail surfaces of the Brigadier are identical. This greatly simplifies production and makes replacement an easy matter.

● Getting into cabin is like stepping into a car. Step is 20 inches above ground. No danger from propeller or slipstream.





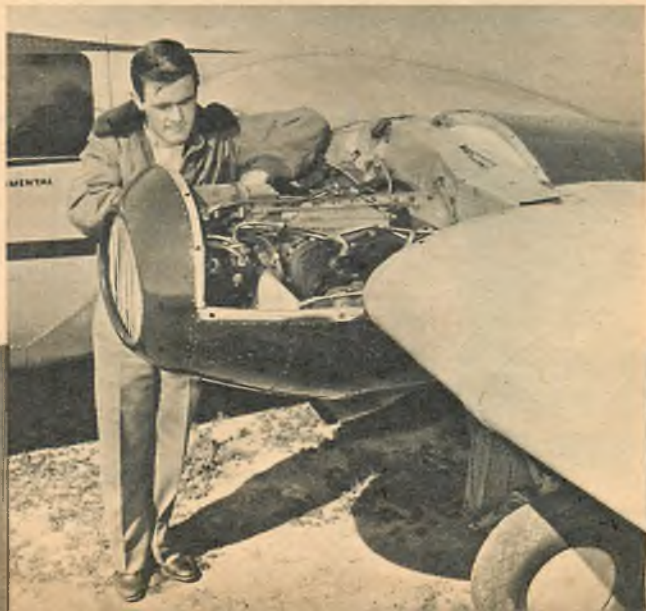
● Pusher propeller shaft slips out by unfastening three bolts. It is secured on a floating mount which absorbs vibration.

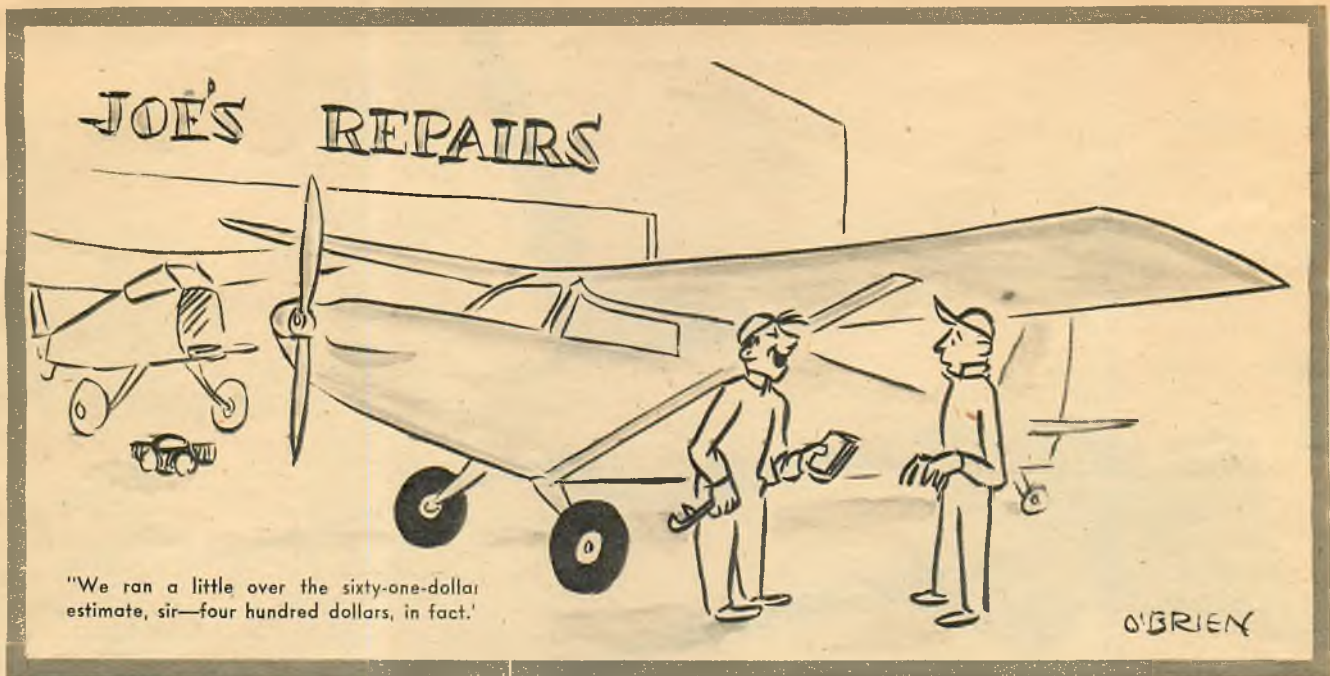
● With one engine and propeller stopped, the Brigadier can still easily maintain flight, and climb to an altitude of 5,000 feet.



● Tricycle landing gear permits a level, automobile-height cabin. Slanting nose gives good visibility while taxiing on the ground.

● No need for ladder or stand when working on the Brigadier's engines. Accessibility to power plants with cowl off is excellent.





# AIR TRAILS Solo Club

**A**S this month's meeting is called to order, the club roster is swelling rapidly toward 9,000 members—people of all ages, from a girl of 13 up to flying grandparents who make no more fuss about an airplane than stodgier folks do about automobiles. Pilots all over the country are reading this with you, enough of them to require New York's Madison Square Garden if an actual meeting could be held. The wonderful thing is that more and more members are showing willingness to speak out, taking on the responsibility of acquainting us with experiences, ideas, important developments. If all of us did likewise the Solo Club would become one of the biggest things in American private flying.

This month, our committee on flying clubs has a report to make that will perk up many of you money-

shy peelots. Please let's hear what you think of this report and send any pertinent questions to the Flying Club Committee, Air Trails, Box 489, Elizabeth, N. J. Should the response be great enough, answers to the questions will be taken up in a supplementary report. We have this problem in our teeth now. Don't let it die.

Like the seed that fell on fertile ground, pleas for ideas and information have taken root. From points scattered thousands of miles apart, from California to Nova Scotia, members are passing on their suggestions and information. Here are three to mull over. Ladies and gentlemen we give you, first, Dan and Alberta Imhoof, of Eureka, California.

"We think it is the finest club in the country," says Dan, "and it is doing more than most clubs put together. Your getting ideas from members is a swell deal in itself. You get a cross-section of flying that is bound to help flying—which is what we all try to do." Dan, an ex-fighter pilot, has logged 3,000 hours. Alberta has piled up 300 hours or more since learning to fly in 1945. Dan wants to tell us about a unique way to help people to learn to fly. But first we should like to have him tell us more about himself and the Mrs.

"She is plenty sharp on aerobatics," says Dan of the better half, "and is good on instruments, too. Lady members of the club will be (Continued on page 91)

<p><b>HOW TO BECOME A SOLO CLUB MEMBER</b></p>	<p>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.</p>	<p>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.</p> <p style="text-align: center;"><b>Proof of qualifications as a Solo Club Member:</b></p> <ol style="list-style-type: none"> <li>1. CAA Airman Certificate, number and rating.....</li> <li>2. F.A.I. license and number.....</li> <li>3. Evidence of: Service in Army, Navy air forces, either as a rated pilot or having received flight training including solo time (attach).</li> </ol> <p>Applicant..... Age.....</p> <p>Street..... City or Town..... State.....</p>
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**GRUMMAN PANTHERS**

By ALFRED OWLES

**An Air Trails Air-Pix**





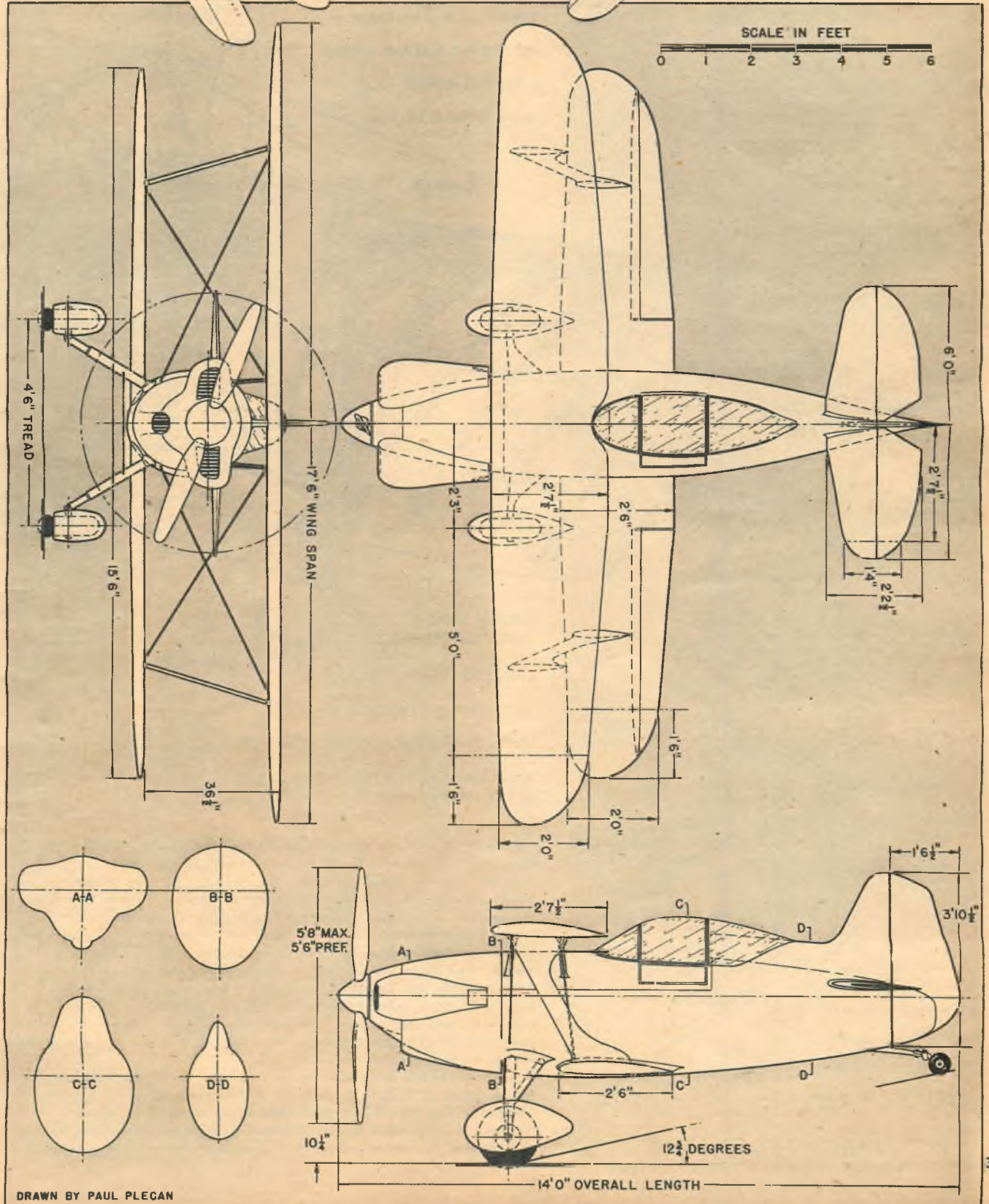
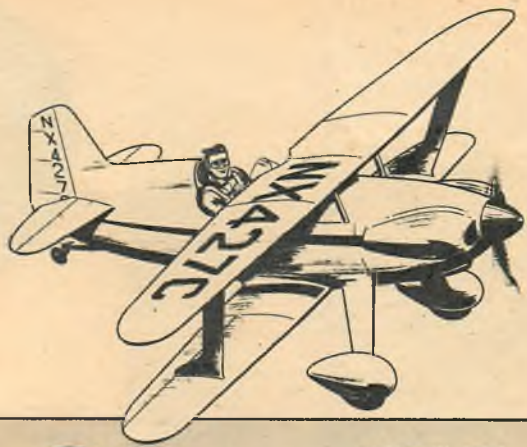
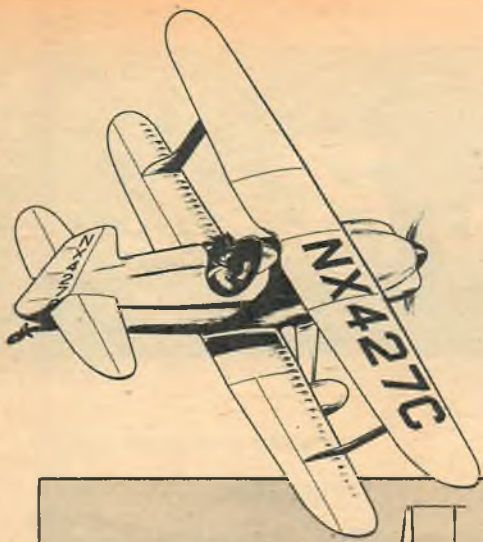
# Knight Twister Junior

Designed by **VERNON W. PAYNE**

**T**HE Junior is the outgrowth of the original Payne Knight Twister designed and built by Mr. Payne back in 1928. Even in those days the Twister's aerodynamic efficiency, streamlined appearance and safety features were ahead of a number of lightplanes then on the market. The first ship was equipped with an inherently stable wing of high performance. The same wing is now on Knight Twister Junior. The reason for the selection of the biplane shape was to get small span and the greater strength-for-weight ratio inherent in the biplane truss. Also, the large stagger of the wings gives slower landing speed and shorter landing run.

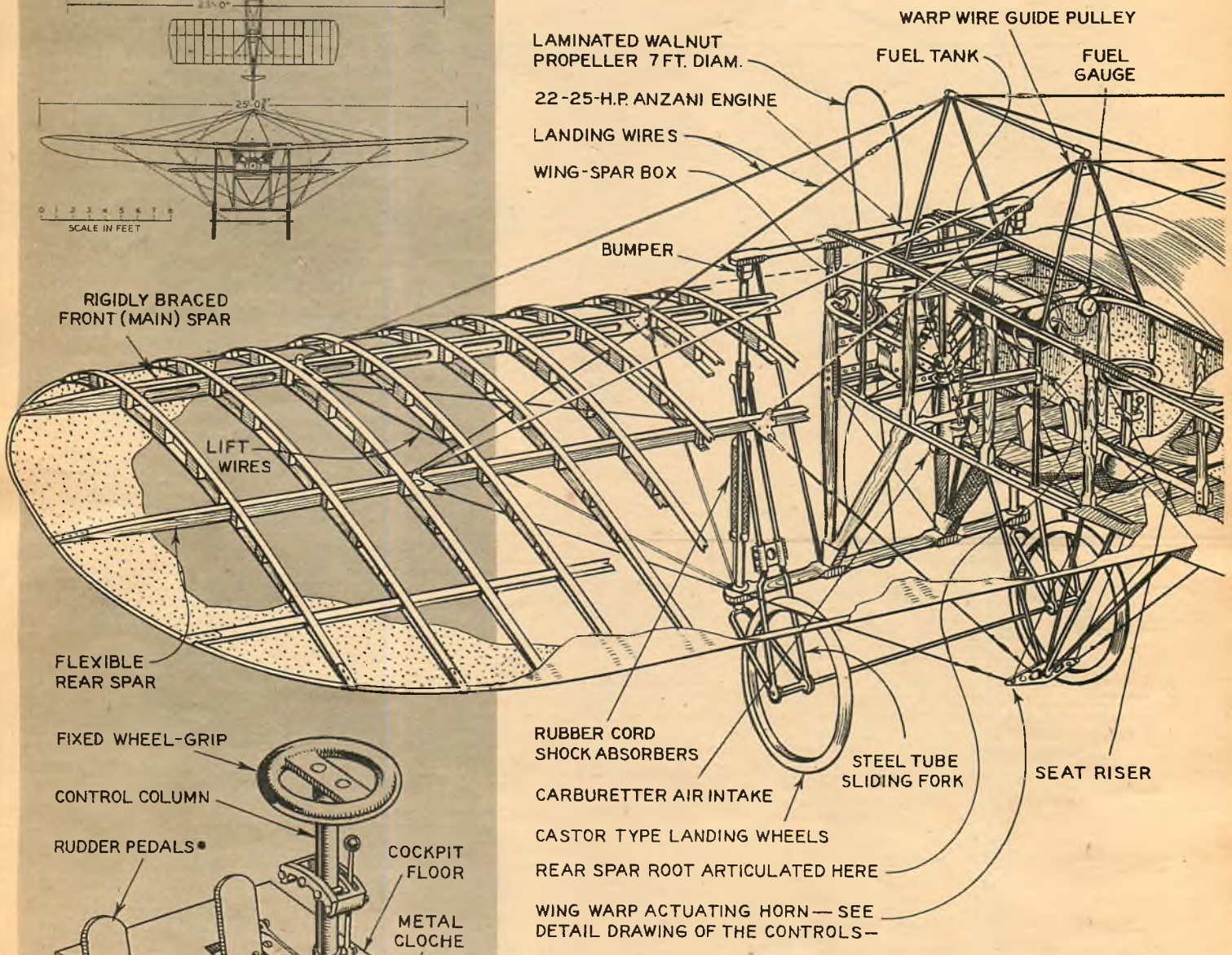
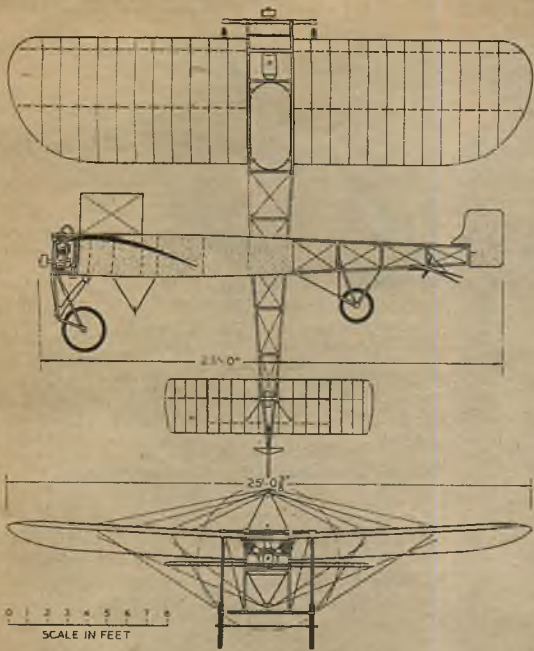
The recently tested Knight Twister Junior has two and a half feet more span in both wings, giving a total of 73 square feet of wing area instead of the 55 square feet found on the original Twister. The resultant decrease in wing loading improved the rate of climb and permitted use of an engine of 75 hp or less. With a 75-hp engine—without starter and generator—and a gas tank of 12-gallon capacity, the gross weight was held down to 810 lbs., which included the pilot and his parachute. This gave a wing loading of only 11 lbs. per square foot and a power loading of 10.8 lbs. per horsepower.

Test flights demonstrated that the ship had a cruising speed of 120 mph, a climb of 850 feet per minute and a landing speed of 50 mph. With cockpit enclosure and additional streamlining, the climb would be 900 feet per minute and the cruising speed 130 mph. In the air the plane can be pulled up well beyond the stall angle. It does not fall off on a wing but mushes forward at 50 mph, nosing down to regain flying speed as soon as the pressure on the stick is released. On landing it does not have any tendency to ground loop and the wheel brakes can be applied almost immediately after touch down without nosing over. And what about price? Under present conditions, at least \$650 without engine, propeller and special fairings.



DRAWN BY PAUL PLECAN

# Air Progress



## TYPICAL CONTROL DETAILS

\*NOTE: SIMPLE RUDDER BAR WAS A VARIANT FORM OF THIS CONTROL ON THE BLERIOT - XI.

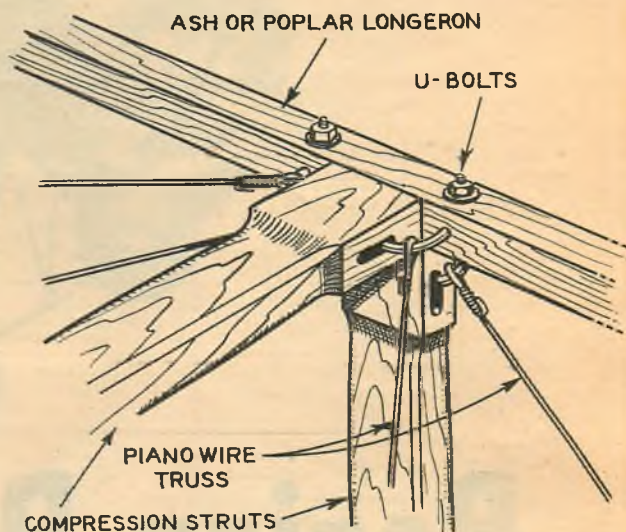
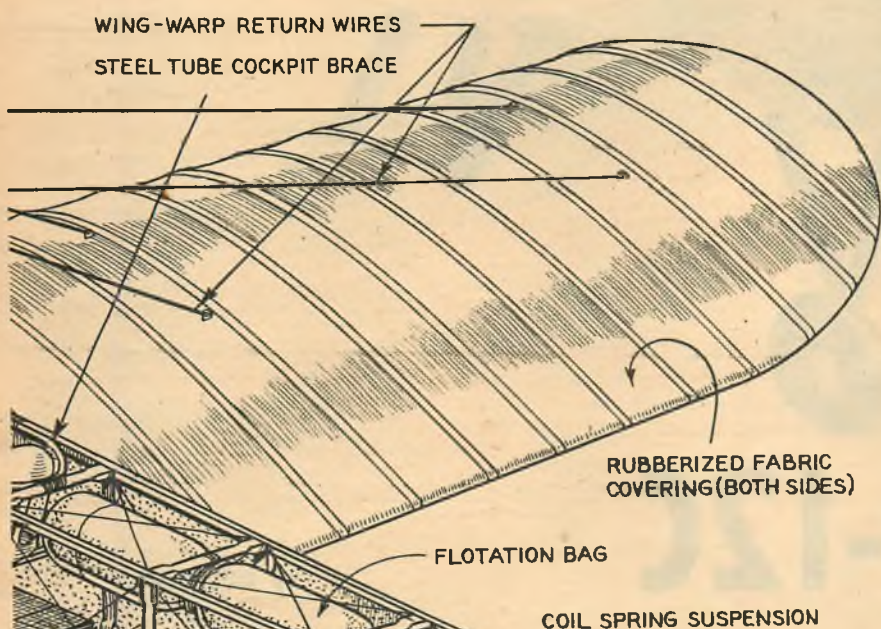
Forty years ago this month Louis Bleriot startled the world by flying from Calais, France, across the English Channel, to crash-land near Dover, England. Leaving France at 4:30 a.m., July 25, 1909, the pioneer pilot-designer covered the 22 miles of open water in about 37 minutes—a flight comparable in daring to Lindbergh's oceanic hop 18 years later.

The Bleriot XI which made the flight was a hand-made job and by today's standards incredibly flimsy. Total weight, with pilot, was only 660 pounds. Few Bleriot monoplanes of this type, however, suffered structural failures in the air, except in cases where individual pilots altered the original structure. A modification of this type became the first plane to complete a loop and the first to make inverted flights. Fitted with a more powerful engine (the 50-hp Gnome rotary) the type XI was for many years the world's most popular private plane.

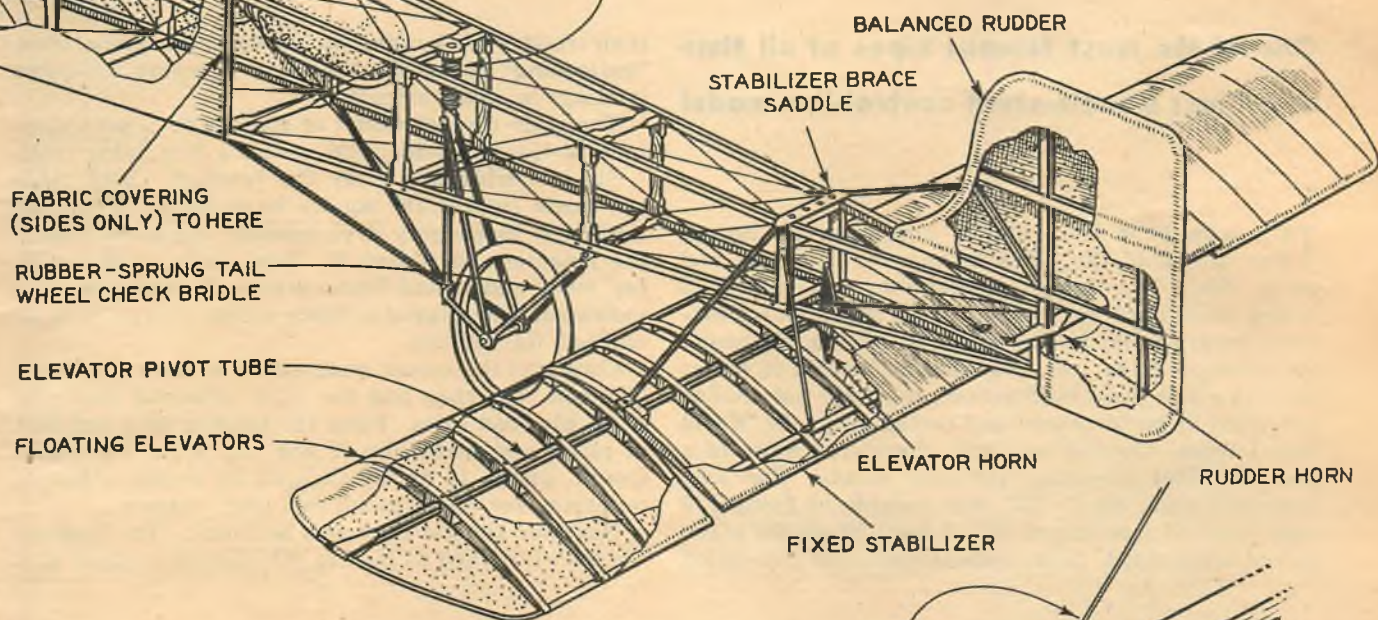
Power on the original model was provided by a 3-cylinder Y-type radial engine rated at 22-25 hp. Actually it developed about 20 hp, which dropped during the cross-channel flight to less than 17 hp due to overheating. It is recorded that a providential rainstorm cooled the motor and restored full power just when it seemed that the flight would fail.

# The Bleriot Cross-Channel Plane

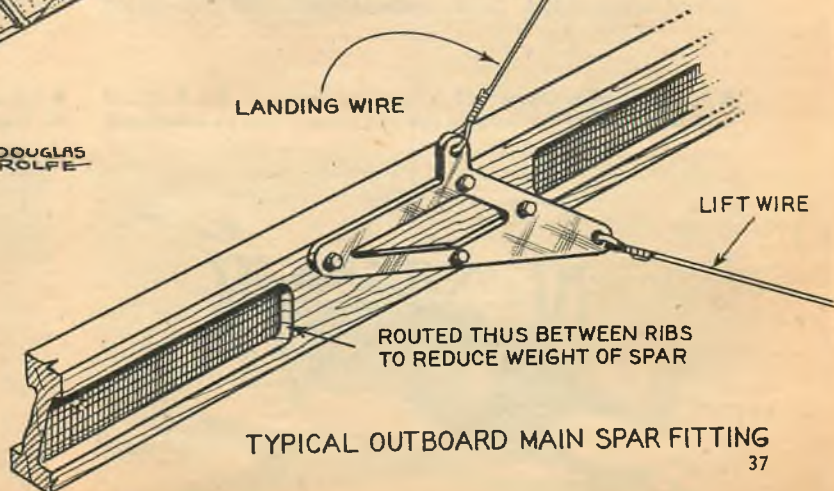
By DOUGLAS ROLFE



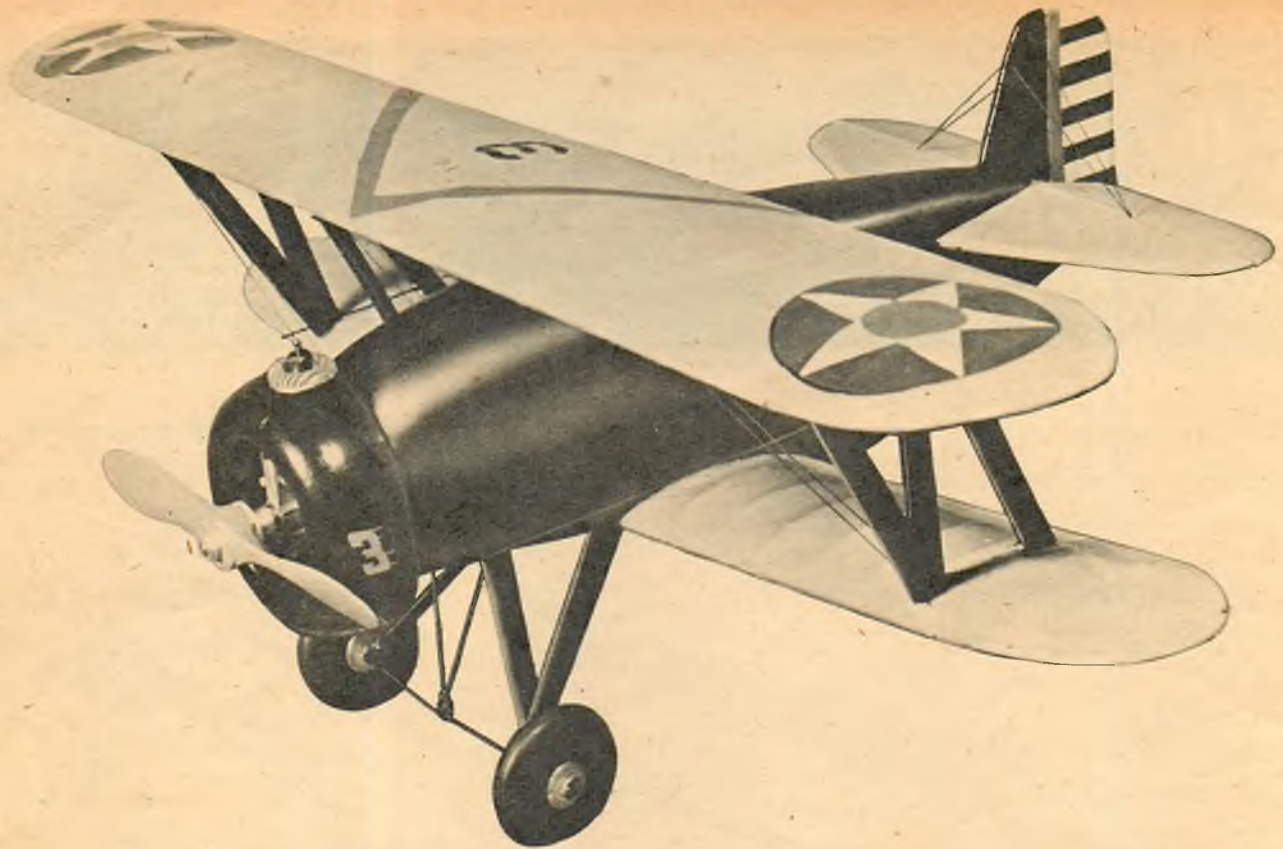
TYPICAL FUSELAGE JOINT DETAIL



DOUGLAS ROLFE



TYPICAL OUTBOARD MAIN SPAR FITTING



# Boeing P-12C

By DICK EALY

**One of the most famous bipes of all time as a Class B scale-stunt control-line model**

THE trim little P-12 fighter developed by Boeing was queen of the skies during the late '20s and early '30s. The Army designation was the P-12 series, while the Navy's was the F4B series. In appearance it was similar to World War I fighters. Although the aircraft of the late '20s had the benefit of better materials and more horsepower, they did not change too much in performance and tactics from the World War I types. Combat was still considered more of a personal duel involving intricate stunts. The ship described here, the P-12C, was capable of flying 178 mph and had a ceiling of 30,000 feet. Since the plane lacked wing flaps, pilots side-slipped and fish-tailed

their rudder in landing to prevent the plane from "ballooning" across the field and to insure pin-point landings in small airports.

The scale control model of the P-12C is on a one-inch-to-the-foot scale, and makes a fine flying craft.

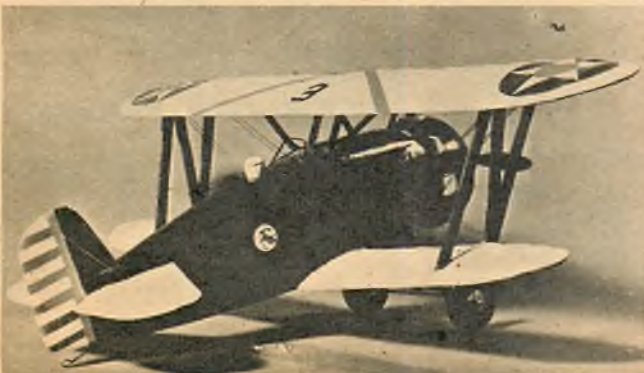
Start construction with the fuselage. Both sides are made from 3/16" square hard balsa. When the cement is thoroughly dry, separate the sides. Notch the longerons at station E. Bend to fit as shown in top view, and install firewall and all cross-pieces as indicated. The diagonal brace across cockpit may be omitted for realism.

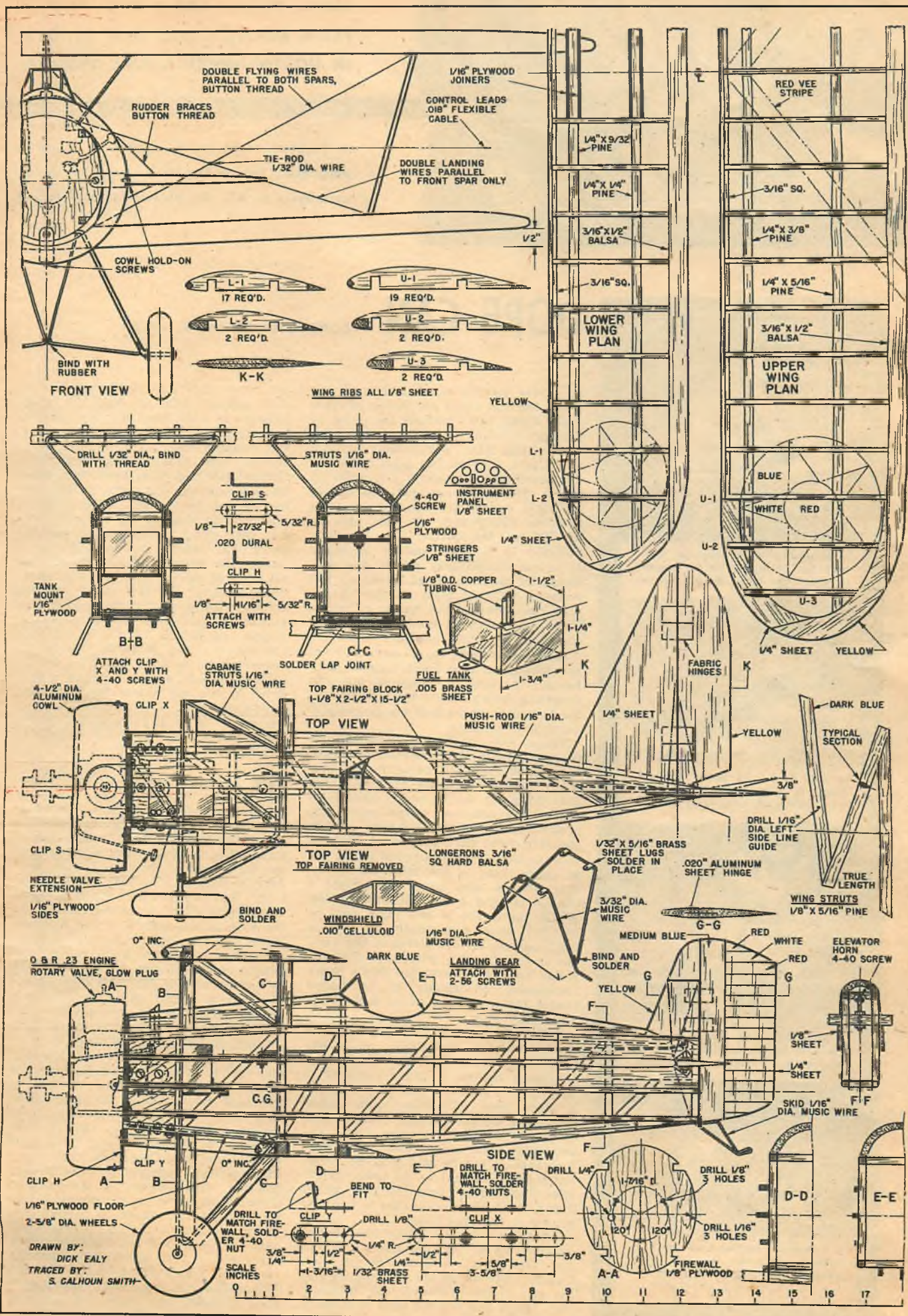
Construct the center wing struts as shown in detail "B" and "C," then add the 1/16" plywood floor and 1/16" plywood sides. Form the landing gear and bolt in place, and make clip X and clip Y for the motor mount. Install to fit the Ohlsson 23 engine. Alter as necessary for other radial mounted engines.

Next add the gas tank and bellcrank. The fuselage top cowl is carved as shown. (Continued on page 97)

● A rotary valve Ohlsson 23 is used for power in the P-12C. If you have engine of comparable size and power it can be substituted.

● Full size working plans of the P-12C may be secured as a part of Air Trails Plan #749. See announcement among ad pages, this issue.





# Model Matters

NEWS, VIEWS, COMMENTS, PHOTOS  
FROM MODEL CLUBS AND BUILDERS  
IN NORTH AMERICA AND OVERSEAS

● Payment of \$2 to \$5 is made on or before publication for photos of unusual interest sent exclusively to AT. No photos can be returned.

## DOPE CAN

CONDUCTED BY VAL A. LUCE



● Bernard O. Beck, Alcester, S.D., built this 100-sq.-in. job for engines of infant-type class. Weighs 1½ oz.



● Spad 13-C.1 by Major Frank F. Marsh is U-control to 1½" scale. He's medical officer at Army hospital.



● Ervin Napravnik, Czech engineer, made this .64 engine. Horsepower, .8; wt., 14 oz.; maximum rpm, 13,600.



● Rubber job by Pierre van de Dijk, Holland. Features 2-bladed free-wheeling prop popular on continent.

If you're making up a list of those who are worried about the future of free-flight flying, don't include the name of Clayton Newlin. A familiar figure on the contest field, particularly on the East Coast, Clayton has been collecting the "hardware" for quite a number of years. He points out that one of the principal advantages claimed for control-line flying—that of being able to fly 'em on the corner lot—has been nullified to a great extent in many localities; particularly where over-enthusiastic modelers have shattered the peaceful calm of early Sunday mornings and disturbed the repose of neighbors who hadn't hit the hay until after midnight the night before.

Besides, he adds, many control-liners are taking up free-flight because they haven't the time or money to put into modeling which would bring them the meet awards which they are potentially capable of winning.

From the foregoing observations Newlin draws two conclusions: first, that since they are being pushed out into free-flight country anyway, those who formerly built control-line ships exclusively are now investigating the possibilities of gliders, rubber models and free-flight gas jobs; second, that the more contest-minded, tired of losing out at every meet to the same select few who always win, see in free-flight a chance to snag a thermal and a prize. While there are a few who can be counted upon consistently to give a good account of themselves in the various free-flight categories, says Clayton, it has been his observation that a lucky "unknown" is usually to be found among the free-flight winners at virtually every meet.

While it is fully realized that the control-line vs free-flight scrap has been just about done to death, the reasoning behind Newlin's remarks is such that it was felt that they deserve a place here. To those who desire something besides straight duration and who are looking for something resembling scale appearance and performance, it can be said that the PAA-Load Event should be to their liking. (See Herb Kothe's beautiful ship, which flies as beautifully, plans for which appeared in the May issue.)

Then there's the Precision Event dreamed up by the Los Angeles "Thermal Thumbers," and the Flight Plan Contest, introduced by Jim Walker and the rest of the "Fireballs" of Portland, Ore. Both events have been previously described in this pillar. As to the latter,

we have from Jim an account of the first contest, held on Feb. 27, which appears to have been a daisy. Due to superlative skill on the part of the flyers, coupled with good weather, point scores were higher than anticipated. Competition was razor-keen, with Owen Brown winning first place by the slim margin of two points over Richard Nichol, who obtained an even 300 with his best effort. Heartening was the news that Infant-powered ships were among the winners, thus showing that all sizes of models can compete on an equal footing. For that matter, nothing seems to handicap the flying of CO<sub>2</sub> or rubber models either. Space forbids giving the details of the Flight Plan Contest here, so interested clubs are requested to address inquiries to the column, which will be sent along to Jim. In this way, those who have tried it will be better able to voice an opinion as to its possible inclusion in the AMA Rules, for which Jim is beating the drum.

Don James, designer of the "Infant Pursuit" featured in the April issue, takes issue with the C.L.A. theory as expressed by Jerry Brofman in his article describing the "Cosmic Rave," attributing the ship's ease of adjustment to high power loading rather than Jerry's high C.L.A. location explanation. Don believes that the ship would have equal if not greater stability with the C.G. at the bottom of the fuselage. While it's true that most of the free-flight gas jobs seen today have their center of lateral area up this high, the fact remains that Jerry took first place at the Nats. A portion of the column is hereby offered as an arena where the two gladiators can battle it out, so we'll be looking for Jerry's answer.

It also seems that there's more than one variety of nylon, since Don sends a sample of what appears to be the snazziest covering material these blood-shot old eyes have ever seen. Its texture, weave and weight are far superior to the parachute variety, of which we're sure Don Foote wrote when his comments appeared in the February column. One feature of the material James sent us is its resistance to unraveling at the edges; a property in which it's superior to the finest pre-war silk. Seeing it will lead us on a search through the yard goods shops and it's suggested that readers do likewise. If Milton Ronney, who uses it, can pile a ship in under full steam and have no more damage (Continued on page 82)



## NAVY MODELS

An outstanding feature of the Naval Training Center's Field Day at San Diego, Calif., was a demonstration by members of the base model club. Art Jensen's Orwick-powered Reliant is flown (above) by Charles Goodale, Navy model instructor. CPO Glen Horton, Jr., shows off his radio-controlled Atwood-60-powered Piper Cub. Workmanship awards went to (below, l. to r.) CPO W. C. French, Super Cyke original; Chief Horton, Ohlsson 23 Doodle Bug; L. E. Wassinger, Jr., McCoy 29 job. W. Larsen (below, r.) sprays his Beechcraft.

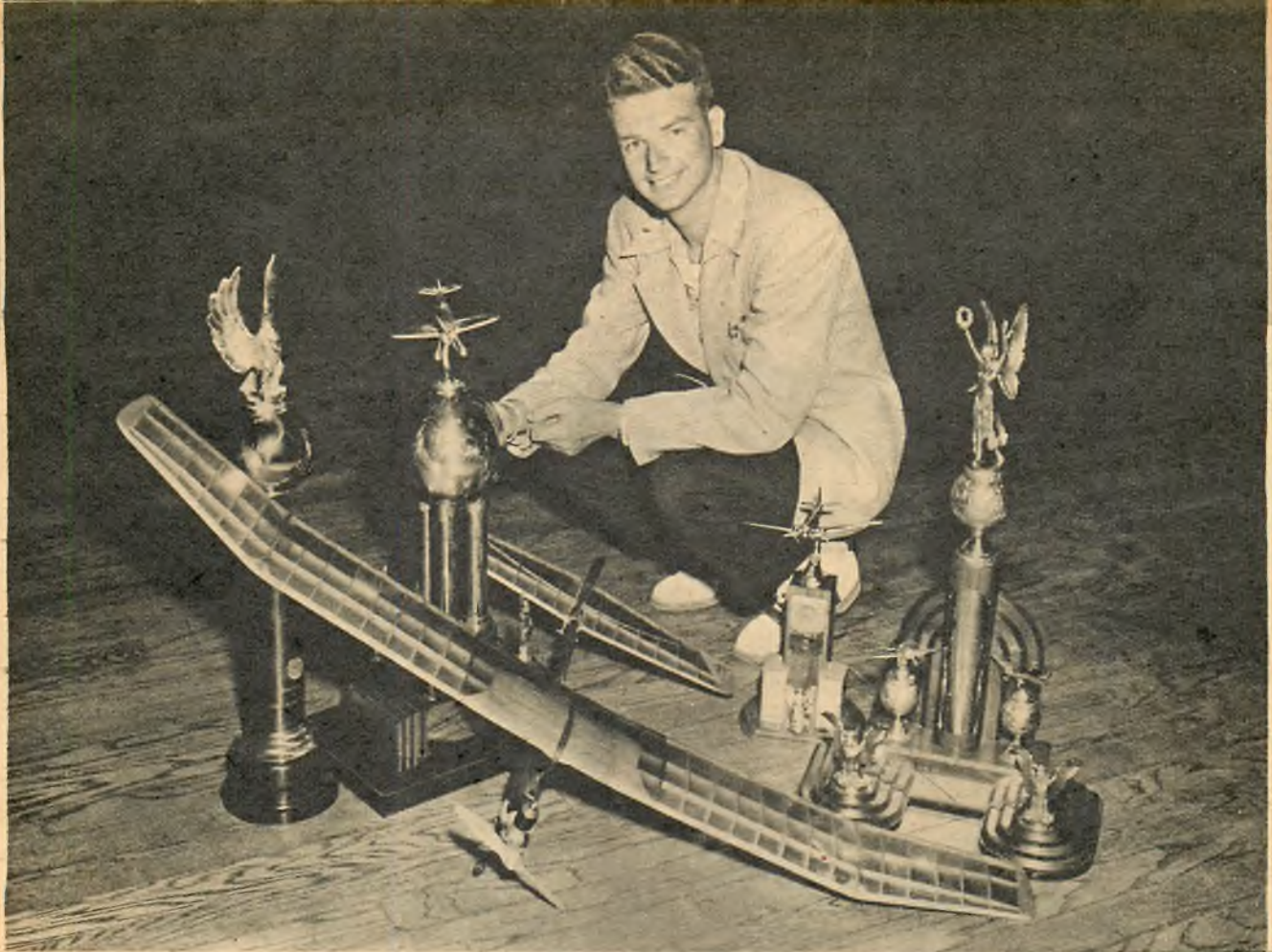


## AIR FORCE CONTEST

When the Air Force threw a 2-day meet at Hickam AFB, Hawaii, a strong wind got into the act. Yet more than 200 contestants, military and civilian, representing almost all racial groups on the Islands had a fine time in contest sponsored by the American Legion's Pearl Harbor Post No. 24. Brig. Gen. Robert F. Travis, commanding general of Pacific Air Command took top honors (left, above). Jason G. Arauso, in peak cap, is shown with his scale control-line B-26. Bertrand Takemoto (below, right) weighs in his U-control scale Gulfhawk.







● Designer Norris and some of the trophies his Class A job helped him win at the '48 Nationals where he captured Senior Class Champ title.

# Blitz Buggy

By JACK NORRIS

**This plane has racked up an impressive list of National and Plymouth meet victories**

**U**NLIKE most models the Blitz Buggy was not designed, it was developed. For the past seven years we have made an effort to produce a free-flight design that would answer the demands of competition. From experience we have found this necessitated constant attention to practical aerodynamics. The result is a model that has won the Plymouth Internationals, the Philadelphia Flying Circus, the Scripps-Howard Junior National Air Races, and two classes at the 1948 Nationals.

Through association we have developed a keen respect for the modeler's ability to follow plans. We have planned, therefore, to omit the usual description

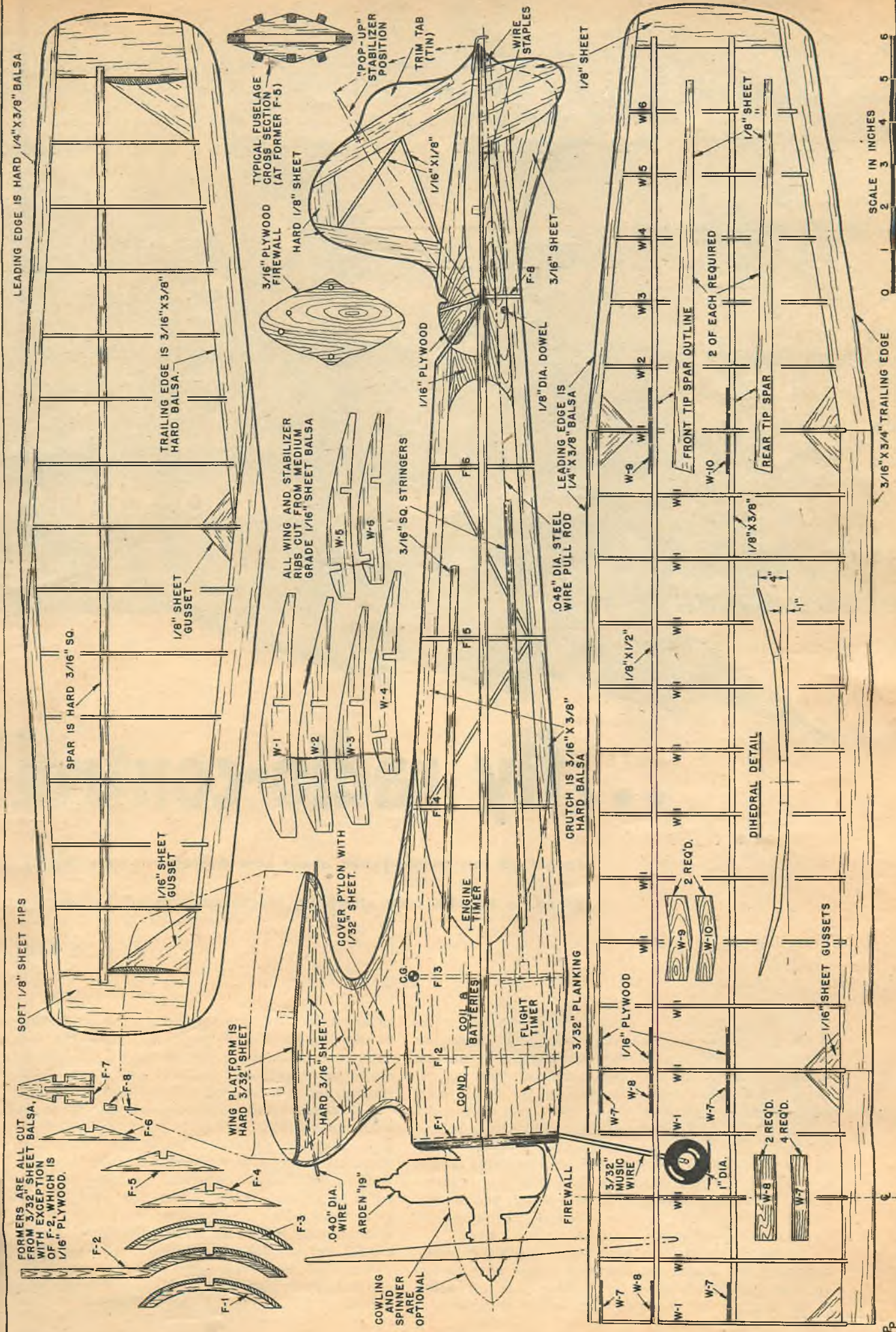
of construction details. Instead, we have decided to give a summary of the basic design concepts incorporated in the model in an effort to make the material more interesting and instructive to the reader.

The design of a contest free-flight model, like any other engineering problem, requires constant compromise. By practical aerodynamics we mean a balance of those factors which produce the three goals of free-flight design: efficient flight characteristics, stability, and ease of construction.

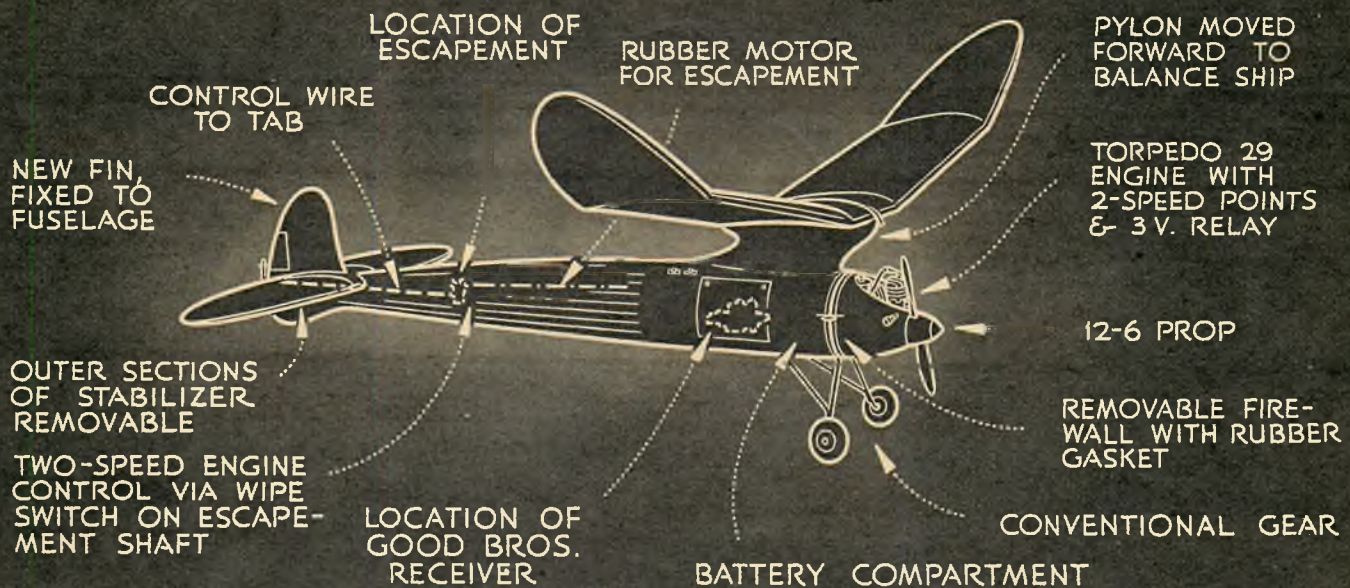
The factors which produce these characteristics are often so closely related that instead of blunt compromise, it is often possible, through thoughtful design, to fulfill two, or perhaps three, of these goals with one idea. As a practical example of this, streamlining will almost always enhance appearance and flight characteristics. By the use of some ingenuity in design, construction methods may be incorporated which give good streamlining (*Continued on page 67*)

● Full size plans for building the Class A Blitz Buggy are available from Air Trails' full size plan service. Use coupon in back of issue.

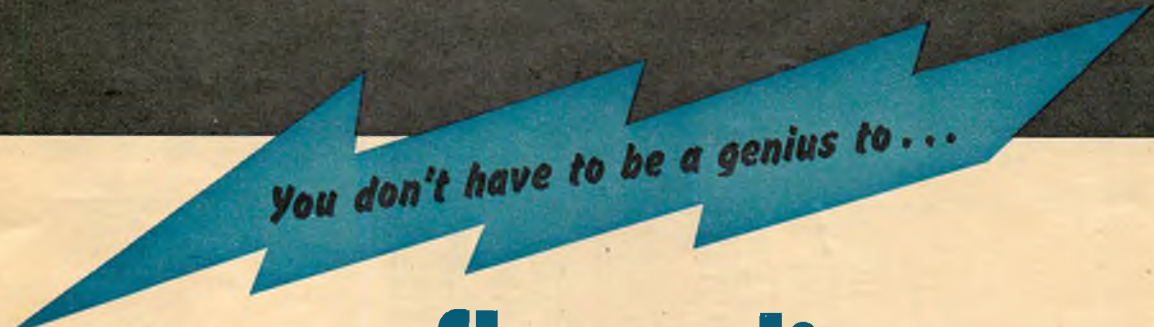




SCALE IN INCHES  
0 1 2 3 4 5 6



MODIFICATIONS TO **SAILPLANE** FOR **RADIO-CONTROL**



# ...fly radio-control!

Forget all this mumbo-jumbo about how difficult r-c operation is supposed to be—the only stumbling blocks are outdated Federal rules

By C. O. WRIGHT

**T**HE large increase in radio-control entries at the Olathe Nationals last year indicated expanded interest in radio-control for free-flight and proved the event is out of the "genius" class. This season should find even more of the fans in the field. With lightweight receivers on the market, technical difficulties are at a minimum, and the job is largely one of model building. The experienced free-flight gas builder can easily convert one of his successful D jobs to radio or build a radio job following his favorite design. The completed ship should weigh five pounds or less, and should fly well on any good 29 motor with a twelve-inch-diameter, six-inch-pitch prop.

The editor asked for a report on a Sailplane radio-control model which son Bob and I flew with mixed success at Olathe to score tenth place. Let me hasten to say that we are the most amateurish beginners in

radio-control and I am reporting on our experience not for the Jimmie Walkers and Goods, but with the hope that some of the inexperienced who have been hesitating to get their feet wet may jump into radio-control, for it is not too difficult and is a lot of fun.

Our observation convinced us that much failure with radio-control is due to poor ships, unworthy of flight with or without radio in the first place. We therefore selected our favorite D ship, the Sailplane. With no significant alterations, the radio was installed with two-speed motor timer. At first we used a DeLong 29 motor. Long motor run warped the piston, and the night before we left for Olathe we substituted a K&B Torpedo 29 with a two-speed timer installed. (This shift was made with the encouragement and general supervision of Russ Nichols who was in town, planning the AMA business sessions at Olathe.)

The Sailplane, weighing five pounds complete with all batteries, radio and two-wheel gear, performs so well on a 29 motor that we would not recommend a motor of larger size. On full speed the ship has a good climb and a nice rise off the ground, while on low speed motor timer point it loses a little elevation. With a larger motor, vibration might well be more serious, climb too steep, and low speed motor might not result in desirable loss of altitude. Leave the larger, more heavily powered ships to the experts.

The ship was started during the Thanksgiving holidays in 1947 and completed on Christmas week after Bob had returned from college in California. Our experience with the flight characteristics of the ship has been all that could be desired. Constructed and balanced as shown on the plans, it flew without important adjustment, and the low power prevented critical performance. Our grief has been with the radio where we are very inexperienced. A defective sensitive relay on the receiver, now corrected, prevented good control at Olathe, but the ship survived three flights without damage when control was lost.

The accompanying drawings show exactly how we installed the Good Brothers receiver in the Sailplane fuselage, placing the batteries in the front compartment, back of a removable firewall. The pylon was moved forward to balance the ship, and a conventional

of the detachable elevator is shown. While the construction is simple, it must be done accurately and carefully. After the elevator cementing has thoroughly set, the parts are separated with a thin razor blade, cutting the leading and trailing edges. Soap or parafine on the dowels makes for easy working.

We used a two-speed motor timer operated by a conventional three-volt relay. A simple wipe switch was installed on the rubber motor shaft of the rudder escapement mechanism so that every other neutral position closed the switch, resulting in "low" motor on every other neutral rudder position. A very small condenser, smallest available, was thrown across the points of the wipe switch to guard against interference with effective antenna length.

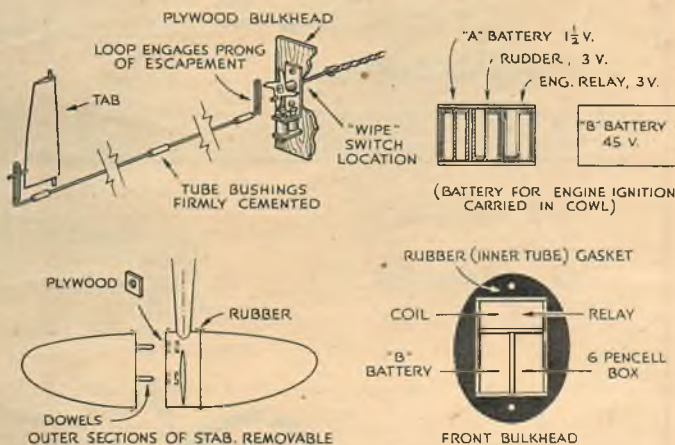
The Sailplane with the 29 motor produces a somewhat deliberate response to the signals, and the inherent stability of the design makes rapid stunting difficult. The slow action, however, is an advantage for the beginner, who may increase tab size or movement as he gains in experience and desires more snappy performance.

So much for our Sailplane r.c. experience. I hope it will encourage many of you to try your hand at this interesting and satisfying form of model aviation. And, remember—you don't have to be a genius . . .

Dr. Walter Good, chairman of the Academy's contest board (and with his brother William, three time winner of the National radio-control championship) and the writer are concerned over the difficulties that lie in the path of the would-be radio-control flyer. We drew up the statement that follows which concerns desirable modification of radio-control FCC regulations.

It is evident that quite a few modelers have written to the Commission urging that the rules be liberalized. As president of the Academy of Model Aeronautics I urge you to continue with the campaign in your area and do the following: (1) get your local model clubs to send communications to Washington; (2) send these letters to the Secretary and the members of the FCC; (3) send similar letters to the Congressmen and Senators from your state; (4) if convenient, send me a copy of the letters you are writing so we can centralize the drive from my office and follow up.

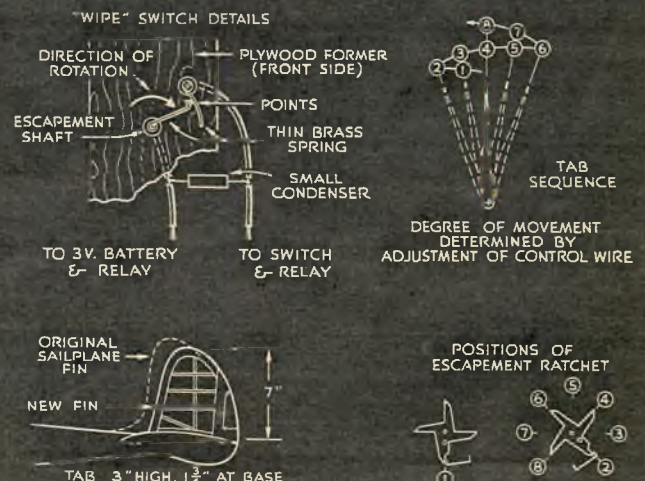
The Federal Communications Commission is located in the Post Office Department Building, 12th Street and Pennsylvania Ave., N. W., Washington 25, D. C. The FCC commissioners are (Continued on page 94)



two-wheel gear was attached to the fuselage, but not to the firewall. We used a compromise rudder size, about half way between the larger area on the early plans and the smaller area on the last Sailplane kits sold. The height of the rudder used is seven inches. The tab is roughly triangular in shape with 1 3/4" at the base and 3" at the altitude.

The removable firewall serves several purposes, chief of which are to offer access to the radio batteries, and to allow for a rubber gasket (made from inner tube stock) between the fuselage and firewall to dampen out motor vibration. Without this rubber gasket, motor vibration resulted in a flutter in the rudder tab.

We found it wise to attach the rudder permanently to the fuselage and to make each side of the elevator removable for easy transportation. The construction



You're so right,  
Mr. Wright!

By GORDON S. LIGHT

**Radio-control flying can be popularized with events of more interest to the public**

THERE'S nothing wrong with radio-control flying that a relaxation of FCC rules and some better r.c. events can't cure. All you need is a free-flight model and a little black box.

Ordinarily, free-flight models are notoriously independent. They make little effort to cooperate. Once out of your hands, they carry on pretty much as they please, torturing earthbound builders with their antics. Free-flight contests up to now have been limited to simple battles with a stop watch, with no fancy or precision flying.

Little black boxes mounted inside fuselages will change all this. For the most part a radio-control model leads a fairly conservative and well regulated life. And, of course, it's capable of bigger things than merely clowning around in the sky.

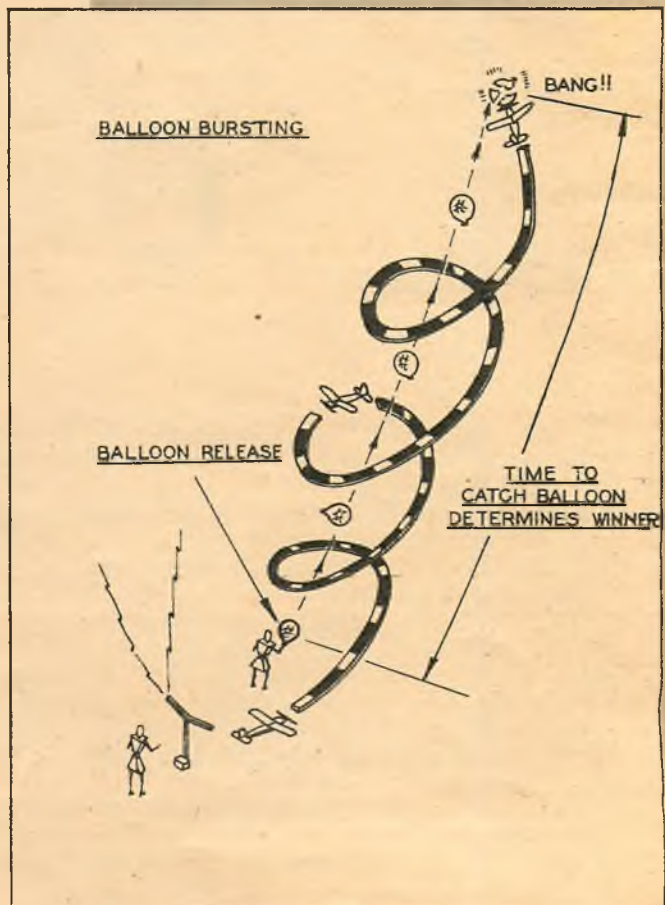
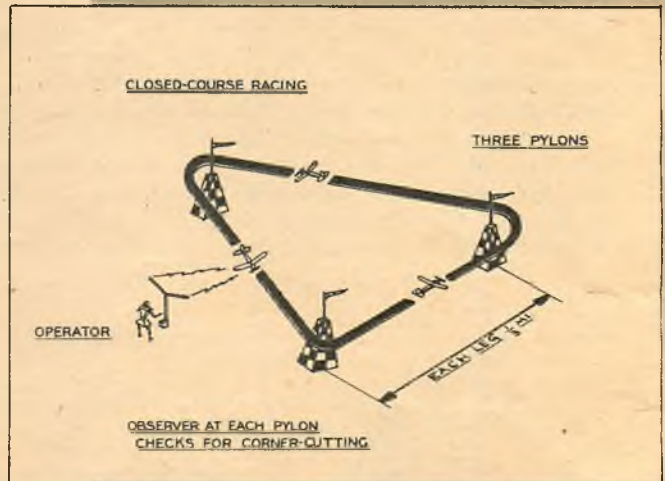
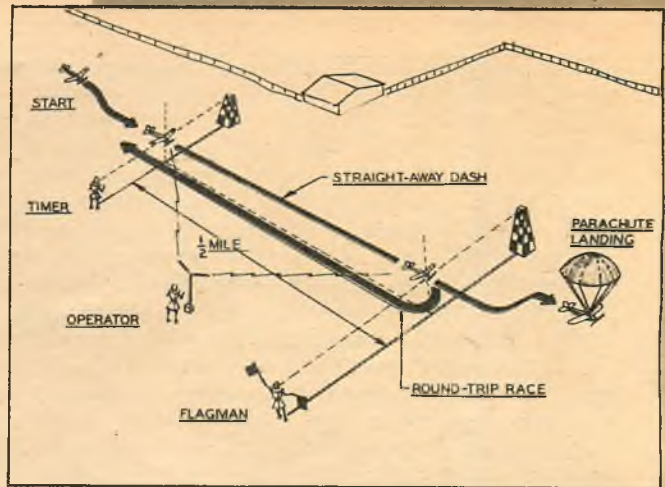
The experts are still developing suitable radio gear for the average size models and improving the flying technique. Black box design hasn't yet reached the 100% foolproof stage (what has?) but the experts are closing in. It isn't too early for the duffers to dream about future types of free-flight contests

Here are some suggestions to consider, to popularize radio-control flying:

**Speed dashes:** Half-mile straightaway course. One upwind dash and a downwind dash for an average speed. This comes closest to the true top speed since no time is lost turning. A slightly slower alternate is to fly the course in round-trip fashion, turning around a pylon at the far end.

**Closed course racing:** Triangular course marked with three pylons. There will be no jockeying for position at the pylons, however. Only one model can fly the course at a time. The interference problem limits all r.c. flying to one man at a time.

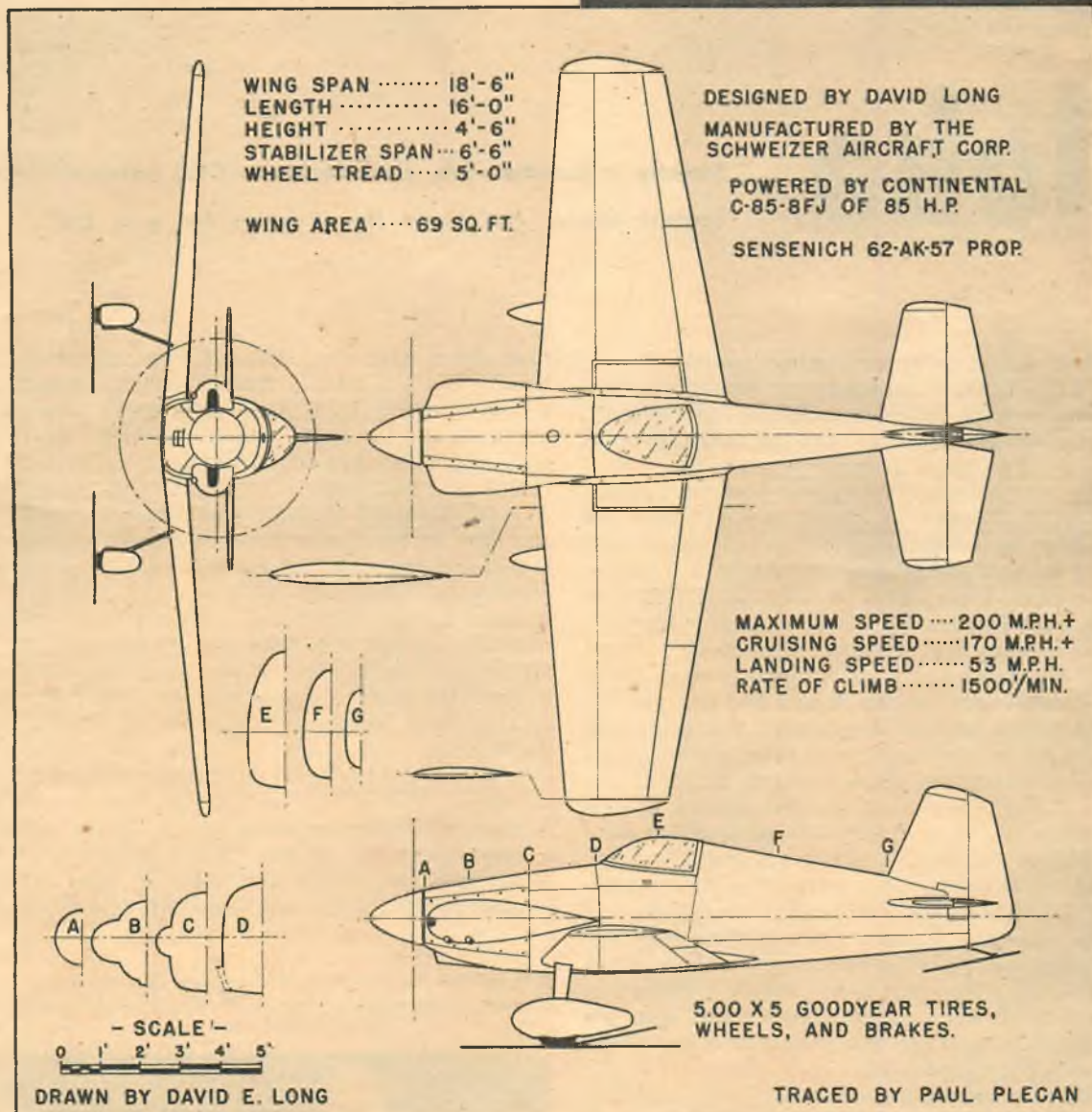
**Balloon-busting:** This is an old trick with indoor models, but the poor old balloon is tied down without a chance in the world. Cut the string and have the r.c. model chase it aloft. By regulating the amount of hydrogen, the rate of ascent of a balloon can be closely determined. (Weather observers use this trick for measuring the winds aloft.) By timing from the instant of release until the model pops the balloon, the altitude can be ascertained. (Continued on page 96)





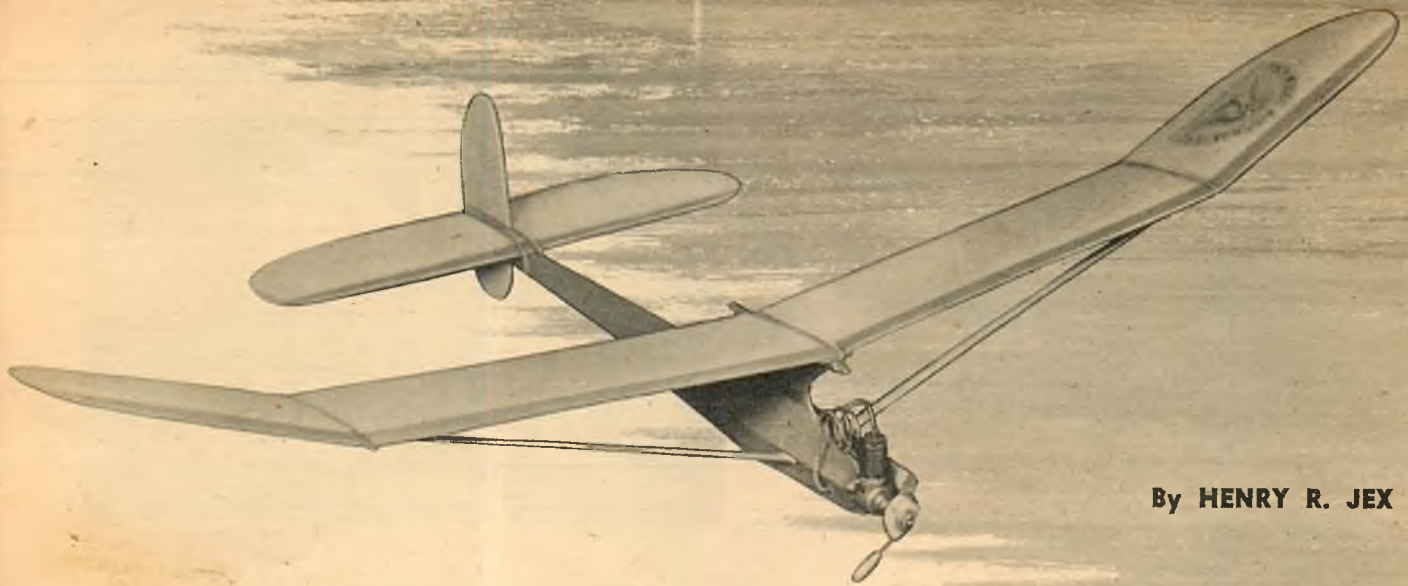
mini-SOLID :

# Midget Mustang



**V**ERSATILITY is the key word of Midget Mustang—a combination racing plane, aerobatic ship and fast personal transport. Having already accounted for itself by winning fourth place in the 1949 Miami Air Maneuvers, ahead of the veteran racing pilot Art Chester and his fast Swee-Pea, Midget Mustang is now slated for production, with small modifications, by the Schweizer Aircraft Corp. of Elmira, N. Y. Principal changes will be a new landing gear of wider tread, fixed to the wing leading edge spar; a 35-lb. baggage compartment located behind the pilot and accessible from outside; and an optional auxiliary 5-gallon gas tank. The little ship possesses fighter performance with lightplane ease of flying.





By HENRY R. JEX

# Aloha

Strictly a duration job, this Herkimer CO<sub>2</sub> powered contest winner can snare the trophies for you, too

**A**LOHA is a CO<sub>2</sub>-powered contest model. It won the first contest it entered and nearly equalled the National record of 9 minutes for its category. Flights are always over 2 minutes, regardless of weather, over 3 minutes in warm weather!

This fine performance is due to several unusual design features. Primarily, its very small size (90 square inches) and light weight (3.5 ounces) permit the use of a long motor run of nearly 2 minutes. A Schmitz-Luck type airfoil is used in conjunction with sheet construction for efficiency and simplicity. Airfoil parameters are: camber—5% at 25% chord with a 3% thickness and a sharp leading edge. Thin 1/16" sheet is perfect for this shape, and it preserves a true, unbroken airfoil throughout the span and chord. Unique struts keep this thin section from twisting or bending, yet allow adjustment for C. G., warp, or removal. Minimum drag is caused by the pod-and-boom fuselage. Rugged T-construction simplifies building, while the screw in the cartridge holder enables fairing of this usually awkward area. Engine and cartridge are also readily accessible and are not "souped-up." A single-blade folding propeller makes efficient use of the gas energy, yet reduces glide drag immensely. Note that a reasonable diameter is used, along with higher-than-usual pitch and an efficient airfoil. The single folder is almost necessary for contest performance.

After all this harping on efficiency, some may lift their eyebrows at the extreme adjustments used. However, using the incidences and C. G. position shown, flights are always consistent, are not critical on adjustments, and, most important, variations in engine power don't affect adjustments. Aloha may be flown with the C. G. as far back as 1/2" from the trailing edge, but incidences must be carefully changed, so this is not recommended for the average flyer. Better still, follow settings exactly.

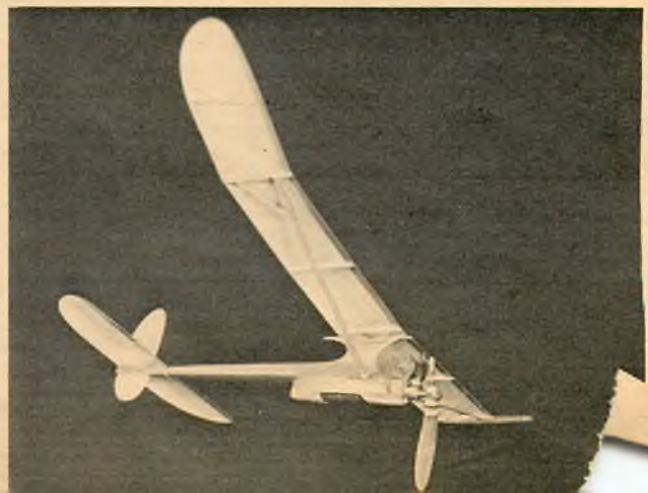
The fuselage is the more difficult, so knock it out

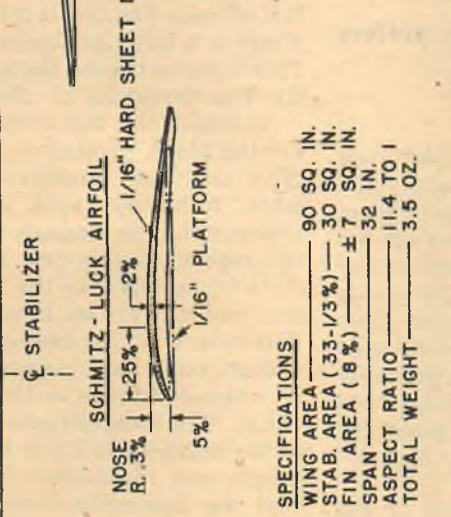
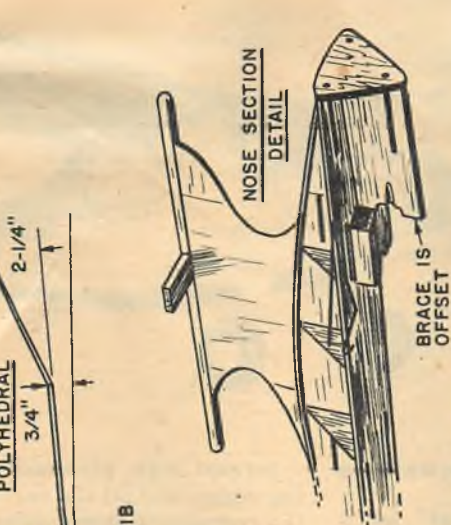
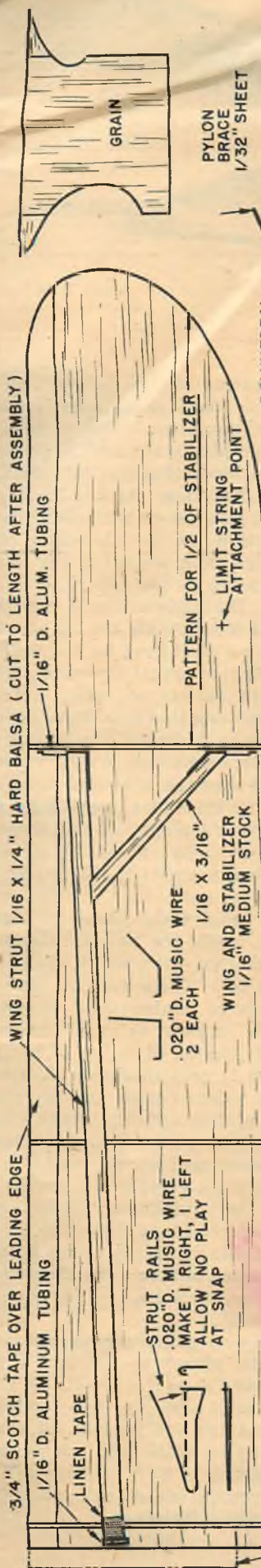
first. Start with the 1/16" stiff balsa (quarter grain) boom. Cut the profile from 2" sheet, including the pylon. Add the 1/32" hard balsa pylon pieces (grain vertical) and the 1/32" formers as shown on the plan. Glue the 1/16" square fairing strip on last.

The pod and engine are next. Cut out and drill a 1/16" plywood firewall and attach it carefully to the nose of the boom, including the 3° to 4° down thrust and zero side thrust. Place a 1/16" sheet brace behind the lower part of the firewall, slightly offside to allow for the holder end. Cut out 1/16"-wide slots behind each bolt hole long enough for the 1/16" x 1" motor bolts to fit into. When the bolts are screwed in from the front, these should be a tight fit. Screw on the motor temporarily, put plenty of glue around the threads, and place 1/2"-wide linen sewing tape over and under the slots, effectively forming a "built-in" nut.

Place an empty cartridge in the holder; substitute a machine screw for the thumb screw (or cut off wings and slot head) and coil the tube as in the photographs. Put the holder (*Continued on page 61*)

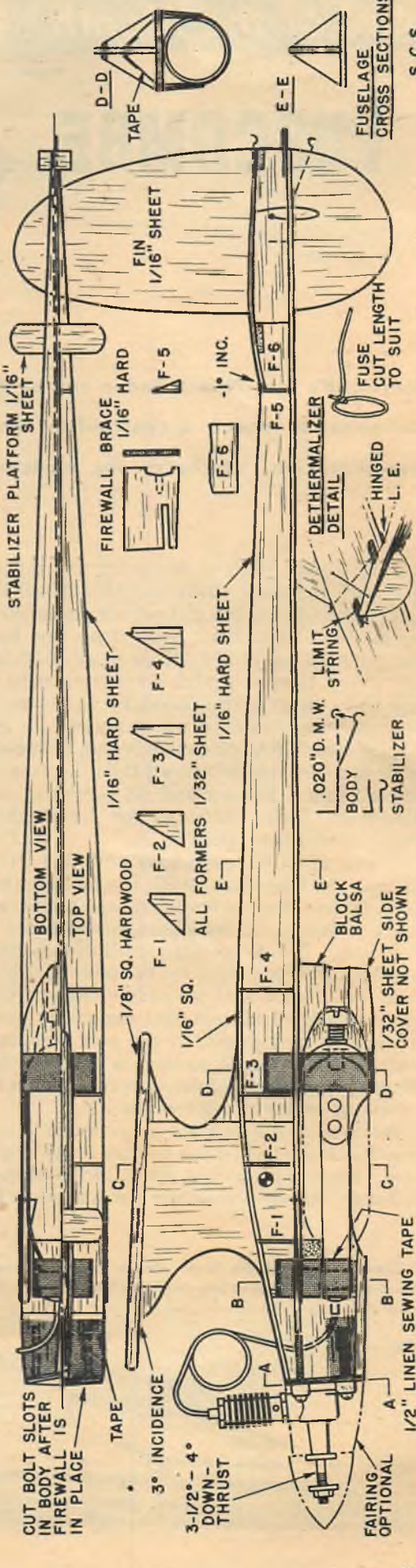
● If you like to work from full size plans you can secure working drawings of the Aloha on Plan #749 from AT's Full Size Plan Dept.





SPECIFICATIONS

WING AREA	90 SQ. IN.
STAB. AREA (33-1/3%)	30 SQ. IN.
FIN AREA (8%)	7 SQ. IN.
SPAN	32 IN.
ASPECT RATIO	11.4 TO 1
TOTAL WEIGHT	3.5 OZ.



PLANS ARE HALF SIZE



## Model of the Month

# LUSCOMBE



**Cleveland's new, 76-inch Sedan can be flown as a radio-control model, a control-line "goat" or a free-flight job, whichever the modeler prefers**

**I**N thirty-odd years of designing and manufacturing model airplanes, Cleveland Model and Supply Co. has produced over 300 distinct airplanes, none of them in less than 1,000 lots. Some, they say, have hit the staggering total of 200,000 or more. Although virtually every type of model plane known to the hobby has been quantity produced by this firm, this Ohio manufacturer has been world famous for generations for detailed flying scale models and, of these, probably none has been better known than the now finally obsolete Stinson Reliant and its successor, a giant 76" Luscombe Sedan intended for free-flight, control-line, and radio-control.

Priced at \$7.50, compared with the \$17.50 of the Reliant, the Luscombe Sedan is a fabulous kit for anyone who has ever harbored an urge to construct something realistic. Inasmuch as this includes just about everybody, it is to be expected that Luscombe Sedans will be a common sight for the next decade. It got so with the Stinson that a steady demand from builders all over the world kept that expensive number alive for twelve long years. In the end numerous modelers were determined to have a crack at the Stinson before it passed out of the picture. Now it is a case of "the king is dead, long live the king."

We shall now switch the microphone to our reporter who has just reached the bottom of the big Luscombe box. Strewn about are plans, strips, printed sheets, Silkspan, wheels—yes, they put wheels in the kit, too

● Cleveland's Luscombe Sedan stands nearly two feet high in its "stocking feet." Concern has produced kits for more than 30 years.



—formed wire, plywood, sawed blocks, formed leading edges, and all the rest of what it takes to live up to the company's thirty-year reputation. With a corral full of balsa like this it is fun just to identify the parts. There is a large profile-cut block that had us baffled. This turns out to be the biggest nose block in captivity. You should see it! But let's get on with the show.

As usual, the big attractions of the Cleveland kit are the plans, printed on one sheet almost as big as a table cloth and another as big as the top of a card table. A homey touch is the characteristic use of typewriter type, enough of it to double the length of this report. In this case, it's a good deal, for the notations frequently take the form of actual directions and are loaded with an infinite variety of useful hints. Particularly on the fuselage—one that must have been exceptionally hard to design so that people could build it without difficulty—these comments are of great value. The tough structure over the wing and in back of the cabin—you know how the Sedan goes—is both simple and ingenious. There's plenty of indication that the Luscombe designer didn't go in for guess work; all this intricate authentic detail of a large complex model is cleverly worked out.

Let's see what we get besides the plans for our seven-and-one-half bucks. Inside the roll of Silkspan are close to 50 strips of assorted sizes, many of them quite heavy, such as  $\frac{1}{4}$ " x  $\frac{1}{2}$ ". There are two neatly carved leading edge pieces of timber-sized dimensions, several chunks of  $\frac{3}{8}$ " square,  $\frac{1}{4}$ " x 1" shaped trailing edges, a couple of lengths of  $\frac{1}{2}$ " x 1" hefty motor bearers, no less than 11 printed sheets of various thicknesses and about a dozen other sheets. Five lengths of music wire, several sawed-out blocks, two envelopes of metal parts and wheel bushings, two sheets of celluloid, and wheels complete the round-up. The wheels, by the way, are scale-type doughnuts of about 4" diameter, and  $1\frac{1}{2}$ " thickness. They are turned from a soft balsa and are ready-drilled to take hard-wood tubular-like bushings. Many of the balsa sheets—our reporter just called out from the depths of the box—are stamped: "scrap balsa, for filling-in use." Now, that's a nice idea!

Unlike many politicians who glibly use the phrase, Cleveland can "point with pride" to the fact that after so long a period, having seen the growth of the model industry, the approach and passing of many trends and interests in airplanes and models, the firm is still paramount in the flying scale field. A recent advertisement, typical of scores of such displays going back as long as there were model magazines, and even before, features twenty scale (Continued on page 65)

# See you at the Nationals!



● Into the wild blue yonder! Naval Air Station at Olathe, Kansas, will be site of National meet again this year. F6F's in background.



● Jim McClelland (center) will be contest supervisor for 18th annual AMA Nationals. Here he receives official sanction certificate from Academy prexy C.O. ("You Don't Have to Be a Genius . . .") Wright. Happy gentleman with the trophy on his head (!) is Jess Hall, manager for the meet which will be run off July 26-31. Other photos give you sidelights of '47 competition held at same field.





● Top executives of Plymouth Motor Corp. going over plans for Plymouth's 3rd International meet. From left: H. B. Heberling, asst. general sales manager in charge of advertising; Frank P. Sposite, contest director; A. B. Dowd, merchandising mgr.; Bruce K. Steele; D. S. Eddins, pres.; R. C. Somerville, general sales mgr.

**P**LYMOUTH Motor Corporation will sponsor the Third International Model Plane Contest at Detroit, Mich., August 22 through 29, it has been officially announced by D. S. Eddins, president of Plymouth.

Prizes will consist of 167 trophies and \$8,750 in U. S. savings bonds. The contest is invitational, with bids going to modelers throughout the world who establish outstanding records in local and state qualification meets sponsored by Plymouth dealers. Last year 25,000 model builders participated in 208 dealer-sponsored competitions; some 925,000 spectators witnessed these events.

It is expected that the 1949 qualifying rounds and the international finals will draw even bigger crowds and additional contestants.

"We are tremendously gratified with the results of the contests we have sponsored during the past two years," Eddins said. "Last summer the model builders established 7 national records for endurance and speed in Plymouth-sponsored contests."

Participation in the International finals will be open to boys and girls in four different age groups: novice, 13 and under; junior, 14 and 15; senior, 16 to 20; and open, 21 to 25. Creation of the novice group is a move to assure the very young of a chance to compete against others of similar age and experience. Similarly, a top age of 25 was placed on the open class to provide a more equal competitive opportunity for young men and women.

"We appreciate the fact that there are many excellent model (Continued on page 69)



# Whirling Dervish

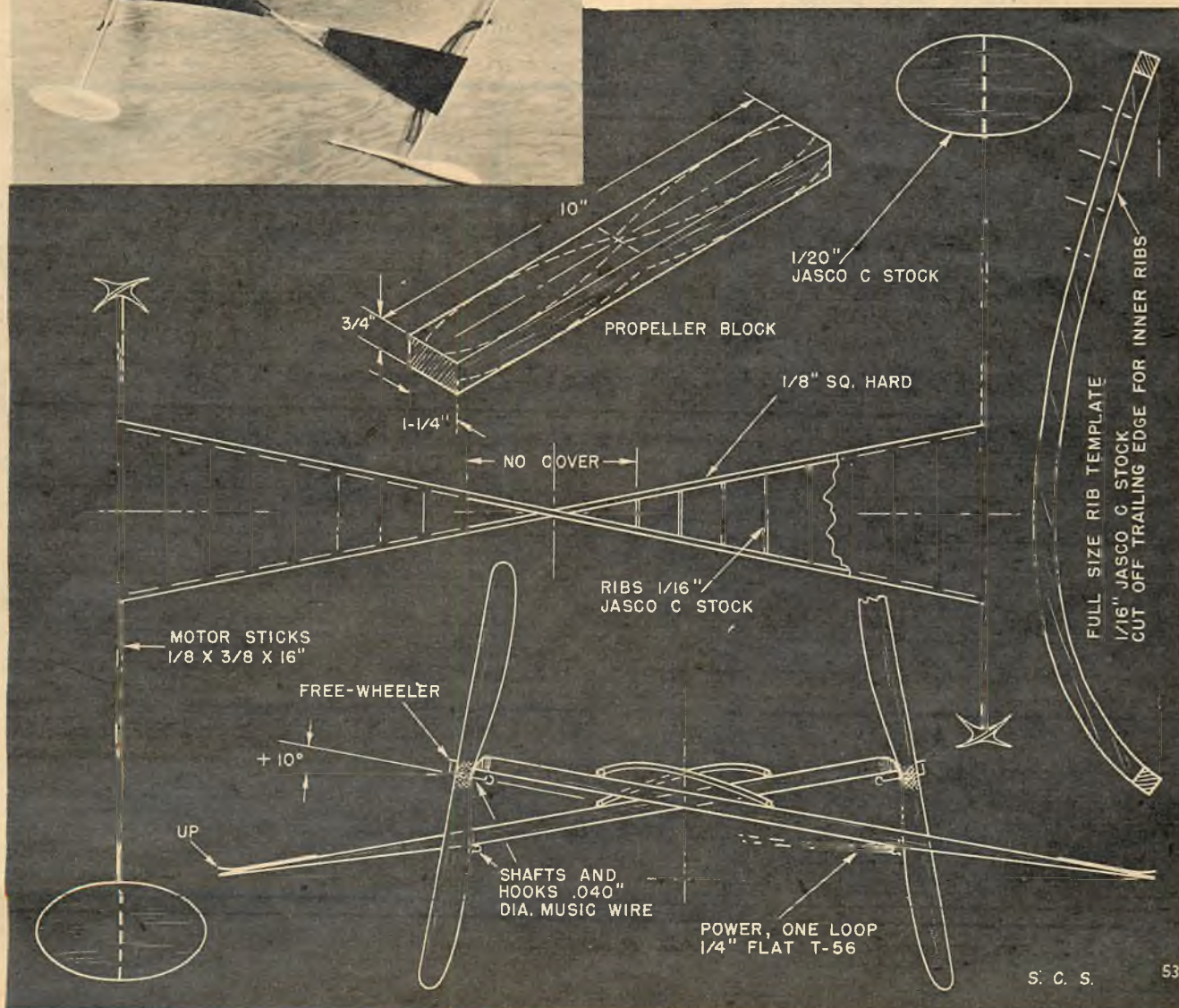
New approach to helicopters is this unique model which established a record of almost 9 minutes

WHEN Mr. Ehling started out to better the national helicopter record you could have been reasonably certain that he would come up with a novel model. But no one expected this design which established a new all-time high of 8 minutes, 55 seconds (three-flight total time).

The model shown below, one-quarter actual size, is really a 20-inch propeller which is rotated vertically by small props at its tips. Construction of the lifting surface is similar to that developed by Merrick S. (Pete) Andrews for indoor microfilm flying.

Most surprising feature of the Ehling rotor prop helicopter is that the model is extremely stable and with power exhausted continues to float for long periods before descending. The ship is twirled as the propellers are released at start of flight and it climbs at a good rate. In still air the model will land at the same spot where it has "taken off." The same rib form is used all along the "wing"—the trailing edge is cut down as the rib approaches the center.

Designed and Flown by FRANK EHLING



DRAWINGS BY FRANK ZAIC

# RECORD REVIEW

**Mahieu's Zeek has set R.O.G. and seaplane records in three classes; Tracy did 118.76 mph in Class B.**

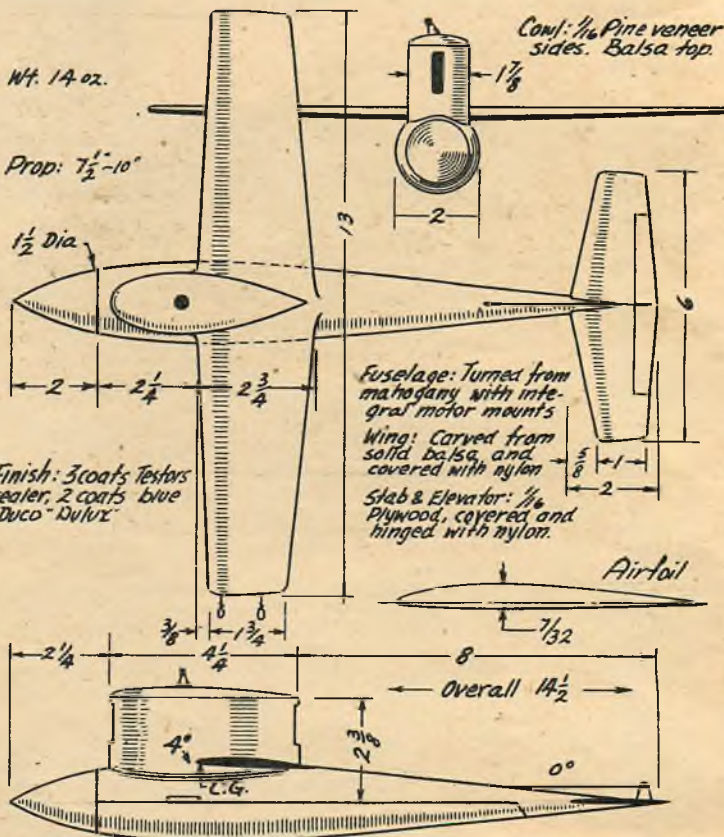
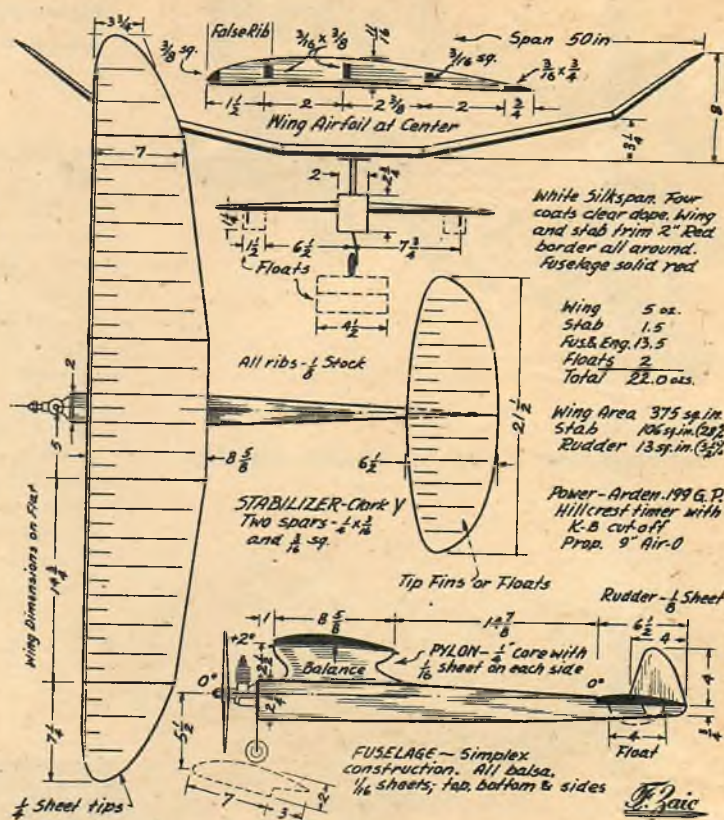
**L**EW MAHIEU of Long Beach, Calif., proved that he's one of the West Coast's better builders with a remarkable series of records established with his Zeek free-flight job. The model sketched here set a national record in Class A open R.O.W. of 22:01. It also placed second in the seaplane events at the '48 Nationals, and first in the Class A free-flight event at the 1948 Plymouth International competition.

The same design enlarged to Class C and D sizes turned in a D R.O.G. mark of 19:14.4 and R.O.W. time of 8:08.6 in the same size category. This was done with a series 20 McCoy 60 engine. The prop used was an Air-O 12 incher. The engine was a glow plug job.

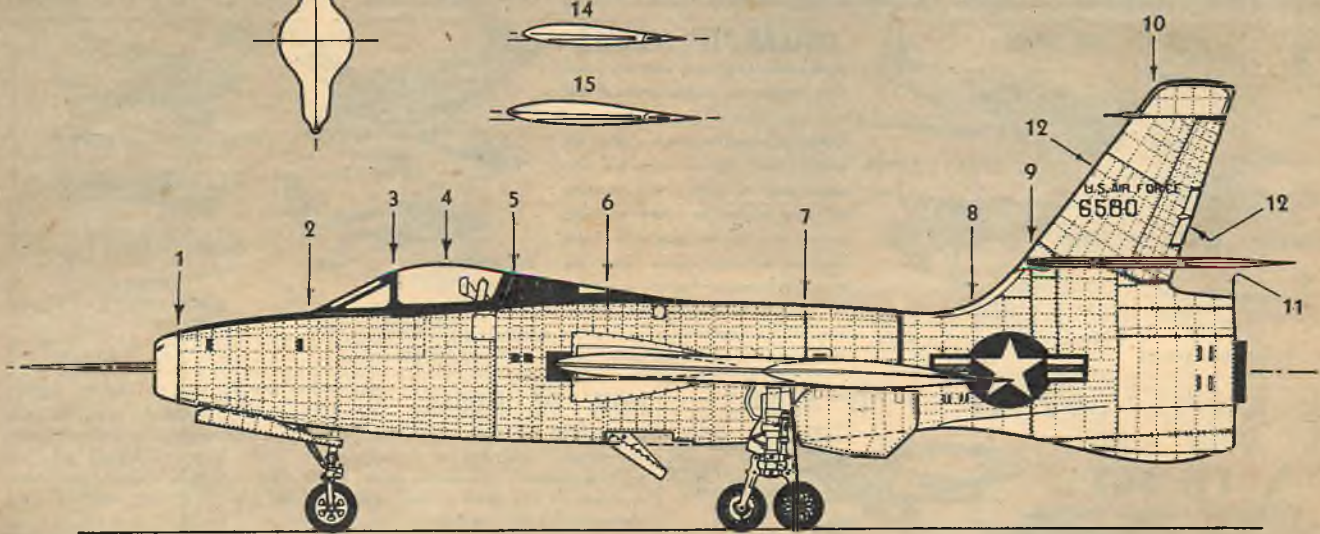
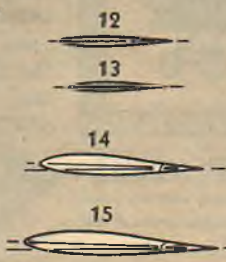
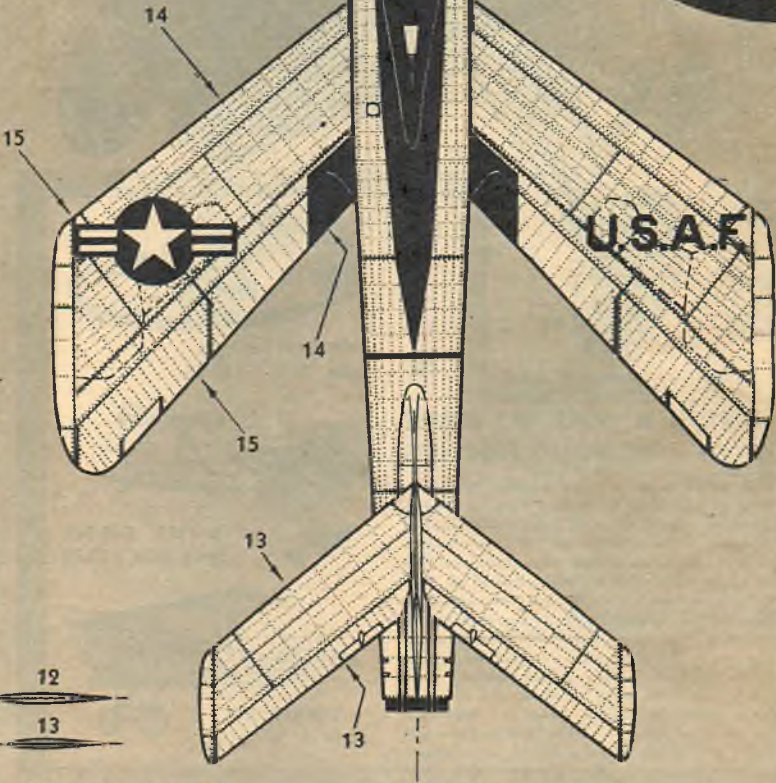
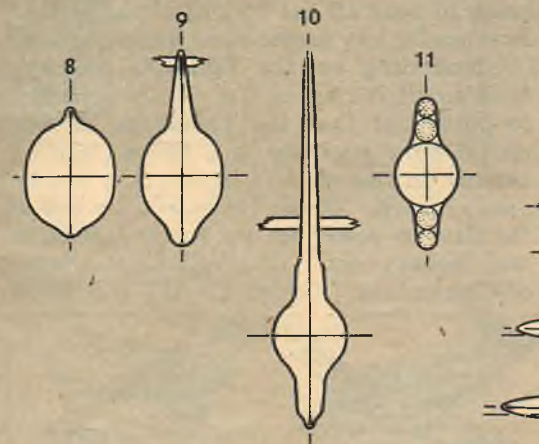
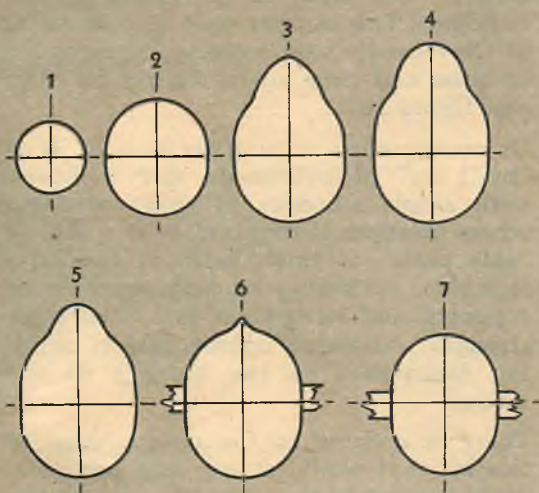
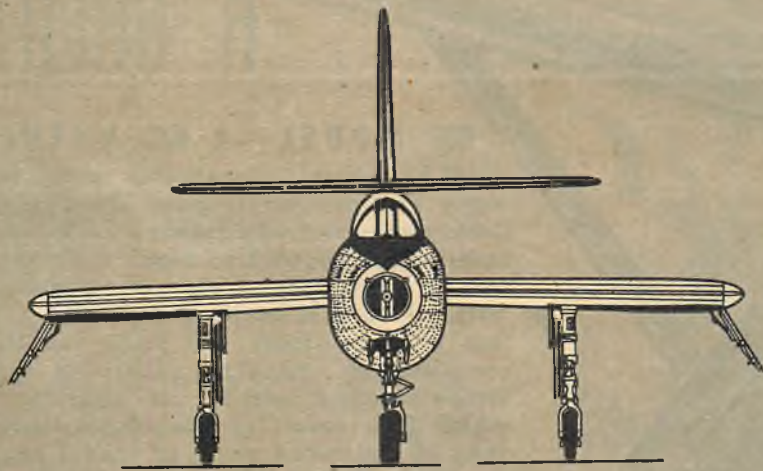
In Class C using a K&B Torpedo .32 and an 11-inch Air-O prop, Mahieu also established another new national seaplane record. The weight of the record breaking R.O.W. C-Zeek was 32 oz.; the wing area 527 sq. in. Thrust and incidence angles the same as the small A-B version sketched by Mr. Zaic.

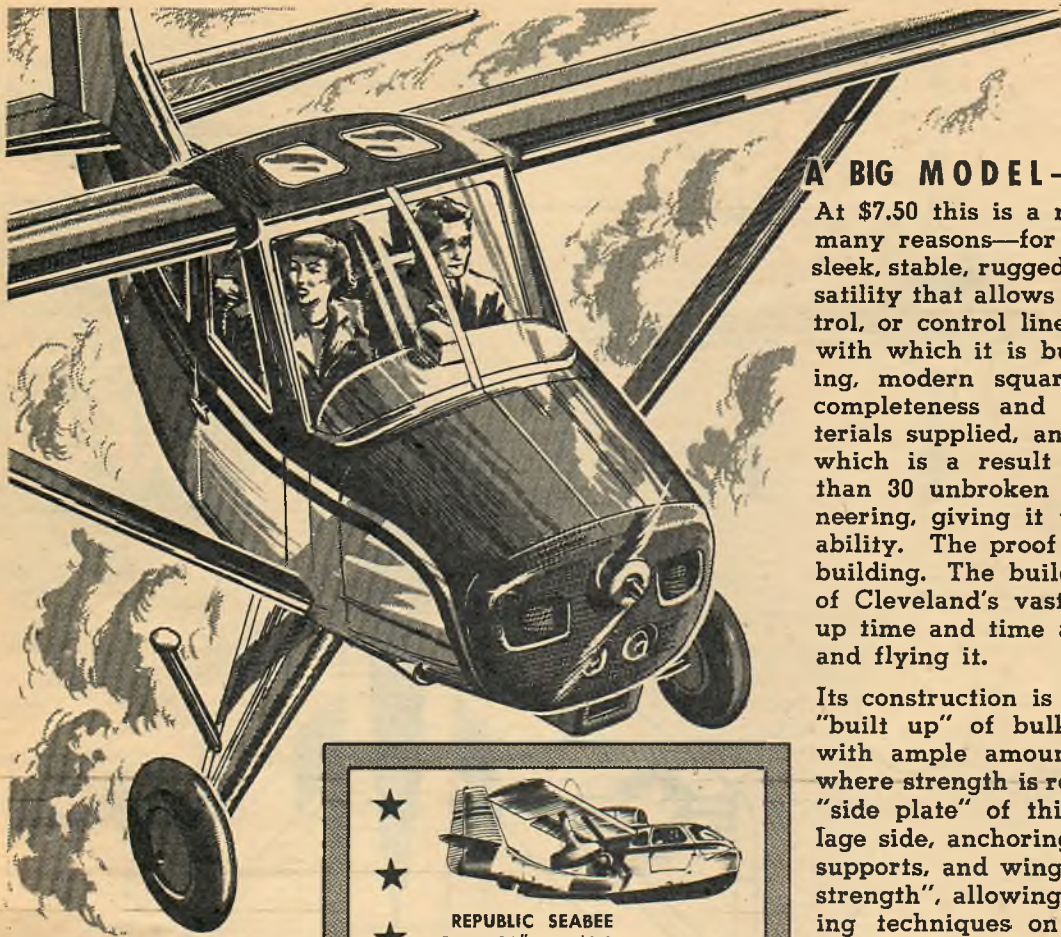
The D-Zeek as a 3-float job weighed 64 oz. and had a wing area of 855 sq. in. Thrust angles were zero-zero, the wing had positive 3 degrees, the stabilizer zero degrees. The floats were designed by Ray Acord.

Richard Tracy of Long Beach, Calif., set a Class B senior record of 118.76 mph with this McCoy-29-powered speed job. The flight was made at Southgate, Calif., at about 5 p.m. Weather was moderately cool and breezy. Note that record-holder Tracy followed general West Coast style in turning fuselage from a harder wood—in this instance mahogany.



*Solid  
Stuff:*  
REPUBLIC  
XF-91






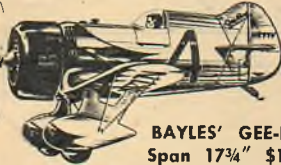

# A GREAT

## A BIG MODEL—A BIG VALUE!

At \$7.50 this is a remarkable model for many reasons—for its great 76" span of sleek, stable, rugged airplane—for its versatility that allows free flight, radio control, or control line flying—for the ease with which it is built,—for the eye filling, modern square cut lines, for the completeness and high quality of materials supplied, and for its "character", which is a result of Cleveland's more than 30 unbroken years of model engineering, giving it unquestioned dependability. The proof of this model is in its building. The builder will find benefits of Cleveland's vast experience cropping up time and time again during building and flying it.













Its construction is familiar to all. It is "built up" of bulkheads and stringers, with ample amounts of sheet covering where strength is required, with a sturdy "side plate" of thick balsa at the fuselage side, anchoring landing gear, motor supports, and wing strut to a "center of strength", allowing lighter, faster, building techniques on the balance of the model.

There is nothing in the construction of this kit that would stump any beginner, yet it is a model on which the expert can bring to bear all the "tricks of the trade." Practically any motor may be used to fly it, depending on the builder's purpose, from small A's up to D's. We would like to point out that the prototype of this model only recently was chosen for an assault on the world's light plane endurance record. Order today and be one of the first in your locality to fly this modern beauty by "CLEVELAND—Home of Champions." Order kit GP-112. \$7.50.

- ★  **REPUBLIC SEABEE**  
Span 28" — \$2.25
- ★  **BAYLES' GEE-BEE**  
Span 17¾" \$1.75
- ★  **FOKKER D-7**  
Span 21¼" \$1.75

### AUTHENTIC ¾" SCALE "M" (Master) MODELS — THE WORLD'S FINEST KITS

It is difficult to tell a C-O-2 powered "M" model from a real plane in flight. These outstanding Cleveland-Designed ¾" scale flying models are the successors to the world-famous "SF" kits. There is really no difference between them except that they no longer contain liquids, and therefore sell at a lower price. These kits are the finest that money can buy, and are accurate, authentic miniatures of the real thing. They are of light, "built-up" construction, and may be flown with rubber or C-O-2 motors. (No motive power or flying propellers supplied.) They will appeal to the control enthusiast who wants absolute authenticity, and will "beef up" construction for gas motor flying. Jet models may be flown with C-O-2 jet, "Jetex", by swing control, or as gliders.

30" SPAN		DOLLAR "IT" MODELS	SCALE FLYERS	
 <b>F-80 SHOOTING STAR</b>	 <b>RYAN NAVION</b>	These conveniently sized, popularly priced scale models are flight-engineered, and have won immense popularity wherever realism, flying ability, and low prices are sought. Their full sized plans are complete, easy to follow, and accurate. 30" span is ideal for rubber or C-O-2 motors, and for the ease with which they are built and flown. Here you have both maximum flyability and building fun! Wherever practicable, instructions for the installation of appropriate motors are included in the plans.	 <b>BEECH BONANZA</b>	 <b>STINSON VOYAGER</b>
 <b>FOKKER D-8</b>	 <b>LUSCOMBE SILVAIRE</b>		 <b>MCDONNELL PHANTOM</b>	 <b>ERCO ERCO COUPE</b>
 <b>GLOBE SWIFT</b>	 <b>PIPER CUB</b>		 <b>GRUMMAN PANTHER</b>	 <b>LUSCOMBE SEDAN</b>

**FOR RUBBER, C-O-2, OR TINY GLOW PLUG 3 FT. DC-3**



**2 FT. MINNOW \$1.00**



**\$1.00**

**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

# MODEL! the CLEVELAND LUSCOMBE SEDAN

for:

FREE-FLIGHT  
CONTROL-LINE  
RADIO CONTROL

Only \$7.50!  
Giant 76" Span

## ANNOUNCING!

SEND 5c OR TWO  
3c STAMPS FOR  
LATEST CATALOG

**"PREFAB"  
FLYING  
MODELS**

20" span



**AERONCA SEDAN**  
E-Z 117 only 50c

Recent Smasher Of The World's Endurance  
Flying Record! - Now Standing at 1,008 Hrs.



ALL BALSA PARTS DIE-CUT ACCURATELY  
EXACT SCALE! — FLIGHT ENGINEERED!  
RUGGED, RIGID, YET FEATHER - LIGHT!

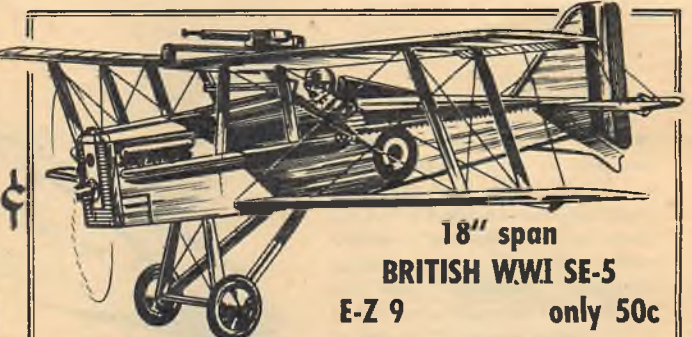
20" span



**BEECHCRAFT BONANZA**  
E-Z 108 only 50c

ONLY  
**50¢**  
EA

18" span



**BRITISH WWI SE-5**  
E-Z 9 only 50c

E-Z models are accurate scale flying models for rubber, C-O-2, and miniature glow plug motors. They are flight-engineered for light weight, strength, stability and endurance. Even beginners, building E-Z kits, gain from Cleveland's 30 years of model designing, building, and testing. They contain accurately die-cut ribs and formers of light, firm balsa. A propeller for rubber power, turned hardwood wheels, plenty of good tissue, landing gear wire, and a full size easily read drawing with clear instructions, are also included.

Nothing like Cleveland E-Z models has ever been offered before. They combine prefabrication, accurate

scale, realistic appearance, and great endurance, yet cost only a half-dollar. You'll find that once the plans are spread out, you won't want to get up until the model is finished, and when it is, you'll have a model with contest flying ability, and one that you will be proud to display.

The three designs chosen to introduce E-Z kits are remarkable and varied. The Bonanza recently established a new lightplane distance flying record. The SE-5 is a reknown World War I oldtimer famed for its combat ability. The Aeronca Sedan is the new world's endurance record holder (1,008 hrs. 5 min).

CLEVELAND MODEL & SUPPLY CO., 4515G2 Lorain Ave., Cleveland 2, Ohio. World's Finest Models, Since 1919



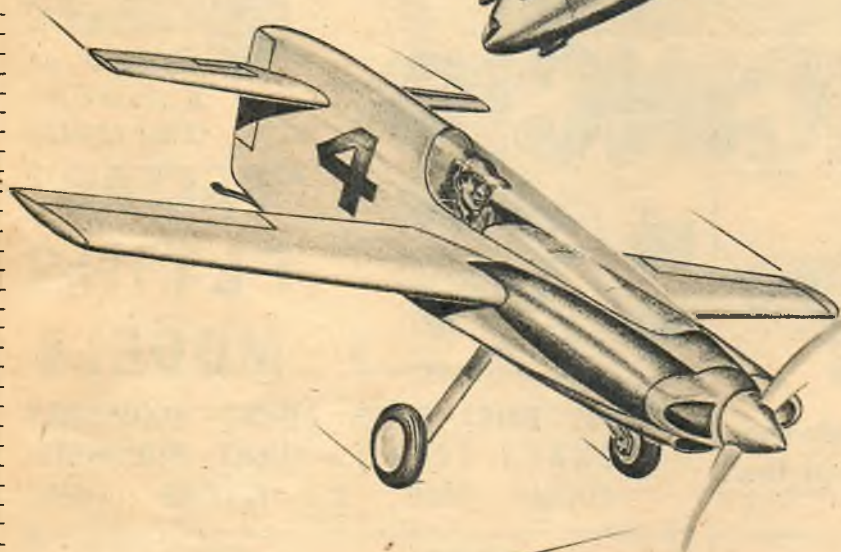
# Airmen of Vision

## DESIGN COMPETITION

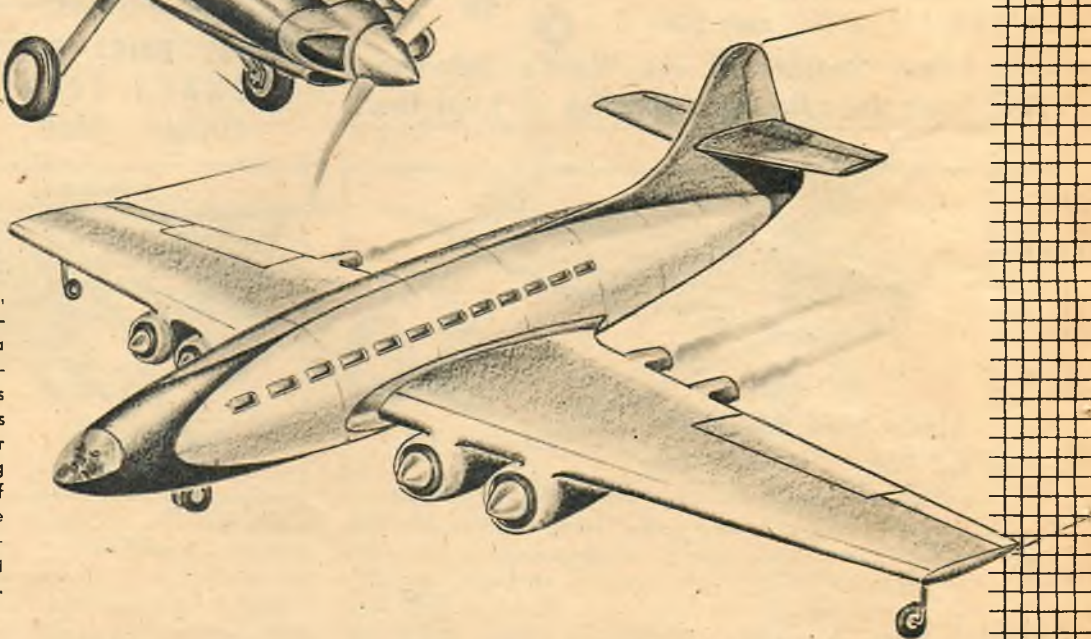
● First prize for a parasite fighter design goes to Dick Locher of Iowa City, Iowa. The plane is to serve as an escort interceptor and be carried in B-50, B-36 or B-47 type bombers. Span is 16½ ft., length 17 ft., 8 in. Power is supplied by two jet units located on horizontal tail. This installation permits wing to be centered at midway mark on fuselage, greatly improving visibility. Cabin is pressurized and equipped with ejection seat. Armament is 4 cal.-50 machine guns or 6 rockets. Wings can fold for stowage.



● Second prize winner, Stanley J. Rutz of Muskegon, Mich., has a neat midget racing plane suitable for Goodyear event. Span is 15¾ ft., length 14½ ft. Construction is all-metal stressed skin on wing and fuselage; control surfaces are fabric-covered. Pilot sits far back in the fuselage which fans out in depth in the rear to serve as vertical stabilizer. The plane's top speed with an 85-hp engine is calculated to be in the neighborhood of 180 mph. Rutz has good flying U-control model of this design.



● Third prize, a jet transport, designed by Jack E. Leffler, Renton, Wash. Leffler is at present a flight engineer on DC-6's, but expects to be taking the co-pilot's seat soon. His design features staggered passenger seats for better view, inboard seats being 1 ft. further ahead. Capacity of transport is 48 passengers, range 4,000 miles, cruising speed approx. 500 mph, operation ceiling around 30,000 ft., span 100 ft.



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. Sketches of the complete airplane in three-quarter front and rear position should be included.
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 is welcome.

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 designs submitted.

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.

**Top Performance!**

**"OK" CUB**

ONLY

**\$5.95**

INCLUDING  
GLOW PLUG

**Develops up to 15,000 RPM!**



**HOBBYISTS**—here's the small displacement glow plug engine you've been waiting for! It's easy on your pocket—a cinch to install—a snap to start.

This new "O.K." CUB is a "natural" for free-flight and control-line flying. Its small frontal area offers low wind resistance. No limitations in installation, either—you can use radial or lug mounting.

**SPECIFICATIONS**

Displacement	.049
Bore	.390
Stroke	.415
Weight	1 1/2 oz.
RPM	Up to 15,000 using a 5 1/2" low pitch prop.

Higher power on a weight-ratio basis results from the unique and patented port design which provides radial fuel injection, higher turbulence and more effective scavenging.

Like all "O.K." engines, the new CUB gives you all the qualities of a full-scale engine: easy starting, reliability, wearability, long range and economical speed. All built in by "O.K.'s" skilled engineers.

Look over the "O.K." CUB at your dealer's. Examine its sturdy construction . . . heft it . . . you'll agree it's a honey!



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. Re-designed 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 Sheresnow, noted model engine designer. Wt. 3/4 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**

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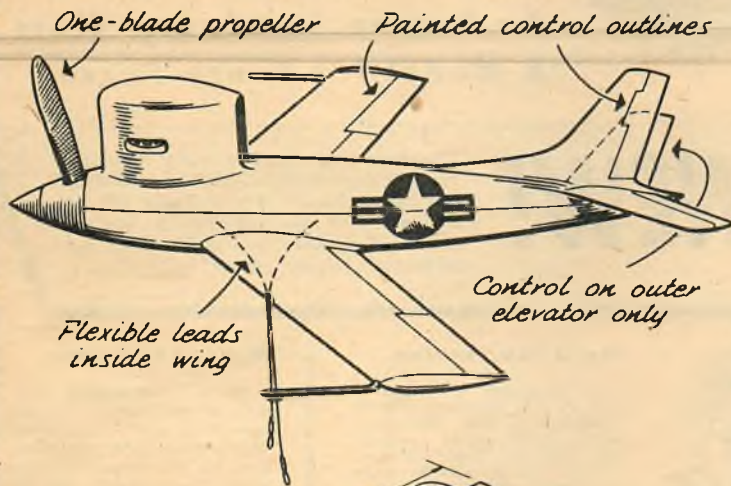
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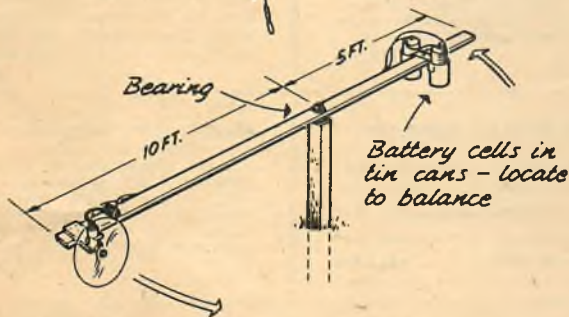
CANADA: Herkimer "O.K." Engine Co., 511 Hermant Bldg., Toronto  
EXPORT: 120 Wall St., New York 5, N.Y. (All cables: Concordia, N.Y.)

# Sketch Book

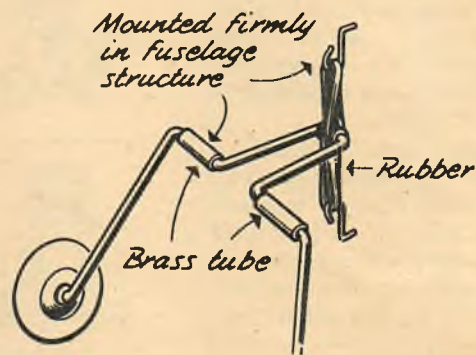
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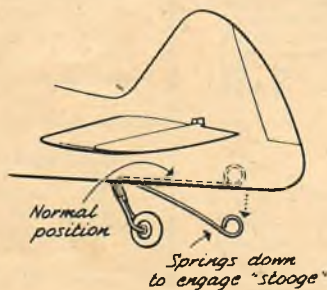
● The Sketch Book doesn't always concern itself with gadgets. Once in a while we like to doodle and design the plane we'd some day enjoy building. Ronald Dailey, Alexandria, Ind., has done just that. He gets his inspiration from the F-86 for a class D speed job. Pitot tube serves as handy line guide. Designer plans to use conventional dolly and engine of .60 cu. in. displacement. Have you got any ideas for dream ships?



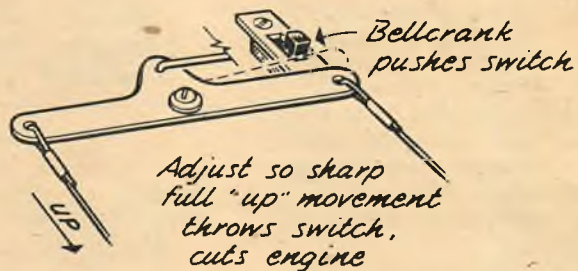
● For engine tests and breaking-in, plus propeller thrust comparisons, this whirling rig of C. R. Ciesicki, Cleveland, O., is unique. Chief advantage: adequate cooling assured.



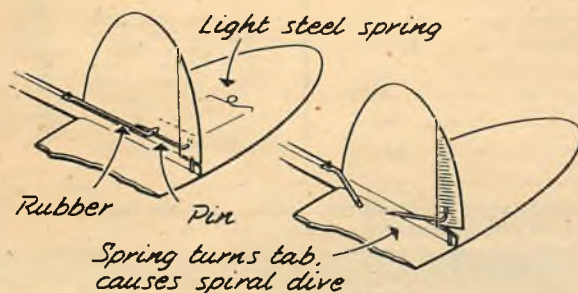
● G. W. v. d. Meulen, Hengelo, Holland, submits a neat shock-absorbing landing gear suitable for rubber or gas models. Shock strands absorb both fore and aft thrusts.



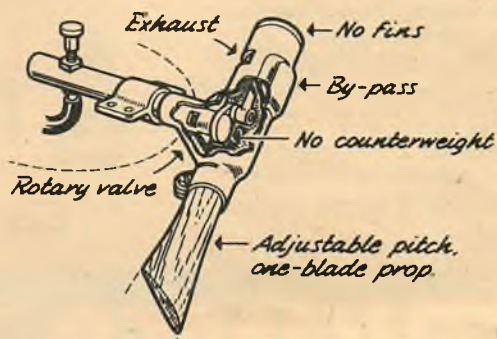
● Bob Myers, Eureka, Calif., feels that fitting for "stooge" release of control job needn't mar ship's appearance. Wire loop flexes from retracted position to anchor plane.



● Cutting ignition on control models at will need not involve third line or relay, says Howard Megee, Shelton, Conn. Quick full "up" movement of handle does the trick.



● Outdoor h. l. gliders do fly away. So Don Longmire, Gardena, Calif., worked out this simple dethermalizer, a strand of rubber pierced by a pin. Adjusts accurately.



● Hold your hats, folks. Here's a proposed model rotary diesel engine by J. Diez Luckie, Medford, Mass. Could be a glow plug engine with commutator for starting current.

# Aloha

(Continued from page 48)

on the bottom of the boom in position shown; block up the small end, and attach it securely with 1/2" linen tape passed through slots cut in the tee. Glue well!

At this point, carefully bend the strut rails (one right and one left) from .020" music wire. Make sure the wire is a snug fit in the tubing used at the strut ends. Note that the open end is back, allowing it to unsnap in the event of a crash. Place this hook close to the fuselage, so that the rail snaps open and close. Glue this well, also. Fill in around the holder sides up to the firewall with 1/32" med. sheet, curved snugly over the parts involved. A hard block will be needed at the bottom front of the pod. Fair in the rear part with a soft balsa block, first scooped out to fit, then shaped outside. Add the wing and tail platforms and 1/8" square hardwood pylon top and sand the body smooth and clean. Cover the boom with light Silkspan, bottom first, then the sides, and fill in any crevices with Plastic Wood. Give the body one coat of clear dope and one coat of heavy bright red, orange, or yellow dope.

The wings and tail are the next to be constructed. They are relatively simple. Medium 1/16" x 3" sheet is used throughout, with the softer portion near the leading edge, if possible, because the curve is sharper at this part. Trace a paper pattern from the outer polyhedral break to the tip. This pattern is used not only for the wing tips but it is one half of the stabilizer platform. Cut out the wing, elevator, and fins from the sheet balsa, keeping the wing in one piece, Sand smooth with 7/0 sandpaper.

Ed Lidgard's method is used in forming the airfoil. First, cut out six hard ribs and make sure they fit the plan profile. Second, wet the top and dope the bottom of the wing back to 1 1/2" from the leading edge. Be careful not to dope farther back, for in doing so you will spoil the airfoil. Now, while the wing is slowly curling up, place the ribs in their proper places, and pin them in place so that the airfoil is maintained. Don't worry if a slight twist develops at this stage; it is only necessary that the tips be carefully formed. Sand off the raised grain after the wing is dry but still flat on the bench.

The stabilizer is shaped in the same manner, but the airfoil is maintained by the tail platform. Cut apart the four wing panels and put the two left next to the two right panels. After sanding the ends of the outer dihedral breaks slightly to allow a clean joint, raise each tip 2 1/4" and glue well. After these have set, sand the center joint and with one side on the table, raise the other panel to 1 1/2" at the outer break. Put a 2" long cross-grain brace between the center ribs so that the wing fits flat on the pylon mount.

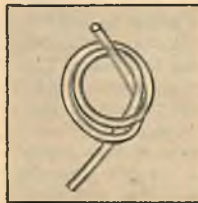
The success of the sheet wing depends greatly on the struts used, so take great care in making this part. Use 1/4" x 1/16" hard, tough balsa for the main strut, and 3/16" x 1/16" for the Y-piece. Glue up the Y over the plans, but leave the fuselage end a little long. Check the length by putting the wing and tail squarely on the body so that the C. G. falls as shown, and place the strut in its approximate position. Note that the Y

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must be cut so that the fuselage end of the strut falls in the center of the rail when wings are unwrapped.

Put the L-shaped wires on the Y, cut short lengths of 1/16" O. D. aluminum or brass tube to fit over them, and attach tubes to the outer wing rib. The tubes should be a snug fit over the wire and should be raised slightly so the strut will fold flat on the wing. Replace the wing in its correct position on the pylon and trim the ends of the struts to just touch the rail. Groove this end, glue in a 1/16" O. D. aluminum tube, and reinforce with a piece of 1/4" linen tape around the end. Note that wing may be slid forward or backward, the warp may be changed in either wing, or the whole may be removed by proper manipulation of the strut and rail. Hold the strut in correct position with short pins into fuselage on either side.

Apply 3/4" colored or plain Scotch Tape to the wing leading edge to protect it, and run a thin line of dope along its edges. It is advisable to waterproof the wing so that it stays smooth. Dope or glider polish was too heavy for this model so a new idea was tried: spray or wipe on a heavy coat of the new water-repellent, "Aqua-Pruf," obtainable at any department store. Aqua Pruf adds practically no weight, doesn't raise the grain, and dries in five minutes. Surface must be satin smooth for best results. Try it on any thin sheet balsa!

Last but not least, comes the all-important propeller, for a good one will spell the difference between good and poor performance. Use a broken prop if you wish, but be certain the diameter is 8", the pitch is 6", and that the blade is of a wide type. A "Top-Flite" 8-6 was used on the original. Scoop out the undercamber until a thin, sharp airfoil results. Put a small box hinge on the flat part at the rear, positioning this as close to the hole as possible. These may be obtained from your hobby shop or from a cabinet maker's supply house. It's a good idea to strengthen each rolled part with a small drop of solder, but this is not absolutely necessary. Push 1/2" pin heads through the holes in the hinge and well into the prop. (Note: 2 Jasco heavy duty folding hinges may be used.) Glue securely.

The 1/16" music wire counterbalance support is now bent to shape, fitted to the short end, and glued on. Wrap 1/4" linen tape around both sides of the hinge and the short end of the prop to strengthen these parts. Into a 3/16" x 1/2" deep hole in a block, stick the end of the balance support. Melt solder around it and file to balance after doping the prop. The support may be bent to get vertical balance. A 3/16" strip of paper wrapped around the CO<sub>2</sub> shaft will center the propeller. Cut apart the hinge now and check it for smooth action.

At this point it is essential that the completely assembled Aloha be checked thoroughly. Make sure the position of the C. G., the wing and tail incidences, and thrust adjustments are exactly as shown. Also check the model's weight. It should be around 3 1/2 ounces including the empty cartridge. Correct care-

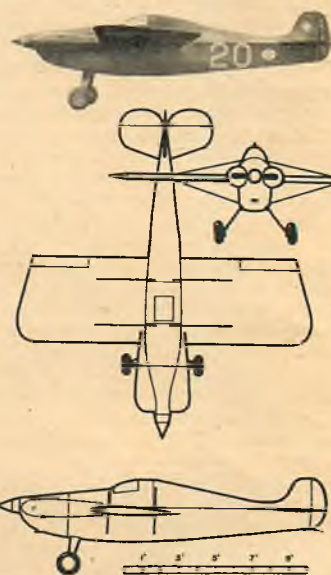
fully any warps or unbalance. Also, unscrew the cylinder until the motor runs nearly 1 1/2 minutes. High power will not give the longest flights, but with this long motor run and the exposed cartridge the very utmost energy can be extracted from each charge. Also oil the motor frequently with 3-in-1 or similar oil.

After the Aloha has been checked and the motor slowed down, test-glide it over a grassy area with an empty cartridge. Try to get a 30-foot radius right glide. Use the rudder and wing warp to do this; i. e., right rudder, right wing washed in slightly. Keep the glide smooth and somewhat below a stall.

At last, a full cartridge may be inserted, the screw tightened up and backed off until the gas reaches the motor. Have the prop set so that the piston just touches the valve when the prop is on the left horizontally. Flip it over smartly, check to see if it is pulling forward, and release the model slightly to the left of the wind. Climb should be in shallow, wide right circles which gradually tighten as the power drops. At the end of the power run the model should be 100 feet up and just settling with a flat power glide. Increase power until this is the case, but keep in mind the fact that cool weather decreases the altitude.

After recovering the original Aloha from an out-of-sight flight of 12 minutes, it was decided to use a simple dethermalizer on hot days. A pop-up tail, Goldberg type is used and the release is a fuse. Merely hold down the trailing edge of the stabilizer with a 1/4" loop on one end of a slow burning fuse, which trails behind. Tightly woven string should be soaked in a dilute solution of potassium or sodium nitrate, dried, and cut to a length previously determined to give a 5 to 8 minute flight. Try to get an even burning rate, like 1" per minute. Light the fuse just before flipping the propeller.

### GOODYEAR RACERS



● Wittman "Buster," flown by William Brenand. Came in fourth in main event; speed, 167 mph. Similar to new plane flown by Wittman himself, described in January issue.

# The Gas Station Goes Aloft

(Continued from page 25)

of refueling in flight, then, from mobile gas stations, completely scraps the classic concept of how much can be carried, and how far.

Like most "new" developments, refueling in flight is many years old. In fact, it completely spans the brilliant career of General Carl Spaatz, former Chief of Staff of the Air Forces. In 1929 he and General Ira C. Eaker, then Major and Captain respectively, flew the trimotor Fokker "Question Mark" to a world's endurance record of 150 hours, over 6 days, by refueling in the air from a Douglas biplane. A fuel hose trailed from the Douglas, flying a few feet above and ahead, and was simply grabbed by a crew member standing half out of the fuselage. He then jammed it into the tank opening and the fuel was turned on. In July of the following year, the Hunter Brothers flew 553 hours—23 days—in a Stinson, and a few days later Jackson and O'Brien of St. Louis jumped the record to 27 days in a pair of Curtiss Robins. Five years later, the Keyes brothers upped even this by staying in the air practically a full month.

With these exploits, air-to-air refueling passed into oblivion as a spectacular but impractical stunt. A revolution in airplane design came about at this time anyway with the development of the famed Douglas and Boeing transports which had the power and speed to carry heavy loads over long distances. Refueling in the air wasn't needed.

In 1930, however, Squadron-Leader Atcherly of Britain's Royal Air Force visited America and learned of the record-breaking endurance flights being made in this country and was fascinated by the possibilities of refueling in flight as a means of connecting England's far flung empire with commercial airliners. On returning to England, he proceeded to devise and patent a more practical and fool-proof system involving the tangling in mid-air of two long ropes which were then used to pull the fuel hose across.

The technique is extremely simple and is essentially that used today. The aircraft that is to receive the fuel merely releases, from a hatch near the tail, a light line about 250 feet long to which a small three-pronged anchor-shaped grapnel is attached. The air-resistant grapnel causes the line to trail back at a rather flat angle. The tanker airplane then flies in from behind and slightly to one side. It also trails out a line about 150 feet long, with a heavy "sinker" attached to its end to force the line to drop down almost vertically. The tanker then merely "crosses over" the stern of the receiving aircraft in such a way that its line first strikes and then slides down to the end of the receiver's where automatic couplings engage and lock the lines together. Physical contact is thus made between the two aircraft.

The tanker reels in its line with the receiver's line attached. Then inside the tanker, the fuel hose is attached to the receiver's line. The hose is pulled back by the receiving craft, connected to an inlet valve in its fuel system, nitrogen gas is flushed through to prevent fires from electrical static discharge, and the fuel is transferred by gravity

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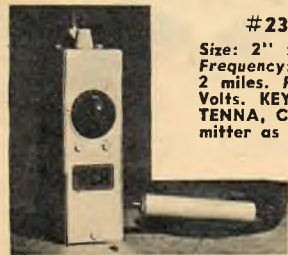


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from the tanker now flying above. When finished, nitrogen is again flushed through the hose. It is now disconnected from the inlet valve, but remains attached to the receiver's line which is played out the stern. After a certain length is trailed out, the tanker (through radio contact) turns and flies away, thereby breaking a special "weak link" in the receiver's line. The tanker reels in the hose as he flies away. This technique has been improved somewhat since then, notably by shooting the tanker's line across and over that of the receiver's by means of a projectile. The B-29's now being modified as tankers at Boeing's Wichita factory for in-flight refueling are reported to use this general system adapted from the British.

Practical demonstrations of refueling in flight aroused considerable interest in England and simultaneously with Acherly's development of the double-line system, Sir Alan Cobham became interested in the idea and carried out a series of experiments using the original American single line system. In fact, in 1933, he attempted a non-stop flight from England to India in a single-engine Airspeed but was forced down by mechanical trouble. However, in 1936 he organized Flight Refueling, Ltd., as a commercial concern and obtained the rights to Acherly's patented line-fouling system. Imperial Airways became interested in the refueling idea about this time, for use with their Empire flying boats, which lacked the necessary range to operate over the Atlantic. As a result of this interest, a number of successful refueling tests were made over the English Channel to demonstrate the feasibility of making contact and transferring fuel under adverse weather conditions.

By 1939, sufficient progress had been made in developing equipment and perfecting the transfer technique to plan a series of actual transatlantic crossings and to depend on in-flight refueling to get across. Eight Empire flying boats of Imperial Airways were equipped with the necessary reels, motors, hoses, lines, and other equipment, and some 16 crossings were made over the North Atlantic between England and Montreal. On taking off from Ireland, the flying boats were met by a tanker plane operated by Flight Refueling several hundred miles off the Irish coast and the fuel transferred. After refueling, the tanker (a Harrow bomber) returned to Ireland while the Empire continued across the Atlantic to Botswood. This scheme allowed some 3 1/2 tons of payload to be carried—otherwise none could have. The 800 gallons of fuel were transferred in 7 minutes, a rate of about 120 gallons per minute.

With the coming of war, further tests were discontinued since it could not be seen how the scheme could be used for mass bomber formations. However, Wing Commander A. C. Johnson, who had directed operations at the Newfoundland base, was invited to Wright Field by the Air Force for possible application of the system for B-17's and B-24's in the bombing of Japan. Consequently, a Fortress and a Liberator were modified with British equipment and in early

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1943, a series of tests were successfully carried out at Eglin Field and Orlando, Florida.

In the meantime, however, the long range Superforts became available and since the problem of refueling mass bomber formations remained unsolved, the idea was forced to the sidelines. The British, however, not having anything with the range of the Superforts, did modify Lancaster and Lincoln bombers for their planned attack on Japan. In fact, it has been said that the Lancaster, roughly the size of the old B-17 Fortress, could thus carry a bomb load comparable to the '29 for the same range if refueled some 1,000 miles from the take-off point. However, the atom bomb removed the need for actual British participation in the final bombing of Japan.

After the war, British interest returned to commercial trans-Atlantic refueling since she had no long-range

transports like our DC-4's, DC-6's, and Constellations. In the spring of 1947 a series of 22 test flights were made over the South Atlantic on the England-to-Bermuda route by British South American Airways. Surplus Lancasters (already converted) were used as both tankers and receivers. The tankers were based on the Santa Maria Islands, several hundred miles southeast of the Azores. Contacts were made in all cases without incident.

As a result of all these shake-down flights, the British Overseas Airways set up a regularly scheduled non-stop mail and freight service between Montreal and London, with converted B-24 Liberators as transports and Lancastrians (converted Lancaster bombers) as tankers. The tankers are operated by Flight Refueling, Ltd. Tanker bases are located at Gander, Newfoundland; Goose Bay, Labrador; and Shannon, Ireland. Fuel is picked up approximately 500 miles out over the Atlantic and a typical contact involves the transfer of about 900 gallons of gas in about 8 to 10 minutes, at an air speed of 165 mph and at 10,000 feet altitude. The most modern equipment is used for locating each other—radio and radar—and fuel pickups are made at night as well as day.

Based on British success and our own B-50 flight around the world, in-flight refueling would seem to be a practical means of extending the range of heavily laden bombers or transports without sacrificing payload or increasing the dangers of take-off. For military planes, the principle of picking up fuel in mid-air may well be the key to the problem of how to fly jet planes as far as present-day propeller-driven types.

## Luscombe

(Continued from page 50)

flyers and seven originals.

"It was after ten years of 'parts and supplies' and experimental stick model production so much in vogue in 1929," Ed Pachasa, Cleveland's president, likes to remember, "when the organization really got under way with its first 'SF' (Scale Flying) model work. It was the venerable Great Lakes trainer, still a beautiful model today, that dictated the physical make-up of many commercial kits that followed at the time."

Pachasa refers to the pine, reed, wire, cloth- and thread-wrapped joints era that came to an end in the late twenties. All-balsa simply cemented together was a new trend, and with their flying scale jobs, Cleveland rode the wave. Those were the days when the flying scale model was king-pin—a monopoly that only the gas engine could cut into. Even today there are builders who have put together every Cleveland scale kit ever put out, and, to prove the point, not infrequently startle the plant with an envelope jammed with snapshots of by-gone numbers. Because few real machines escaped Cleveland's interest the company's list of kits, if compiled for the years, would amount to a partial history in model form of American aviation. The Great Lakes also foreshadowed the "prefab" era of twenty years later, with die-cut ribs, shaped cowl, and similar pieces.

Virtually no field of aeromodeling escaped Cleveland's attention, though this versatility was in effect overshadowed

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Comet's Control Gas Models are tops in their field—amazingly easy to build, and terrific performers in the air! Greatest values, too—remarkably complete kits at prices that save you money!



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So completely pre-fabricated, it cuts building time to a minimum! Completely finished 1-piece balsa wing; ready-cut fuselage sides and formers, many other finished parts. Suitable for Class "A", "B" and "C" engines. Wingspan 35½ in.; Kit No. T-15... **\$2.95**



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Comet's famous Zippers have won and held the approval of many thousands of model builders who demand the best! They're outstanding performers which have come in ahead in contest after contest!



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Comet's famous free flight gas model, with many features never duplicated by others! Redesigned for the latest Glo-Plug engines. Wingspan 54 in.; for "B" and "C" engines. Kit No. T-10... **\$5.95**



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 F1—Piper Cub  
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 F5—Cessna  
 F6—Fokker D-VIII

**25¢**

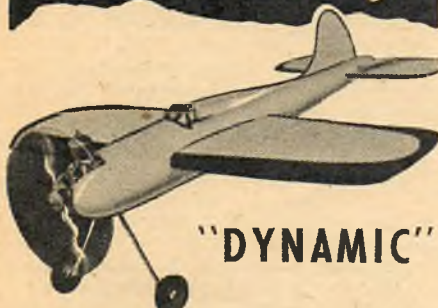


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A carved fuselage is furnished in both the Dynamic and Stunt-master kits.

**STUNTMASTER**  
 40" Wingspan. Suitable for all B & C engines of .23 to .60 displacement.  
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 24" Wingspan biplane for .19 to .36 engines. Kit very complete to last detail.  
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 17 1/4" long, beam 5", for .099 to .29 engines. A real fast job with snappy cabin.  
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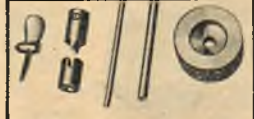
**BUCKEYE SPEEDBOAT**  
 Same specifications as above. Kit complete with metal prop., hardware, etc.  
**\$4.95**



**CO<sub>2</sub> SQUIRT**  
 Can be powered with any of the new infant engines or CO<sub>2</sub> motors.  
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**ACCESSORIES**  
 Universal ..... 75c  
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 1 1/2" Metal prop. 25c  
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**SCIENTIFIC**

**MODEL AIRPLANE COMPANY**  
 218-220 A-7 MARKET ST. NEWARK, N. J.

owed by the firm's record for flying scale ships. There are microfilm jobs, r.o.g.'s, "profile" kits, beginner's models of infinite variety and form, gliders of all sizes and shapes, super-detailed scale, control-line, free-flight, down to the mammoth gassies for radio-control. Such famous contest designs as the Playboy point up the firm's amazing flexibility. Things like the once popular "nature" series, with really good flying models-built up to resemble insects, birds, and even fish are remembered by older builders. So colorful is this Cleveland story, that we nearly forgot to retrieve our reporter from the bottom of the Luscombe box.

The Sedan is intended for free-flight, control, and radio-control with various engines from large A's on up. How can this be? "Put away your money before you lose it," our reporter comes back. "It's like this . . ." And darned if it

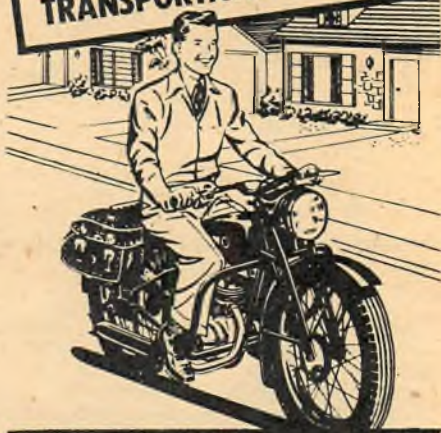


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isn't so. For free-flight, large A engines up to small C are recommended; for control, B to D engines are the ticket; for radio work, Cleveland suggests an engine proportioned to the weight of the equipment and warns against an engine with too much power which would result in a skyrocket climb. All this makes sense. For realism and safety in flying-scale free-flight, low power is a must. A well-designed airplane that holds down weight, as does the Sedan, will perk very well on the minimum power mentioned. It certainly is desirable to avoid large motors in free-flight. In control-line, the airplane necessarily is a "goat," and with its inherent stability will ride well on the end of wires needing a minimum of centrifugal force. But it is as a radio model that the Luscombe promises the most, though this depends largely on what the FCC is going to do about the ever increasing number of RC fans who are clamoring for fair regulations that recognize model work as being in the field of transportation and not communications. Despite the long delay on the removal of present restrictions that harry the RC field, Cleveland points out the steady demand for the Reliant as an indication of steady interest in this direction. Should the FCC break down, there will be a field day on Luscombe Sedans!

In this day of super prefabrication where the manufacturer does everything but send along a little man to fly the model, it is interesting to find a "rugged individual" outfit like Cleveland that sticks to a belief that the industry also needs fine quality kits requiring many hours to assemble, and that the feeling of satisfaction and pride the modeler gets from finishing such a job is part and parcel of the firm's long success, contrary to what some others are now doing. Cleveland has no intention of entering the prefab field exclusively for the advanced builder. There is no question that the Luscombe will not be put together in one evening, or several evenings. There is also no question that a lot of builders will get a big bang from adding that last finishing touch. It should take will power to fly anything that looks so good. Why,

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**HARLEY-DAVIDSON 125**  
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- ENCLOSED COCKPIT UNIT
- STYLED FOR SPEED
- A CINCH TO BUILD.....



**75¢** **HITS OVER 450 M.P.H.** ACTUAL SCALE SPEED

the ship stands nearly two feet high in its stocking feet!

Cleveland's contention is that the average modeler wants a ship that is not too hard to build, but which at the same time gives him enough scope to exercise a natural desire for craftsmanship; which can be loaded with detail for display when desired, but which can also be flown with ease and dependability. Not necessarily a contest winning flight, but a realistic steady flight of reasonable duration with a model that looks like a real plane. Before other manufacturers who have followed other formulas to the top of the heap shoot us down in our tracks, we should point out that this is, after all, just the Cleveland formula. Lots of builders prefer prefabrication. Many don't. You pay your money and you take your choice.

If you have a repressed desire to cut and glue, to fit and shape, to make something huge in flying scale or radio-control models, you can't go wrong with the Cleveland Luscombe Sedan at \$7.50.

## Blitz Buggy

(Continued from page 42)

and "A-B-C" construction throughout. The factors which actually produce good contest characteristics are often so elementary in principle that they are overlooked in the quest for something difficult. Some of these factors are as follows:

Planes with short bodies and large tails can be controlled quite efficiently; yet they have that degree of longitudinal instability which allows them to "jump" on practically any rising air current. As a result they stay up longer and win contests.

Designs which place the center of side area of the model on a level with the center of gravity do not tend to be upset when the model slips sideways in a turn, and therefore do not go into a spiral dive.

Bodies with large side areas may be observed in the air longer than pencil bombers and consequently win more contests—other factors being equal. Wings with less dihedral, which may be used if the center of lateral area is carefully placed, do more lifting and less dragging. Long thin wings with properly designed square tips are easier to make and are more efficient than stubby or even tapered wings.

Strong models covered with silk last longer and can be better and more consistently adjusted. Planes with demerizers that work not only can be retrieved more often, but can be retrieved sooner so that your flying can be concentrated during the best part of the day.

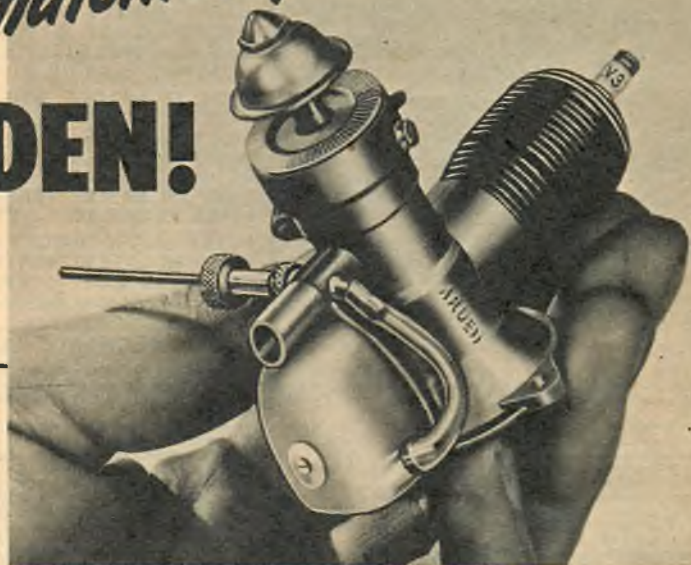
After many years of building diamond-shaped fuselages, elliptical cross-sections, and even boxes, we arrived at the present lateral-crutch construction which is quite simple, yet surprisingly efficient. The type of formers used practically eliminates fitting and plotting of shapes yet gives very good streamlining.

The use of large construction components lowers the number of parts necessary while it increases the resistance to warping. Warps are one of the biggest factors in decreasing performance and should be avoided at all costs.

Before beginning construction it should be decided if glow plug or regu-

*For matchless performance*

**ARDEN!**



Fills the bill for novice and expert alike. For easy starting, smooth operation, dependability, model builders from every section of the country state that Ardens are the "hottest" engines ever developed.

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Catalog No.

1-B-099	.099 engine with ball bearing crankshaft	\$12.50
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*Only 65¢*

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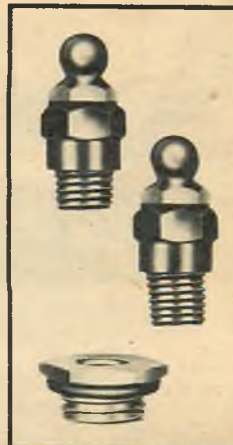
Permit ready conversion of Arden Engines from spark ignition to Glow Plug ignition . . . eliminating spark plug, batteries, coil, condenser, engine timer, wiring, and associated ignition troubles . . . assure easier starting and greater engine H. P. output.

No. E-8001 S (short) 1/4"-32	65c
No. 8020 L (long) 1/4"-32	65c
No. 8015 Glow Plug Adapter, for class C engines 3/8"-24	25c

Replacement element type

Permits replacement of hot or cold elements.	
No. E-8030 SH Arden Glow Plug (short)	85c
No. E-8040 LH Arden Glow Plug (long)	85c
No. E-8035 Replaceable glow plug element (hot), 2 for	85c
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VERNON PAYNE'S LATEST "TWISTER" DESIGN IN U-CONTROL FORM. FULL SIZE PLANS ARE FOR A BIG 35" WING SPAN (2"-1" SCALE) MODEL, LARGE ENOUGH TO TAKE THE BIGGEST CLASS "C" ENGINES (SOME CAN BE COMPLETELY ENCLOSED IN COWLING). PLAN NO. G-60...25 CENTS  
**P-12C & MIDGET MUSTANG PLANS**

OUR P-12C PLAN GIVES ALL DETAILS NECESSARY TO BUILD A SUPER-DETAILED U.S. ARMY P-12C OR A NAVY OR MARINE VERSION OF THE F-4B3. PLAN G-26..... 25¢ POSTPAID  
 PLANS OF THE "MIDGET MUSTANG" ARE FOR LATEST VERSION OF THIS SHIP. PLAN G-34..... 25¢ POSTPAID.  
 P-12...30" SPAN--M.MUSTANG...28" SPAN

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lar ignition is to be used. If a glow plug is used, the gas tank may be mounted internally and the indicated cowling added. The use of slightly larger leading and trailing edges on the wing and tail will increase strength and help to rectify the weight and balance change caused by the elimination of the ignition. If on the other hand a regular ignition system is used, as it was on the original model, care must be taken to keep the ignition layout as thin as possible so that it can be readily removed from the fuselage. We advise the use of a 1/8" x 1/2" maple ignition track. In a crash this will transfer the shock to the firewall and the coil won't be found leaving by the "side door."

It is advisable to use firm straight-grained balsa on all parts unless otherwise noted.

**F**uselage construction is begun by laying out the 3/16" x 3/8" backbone and adding the pylon core and the plywood tail stiffener. After the formers are glued to one side, the body may be removed from the plan. The formers of the other side and the wing and tail platform may then be placed. Adding the planking, stringers, fillets, and firewall ring will complete the body construction.

The wing and tail are of simple construction and require little explanation. The use of a plywood or tin rib-template will cut building time in half. Plenty of glue at dihedral breaks and good straight-grained wood will greatly improve the strength and resistance to warping.

The dethermalizer is the biggest asset of a good contest ship but seems to give a disproportionate and unnecessary amount of trouble.

We have chosen the "pop up tail" type to eliminate the use of hanging strings and complicated lever systems. The angle used here is very important though not overly sensitive. Too low an angle will produce a spin while too high an angle will give a brick-like descent. At optimum position, usually about 40°, the model will turn into the wind and settle quite slowly, hence adding to the flight time and often giving the winded modeler time to get to the landing spot before the model.

Release mechanisms seem to be the big bugbear due to the low force exerted by the pneumatic timer. This trouble is eliminated by two very



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simple principles. Make the release mechanism as smooth and simple as possible to reduce friction, and be sure that the pivot point of the tail is almost in the straight line of the tail-holding rubber bands. This gives assurance that the rubber bands will "hold down" the tail and not "hold back" the dethermalizer.

The dethermalizer timer is placed in the front of the model between the second and third former where it may be removed for adjustment whenever necessary. It is best to adjust the dethermalizer for about 10 minutes. If a shorter run is desired, allow the timer to run for a few minutes before launching. If a longer run is desired, an extra rubber band or so may be added to the

tail pivot thereby slightly increasing the dethermalizer friction.

There has been much research done on undercoats for lacquer finishes but the best undercoat for clear dope is still sandpaper.

Because it is more resilient, silk will often help models last twice as long and is therefore well worth the slightly greater investment required.

Several coats of thin clear dope will assure a low drag covering and add immeasurably to the performance.

Flying: here we are around to that interesting part again. I'm not going to tell you that you shouldn't test the model with the motor wide open on a windy day with lots of thermals, because I know that you wouldn't do a thing like that. I will, however, recommend that you do use that rare quality—common sense, and also take your time. The model is quite large for a class A ship but with an Arden 19 it really "moves."

We have always flown our free-flights in a medium tight right climb with a tight left glide and so far have had good results. The original model flew with the indicated incidence and downthrust and 4° right side thrust. We found that a 9-8 Power Prop allowed the motor to "turn up" enough to approach its optimum horsepower in a fast climb.

Blitz Buggy is quite stable and little trouble should be encountered in bringing it to high performance. We have always noted, however, that the consistent winners have their models well tested and know exactly what the model will do when it is launched.

### CLASS B BLITZ BUGGY

Author Norris says anyone can turn out his winning Class B version of the Blitz Buggy by multiplying all dimensions given for the Class A job by 6/5. The only change in the design is that the flat center section is left out of the wing giving it a span of 60 inches.

Using his B class DeLong-powered job, Norris took a 1st at the 1948 Nationals, 1st at the 1947 Plymouth Internationals, 1st at the 1947 Scripps Howard Junior National Air Races, 1st at the 1946 Philadelphia Flying Circus—to mention only a few of its top places in scores of major meets.

## See You at Detroit!

(Continued from page 52)

flyers who are 26 years old or older," declared Eddins. "However, the Plymouth International contests are designed to help young people develop themselves by planning, studying and working. In view of this we believe that it is wise to keep the contests youthful in every sense of the word."

Last year the Detroit contest attracted entrants from 46 states and five foreign countries and U. S. possessions. There was a 400% increase as far as numbers of flyers in the '48

qualifying meets compared to 1947.

One difficulty experienced in the '48 finals was the large number of contenders who showed up for the control-line flying. So unexpected was the interest, the time for the U-control events had to be extended. After the competition, Plymouth officials made extensive time studies of control-line flying and have come up with their answer: close to a dozen circles will be installed at Belle Isle park, a 985-acre island in the Detroit river near the motor capital, which has outstanding recreational facilities.

Time studies, although new to model plane contests, are an old story to executives of the Plymouth Motor Corporation. A manufacturer who produces three automobiles every minute must control the flow of materials on a split-second basis. To understand the importance of time in the production of an automobile, one should realize that Plymouth's Detroit plant has 25 miles of conveyor belts and under normal conditions uses 7 million pounds of material in a working day. Still it has no large stock room. Materials and assembled small parts come into the plant on a carefully timed schedule from trucks and freight cars to the conveyors. In less than an hour after arrival, they are part of a finished sub-assembly or car.

This knowledge of timing will be put into practice when the control-line events are flown. In last year's Second International, control-line events utilized five circles and lasted two and a half days. By carefully studying the time spent in processing contestants and flying time, contest officials have learned that there was one fight every 4.6 min-

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Let's get down to cases . . . the best flyers discovered last year that you no longer have to pay fancy prices to get good props! The toughest competition in the world proved that at the 1948 Nationals **POWER PROPS** and **TOP FLITES** took "FOURTEEN FIRSTS" including all classes . . . Stunt . . . Free Flight . . . Speed and CO-2. Not only that . . . but more contestants used these props than any other make. Why? How come a 35c prop can get that kind of Record?

O.K. . . . here's the answer! My associates and I have worked hard and long to perfect a precision method for making props. A method that does away with most of the tedious and costly hand-sanding . . . that reduces to a minimum the factor of error. Yes . . . our Props are machine-cut to such close limits that very little sanding is necessary . . . and that means truer air foil . . . truer pitch and greater uniformity. That's why it costs us less to produce . . . and it costs you less to fly . . . a championship prop!

### Power Props

Dia.	Pitch
5 1/2	3 — 25c only
7	**6 — 8 — 9 — 10 1/2
8	**6 — 8 — 9 — 10 1/2
9	6 — 8 — 9 — 10 1/2 — 12
10	6 — 8 — 9 — 10 1/2 — 12
11	6 — 8 — 9 — 10 1/2 — 12
12	6 — 8

\*\*This size and pitch is perfect for Arden .099  
\*Reports indicate that 7—8 is a Super CO-2 prop

### Any Size . . . Any Pitch

LACQUERED, BALANCED, READY TO FLY

**NOTE:** Due to popular demand we have added three new Power Props—5 1/2-3, 12-6, and 12-8. Also, the 7-6 formerly for CO-2, is now drilled for Arden .099 and the 7-8 formerly for Arden .099 is now drilled for CO-2.

35¢

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Dia.	Pitch
8	*3 1/2 — **6 — 8 — 10
9	3 1/2 — 6 — 8 — 10 — 12
10	3 1/2 — 6 — 8 — 10 — 12
11	4 — 6 — 8 — 10 — 12
12	5 — 8
13	5 1/2
14	6

\*Special CO-2 prop

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utes, for example, on the Class A group. Class C models made a flight every 5 minutes. Among other things, the study revealed that in Class B 362 attempts were required for 145 official flights.

For the Third International, all of the information gained in the study will be combined into a set of tables so that officials may know exactly how many circles are needed to complete the events on schedule in accordance with the number of contestants entered. The huge Belle Isle athletic field provides enough room for 15 or 20 control-line circles if needed. Tentative plans call for 10 circles and four eight-hour days are being allowed for the events. Control-line will be flown August 25, 26, 27 and 28.

At press time, contest officials were hoping to obtain the use of Windsor airport across the river from Detroit in Ontario, Canada, for the free-flight events. This is a good size field and should lend additional international flavor to the meet.

Indoor flying will continue as it has in the past two years in the coliseum located on the Michigan State Fair grounds. The building has a flying area of 125 by 275 feet and a 65-foot ceiling.

This year towline gliders have been added for the novice entrants. Here's how the complete line-up works out:

	Novice	Junior	Senior	Open
Indoor stick	x	x	x	x
Indoor cabin		x	x	x
Outdoor stick		x	x	x
Outdoor cabin		x	x	x
Outdoor cabin-stick	x			
Towline gliders	x			
Free Flight Class A	x	x	x	x
Free Flight Class B	x	x	x	x
Free Flight Class C		x	x	x
Free Flight Class D		x	x	x
Control line speed-A	x	x	x	x
Control line speed-B	x	x	x	x
Control line speed-C		x	x	x
Control line speed-D		x	x	x
Control line Stinson scale event			x	x
Control line jet speed			x	x
Control line stunt	x	x	x	x

Winners of the first three places in each event will be awarded trophies as well as savings bonds: There will be a \$100 bond for a 1st, \$50 bond for a 2nd, and \$25 bond for a 3rd place victory. Also, special trophies will go to the high point winners in each of the four age classes. In addition to that are the perpetual trophies upon which winners' names are engraved each year: the Plymouth trophy for high-speed jet control-line flying; the DeSoto "People and Places" magazine trophy for the top girl contestant; the Air Trails trophy for top flyer in stunt competition; and the Stinson trophy for high point winner in the U-control flying scale event.

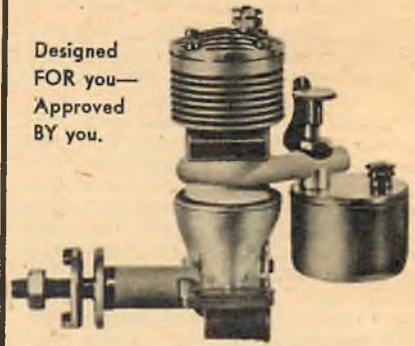
All entrants in the Internationals will receive a special plaque, whether or not he or she places in the competition.

Held in conjunction with the Aero Club of Michigan, the 3rd Plymouth International contest is sanctioned by the Academy of Model Aeronautics, Washington, D. C. For full information and all details consult your nearest Plymouth dealer.

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## Air Briefs

### Carrier Blimps

The Navy's blimps, which served during World War II in escort and patrol service and anti-submarine warfare, may be made even more useful in the future by operating at sea from aircraft carriers. The blimps would thus have a mobile base for refueling and their present long range would be even longer, says the Navy, which tried out the idea during spring maneuvers in the Caribbean. Two blimps attached to the carrier USS Sicily successfully rearmed, refueled, and took on fresh crews and food supplies twice daily from the carrier deck.

### Touring B-29's

Several groups of USAF B-29's will be rotated between their home fields and bases in England on training missions during the remainder of the year. Groups will be moved at three-month intervals.

### New Jet Fuel

Air Force jet planes are now being modified so that they can use AN-F-58, a new gasoline-type jet fuel which is supposed to improve performance and conserve crude oil at the same time. AN-F-58 is distilled by a new process that gives more useable fuel per barrel of oil. The Navy will be able to use it without making modifications, since their planes are already equipped for a gasoline jet fuel. Altitude performance and cold weather starting are supposed to be improved by the new type.

### Long and Lonely

Bill Odom's 4,957-mile flight from Honolulu to Teterboro in a Beech Bonanza was not only an official international distance record for light planes but also the longest non-stop solo distance flight in the history of aviation. It exceeded Lindbergh's 3,609-mile New York-Paris trip and Wiley Post's 3,942-mile hop from New York to Berlin.

Also lonely, but not so long, was the phenomenal 5-hour transcontinental speed record for piston-engine planes set by Joe DeBona in a nine-year-old F-51—an average of 491 mph from Burbank, California, to New York.

### Practice for the Air Guard

An estimated 40,000 Air National Guardsmen in 500 units will take part this summer in the largest field training program in the history of the National Guard. They'll take to camp with them some 2,100 planes of all types, including 100 jet-propelled F-80's . . . Another year, there'll be F-84's too. USAF is transferring to the Guard about 25 percent of its present force of Thunderjets, and more will be added as soon as production permits.

### Rotary Newcomer

A seven-passenger utility helicopter which is scheduled to be on the market early next year with a price tag of about \$20,000 has been announced by the Doman Helicopter Corporation. The new machine, called the Pelican, will be a real news (and sales) maker if it does all it's supposed to at that price. It will have a 245-horsepower engine located in the nose, which will permit

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2—150 ft. x .011 dia.	1.00
2—150 ft. x .014 dia.	1.00

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200 ft. x .021 dia.	2.75

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### BERKELEY TWO SPEED INSULATED WIRE

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- Step No. 1: Wrap control wire around eyelet TWICE and lay end back against wire. Leave 2" for handling.
- Step No. 2: With bronze wire supplied, wrap as shown for ten turns, each turn close to next one. Use nail for convenience as shown.
- Step No. 3: Fold control wire forward against wraps as shown, tuck end of control wire through "V", wrap ten turns forward.
- Step No. 4: Tuck end of bronze wire through "V", pull snug and clip off control wire & wrap wire 1/16" from eyelet.

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Flexible lead in wire (stranded) between bellcrank and wingtip	3' 25c
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placing of the load astride the machine's center of gravity. It'll handle a payload of 1,400 pounds. As a taxi, it will seat six passengers; in military service could accommodate four standard litters; for agricultural operations would carry 1,000 pounds of insecticides.

### Lots of Floaters

A lot of private pilots apparently are joining the nation's floating population. In the first months of 1949, Edo Corporation reported the number of floats sold for personal and commercial-type planes was nearly triple the same period of last year.

### Home-Grown Jet

Details of the first jet-propulsion engine designed and manufactured in Canada have been announced. It is the Avro Chinook, described as "primarily a development engine built to supply the answers for larger jet engines."

### Swiveling Take-Offs

Planes equipped with cross-wind landing gear—which CAA considered one of its primary developments of last year—sometimes take off in less distance with cross-winds than they do in still air, it has been shown in tests made by the National Advisory Committee for Aeronautics. On one demonstration in a 90-degree cross wind, a light two-place plane used 75 feet less runway on take-off than under calm air conditions. Castering gear has been developed for six different types of planes, ranging in size up to the DC-3. Eventually, it may make possible less costly and more numerous airports, through the use of single-strip design.

### Trophy for Air Guardsmen

A new trophy to be awarded annually to outstanding flying units of the Air National Guard has been established and named the "Spatz Trophy" after former USAF chief of staff General Carl Spatz. The trophy will be awarded to the best flying unit in each of the AG's 12 wings. It is a world globe topped by a National Guard jet fighter plane in flight on a pedestal.

### Private Progress

Luscombe has unveiled the Silvaire Sprayer, the first production airplane ever factory-designed and engineered specifically for aerial crop spraying. It has a 90-hp engine, carries two 30-gallon self-agitating tanks and two wind-driven brush spray units. A stall-warning indicator and chest harness are standard equipment.

### Airliner Predictions

More predictions of commercial jet transports to come: W. A. Patterson, president of United Air Lines, says he expects U. S. lines to be using jets in scheduled operation within 10 years, perhaps sooner. Lord Douglas, marshal of the RAF, after surveying aviation setup in Australia, believes jet-powered airliners will be operating between Australia and England "within the next few years," cutting flying time at least in half.



Join the C.A.P.!  
write Air Trails for details



## 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.

- June 11-12—Grand Rapids, Mich., Frank P. Sposite, Box 1518, Detroit, Mich.
- June 12—Mayfair, Pa., B. J. Dattner, 3424 Sheffield Ave., Philadelphia.
- June 12—Jersey City, N. J., George Rathgeber, 96 Bowers St.
- June 12—Chicago, Ill., R. F. Autrim, Jr., 10752 S. Washenaw.
- June 12—Ft. Wayne, Ind., Kenneth Kimmel, 2210 Lawndale Dr.
- June 12—Clean, N. Y., C. L. Matson, 1311 E. State.
- June 12—High Point, N. C., Walter Thomas, Jr., 711 Sunset Dr.
- June 12—Everson, Wash., Delbert Erickson, c/o Everson Model Shop.
- June 12—Omaha, Neb., Oscar Olson, 2122 N. 56.

- June 14-16—San Francisco, Calif., Annual trade show and convention of Model Industry Assoc., Franklin Butler, Model Industry Association, 30 W. Washington, Chicago 2.
- June 18-19—Atlanta, Ga., H. R. Hudson, 881 Glen Arden Way N. E.
- June 19—Beloit, Wis., M. F. Koebernick, 1337 Dewey Ave.
- June 19—Anderson, Ind., Bob Johnson, 1412 Fountain.
- June 19—Augusta, Maine, H. E. Smith, 93 Bangor.
- June 19—Ashland, W. Va., Dr. Jules McCracken, Box 82, Milton.
- June 19—Fond du Lac, Wis., c/o Flying Badgers, Box 362.
- June 25-26—New Orleans, La., Franklyn Wenck, 334 Baronne St.
- June 25-26—Klawatha, Kan., D. B. Allerton, 628½ Oregon.
- June 26—Clinton, Ind., W. L. Marietta, 759 Elm St.
- June 26—Fresno, Calif., record trials, Ocie Randall, 716 Waterman Ave.
- June 26—Washington, D. C., Val Luce, 1025 Conn. Ave., N. W.
- June 29—Chicago, Ill., Charles A. Bell, 5755 N. Artesian Ave.
- July 2-10—Elmira, N. Y., 16th Nat. soaring contest, Harris Hill.
- July 2-4—Adelanto, Calif. Soaring regatta (4th heat), El Mirage Field.
- July 2-3—Newport News, Va., Vincent Serio, Jr., 7003 Park Dr.
- July 2-4—Tulsa, Okla., Ralph Roof, 815 S. Trenton.
- July 3—Kokomo, Ind., Edward Scott, YMCA.
- July 3—Jacksonville, Fla., M. W. Myers, 1807 E. 27th.
- July 3—Hillsboro, Ore., Roy V. Ellison.
- July 3-4—Providence, R. I., L. B. Stuart, 209 Elmwood Ave.
- July 4—Beckley, W. Va., Mrs. Gene Keatley, 217 Prince.
- July 4—New Haven, Conn., Chas. Hoelck, 25 Dennison Ave., Mystic.
- July 4—Chicago, Ill., P. L. Vacco, 4652 Milwaukee Ave.
- July 4—Philadelphia, Pa. Bulletin-Plymouth Flying Circus. Contact the Bulletin newspaper.
- July 10—Crossville, Tenn., Roy A. Stone.
- July 10—Indianapolis, Ind., Frank Nekimken, c/o American Legion Nat. Hq.
- July 10—Windsor, Ontario, Canada, J. W. Graves, 1555 Church.
- July 10—Huntington, W. Va., Dr. Jules McCracken, Box 82, Milton.
- July 16-17—Knoxville, Tenn., H. D. Powers, Briar-Cliff Rd., Fountain City.
- July 17—Aurora, Ill., Hart Betts, 7 Fox Promenade.
- July 17—Watertown, N. Y., William D. Tracev, 270 Mullin St.
- July 17—Terre Haute, Ind., write Frank Nekimken, c/o American Legion Nat. Hq., Indianapolis.
- July 18—Chanute AFB, Ill., Lt. Harry G. Vogler, Jr., Hq. 3499th Mobile Trn. Group.
- July 24—Portsmouth, W. Va., Dr. Jules McCracken, Box 82, Milton.
- July 24—Mishawaka, Ind., Richard Ramsbey, 713 N. Main St.
- July 26-31—Olathe, Kan., National Championship Meet, Jess Hall, American Legion.



- July 31—Fresno, Calif., record trials, Ocie Randall, 716 Waterman Ave.
- July 31—New Rochelle, N. Y., R. V. Cearfoss, 347 North Ave.
- Aug. (date pending)—Butte, Mont., L. L. Richens, 9 S. Montana St.
- Aug. (date pending)—Essex, Conn., Chas. Hoelck, 25 Dennison Ave., Mystic.
- Aug. 6-7—Adelanto, Calif. Soaring regatta (5th heat), El Mirage Field.
- Aug. 7—Prescott, Ariz., Dale H. Liljegren, 1116 Paar St.
- Aug. 7—Beckley, W. Va., Dr. Jules McCracken, Box 82, Milton.
- Aug. 7—Cleveland, O., John W. Grega, 10422 Gay Ave.
- Aug. 21—Grand Island, Neb., W. H. Parmenter, 1634 K Lincoln.
- Aug. 22-29—Third Annual Plymouth International meet. Contact your local Plymouth dealer for entry blank and rules.
- Aug. 28—Mishawaka, Ind., Richard Ramsbey, 713 N. Main St.
- Aug. 28—Long Island, N. Y., E. V. Roff, 56 Stuart Ave., Malverne, L. I.
- Sept. (date pending)—West Chester, Pa., H. J. Aldsworth, 302 S. High.
- Sept. 3-5—Adelanto, Calif. Soaring regatta (6th heat), El Mirage Field.
- Sept. 4—Indianapolis, Ind., L. V. Brown, 5506 N. Illinois St.
- Sept. 4—Jacksonville, Fla., M. W. Myers, 1807 E. 27th.
- Sept. 4—Decatur, Ill., Fred Bascom, 806 W. Elm.
- Sept. 5—Far Hills, N. J., Harold J. Dob's.
- Sept. 11—Rochester, N. Y., Ray C. Edmunds, 675 South Ave.
- Sept. 18—Chanute AFB, Ill., Lt. Harry G. Vogler, Jr., Hq. 3499th Mobile Trn. Group.
- Oct. 1-2—Adelanto, Calif. Soaring regatta (7th heat), El Mirage Field.
- Oct. 29-30—Adelanto, Calif. Soaring regatta (8th heat), El Mirage Field.



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(Continued from page 27)

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Indianapolis—Capt Eugene Adams 2618 College  
Indianapolis—Lt Donna Selig 5227 N Illinois  
Indianapolis—Capt Raymond B Cobb 628 E Michigan  
Kokomo—Capt William I Boles 833½ S Washington  
Marion—Capt Orion B Reed Bx 605  
Mt Vernon—Capt David E Hastings 521 Locust Av  
New Albany—Capt S V Jennings 1206 E Main  
Rising Sun—Capt Edward Menefee 216 2nd  
Seymour—Capt Thomas Johnson Bx 318  
Silver Lake—Lt William Mollenhour Warsaw  
South Bend—Capt Claude J Gerlach 1412 Marietta

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Aurora—1st Lt Leslie E Knapp  
Cedar Rapids—Capt H Gunderson 1865 Ellis Blvd  
Decorah—Capt H T Opsahl Burr Oak Rd  
Des Moines—Capt Duane A Fuller 903 Arthur  
Des Moines—Robert S Leibold 1925 40th St Pl  
Dubuque—Capt Fred J Hutfill 121 W 23rd  
Fairfield—A W Plants  
Guthrie Center—David J Evans Bx 356 206 7th  
Marshalltown—Lt Eric T Hill Bx 181  
Mason City—Capt R M Maynard 1133 15th NE  
Oelwein—Maj Lee E Finders 112 1st Av NE  
Perry—1st Lt L J Griffith Jr 1218 2nd  
Rock Rapids—1st Lt Glen E Hunt RFD  
Sioux City—Robert Rol  
Waterloo—Capt Harry Hollett 626 Sycamore

### KANSAS

Coffeyville—Capt Frank J Bath 1104 W 4th  
Dodge City—Maj Roy O Mahon  
Fort Scott—Capt Willard J Watson 11 S Little  
Garden City—Lt N L Dunnan New Municipal Airport  
Independence—1st Lt R P Johnson Bx 386  
Junction City—2d Lt Chas A Rose 638 W 5th  
Lawrence—2d Lt H E Shigley 208 W 15th  
Pittsburgh—2d Lt Donald E Slagle 706 S Olive  
Pratt—1st Lt Arthur G Mooney 1012 W 3rd  
Russell—Lt Rupert DeWald Bx 621  
Salina—Capt Fred G Wallis Bx 1057  
Sedan—Capt Carl F Walter  
Sterling—1st Lt Wayne Fish  
Sylvia—1st Lt Fred McElhinney  
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### MAINE

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Lewiston-Auburn—Paul R Dwinal Greenlaw Airport  
Auburn  
Portland—Lt Henry C Hey Spurwink Av Cape Eliza-  
beth  
Rumford—Louis F Gayer 483 Virgin  
Sanford—Albert M Reese Sanford Airport

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Holyoke—Alice A Guimond 109 Mosher  
Lawrence—R L Ovellette 22 Brookfield  
Lowell—J E Creamer 238 Central  
Marlboro—D V Lacouture Marlboro Airport  
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Somerville—Leo Millea Jr 72 Wallace  
Springfield—R C Cutler Wilson St Wilbraham  
Swampscott—Colvin Tilden 17 Middlesex  
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Farmington—Oscar Thomas Thomas Flying Service  
Gallup—D B Clark Thunderbird Airport  
Hot Springs—J B Wright Bx 8  
Las Cruces—Robert Crawford Crawford Flying Serv-  
ice  
Las Vegas—Maj H L Feld 613 8th  
Lordsburg—R B Rice Bx 895  
Los Alamos—Capt William R Kennedy Bx 741  
Portales—L E Stainbrook 701 Oldham  
Roswell—Edward Buck Bx 941  
Santa Fe—Capt Jack V Gallette 236 Johnson  
Santa Fe—Clifford Steiger Boyd's Airport  
Springer—Vic Reynolds Bx 7  
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# "Operation Bucsom"

(Continued from page 29)

freight; camouflage and identification of all types of aircraft from lightplanes to commercial and military planes, and operation of radar and radio units are only a few of the details so far released.

Air Force planes will be loaned for the operation with the planes to be maintained by National Guard personnel. Also to be used are large trailers, mobile portable lighting equipment, buses, trucks, jeeps and perhaps even facsimile transmission of maps and messages.

While CAP members will participate, along with National Guard and regular USAF personnel, the accent will be on the training of Cadets.

CAP units in New Orleans cooperated to provide the annual Mardi Gras with one of its most beautiful floats . . . Idaho Wing CAP has a new staff member in the CAP-USAF liaison office, T/Sgt. Edward L. Anderson.

Ruston, La., Squadron has had the most successful membership drive in the history of the Louisiana Wing, from two to 53 members in less than two months, asks if any other CAP unit can match the record?

The Alameda Squadron, Fourth Group of the California Wing CAP, can

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probably boast of one of the most unusual air search-and-rescue missions of recent months. The unusualness is not in the mission itself, but in the plane. Lt. Glenn H. St. Louis of the Alameda Squadron flies a Vultee BT-13 whose entire bottom fuselage is made of plexiglas for better observation.

# Official CAP History

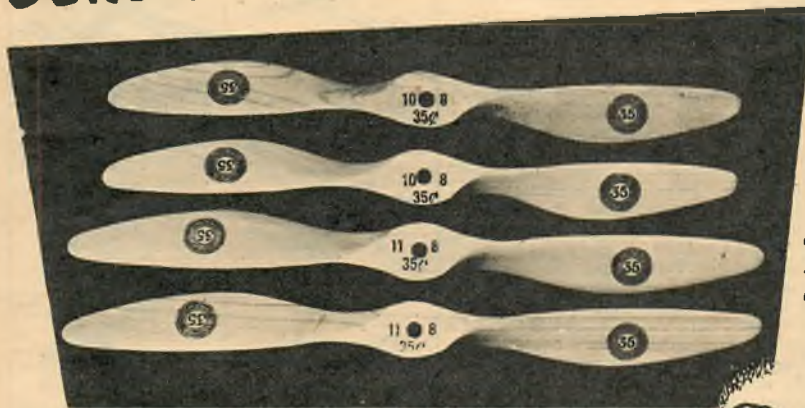
In response to requests, Air Trails presents the following data on the aims, organization and history of the Civil Air Patrol. This material was prepared by CAP National Headquarters. It is recommended that all Patrol members clip and save this report for use during recruiting.

**Origin**—CAP was founded on 1 December 1941 under the Office of Civilian Defense to mobilize the civil airmen of the country with their airplanes and equipment for wartime duties. The CAP Cadet Program was founded 1 October 1942. From the beginning of CAP, most of the active missions were flown for the Army Air Forces. Therefore, on 29 April 1943, CAP was transferred to the War Department by order of the President.

**Command**—Appointed by the Commanding General, United States Air Force, the National Commander, with a staff of Air Force Officers and civilian employees, directs the activities of CAP. The National Headquarters is in Washington, D. C. (Bolling Air Force Base).

**Organization**—With the exception of National Headquarters, a USAF-CAP Liaison Officer, an enlisted assistant, and a Civil Service secretary at each of the State Wing Headquarters, CAP is composed of civilian volunteers. A Wing Commander in each of the 48 states, District of Columbia, the Territory of Hawaii, and Alaska, reports to the National Commander and directs all CAP activities in the Wing. The Wings are organized in Groups, Squadrons, and Flights. In the smaller states, there are no Group Commands. A typical local unit is a Squadron of 50 to 200 senior members or a

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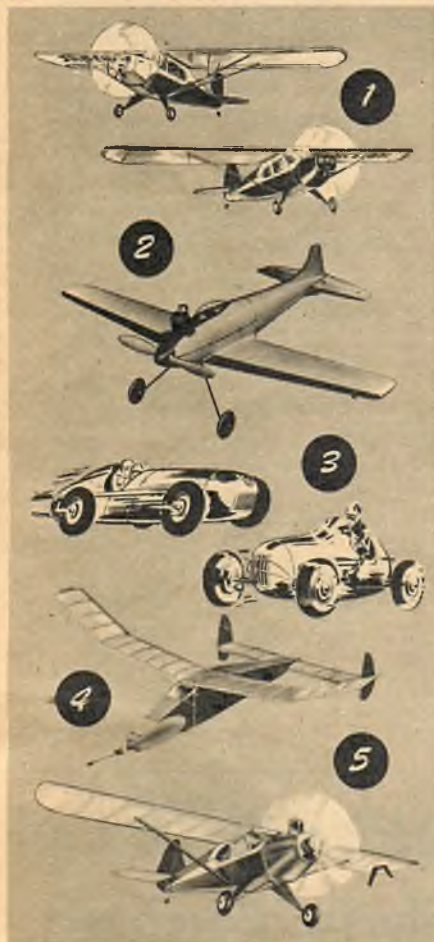
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**History**—Soon after the Patrol began to form its local units in the 48 States and to embark upon its program of training at the beginning of the war, it was called upon to send airplanes and pilots on military missions. In the words of General of the Army, H. H. Arnold, Commanding General of the Army Air Forces during the war, "The Civil Air Patrol grew out of the urgency of the situation. The CAP was set up and went into operation almost overnight. It patrolled our shores—performed its antisubmarine work—at a time of almost desperate national crisis. If it had done nothing beyond that, the Civil Air Patrol would have earned an honorable place in the history of American air power."

Early in 1942, when German submarines were attacking American vessels within sight of our shores and were cutting the vital supply lines to our troops and allies, the Army and Navy did not have enough airplanes and ships to guard the coastal waters. CAP volunteers brought their airplanes and equipment to organize three experimental bases to find the enemy and call the bombers to the kill. They were unarmed, but the CAP airmen kept their secrets so well that U-boats about to attack convoys crash-dived on the approach of CAP planes.

After this success, 21 bases were manned, developed, and equipped by CAP to cover the entire Atlantic and Gulf coasts from Maine to Mexico. Bombs and depth charges were slung beneath the light civilian planes which were in radio contact with their bases. Skimming the water in pairs, these single-motor airplanes were on daylight watch over the coastal shipping lanes, often as far as 100 miles at sea in winter weather or over high waves, when the failure of an engine meant almost certain death. In this service 26 CAP men were lost, while hundreds of survivors of ship sinkings and dozens of Army and Navy airmen down at sea were rescued when spotted by CAP observers.

Aircraft of the CAP Coastal Patrol were flown more than 24,000,000 miles over water. They spotted 173 subs; dropped bombs and depth charges against 57; and are officially credited with sinking or damaging at least 2, in addition to those destroyed by airplanes or ships summoned by CAP. They found 17 floating mines, some in the path of troop convoys. This coastal patrol continued until 31 August 1943 when the Navy and the Air Force took over.

From similar bases inland, CAP pilots and observers flew 30,000 airplane hours along the Rio Grande to observe illegal crossings in either direction and to report irregularities. They flew so low that they could read auto license numbers. Their radio reports resulted in many arrests.

For the Second Air Force, CAP airplanes flew more than 20,000 miles per day throughout the West to carry military mail, repair and replacement parts, and other urgent shipments between widely separated air bases. At many air fields in other areas, CAP airplanes were assigned to carry rush shipments when needed.

CAP has performed more than 20,000 missions as air participation in anti-aircraft gunnery training of the Eastern and Western Defense Commands. On these assignments, CAP airplanes flew over 46,000 hours towing aerial gunnery targets and tracking for guns and searchlights.

CAP airplanes and ground parties may be called into action upon request by the USAF when military aircraft are reported missing, especially in mountainous, desert, and wooded terrain. CAP pilots and observers, flying low and slowly in their light airplanes and trained in methods of precision reconnaissance, find what they are looking for. Many airplane wrecks have been spotted, guards posted, and aid given to survivors. CAP airplanes have flown over 24,000 hours on official search missions and much more on their own.

Inspection of camouflage and smoke screens, exercise of the Aircraft Warning System in the Southeast, radar training flights, and other special missions were flown to relieve Army airplanes and personnel for combat duty. In its military flying, CAP lost more than 50 men and 150 airplanes.

Belated but well earned recognition has recently been given to 824 members of the CAP Coastal Patrol Bases in the form of Air Medals. These medals were awarded to those members who flew at least 200 hours in actual over-water reconnaissance.

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**Present Mission**—One of the chief functions of the Civil Air Patrol is the training of American youth in the fundamentals of aeronautics. In the United States, District of Columbia, the Territory of Hawaii, and Alaska, which make up the 51 Wings of the CAP, there are about 70,000 boys and girls between the ages of 15 and 17 participating in the CAP Cadet Training Program. They are given ground training by the approximately 110,000 senior members of the CAP.

The aviation subjects included in this ground training are map reading, theory of flight, meteorology, navigation, aircraft structures, engines, instruments, crash procedure and Civil Air Regulations. These are far more subjects than are required for a pilot license. Military subjects taught the cadets include Infantry Drill, safeguarding military information, guard duty, military correspondence, and organization of the United States Air Force. CAP does not give flight training but encourages all members to learn to fly by purchasing flight time from private operators. In many areas funds have been donated to give flight scholarships to outstanding members. CAP cadets are given orientation flights in L-4 type aircraft on loan to the Civil Air Patrol from the USAF. CAP pilots take special flight proficiency courses and observers go aloft to gain experience for emergency duties.

Instruction is given without charge by CAP members and other local volunteers best qualified to teach the various courses. Navigation may be taught by a commercially rated pilot; radio by a skilled amateur or professional operator; first aid by a doctor or Red Cross instructor; and military drill by a veteran of the recent war or World War I. CAP training is a liberal education. Members who can fly broaden their aviation knowledge and learn the related ground subjects. Non-flyers learn about aviation.

A USAF Liaison Officer is assigned to each CAP Wing for consultation, advice, and assistance in training problems and in the organization of training programs. These officers, most of whom are combat returnees, may be called upon to advise instructors and CAP officers administering the training program. They are available to discuss training methods and teaching techniques. They are the direct liaison between the USAF and the Civil Air Patrol in that area.

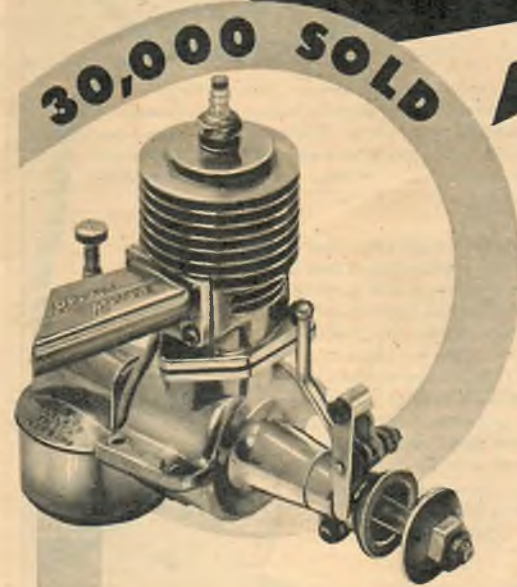
Each year the cadets are given the opportunity of attending one of the many summer encampments held at various USAF bases throughout the country. The encampments are approximately two weeks long. During that time the cadets put to practice the theory they have been taught in their ground schools. Separate encampments are held for the girl cadets who receive the same privileges that are afforded the male members.

Tinker Air Force Base, Oklahoma, had the distinction of being the only base offering the CAP cadets a course in the maintenance of the Jet Engine (J-35). The course included twenty-two hours of classroom theory and thirty-eight hours of actual assembly and disassembly.

**Aerial Home Guard**—CAP takes an active part in emergencies. Each local unit is prepared to work with military, state, municipal, or relief authorities to give whatever aid may be rendered through the airplanes, radio equipment, cars, and personnel of CAP. They cooperate with many public agencies such as the Civil Aeronautics Administration, the Coast Guard, the Federal Bureau of Investigation, and the American Red Cross to be useful wherever possible, both in the air and on the ground. In emergencies caused by floods, tornados, hurricanes, blizzards, fires, explosions, or railway wrecks, CAP has saved many lives and has averted extensive property damage. In floods, CAP pilots fly to drop warning messages, observe the extent of damage, and spot persons or livestock in distress. In addition to searching for missing military aircraft, CAP personnel often hunt for missing civilian aircraft.

**Air Power**—The ultimate goal of the CAP is to have 100,000 highly trained flying and technical personnel who, should an emergency arise, will be qualified and readily available to fill positions in commercial and military training had a great advantage over raw recruits. Those who had completed courses in such subjects as Morse Code, aircraft identification, meteorology, and navigation, had such a definite advantage that their chances of passing the rigorous Army courses were much improved.

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Due to the high cost of training Aviation Cadets, any reduction in the percentage of wash-outs meant a substantial saving; therefore, prior experience and training tends also to reduce accidents.

The status of Civil Air Patrol as an active flying organization makes it far more effective as a training corps than one founded for training alone. Members who train with the expectation of being called at any moment to guard an airplane wreck, or otherwise meet an emergency, have a constant incentive to learn the courses and the military team work that spells success or failure. The early units of CAP performed many missions in which their members and recruits may take special pride. It is this tradition and spirit that puts zest into CAP's recruiting and cadet training activities.

In the future as in the past, the Civil Air Patrol stands ready to meet any local or national emergency which might arise.

*Plans of CAP*—As a continuing goal the CAP intends to maintain a CAP Cadet Corps of 100,000 young men and women. Many Wings are increasing their membership through various methods. As an example, one squadron commander utilizes this plan: Each cadet of his squadron who recruits three new members receives a flight in the commander's privately owned twin-engine plane. Many new recruits have been added to the squadron by this method.

CAP's policy of accepting women on a basis of equality is particularly important. Before the war, barely more than 3 per cent of the licensed pilots were women. Thus, the female half of the population, controlling far more than half of the purchasing power, had taken little part in aviation. Today women and girls make up some 20 per cent of the membership of CAP.

*Aid in Reducing Juvenile Delinquency*—All cadet activities are under close supervision of parents and teachers. It is required that parents come to at least one meeting a month to see their boys and girls in action. Parental consent is required before cadets can enlist in CAPC (Civil Air Patrol Cadets) and before they are allowed to accept airplane rides. There is no pledge of military service in CAPC. The purpose is to prepare young people for civilian aviation in peacetime as well as for possible duty in the armed forces.

The CAP Cadet Program has been endorsed by President Harry S. Truman as concerning the future security of our nation and by J. Edgar Hoover, Director of the FBI, as a means of reducing juvenile delinquency. Educators, clergymen, and police are strongly backing CAP units.

Through the various activities of the CAP the cadets are kept busy. One of the activities for the cadets is the Glider Program. We have contacted the State Superintendents of Public Instruction in all states, asking their permission to make direct contact with the school authorities of the 8,000 United States secondary schools equipped with shop facilities capable of constructing a simple one-place sail plane. Most of the State Superintendents have concurred with us in our plan, and some few of the school authorities have already committed themselves to participation.

The CAP will cooperate with these schools to the extent of making available glider plans at a very low cost, of furnishing names and addresses of manufacturers handling materials, and of offering the assistance of the various Wing organizations in completing the project. Some gliders are being built in the workshops belonging to members of the CAP units. Here the cadets who do not have the opportunity of attending shop classes in school can meet with one of the glider construction classes and receive instruction in mixing glue, splicing spars, laying out foils, building jigs, running static tests, and begin actual construction work. When the glider is finished, it is taken out and flown by the cadets. The Civil Air Patrol has long felt that there should be a greater interest in glider and sail planes, so at present, we are encouraging the formation of Glider Clubs.

During 1948 the Civil Air Patrol began sponsoring an annual program of building and flying model airplanes. It is our intention to cooperate with the Air Modeling Association, American Legion, Veterans of Foreign Wars, National Aeronautic Association, Amateur Athletic Union, Air Scouts, Junior Chamber of Commerce, and any other agency that is interested in furthering the course of aviation. It is not the intention of the CAP to supplant the work of any organization anywhere. Our only

interest is to get a maximum number of American boys and girls actively engaged in aviation activities.

**Air Marking Program**—The Air Marking Program has been an active project of the CAP for several years, with the goal of air marking all of the United States.

In the earlier part of 1947, National Headquarters of the CAP was informed that the Civil Aeronautics Administration had a small appropriation which had been set aside for air marking. Miss Blanche Noyes, who is charged with the air marking activities of the CAA, offered to place the air marking paint that this appropriation could buy at the disposal of the CAP. National Headquarters sent inquiries to all the Wings requesting their cooperation with the CAP. Many Wings were aided by various Chambers of Commerce and other local agencies. With the additional help from the CAA, the Air Marking Program has been expanded to include the marking of various "Skyways" throughout the United States.

**Communications Network**—Early in 1947 the Army Air Forces allocated two radio frequencies for the use of Civil Air Patrol. These frequencies, 2374 kc. and 148.40 mc., are used for training purposes and in local and national emergencies. During a hurricane in Florida, Mississippi, and Louisiana in 1947, the communications network played an important part by maintaining radio contact with isolated regions where power lines were broken.

The Communications Officer of National Headquarters of the CAP, met with communications representatives in eight regional districts during February, March, April, and May, 1948, at which time the necessary liaison was effected to establish Wing and National networks with a control station in each region.

Much of the equipment needed for the CAP communications network has already been donated to the CAP by the Air Force and the Army Signal Corps, or secured through purchases from the War Assets Administration. The Air Force has also issued forty-eight SCR 399 radio sets for use in the National Network.

**Other Projects**—Other projects of the CAP include aviation cadet recruiting for the USAF; Air Tours in different parts of the United States to bring aviation closer to the general public; Air Shows to raise funds to pay for cadet Flight Scholarships and to run the Wing business; and the formation of Rifle Clubs for competitive matches between squadrons and units.

**Support of Civil Aviation**—Not only did the formation of CAP make it possible to continue private flying through the war years, but the action of local members of the Patrol kept open many airports which otherwise might have been closed.

According to a survey of all 48 states in the latter part of 1944, of 1,592 fields open for civilian flying, fully a third would have been closed during the war had it not been for members of the CAP. At that time 31 airports had been built and major improvements had been made on 108, largely by the volunteer labor of senior members and cadets, and 215 fields were managed by CAP members.

By training tens of thousands of cadets in pre-flight subjects, extending interest to their parents, training adults, and spreading aviation knowledge throughout whole communities and areas, CAP has helped create a demand for light airplanes, flight training, airports and landing fields, and commercial feeder and airline services. Through demand, mass production and lower costs can be achieved. CAP has helped bring aviation to the small towns as well as to the cities. Its training program, the voluntary discipline of its pilots, and the nationwide cooperation of CAP units with the CAP air marker program all serve the cause of flying safety.

**General**—Close cooperation is maintained with state and local governments; parents and teachers; civic, business, and professional groups; and youth organizations. In many areas, sponsoring committees of prominent citizens have been formed to guide and assist the program. CAP offers to its members and to the communities which it serves an opportunity to build American aviation against another war, and to help raise the mental, moral, and physical level of the young people in its care. With these objectives and with the tradition of service which is behind it, the Patrol is an organization in which any citizen can be proud to play a part.

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U control or free flight scale model. Very easy to build. Excellent flyer. Uses "B" or "C" type motor. Set has all parts printed on balsa, silkspan, wheels, full-sized drawing and all parts. \$4.95 Dry set, less motor .....

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**Dope Can**

(Continued from page 40)

than a busted prop, so can you. We've met modeler James and know he's a right Joe, so that his statement that, believe it or not, there are some people with whom he agrees appears unnecessary.

**Like a Duck:** L. H. Clapsadle, R. D. #1, Mogadore, Ohio, wants to make like a duck with an amphibian or seaplane. He's particularly anxious to obtain plans for the "Neptune," a realistic type of ship, which appeared in Air Trails about eight or nine years ago. Design was by Fred Tuxworth and plans were drawn by Paul Plecan. As we remember, the engine was mounted in a nacelle above the wing. If you haven't the dope on the "Neptune," Clapsadle writes that he'd be tickled to pieces to receive plans for anything in the boat-amphibian line.

**"Never Again!"** says Daniel Lambert of Flint, Mich. This doesn't refer to model building, since he's head over heels in same, but to the use of extension shafts in his scale control-liners. His Navion has an inverted Ohlsson "60" in its cabin, with a 7-inch extension shaft. What with installation and cooling problems to lick, the time and work involved have caused him to forswear similar arrangements in future ships.

**No Bar in Hershey** on modeling, reports Arling (Smitty) Schmidt, who's attending Hershey Junior College and with whom we used to spend hours in model-gabbing. Smitty sends (a) a picture of himself, (b) a couple of snapshots of his Wakefield ship, which is prettier than he is, and (c) a complete course in low-speed aerodynamics which he calls a letter. He claims hitting 2½ minutes by the watch with only ¾ winds in still air for the ship, so maybe he'll be heard from in the Wakefield Team Trials. Unusual points in the design are 8% airfoil in the wing, which has "vee" dihedral and very little of that, and a 15¼" prop with "suarish" tips.

**Self-Preservation** is behind the proposal of George Florman, who suggests that control-line be given a shot in the arm "before someone gives us one in the head." His suggestion is that control-line ships be fast, maneuverable, useful and pretty all at once; in other words, that the same ships compete for speed, stunt, payload and appearance. Just as there are specialized types of full scale aircraft there should be specialized types of models, says George, who doesn't advocate the discarding of present-day ships. However, he believes that models built and flown according to his proposed specifications would be far more appealing to the general public, who just can't understand why models, outside of Flying Scale, don't resemble the big ones. They'd be safer, too, he adds.

**You'll Go Nowhere Fast** if you fly a ship like the one built by Robert L. Wall, who calls Green Bay, Wis., home but who is temporarily drawing pay as a U.S.A.F. private in Wichita Falls, Tex. Said ship is powered by a 6-inch diameter jet engine, has a span of 10 feet, a length of 9 feet and a flying weight of 65 pounds. Engine is of the pulse-jet type and burns out valves faster than the midget variety. Gas consumption is anything but economical, it seems, since Private Wall tells us it used a half-gallon during the 2 minutes, 35 seconds it was in the air before the valves burned out. Flown with a light pole as an anchor, the ship is said to have hit 245 mph. Wow!

**20 Big Years of Experience** are behind the teaching given the kids in Jacksonville, Fla., by Milton (AMA 289) Myers. Employed by the city's Recreation Department, Myers has designed models for every type of flying, many of which have been used as work projects in the city's school system. In his spare time

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he takes a postman's holiday, building and flying such ships as his McCoy-"60"-powered scale De Havilland DH-4—a beautiful thing—with which he's won stunt events. More power to him, say we, for his work with the kids.

**Hitch Up The Ercoupe**, we're a-goin' tuh the Nationals! Gordon Tileston writes from Mesa View Ranch (3,000 acres of it), Craig, Colo. Because of the size of the ranch, Gordon and his pop own an Ercoupe for spotting strays, inspecting fences and irrigation ditches and preventing rustling. Speaking of rustling, Gordon reminds you modelers that leaving engines around at contests is inviting trouble, since some find it a temptation hard to resist. Keep 'em locked up, he counsels, and you'll go home with the same number you had when you arrived.

He also pleads for separate classes for towline glider at the Nats, since he's sure that more of his gang would have won last year had the event been set up that way. As it was, Bill Fox of Boulder took a first in Senior. We feel pretty safe in speaking for the sponsors on this one—adding two more classes would mean rounding up eighteen more trophies, for first, second and third in three age groups in the two additional events, plus other prizes. With a meet the size of the Nationals, and with the tremendous number of awards to be obtained, this would be a terrific job to do. In addition, the additional recording necessary is beyond comprehension.

**Penny Has Thoughts** that top everything heard to date. J. E. Penny of England wants a nice new shiny American car, which is a perfectly normal desire since so many of us over here have the same idea. How he proposes to circumvent the four-year wait for it that he's told is necessary is a sweetheart of a deal, however. Briefly, it consists of having the U. S. Wakefield Team bring the car along with them (they could maybe put the car on floats and drive it over?) and deliver it to Bro. Penny. He's a little coy in mentioning the make, but says the job sells for \$2,800 in the U. S. for which he'll gladly pay 800 pounds (he says) upon delivery. A couple of small details come to mind in connection with the fenagling—first, how can the car be obtained here without having to wait four years; second, how will our Wakefield Team look in suits with wide horizontal stripes?

**E. R. E. Loves A. T.** From Cranston, R. I., comes a plea from E. R. Erickson not to listen to those who want to "re-do" Air Trails. He likes us just the way we are. His letter contains the comment that although there's no doubt but that fenced-in control-line circles as proposed by Jim Walker would do the job, he believes that the cost would be beyond the means of the average club. This, in turn, means that John Q. Public would have to pay for it. However, he sadly notes that John Q. isn't aware of the danger and needs to be educated. One safety measure he feels should be taken is that of requiring that a strap should be fastened to the wrist and to the control handle.

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Questionnaire Sent Us by Frank Knox, 18520 Lancashire, Detroit 23, contains many which are asked by those who haven't advanced to the point where the gobbledegook language spoken by the modeler is of any sense. (Is it ever?) He wants to know what "downthrust" is, to which the reply is made that it is the tilting of the propeller forward so that it points down slightly, rather than straight ahead. It is used to prevent the ship from nosing up into a stall or looping, since it provides a little "down" force at the nose. As to dethermalizers—they're used to bring a ship down so that it won't soar away in a thermal, or warm rising air current—the reason for some of those phenomenal flight times you read about. They are of many types, the three most popular being the pop-up tail, the spool and the hinged drag-producer. With the first, the tail surfaces are made to cock at a high angle with the trailing edges up in the air. This causes the ship to descend steeply, while remaining level. The spool type has a hundred feet or so of thread fastened to a spool and wound around it. The free end is fastened to a wing tip, so that when the spool is released its weight, when unwound and hanging from the wing tip, causes a spiraling descent. When the weight is taken off by the spool hitting the ground, the ship pulls out of the spiral and makes a normal landing. Another method is that of having a hinged section of the fuselage over the wing which when released causes so much drag that the wing loses lift and the ship settles.

These answer only two of his questions, and then are far from complete, so it is suggested that Frank get himself a copy of Bill Winter's "Model Aircraft Handbook" (T. Y. Crowell, N. Y.). If the local bookstore doesn't have it, they'll get it for him. Bill's book really has the answers. Frank would also appreciate your writing to him, especially if you've got some old copies of AT containing "how to do" articles and plans for rubber jobs, CO<sub>2</sub> ships and gliders.

Look Ma, No Batteries! That's what Jimmie McCroskey, Box 56, Iredell, Texas, would say if he could find magnetos for his two Ohlsson 23's. So far as we know, there just aren't any light enough for his purpose. Maybe you know of one; if so, please tell Jimmie (and us) about it. Why not glow plug 'em, Jimmie?

Are Your Club Meetings Ho-Hum Affairs? Pep 'em up by latching onto a 16-mm sound projector and running off Goodyear Tire and Rubber Co.'s "A Big Race for Little Wings." A pictorial account of the exciting Goodyear Trophy Event at the 1948 Cleveland Air Races, the film can be had by writing to Public Relations Dept., Goodyear Tire and Rubber Co., Akron, Ohio.

Another movie sure to be entertaining is "Operations Vittles," the U. S. Air Force pictorial story of the airlift supplying blockaded Berlin. The success of the airlift shows that an American city, if isolated by a flood, for example, could be supplied with everything it would need until outside contact was reestablished. The cargo capacity of the aircraft used is shown in the picture, and the ability to transport terrific loads by air, even in bad weather, is proven beyond question. "Operations Vittles" may be obtained from the Air Materiel Area Hq. at Middletown, Pa.; Brookley AFB, Ala.; Ogden, Utah; Oklahoma City, Okla.; Sacramento, Calif.; Kelly Field, San Antonio, Tex.; and Robins AFB, Ga.

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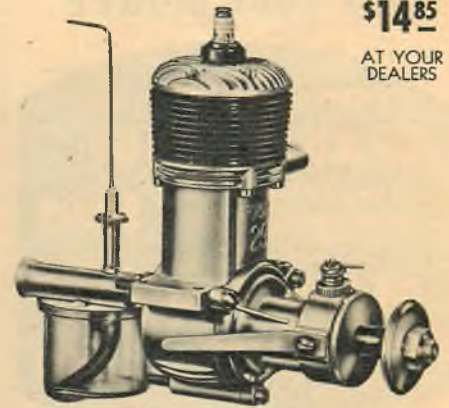
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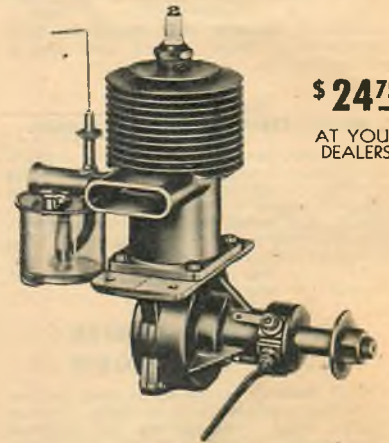
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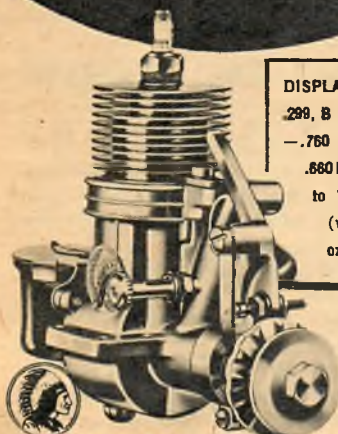
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We Did a Double-Take on Paul Ashelman's letter. He writes of a 22-minute flight made last January at Warren, Ohio, which is pretty good free-flight time. This one, though, was control-line! Paul's brother Don and Jim Craig loaded up a scale Cyke-powered Great Lakes Trainer with a pint of Ohlsson #2, snapped 46-foot lines on, and flew a total of 327 laps, changing off every 40 laps or so. In passing the handle at the 327th lap, something went wrong. The ship started a dive and was just pulled out in time to avert a crack-up. The tank still contained a third of a pint, which means that they could probably have flown 500 laps and had the ship in the air over a half-hour. Paul wants to know whether anyone has ever topped this, and so do we.

"Dear Dope Can:" Writes Ken Thomson, "Please publish this: Hey, fellows, how about looking in your old AT's and see if you can find me some old three-view drawings of Japanese aircraft." We've looked in our available copies and can't find any, but maybe some reader can. If so, and if you're not saving that plan or article on the other side, send them to Ken at 11 Wyatt Rd., Garden City, N. Y.

**One For The Kids:** Encouraged by the success of last year's contest, the sponsors of the Exhibit Contest in Cleveland put up a total of 300 awards, topped by 30 gold trophies, for this year's shindig which was run on March 12. Contestants in grammar and high school were divided into four groups, with a fifth set up for contestants out of high school or over 18. In addition to built-up and solid military and non-military scale models, as well as flying scales, contestants could enter a form of "Airmen of Vision" event. The Cleveland Women's Chapter, National Aeronautic Assn., were right in there as usual, taking care of registration.

And As He Picked Up The Remains he sadly murmured, "Oh dear, Jim must have gotten my signal wrong." Maybe that isn't exactly what we've heard said, but the reader can get the general idea. The comprehensive and simple set of signals worked out by the Fredericksburg (Va.) Modelcrafters Club, sent to us by secretary D. G. Gouldman, Jr., seems to be the answer. Still sharply etched in memory is the look of anguish on the face of Chuck Manson of Washington, D. C., as his hot little "29" job spread itself on the concrete at Detroit in '47 because of a misinterpreted signal.

**Modeler's Dream** is Hillman's Model Wings Airport, just outside of Pittsburgh, which should be completed and in full swing as this is read. James Schenck writes that a 200-foot runway will be provided for free-flight, control-line circles will be enclosed by an 8-foot fence, an operations building and comfort stations will be erected and adequate parking facilities and roadways will be provided. It is expected that few weekends will go by this summer without a meet being run off, since all clubs in the Tri-State area are invited to use the field. No fees will be charged, but Contest Directors will have to clear dates first with Mike Thomas, AMA Secretary-Treasurer, who is acting as Co-ordinator for the activity. Copies of the contest schedule can be obtained by writing Model Wings Club, P. O. Box 7955, Pittsburgh 16.

**Get The Point!** If you get enough of them and are a member of the Bristol (Pa.) "Aeromodelers," you're in line for a snazzy award, according to the newspaper write-ups of club flying activities sent in by Clarence Wells. We also see that club membership is nearing the sixty mark—a sure sign of a live-wire organization.

'Nuts Name Vacco as president for 1949, writes Charles Bell of the famous Chicago "Aeronuts." In addition to Pete, Bell is vice-president, William Erlich is secretary and Otto (2nd place Wakefield) Curth is treasurer. In addition to the above, the club has among its members such beginners as Carl Goldberg, Wally Simmers, Ed Lidgard, Pappy Matulis and others too numerous to mention here. Believe it or not, Bell

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writes that they're looking for members, so you Chicagoans should drop everything, including a postcard to William Erlich, 2513 N. Sawyer Ave., and jine 'em.

It's About Time club "spark plugs" got some recognition. Take Tom Sauerwein of the Williamsport (Pa.) Gas Model Club—because of his year-round interest and efforts in club activities, Tom was given a special award. Every club has someone like Tom; why not show that someone that his or her efforts are appreciated? Johnnie Deitch, who publicizes the WGMC, would like to see the membership list grow to more than its present 45, so if you're within hailing distance of Williamsport get in touch with him at 520 Pine St., or with Ferd D. Page, Jr., at 437 Church St.

It's a Shame that the picture sent us by Ocie Randall is a little too dark; otherwise you could have seen what the hottest flyers in one of the hottest free-flight gas clubs in the country look like. Ocie explains that the picture represents the point champs for 1948 of the Fresno Gas Model Airplane Club. Here's a club where the Juniors are really expert, so special congratulations are in order for Fred Ginder, who won the Eastman Junior Trophy. They start 'em young in California!

Look Out For The Thermalites! Don Edmonds says that club members will be "violently active" this year, so those in the vicinity of Jamaica, Long Island, can expect to see the air black with models this summer. Recognizing the contributions every type of building has to give, the club welcomes as members all who are active in any phase of modeling, including solids. Why not show up next Friday evening at 8:30 for the regular club meeting, held at 172-10 111th Ave.?

"Best Club in The U.S.A." Writes Mal Alberts, secretary-treasurer of the Los Angeles "Sod Busters." This, he reasons, automatically makes it the best in the world. Could he be just a leetle prejudiced? Anyway, the club is an active bunch, according to his letter, since every Sunday finds them out behind Dorsey High School near the Baldwin Hills flying everything there is to fly. Mosey on over to 1436 S. Robertson at 8:00 P. M. of a Tuesday evening if ya wanna be associated with a swell gang. Thanks, fellas, for the swell honorary membership card given AT.

Completely In The Dark and liking it, is the McAllen (Tex.) "Prop Crackers Club." Not satisfied with ordinary daylight flying, its members do it the hard way by flying at night with no lights and no moon! J. E. Bell, club Prexy, writes that he, with Caesar Fulton and Norman Keeran, did that very thing. On one flight, the control handle was passed around six times—this with an Atwood job that hits 85 to 90 mph. Next project is having more than one ship in the air under the same conditions. Doggonit, you just can't beat these Texans!

No Gripes in the editorial in the March issue of the Augusta (Me.) "Flying Maniacs." Instead, editor Howard Smith outlines the proposal of Bob Venner that hopped-up engines be outlawed, so as to cut down the speed of control-liners and make the sport safer, as well as giving Joe Average Modeler a chance. Question, Bob: what is a hopped-up engine? Also, how could the rule be enforced? If the fellows up there have logical answers to those two, we're sure the AMA Contest Board will be glad to listen to you. No foolin', either! Good news comes in the form of a release, to the effect that the Maine Council of Model Clubs is now official. Clubs in Augusta, Bangor, Lewiston, Portland and Waterville are represented by their respec-



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tive presidents and by delegates from each of the three age groups. By the time this is read, the three other Maine clubs are expected to have followed suit. In addition to standardizing contest rules and procedure, the Council will act as a judicial body for such things as club activities, contest dates and protests, etc. It is assumed that it will also speak for Maine in the Eastern Association of Model Airplane Clubs.

A quick note from Kenneth Ray tells of the adoption of a new charter and the reorganization of the Bangor "Hedgehoppers," plus a reminder that their annual "Flying Fair" is scheduled for July 10.

**Hibernating In Vermont?** "Nope, just exams," explains Gerald Turner, editor of the "Green Mountain Modeleer News." Issue No. 3 has just reached us, and apparently the Modeleers have really been busy. In addition to their regular control-line flying, the boys have gone in seriously for hand-launched gliders.

**Contest Issue** of the "Green Mountain Modeleer News" was a good idea. In it is described the procedure used in running their Winter Meet, which was held at Burlington, Vt., on March 6. Distributed before the contest, the "News" listed the events to be run, how they would be run and the point system used in determining winners. It seems that winning required all-around prowess, since Flying Scale, Balloon Busting, H.L. Glider, Speed, CO<sub>2</sub> Free-Flight, Precision and Combat events were scheduled, and prizes awarded to those with the highest accumulated point scores.

**"Give Him A Plug,"** Says H. A. of Mr. W. K. Amo, Superintendent of the Little Rock (Ark.) Parks and Recreation Dept. H. A. Thomas, whose purty sketches of models have appeared in Air Trails for years and years, sent us a copy of the Fourth Annual Report of Mr. Amo's department, and a most interesting document it is, too! Main thing is that Mr. Amo appears to see the need for control-line facilities of a permanent nature, and for that we love him to pieces.

**Home Run By Bunting** with "Slip Stream," publication of the "Prop-Twisters Model Club," Greensboro, N. C. Editor Harold Bunting can be justly proud of this newsy bulletin which contains such things as dope on what other clubs in the state are doing, plans for a cute little Infant-powered control-liner, AMA news and, of course, club doings.

**Fred Morgan Wins:** Remember the mention of the rotten weather at the East Bay Aeroners' California State F. F. Championships, and how the weather was a tough break for June Dyer, who stepped in and worked her head off as CD after illness prevented Don Foote from officiating? Since then, June turned reporter and sent us a swell four-page account of what went on. Space forbids a complete listing of the winners, but we've got room for the news that 14-year-old Fred Morgan of Fresno showed the oldsters how it's done by hanging up high time of the day with his K&B torp-powered Zipper, thereby winning the Air Trails trophy. His time—9:43—was really outstanding in view of conditions.

Of T.M.A. Of M.I.T. Myron Hoffman packed plenty of news into his letter on the activities of the "Tech Model Aircrafters," the members of which are M.I.T. students. Apparently the fellows build and fly every-thing flyable and even have a few events your club might try. One is the "Two-Bit" model, which must fit unassembled into a standard shoe box and which must be assembled by hooks or gadgets and without glue. Name comes from the requirement that a 25c piece must be placed in the model facing the line of flight and completely enclosed by the fuselage. Latest contest, held in the school athletic cage, was won by a 200-sq.-in. job—if he got it in a shoe box, he deserved to win—with a time of 2:14. Wakefield models of members are geared to weather conditions in England, with high



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pitch props and long motor runs. They no doubt remember, however, that they must first qualify under American weather conditions. Besides Wakefield types, there's been lots of interest in Team Racing, which shows to go that they're versatile. Secretary Hoffman invites correspondence, so write him at 222 Babcock St., Brookline 46, Mass.

We Like Doc for the friendly note he sent to members of the Tri State M.A.A. along with the report of the Association's annual meeting. We're speaking of Doc McCracken, of course, who's president of the group and who is the kind of leader model aviation needs. Betcha you'll read more and more about the Association, composed of clubs in Southern W. Va., Eastern Ky. and Southeastern Ohio.

**When Vultures Get Together:** The "San Francisco Vultures" run a meet that is a pip. Take their contest of March 20 at the Cow Palace in San Francisco, for example. Events included hand-launched glider, flying scale, hand-launched stick and a chance to establish a record in any indoor category except R.O.W. Ed Bernardo and Dick Burkett did their usual fine job of directing the contest.

From the Beginning, AMA model flyers' licenses have been issued to both rubber and gas flyers. These licenses have been valid for a period of twelve months from date of issue. For some time, it has been felt that this procedure has caused unnecessary inconvenience to both the model flyers and Headquarters. It resulted in modelers inadvertently overlooking the renewal of their license, with the usual hurry and scurry to get a new card before entering a contest. At Headquarters, it necessitated a constant flow of renewal notices and follow-ups.

The new plan now in effect is designed to eliminate these difficulties. AMA licenses are now issued on a calendar year basis. All licenses will expire automatically on December 31 of each year, which will give the flyers an opportunity to renew their annual license cards during the slack season when the fewest number of contests are scheduled. The old gas and rubber licenses have been scrapped and the new licenses will cover any type of model or event. They will be issued to Junior, Senior, and Open model flyers according to their age on January 1 of each year. The license cards will be of a different color each year to facilitate processing at contests.

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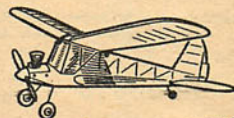
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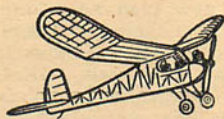
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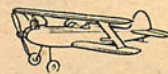
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Cabin Pylon—attractive free-flight 52" plane for large A or small B engines. It's found on Plan 105.



Upstart—Claude McCullough's 57" stunt model for Class D engines. Trim lines, easy. Part of 108.



Aeronca C-3—Chuck Hollinger's fine U-control scale model of a famous old ship. C1. B. 50". 107.

## Solo Club

(Continued from page 32)

proud of her. Once she had a forced landing in our Culver Cadet in the mountains and put it down in a mighty small field, the only one in miles. As for myself, my first flight into the 'wild blue yonder' was in a home-made glider in 1936. It was one of those kits they used to sell, the kind you assemble at home. Some deal! We used to tow it behind an old Model A Ford.

"In the service I flew everything from B-17's to P-51's. Out of service we have flown practically everything there is to fly, owning such ships as a Cub, BT-13, and the Cadet." From home-made glider to B-17's! This where-there-is-a-will-there-is-a-way attitude of Dan's has since been applied to helping other people get into the same wild blue yonder.

"I have taught dozens and dozens of people to fly," begins Dan Imhoof, "and can't see why it isn't possible for anybody to learn how to fly if they really want to. I want to describe one of my contributions toward boosting private flying. Now, any instructor who owns or can use a plane free should teach some person to fly, someone who really wants to fly in the worst way but who cannot afford the time and the instruction. Teach him or her for the expense of running the airplane. I have taught several friends for the cost of gas and oil. This may not mean much to the instructors but it means the world to the person who gets the break.

"I don't mean that we should teach everyone to fly for nothing. Only those who can't afford it. I feel these people want to fly as badly as you or I when we first started. This isn't taking money from the operators either. These people never would have learned to fly otherwise—we instructors have devoted our own time and efforts to teach them.

"Some of these people I taught to fly for free have brought in cash customers to the local operator. They tell their friends—and their friends tell their friends—it is a chain reaction, and in modern flying that is what we have got to get. Get everyone interested in flying. Get them to talking, eating, and sleeping flying, and only then will flying go places." Nice going, Dan. You can bet that some operators will label this as progressive nonsense but then too many operators are so short sighted that they unknowingly cut off their noses to spite their faces. That's why you don't hear too much about clubs. Why give people cheap flying? Smart operators have plugged clubs until the increase of local plane sales, and flying time on club ships have kept their shops bustling, and their gas pumps whirring. And, incidentally, where but in a group like ours can you hear remarks like Imhoof's? Who else has anything to say?

Here is Leon H. Malcolm, Solo Club member No. 7944. Leon has a gripe. "First, let me take this opportunity of saying how proud I am of my membership card and wings which I wear all the time. I understand that one can put in his favorite gripe and, brother, I have one.

"As a pilot with a few hours I have had the experience of getting lost and it is no comfortable feeling. One of the things I think should be done is the identification of every town, no matter

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how small, for private flying. Although I have never had the experience I would imagine it very embarrassing to land at some unknown airport and inquire its name!

"This particular time I lost my direction. I had to follow a railroad for about fifty miles before finding out where I was. In the course of events while following this railroad I passed over six small towns. If these towns had been properly marked there would have been no need for my delay. As it was they had no identification whatsoever, not even on water towers. I believe that private flying will not come safely into prominence unless this condition is altered." Well spoken, Leon Malcolm.

Leon's troubles remind us of some of our own. For a long while we had the habit of not trusting the compass before picking up the first check point. If things didn't look right we gilded the lily. Want to know what cured us? We had to land at an airport, as Leon feared, and ask which it was. Guess this can happen to anyone. Two P-38's once landed at Lock Haven, Pennsylvania, and asked where they were. "Lock Haven," they were told. Asked the Air Force boys, "What state is that in?"

This airmarking question is a funny one. Recently, an editor of a national magazine, hearing about airway number one, figured there would be a story in flying across country by watching the thousands of signs that marked each hamlet. Was he foxed! Towns, much less markers, can be few and far between. But marking is a must. Before the war there was quite a campaign of marking but then, fear of German bombers—can you picture them buzzing railroad stations to see where they were?—caused the signs to be effaced. Now we are marker-conscious again. Just for fun we shall assign our soup-to-nuts committee to the problem. We shall have some facts in a meeting or two.

In the old days—before they invented flying machines—the gold miners used to come out of the woods, plunk down their dust, cut loose, and go back broke to the diggings. Up in Halifax, Nova Scotia, people still come out of the wilderness to celebrate in the civilized way. What do they do? They plunk down their coin and hire a Cub or a Champ. So help us. At least that is Emerson Lister's story. Writes Lister:

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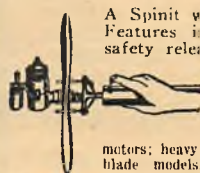
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Thee, and perspired freely. I didn't. I merely pushed the throttle. A moron could have done it. Before ten minutes were over I began to think one had. Maybe I ought to get back to the beginning.

"During my vacation from college," continues Emerson, "a friend and myself were doing mapping and surveying way out in the bush. When, at rare intervals, we emerged from the bush, we would draw our pay and set off for a few days at the nearest airport, and spend our dollars at our favorite sport, flying. At this field there are three planes, a Cornell, a Champion, and the usual Cub.

"On this particular weekend I had been putting in dual time in the Cornell. After supper my friend took the Cornell and the instructor, and I was left with the Cub and a fellow I had thought the mechanic. I asked him if he would take me around a few times to practice landings and takeoffs. He said he would, and off we went. I had flown Cubs before on floats but never on wheels. My first two landings were good then, to my surprise, the man in the front seat got out and waved me off.

"Well, the circuit was fine and the approach was all right, but I broke the glide violently and nearly stalled out at about 20 feet. Realizing almost too late what I had done, I applied full power and shoved the stick forward. The plane scuttled over the length of the field at about ten to 20 feet, swerving from side to side, as I stepped on everything in the cockpit. I pulled up over the end of the field and described a sort of elliptical orbit and made a decent landing, plane right side up and all that. Since then I have done a few more hours and, next May, expect to begin training with RCAF. Will let you know how I make out."

These guys must be reading our diary. There was an instructor who believed firmly in making you make the tough decisions and then, to give him credit, he sat through the fireworks. You learned fast. Every time a student leveled off high, slowed down and began to wonder, he would pipe up, "Well, what do you do now?" That always provoked a decision between holding back stick or opening the throttle. Nothing indecisive. For the first dozen times we held back stick. The thirteenth it looked high so we pushed the throttle, also a stick. Yoicks! Did that instructor scramble, recovering in a slight dive to bounce hard off the runway, and fly round again. The moral is not to dump

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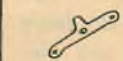


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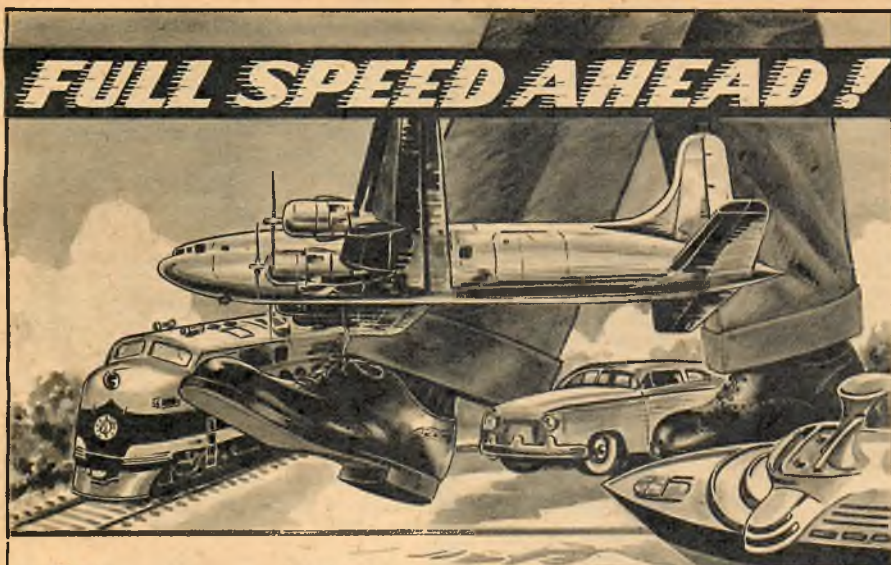
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the nose when you get hung up on a landing. Don't let it get higher, of course, but don't kill the lift suddenly by a drastic reduction in the angle of attack of the airplane. If you new soloers suddenly flub an approach or a landing, perhaps for the first time, don't let it rattle you. Don't necessarily push for another landing. Make a circuit or two of the field until you relax. There is nothing to be excited about, so get rid of the excitement. While you fly, relax, and plan the next approach.

**. . . to Fly  
Radio-Control**

*(Continued from page 45)*

Wayne Coy, chairman; Paul A. Walker, Robert F. Jones, C. J. Durr, George E. Sterling, Rosel H. Hyde and Edward M. Webster. Key commission officials are: T. J. Slowie, secretary; Benedict P. Cotton, general counsel; John A. Willoughby, acting chief engineer; and W. J. Norfleet, chief accountant.

What we need is a wide showing of public interest. If we can do this we should get immediate action. Everybody must do his part. Here is the report Dr. Good and I made to the FCC. Please read it carefully, take it up at your next club meeting, and act right away in the manner described above. Copies of your letters to Washington should be sent to me: C. O. Wright, AMA President, 315 West 10th St., Topeka, Kansas.

**Recommendations That FCC Regulations  
on Radio-Control Model Airplanes  
Be Changed**

**THE PROBLEM**

1. The radio-control of model airplanes is under regulations of the Federal Communications Commission. This is because the ground-based transmitter emits radio-frequency energy. The activity is characterized by one-way transmission, not two-way communication.

2. A model builder may radio-control his own model *only* if he becomes a licensed Amateur Radio Operator. To acquire such a license requires an examination including (a) a communication code test, (b) a technical exam, (c) a test on regulations. Mastery of the code seems most illogical to the modeler because it has no connection with the actual control of a model by radio. Regulations designed for two-way radio communication do not fit the requirements of model airplane radio-control, which is in the field of transportation.

Very few individuals possess the dual talents of modeling and ham radio hence few modelers can qualify to become a "ham." The two fields are somewhat unrelated and therefore appeal to different basic interests. *The present FCC regulations restrict the activity in a most undesirable way.*

3. A model builder may radio-control his own model through the "hands" of a "ham" friend who possesses an amateur license. According to current FCC interpretation the modeler may not actuate the flight control switch, even though the "ham" is present! *This should be changed immediately to allow the modeler to so do.* Although many modeler-ham teams have produced suc-



# AIR TRAILS

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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 July, 1949, index.

States Navy closed its Naval Station at Olathe, Kansas, in 1948 for the National AMA Model Meet and will do the same for a week, July 26 to July 31, this year. The Navy is especially interested in radio-control model aviation, and plans to offer inducements in that field.

England has simplified their regulations for radio-controlled airplane models and has assigned a special band for the activity. It is reported that Russia has done likewise.

2. Radio-control model aviation may make a valuable contribution to controlled target ships and guided missiles, and thus play a part in national defense.

3. The activity has definite educational and recreational values including youth programs in combating juvenile delinquency.

4. Radio-control, if made available on a more extensive scale, will further expand model aviation, extend its educational and vocational guidance contributions, and its values in the hobby and recreational fields.

### RECOMMENDATIONS TO FCC FOR CHANGES IN REGULATIONS

1. Immediately amend Amateur Rules to allow the unlicensed modeler to operate the flight controller in the presence of the licensed operator.

2. Immediately proclaim the 27.255 mc band as usable to the radio modeler with the simplified citizen's Radio Band license form. A maximum of five to ten watts of power would be sufficient. It is assumed that "factory sealed" FCC type approved transmitter would be required.

3. Eventual assignment of a special band and special license for radio-control modelers.

## You're So Right, Mr. Wright!

(Continued from page 46)

*Cross-country distance flying:* After take-off you lie down in the back seat of an open top convertible and start cross-country with your model. It is a combination of thermals, fuel consumption, and distance. Of course, you have to get the crate back to the take-off spot. Unless you call this one right, you end up ten miles from the take-off with no fuel, no thermals, an awfully dead engine, a red face and no prize.

*Rate of climb:* This is a wonderful idea, if only to settle all the conflicting claims for high rates of climb. Measuring the altitude could be done with fairly simple ground tracking instruments.

*Climb to altitude and return:* This is a race against time and a battle with over-eagerness that might result in losing your wings during the pull-out following the dive back to earth. Officials would have to wear extra-strong crash helmets. Only those models making respectable landings would be counted as having "returned." Measuring the altitude might be difficult. A hovering lightplane could give the signal by wagging wings.

*Duration flying:* Just about what we have now except the timer has an easier life. He waits for the model to land back in the take-off circle—otherwise he turns in a blank time slip. The contestant has the worry of nursing his

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crate back to the circle after the bottom falls out of the thermal market.

**Payload:** Instead of aimlessly toting a bag of jelly beans through the air, give the model a definite course to fly with landing in a designated area required. Throw in a little speed requirement and this event would be a real index of a model's efficiency.

**Bomb-dropping:** The idea is not to hit the official on the head but to drop a "bomb" from altitude and intercept it by dive bombing before it reaches the ground. This event could be made far less frightening if the speed of the bomb was reduced by making it lightweight and reducing the rate of free fall.

**Climb over obstacle:** A sort of high-jump event for the model to measure its get-up-and-go ability. Take-off and climb over a five foot obstacle—the minimum distance required here is the thing. Along this same line, a series of obstacles could be set up for precision flying. You would fly the model over, under, between, or around. All the obstacles would be flimsy. If you missed you would have tissue paper draped around an otherwise intact structure. If you stalled out or lost flying speed making a low altitude turn, it would be slightly gruesome, but would make this type of event fairly interesting to watch.

## Boeing P-12C

(Continued from page 38)

After completing the horizontal tail, put in the delta tail-horn made from a 4-40 screw with a hole drilled in its head for the push rod. The tail slides into place from the rear; this means it is necessary to remove temporarily the vertical fuselage tail piece at the rear. Mount the tail at zero degrees incidence.

Next finish and mount the rudder and tail skid. The push rod is a 1/16"-dia. steel wire. The lower wing is next. Put 1/2" dihedral in each side. Cement in place with zero degrees incidence. The front spar at station C attaches to bottom of fuselage. A small filler block is placed between bottom of fuselage and rear wing spar. Before starting the top wing assembly, drill 1/32"-dia. holes in both front and rear main pine spars, as shown in B-B and C-C. Make the wing in one piece. Notch the three center ribs so that wing may be dropped into place over music wire center struts. Bind in place with thread. Top wing has zero degrees incidence.

Return to fuselage and make the 1/8" sheet balsa side and bottom stringers. Add balsa fairing to landing gear and center wing struts. Add outer wing struts and lead wires. Cover entire model with Silkspan paper or silk. Spray tissue paper with water in atomizer to shrink it.

Fuselage is given six coats of thin dark blue dope, as is the rudder, landing gear, struts and cowl. Wings and horizontal tail receive six coats of thin yellow dope. Insignia is placed on rudder as shown. A red "V" stripe may be added to top wing to denote squadron leader.

The motor is mounted last and the aluminum cowl attached. Cowl was cut down from a deeper 4" version obtained in a hobby shop.

For flying, be sure to offset torque by bending rudder 3/8" to right side. Fly on lines not over 45 feet long.

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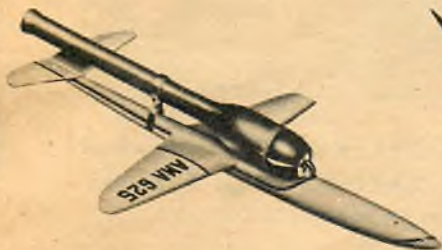
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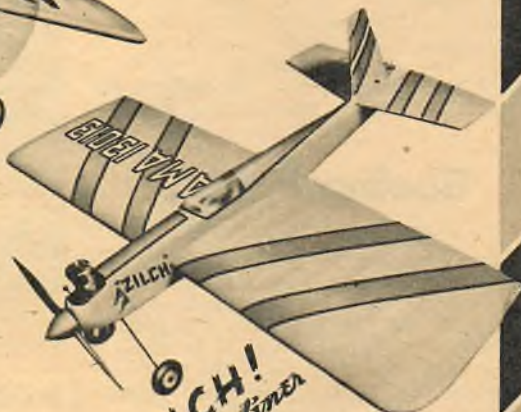
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## The Last Word

**Generally Speaking:** You don't expect as a usual thing to find generals who are ardent model plane fans. That's why we're introducing Brig. Gen. Robert F. Travis, commanding general of the Pacific Air Command. As you can tell from this month's Model Matters ("Air Force Contest") Gen. Travis is quite a



control-line flyer. At the recent Hickam AFB meet he came out top man—and nobody enjoyed it more than the GI's and civilians competing with him.

We suspect that the fine series of meets that have been run off at Hickam lately are largely the result of his strong support for the hobby.

General Travis has a distinguished air career. He was graduated from West Point in 1928 and completed primary flying school at Brooks Field, Texas, the following year. During the war he saw service overseas in the European theater where he commanded the 41st Combat Wing of the Eighth Air Force. He took over the command of the PAC last September. A Command Pilot, Gen. Travis has been awarded the DSC, Silver Star with two Oak Leaf Clusters, DFC with three Clusters, Air Medal with three Clusters, the Purple Heart.

**August, you say?** Plenty cooking on the back burner, friend! Opening theme is the roadable airplane—is it a certainty or an absurdity? Here are all the pros and cons, plus a progress report to date. You'll be taking the Piper Clipper aloft in the "We Fly" yarn.

Our expanded Civil Air Patrol section takes you backstage with that important organization. Remember, if you're between 15 and 18 you're eligible for membership as a C.A.P. Cadet; over 18, you can qualify as a Senior member. Write Air Trails if you're interested.

Doug Rolfe's incomparable Air Progress drawings are devoted to the history of England's famous Avro concern. And clear the work bench—in August you'll find not one, not two, but three plans for building the cute Piper Vagabond. Take your choice of a rubber-powered scale flyer, an Infant-size gas engine job, or a Class B control ship for stunt-scale events.

If you can stand waiting, here are two more glimpses: Chet Lanzo presents his radio-controlled towline glider and Aubrey "Red" Kochman comes up with the Baby Boomer for Infant and OK Cub engines. Take our word for it, August is quite an issue.

THE EDITORS

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