An Encyclopedia
of the

GOLDEN AGE OF MODEL AIRPLANES

Volume 2

Development of gasoline engines and models prior to World War II

1935 - 1941
"The Boom Years"



Reproductions of Original Catalogs

THE ULTIMATE PICTURE BOOK
FROM AN ERA LONG PAST

AN ENCYCLOPEDIA OF THE

GOLDEN AGE OF MODEL AIRPLANES

VOLUME 2

Development of gasoline
engines and models prior
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1935 - 1941

Reproductions of Original Catalogs
Plus
Selected Stories and Plans
From Old Magazines Of This Period

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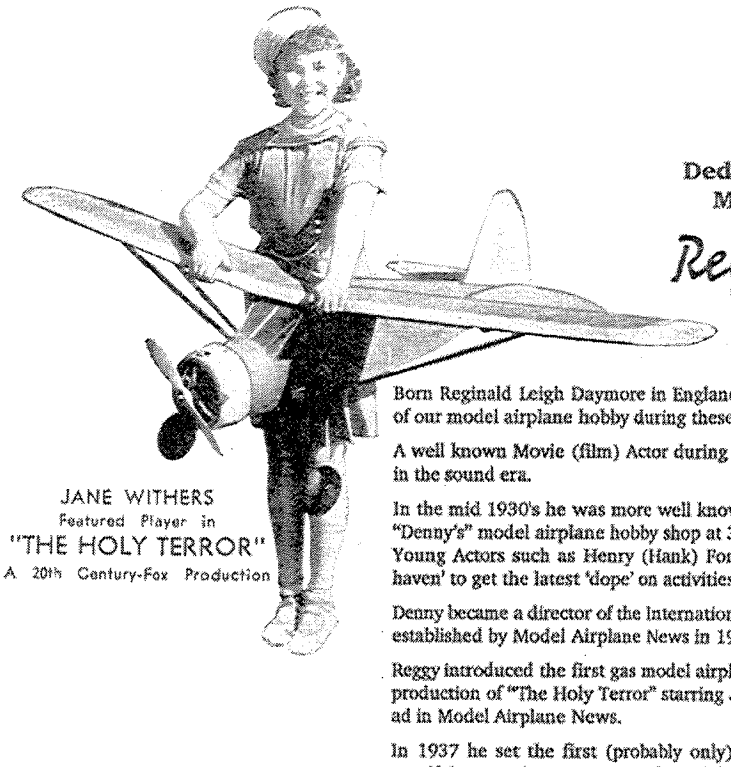
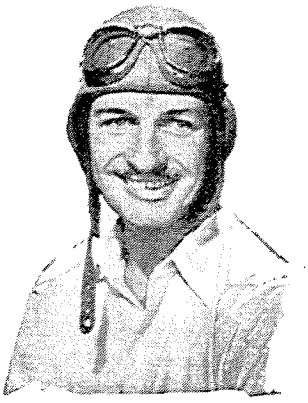


JANE WITHERS
Featured Player in
"THE HOLY TERROR"
A 20th Century-Fox Production

Dedicated to the Memory of

Reginald Denny



Born Reginald Leigh Daymore in England Nov. 20, 1891, he became an exemplary representative of our model airplane hobby during these "Boom Years".

A well known Movie (film) Actor during the silent era, he became one of the better known Actors in the sound era.

In the mid 1930's he was more well known to kids growing up in the Hollywood area through his "Denny's" model airplane hobby shop at 3751-M Hollywood Blvd., just off the Hollywood Freeway. Young Actors such as Henry (Hank) Fonda and Jimmy Stewart often dropped by this 'modelers haven' to get the latest 'dope' on activities.

Denny became a director of the International Gas Model Airplane Association (I.G.M.A.A. - Page 36) established by Model Airplane News in 1936.

Reggy introduced the first gas model airplanes into the movies, such as the 1937 20th Century Fox production of "The Holy Terror" starring Jane Withers .... even used Jane in his "Denny Industries" ad in Model Airplane News.

In 1937 he set the first (probably only) competition for designing a model airplane engine by specifying requirements .... Walter Righter submitted 10 prototypes, calling them "Skychargers" which Denny renamed as the "Dennymite", and produced by the Righter Mfg. Co. 'til 1940 when sales were returned to Righter, then subsequently sold to Pacific Airmotive Corp. in 1946.

With the model race car hobby peaking in 1938, he provided enthusiasts with the "Mercury Midget" race car in both front and rear drive models, powered by his "Dennymites".

In the late '30's he started flying radio controlled models and immediately recognized their potential as wartime target models (was approached by a foreign government which he turned down) and eventually obtained a U.S. contract for his new "Radioplane" company which produced 'drones' throughout World War 2.

Aside from producing rubber powered model airplanes such as the "Super Endurance Model Condor" he provided kids with inexpensive models including the "Jimmie Allen" kits used for promotion by Oil Companies such as Skelly, Richfield, Rainbo etc.

Reginald Denny surely filled in his "spare time" between movies .... or was it that the movies enabled him to enjoy his hobby !?

He was remembered in "Filmdom" for his portrayal of the 'silly-ass' Englishman ! .... which Denny popularized in Paramount's "Bulldog Drummond" series as Algy .... and achieved stardom in Universals' "Leather Pushers" series in the '20's and made many more light domestic comedies before American audiences realized he really was British ! As he entered the sound era, his cultured British accent limited his choice of jobs but continued delivering fine performances as a stuffy Brit. He starred as 'Bob Brooks', a wealthy, spoiled playboy in a controversial film, Cecil B. DeMille's "Madam Satan" in 1930.

Should you have the opportunity to see any of the following films, you'll enjoy the acting of Reginald Denny: -

1931 - Private Lives
1934 - The Lost Patrol
1935 - Anna Karenina
1936 - Romeo & Juliet
1937 - Bulldog Drummond (series of 8 titles)
1940 - Rebecca
1942 - Sherlock Holmes and the Voice of Terror
1947 - The Secret Life of Walter Mitty
1947 - My Favorite Brunette
1948 - Mr. Blandings Builds His Dream Home
1953 - Abbott & Costello Meet Dr. Jekyll and Mr. Hyde
1965 - Cat Ballou
1966 - Batman

On June 16, 1967, he died too soon, from a stroke, in Surrey England.

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INTRODUCTION

Welcome to My World of visual model airplane history .... what a tremendous kick for me, researching Volume 2 !

This 1935 - 1941 'Boom Era' barely preceded my own entry into our Hobby, although I have many friends who did enjoy this period in modeling .... engine development .... with boxy airplanes and Charles Grant's theories being almost submerged by Carl Goldberg's 'Zipper' in 1939 (page 130) .... the stirrings of radio controlled flight evolving .... but, controlled flight with Vic Stanzel's G-Line and Jim Walker's U-Control made known, first !

Much of the catalogs and magazines provided by friends from their collections are vanishing at such a rate that unless I preserved it for this and future generations, it might be gone forever .... important catalogs retouched (original catalog printing in the '30's and '40's was really lousy, at best) .... I omitted some of the building material and balsa price lists to save space for the reproduction of magazine articles pertinent to this period.

Original catalogs are much sought by collectors, ranging from $10 - 25 each ! .... there are 15 catalogs plus numerous articles reprinted here !! .... everyone can now afford to have their own personal copies.

Most of the gas engine-powered model plane advances made in the early '30's really didn't make itself felt by the modelers until late '34 .... then it became known that Bill Atwood, who had approached Maxwell Bassett's world free flight record was designing the Baby Cyclone (X) which became available in 1935 .... Walter Hurleman's Aristocrat 60 (similar to the Brown) had become available in '34 but was not widely used .... Louis Loutrel made a .60 available in 1934 as a kit or assembled, the design eventually being sold to the G.H.Q. Model Airplane Co., where it somehow became modified and sold well from 1936, but unsuccessful as a model engine, from all accounts ! .... Forster Brothers produced a .99 Model A and .88 Model C in 1934, and made improved .88 and .99 versions known as 'Little Hercules' in 1935 (evolving through various mods until 1955, including glow engine versions !) .... the foregoing were the only engines really available to the modeler in 1935, excluding a few rare types.

Between 1935 and 1941, focus on the Nationals became more intense with the following numbers of competitors: 1935 - approx. 300; 1936 - 300; 1937 - nearly 500; 1938 and 1939 - more than 700; Chicago 1940 - nearly 1200; Chicago 1941 - more than 1300 !!

During this research I found some fun facts: Did you know that Joe Ott's kits (1940) were produced by J.L. Wright, the son of the famous Architect, Frank Lloyd Wright ! .... in 1939, Carl Goldberg had the 'Comet Traveling Hangar' which he took on the road through Wisconsin, Pennsylvania, New York and points east .... like a 'Traveling Medicine Show' .... stopping at hobby shops in every "hamlet, town and village", he pulls open his trailer and out comes scale, rubber, and gas models; all supported by a movie projector with B & W and Color movies of the Detroit Nats .... talk about prefabrication ? .... Selley Manufacturing (page 9) offered moulded fuselages and parts in their kits .... made from Buckram, a ladies hat material, impregnated with starch and formed with heat .... one must actually see examples to know how good they were ! .... this in the '30's !! I wonder what happened to the dies ?

Radio Control Models finally became noticed at the Nationals when Walt (and Bill) Good won in 1939 and again in 1940 .... then the prolific Jim Walker won the 1941 Nats !

Radio 'controlled' models still hadn't made the impact yet that Vic Stanzel's 'G-Line' and Jim Walker's 'U-Control Fireball' made with the modelers .... Jim took and demonstrated his Fireball all down the West Coast, firing up a whole new breed of modelers .... his Brown powered models soon changed to Ohlsson .23's which we understand were hand selected at the factory .... Irwin Ohlsson always said Jimmy was his best salesman !

Enthusiasm by modelers for new designs, new engines, and new methods during these 'Boom Years' seemed to know no bounds and we hope you'll enjoy our book as much as we had when compiling it.

Watch for Volume 3 ! **Frank Anderson**

REMINISCING BY **WALT GRIGG**

..... one of THE Major Model Airplane Kit Collectors in the U.S. (Ed.)

Uncle Frank' asked me to write a few lines because he thinks I've collected more information on model airplane kits, and their manufacturers, than most Collectors, here in the U. S. ! ..... So, here goes :

All of us have certain memories stuck in our subconscious ... for me, a fair slightly overcast day in 1940 or '41, whatever. The date may be hazy, but the moment is clear ... on the front porch of my grandparents home in Newton, North Carolina ... I'm winding the 'rubber band' motor of a Chester Racer, a model airplane I've built from a ten (10) cent kit by Comet Model Airplane Company in Chicago. This Racer is resplendent with a green and yellow tissue covering 'glued' in place with cement having that wonderful odor of Banana Oil ! Having wound as tight as I dare, I release the propeller and the model zooms from my hand turning around a bush almost back into my hands ... total enjoyment !! My Racer has flown 'round the pylon !! My Grandparents probably thought I was nuts ... and they were probably right, because this was the first real 'flying' model from all those I'd built !

The most wonderful 'happening' for young model builders in the late '30's, was the arrival of the 'TEN CENT' Kit !! Nearly every kid could come up with a dime, even in the depression ... so, a dime for a kit, a nickel for a tube of glue and a kid was in business ! If he messed up this model, find another dime ... this is how I and most others learned to build. To this day, the odor of regular model airplane 'dope' and glue are time machines ... a release, if you will, from all the complications of this modern world.

The most prolific kit designer, in my mind, was Joe Ott from Chicago. He began designing and building model airplanes shortly after World War I and later in the 1920's became the Model Editor of Popular Aviation magazine. During his tenure, the 'Country' became Joe Ott crazy because HIS designs FLEW !! By 1932 Joe began manufacturing his own line of kits. In 1934, Joe was hired to develop a kit line for the Donald F. Duncan Co., manufacturer of YoYo's. I believe Duncans were the first ('34) of the larger companies to have a 'TEN CENT' Kit available . In 1935, Western Publishing in Racine, Wisconsin, had Joe do the 'Ace Whitman' kit line which had some of the most beautifully printed boxes of all ... only marketed in Dime stores and Stationary shops, with Woolworths being a heavy buyer. By 1937, Joe Ott did kits for J.L. Wright ... the son of Frank Lloyd Wright, the great Architect ! ... which carried on 'til 1941 when Joe Ott Manufacturing Company came into its' own.

Although model airplane kit manufacturing was scattered about the country, by far the greatest concentration was in Brooklyn ... with a few, Berkeley, Continental, and Burkhard surviving intact through World War II ... 'specially Ed (Pachasa) Packards' Cleveland Model Airplane and Supply Company in Cleveland, Ohio, with the most extensive line of flying (?) Scale models of any manufacturer ... counting more than 150 ... good quality, lots of detail, meaning a great many small parts (which became a nightmare with the later wartime balsa substitutes). Peerless from Lakewood, Ohio was Clevelands' chief competitor with a great line of scale kits including (important to we kids) Ten Centers!

If I seem prejudiced toward Ten Centers (and the twenty-five centers), I am, because many people had thought the gasoline engines made model aviation popular, 'tisn't so since in the '30's a gas model engine cost about $15 ! I don't know what my Dad brought home each week from the textile mill, but it probably wasn't that much !

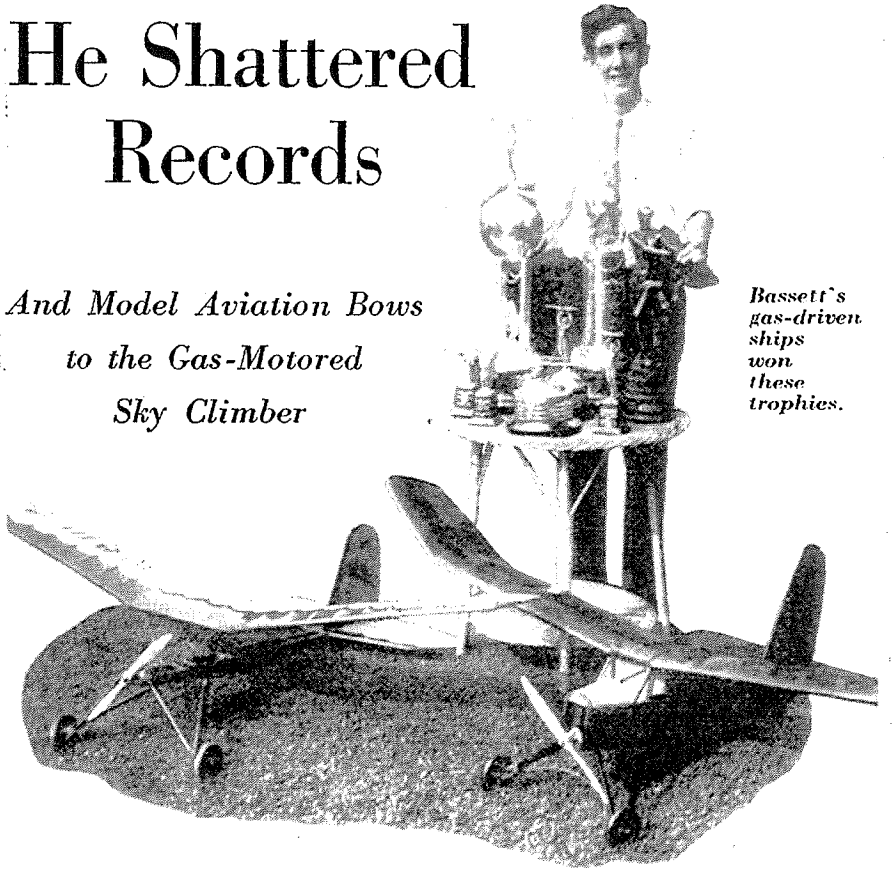
These days it's virtually impossible for kids in any way to rationalize that it was a big thing to have a quarter ! A Quarter !! Geez ! ... that was a ten cent model kit plus a movie, plus a soft drink or a box of popcorn to eat in the Show !!! Decisions, decision. Those Quarters were hard to come by but I could always get a dime from my grandfather (Popaw, we called him).

As a kit collector, I came to realize early that unlike collecting model engines, kits were very fragile ... many became crushed ... some were stored in attics where the cardboard boxes and plans became brittle, some tossed out as trash. However, for collecting, my philosophy is that an incomplete kit is a lot better than none ... and I'm still looking ! ... so some things haven't changed since 1941. Readers interested in buying, selling, swapping, or information, may contact me at 1303 Stetson St., Orlando, Florida 32804.

'Til next time, **Walt Grigg**'

He Shattered Records

And Model Aviation Bows to the Gas-Motored Sky Climber



Bassett's gas-driven ships won these trophies.

This piece of modeling 'History' happened in 1933 but it took 'til early 1935 before the full impact of the gas engine had made its' mark on the competition modeler.

AND now the gasoline-powered model airplane rules the skies!

When 165 contestants from 20 states and Canada gathered in New York City late in June to settle the model plane supremacy for 1933, the familiar rubber-driven models seemed to have the inside track. But Maxwell B. Bassett, 18, Philadelphia, brought along a fleet of ships powered with tiny gasoline motors, and with them he captured three outdoor titles!

He won the national Mulvihill trophy for outdoor stick models, hand-launched, with a flight of 14 minutes 55 seconds. He captured the Stout outdoor trophy for fuselage, rise-off-the-ground ships, in 22:22.5. He took the Admiral Moffett International contest for outdoor fuselage, rise-off-the-ground models with a cloud-piercing flight of 28:18. On this flight officials estimated that his ship reached an altitude of 5,000 feet and traveled seven miles.

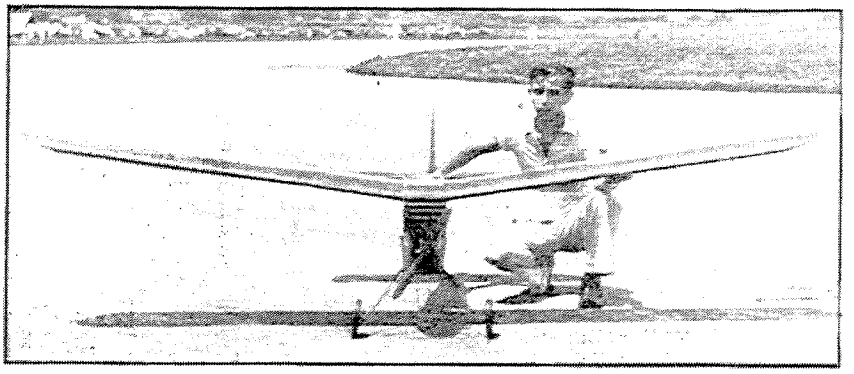
Bassett used two ships, an open stick model for the Mulvihill and a cabin ship for the fuselage contests, both planes powered with Brown one-cylinder motors, two cycle, ⅛ horse-power. His cabin plane was of the high-wing type, with a wing spread of 6 feet and a wing area of 912 sq. in. The ship measured 3¾ feet from nose to tail and the cross section of the fuselage was 7½" by 4½". The total weight, including gasoline, was 3 lbs. 15 oz., and on the record flight of 28:18, the motor used 1¾ oz. of gasoline. The 14" propeller turned up 4500 revolutions per minute. The motor and gas tanks were entirely inclosed in an aluminum cowling, and the cabin had real seats, windows, and shock absorbers.

The stick model had a wing spread of 6 feet 2 inches, with a surface of 900 sq. in. and a fuselage length of 3¾ feet. The wing was tapered and had a pronounced dihedral.

The Stout Indoor contest for stick models, hand-launched, went to John A. Bartol, 17, Roxbury, Mass., with the world record time of 17:47:6, beating the old record by more than four minutes.

Albert Levy, 19, Toronto, Canada, won the Bloomingdale contest for indoor fuselage models, rise-off-the-ground, with a flight of 8:56, also a world record. With a score of 98 out of a possible 100, Joseph E. Geigan, Washington, D. C., won the Exhibition Scale Model contest. His ship was a Curtiss Falcon.

The meet was conducted by the Universal Model Airplane News under the supervision of the National Aeronautic Association. The outdoor events were held at Roosevelt Field, Long Island, and the indoor at the 258th Field Artillery Regiment armory.



Joe Kovel and the KG-2 world-record gas model on the runway at Lambert Field, St. Louis, Mo. Kovel placed fourth with a flight of 31 min. 5 sec., late in the afternoon after the thermals had died. Note the ship's perfect rigging



Leo Weiss with his model which won the Gas event with a flight of 64 min. 12 sec. It was just 28 seconds short of the record

1935 National Contest

What the Gas Models Did at the Annual National Contest, How They Were Handled and a Glimpse of Some of Their Unique Features

By C. L. BRISTOL

From M.A.N October 1935

THE N.A.A. Meet at St. Louis, June 27-29, offered among its many attractions a colorful and spectacular demonstration of model aviation's newest development, the "gas-jobs." Carefully designed contest planes, beautifully finished flying scale models and rule-of-thumb creations, roared away from Lambert Field during the entire day. Some were pursued for miles by harried officials in automobiles. Others were picked up in bits, close at hand, by their erring and sorrowful designers. Occasionally a snarling "gas-job," choosing to circle the immediate lower reaches of the atmosphere, could be seen herding an agitated group of officials and spectators about the mighty airport at a surprising rate of travel.

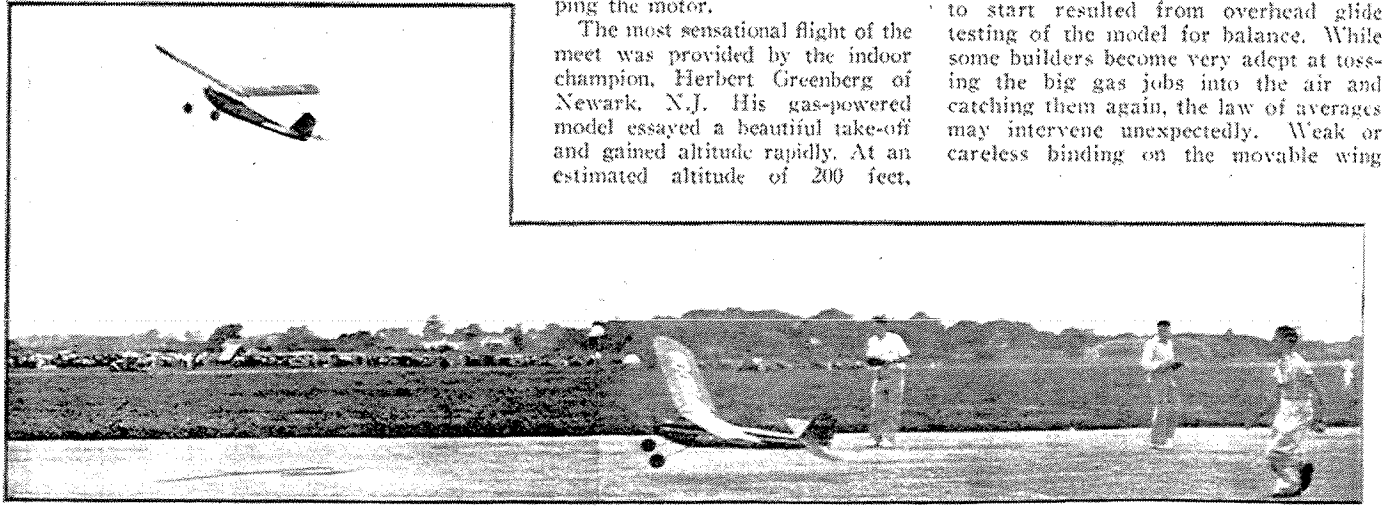
Leo Weiss, age 16, of New York City, carried off the gas event with a time of 64 minutes, 12 seconds. A clever model plane designer and first-rate showman, this lad fell only 28 seconds short of the world's record held by Joe Kovel of Brooklyn, N.Y. Weiss' model is suggestive of Lockheed design, having the general lines of the Vega in combination with an Electra-type tail group. The fuselage is a hollowed balsa shell and all wing surfaces are balsa-covered. A completely cowled motor has controls projecting outside. This is a significant feature, as many of the contestants burned precious drops of fuel while replacing cowl or baffle plates after the motor was started.

Hubert Lacey, 21, of Dayton and St. Louis, won the open-class event with a fine scale model of the Buhl "Bull Pup." Like Weiss, Lacey fell short of the existing record in his class by seconds. For those who prefer scale models, he demonstrated that intelligent application along these lines can bring out nice results in the gas-powered field. It is interesting to note that Lacey, in working out a successful wing, tail, and thrust line adjustments for his plane, arrived at a very similar combination to that employed by "Champion Joe" Kovel in his record-breaking KG-2. A feature of Lacey's model is the wiring system and outside button that enables him to switch from external or starting batteries to those inside the plane without stopping the motor.

The most sensational flight of the meet was provided by the indoor champion, Herbert Greenberg of Newark, N.J. His gas-powered model essayed a beautiful take-off and gained altitude rapidly. At an estimated altitude of 200 feet, however, it went into a series of whip-stalls and "spun in" to a most convincing crack-up. Mr. Greenberg would like to know which of the many pitfalls of gas-powered model building brought his flight to such an untimely end.

Of the 65 gas models entered at the "Nationals," 24 made official times. Approximately half of the remaining entrants took "delayed" flights, which is an elegant way of saying that they flew for less than ten seconds. The remainder failed to show at the field, or contracted the balky engine complex.

A common ailment of the unsuccessful entrants was insufficient dihedral and tail group, combined with a tendency to climb too sharply at the take-off. Models that are practically "stalled off" the ground do not retain sufficient flying speed to resist motor torque, which remains constant and results in quickly grounding the plane, often with damage. Other failures to start resulted from overhead glide testing of the model for balance. While some builders become very adept at tossing the big gas jobs into the air and catching them again, the law of averages may intervene unexpectedly. Weak or careless binding on the movable wing



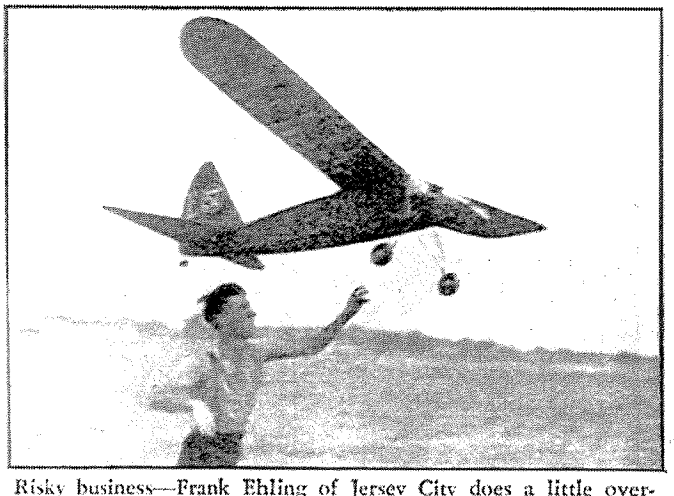
A composite picture of how the record-holding KG-2 outdistanced its builder, Joe Kovel of Brooklyn on the take-off and how it looked a few seconds later as it climbed for altitude. It is *not* stalling

type of model causes other disasters, as the motor vibration may be underrated. Planes of the fixed wing type depend on shifting of the batteries for balance, and these batteries must likewise be securely fastened in their final position.

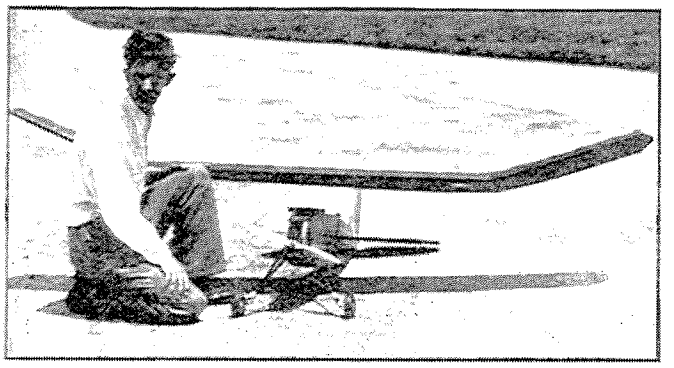
Badly designed landing gears drew their toll, as the gear must withstand not only normal landing shocks but also those of "pancaking" and the familiar one-wheel "hot" landings. It is significant that the landing gear of the KG-2 has been designed with infinite care.

Trouble-shooting becomes an exacting job where miniature gas engines are concerned. Weak batteries, a plugged vent in the gas tank cap, or a microscopic leak in the feed-line joints can cause the contestant many feverish minutes of delay. Motor vibration may change the adjustment of the mixing valve where no lock or other provision for keeping it tight is employed, causing the motor to "conk" and terminate the flight abruptly. A worn or loose timing device may succumb to motor vibration with similar results. Tapered or out-of-round pistons with their resultant loss of compression usually become a problem for the chosen manufacturer.

The construction of gas-powered model planes is not only the logical forward step for successful builders of rubber-powered types, but it has attracted large numbers of men engaged in other fields who dislike the rubber string idea. The builder who contemplates a "gas-job" will do well to study the aerodynamics involved thoroughly, and consider carefully the many-sided structural phases of design. He will be dealing with five to seven pounds of extremely active and temperamental machinery, representing an investment of several times as many dollars. He will treat himself to participation in the finest and most scientific of sports, and will say along with the rest, "It gets in the blood!"



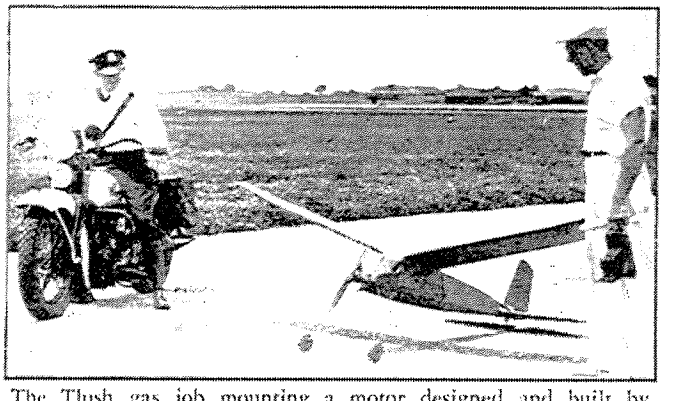
Risky business—Frank Ehling of Jersey City does a little overhead glide testing of his gas job to determine correct balance. Sometimes the model is safely retrieved. The model or its builder must be "good"



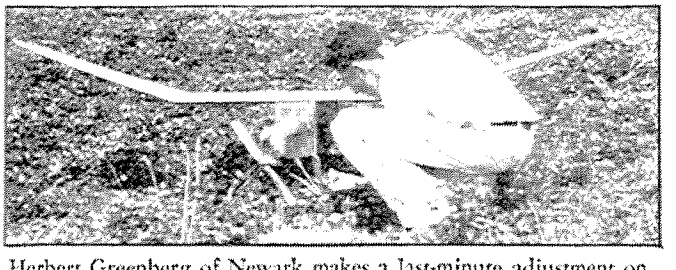
Maxwell Bassett of Philadelphia and the model with which he placed third with a flight of 36 min. 4 sec. It seems that Bassett's plane has at last gone "parasol." Bassett is the former gas model champion and is the "father" of gas model aviation in the U. S.



The Stix Baer & Fuller entry receives its official microscopic allotment of fuel, one-fourth ounce for each pound of model weight. This is a moment full of expectation with possible tragedy to follow



The Tlush gas job mounting a motor designed and built by Charles Tlush who stands at the right. The motorcycle policeman wonders whether or not it is a *real* motor or just for looks



Herbert Greenberg of Newark makes a last-minute adjustment on his ill-fated craft. The plane fell from a dizzy height, reducing the front section to toothpicks. It is strange that nearly all planes with motors mounted at the bottom of the fuselage are prone to crash

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ALSO 5 FT. HEATH PARASOL

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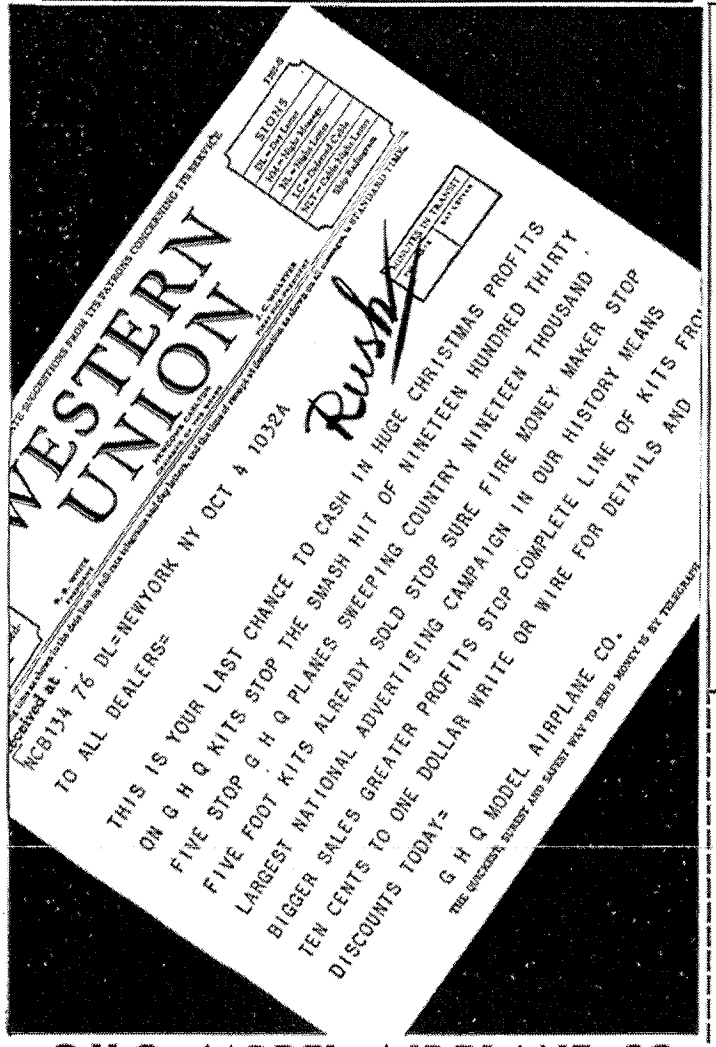
FLY BETTER · COST LESS · CONTAIN MORE ! ALL HIGH QUALITY · ACCURATE for EXPERTS! · EASY for BEGINNERS.



G.H.Q. MODEL AIRPLANE CO.,
564 Southern Boulevard, New York, N. Y.

Here Too Are Marvelous G. H. Q. Values!

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Each 24" G.H.Q. Kit is complete in every detail. A liberal quantity of everything. 18 models to select from at 25c each.

Puss Moth
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Army Falcon
Sopwith Camel
Fokker D-7
SE5
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Army Hawk
Monocoupe
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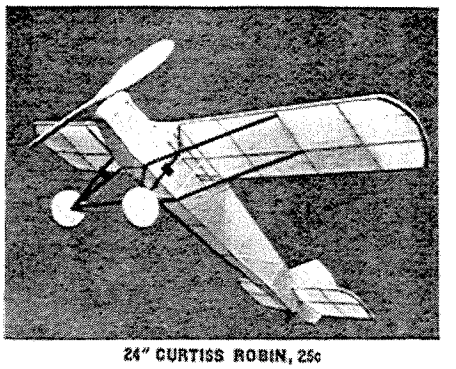
Nieuport
Douglas Mailplane
Stinson "R"
Curtiss JN4
Bellanca



24" CURTISS ROBIN, 25c

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36" FLYING SCALE MODELS 50c

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G.H.Q. Scale Models are the best Kits your money can buy for appearance and flights. Buy one today and you'll buy a whole fleet of them. Get acquainted with G.H.Q. Kits and no others will do.

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Enclosed find $..... Please send the following kits as checked.

12" SOLID KITS — 15c each Postpaid

- ☐ Boeing 247-D
- ☐ Ryan Racer
- ☐ G.A. Coast Guard Amphibian
- ☐ D.H. Comet
- ☐ Lockheed Orion
- ☐ Sikorsky S-41
- ☐ Douglas Airliner
- ☐ Dewoitine D-33
- ☐ U.S. Army Martin Bomber
- ☐ Monocoupe 145-D

24" FLYING KITS

- ☐ Curtiss JN4
- ☐ Bellanca
- ☐ Nieuport
- ☐ Douglas Mailplane
- ☐ Stinson "R"
- ☐ Puss Moth
- ☐ Fokker D-7
- ☐ Fokker D-8
- ☐ Polish Fighter
- ☐ Monocoupe
- ☐ Falcon
- ☐ Aeromarine
- ☐ S. E. 5
- ☐ Sopwith Camel
- ☐ Aeronca
- ☐ Fairchild
- ☐ Army Hawk
- ☐ Curtiss Robin

36" FLYING KITS

- ☐ Douglas Y-10
- ☐ Curtiss A-8 Attack
- ☐ Northrop Gamma "Skychief"

5 FT. FLYING KITS

- ☐ Monocoupe
- ☐ Stinson Reliant
- ☐ Heath Parasol

SEND MONEY ORDER, CHECKS, STAMPS OR CASH. Don't Fail to Include Postage for Each Kit With Your Order. ONE-DAY SERVICE.

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THE PERFECT GIFT! A SELLEY-TEX FLYING MODEL CONSTRUCTION SET

U. S. PATENT APPLIED FOR

AMATEURS as well as EXPERTS ENDORSE this revolutionary idea in simplified building!

YOU TOO, CAN easily and successfully BUILD AND FLY SELLEY'S exclusive PLANES THE NEW WAY!

SELLEY-TEX OFFERS 10 ADVANTAGES OVER ALL BALSA STICK KITS

1—MOULDED CONSTRUCTION. First real advancement in practical building.
2—EASIER-TO-BUILD. The moulded parts make it simple as ABC.
3—EXCLUSIVE FABRIC. Specially close woven and processed by secret formula.
4—MORE PRACTICAL. Selley is discontinuing all Balsa Stick type entirely.
5—MORE AUTHENTICALLY DESIGNED. Minute details are moulded into model.
6—MORE DURABLE. The moulded shell is stronger and lighter.
7—BETTER FLYERS. The moulded fuselage eliminates weight behind center of gravity.
8—POSITIVE MEANS OF BALANCING. Simple ring device correctly balances plane.
9—FINISHED ADJUSTABLE PITCH ALUMINUM PROPELLER. Maximum of thrust and minimum of rubber.
10—FULL MONEY BACK GUARANTEE.

Now you can get an entirely new and different type of kit with the assurance that your efforts will be rewarded by your possessing and demonstrating to your friends a fast, four-distance flying airplane model beautifully designed and true-to-scale. The endorsement of experts is of course a great compliment. We appreciate and welcome such support. But we take much greater pride in the testimonials on this page from ordinary model builders who never were able to assemble an old-fashioned all balsa stick kit. Read how average boys are succeeding with SELLEY-TEX simplified "moulded" construction—The Modern Method of Model Building. Whether you select a SELLEY-TEX Construction Set for yourself or as a gift, your choice represents the GREATEST VALUE ever offered in kit form! The coupon below is for your convenience. Clip it now!

READ WHAT AVIATION AUTHORITIES SAY ABOUT SELLEY-TEX KITS

CLARENCE D. CHAMBERLIN

"Your method of accurately forming the master parts of a model mechanically seems to remove the art to such a degree that anyone who can be a successful model builder. Signed, Clarence Chamberlin.

CASEY JONES SCHOOL OF AERONAUTICS, INC.

"With your new moulded process, I would judge, almost anyone should be able to make a successful flying model." Signed, Lucy Jones.

AERO DIGEST

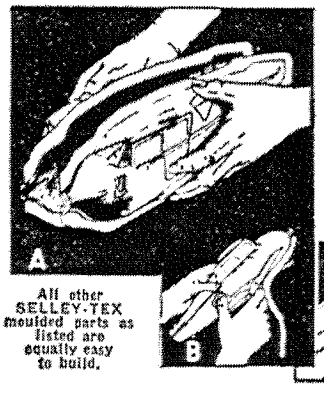
"The most difficult phases of balsa building have been eliminated by your original moulded process." Signed, Lieut. E. McGlaughlin, Editor.

JOHN CARISI

"This new process admirably solves the model builder's many and different problems of construction." Signed, John Carisi.

BURNELLI AIRCRAFT, LTD.

"Beyond the consideration of this process as a practical means of simplifying model building is the fact that before long full sized aircraft will be fabricated on a similar but greater basis. Consequently, the American youth who builds moulded models will get the start for the early airplane designer of tomorrow." Signed, Vincent Burnelli.



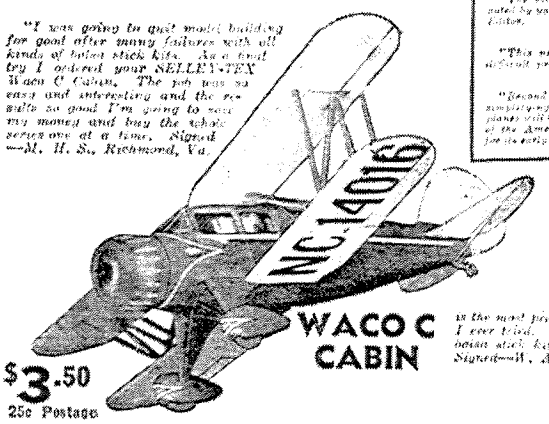
Simple as ABC

A—Fit together and cement the two moulded parts of the fuselage.

B—Cut away the border of excess fabric.

C—The result is a perfectly shaped fuselage in the form of a hollow shell, very strong and indestructible.

All other SELLEY-TEX moulded parts as listed are equally easy to build.



WACO C CABIN

$3.50 25c Postage

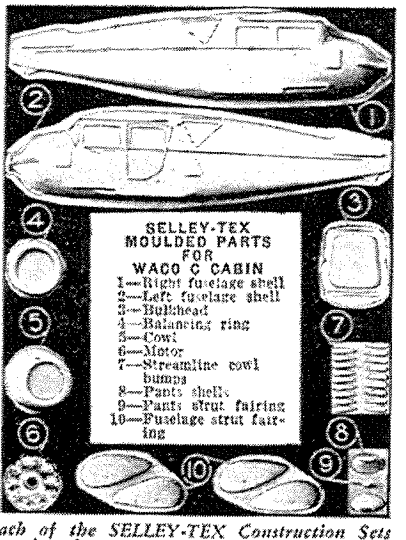
"I was going to quit model building for good after many failures with all kinds of balsa stick kits. As a last try I ordered your SELLEY-TEX Waco C Cabin. The job was so easy and interesting and the results so good I'm going to save my money and buy the whole series one at a time. Signed—M. H. S., Richmond, Va.

Every SELLEY-TEX model is packed securely in an attractive red, yellow and black box that makes an ideal gift package. Give yourself a gift!

"I thought that SELLEY-TEX was just another improvement on the old balsa stick kits. I certainly got a pleasant surprise when I received the 'Ryan Sportster' and found that your new simple method is the most practical way of building a model I ever tried. I'll never go back to the all balsa stick kits again. I'm satisfied" Signed—W. A. W., Chase City, Va.

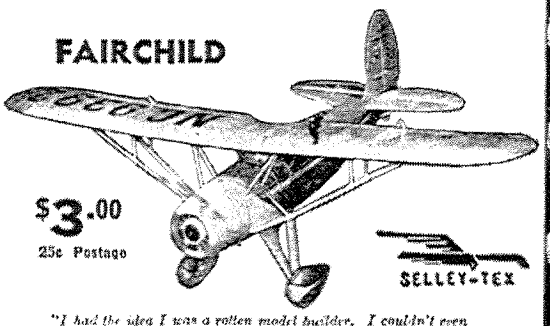


RYAN SPORTSTER **$3.00** 25c Postage



Each of the SELLEY-TEX Construction Sets contain the necessary individually designed moulded scale parts similar to those shown above.

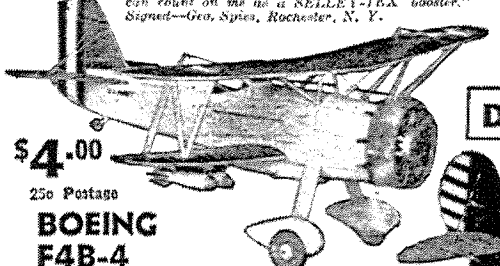
FAIRCHILD



$3.00 25c Postage

SELLEY-TEX

"I had the idea I was a rotten model builder. I couldn't even complete a Balsa Stick aeroplane let alone fly one. I took a chance with your SELLEY-TEX Boeing F4B4 and am now a proud owner of self made plane that actually flies. From now on, you can count on me as a SELLEY-TEX booster." Signed—Geo. Spies, Rochester, N. Y.



$4.00 25c Postage

BOEING F4B-4

"I never made such a good looking model or got better flying performance with any balsa stick kit as I have with your SELLEY-TEX Goshawk Construction Set. That moulded idea of yours is the cleverest stunt on the market. Please send me the Fairchild 22. That's all I can afford right now." Signed—Wiley H. Pridgen, Orlando, Fla.



GOSHAWK **$3.50** 25c Postage

DEALERS! Cash in on the growing demand! Write for discounts, propaganda, etc.

"I believe you have something that will make the Model World sit up and take notice. You are about ten years in ADVANCE of all other model companies and have beaten a path for the rest to follow. You have really CONTRIBUTED a worthwhile thing to us modelers and I as one feel duly grateful. Lots of luck. Signed—Homer D. Corvin, Bismarck, N. Dak.



WACO D MILITARY **$4.00** 25c Postage

FREE! Write for our beautiful, two-colored broadside illustrating in detail the new line of incomparable SELLEY-TEX Construction sets. Send 5c stamp for postage.

Send 5c for new supply catalog illustrating and listing the most popular accessories.

*** LISTED PARTS AND ACCESSORIES**

Every model is packed in a beautiful, sturdy box with finished scale flying, adjustable pitch metal prop, finished propeller shaft and rear hook, scale wheels, with brass bushings, ribs printed out accurately on white sheet balsa, many special turned wood parts, finest grade of balsa wood, sticks, tail wheel and fork fittings, control horns and wire, pure para rubber, special bamboo paper, authentic markings, colored insignia, best quality cement, colored dopes, full-size easy-to-understand plan, complete with all picture details. All the tools necessary to build model: CLAMPS—RAZOR BLADE, BRUSH, SANDPAPER

ALL 24-INCH WING SPAN

See your local dealer or mail this coupon today

Please send me the SELLEY-TEX model kits I have checked. I am enclosing $.....
(Each plane 25c postage. West of Denver 35c postage.)

NEW RYAN SPORT.	3.00 ☐	FAIRCHILD	3.00 ☐
WACO C CABIN	3.50 ☐	BOEING F4B4	3.50 ☐
WACO D MILITARY	4.00 ☐	GOSHAWK	4.00 ☐

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SELLEY MFG CO. INC., DEPT 312A 1373 GATES AVENUE, BROOKLYN, N. Y.

OFFICIAL MODEL AIRPLANE RECORDS

Approved by Contest Board of the N.A.A.
Through July 30, 1935
OTHERS PENDING

INDOORS

STICK MODEL AIRPLANES, Hand-launched

CLASS B

Junior:	Roy Carlson	Springfield, Mass.	16m 45.6s
Senior:	Ralph Kummer	St. Louis, Mo.	17m 49.8s
Open:	William Latour	Philadelphia, Pa.	15m 17.8s

CLASS C

Junior:	John S. Stokes, Jr.	Huntingdon Valley, Pa.	20m 53s
Senior:	Herbert Greenberg	Newark, N. J.	22m 11s
Open:	Carl Goldberg	Chicago, Illinois	23m 29.3s

STICK MODEL AIRPLANES, R.O.G.

CLASS A

Junior:	Joseph Pruss	Philadelphia, Pa.	10m 25s
Senior:	Merrell Malley	Atlantic City, N. J.	10m 56.4s
Open:	William Latour	Philadelphia, Pa.	9m 50s

CLASS B

Junior:	Bruce Mackler	Atlantic City, N. J.	10m 22s
Senior:	Mayhew Webster	Philadelphia, Pa.	16m 33s
Open:	William Latour	Philadelphia, Pa.	14m 02.8s

STICK MODEL AIRPLANES, R.O.W.

CLASS A

Junior:	William Wert	Philadelphia, Pa.	3m 46s
Senior:	Paul Karnow	Philadelphia, Pa.	5m 01.4s

CLASS B

Junior:	James Mooney	Philadelphia, Pa.	8m 37.6s
Senior:	Mayhew Webster	Philadelphia, Pa.	11m 55s
Open:	William Latour	Philadelphia, Pa.	13m 15s

GLIDERS, Hand-launched

CLASS A

Junior:	Kenneth Nelson	Boston, Mass.	26.6s
Senior:	David B. Hecht	New York City	34.4s

CLASS B

Junior:	Louis Young	Boston, Mass.	27s
Senior:	David B. Hecht	New York City	31.6s

CLASS C

Junior:	Stanley Congdon	Glen Ridge, N. J.	17s

AUTOGIROS

Junior:	Raymond Steinbacher	Ridgefield, N. J.	57.2s
Senior:	Alton H. DuFlon, Jr.	Ridgefield, N. J.	2m 01.2s

FUSELAGE MODELS, R.O.G.

CLASS B

Junior:	Robert Jacobson	Philadelphia, Pa.	10m 44s
Senior:	Herbert Greenberg	Newark, N. J.	12m 23.5s
Open:	William Latour	Philadelphia, Pa.	6m 48s

CLASS C

Junior:	John S. Stokes, Jr.	Huntingdon Valley, Pa.	15m 05.6s
Senior:	Torrey Capo	Quincy, Mass.	15m 33s
Open:	William Latour	Philadelphia, Pa.	12m 31.8s

FUSELAGE MODELS, R.O.W.

CLASS B

Junior:	John Stokes	Huntingdon Valley, Pa.	3m 23s
Senior:	Bruno Marchi	Boston, Mass.	3m 11s
Open:	William Latour	Philadelphia, Pa.	5m 42s

OUTDOORS

STICK MODEL AIRPLANES, Hand-launched

CLASS C

Junior:	Jack Haggerty	Reading, Pa.	18m 58s
Senior:	Vernon Boehle	Indianapolis, Ind.	15m 00s
Open:	Bernard Collins	Providence, R. I.	3m 23s

CLASS D

Junior:	Fred Skafec	Akron, Ohio	8m 21.6s
Senior:	Ralph Kummer	St. Louis, Mo.	20m 54s
Open:	Michael L. Vetrano	South Manchester, Conn.	2m 55s

GLIDERS, Tow-launched

CLASS C

Senior:	Bob File	Columbus, Ohio	23m 13s

CLASS D

Junior:	Stanley Congdon	Glen Ridge, N. J.	45.2s
Senior:	Fred Korn	New York City	1m 16.2s

AUTOGIROS

Senior:	Ralph Kummer	St. Louis, Mo.	2m 06s

FUSELAGE MODELS, R.O.G.

CLASS C

Junior:	John Foster	Indianapolis, Ind.	7m 53s
Senior:	Robert Cahill	Indianapolis, Ind.	33m 00s
Open:	Bernard Collins	Providence, R. I.	2m 56s

CLASS D

Junior:	Alan Starr	Atlantic City, N. J.	5m 41s
Senior:	William Ying	Staten Island, N. Y.	41m 19s
Open:	Michael Lichstein	Philadelphia, Pa.	1m 28s

CLASS E (Gasoline Engine)

Senior:	Joseph Kovel	Brooklyn, N. Y.	64m 40s
Open:	Alphonse Bellantonio	Brooklyn, N. Y.	18m 50s

MODEL AIRCRAFT LEAGUE OF CANADA

Junior Branch, Aviation League of Canada

OFFICIAL CANADIAN MODEL AIRCRAFT RECORDS

INDOOR

STICK R.O.G.

Junior:	Clarence Dunn,	Hamilton Ont.	4m 19s
Senior:	Ernest Houslander,	Hamilton Ont.	8m 34s
Adult:	Ted Booth,	Hamilton Ont.	5m 27s

STICK HAND LAUNCHED

Junior:	Don McIntyre,	Guelph Ont.	5m 43s
Senior:	Harry Burrows,	Toronto Ont.	17m 14s
Adult:	John T. Dilly,	Galt Ont.	12m 56s

FUSELAGE R.O.G.

Junior:	George Reed,	Toronto Ont.	3m 56s
Senior:	Albert Levy,	Toronto Ont.	8m 56s
Adult:	John T. Dilly,	Galt Ont.	6m 23s

FLYING SEMI-SCALE

Junior:	Jack Barton,	Weston Ont.	1m 46s
Senior:	Harold Prier Birch,	Cliff Ont.	2m 19s
Adult:	Albert Levy,	Toronto Ont.	4m 14s

GLIDER HAND LAUNCHED

Senior:	Ernest Barrie,	Galt Ont.	33s

OUTDOOR

STICK HAND LAUNCHED

Junior:	Jack Purvis,	Toronto Ont.	5m 20s
Senior:	Vic Davey,	Winnipeg Man.	5m 41s

WAKEFIELD

Junior:	Jeff Noble,	Toronto Ont.	49s
Senior:	Bill Hunt,	Vancouver B.C.	2m
Adult:	Fred J. Rogerson,	Hamilton Ont.	1m 12s

SOCIETY OF MODEL AERONAUTICAL ENGINEERS

(The Body governing Model Aeronautics in Great Britain, by agreement with the Royal Aero Club.)

OFFICIAL LIST OF BRITISH RECORDS, 1935

FUSELAGE MACHINES

Rising off Ground	G. M. Merrifield	9m 50.0s
Rising off Water	M. E. Hunt	1m 46.0s
Hand Launched	A. D. Paine	22m 10.0s
Speed	C. H. Debenham	35.25 m.p.h.
Auto-Gyro (H.L.)	S. R. Crow	14.4s
GLIDER		
Hand Launched	W. E. Evans	3m 10.0s
FARMAN TYPE		
Hand Launched	C. A. Rippon	31.2s
TAILLESS TYPE		
Hand Launched	F. B. Baggs	1m 30.0s
PETROL DRIVEN MACHINES		
R.O.G.	C. E. Bowden	12m 48.0s
C. A. MACHINES		
Fuselage R.O.G.	D. A. Pavely	1m 7.6s
Non-Fuselage R.O.G.	D. A. Pavely	1m 10.0s

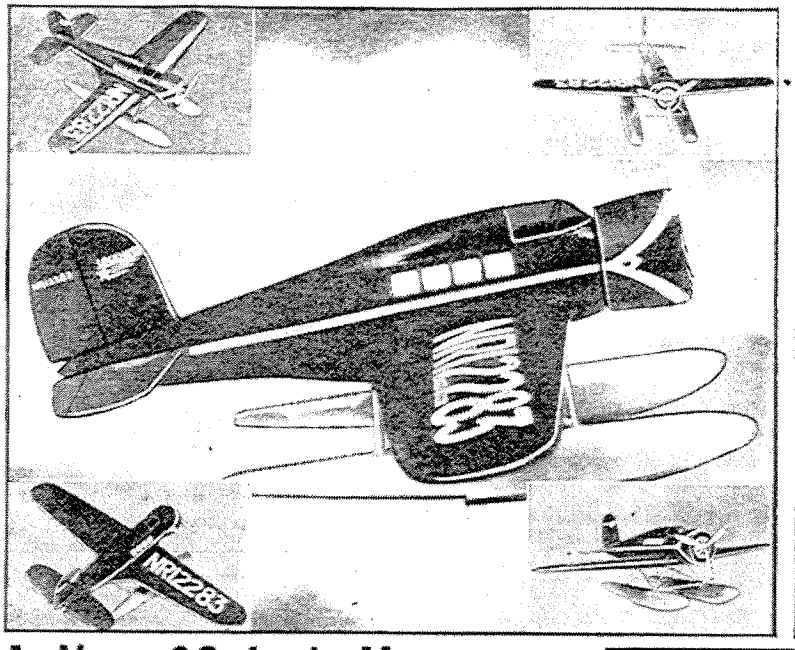
SPAR MACHINES

TWIN PUSHER		
Rising off Ground	S. C. Hersom	4m 7.0s
Rising off Water	S. C. Hersom	1m 5.0s
Hand Launched	T. D. C. Chown	2m 25.0s
TWIN PUSHER AUTO-GYRO		
Hand Launched	D. A. Pavely	25.8s
TRACTOR		
Rising off Ground	D. A. Pavely	1m 51.2s
Rising off Water	S. C. Hersom	43.0s
Hand Launched	P. L. Wilson	2m 10.0s
GLIDER		
Hand Launched	W. E. Evans	2m 10.0s
FARMAN TYPE		
Rising off Ground	C. A. Rippon	32.4s
Hand Launched	C. A. Rippon	37.8s



P. P. Co.

Build The Famous HEATHE WILL ROGERS & WILEY POST LOCKHEED . . . A NEW 36 INCH Record Breaking Flyer



HERE'S the plane that is sure to touch the heart of every model builder . . . . it's an exact replica of the famous Lockheed flown by the two great immortals "Will Rogers" and "Wiley Post" . . . . too bad neither of these great men can be here to see how exactly we have matched and duplicated every detail of the great original. You will want to build this new 36" record breaking flyer and keep it as a memento.

Contains HEATHE'S new copyrighted, simplified plans and instruction sheets. All parts printed on balsa. Optional supplies for movable controls from the cockpit, carved prop, cowling, loads of wood, cement, dope, colored tissue, rubber, bent wire parts, sandpaper and razor blade, etc.

$1.50 POSTAGE FREE

SPECIAL
See our bargain supplies below. FREE 6 1/16 x 2 x 18 plus 100 1/16 square Balsa with each $1.00 order. FREE with each $2.00 order 250 ft. " finest para rubber 1/8" flat.

FREE PHOTO
of Will Rogers and Wiley Post Taking Off

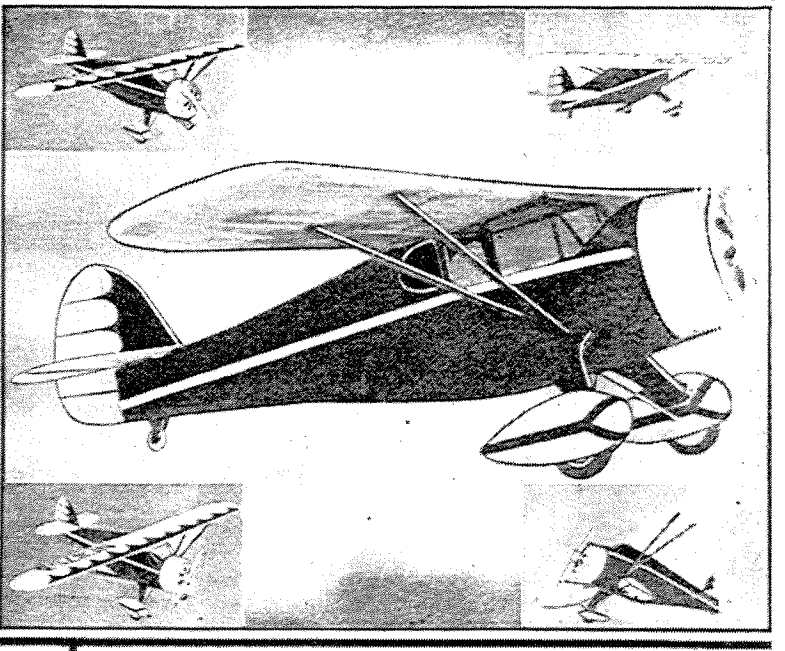
We were fortunate in securing a limited number of photo copies of Wiley Post and Will Rogers taking off in the ill-fated Lockheed at Fairbanks, Alaska. These pictures are beauties, size 5x7 (suitable for framing). FREE to every purchaser of $1.00's worth of kits or more. FREE.

A New 36 Inch Monocoupe

With Movable Controls

HERE'S the sensation of the model airplane industry . . . . of course it's a HEATHE scoop. Trial tests have exceeded our own expectations. This new 36" Monocoupe has broken all records. In fact, when she was up in the air she looked like a real big airplane instead of just a model. Our engineers were painstaking in planning and designing this model for you. They visited the Floyd Bennett field, saw the real MONOCOUPE and discussed its various parts with aviation engineers . . . . then they completed the model offered to you here. You will agree it is a beauty. Contains the identical HEATHE new simplified copyrighted plans and all the other supplies and accessories included with the Lockheed described above. Order yours today and be the first to fly this new HEATHE master of the air.

$1.00 Postage FREE



SPECIAL Combination Xmas Offer

Gift time is here! HEATHE wants to give everyone a chance to save money. Here's our special combination offer which many of our friends and customers will want to take advantage of for Xmas. Here's what we give you for only $3.00 postpaid:

1—Wiley Post Kit	@	$1.50
1—Monocoupe Kit	@	1.09
1—"2 in 1" Fokker D-7 and Curtiss Robin Kit	@	.59
3—Solid Replicas	@	.25
		$3.34

ALL FOR **$3.00** Postpaid

This gives you an additional saving of 10% off our already low prices . . . and don't forget you get a FREE Wiley Post-Will Rogers picture described above . . . ORDER TODAY

PRIZE WINNING

HEATHE Brown Jr. Gas Engine & HEATHE Gas Model Supplies Used and endorsed by Champions of the World: Alphonse Bellantonio, Vartanian, Gerard Smith, and all members of the championship HEATHE Gas Model Club.

SPRUCE
5 Ft. Lengths

3/16" sq.	6 for 25c
3/16" x 1/2"	3 for 20c
3/16" x 3"	25c
1/4" sq.	6 for 30c
1/4" x 1/2"	3 for 25c
1/4" x 3"	30c

No spruce orders for less than 50c accepted.

WALNUT
Propeller Blocks

5/8 x 1 1/2 x 18	18c
7/8 x 1 1/2 x 18	20c

HICKORY
Propeller Blocks

5/8 x 1 1/2 x 18	12c
7/8 x 1 1/2 x 18	15c

SPECIAL HARD BALSA
Stronger and lighter than bass or pine

1/8" x 2" x 36"	2 for 15c
1/8" x 3" x 36"	15c
1/4" x 2" x 36"	12c
1/4" x 3" x 36"	24c
1/4" sq. x 36"	6 for 15c
1/4" x 1/2" x 36"	4 for 15c
1/2" sq. x 36"	2 for 15c

BAMBOO PAPER
24" x 36" sheet 2 for 15c

SPRING STEEL WIRE
5 ft. straight lengths

3/32" dia.	per length 15c
1/8" dia.	per length 25c

Cut in half except when ordered with 5-ft. spruce.

DURAL ANGLE
For motor mounts, etc.
1/16" thick

1/2" x 1/2"	per ft. 15c
3/4" x 3/4"	per ft. 22c

DURAL TUBING

1/4" O.D.	per ft. 14c

ALUMINUM RIVETS
for assembling motor mounts, etc.

3/16" dia. x 1/4" long	doz. 5c

HARD ALUMINUM
For Fittings, etc.

1/32" thick 6"x6"	sheet 15c

SPECIAL GAS MODEL CEMENT
Durable and Flexible

Pint	60c

SPECIAL GAS MODEL COLORED DOPE

4 oz.	20c
Pint	70c

ORDERING INSTRUCTIONS:
Includes 15c packing charge on all orders except for wheels. Canada 10c extra.

Complete Price List FREE Upon Request

SPECIAL COMBINATION KIT

COMPARE (A $3.50 VALUE) COMPARE

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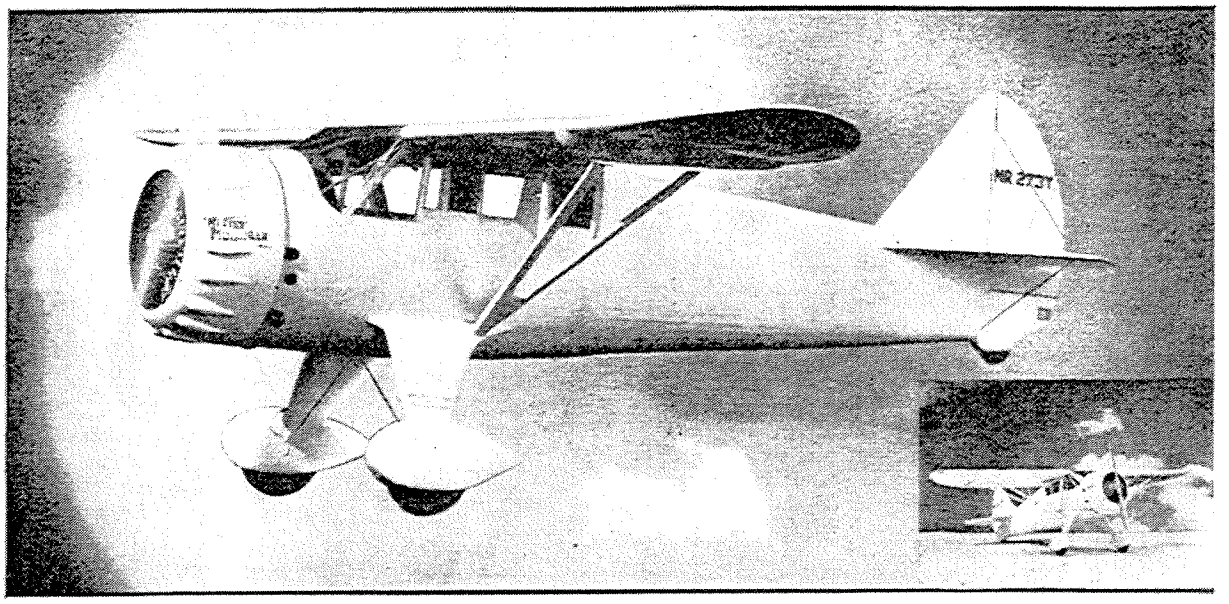

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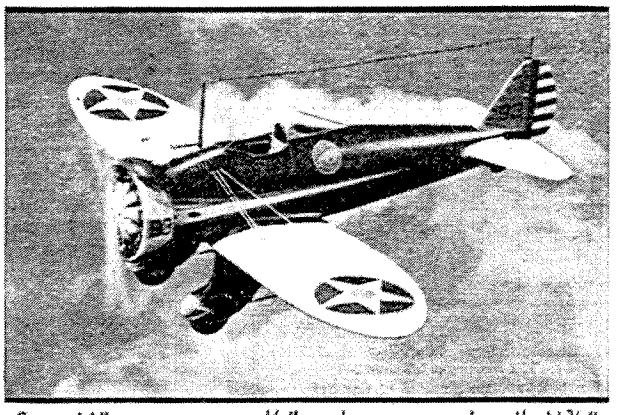

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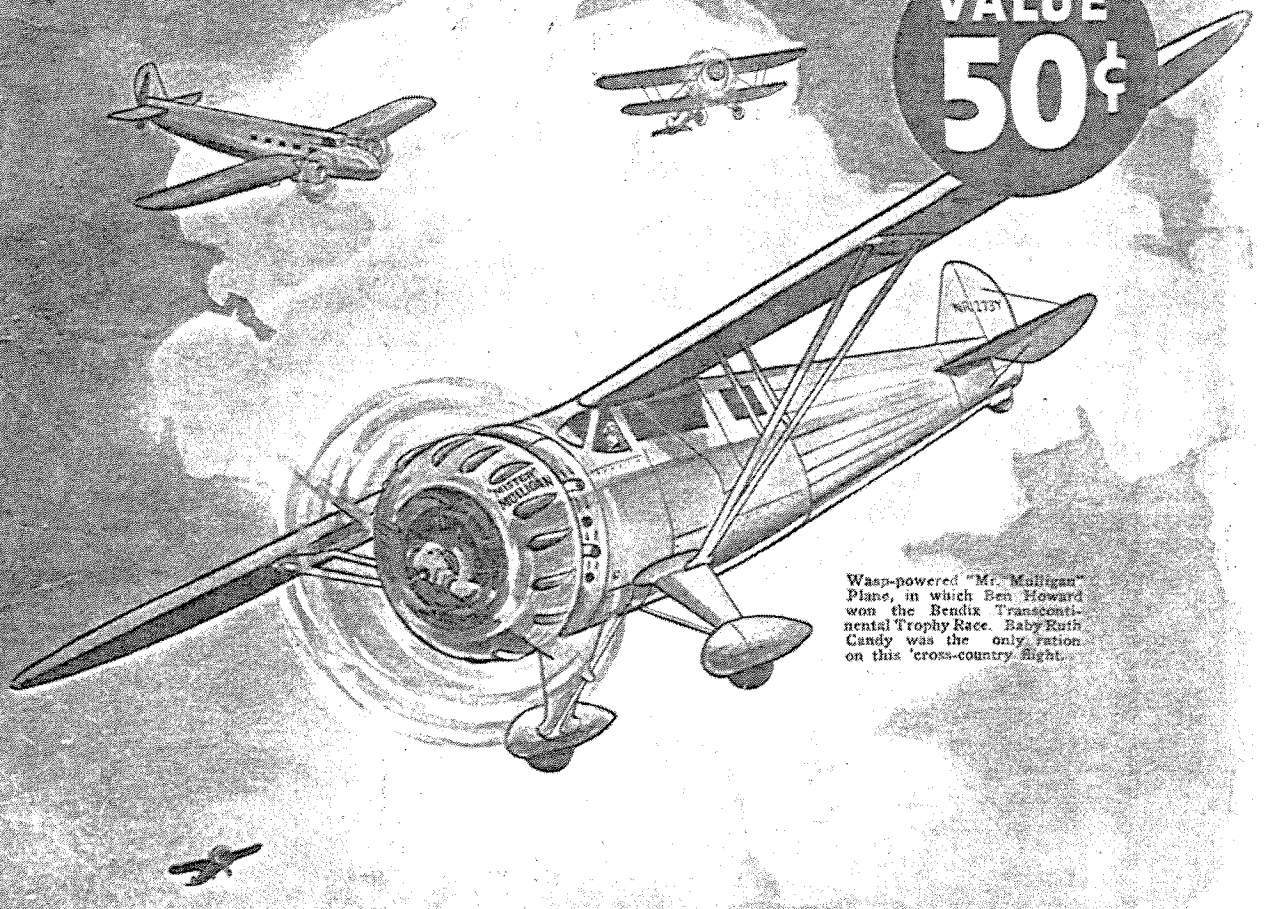
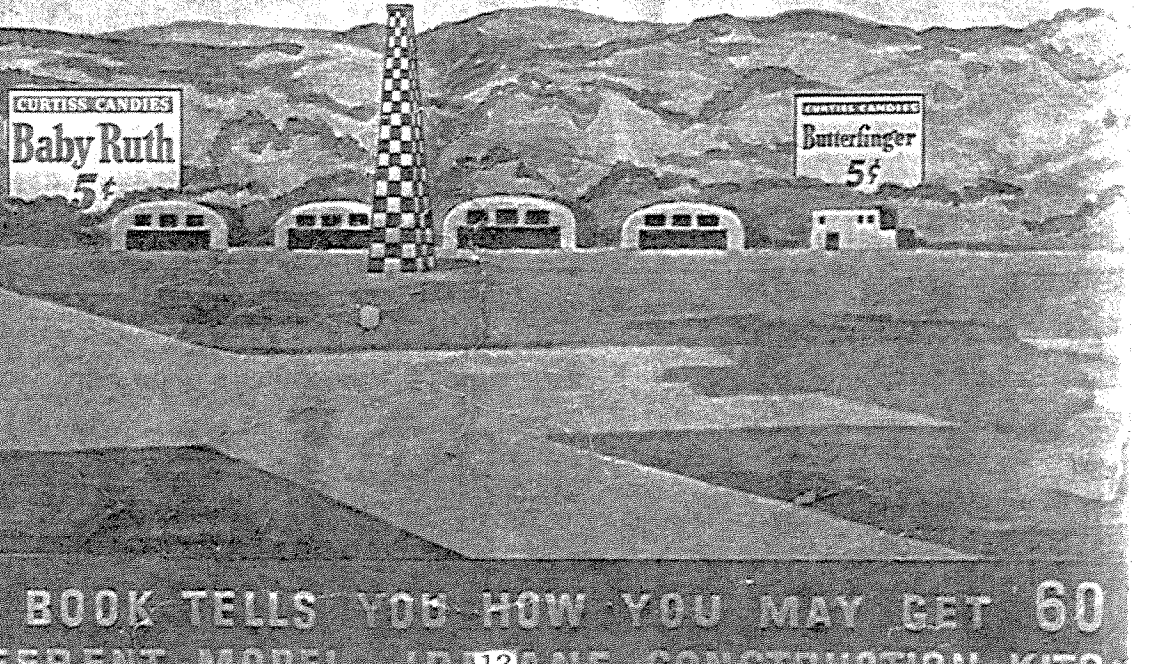


Wasp-powered "Mr. Mulligan" Plane, in which Ben Howard won the Bendix Transcontinental Trophy Race. Baby Ruth Candy was the only ration on this 'cross-country flight.



THIS BOOK TELLS YOU HOW YOU MAY GET 60 DIFFERENT MODEL AIRPLANE CONSTRUCTION KITS

MODEL AIRPLANE INSTRUCTION COURSE
FOR ALL MODEL PLANE BUILDERS

This book is divided into several parts. First, the cover pictures a popular airliner over a modern airport. Learning model aviation thoroughly is a valuable step in preparing yourself for positions in the very rapidly growing aviation industry. Great opportunities await all red blooded Americans in the marvelous field of aviation. Who knows but a few years hence you may be designing planes to replace the Douglas Transport shown on the cover? You may be a pilot or an air terminal manager. Do your model work well and thoroughly as your first course in aviation.

Next, many pictures of famous planes with descriptions are given. You can build models of all of these and many others. See list of kits and materials on the inside back cover.

The sections on *Aerodynamics and Design,* and *Construction and Materials* should be studied carefully before starting work on the six graded projects. This general study will simplify many of the "hows" and "whys" of all model airplane work. Next is the section containing six graded construction projects.

Instructors of model airplane classes were consulted, the designs were studied by many model plane experts, and all of the original plans from which the drawings and instructions in this books were prepared were approved by the Junior Birdmen Institute. Designed to very exacting requirements by a prominent model authority, Lt. B. P. Pond, this Model Airplane Instruction Project Series now in this book form, fills a long felt need.

Your friends, like you, can become expert model airplane builders in easy, simple steps. Young and old enjoy this interesting and instructive work, and we feel sure that many of your friends will want to make all of these projects. If there are no instruction groups in your vicinity, your model work will be even more interesting if you form a group or club of your own. A group study of this series is a valuable education, or review, for all "air minded" people. Every one, beginner or "experienced", should begin with Project No. 1 and "follow through" with Nos. 2, 3, 4, 5 and 6 to get the most instruction and enjoyment out of the series. Each project develops the simple A, B, C's of model aviation, step by step. Building each and every experiment in order is the only sure way that the building and flying of advanced models—beautiful, detailed scale models—can become easy. Be among those who enjoy the world's greatest sport, hobby and science.

Following the projects you will find an example of a solid model with a few special helps and suggestions to aid in building this model and other solid ships. An example of a balsa body flying scale model shows a type of construction especially valuable to the expert model builder. Next you will find another page of famous planes you may wish to build. The inside back cover lists many other model planes you can build. Materials for building ships of your own design and for repairs are listed next to the model kits. The field of model building is unlimited and this book will prove very valuable in years to come.

The many helps and hints on aerodynamics, design, materials and construction, discussed in the following general information, are given to make the projects simple and easy to understand, and should be referred to constantly in order that you will be most successful, get a better grade and be better prepared for the next project and to build other fine model airplanes. Be sure you understand the "how" and "why" of each step before going on to the next. Do not skip any project and DON'T RUSH.

Many of these helps are aids for preparing a model for contests. After you have first made the project, and understand it thoroughly, you may then wish to "lubricate" the rubber, lighten and yet strengthen your plane, and "touch up" many minor details to squeeze every possible added second of duration and length of flight from your ship.

CAREFULLY STUDY THE FOLLOWING MATERIAL:

AERODYNAMICS AND DESIGN

The following notes on aerodynamics give the basic principles of flight and the individual projects illustrate these principles step by step.

WING LIFT—Study Figs. 1, 2, 3 and 7. The upward force on a wing is called "lift". Lift force is due to the action of the air on the wing when the wing is moved edgewise through the air at favorable angles—compression of air underneath and suction above. The resistance of a properly designed, or selected, wing cross-section is very small compared to the lift force. A propelling force of some kind is needed (either due to a portion of gravity force or a propeller pull or thrust), and if this force is equal to the wing "drag", or resistance, it is enough for level flight. Without changing controls, or angle of wing, any excess propelling force produces "climb", not speed. At low angles the drag is a smaller proportion of lift than at high angles. Due to uneven air flow and turbulence at very high angles, the lift falls rapidly and the drag increases so much that the wing stalls and no longer lifts.

For model wings the best shape is a hollow, or concave, underside—hence covering is often left off of the underside of the wings, on high wing ships especially, where longer flights are desired. The best shapes for wings and airplane parts are determined by tests in a wind tunnel. (See Fig. 4). Purely for the purpose of testing flying model plane parts, flying the model itself is generally far more accurate and sensible, except for the interest created in groups by wind tunnel tests.

Center of pressure (C.P.) is the point at which the lift of a wing is balanced equally in front and rear. This point varies at different angles of attack and between different wing curves. (See Figs. 3 and 7).

INHERENT STABILITY. Model airplanes, as well as large planes that are properly designed, are so proportioned and built that they try to balance themselves and fly almost automatically. This tendency to fly correctly is known as "Inherent Stability." Low center of gravity helps to produce inherent stability.

LATERAL STABILITY. This is the balance that is built into a model airplane by the use of dihedral in the wings. Lateral, or crosswise, refers to the relation of the wings to the body. Wing dihedral (Fig. 8) and low center of gravity (Fig. 7) are common means of obtaining lateral stability.

LONGITUDINAL STABILITY. This is fore and aft, or lengthwise balance—through the body, nose to tail. The area and correct position of the wings, rudder and stabilizer give longitudinal stability. (See Figs. 5 and 6).

Dihedral (Fig. 8) is the most important factor in "Stability". There cannot be very much "Stability" in a model without the correct amount of "Dihedral". With sufficient dihedral a model airplane will have good "Lateral Stability". Dihedral as shown in Fig. 8 applies to model airplane construction as follows:

No dihedral—undesirable for models.
Plain dihedral—simplest for models.
Tip dihedral—high wing for slow models or models with low center of gravity (C. G.)
Curved dihedral—efficient for all models.
Double dihedral—efficient for all models but easier to make than the "curved."
Negative dihedral—seldom used—not desirable.

"Stagger Wing Position" (See Fig. 9), used in biplanes, is mainly for visibility and to reduce interference between wings.

STREAMLINE. Air resistance wastes power just as "dragging" brakes in an automobile. Air resistance increases very rapidly at increased speeds—approximately four times as great at only twice the speed. In models, because of slow speeds, the air resistance is very low. Yet streamlining in model airplanes is still very necessary for long flights. Since the total power available in a model is quite small even slight power savings, due to streamlining, improve duration remarkably. Keep this in mind while constructing the projects. A square part has 6 to 12 times the edgewise resistance of the streamline part that should take its place.

THRUST force is the propelling force. In gliders (See Project 1) gravity furnishes this energy, and combined with rising air currents we have the secret of the cross-country flights of motorless sailplanes. At present the propeller is the only satisfactory means of securing the needed propelling force for power driven planes. The propeller in principle consists of two opposite wings fastened on each side of a shaft, which, when turned by the power source, pulls, or "lifts" forward just as the wings of a plane furnish lift upward. Study the Propeller Chart for propeller pitch calculation, design, laying out and carving. Always remember that a well balanced, carefully made propeller will improve the flying of your model.

PROPELLER PITCH (See Propeller Chart) is the theoretical calculated distance the propeller would move in one revolution if there was no slippage. Actual pitch is the actual distance a propeller moves a ship per revolution at its normal speed. A pitch of about 1½ to 2 times the diameter is more efficient than higher pitches more often used by uninformed model builders (and the lower pitches used on real planes). A propeller must "slip" some or there would be no thrust. Too much slip wastes power—like flying a plane near the stalling angle. Several model propellers of slightly higher and lower pitches and diameters should be tried with each model to find the best propeller to suit. Two models built alike may fly better on different propellers due to slight variations in weights, etc., of the models. The back side of a model propeller should be cambered (See Propeller Chart), or cupped more on slow ships and less on faster models to increase efficiency. We again caution you that propellers are important factors of model flying. Study the charts, read the instructions and take your time when making your propeller.

TORQUE and "COUNTER TORQUE"—The force turning the propeller has an equal and opposite force opposing it, acting at the point where the motor is attached


Fig. 1 Fig. 2

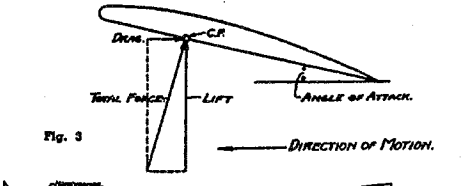


Fig. 3

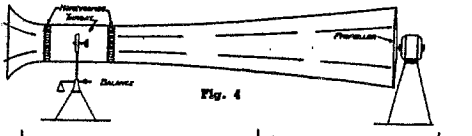


Fig. 4

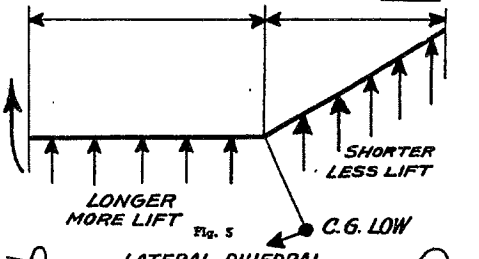


Fig. 5

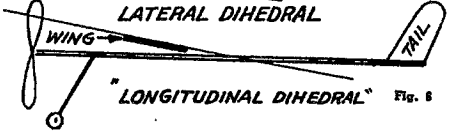


Fig. 6

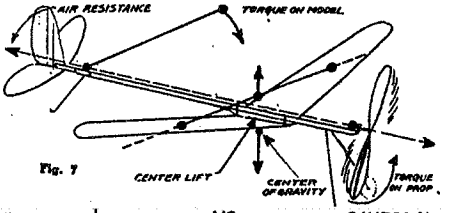


Fig. 7

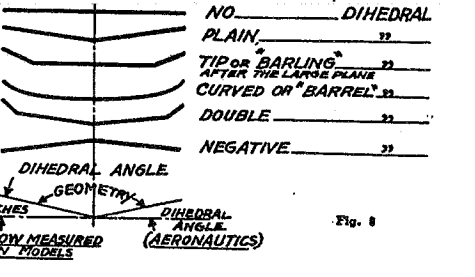


Fig. 8

CURTISS Baby Ruth AMERICA'S FAVORITE!

CURTISS **Butterfinger** CHOCOLATE COVERED PEANUT-BUTTER CONFECTION!

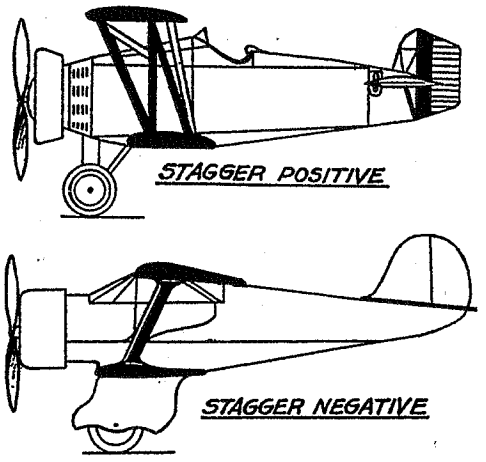


Fig. 9

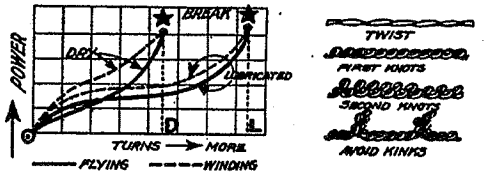


Fig. 10

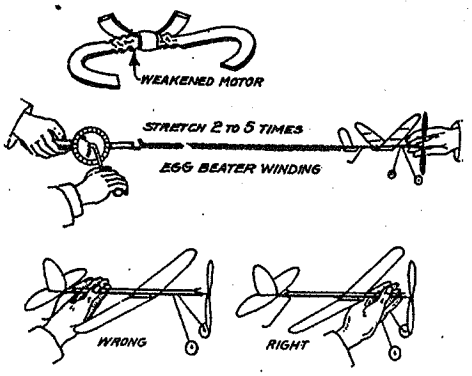


Fig. 11

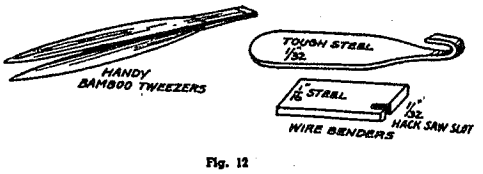


Fig. 12

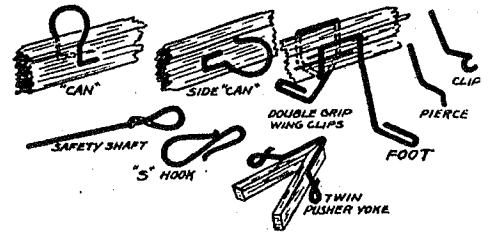


Fig. 13

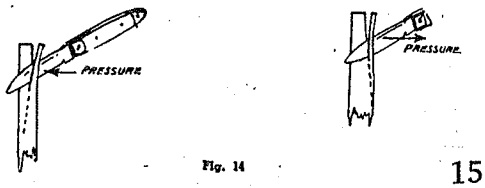


Fig. 14

to the airplane. Any turning force is called "TORQUE". The actual turning force of the rubber motor on the propeller we will call "Propeller Torque". The opposite turning force of the rubber motor on the rear hook of the model we will call "COUNTER TORQUE". It is this counter torque force of the rubber motor on the rear hook which causes difficulties in balancing the flying model airplanes since this counter torque tends to turn the whole model airplane around in the opposite direction from the propeller. The general stability of the model partly overcomes torque. Further correction is explained in the Projects. Overcoming "COUNTER TORQUE" is accomplished by twisting the wings just enough so that much of this counter torque—about one-half—is balanced by the unequal lift and resulting wing-torque force. This wing twist is called "wash in" on side lifting more, and "wash out" on side lifting less than nomal. In a stick type model, if the wing clips fit tightly and by experiment the right sized motor stick is found, the torque will twist wings automatically to keep torque and counter torque forces almost equal. Right rudder (with a right hand propeller plane) is needed with this "Washin-Washout" — or counter torque correction, since the air behind the propeller is following a spiral path. (Left rudder is a "freak"—mainly below the thrust line). The wing dihedral and longitudinal dihedral (angle of tail to wing, Fig. 6) not only furnish the stability "pilot" for your models, but also help to keep the model level when the torque becomes less than the effect of the counter torque correction you have made. This occurs as the motor unwinds.

Much has been written recently on sizes of control surfaces for models. When Project 3 is studied you can try several control sizes and learn that the surfaces have to be about a certain size for a particular model, and any larger is unnecessary. Too small surfaces are worse, both in models and in real planes, than too large surfaces.

STRUCTURAL DESIGN and proper use and location of materials is overlooked by many. In real ships, where stresses are greater, stresses and loads have to be calculated very closely. Members are joined together—not haphazardly—but at more or less evenly spaced "panel points", permitting light construction and greater strength. Even on models this is very important. To hold members in rigid relative positions, bracing is necessary. Wires, struts, cross bracing or triangle shapes are used. In models tissue is used to brace wings and bodies where no great strength is required. Where landing gears attach, and at other stress points, tissue is often not enough and cross bracing struts, heavier or double members, are needed. Reinforce points of frequent breakage on your models with cement, or even a little heavier piece of material. After a time you will learn to lighten parts that seem overly strong and therefore too heavy for maximum length of flights. In the projects and on real planes note the bracing methods used and the points made stronger to take the loads with less possibility of damage.

If it is necessary to overpower your model with extra strands of rubber to make it fly, your model is not properly built. It is probably too heavy and not properly balanced. The secret of good model building is to build strong enough to avoid breakage but light enough to fly with minimum power and propeller speed. High speed propellers reduce duration and often cause unnecessary breakage.

CONSTRUCTION AND MATERIALS

TOOLS required for model projects are simple, few and inexpensive. Old single edged (for safety) razor blades, pins and assorted sand paper will fill almost every need. Handy additional items are a ruler, waxed paper, eyebrow tweezers, or a simple pair of home-made bamboo tweezers (See Fig. 12), toothpicks for cement spreaders and scissors.

Pliers for wire bending and cutting, or a homemade bent or slotted steel bender (Fig. 12), are better than trying to bend wire by hand or around a nail. Brushes, atomizer, or spray may be desired for extra paint decoration and dopes. For finer work, scales for close weighing, drills, drawing instruments, soldering iron for bending bamboo, will be found helpful. Holes in ribs, nose blocks, etc., to lighten the weight, are easily cut with various sizes of sharpened thin metal tubes, or discharged cartridge shells. You can do better work on a large flat surface, where you have room to lay your work out, such as a table or drawing board. Keep only needed materials and tools in front of you as a cluttered bench often produces a poorly finished project.

To preserve the patterns, they should be printed on the plans rather than on the wood. In transferring patterns to the work many ways are used. Drawing squares on the wood to correspond with squares drawn on patterns permits accurate shaping of parts.

Transferring by using carbon paper between drawing and material is simple. If you have no carbon paper handy prick through the pattern outline into the wood at frequent points and cut the wood to this perforated line. A cutout pattern is handy, but to prevent damage to the drawing the pattern can be traced on transparent paper, or held to a window and traced. Pasting pattern to cardboard and trimming is helpful. Any of these methods is better than trimming to fit, or cut-and-try methods. Do not destroy your pattern as you might need it to replace a part. Keep patterns in envelope when through with them. Attach the envelope to the plan for future reference. Pins, blocks, books, "jigs", weights and rubber bands are all handy to hold parts in place while cement dries. Always give cement plenty of time to dry, using two coats if necessary. Tweezers help when fingers are big or you have very small parts to assemble.

CEMENTING should be done carefully, using several coats where needed on landing gears, shafts, bamboo, etc. Thick cements make stringy, crude joints. Keep cement at a medium consistency by adding small amounts of thinner as required. Dope may be made by adding a small amount of cement to a good grade of thinner. Remember to keep clean and tightly sealed, and away from open flame any dopes not being used.

POWER. Millions of rubber driven models, thousands of compressed air models, and hundreds of gasoline models indicate the relative use of the three common forms of model power. Steam, CO_2 gas, springs and rocket power are rarely used.

RUBBER. Since rubber can store more energy for a given weight than other low priced power storage, or power sources, most successful model developments have been accomplished with rubber motored ships. Rubber will always be a favorite and records for rubber driven ships will be further improved. The following data on the handling and use of rubber in models should prove helpful:

GRADES AND SIZES. Avoid bands if they are rough, unevenly cut, or poorly joined. Strip rubber is made in various sizes and thicknesses. Less rubber may be used on special light ships. If you require more rubber than specified your ship is too heavy or not in balance. Any size of motor desired can be made up, using strip rubber. Allow extra length for slack where a winder (Fig. 11) is to be used. Tie a square knot (Boy Scout fashion). A firm knot without tears is made by pulling the outside loose ends to draw the knot tight instead of pulling the long strands. If good part of motor is pulled, the slippage in the knot will tear and weaken the motor proper, (Fig. 11). An almost unbelievable number of winds (Fig. 10) can be put in a rubber motor—twists appear first and next a row of "first knots", followed by "second knots". Half a row of second knots is enough for dry unlubricated rubber. A full row of second knots wound dry is a possible breaking strain. Learn the correct number of winds for reference in future flights. 75% to 85% of maximum breaking point winds usually gives better performance than 90% to 100% (breakage average).

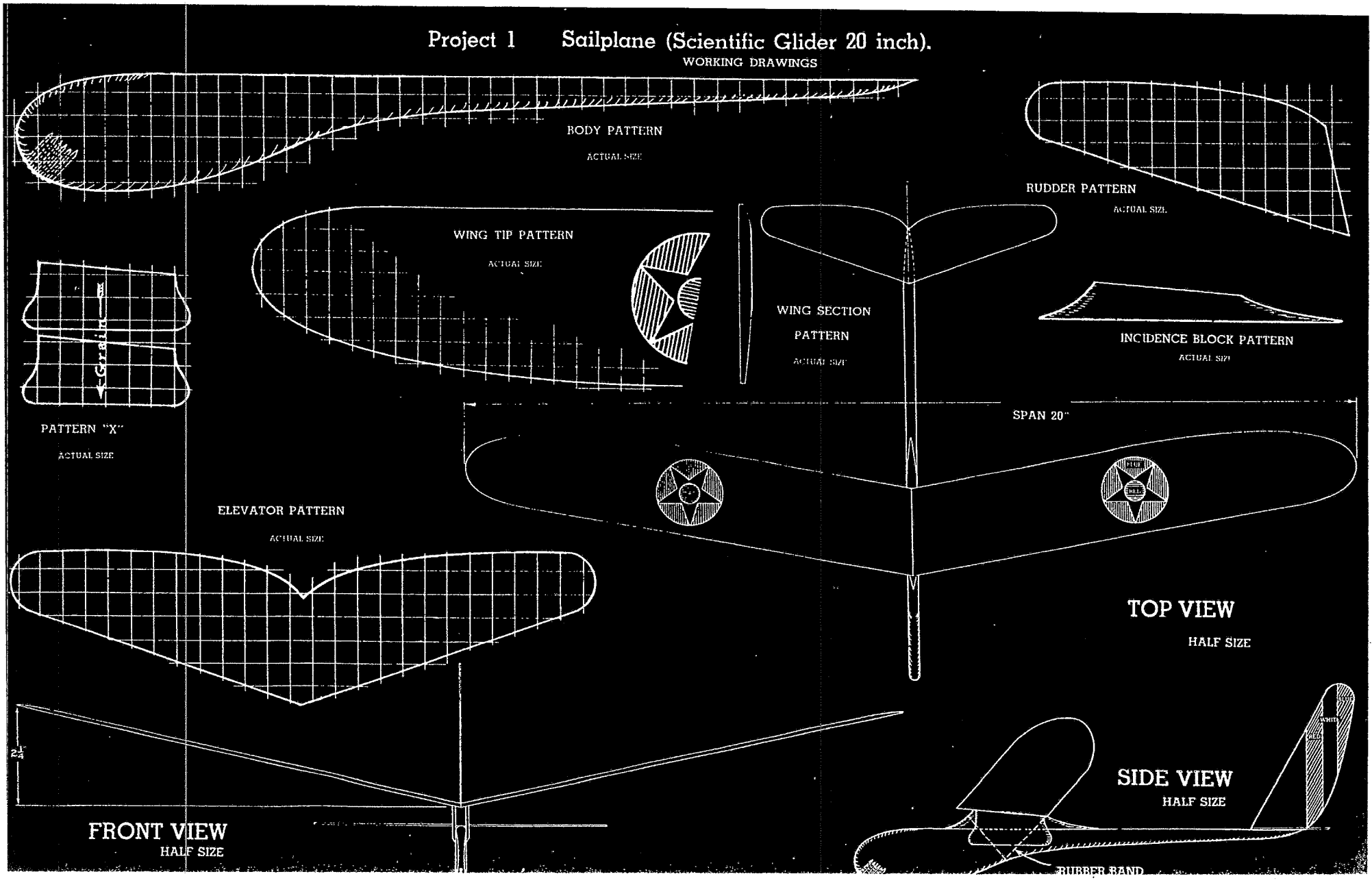
Study the chart (Fig. 10), on lubricants, which gives the general idea. Good rubber, lubricated with good lubricant, gives more power return on the unwind, more duration and with some added turns allowable, just as suitable lubricants are used in automobiles and other points of friction. Glycerine is non-injurious to rubber but is not a good lubricant. Never use any auto or machine oils. Castor oil is one of the best harmless rubber lubricants. A drop of rubber cement should be put on the outside of the knot, for, otherwise, castor oil is so slippery that the best tied knot will slip and untie with damaging snap. Winding by stretching out several times original length at beginning and using a winder (built from egg beater) gives many more turns, especially on dry rubber. (See Fig. 11).

Rubber gets "tired" and power is lost if motors are kept wound up very long. Keep rubber in the dark when not in use, as sunlight is quite injurious especially to "accelerated Vulcanized", brown, white, and other patent concoctions of rubber. Clean soapstone, or graphite, helps on rubber for "dry" winding.

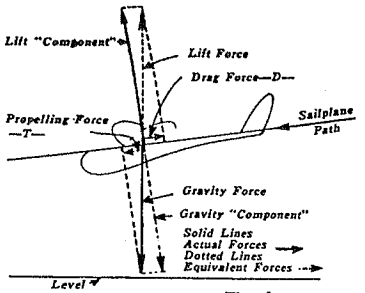
BAMBOO is better for parts subjected to shocks and knocks than balsa wood, and when properly used it is light, strong and is very easy to use. The hard outside varnish-like surface, which scrapes off like powder, should be removed. If a bend is needed, bend slowly over a hot (soldering) iron, electric bulb or candle flame before splitting so you can split off several duplicate pieces. Bamboo splits quite easily and quickly. To split straight, start in the center. If split veers to one side push the knife, or splitting tool against the heavy side and the split tends to follow back the direction the pressure is applied (See Fig. No. 14). When close to size desired the bamboo can be scraped to size and streamline shaped. Remember, bamboo is

Project 1 Sailplane (Scientific Glider 20 inch).

WORKING DRAWINGS



FOR ENERGY PICKUP ANYTIME - Baby Ruth CANDY



Forces on a Sailplane Fig. 1

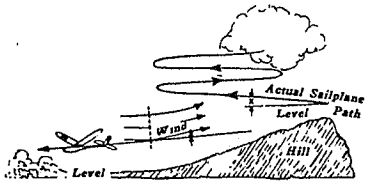
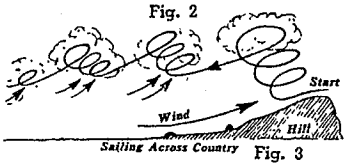


Fig. 2



Sailing Across Country Fig. 3

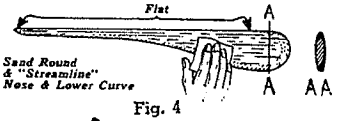


Fig. 4

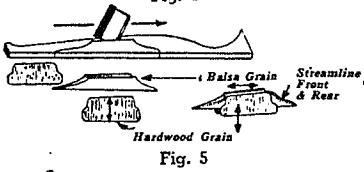


Fig. 5

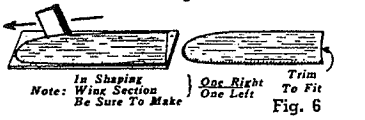


Fig. 6

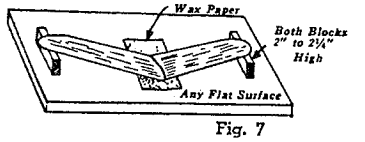
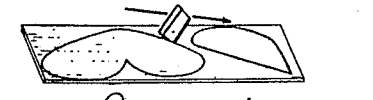


Fig. 7



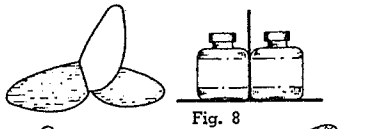


Fig. 8

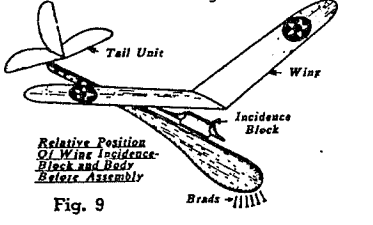


Fig. 9

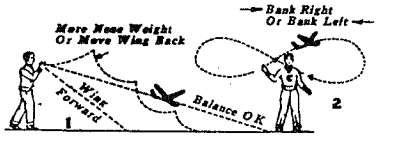
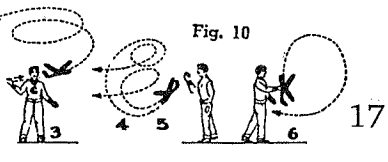
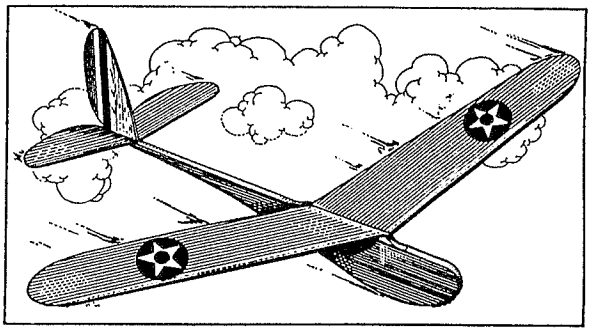


Fig. 10





The original plans and instructions from which this project was prepared are approved by Junior Birdmen Institute.

Project No. 1

SAILPLANE—SCIENTIFIC GLIDER

(Read general model data in front of book before beginning this first project.)

SAILPLANE—One of America's newest fascinating sports is flying motorless gliders. The more advanced, streamlined ships are known as "sailplanes." There is no "thrust" on a sailplane or glider. The main forces acting are LIFT, DRAG (resistance), and GRAVITY (weight). (See Fig. 1). The force which acts to produce forward motion of the sailplane is the PROPELLING FORCE, T.

The *gravity force* is considered separated into two equivalent forces—T, the *propelling force*, and the *gravity* "component," which just equal the gravity force. In the same manner the *lift* force is composed of two actual forces—D, *drag force* (resistance of sailplane) and the *lift* "component." In a steady glide the forces balance.

The more streamlined and smoother the sailplane is made, the less resistance the sailplane will have, the flatter the gliding angle will be, and the *sinking speed* will be less. Also the chances of soaring, or sailing on rising air for long flights, will be greater with your model sailplane, the same as in man carrying sailplanes.

Whether considering a full sized airplane or the project you are building, a soaring plane will rise only in air moving generally in an upward direction, as up a hillside, rising above a heated stretch of sand or up underneath clouds as shown in Fig. 2. In still air each different glider settles toward the ground at a certain speed peculiar to that ship. This is called sinking and the rate of sinking is called sinking velocity by soaring experts. When the air is rising at this same velocity the glider will maintain its altitude. When the air is rising faster than this sinking velocity, the glider will rise. Then the speed of rising will be the difference between the upspeed of the air and the sinking speed of the sailplane.

Now we get to the practical sailplane flying. In a case of the wind's actual speed being the same as the air speed of the sailplane, the angle "X" Fig. 2, becomes an actual climbing angle when the sailplane is launched from the top of the hill. A pilot guides his sailplane in this rising wind current until he has gained all possible altitude, often several thousand feet above the hill-top.

If a cloud bank is close, the pilot can take advantage of the rising air under the clouds, and sail cross-country, sailing from one cloud to the next.

Now let us actually construct Project No. 1, a model of a sailplane. Refer to plan on opposite page.

BODY—Carefully transfer the actual size body and the incidence block patterns to ¼" x 1½" x 10½" balsa wood. Carefully cut out these two parts. (See Figs. 4 and 5). Round the front and lower edge of the body as shown to streamline, and also to reduce the undesirable "frontal rudder" effect if left flat. This front depth provides room for the pilot in the big sailplanes and helps to balance the weight of the long tail.

THE WING INCIDENCE BLOCK, or streamlined "cabane," is designed to fit the body or fuselage snugly and yet be readily adjustable. Some may wish to cement this "cabane" to the fuselage after the correct position for sailing is found. Cut out two pieces of 1/16" thick hardwood veneer to pattern "X" and cement to the sides of the "cabane" or incidence block. Be sure the grain of the hardwood runs in the direction shown by the arrow. (See Fig. 5). Then trim and sand the "cabane" unit to streamline shape, front and rear only. The high part should be to the front, giving the wing an *angle of incidence*. This up, or positive, angle of incidence (compared to the elevator) gives the model sailplane its *stability*, taking the place of a pilot using his elevator in a full sized sailplane.

THE WING for the Sailplane is made of two pieces of 3/32" x 2" x 10¼" balsa cut to the pattern shown (TOP VIEW). The inner or center ends of the halves are cut on an angle so that the wing leans backward—"sweepback"—when assembled. (See Fig. 6). Sweepback helps to keep the sailplane on an even course.

Wing Section—Sand the two halves, or "panels"—one *right panel* and one *left panel*—to the streamline "wing section pattern" shown—to improve the performance.

The streamlined wing panels are then propped up on a flat surface by 2" to 2¼" high blocks (books, bottles or any other handy objects may be used) placed under the tips. (See Fig. 7). Trim the center ends of panels to fit, and cement them together. Two or three thin coats of cement make a stronger and neater appearing joint. Wax paper under the joint will prevent the cement from sticking the wing to the table. Making the tips of the wing higher than the center is referred to as *dihedral*, and tends to keep the sailplane's wing level in flight, taking the place of a pilot using the *ailerons* in a big ship.

THE TAIL, consisting of a rudder and elevator, is cut out with a razor blade to patterns, and lightly sanded, from 1/32" balsa sheet. Follow the patterns very closely, especially on the elevator, so that both sides will be exactly alike. Use care to avoid splitting the balsa parts (See Fig. 8). Cement the rudder in the exact center of the elevator, and straight up. Brace with two square objects while the cement dries.

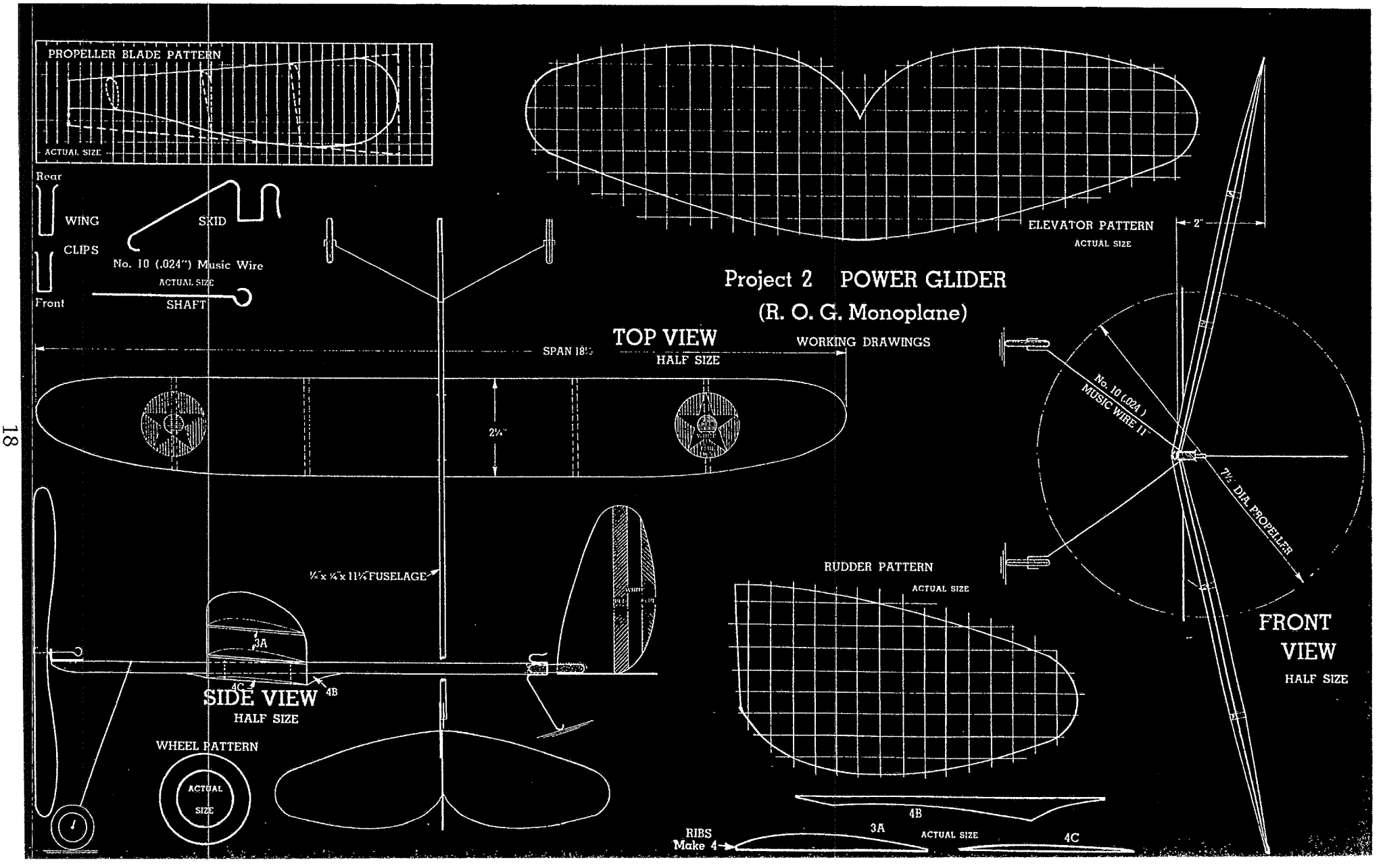
ASSEMBLY—With the parts completed, the final assembly is the next step. When the cement is thoroughly dry at the center of the wing, groove the top of the incidence block to fit the dihedral angle on the underside of the wing. Then accurately locate and cement the wing incidence block on the underside of the wing. Slip the fuselage in place in the slot in the incidence block, and square up the wing with the body by sighting from the front and top. A few small pins will help to hold the parts true while the cement dries.

Next attach the tail unit. Sight from the top and front to assure correct location. Pin in place and cement carefully, rechecking alignment as the cement dries. (See Fig. 9). Five or six small brads should be carefully pressed into the underside of the nose of the fuselage to protect the sailplane in landing on jagged ground, and to bring the balance position for the wing farther forward.

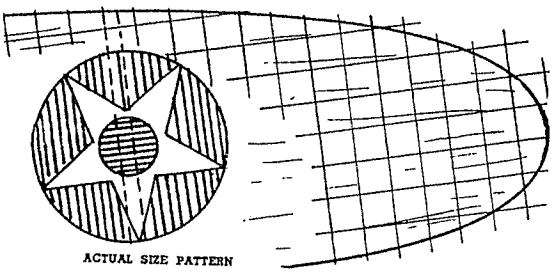
Add insignia if you want the beauty of your sailplane to outshine others. Variety and originality of decoration and coloring is individually distinctive, and enthusiastically popular, affording competition for appearance in addition to the keen competition in the actual sport of flying.

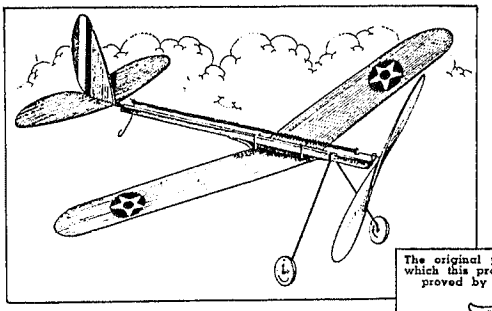
FLYING—If the wing becomes loose on the body, a small rubber band, about No. 10, will hold the wing in place. Cross band under body (see SIDE VIEW on drawing for best way to use shock absorbing band wing fastening). Try a simple glide by launching gingerly with a spearlike thrust. DO NOT THROW LIKE A BALL. The wing position on the drawing, tests show, is OK with 6 brads and a light tail. For some models this position is ¼", and occasionally ½" too far forward. A few planes will require ¼" to ¼" further forward setting of the wing for long, smooth glides. (See Fig. 10, Part 1). Mark the location of the wing on the body for a smooth glide, and with different wing positions practice the other flight maneuvers shown in Fig. 10, Parts 2 to 6. Study them until you can pilot your sailplane through all maneuvers with ease, especially Part 3. Part 6 shows where to grasp the body of the model for sailing.

If you are fortunate enough to be near a clear hillside on a breezy day, by all means try your luck at model sailplane soaring. You will experience a rare thrill of accomplishment when you see Project No. 1 sailing around in the air, well above the point of launching. You are now ready for POWER GLIDER (R. O. G. rise off ground), Project No. 2. Grade your sailplane using the grade chart on page 2.


PROPELLER BLADE PATTERN
ACTUAL SIZE
Rear
WING
CLIPS
Front
SKID
No. 10 (.024") Music Wire
ACTUAL SIZE
SHAFT
ELEVATOR PATTERN
ACTUAL SIZE
2"
Project 2 POWER GLIDER
(R. O. G. Monoplane)
WORKING DRAWINGS
TOP VIEW
HALF SIZE
SPAN 18½
2¼"
No. 10 (.024") MUSIC WIRE 11"
7½" DIA. PROPELLER
FRONT VIEW
HALF SIZE
¼" x ¼" x 11¼" FUSELAGE
3A
4C
4B
SIDE VIEW
HALF SIZE
RUDDER PATTERN
ACTUAL SIZE
WHEEL PATTERN
ACTUAL SIZE
4B
3A
ACTUAL SIZE
4C
RIBS
Make 4

YOUR NICKEL CAN BUY NO FINER CANDY THAN Baby Ruth





The original plans and instructions from which this project was prepared are approved by Junior Birdmen Institute.

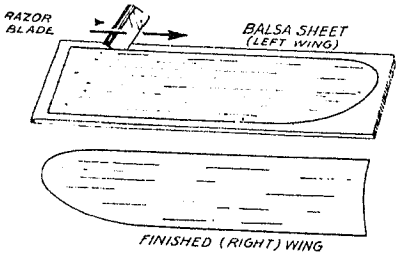


Fig. 1

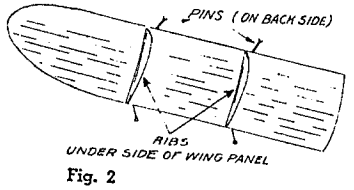


Fig. 2

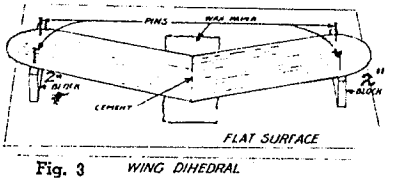


Fig. 3 WING DIHEDRAL

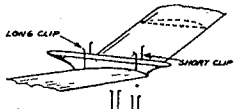


Fig. 4

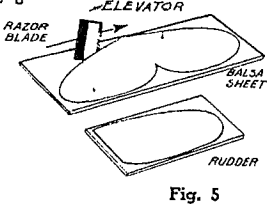
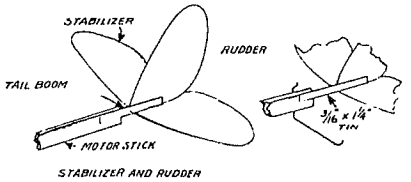


Fig. 5



STABILIZER AND RUDDER ASSEMBLED WITH TAIL BOOM

Fig. 6

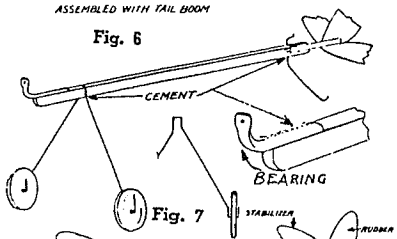


Fig. 7

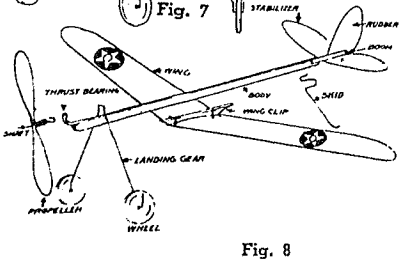


Fig. 8

Project No. 2—POWER GLIDER—(Rise Off Ground Monoplane)

Project No. 2 is simplified with as few parts as possible to make a successful flying model or power glider. You will note that a few new details are added to each Project of the course so that the builder learns in easy steps.

Project No. 2 has the main elements of a real plane; a propeller and motor, a body, (the stick), a landing gear, a wing, a rudder, an elevator, and even a tail skid. Therefore, when you understand these model projects, you really learn very much of the fundamentals of real planes as well.

POWER GLIDER—Really a power driven airplane model—a glider into which a propeller has been designed. A rubber motor is used for storing sufficient energy for flying this plane. The "drag", or air resistance, is overcome in the Power Glider by the thrust of the rubber driven propeller. When the rubber motor is fully wound any excess propeller thrust over that required for level flight (the resistance of the plane) causes the model to overcome the gravity force and climb into the air. As the motor unwinds and thrust equals the resistance, the model levels out and goes no higher. When the thrust becomes less than the drag, the ship acts as a glider and the force of gravity brings the plane back to the ground. The glide is long and at a small flat angle to the ground when the plane is properly built and adjusted.

From Project No. 1 it should be remembered that the drag, or resistance, is much less than the weight of the sailplane—1/10 to 1/20 of the weight in a well polished and streamlined plane.

In a like manner the drag of this Project No. 2 ship is much less than the weight of the ship. Due to the added resistance of the propeller and landing gear, the weight of the ship in Project No. 2 is 4 to 6 times the drag of the ship. This ratio of plane weight to drag indicates the gliding angle without power. For example if the weight of the model is six times the air resistance of the model, the ship will glide 60 feet when launched from a height of 10 feet. Therefore, the propeller only has to pull with a force equal to 1/6 of the weight of the plane for level flight. However, the wing carries the whole weight of the ship.

Let us start constructing this simple Project, beginning with the wing.

WING—Sand two 1/32" x 2¼" x 9¼" balsa sheets to smooth the surface and reduce "skin drag", or surface air friction. Cut the two balsa veneer sheets into right and left wing panels, using the actual size tip pattern. (Fig. 1). Shape 4 ribs from ⅛" x ¼" balsa stick using rib Pattern 3A. Coat the curved upper part of the ribs with cement. Then quickly pin the ribs in proper places on wing halves (Fig. 2), cupping or curving the balsa wing panels, or sheets, into a simple, efficient wing curve. Be sure to make one *right* and one *left* wing-half, or panel. Next make the wing mounting strip and center rib from ⅛" x ¼" balsa stick, using Patterns 4B and 4C. Now the cement on the ribs should be dry enough to remove the pins. Sand and trim the center ends of the panels to fit together. Then assemble the wing halves. (Fig. 3). The blocks under the tips should be at least 2" high, as this furnishes the dihedral angle, or "automatic pilot", which keeps this plane level crosswise in flight. Cement halves together. Carefully cement the wing mount strip (4B) in place on top in the center of the wing (Fig. 4). When the cement is dry turn the wing over and apply a thin coat of cement to the underside of the wing joint and pin the center rib (4C) in place.

Make the 2 wing clips—and the other wire parts too—from No. 10 (.024") music wire. Next attach the wing clips (Fig. 4). Note that one clip is short (for the front), and the other long (for the rear). The clips should be adjusted snugly, without crushing the wood, to fit the long ⅛" x ¼" balsa motor stick. Pierce clips through wing from under side and cement both above and below the wing.

RUDDER and ELEVATOR—Cut these parts from 1/32" x 2¼" balsa sheet (Fig. 5). Cement the rudder vertically in the exact center of the elevator. Brace with two square objects while the cement dries. Next cement the flat metal piece to the rudder as shown in the drawing and in Fig. 6, and it is ready to attach to the motor stick.

FUSELAGE—This part is equivalent to the fuselage on real planes. For lightness, long flights and simplicity a single stick, ⅛" x ¼" in cross-section, is used. The drawings and illustrations show the relative positions of the parts. The landing gear is bent to the shape shown (Figs. 7 and 8). The 1" dia. wheels are slipped in place and held by bending up the axle ends, or by cementing a small scrap of balsa, or rubber, on the end of the axle. Light balsa wheels may be made by cutting out four 1" discs of 1/16" thick balsa wood and cementing them together in pairs and rounding the edges. Cementing together cross grain, or with grain at right angles, makes the wheels stronger. A pin should be pierced through each wheel in the exact center so that they rotate in a true manner. Then apply a drop of cement at the pin, which will form a bearing when the pin is removed after the cement dries. Now you are ready to cement in place with two or three coats of cement, first the landing gear, second the tail skid, which is combined with rear rubber hook, and, third, the thrust bearing. Use a regular 3/32" half-round pierced steel model bearing or a nail flattened and drilled at the end. (Fig. 7). A wrapping of thread will make them more secure. Next, cement the tail, or *empennage* unit in place. This is an important step to insure good flights. Many models climb too fast at first and dive steeply when unwound. The tail should be in line with the motor stick—not up or down at the rear.

PROPELLER—The propeller is a very important factor of powered flights. For this reason use a semi-finished, machine cut true pitch balsa propeller if available. Otherwise carefully make one from a balsa blank 9/16" x 1" x 7½", according to propeller instructions in the first section of this book. It should be carefully shaped to pattern. The propeller shaft should now be pierced through the exact center of the propeller and bent over. (Fig. 10). A coat of cement around the propeller shaft on both sides of the hub, anchors the shaft more firmly. The propeller should be balanced to prevent vibration.

RUBBER MOTOR is a single loop of 3/16" flat, pure thread rubber tied in a square knot. (Fig. 11) Clip off the long ends. Slip two or three washers on the shaft. Thread the shaft through the thrust bearing. Slip the motor rubber over the rear motor hook and the propeller shaft. The Power Glider is now all assembled except for attaching the main wing. For a trial wing location, balance the motor stick on your finger and slip the front clip of the wing on the motor stick at this point. Hold the model as shown in Fig. 9 and wind the motor about 100 times for a trial flight. Launch model from your hand at first. After making minor adjustments you can allow the model to R.O.G. under its own power. Learn not to push the model in the take off, as pushing is decidedly unsportsmanlike and against contest rules. A little bend in the light metal tail-boom to give right turn rudder will insure better flights. Remember there is no pilot aboard. You must adjust the wing and tail by trial flights until the model flies properly. It may take several trials to get a good flight, but what a thrill when your model streaks off on a long flight! Grade your Power Glider using the grade chart on the bottom of page 2.

Project No. 3—Stability Study—is the next project you will construct. Since Project No. 2 has been built and flown, you will find Project No. 3 very easy. You will enjoy experimenting with the "hows" and "whys" of different wing and tail settings, and learn much about piloting a plane properly.

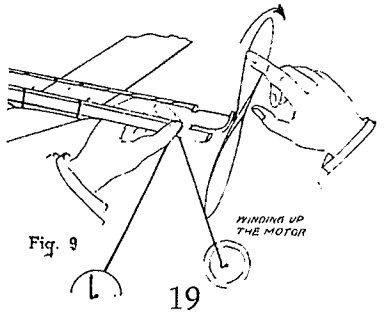


Fig. 9

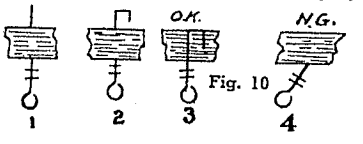


Fig. 10

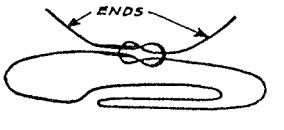
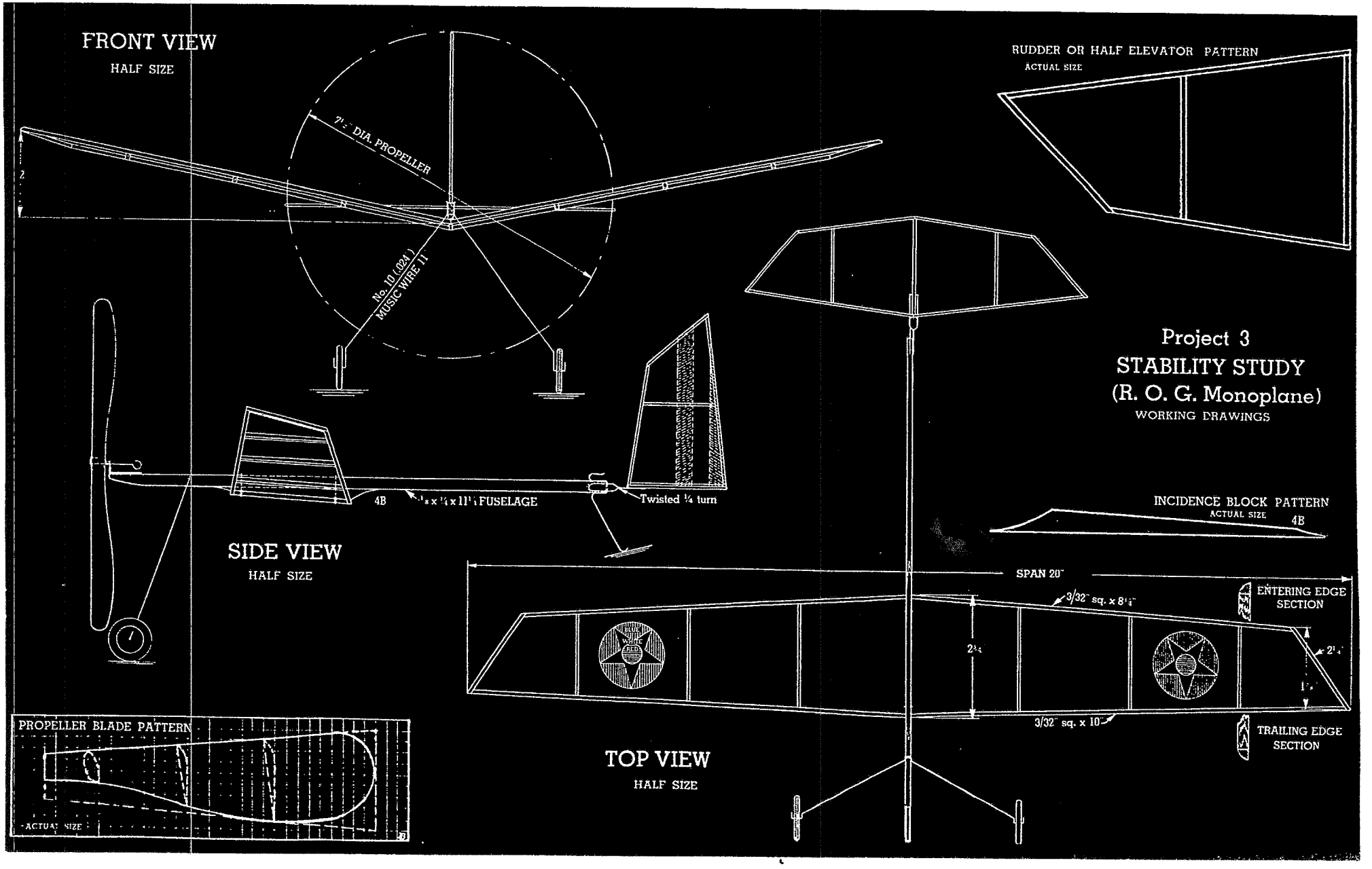


Fig. 11


FRONT VIEW
HALF SIZE
7½" DIA. PROPELLER
No. 10 (.024") MUSIC WIRE 11"
RUDDER OR HALF ELEVATOR PATTERN
ACTUAL SIZE
Project 3
STABILITY STUDY
(R. O. G. Monoplane)
WORKING DRAWINGS
4B
⅛ x ¼ x 11½ FUSELAGE
Twisted ¼ turn
SIDE VIEW
HALF SIZE
INCIDENCE BLOCK PATTERN
ACTUAL SIZE
4B
SPAN 20"
3/32" sq. x 8¼"
ENTERING EDGE SECTION
2¾"
2¼"
1½"
3/32" sq. x 10"
TRAILING EDGE SECTION
PROPELLER BLADE PATTERN
ACTUAL SIZE
TOP VIEW
HALF SIZE

Biggest Value - FINEST QUALITY Butterfinger CANDY!

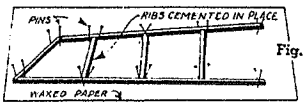


Fig. 1

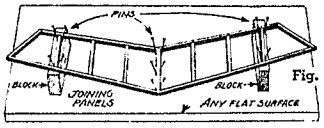


Fig. 2

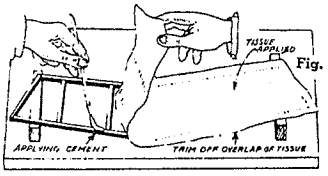


Fig. 3

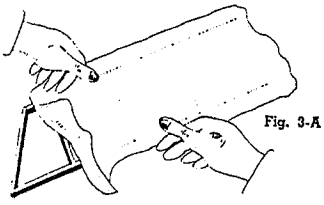


Fig. 3-A

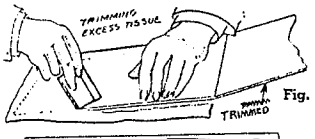


Fig. 4

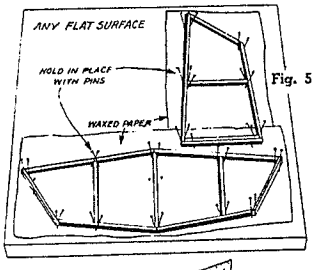


Fig. 5

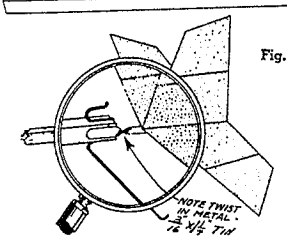


Fig. 6

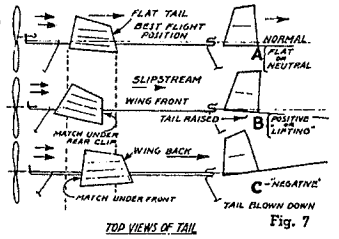
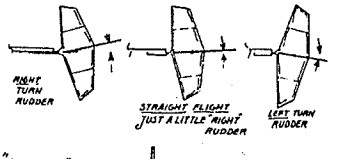


Fig. 7



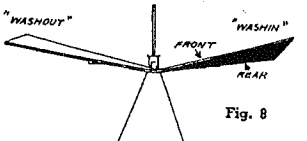


Fig. 8

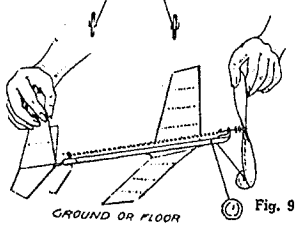
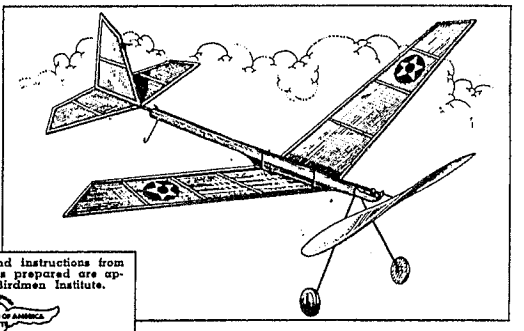


Fig. 9



The original plans and instructions from which this project was prepared are approved by Junior Birdmen Institute.

Project No. 3 STABILITY STUDY (R.O.G. Monoplane)

Project No. 3, Stability Study, is very interesting and instructive. This R.O.G. is very easily constructed. The ship is made lighter than Project No. 2 by using tissue wing and tail surfaces. The lighter construction and 20 inches wing spread make this ship a very good flier. Longer flights give an opportunity to watch the behavior of the ship with different wing and tail adjustments. Much time should be spent in flying this ship with all possible settings, until you know how to adjust this simple model to correct flying troubles. This Project 3 is ther :fore a model piloting course.

When you learn how to "pilot" this simple "training" ship, you can easily pilot other models, as the same general methods and rules apply.

Study the drawings of the finished assembled plane, the plans and instructions before beginning this project. Tissue covered wing and tail assembly and the adjustable tail are the only new ideas introduced. You should find this project very easy to construct.

Since very little new construction is introduced, try to make each part a little lighter and neater than the similar parts on Project No. 2. Accuracy in cutting and assembling the smaller parts of the built-up wing and tail will produce a neat plane true to shape. Inaccurate and careless workmanship in a model is a bad habit when it is just as easy to be accurate. Beginning with the wing the needed steps of construction are as follows:

WING—Build the wing by pinning and cementing together, according to the drawing, accurately cut balsa strips 3/32" sq., applying the method of construction illustrated in Fig. 1. Using the dimensions given, make a drawing of the wing, full size. Build the wing directly on this full size drawing. The wing beams may be sanded quarter rounded if desired. (See blueprint). Transparent wax paper over the drawing will prevent spoiling same by the parts sticking fast to it (See Fig. 1). Make two halves or "panels". When the cement is dry apply a little cement on the underside of each joint. Next block up the wing tips as shown in Fig. 2. Fit the center rib and cement in place. Allow to dry very thoroughly. Turn over and cement underside of joints.

Next apply the tissue covering to the completed wing frame. How to apply tissue is described in detail in front of book. Cut the tissue just a little larger than is needed, and apply cement sparingly to the framework, one section at a time. (See Fig. 3). Lay the tissue on the framework and stretch in place with the thumbs as shown in Fig. 3A. Trim off the excess with a sharp razor—Fig 4.

The wing incidence block is next made, according to Pattern 4B, from a piece of ¼" x ¼" balsa and cemented in place on top of the wing. (See Figs. 4, 8 and 9 in Project 2.) Make the 2 wing clips —and the other wire parts too—from No. 10 (.024") music wire, using Patterns in Project No. 2. Push the wing clips through tissue near spars and touch with cement. See that the wing clips fit the motor stick snugly without crushing the balsa. The shorter clip is the front clip and the long clip is for the rear. If the tissue is not very smooth, steam it over a teakettle spout to shrink. (See general instructions on tissue).

TAIL—The rudder and elevator are built up on wax paper over the drawing and covered in the same manner as the wing. (See Fig. 5). One-half of the elevator (also the full rudder) is shown actual size on the blueprint. Use 1/16" sq. balsa spars. The rudder may be covered both sides, if desired. Cement rudder in a vertical position on the center rib of the elevator. Twist the metal piece (see plan and Fig. 6), then cement securely to the underside of the center elevator rib.

BODY—In Project No. 2, Figs. 7 and 8, show the proper relation of the parts of the body. The landing gear is shaped as shown in the drawings. Slip the wheels in place and bend up the ends of the axle to hold them in place. Light balsa wheels may be made by cutting out and cementing together four 1" discs of 1/16" thick sheet balsa as described in Project No. 2. Washers may be cemented to each side of the wheels at the center to form a more durable bearing.

Next cement (1) the thrust bearing (such as used in Project No. 2), (2) the landing gear, (3) the combination rear rubber hook and tail skid, and (4) the tail in place, using two or three coats of thin cement to make a neat strong joint. A wrapping of thread will help secure the parts in place while the cement dries.

PROPELLER—Try to make a better propeller for this project than you did on Project No. 2. Follow propeller instructions in Project 2 for making Project 3 propeller. Review propeller chart data in front of book. Slip two washers on the shaft and slip propeller in place in front thrust bearing.

RUBBER MOTOR is a single loop of ¼" flat thread rubber tied in a square knot. (See Fig. 11, Project 2.) Hook the motor between the front shaft and rear motor hook. The model is now completely finished. Now balance the complete body unit on your finger for a trial location for the front clip and mount the wing here. The long side of the wing with the short clip faces the nose of the ship. A trial hand launched glide should be made to check the wing position. Should the wing clips become loose after many flights, a small rubber band—No. 10 or No. 12—will hold wing satisfactorily.

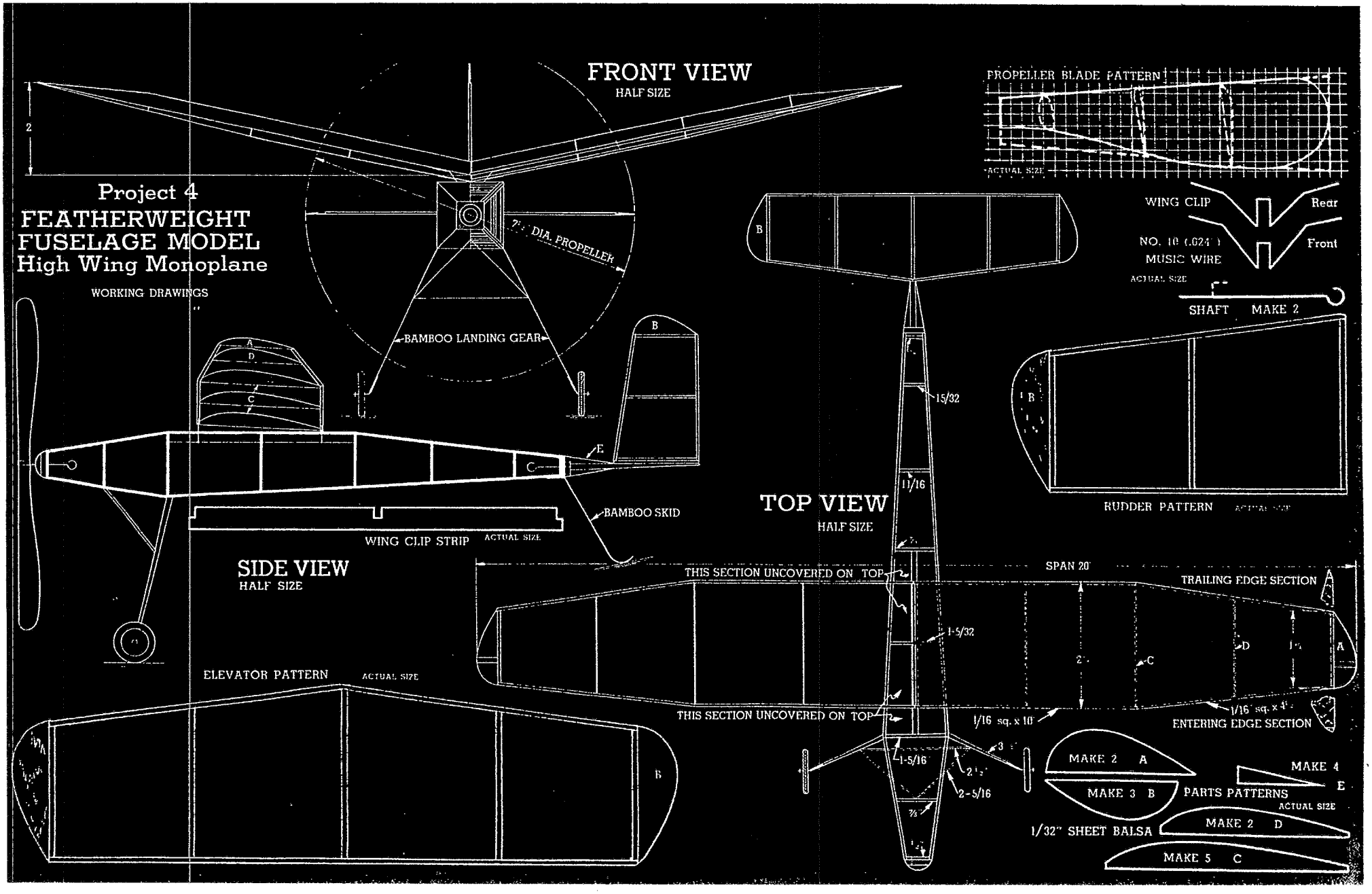
Set the tail unit by bending metal tail-boom where needed. The elevator should be normal, (See A in Fig. 7), and the rudder should be just a little to the right for a trial flight. A very small warp up of the front beam, looking at the model from the front, should be twisted into the wing to counteract the force of the rubber trying to turn the rear motor hook. (See Fig. 8.)

A trial flight should now be made, using 150 to 200 turns of the propeller. Better flights are made in an open space on a day when the wind is quiet. Next fly the model R.O.G. off a smooth level spot, carefully studying Fig. 9. You have made several glides, hand launched and R.O.G. flights with the wing and tail adjusted to "A" position. If the model climbed without stalling and glided flat at the end of the flight, you have the right settings.

Next bend the tail down as in "B", Fig 7. Move the wing foward and slip a match, twig or scrap piece of balsa under the rear wing clip, so that the wing still has a greater angle to the air than the elevator has in its new positive angle or lifting position. If this is done to a sufficient degree the model will be underelevated at the beginning and overelevated at the end of the flight. (Remember overelevation is shown by stalls and dips in flight). Why does this happen? The air behind the propeller, the slip stream, is moving faster than the model moves through the air. The elevator is entirely in this slip stream while only a small part of the wing at the center is in the slipstream. With "power on", the slipstream lifts and raises the tail more than the wing. The wing was moved forward to make up for this greater tail lift. When the slipstream becomes less, the model then flies overelevated, because the center of gravity is back of the center of pressure. *Setting the wing at a greater angle of incidence and bending the tail down somewhat corrects this usual difficulty of securing a good flight from flying scale models.*

Scale models are usually tail heavy because the rubber motor weight extends the length of the ship, while the engine weight of real planes is concentrated at the nose. This arrangement (Fig 7B), often works out for the best flights on high wing models where the thrust line is below the wing. Adding weights in the nose of a scale model also helps to improve flights. Next study "C" of Fig. 7. Bend the elevator upward and move the wing backward. Place a match or other spacer under front wing clip. This condition illustrates a common defect in models. The result in the extreme positions is a badly overelevated flight with power on, and a steep glide or nose dive with power off. The slipstream blows the tail *down* and as the slipstream becomes less the tail rises because the center of gravity is forward of the center of lift. This arrangement (Fig 7C), often works for the best flights on low wing models where the thrust line is above the wing.

As an especially valuable lesson in stability, you should next prove to yourself something of the size required on elevator and rudder for stability. First, carefully remove the rudder entirely and note the poor stability, if any, in attempts to fly the ship. Next, from left-over pieces make a 1/3 size rudder. The weak and uncertain rudder action in flight should be quite noticeable, but a fair flight can sometimes be made. A larger rudder than actually needed, however, is wasted weight and effort, and denotes poor design. Remember a little rudder placed a long distance from the wing, or C.G. (possibly on a "boom" or extension to body) is as effective as a large rudder very close to the C.G.—as on a teeter-totter balancing with a heavy person on the short end and a light person on the long end. You can try a 1/3 size elevator to demonstrate the need of "just enough" control surface for a smooth controlled flight. Do not leave this project until you understand the adjustments required to make a model fly and glide properly all in one flight, nor until your grade is well above 75. Grade your project 3 model using the grade chart at the bottom of page 2. Project No. 4, the next project (a featherweight fuselage model with high wing), is one you have been waiting for—a fuselage plane with a real body similar to large ships. Project No. 4 will be quite easy and lots of fun if you did good work and understand the building and flying of this Project No. 3.


Project 4
FEATHERWEIGHT
FUSELAGE MODEL
High Wing Monoplane
WORKING DRAWINGS
FRONT VIEW
HALF SIZE
7" DIA. PROPELLER
BAMBOO LANDING GEAR
SIDE VIEW
HALF SIZE
BAMBOO SKID
WING CLIP STRIP ACTUAL SIZE
ELEVATOR PATTERN ACTUAL SIZE
TOP VIEW
HALF SIZE
SPAN 20"
THIS SECTION UNCOVERED ON TOP
TRAILING EDGE SECTION
ENTERING EDGE SECTION
1/16 sq. x 10"
1/16 sq. x 4"
15/32
1-5/32
1-5/16
2-5/16
PROPELLER BLADE PATTERN
ACTUAL SIZE
WING CLIP
NO. 10 (.024")
MUSIC WIRE
Rear
Front
ACTUAL SIZE
SHAFT MAKE 2
RUDDER PATTERN
MAKE 2 A
MAKE 3 B
MAKE 4 E
MAKE 2 D
MAKE 5 C
PARTS PATTERNS
ACTUAL SIZE
1/32" SHEET BALSA

FOR EXTRA ENERGY EAT A Butterfinger BAR EVERY DAY

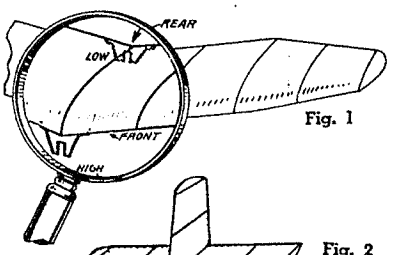
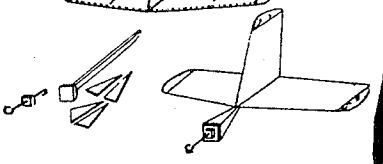
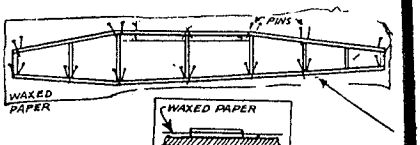


Fig. 1

Fig. 2





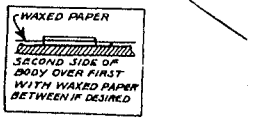


Fig. 3

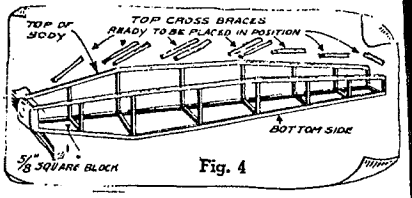


Fig. 4

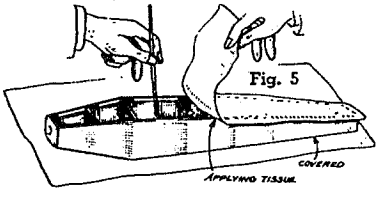


Fig. 5

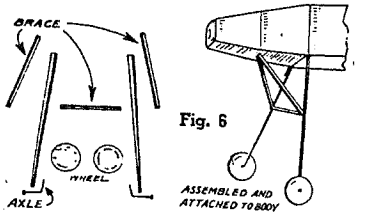


Fig. 6

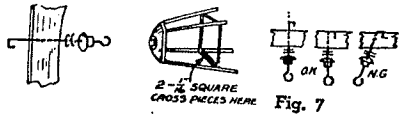


Fig. 7

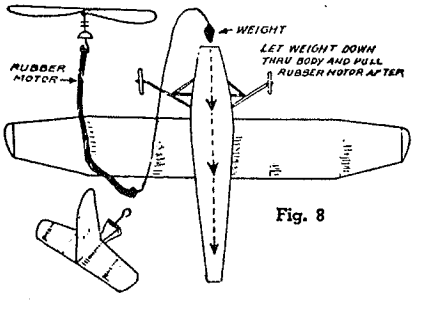


Fig. 8

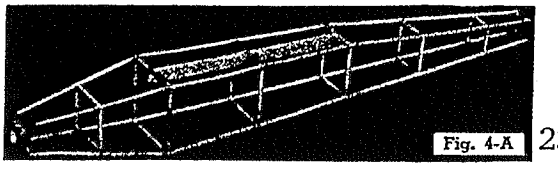
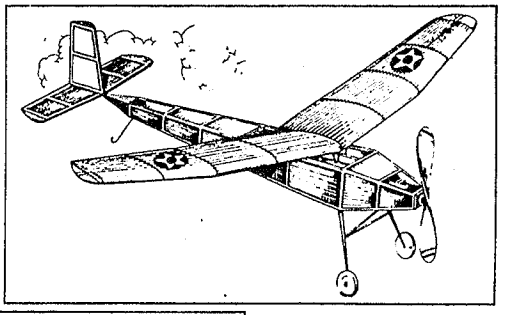


Fig. 4-A

SIDE VIEW OF BODY ACTUAL SIZE PATTERN



The original plans and instructions from which this project was prepared are approved by Junior Birdmen Institute.

Project No. 4

FEATHER-WEIGHT FUSELAGE MODEL

High Wing Monoplane

This Project moves you one step farther toward more advanced models with built-up bodies (fuselage or cabin type models). Sometimes fuselage models are incorrectly termed commercial models.

Project No. 4 has a body arranged in many ways like a large plane. For simplicity this type of model resembles no particular large plane and can be built very lightly.

This ship is an ideal size for indoor flying. If carefully handled, long flights may be made outdoors when the air is calm. In spite of its light weight this ship is sturdy and easy to build. Study the body very carefully and you will see how really simple it is, and since you have performed all other construction operations on Projects 1, 2 and 3, you should build a fine ship with this Project 4. Study all drawings and sketches and directions so that you understand them fully before starting construction.

WING—Sand smooth a 1/32" x 2" x 7" balsa sheet. Using patterns, cut ribs, wing tips, and other parts. Make the number of parts shown on each pattern. Stack the ribs together and sand the edges so that ribs are all alike. All wing spars are 1/16" square. Using the dimensions given, make a full size drawing of the wing. Assemble the wing in halves directly on this full sized drawing as you did in Project 3—making one right and one left half. Next block up the wing tips 2" as in Fig. 3, Project 3, and securely cement the beams together and cement the center rib in place. Cover wing carefully with tissue as described in Project 3. Make the wing clips and rubber hooks from No. 10 (.024") music wire. Cement the wing clips in place with the higher clip at the front.

FUSELAGE—Refer to Fig. 3. Wax paper is laid over the SIDE VIEW of the body at the left. Carefully cut and assemble the parts with cement over the full black lines. All spars are 1/16" square balsa. The use of pins will assist in holding the parts in accurate positions while applying cement. To assure both sides being identical, the second side may be assembled over the first by laying another sheet of wax paper betwen the two side units to prevent them from sticking together. When the cement is dry turn the body halves over and again cement the joints. The bottom of the fuselage is straight (except for the two front sections) to assist you in aligning the members and assembling your first fuselage true to drawing. (Note Fig. 4). The bottom cross members of the body may be cemented in place followed by the top cross pieces. The length of each of these cross members is shown on the drawing. Pins and weights are helpful in holding the body sides in a vertical position during assembly. The lengthwise body sides should be cut part of the way through at the second cross piece from the front to allow for the bend shown on the drawing. A drop of cement over each cut will give the pieces full strength again.

The nose piece is cut from ⅛" flat balsa ⅛" square. Cut a hole in the center to fit a round hardwood thrust bearing button. A thrust bearing button made from balsa wood may be substituted if desired. Double cross-pieces are cemented at the first cross-piece at the bottom and at each of the 3 cross-pieces where the wing clip strip is attached, and also at the rear (Fig. 7). Aim to keep the fuselage square at each brace section, or panel point. Notch the wing clip strip as shown in the drawing deep enough for the double cross strips, and cement in exact center under the top cross-pieces of the fuselage. Fig. 4A shows the completed fuselage at this point. Cover the fuselage all over except the two top sections where the wing clip strip is located. (See Fig. 5.)

LANDING GEAR—A bamboo landing gear is used for flexibility. Bamboo is very tough and therefore can be scraped quite thin. Refer to the section on aerodynamics and design on how to split bamboo. Remember this model weighs but very little, so the landing gear has to support very little weight. See Fig. 6 for parts of landing gear. The long legs of the gear are actually 3¼" long, as measured by geometry from the drawing. Note that the front braces meet in the center of the first bottom cross-piece. Use several coats of cement in assembling the landing gear members. 1" wheels are next slipped on pins. The pins are bent and cemented to the struts in the correct position. Thread wrapping will help to hold the axles in place while the cement dries. Light balsa wheels may be made as in Project 2 and 3. Next make the very thin bamboo tail skid and cement in place.

TAIL—Refer to Fig. 2 for the assembly of the tail parts. From ¼" flat balsa cut one piece ⅛" square. One of the rubber hooks is pushed through, bent over and cemented in place in the center of the ⅛" square balsa piece. Next make one piece ¼" flat balsa ½" square to form the tail plug when cemented together with the ⅛" square piece. To this plug cement ¼" square x 3" balsa wood spar—tapered—for the tail boom. Next cement four little triangular pieces E of 1/32" balsa shown in Fig. 2 so that their outer corners join with the corners of the larger ¼" square and their inside edges are along the ¼" square tail boom. Cover with tissue, forming a streamlined pyramid with the point toward the rear.

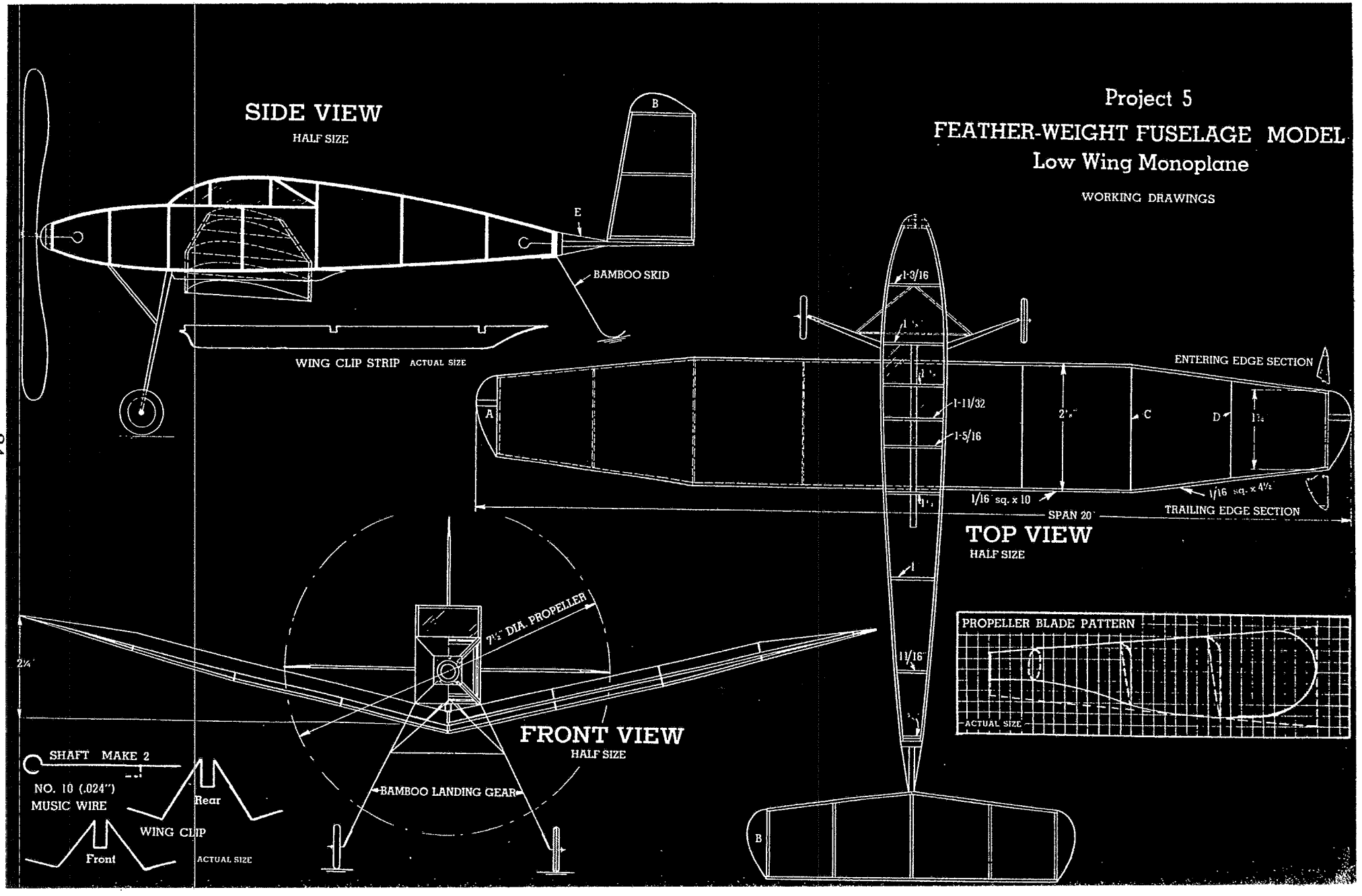
Then the rudder and elevator are built up on wax paper over the drawing and covered in the same manner as the wing. (See Fig. 5 in Project No. 3.) The rudder may be covered both sides if desired. Cement the rudder in a vertical position on the center rib of the elevator. Cement the tail boom under the center of the elevator.

PROPELLER—Try to make an even better propeller for this project than you did in Projects 2 and 3. Follow propeller instructions in Project 2 for making Project 4 propeller. Slip the round wood thrust bearing on the shaft in correct position and next slip two washers in place. Then push the shaft through the exact center of the propeller and bend over (See Fig 7). A coat of cement around the shaft on both sides of the hub anchors the shaft more firmly. Tie one loop of ¼" rubber for the motor.

Fig. 8 shows the method of threading the motor through the body. A long wire with a hook on the end will serve the same purpose. Closing the opening in the shaft and rear hook to prevent the rubber from coming unhooked easily is suggested. Check the tail assembly to see that the rudder and elevator are in line with the body. The tail should fit snugly and squarely against the rear of the fuselage. To change tail setting, cement a narrow strip of paper on the required contact faces of the plug.

FLYING—Slip the wing in position by pushing the wing clips on the wing clip strip. The entering edge should be ½" in front of the point where the complete body, tail and propeller assembly unit balances. You are now ready for a trial glide, and with any needed minor adjustments, to make some trial flights hand launched. Then you may try R.O.G. flights.

Complete and detailed instructions on balance, control and adjustments are contained in Project 3, and the general instructions. Grade your model using the grade chart on the bottom of page 2.


Project 5
FEATHER-WEIGHT FUSELAGE MODEL
Low Wing Monoplane
WORKING DRAWINGS
SIDE VIEW
HALF SIZE
B
E
C
BAMBOO SKID
WING CLIP STRIP ACTUAL SIZE
1-3/16
ENTERING EDGE SECTION
A
1-11/32
1-5/16
2"
C
D
1/16 sq. x 10
1/16 sq. x 4½
SPAN 20"
TRAILING EDGE SECTION
TOP VIEW
HALF SIZE
PROPELLER BLADE PATTERN
ACTUAL SIZE
7½" DIA. PROPELLER
2½"
11/16"
FRONT VIEW
HALF SIZE
SHAFT MAKE 2
NO. 10 (.024")
MUSIC WIRE
Rear
WING CLIP
Front
ACTUAL SIZE
BAMBOO LANDING GEAR
B

GOOD TO EAT *and* GOOD FOR YOU **Baby Ruth** CANDY

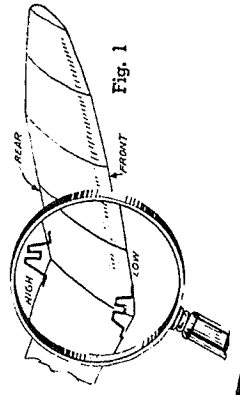


Fig. 1

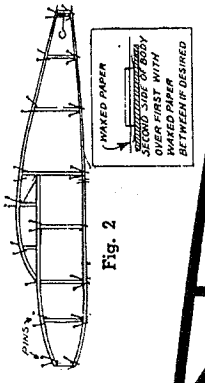


Fig. 2

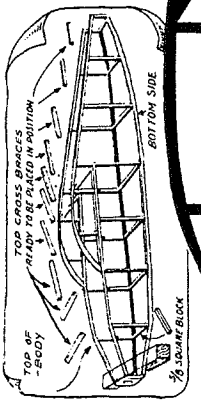


Fig. 3

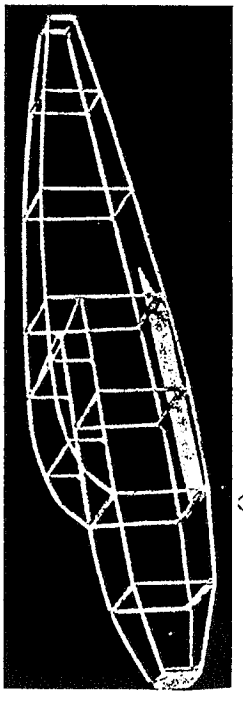


Fig. 4

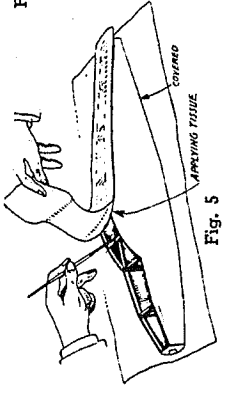
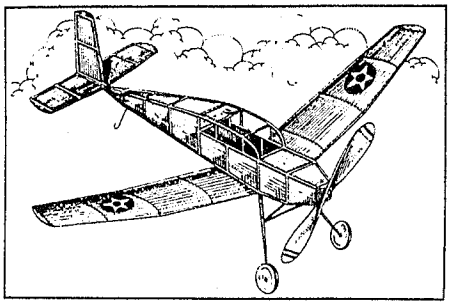


Fig. 5

SIDE VIEW OF BODY
ACTUAL SIZE PATTERN



The original plans and instructions from which this project was prepared are approved by Junior Birdmen Institute.

Project No. 5

FEATHER-WEIGHT FUSELAGE MODEL

Low Wing Cabin Monoplane

This Project is still another easy step forward toward advanced models. It is a low-wing cabin project. On Project 5 grade chart column you should try to get a greater number of points than you did on Project No. 4.

Project 5 has smoothly curved body lines, a cabin and enough cross-sectional area at largest part to make it eligible in flying contests with the English model contest area rule. This rule requires that body must have its largest cross-sectional area at least as large as $\left[\frac{\text{LENGTH}}{10}\right]$ squared. The 15 ½" length of Project No. 5 divided by 10=1.55", and this squared=2.41 which is the least square inch area allowable. No. 5 body is 2.2" high x 1.5" wide=3.3" sq. inches in area, which is a wide margin of 1.1 sq. inches over requirements.

WING—Make and cover the wing exactly like Project No. 4 wing except that the clips—made of the same size wire—are above the wing and the high clip is at the rear instead of the front—See Fig. 1.

FUSELAGE. Refer to Fig. 2. Wax paper is laid over the SIDE VIEW of the body at the left. Make two identical body sides by carefully cutting and assembling the parts with cement over the full black lines. To assure both sides being alike, the second may be assembled on top of the first using a sheet of wax paper between them to prevent sticking the halves together. All body spars and parts are 1/16" square balsa. Proceed with the fuselage just as in Project 4. Use care to keep the curves of the body smooth. (See Fig. 3). The lengths of the top and bottom cross-pieces are shown on the drawing. Cross-pieces are double at the first four cross-pieces on the bottom to stiffen landing gear and wing clip strip attachment, and also at the rear—all around. Notch the wing clip strip to fit the cross-pieces and cement in the exact center. See Fig. 4, which shows the completed uncovered fuselage. Cover the fuselage all over except the bottom two sections where the wing clip strip is located. See Fig. 5. Cellophane windows may be pasted over the two top and side cabin sections to resemble the windows of a real ship.

LANDING GEAR—Landing gear and wheels are made and assembled from instructions and data in Project 4.

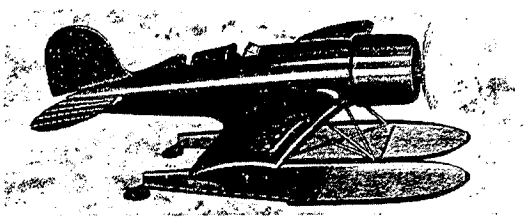
TAIL—The tail unit is just the same as the tail unit on Project 4. Use the assembly patterns and instructions in Project 4 for making the complete Project 5 tail assembly.

PROPELLER—Try to make a still better propeller for this project than you did in Projects 2, 3 and 4.

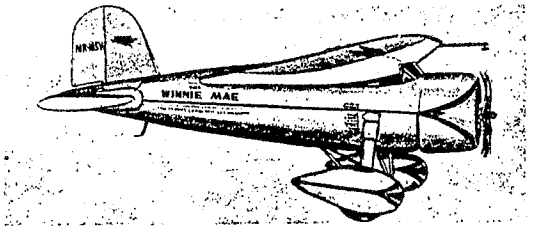
Follow propeller instructions in Project 2 for making Project 5 propeller. Attach the shaft, washers, and wooden bearing button in the same manner as described in Project 4. Tie a single loop of ⅛" rubber for the motor, and thread the motor through the body as shown on Fig. 8, Project 4.

FLYING—Slip the wing on the wing clip strip. The entering edge should be ½" in front of the point where the complete body, tail and propeller assembly unit balances. You are now ready for a trial glide, and with any needed minor adjustments, make some trial flights, hand launched. Then you may try R.O.G. flights.

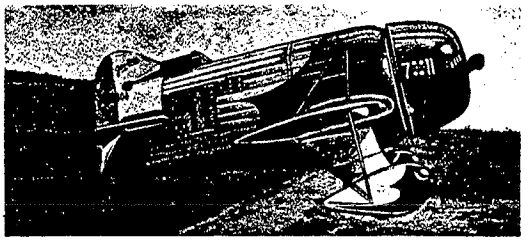
Grade your model using the grade chart on bottom of page 2.



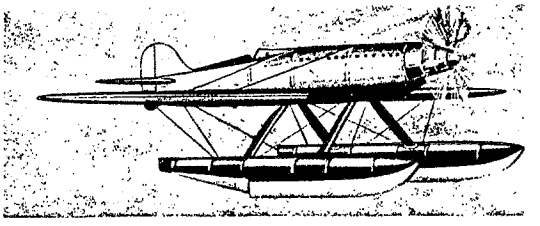
LOCKHEED SIRIUS—A fast ship with a long range gasoline carrying capacity. Used by Col. and Mrs. Lindbergh in their tour of the Orient. (A Sirius wing with a fuselage of the larger Orion formed Post's ill-fated "special" seaplane).



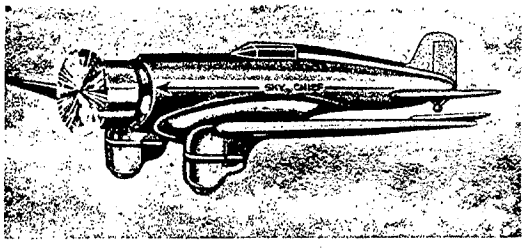
WILEY POST'S "WINNIE MAE"—The famous, record breaking Lockheed Vega plane which Post made immortal by twice circling the earth, each time in new record time. Post flew his famous "Winnie Mae" in Air Race Derbys and in his many stratosphere experimental speed dashes.



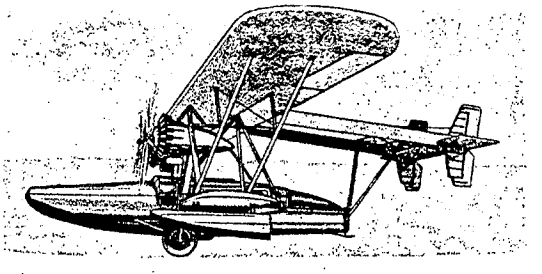
GEE BEE SUPER SPORTSTER—A tricky ship to handle but a very fast ship. Jimmy Doolittle set a world's speed record (which stood for several years), in this "flying Milk Bottle" at the 1932 Cleveland air races.



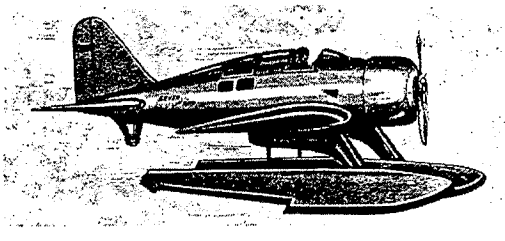
MACCHI CASTOLDI — Italian — Set the world's seaplane record of over 440 miles per hour (over 7 miles per minute). A unique twin propeller drive, using two special motors turning the propellers in opposite directions, helped to make this astonishing speed possible.



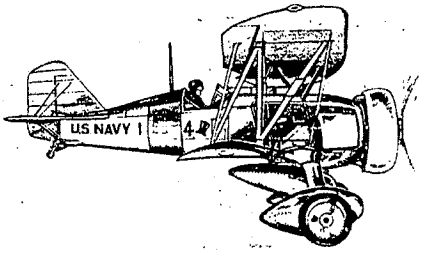
FRANK HAWK'S NORTHRUP "GAMMA"—The speedy metal ship used by Hawks in many record speed dashes. A single motored, modern streamline plane with a top speed over 200 miles per hour.



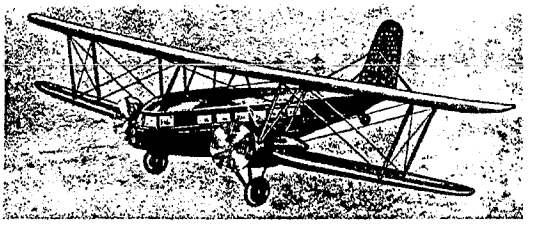
SIKORSKY AMPHIBIAN—S-38—Much more efficient than it looks. A widely used and well known "duck" type of plane, built in U.S.A. by the Russian genius, Igor Sikorsky.



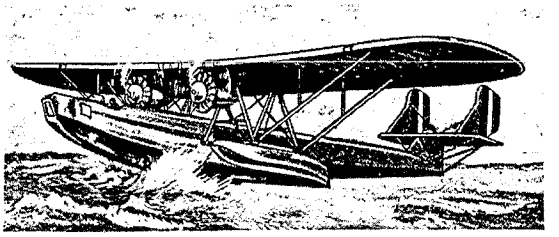
SEVERSKY AMPHIBIAN—This amphibian placed well up in the 1935 Thompson Trophy Race at Cleveland against the fastest planes in the country. A trim, speedy ship of versatile uses.



CURTISS GOSHAWK—A late Navy fighter of great speed and embodying many unusual features of construction and equipment.



CURTISS "CONDOR"—The "Pullman Sleeper" ship of the air, so large that trenches had to be dug for the wheels in order to roll the plane out of the factory! These huge airliners were used extensively in the U. S. but have mostly been transferred to South American lines.



CONSOLIDATED "ADMIRAL"—A long range Navy Flying boat of large size, with many famous long flights to its credit.

69—FAMOUS PAUL JONES KITS—69

How to Get Your Construction Kits

. . . *THE* CURTISS *WAY* . . .

THE FOLLOWING FAMOUS PAUL JONES CONSTRUCTION KITS may be had by saving Curtiss Candy wrappers. Select the model you want to build, sending wrappers and handling cost required, to Curtiss Candy Company, Department S, Chicago, Illinois. On Canadian orders, add 10c to cash required for additional postage and handling. BE SURE to print your name and address and the catalog number of the kit you want on your order.

ADDITIONAL COPIES of this book may be obtained by sending your name and address together with two 5c Baby Ruth wrappers, one 5c Butterfinger wrapper, and 15c in stamps, to cover postage and handling, to Curtiss Candy Company, Department S, Chicago Illinois. On Canadian orders, add 10c additional to cover extra postage and handling.

SPECIAL OFFER—send ten 5c Baby Ruth, six 5c Butterfinger and ten 1c Taffee Giraffe wrappers, together with 98c in cash (do not send stamps), to Curtiss Candy Company, Department S, Chicago, Illinois, and you will receive a complete supply kit containing all the necessary materials required to build the six projects in this book — actual $1.50 value. On Canadian orders add 10c additional to cover extra postage and handling.

ANY OF THE FOLLOWING FAMOUS PAUL JONES CONSTRUCTION KITS

can be secured by sending your name and address, together with 10c in coin, two 5c Baby Ruth and one 5c Butterfinger wrappers to Curtiss Candy Company, Department S, Chicago, Illinois. Order your kit by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

No. 800 SERIES — 12" WING SPREAD

12 Flying Scale Models
Biplanes and Monoplanes
True Pitch Balsa Prop.

No. 800-A, Boeing P-12-F.
No. 800-B, Curtiss Swift.
No. 800-C, Monocoupe.
No. 800-D, Page's Navy Racer.
No. 800-E, Fokker D-VIII.
No. 800-F, Boeing P-26.
No. 800-G, Vultee V-1A.
No. 800-H, Cessna C-34.
No. 800-I, Army Douglas O-43A.
No. 800-J, S.E.V.
No. 800-K, Wiley Post's "Winnie Mae."
No. 800-L, Stinson, Model "O"

List of Materials:

Machine Cut True Pitch Balsa Propeller—2 Dram Bottle of Cement—Jap Tissue—Special Driving Rubber—Wire Parts—Balsa Veneers—Thrust Bearing.
A Complete Set of Full Scale Working Drawings, Pattern Sheets and Instructions.

No. 850 SERIES — 18" WING SPREAD

3 Flying Airplane Construction Kits
18 Inch Wing Spread

No. 850-A, Curtiss Robin—Monoplane.
No. 850-B, Taylor Cub—Monoplane.
No. 850-C, Kinner Envoy—Monoplane.

List of Materials.

Balsa Block for Propeller and Pattern for Cutting—Bottle of Cement—Jap Tissue—Special Driving Rubber—Wire Parts—Balsa Veneers—Balsa Cut Spars—Thrust Bearing.
A Complete Set of Full Scale Working Drawings, Pattern Sheets and Instructions.

No. 150 SERIES — 6" SOLID SCALE KITS

30 Famous Shell Models

No. 150-A, Gee Bee Super Sportster.
No. 150-B, New Boeing High Speed Transport.
No. 150-C, Boeing Army Pursuit (P-12C).
No. 150-D, Boeing XP-936 Pursuit.
No. 150-E, Frank Hawk's Northrup "Gamma".
No. 150-F, Bennie Howard's Racer "Pete".
No. 150-G, Gen. Balbo's Savoia Marchetti.
No. 150-H, Wiley Post's "Winnie Mae".
No. 150-I, Richthofen's Albatross.
No. 150-J, Wedell-Williams.
No. 150-K, Macchi-Castoldi 6-72 (Italian Sea Plane).
No. 150-L, U. S. Coast Guard Amphibian.
No. 150-M, Stinson Tri-Motor (Model U).
No. 150-N, Curtiss "Condor" (Model T-32).
No. 150-O, Curtiss "Shrike" (Model Attack YA-8).
No. 150-P, Martin Bomber (Model XB-907).
No. 150-Q, Sikorsky Amphibian S-38.
No. 150-R, Pitcairn Autogiro (Model PC A-2).
No. 150-S, The Consolidated Admiral (U. S. Navy).
No. 150-T, Seversky Amphibian.
No. 150-U, Vought Corsair (Navy and Marine Corps).
No. 150-V, Curtiss Sparrow Hawk (Akron Fighter).
No. 150-W, Lindbergh's Lockheed-Sirius.
No. 150-X, Curtiss Goshawk Fighter.
No. 150-AA, Monocoupe.
No. 150-BB, Waco "D" Pursuit.
No. 150-CC, Polish Fighter.
No. 150-DD, Beechcraft.
No. 150-EE, Hawker "Super Fury".
No. 150-FF, Rickenbacker "S-P-A-D".

Authentic Scale Working Drawings—Balsa Veneer—Balsa Block for fuselage—Metal Propeller—Special Cement Paint Kit that will give any color desired — Strip of Colored Insignia.

ANY OF THE FOLLOWING FAMOUS PAUL JONES CONSTRUCTION KITS

can be secured by sending your name and address, together with 20c in coin, three 5c Baby Ruth and two 5c Butterfinger wrappers to Curtiss Candy Co., Department S, Chicago. Order your kit by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

No. 300 SERIES

9 Flying Scale Models — Biplanes and Monoplanes —
True Pitch Balsa Prop. Molded Balsa Fuselage.

No. 300-A, Lockheed Endurance — 18-inch wing.
No. 300-B, Lockheed Vega—15-inch wing.
No. 300-C, Lockheed Orion—15-inch wing.
No. 300-D, Boeing Army Pursuit P-12-F—15-inch wing.
No. 300-E, Wedell-Williams Racer —15-inch wing.
No. 300-F, Curtiss Sparrow Hawk—15-inch wing.
No. 300-G, Buhl "Bull Pup"—17½-inch wing.
No. 300-H, Polish Fighter—16¼-inch wing.
No. 300-I, Waco "D" Pursuit—15-inch wing.

List of Materials:

Molded Balsa Fuselage Halves (2)—True Pitch Machine Cut Balsa Prop—2 Dram Bottle Cement—Jap Tissue—Thread Rubber—Wire Parts—Thrust Bearing—Balsa Veneers.
A Complete Set of Full Scale Working Drawings and Instructions.

No. 350 SERIES

3 Flying Airplane Construction Kits
24-Inch Wing Spread

No. 350-A, Consolidated P-30 Pursuit—Monoplane.
No. 350-B, Mister Mulligan—Ben Howard Racer—Monoplane.
No. 350-C, Beechcraft—Biplane.

List of Materials:

Cut Balsa Spars—True Pitch Machine Cut Balsa Prop—2 Dram Bottle Cement—Jap Tissue — Thread Rubber — Wire Parts — Thrust Bearing — Balsa Veneers.
A Complete Set of Full Scale Working Drawings and Instructions.

No. 500 SERIES

Ready Built Flying Airplanes — Simple to Assemble
Easy to Fly

No. 500-A, FLYING BOEING—

READY to SET UP and FLY (Ready Built). Made of Selected Balsa Wood. Guaranteed to Fly Well — Simple Instructions. Wing Spread 14 inches — Length 10½ inches.

No. 500-B, PAUL JONES "EAGLE"

A SCIENTIFIC STICK PLANE (Ready to Fly). Simple to Assemble—Excellent Flyer. Made of Selected Balsa Wood. Guaranteed to Fly Well—Simple Instructions. Wing Spread 14 inches—Length 15 inches.

ANY OF THE FOLLOWING FAMOUS PAUL JONES CONSTRUCTION KITS

can be secured by sending your name and address, together with 25c in coin, four 5c Baby Ruth and three 5c Butterfinger wrappers to Curtiss Candy Co., Department S, Chicago, Illinois. Order your kit by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

No. 600 SERIES

12" Shelf or Sailing Models

No. 600-A, The "Enterprise".
No. 600-B, The "Shamrock V".
No. 600-C, The "Nina".

No. 650 SERIES

Power Boat Construction Kits

No. 651, Paul Jones Outboard Racer.
No. 652, Paul Jones Coast Guard Patrol Boat.
No. 653, Paul Jones Speed Boat.

No. 750 SERIES ..... SUPPLY KITS

No. 750A - SUPPLY KIT—Over 45 popular items including two types of bearings, assorted washers, 3 sizes music wire, supply of cement, True Pitch machine-cut balsa propeller, 4 sizes balsa sticks, assorted balsa veneers, assorted balsa blocks, 2 colors of tissue, bamboo and rubber.

Send 25c in coin together with four 5c Baby Ruth wrappers and three 5c Butterfinger wrappers to Curtiss Candy Company, Department S, Chicago, Illinois. Order your Supply Kit by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

No. 750B - SUPPLY KIT—Over 70 items including 3 types of bearings, 2 sizes of washers, 4 sizes music wire, supply of cement, 2 True Pitch machine-cut balsa propellers, 5 sizes balsa sticks, 2 sizes rudder stripe sheet, 3 colors of tissue, 2 strips bamboo, and 2 sizes thread rubber.

Send 50c in coin together with four 5c Baby Ruth wrappers and three 5c Butterfinger wrappers to Curtiss Candy Company, Department S, Chicago, Illinois. Order your Supply Kit by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

No. 750C - SUPPLY KIT — Over 115 popular items needed by every model builder. Includes 4 assorted propeller bearings, big supply assorted washers, 5 best sizes music wire, big supply of cement, 5 assorted sizes True Pitch machine-cut propellers, bundle of 4 sizes balsa sticks and spars, 4 sheets assorted balsa veneer, 3 different sizes balsa blocks, pair of model wheels.

Send $1.00 in coin together with four 5c Baby Ruth wrappers and three 5c Butterfinger wrappers to Curtiss Candy Company, Department S, Chicago, Illinois. Order by catalog number. On Canadian orders add 10c additional to cover extra postage and handling.

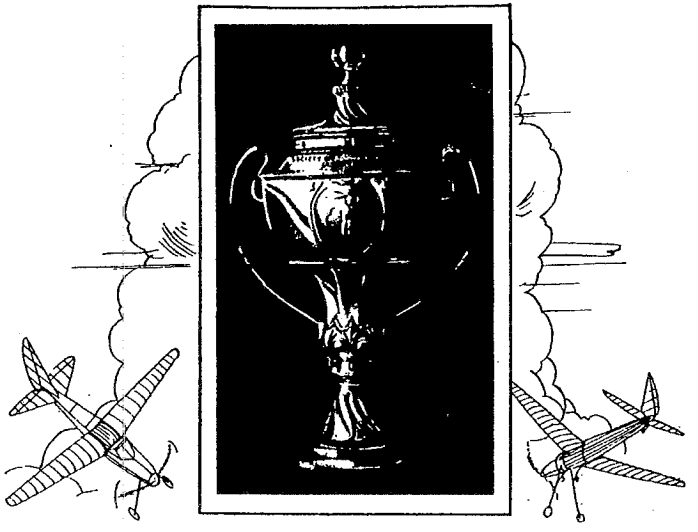
CURTISS CANDY CO., OTTO SCHNERING, *President* **CHICAGO**

MODEL AVIATION

Volume I Number 1 June 1936

PUBLISHED MONTHLY BY

THE AMERICAN ACADEMY FOR MODEL AERONAUTICS



The Wakefield International Trophy

PRESENTED BY SIR CHARLES WAKEFIELD IN 1927

INTRODUCTION

This first issue of MODEL AVIATION, besides introducing itself, is intended to call attention to the new American Academy for Model Aeronautics. This organization will take definite form during the National Championship Model Airplane Meet in Detroit. Officers will be elected and committees are to be named. We believe that a new day for model aeronautics has arrived.

MODEL AVIATION takes pride in its connection with this worthy movement. We hope that in the months to come this publication will be able to fulfill adequately its obligation as the official journal of the Academy.

The science and art of model aeronautics deserves most careful and serious consideration. It will be the endeavor of MODEL AVIATION to cover all phases of the field, including organization, representation, scientific research, international cooperation, contest activities, technical development, and general news.

Organization which will give the model flyers representation is necessary. We believe in the principle "of, by and for the members". We are confident that the Academy will accomplish that.

Scientific research is imperative for model aviation to progress. The individual expert has done much research work in the past which has never found its way into print. It is the intention of this publication to coordinate and publish individual research reports by Academy members.

International cooperation is especially necessary now that the F.A.I. has recognized model aircraft records. This publication will gather from all available sources and publish noteworthy foreign developments and improvements.

Contest activities will be covered by publication of a calendar of all N.A.A. sanctioned contests and the results of these. Also the official N.A.A. and F.A.I. lists of records will be published.

Technical development of model aircraft is fairly constant but has been hampered by a lack of able direction and suitable facilities. One of the projects of the Academy is a slow speed wind tunnel. MODEL AVIATION will publish results of the Academy's experiments.

General news from all parts of this country and foreign lands will be gathered from member correspondents. This will give our readers more general model aviation news than could be covered in any other way.

Naturally it is going to cost something to publish this material and the cost will have to be borne by the readers. Just how much this will be depends on many factors. This issue is being mailed to a selected list as a means of introduction. The next issue will go into the matter of subscription rates.

Frank Zaic

THE AMERICAN ACADEMY FOR MODEL AERONAUTICS

STATEMENT OF PURPOSE

A number of the country's outstanding model aircraft enthusiasts are forming a regular N.A.A. chapter. This group will consist of sincere builders and flyers, club directors, sponsors and patrons of the sport. The chapter group will act as a Council to direct and supervise the contest and research activities of the many expert model flyers. The entire organization will be known as The American Academy for Model Aeronautics. The Academy will be a strictly non profit enterprise.

Organization meetings will be held by the Council in Detroit during the 1936 National Championship Model Airplane Meet. A complete policy will be formulated during these meetings. An announcement of the results of these sessions will be featured in next month's issue of this publication.

The expert builders' group is at present without definite national status. It is expected that this expert group in the Academy will number approximately two thousand within the first year and may eventually reach a maximum, after a few years, of as many as ten thousand members. It is anticipated that membership will be based on demonstrated performance ability. Just what these requirements are will be decided during the Detroit meetings.

Thus the experts will have their own organization set up according to recognized need and free from any commercial connections. The organization would be self sustaining and self governing. It will have its own monthly publication of articles and news items contributed by members, published under the supervision of the Council. It would not act in conflict with any present organization or publication but would rather serve as a means for obtaining information that is not available now.

By requiring that all members of the Council be regular N.A.A. members, that Association would always be assured of close cooperation by the Academy. It is a recognized fact that all contest activities should be under N.A.A. sanction. Now that the Federation Aeronautique Internationale has recognized model records this sanction requirement offers added importance. The Secretary of the N.A.A. Contest Board would be an ex-officio member of the Academy Council.

Much of the foundation work has already been completed. Interested model plane leaders discussed the plan during the 1935 National Meet in St. Louis and have since agreed to carry out the organization. Nothing is being done hastily and no definite policies will be adopted except by deliberation at the Academy organization meetings. There is enthusiastic interest and support of a large number of leaders, insuring a successful launching of the plan.

The Council is not limited as to age. The chief requirement for membership on the Council is a clearly demonstrated interest in and past service to this fine scientific hobby. Various committees will be named within the Council to make definite recommendations. All who have heard of the plan express the belief that it is the very thing which the model game has long needed.

In many respects the Academy will be quite similar to the Soaring Society which is the directing organization for gliding and soaring in America. We all recognize the fine work that has been done by this group and there is a great deal of inspiration in their example for us in the model plane field.

Among the leaders who have already signified their desire to become members of the Academy Council are Captain Willis C. Brown, Mr. Ernest A. Walen, Torrey Capo, Mr. Victor Fritz, Bruno Marchi, Mr. C. E. Carmichael, Mr. Jesse Bieberman, Hewitt Phillips, Frank Zaic, Lawrence Smithline, Lieut. H. W. Alden, Mr. Percy Pierce, Mr. H. M. Jellison, John Young, Gordon Light, Carl Goldberg, Mr. Bertram Pond, Mr. H. T. Sommers, and Bill Enyart.

1936 NATIONAL MEET IN DETROIT

The 1936 National Championship Model Airplane Meet is to be held in Detroit during three days of flying, June 30 to July 2. There will be two days of outdoor flying and one dayeof indoor flying. June 29 will be turned over to registration of entrants and sightseeing. After the Meet is finished, one day, July 3 will be devoted to inspection of some of Detroit's industrial and aviation activities. A very comprehensive program of events has been arranged.

The Aviation Department of the Detroit Times will sponsor the Meet. Many of Detroit's civic organizations and commercial organizations are assisting in making this one of the best National Meets ever held. The chief load of directing the meet will be carried by Mr. H. S. Walesby, Aviation Editor of the sponsoring newspaper.

Advance indications point to an attendance of more than four hundred contestants from coast to coast and from border to border. Foreign countries are to be liberally represented. Great Britain is to have a team of six entrants in person. Canada will be represented by approximately forty. Entries have been promised from Australia and new Zealand. France, Germany, Italy and possibly a number of other countries expect to compete.

The regular events are on the program: outdoor stick models, cabin fuselage models, rubber powered and gasoline engined models. A new contest has been arranged, one for radio controlled models. There will be the regular indoor contests for rubber powered stick models and cabin fuselage models. The customary trophies are up for contest. These include the Mulvihill, Texaco, Bloomingdale, two Stout trophies, Balfour, Springfield, Moffett, Model Airplane News Trophy. The Lord Wakefield Trophy, having been brought back to this country last year by Gordon Light, is on the schedule. The Detroit Times is offering a new trophy to stimulate competition.

The sponsors have provided an excellent entertainment program. There will be swimming, baseball, movies, river boat ride, amusement park, lunches and the traditional banquet. Workshops will be provided for those contestants who have repairs to make and finishing touches to apply to their models. Transportation to the flying field has been provided. There simply isn't anything left out of the picture that has a proper place in it.

Meet headquarters will be the handsome Book-Cadillac Hotel. Special rates of $1.50 per day for each contestant and official are being offered. The registration desks will be in the hotel. As far as possible, all contestants will be housed close to each other. Many old friendships and acquaintances will be renewed. There will be an air of hospitality about the Book-Cadillac that will long be remembered.

The outdoor contests will be held on Wayne County Airport. This large and well equipped field is one of the best in the country for staging a successful model plane meet. It is far from the river and lake and is surrounded by excellent roads to make pursuit of far flying models easy. Plenty of uniformed U.S. Air Service cadets and officers are to serve as timers and officials. There are to be airplanes for following distant travelling models.

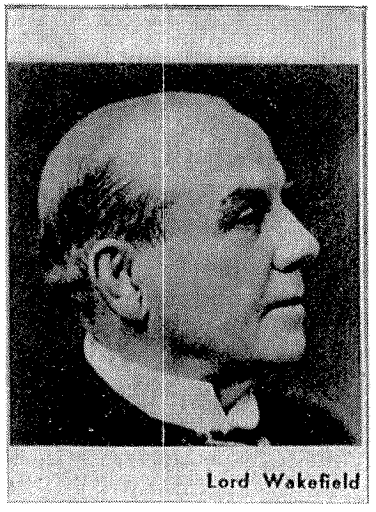
Olympia Auditorium is to have the indoor events. This spacious building has a ceiling height of one hundred feet. It has been the scene of many of the large model plane events and is the best building for this purpose in that part of the country.

General Chairman of meet arrangements is Lieutenant Colonel Ralph Royce, Commanding Officer of Selfridge Field. The field managers for the meet will be Lieutenant Charles F. Greber, U.S.Navy, Commanding Officer of Grosse Isle Naval Air Base, and Mr. H. H. Strickland, Vice-President of National Air Service. As has been customary, the N.A.A. will be represented by H. W. Alden.

Complete information and entry blanks may be obtained by application to Mr. H. S. Walesby, Aviation Editor, Detroit Times. Be sure to enclose an addressed and stamped envelope with yourrequest. Better use a large envelope, too, as the folder is a big one. And don't wait until too late. Entries close on Saturday, June 27.

It doesn't matter what your specialty is, there is an event on the National Meet program that will give you a chance to fly the sort of model that is your preference. The contest rules are wonderfully open and without restriction. An opportunity is offered to all ages of contestants as well. Get your models into flying shape and shape your course toward Detroit so as to arrive there June 29.

A MESSAGE FROM THE VISCOUNT WAKEFIELD



Lord Wakefield

Wakefield House,
Cheapside,
London,E.C.2

On the occasion of the forthcoming eliminating trials for the selection of the British Team to compete in the United States for the "Wakefield Trophy" I appreciate the Editor's kind invitation to send a personal message of good wishes.

Believing as I do that the Model Aeronautical Movement in this country is of great value in the development of British Aviation, I naturally hope that the British Team will crown itself with glory in America and return with the Trophy which bears my name. The members of the British Team may be assured of a generous welcome from our friends on the other side and of an enjoyable and keenly contested meeting. I gladly send my warmest wishes for their triumphant success.

Wakefield
of Hythe



SOME GLIMPSES OF THE WAKEFIELD TRIALS - Top left, Mr. Allman assisted by Mrs. Allman using a motor stick; top right, Alwyn Greenhalgh who placed second; middle right, S.R. Crow "conducting" a take-off; and bottom, L.S. Wigdor "putting the fluence" on his model.

Photos from THE AERO MODELLER

THE WAKEFIELD INTERNATIONAL TROPHY

The Wakefield Trophy was presented by Sir Charles Wakefield in 1927 to the Society of Model Aeronautical Engineers, the official body governing Model Aeronautics in Great Britain. The trophy is pictured on the front cover of this issue of MODEL AVIATION.

The Wakefield Contest is held annually in the country which holds the trophy and is one of the most important international model plane contests. Each country may enter a team of six. Each model is allowed three flights and is timed by observers who, under S.M.A.E. rules, do not follow the model. Prior to 1934 the best flight of the three permitted was taken as the flight time but during that year and subsequently, the average duration of the three flights has been taken.

In the 1935 Contest which was held in England, an American model won. The builder is Gordon S. Light of New York University. Thus the 1936 Contest is to be held in the United States as one of the events on the program of the National Championship Meet. The date set for the Contest is July 1. American and Canadian teams are to be selected by eliminating trials the day before. There will be only five Americans selected as the present Trophy holder is automatically a member.

A British team of six with a manager and two officers of the S.M.A.E. has been selected. This party of nine has booked passage on the Aquitania which is arriving in New York on June 26. The National Aeronautic Association and the New York Chapter of the English Speaking Union have arranged a program for the entertainment of our British visitors during their two day stay in New York, enroute to the Nationals in Detroit.

The British Trials were held on Fairey's Aerodrome near London, May 17th. The day was one of perfect weather, 123 entrants and excellent flying. The six winners who constitute the British team are:

1st	J. B. Allman	Midland Flying Club	age 33	4m 28.3s	average
2nd	A. Greenhalgh	Lancashire " "	11	3m 40.5s	"
3rd	D. Fairlie	Wembley " "	18	3m 35.0s	"
4th	H. A. Jones	North Kent " "	13	2m 46.9s	"
5th	A. A. Judge	T. M. A. C.	19	2m 36.8s	"
6th	R. Copland	Northern Heights "	18	2m 23.6s	"

Mr. B. K. Johnson, Chairman of the S.M.A.E., has been appointed as manager of the team. Mr. Harry York is making the trip as press representative and Mr. J. C. Smith, S.M.A.E. Competition Secretary is the ninth member of the party. They plan to sail from New York back to England on July 5th.

The S.M.A.E. undertook to establish a fund to cover the cost of sending a team to this country. Lord Wakefield headed the subscription list with a very generous donation of two hundred pounds. Mr. C. E. Fairey followed with twenty pounds and thus the fund was given a healthy start. Member clubs and individuals have helped until the fund reached proportions large enough to insure the team's trip.

The British team is bringing six models belonging to fellow members for entry in the Moffett Contest. They have been invited to enter any of the contests on the program. It is understood that some of the party have been successful in gasoline powered model flying and there is a possibility that they may enter the Texaco Contest.

The eliminating trials for the Moffett Contest were held at the same time as the trials for the Wakefield. The six S.M.A.E. members who are sending their models over for the Moffett Contest are:

1st	H. Simmonds	3m 19.7s best flight	These six will send models	
2nd	A. Worley	1m 57.0s " "	to be flown by proxy by the	
3rd	W. Worden	1m 46.0s " "	British team of entrants who	
4th	A. Gibson	1m 45.5s " "	are coming to the United	
5th	G. Merrifield	1m 44.0s " "	States. In this way there	
6th	H. Francis	1m 42.4s " "	will be twelve British entries	

Quoting a letter from England, "I can assure you we are coming over full of enthusiasm and with the purpose of winning the Wakefield Cup back and bringing back the Moffett Trophy too, if we possibly can!! (Please excuse my optimism!:)." There is no doubt about the serious intent of our British friends so it will behoove the American and other teams to look out.

Other foreign entries are expected from New Zealand, Australia, Germany, France, Italy, and possibly others. A general invitation was extended to most all foreign countries by the National Aeronautic Association.

(Wakefield Trophy photo from THE MODEL AEROPLANE CONSTRUCTOR)

MODEL AVIATION

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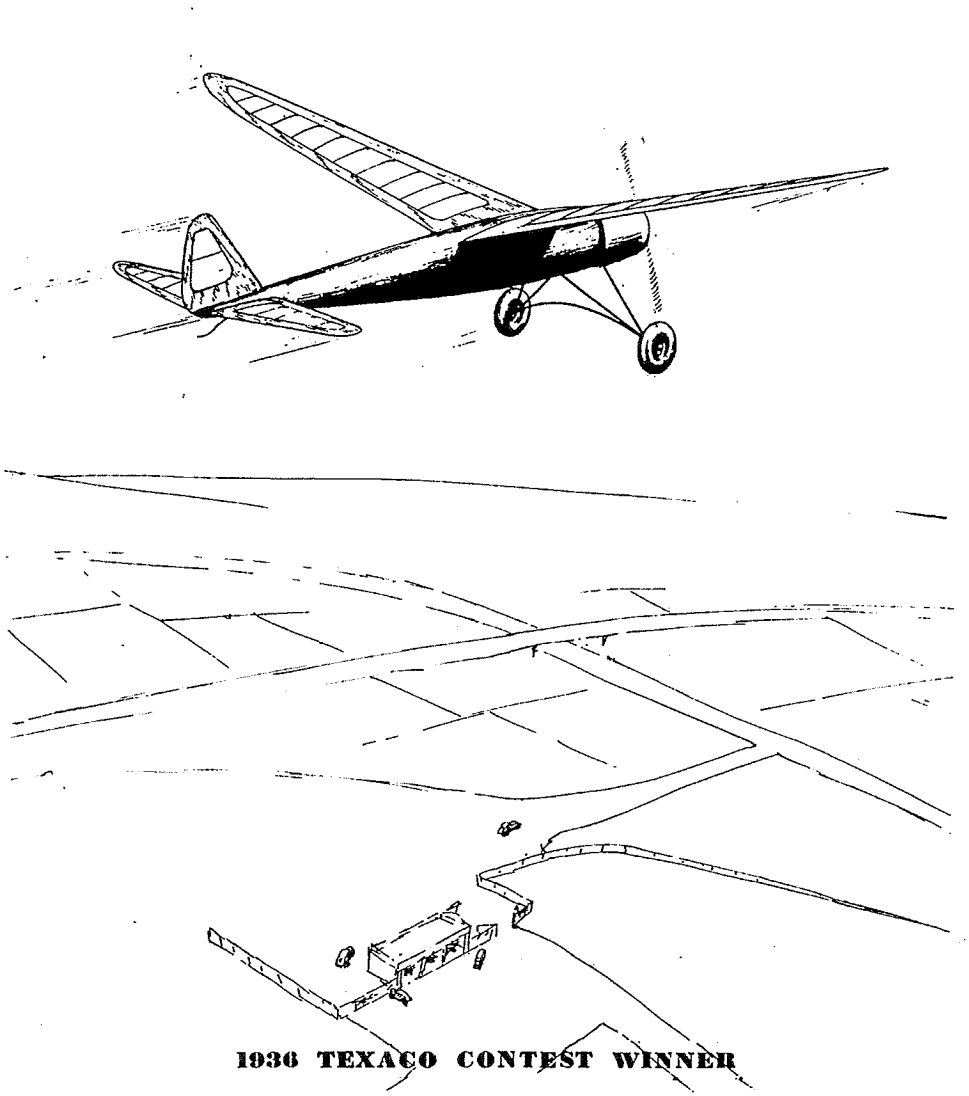

1936 TEXACO CONTEST WINNER

1936 National Meet

Well, the Nationals are over for another year, and as usual we are left with enough impressions and memories to last us for the next twelve months.

The gasoline-powered event stole the meet so far as public interest was concerned....There were almost two hundred jobs present--ranging from 3ft. to 15ft. in span....Planes of special interest at this show were the 200-300 sq. in. ships entered by Bill Atwood and Ira Hassad (using special small motors), also by Effinger and Ehling (both using Brown motors)....Boehle's Cyclone-powered 15 foot job is indicative of the fellow's enterprise and ability....Despite the head-shakings of the "experts" this ship hopped off from the grass as well as from the concrete runway--something the majority of the gas buggies couldn't do.... With a little structural cleaning-up to increase the flying speed this crate would probably go places on thermals....Hewitt Phillips' retractable landing-gear ship had onlookers holding their breaths for a long moment....As it took off the gear folded into place in the wings all right, but the right tip tried to do some grass cutting while the left tip tried to hook the fender of a near-by car.... The crate eventually won clear and went up for second-place time .

The general trend in gas-model design at present seems to be toward good-looking ships of highly-streamlined form....Monocoque construction is much in favor--especially on fuselages....The more ambitious builders carry this construction over to the wing and tail surfaces (paging Weiss and Schmaedig and the others whose names we didn't get)....Frank Tlush's winning gas job had the cleanest fuselage we've ever seen....Next year we hope to see those radio-controlled ships that failed to show up this year....Just watch the public enthusiasm then!...It should just about match our own.

Highlight of the outdoor, rubber-powered events was the unexpectedly keen competition offered by the visiting British entrants....The Britons not only lifted the Wakefield Trophy--their chief aim--but also placed quite high in the other outdoor fuselage contests....Typical of the British ships were high aspect ratio wings and extra long prop runs....This latter characteristic was achieved in the majority of cases by using a motor about twice the length of the fuselage....When the motor ran out the slack rubber was prevented from slopping around inside the fuselage by means of a simple yet ingenious little device called a "rubber tensioner" (description given elsewhere in Model Aviation).... The British fellows thus didn't have to worry about a changing C.G. caused by moving rubber....After the prop went dead their ships were properly trimmed for good gliding and soaring flight as the results of the contest plainly show.... Allman of the British Wakefield Team had what might be termed a really scientific ship....He obtained a long motor run by using a geared-up prop having variable pitch blades....The result of this combination was the equivalent of constant torque or constant thrust....Allman was unfortunate in having the consistent performance of his excellent ship outshone by the thermal flights of the other jobs.

The only other variation from the usual that we saw outdoors was Bob Cahill's folding prop....Larry Smithline was testing one of the same before the Nationals --seems worth developing....Ken Ernst flew a 300 sq. in., twin-ruddered single tractor that did quite well for itself despite (or was it because of?) its extremes in size and design....The French entrant, Andre Vincre, used a hardwood prop and silk covering on his model....Vincre was only moderately successful in the meet but showed himself to be a fellow who has what it takes; he came here alone without being able to speak a word of English....Such is the power of the model game!

The Tulsa, Indianapolis, and Cleveland gangs are still holding their respective ends up--both indoors and outdoors....The Tulsa boys were the outstanding winners in this last national meet....Carl Goldberg and Frank Nekimken brought a promising group in from Chicago.

Not only did the Wakefield Trophy leave the country this year--the Moffett Memorial Trophy also went for a ride on the wings of Vernon Gray's (New Zealand) crate....Bert Pond became the jokingly badgered "villain" of the meet by proxy flying Gray's ship to first place in this event....The poor fellow must be feeling quite low--been signing recent correspondence as "Snake in the Grass" Pond.

Despite hanging lights, a wrestling ring, and a multitude of ships, the indoor enthusiasts did not do too badly for themselves....Might even say that the winning jobs did quite remarkable time considering the obstacles they had to overcome....Seems that the Akron Dock has spoiled all of us indoor builders....When we first entered the Olympia all the lights were down and we felt like crying on each other's shoulder....However we recovered quickly and took solace in the thought that we were all flying under one roof--and the same handicaps....Variations from the usual indoor design were the use of extra large tail surfaces and wings constructed with superfine trailing edges (rear spar located at about 60% of the chord from the leading edge).

When the fellows found that they couldn't break many of the existing records, instead of telling about the good flights they were getting they began to compare the various heights at which their crates "hung up"....We can still hear Bob Cahill say with fine scorn in his voice as he pointed out his pet wreck of the day to us, "No, not that one, the one higher up the wire."....Carl Goldberg seems to be making a habit of winning that open class tractor event--must be quite a strain having to make that winning time every year....The British boys were quite flabbergasted by the indoor flying in general and the microfilm jobs in particular....They went home with the avowed purpose of starting an indoor craze in Britain.

Since it is more than likely that an American Wakefield Cup Team will sail for Britain next year, it might be advisable if we started right now preparing for the eliminations....Hint to the wise--so that lucky thermal flights will be cut to a minimum next year's 200 sq. in. Wakefield entries will have to meet an 8oz. weight ruling.

Conspicuous by their absence this year were, among others, Maxwell Bassett and Joe Kovel. Bassett was unable to attend due to a last minute accident and Kovel was not able to take time away from his job at the Sikorsky factory. Thus, the gasoline powered models missed two of their strongest proponents.

Most everybody commented about the fine assortment of literature on aviation matters which was presented to the contestants when they registered. The Detroit management is to be complimented on their choice of this material and the efforts put forth in procuring it. Each envelope of this literature weighed nearly two pounds. There were magazines, catalogs, air maps and other items of value.

Three new records finally came out of the meet. Chester Lanzo made a new Class D open age record for R.O.G. Fuselage models when he won the event with the great time of 48 min. 45 sec. The day before, Roy Wriston made 41min. 10 sec. during the Wakefield trials, also a new record until it was bettered by Lanzo. Michael Kostich did 36 min. 52.2 to set a new gasoline powered record in the open class. Gordon Johnstone made a new Class B open record for indoor stick models when he did 16 min. 23 seconds. Earlier in the day Willis Brown had done 16 min. 06 sec. which was better than the existing record.

That Lord Wakefield was delighted over the success of the British team is shown by the radio gram which he sent to Mr. B.K. Johnson, the team manager: "WARMEST CONGRATULATIONS TO THE BRITISH TEAM UPON THEIR SUCCESS IN WINNING BACK THE WAKEFIELD CUP I AM DELIGHTED AT THEIR GREAT SUCCESS. WAKEFIELD OF HYTHE" It was in large part due to Lord Wakefield's generosity that the British team was able to make their trip.

A host of individuals and organizations helped in countless ways to put the meet over successfully. Among these are: American Airlines, Central Airlines, United Air Lines, Pennsylvania Airlines, A.C. Spark Plug Co., Berry Brothers, MODEL AIRPLANE NEWS, THE MODEL CRAFTSMAN, MODEL AIRCRAFT BUILDER, Pan-American Airways, Whitfield Paper Works, The Texas Co., Skelly Oil Co., Country Club Model Airplane Supply Co., Paul Guillow, General Motors, Ford Motor Co., Wayne County Airport, The Detroit Olympia, Comet Model Airplane Co., Megow Model Shop, Dallaire's Model Shop, and others. Especially helpful in conducting the meet were: Mr. H. M. Jellison, Mrs. Jellison, Mrs. Ruth Harrington, Col. Ralph Royce, Lieut. Charles F. Greber, Mr. H.H. Strickland, Miss Eleanor Prosser, "Bill" Stout, Col. J.G. Davis, Bill Balough, R. K. Allen, Irwin and Nat Polk, Charles H. Grant, Mr. and Mrs. Harold Stofer, Mr. Arthur Boehle, Bert Pond, D. K. Penny, Harry C. Copeland, Phil Zecchitella, H. L. Snyder, Edward S. Booth, Howard E. Reddick, T. R. Dudley, Ernest A. Walen, Irving Hoyser, G. L. Lawrence, Mrs. Lawrence, Bob Sommers, Bancroft Hall, Al Lewis, A. F. Shaver, G. J. MacKinnon, C. W. Clifford, Ira Fralick, Sr., John Rosich, and others.



ANDRE VINCRE, of Paris, France, although unable to speak any English, came to the National Championship Meet and won many friends in this country by his contagious smile and gracious manner. He placed in Wakefield and Moffett Contests sufficiently high enough to demonstrate that he is a keen contestant who knows model planes. We hope that Andre Vincre will come again to one of our meets and that some of us may see him also at next year's Wakefield Contest in England.

Official Results

1936 National Championship Model Airplane Meet
Detroit, Michigan. June 30 - July 2.

EXHIBITION SCALE MODEL CONTEST for MODEL AIRPLANE NEWS TROPHY

1.	LOUIS CASALE, 23, Syracuse, N.Y. Awarded MODEL AIRPLANE NEWS TROPHY and MINIATURE SUBSCRIPTION to MODEL AIRPLANE NEWS " " THE MODEL CRAFTSMAN	WACO TAPERWING	98 score.
2.	BRONIK SOROKA, 20, Cleveland, Ohio. Awarded DETROIT TIMES TROPHY	CURTISS F11C-2	97.9
3.	Harry Walker, 22, Cleveland, Ohio.	BOEING P-12 NAVY	96
4.	Carroll P. Krupp, 18, Akron, Ohio.	FAIRCHILD 24	95.8
5.	Fred A. Mayfield, Jr., 18, Akron, Ohio.	BOEING F 4B-4 NAVY	95.4
6.	Kenneth E. Bonesteel, 17, Cuyahoga Falls, O.	CURTISS XF11C-2 NAVY	94
7.	Kenneth Diget, 23, Battle Creek, Michigan.	AERONCA "LB"	93.8
8.	Donald Dodd, 16, St. Louis, Missouri.	SIKORSKY S-42	93.6
9.	Stanley Stanick, 17, Salamanca, N.Y.	FLEET TRAINER F-10	92
10.	Earl E. Brinning, 20, Detroit, Michigan.	STINSON RELIANT	91
11.	Julius Takacs, 21, Cleveland, Ohio.	COMPER SWIFT	89
12.	Fred A. Mayfield, Jr., 18, Akron, Ohio.	"MR. MULLIGAN"	88.9

BERRYLOID CONTEST for BEST FINISH on SCALE MODELS for BERRYLOID TROPHY

1.	LOUIS CASALE, Syracuse, N.Y. Awarded BERRYLOID TROPHY	STINSON RELIANT
2.	BRONIK SOROKA, Cleveland, Ohio. Awarded Gold Medal	CURTISS F11C-2

ELIMINATION TRIALS for U.S.A. WAKEFIELD TEAM - No age limit.

These trials had 126 contestants. First six make the team.

1.	Gordon S. Light, Lebanon, Penna.	Qualified as 1935 winner & Trophy holder.						
2.	Roy Wriston, Tulsa, Oklahoma.	2 17	1 16	41 10 **	Average	-	14	54.3
3.	Dick Everett, Elm Grove, W.Va.	3 30	3 19.1	7 38	"		4	49
4.	William Atwood, Glendale, Calif.	1 46.2	5 35.8	2 55.4	"		3	25.8
5.	John Ginnetti, Atlantic City, N.J.	2 06	4 30	1 42.2	"		2	46.1
6.	Charles L. Tracy, Bellevue, Ohio.	2 53.1	1 59.6	2 56.2	"		2	36.3
7.	James Cahill, Indianapolis, Ind.	2 42	2 24	2 29.9	"		2	32
8.	Bruce Luckett, Jr., Tulsa, Okla.	1 55	5 25	------	"		2	26.6
9.	Bob Jeffery, Findlay, Ohio.	3 20	2 05	1 55	"		2	26.6
10.	Vernon Boehle, Indianapolis, Ind.	1 40.2	2 56.5	2 30	"		2	22.2

**The above time of 41 : 10 is a new Class D Open record.

ELIMINATION TRIALS for CANADIAN WAKEFIELD TEAM - No age limit.

These trials had 19 entries. First six make the team.

1.	Thomas G. Harris, Toronto, Ontario.	55	1 40	2 26	Average		1	40.3
2.	Fred Hollingsworth, Vancouver, B.C.	48	1 59.1	1 50.1	"		1	32.4
3.	Melvin Bardsley, St.Catherines, Ont.	1 20	11	2 50	"		1	27
4.	Henry Verdier, Ottawa, Ontario.	1 37	1 12.2	1 28	"		1	25.7
5.	Raymond T. Smith, Toronto, Ont.	1 30.5	1 10	1 12	"		1	17.5
6.	Paul Verdier, Ottawa, Ontario.	1 05.4	1 03.2	1 23.4	"		1	10.7
7.	John Lemick, Toronto, Ontario.	1 36	1 28	-----	"		1	01.3

ELIMINATION TRIALS for U.S.A. MOFFETT TEAM - No age limit.

These trials had 169 contestants. First six make the team.

1.	Vernon Boehle, Indianapolis, Ind.	Qualified as 1935 winner & Trophy holder.						
2.	Donald Kraus, Erie, Penna.	Best flight of three attempts -					16	32
3.	Jesse L. Vint, Tulsa, Oklahoma.	"	"	"	"	"	10	59
4.	Bob Jeffery, Findlay, Ohio.	"	"	"	"	"	7	20
5.	Bruce Luckett, Tulsa, Oklahoma.	"	"	"	"	"	6	00
6.	Edward Lidgard, Chicago, Ill.	"	"	"	"	"	5	28
7.	Carl Hawkins, Toledo, Ohio.	"	"	"	"	"	5	15
8.	Lawrence Smithline, New York, N.Y.	"	"	"	"	"	4	55
9.	William E. Atwood, Glendale, Calif.	"	"	"	"	"	4	13.2
10.	Kenneth Ernst, Indianapolis, Ind.	"	"	"	"	"	4	04

ELIMINATION TRIALS for CANADIAN MOFFETT TEAM - No age limit.
These trials had 19 contestants. First six make the team.

1.	Henry Verdier, Ottawa, Ontario.	Best flight of three attempts -	2 26.4
2.	Raymond T. Smith, Toronto, Ont.	" " " " "	1 40
3.	Paul Verdier, Ottawa, Ontario.	" " " " "	1 03.8
4.	John Lemick, Toronto, Ontario.	" " " " "	1 03
5.	Ernest Barrie, Galt, Ontario.	" " " " "	1 01
6.	Owen Corfield, Port Dalhousie, Ont.	" " " " "	11

WAKEFIELD CONTEST - FINALS - for WAKEFIELD CUP

1.	Albert A. Judge	Great Britain	8 17	2 16.5	1 56.3	Average -	4 09.9
	Holds WAKEFIELD CUP for one year.						
	Gold medal.						
	Subscription to THE MODEL CRAFTSMAN.						
2.	Roy Wriston,	U.S.A.	1 40	9 15	1 13	"	4 02.7
	DETROIT TIMES TROPHY						
3.	Robert Copland	Great Britain	4 35.2	2 10.9	3 25.2	"	3 23.8
4.	Dick Everett	U.S.A.	2 30	3 41.3	2 46.3	"	2 59.2
5.	J. B. Allman	Great Britain	2 30.8	2 29	3 10.1	"	2 43.3
6.	Gordon S. Light	U.S.A.	4 43.5	1 53	1 23.5	"	2 40
7.	Denis Fairlie	Great Britain	2 36.3	2 20	1 20.5	"	2 05.6
8.	Andre Vincre	France	1 32.5	1 27	2 28	"	1 49.2
9.	G. Dubois (Brown)	France	1 20	1 50	2 13	"	1 47.7
10.	John Ginnetti	U.S.A.	2 06.2	1 24.1	1 20	"	1 36.8
11.	Charles L. Tracy	U.S.A.	55	1 46	2 02	"	1 34.3
12.	W.G. Alexander (Marchi)	New Zealand	1 12	1 51.8	1 06.5	"	1 23.4
13.	A. Pearce (Pond)	New Zealand	51	16	2 52.1	"	1 19.7
14.	Alwyn Greenhalgh	Great Britain	06	1 44.1	1 55	"	1 15
15.	William E. Atwood	U.S.A.	1 45	1 56	------	"	1 13.7
16.	Harry A. Jones	Great Britain	1 07	07	2 16.3	"	1 10.1
17.	H.J. Robinson (Lanzo)	New Zealand	1 01	1 13	1 14	"	1 09.3
18.	Fred Hollingsworth	Canada	07	08	3 00.5	"	1 05.2
19.	Paul Verdier	Canada	54.5	1 05.1	1 13	"	1 04.2
20.	Henri Varache (Lanzo)	France	55	09	2 01.5	"	1 01.8
21.	Henry Verdier	Canada	18.5	1 18	1 19.7	"	58.7
22.	W.B. Mackley (Cahill)	New Zealand	1 30.2	1 09	10.5	"	56.6
23.	Melvin Bardsley	Canada	20	14	2 13	"	55.7
24.	J. Finlayson(Chadwick)	New Zealand	46	07	1 00	"	37.7
25.	Raymond T. Smith	Canada	07	1 16	-----	"	27.7
26.	R. MacGregor(Hoyser)	New Zealand	43.1	40	-----	"	27.7

MOFFETT CONTEST - FINALS - for ADMIRAL MOFFETT TROPHY

				Min.	Sec.
1.	Vernon B. Gray (Pond)	New Zealand	Best one of three flights -	44	14
	Holds MOFFETT TROPHY for one year				
	Miniature trophy permanently				
	Subscription to MODEL AIRPLANE NEWS				
	" " THE MODEL CRAFTSMAN				
2.	Bob Jeffery	U.S.A.	" " " " "	10	58
3.	A. Worley (Copland)	Great Britain	" " " " "	9	45
4.	Bruce Luckett	U.S.A.	" " " " "	8	40
5.	W. Worden (Judge)	Great Britain	" " " " "	7	40
6.	A. Gibson (Jones)	Great Britain	" " " " "	6	15
7.	Jesse L. Vint	U.S.A.	" " " " "	5	10
8.	Vernon Boehle	U.S.A.	" " " " "	3	25
9.	H. Simmons (Allman)	Great Britain	" " " " "	2	34.9
10.	Edward Lidgard	U.S.A.	" " " " "	2	15.3
11.	Ray Smith	Canada	" " " " "	2	07.6
12.	Andre Vincre	France	" " " " "	1	42.2
13.	Donald Kraus	U.S.A.	" " " " "	1	40.6
14.	Paul Verdier	Canada	" " " " "	1	33.8
15.	W.B. Mackley (Everett)	New Zealand	" " " " "	1	31
16.	John Lemick	Canada	" " " " "	1	26
17.	Ernest Barrie	Canada	" " " " "	1	18
18.	H. Francis (Fairlie)	Great Britain	" " " " "	1	16
19.	H.J. Robinson (Light)	New Zealand	" " " " "	1	12
20.	A. Pearce (Pond)	New Zealand	" " " " "	1	01
21.	Owen Corfield	Canada	" " " " "		31.5
22.	P.T. Beales (Sommers)	New Zealand	" " " " "		25
23.	Henry Verdier	Canada	" " " " "		17.6

STOUT CONTEST for OUTDOOR CABIN FUSELAGE MODELS, R.O.G. Age limit - under 21.
193 Contestants

		Min.	Sec.
1.	Ervin Leshner, 17, Philadelphia, Pa.	36	01
	Awarded 1000 mile trip by United Air Lines		
	Life subscription to MODEL AIRCRAFT BUILDER		
	$10 merchandise order by THE MODEL CRAFTSMAN		
	Subscription to MODEL AIRPLANE NEWS		
	Holds STOUT OUTDOOR TROPHY for one year and permanent miniature.		
2.	Robert Copland, 18, London, England	20	07
	Awarded WHITFIELD TROPHY		
3.	Joe Nagy, 16, Cleveland, Ohio	18	01.6
4.	Robert B. Shea, 19, Boston, Mass.	17	04
5.	Jean S. Chadwick, 19, Syracuse, N.Y.	10	08.8
6.	Charles Belsky, Chicago, Illinois	9	38
7.	Roy E. Stoner, 15, Rockford, Illinois	6	38
8.	William Ying, 17, Staten Island, N.Y.	6	23.6
9.	Torrey L. Capo, 19, Quincy, Mass.	5	02
10.	Fred Hollingsworth, 19, Vancouver, B.C.	4	57
11.	Kenneth Ernst, 20, Indianapolis, Ind.	4	55.1
12.	Albert A. Judge, 18, London, England	4	31.5
13.	John Kubilis, Jr., 18, Chicago, Ill.	4	00
14.	Mike Karlak, 19, Cleveland, Ohio	3	52.1
15.	Lawrence Eisinger, 16, Staten Island, N.Y.	3	26
16.	Fred A. Mayfield, Jr., 18, Akron, Ohio	3	24.1
17.	James McCoy, 14, Wilkinsburg, Penna.	3	13.7
18.	George E. Henderson, Jr., 19, Asheville, N.C.	3	12
19.	Edward Naudzius, 17, Detroit, Michigan	3	09
20.	James Cahill, 18, Indianapolis, Indiana	3	02

OUTDOOR STICK MODEL CONTEST - Age limit over 21. 38 entries

		Min.	Sec
1.	Sheldon Bell, Toledo, Ohio	6	30
	Awarded BALFOUR TROPHY for one year		
	Gold medal		
	Subscription to THE MODEL CRAFTSMAN		
2.	Richard Korda, Cleveland, Ohio	5	32
	Awarded DETROIT TIMES TROPHY.		
3.	Melvin Bardsley, St. Catherines, Ontario	4	15
4.	Vernon Boehle, Indianapolis, Indiana	3	56
5.	Robert J. Cahill, Indianapolis, Indiana	3	17
6.	Jacob Friedman, University City, Missouri	3	16
7.	Frank Nekimken, Chicago, Illinois	3	12
8.	Michael J. Roll, Dearborn, Michigan	2	50
9.	Frank Zaic, New York City	2	47
10.	Vernon A. Hanson, Minneapolis, Minnesota	2	41
11.	Dick Bodle, Akron, Ohio	2	38
12.	Owen Rothrock, Detroit, Michigan	2	30
13.	Gerald Weisinger, Hackensack, New Jersey	2	18
14.	Roy Wriston, Tulsa, Oklahoma	2	10
15.	Ernest A. Walen, Springfield, Mass.	2	06
16.	Irving L. Hoyser, Syracuse, N.Y.	1	58
17.	Ira J. Fralick. Syracuse, N.Y.	1	57

MULVIHILL CONTEST - Age limit under 21. 192 Contestants.

		Min.	Sec.
1.	Bruce Luckett, Jr., 16, Tulsa, Oklahoma	41	41
	Awarded 1000 mile trip by American Airlines		
	Life subscription to MODEL AIRCRAFT BUILDER		
	$10 merchandise order by THE MODEL CRAFTSMAN		
	Subscription to MODEL AIRPLANE NEWS		
	Holds MULVIHILL TROPHY one year, miniature permanently.		
2.	Alvie Dague, Jr., 16, Tulsa, Oklahoma	23	03
	Awarded DETROIT TIMES TROPHY		
3.	Jesse L. Vint, Jr., 17, Tulsa, Oklahoma	10	00
4.	Robert Toft, 16, Minneapolis, Minnesota	9	31
5.	Mike Karlak, 19, Cleveland, Ohio	8	44
6.	Albert F. Broz, 18, Cleveland, Ohio	8	17
7.	Frank Ehling, 19, Jersey City, N.J.	7	36.8
8.	John Foster, 16, Indianapolis, Ind.	7	09
9.	Frank W. Franz, 19, Detroit, Michigan	7	05
10.	James Cahill, 18, Indianapolis, Ind.	6	40
11.	Edmund B. Swort, 17, Chicago, Illinois	6	33
12.	Torrey L. Capo, 19, Quincy, Mass.	6	02
13.	John S. Romanowski, 20, Jersey City, N.J.	5	51.4
14.	Steven Thomas, 20, Akron, Ohio	5	43.2
15.	Reuben Snodgrass, 17, Tulsa, Oklahoma	5	30
16.	Ervin Leshner, 17, Philadelphia, Pa.	5	17

TEXACO CONTEST for GASOLINE POWERED CABIN MODELS - R.O.G.

Age limit - over 16 and under 21. 97 contestants.

		Min.	Sec.
1.	Francis J. Tlush, 19, Lyndhurst, N.J. Awarded $25 merchandise order by THE MODEL CRAFTSMAN Life subscription to MODEL AIRCRAFT BUILDER Subscription to MODEL AIRPLANE NEWS Holds TEXACO TROPHY for one year and permanent miniature	45	34.5
2.	W. Hewitt Phillips, 18, Belmont, Mass. Awarded MODEL CRAFTSMAN TROPHY One (1) TLUSH SUPER ACE MOTOR by the Tlush Brothers.	30	12
3.	Joseph H. Buehrle, 17, North Little Rock, Arkansas Awarded smaller TEXACO TROPHY	27	50
4.	Michael Granieri, 16, Newark, New Jersey	26	40
5.	DeWitt Ross, Jr., 16, Tulsa, Oklahoma	26	33.5
6.	Roderick Doyle, 20, Alameda, California	26	15
7.	Hubert Bodinet, 17, Chicago, Illinois	22	21.8
8.	Carl Hawkins, Jr., 19, Toledo, Ohio	22	00
9.	Fred Gerling, 19, Columbus, Ohio	20	11
10.	Harry T. Wetzel, 16, Santa Monica, California	20	10
11.	Reuben Snodgrass, 17, Tulsa, Oklahoma	20	00
12.	Frank Broeg, Jr., 17, Burlington, Iowa) John Igoe, 16, " " ")	18	48.2

GASOLINE POWERED MODELS - OPEN AGE CLASS.

Age limit over 21.

43 Contestants.

		Min.	Sec.
1.	Mike Kostich, Akron, Ohio (New open age record) Awarded MODEL CRAFTSMAN TROPHY BABY CYCLONE ENGINE by Major C.C. Moseley Subscription to THE MODEL CRAFTSMAN Subscription to MODEL AIRPLANE NEWS	36	52.2
2.	Melvin H. Yates, Joliet, Illinois Awarded the WHITFIELD TROPHY	27	32
3.	Dick Bodle, Akron, Ohio	25	27
4.	Raymond E. Podolsky, St. Louis, Missouri	24	59
5.	Vernon Boehle, Indianapolis, Indiana	24	39
6.	Harold Stofer, Indianapolis, Indiana	24	36
7.	Winford Davis, Kansas City, Missouri	23	12.8
8.	Richard Staab, Akron, Ohio	21	45
9.	William E. Atwood, Glendale, California	21	44.2
10.	Michael J. Roll, Dearborn, Michigan	20	44.6
11.	Louis E. Schock, Los Angeles, California	19	45.4
12.	John S. Young, Kansas City, Missouri	15	51.3
13.	Alan D. Booton, Asheville, North Carolina	13	42
14.	Bob File, Columbus, Ohio	13	13
15.	Emanuel Radoff, Newark, New Jersey	7	13.4
16.	Eddie Stender, Lyndhurst, New Jersey	6	17.2
17.	P. J. Sweeney, Chicago, Illinois	6	16.4
18.	Jack V. Tighe, Chicago, Illinois	4	53.3
19.	Frank Dallaire, Detroit, Michigan	4	09.8
20.	Floyd Steinberg, Flint, Michigan	4	07.2
21.	Hubert B. Lacey, St.Louis, Missouri	3	37.5
22.	Ben Shereshaw, Irvington, New Jersey	2	43.3
23.	Sherwood R. Castles, Lyndhurst, New Jersey	2	37.2
24.	Charles J. Tlush, Lyndhurst, New Jersey	2	35
25.	Frank Zaic, New York City	2	32

CONTEST for OUTDOOR CABIN FUSELAGE MODELS, R.O.G. - Age limit - over 21.

35 Contestants.

		Min.	Sec.
1.	Chester Lanzo, Cleveland, Ohio (New Class D Open record) Awarded the MEGOW TROPHY Subscription to THE MODEL CRAFTSMAN	48	45
2.	Richard Korda, Cleveland, Ohio Awarded DETROIT TIMES TROPHY	12	04.6
3.	Vernon Boehle, Indianapolis, Indiana	6	30
4.	John Young, New York City	3	46
5.	J. B. Allman, Birmingham, England	3	32.5
6.	Dick Bodle, Akron, Ohio	3	31.2
7.	Roy Wriston, Tulsa, Oklahoma	3	15.2
8.	Louis Garami, Jackson Heights, N.Y.	2	29
9.	Ira J. Fralick, Syracuse, N.Y.	2	00.8
10.	William E. Atwood, Glendale, California	1	50.4
11.	Irving L. Hoyser, Syracuse, N.Y.	1	41.8
12.	Robert J. Cahill, Indianapolis, Indiana	1	35.2
13.	Frank Zaic, New York City	1	33

STOUT CONTEST for INDOOR STICK MODELS - HAND-LAUNCHED

Age limit under 21

122 Contestants

		Min.	Sec.
1.	John Haw, 20, Philadelphia, Pa. Awarded round trip Detroit to Washington by Central Airlines Life subscription to MODEL AIRCRAFT BUILDER $10 merchandise order by THE MODEL CRAFTSMAN Subscription to MODEL AIRPLANE NEWS Holds STOUT INDOOR TROPHY for one year and permanent miniature	18	10
2.	Bruno Marchi, 20, Medford, Mass, Awarded CENTRAL AIRLINES TROPHY	18	01.4
3.	Wilbur Tyler, 19, Everett, Mass. Awarded COMET TROPHY	17	52.5
4.	John Ginnetti, 20, Atlantic City, New Jersey	17	52
5.	Roderick Doyle, 20, Alameda, California	17	20
6.	Donald Godfrey, 17, Detroit, Michigan	17	02
7.	Torrey L. Capo, 19, Quincy, Mass.	16	59.2
8.	W. Hewitt Phillips, 18, Belmont, Mass.	16	46
9.	Dick Everett, 18, Elm Grove, West Virginia	16	40

SPRINGFIELD CONTEST for INDOOR STICK MODELS - HAND-LAUNCHED

27 Contestants Age limit over 21.

		Min.	Sec.
1.	Carl Goldberg, Chicago, Illinois Holds SPRINGFIELD TROPHY for one year and permanent miniature Subscription to THE MODEL CRAFTSMAN	19	26
2.	Roy Wriston, Tulsa, Oklahoma Awarded DETROIT TIMES TROPHY	17	56.1
3.	Joseph P. Matulis, Jr., Chicago, Illinois.	17	55
4.	Ira J. Fralick, Syracuse, New York	16	45
5.	Gordon Johnstone, Detroit, Michigan (New Class B record)	16	23
6.	Willis C. Brown, Arlington, Mass.	16	06
7.	Chester Lanzo, Cleveland, Ohio	14	44
8.	Fay Stroud, Detroit, Michigan	14	32
9.	William E. Atwood, Glendale, California	14	21
10.	Michael J. Roll, Dearborn, Michigan	11	15
11.	Ernest A. Walen, Springfield, Mass.	10	38.5
12.	Robert J. Cahill, Indianapolis, Indiana	10	33.3
13.	Jesse Bieberman, Philadelphia, Pa.	9	00

INDOOR CABIN FUSELAGE MODELS - R.O.G.

Age limit over 21

19 Contestants

		Min.	Sec.
1.	Joseph P. Matulis, Jr., Chicago, Illinois Awarded JIMMIE ALLEN TROPHY Gold Medal Subscription to THE MODEL CRAFTSMAN	11	21.5
2.	Jesse Bieberman, Philadelphia, Pa. Awarded AMERICAN AIRLINES TROPHY	10	25
3.	Teen Becksted, Chicago, Illinois	9	37.5
4.	Ira J. Fralick, Syracuse, New York	8	05
5.	Chester Lanzo, Cleveland, Ohio	7	35
6.	Roy Wriston, Tulsa, Oklahoma	6	38
7.	John T. Dilly, Galt, Ontario	5	50
8.	Ernest A. Walen, Springfield, Mass.	4	47
9.	Nigel Jones, Bralorne, B.C.	4	13

BLOOMINGDALE CONTEST for INDOOR CABIN FUSELAGE MODELS - R.O.G.

94 Contestants Age limit under 21.

		Min.	Sec.
1.	Alvie Dague, Jr., 16, Tulsa, Oklahoma Awarded round trip Detroit to Washington by Pennsylvania Airlines Life subscription to MODEL AIRCRAFT BUILDER Subscription to MODEL AIRPLANE NEWS Holds Bloomingdale Trophy for one year and permanent miniature	16	17
2.	John Haw, 20, Philadelphia, Pa. Awarded Guillow Cup	14	54
3.	Albert W. Courtial, Jr., 19, St.Louis, Missouri Awarded DETROIT TIMES TROPHY	14	31.8
4.	John Ginnetti, 20, Atlantic City, New Jersey	14	00
5.	William E. Gough, Jr., 19, Chicago, Illinois	12	55.8
6.	Walter Good, 20, Kalamazoo, Michigan	12	10

FORMATION OF THE AMERICAN ACADEMY FOR MODEL AERONAUTICS

During the National Championship Meet at Detroit, a provisional council and executive officers were named to conduct the affairs of the American Academy for Model Aeronautics. The officers will continue to serve as elected by the council until the first annual meeting. The officers and council are listed on page two of this journal.

It will be noticed that a wide distribution geographically and representation by every branch of model aeronautics has been achieved in this initial panel of leaders. Committees will be named from among the group to make recommendations and help to formulate plans for the Academy's future. It is expected that all of those who are interested in model aviation will help the movement along by the simple act of joining the Academy.

Regular membership is open to all model plane builders and flyers who have done at least two minutes indoors or one minute outdoors. The membership fee entitles the member to the new F.A.I. Sporting License which, in the future, will be necessary for N.A.A. competition under the new F.A.I. requirements. MODEL AVIATION is also included in the membership dues. Those over 21 - $3.00. Under 21 - $1.50.

Associate membership is offered to all those who do not actually build and fly models but who are, for some reason, interested in model aeronautics and want to follow the subject understandingly. Associate members will not receive the F.A.I. sporting license but will receive MODEL AVIATION. Same dues a regular members.

Patrons are those who wish to assist in the advancement of model aeronautics and who shall have contributed to the Academy, at one time, the sum of not less than two hundred fifty dollars.

Corporate Members are those members of the industry or allied industries who contribute annually to the Academy. The income from these members will be used to enable the Academy to refrain from carrying advertisements in MODEL AVIATION. The dues of Corporate Members range from a minimum of $50 to a maximum of $500.

Honorary members, to the number of ten annually, will be elected by the Council in recognition of outstanding ability or achievement.

WILLIS C. BROWN President	H. M. JELLISON ERNEST A. WALEN C. C. MOSELEY Vice Presidents	H. W. ALDEN Secretary, Treasurer

EXECUTIVE COMMITTEE

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ALBERT W. COURTIAL, Jr.	GORDON S. LIGHT IRWIN S. POLK	JOHN YOUNG

A MESSAGE FROM THE ACADEMY PRESIDENT

Our organization depends on every member doing his part to insure its success. The officers will endeavor to carry out the wishes of the members and will make every effort to lead the way to a successful association. This requires the united help of the membership.

There is definite need of unified study and investigation into the various fields of science pertaining to the subject of model aeronautics in order to make the best possible progress in improved methods and performance. New ideas, new methods, improved designs, higher achievement,- all will result from united effort.

We need a closer interchange of knowledge gained from individual experiment. The AMERICAN ACADEMY for MODEL AERONAUTICS will serve as a center for gathering and publishing material of benefit to all. Advanced model builders and flyers will gain invaluable assistance by this cooperative effort.

It is with the greatest enthusiasm that the council members have undertaken to organize the ACADEMY. It is most gratifying to me, personally, to know that we have a sincere and conscientious group all united in this effort. There is every reason to believe that accomplishment will exceed expectation.

WILLIS C. BROWN

MODEL AVIATION will print papers of scientific and technical interest to members. In general, it provides an opportunity for members to publish articles disclosing new knowledge and new applications in the field of model aeronautics. It will include short notes and critical comments. Papers read at meetings of the Academy will be presented in full and digested. The news of the Academy is furnished members through MODEL AVIATION.

ACADEMY PROJECTS

Construction and operation of a slow speed wind tunnel for testing actual flying models, airfoils, propellers, fuselages, etc. The results of these tests will be made available to Academy members.

Creation of a fund for sending a team to England for the 1937 Wakefield Contest.

Experiment and development of radio controlled model flight.

Development of a practical recording altimeter for registering model flights.

Establishment of a laboratory for testing model plane materials with a view toward scientific application to models.

Collection of a library of model plane writings.

The Academy emblem or seal will be used to decorate the Academy's letterhead, membership cards, publications, etc. It will form the corporate seal when the incorporation of the Academy has been accomplished. The symbol of the central torch, for knowledge, and wings, for flight, is most fitting to the purposes of the Academy.

While N.A.A. was establishing A.M.A. under its' wing, M.A.N. was setting up I.G.M.A.A., in Charles Grants' belief that gas models needed something special.

"Gas Lines" unquestionably will help "gas" builders to get together. However, to facilitate this process MODEL AIRPLANE NEWS has undertaken to organize all gas fans under one banner.

It is proposed to form the International Gas Model Airplane Association. Its purpose will be to extend the activity of designing, building and flying gas engine powered model planes with the object of developing knowledge of aviation, familiarizing the public with common aeronautic practice and providing a means of enjoying a most beneficial sport.

Anyone can become a member. Only those who have designed or built and flown a gas model or have contributed to an important development can be listed as an active member, however. Clubs can become a unit member of the Association, each member of the club being listed on the roll of the Association.

There will be no dues, but assessments may be made by any Unit to carry on specified activities, only those participating in such activities to be assessed. The benefits will be many. First there can be an interchange of ideas through the columns of "Gas Lines," outlines for forming and running clubs and contests will also be supplied to interested units. Contests will be organized and held regularly and information on gas models will be available to members. Social events may also be sponsored. Any Unit may send a delegate to conventions to be held periodically for discussion of problems pertinent to aviation education in general and gas model activities in particular.

Membership pins and cards may be obtained later. Full information will be published soon. If you have any suggestions, please write and let them be known.

All readers who wish to enroll in this organization, the I.G.M.A.A., fill in the coupon below.

APPLICATION FOR MEMBERSHIP IN THE INTERNATIONAL GAS MODEL AIRPLANE ASSN. Please Enroll as A

Regular ..... Active .....
Member
Name .....

Address .....

.....
Number of Gas Jobs Built

Date ....

Leon Shulmans' IGMAA Licence

L FILL IN ALL BUT FIRST THREE LINES (RETURN)

International Gas Model Airplane Association

OFFICIAL GAS MODEL PLANE LICENSE NO. I.G.M.-0-52-1

Assigned Oct 7th '36 Charles H. Grant

Name Leon Shulman

Address 2815 Fremont Ave

NUMBER OF PLANE
1st 1 2nd .....
3rd ..... 4th .....
5th ..... 6th .....
7th ..... 8th .....

Class of Model to be registered E

Type " " " " " Mid-Wing

Wing Span 5 ft Make of Engine Cyclone Engine No. B 2523

Date of First Flight Oct 4, 1936 Approx. No. of Flights Made 2

Duration of Longest Flight. Unofficial 1/2 min. Date Made Oct 4, 1936

Timed by I. G. M. A. A. C. ..... " " .....

Date of Application: March 20, 1936 Signature Leon Shulman

Unit No. 0 Witness Abe Siegel

Purpose of the International Gas Model Airplane Association

In order to clarify in the minds of members the purpose for which the International Gas Model Airplane Association was established, we state the following:

First of all, the policy of the I.G.M.A.A. is governed by the intent on the part of the Association and its officials to benefit all of its members, not only one or two or any small group at the expense of the whole organization. In setting up the organization and in making the rules, the influential factor is that all of its members may receive information from the individual members of the organization.

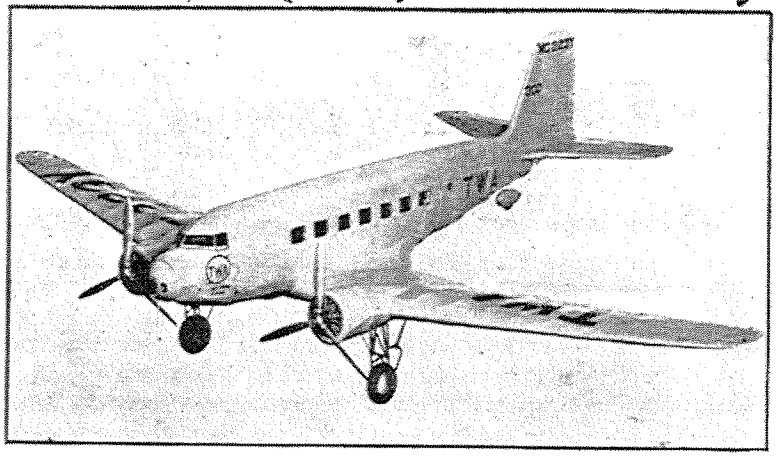
In this way all of its members may benefit from the findings of any one of the members. It helps a free flow of information through which all may be helped.

In order to have the organization fulfill its purpose we are looking to all members, unit leaders and others connected with it to cooperate and uphold the decisions of the officials and rulings of the organization, especially at contests. If there are any objections to the decisions or the procedure at any particular gathering or contest, we wish the organization members to state their opinions and objections in an orderly and intelligent manner. These objections will then be considered carefully and a meeting of the council and unit members will be called if necessary or if demanded, to decide upon any pertinent questions. There is no place in the organization for those who will not follow this procedure.

ASK YOUR DEALER TO SHOW YOU THESE NEW NATIONAL KITS. If he can't supply you order direct. Do not accept substitutes and be disappointed.

Build NATIONAL MODELS for the Utmost in *Quality! - Authenticity! - Performance! - Design!*

NATIONAL MODELS ARE ACCURATELY DESIGNED FOR DETAIL AND FLIGHT. Simple directions, clear accurate drawings, authentic details, formed wire parts and many other exclusive features make National models easy to build. You can't go wrong—and they fly!



DOUGLAS TRANSPORT

Wing Span 42½ Inches; Length 29¾"; Weight 8 oz.

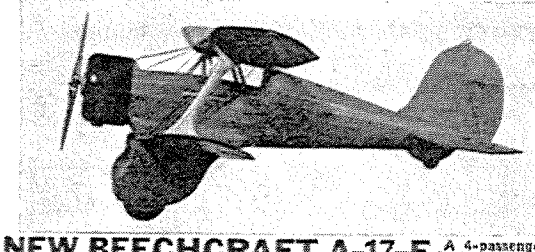
Powered by New Flexible Shaft Gearless Transmission

What a Model! Becoming recognized everywhere as "Monarch of the Skies." Broke its own record for flight over TWA between Los Angeles and New York. It proved the outstanding commercial transport of all entries in the recent England to Australia race.

National's big three view, fully detailed plan, instructions, make it easy to build this beautiful model for exhibition or flight. The most realistic model you have ever seen.

The kit includes plans, special cambered balsa for fuselage and roof covering, printed wood parts, turned motor cowls, nose block and wheels, three bladed laminated props (for flying model), window materials, gearless transmission, Jap paper for covering, cement, gray-silver dope, full insignia, lights, venturi tubes, windows, doors which open the new split trailing edge flaps (air brakes), complete kit Plus 50c packing and mailing charges..... **$5.00**

Fully detailed plans and instructions $1.00 plus 10c postage

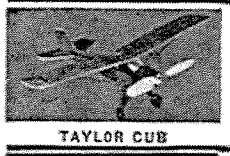


NEW BEECHCRAFT A-17-F

A 4-passenger high speed ship.

A true ¾" "National" scale model. Wing span 25¾", length 18", wgt. 2½ oz. Colors red and black, silver trimmed. Faithful in every detail including wing and tail controls, deep cowl, navigation and landing lights. Many simplified construction features, safety motor tube, turned cowl and wheels, stations and ribs, and parts neatly printed on clear white balsa, easy to cut out. Kits contain ample cement, colored dope, Japanese tissue, formed wire parts and props. Full size plan detailed instructions. A ship every model builder will enjoy building and flying. (Plus P.P. 25c)..... **$2.50**

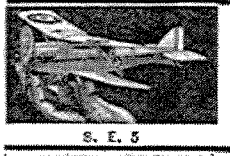
Plans sold separately, 25c; plus 5c postage



TAYLOR CUB

12" FLYING SCALE MODELS

A 12" flying scale model of the well-known cabin monoplane. Group also includes Fokker D-8, Bellanca Liberty, Heath Parasol, Puss Moth, Curtiss Robin. Each kit complete including blueprint and instructions. Now (Plus P. P. 10c) each..... **25c**



S. E. 5

4 FAMOUS WAR-TIME MODELS

Including the Sopwith Camel, S.P.A.D., Capt. Rickenbacker's famous war-time fighting ship, Fokker D-7, S.E. 5 (Illus.). These 4 famous war-time ships are 12" flying scale models. Each kit complete (Plus P. P. 10c) each..... **35c**



AKRON FIGHTER

18 12" FLYING SCALE MODELS

Lockheed Vega (Winnie Mae) Hawk P-6-E, Boeing P. 12, Curtiss Falcon, Curtiss Hell Diver, British Hawker Fury, Polish P-6, Sikorsky Amphibian, Texaco 13, Bellanca Airbus, Gee Bee Sportster 1931, Lockheed Sirius, Laird 400 Albatros, Pfalz, Nieuport Scout, Fokker Triplane, Akron Fighter (Illus.) (Plus P. P. 10c) each..... **50c**



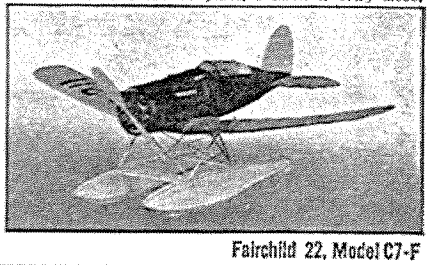
SANDY'S EAGLET

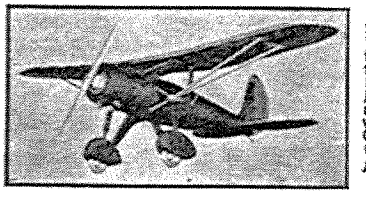
Here you have it, Fans. A ¼" Solid Scale Model Kit to Build Bill Barnes famous Eaglet as piloted by Sandy—Each kit complete (Plus P. P. 10c) each..... **25c**

Col. Lindbergh's Lockheed Sirius Seaplane

Authentically detailed model of this famous plane, a thrill to every model builder. Exact ½" scale, span 21½", lgt. 15½", wgt. 2 oz. Colors: black and orange, silver pontoons, full size 3 view plan with complete materials including safety motor tube, two props, adjustable controls, etc. Price, plus P.P. 15c..... **$2.00**

Detailed Plans alone 35c plus 5c postage.





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½" Scale Model

Span 16½", Lgt. 12⅛", Wgt. ¾ oz. Colors: green fuselage, orange wing and tail silver trim. Features: Hollow Motor Tube, adjustable elevators and rudder, fully-detailed 3-view plan and instructions. Complete Kit. (Plus P. P. 15c) **$1.00**

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18" Strips

1/16x1/16	20 for	.05
1/16x1/8	16 "	.05
1/16x3/16	12 "	.05
1/16x1/4	12 "	.05
1/8x1/8	10 "	.05
1/8x3/16	8 "	.05
1/8x1/4	6 "	.05
3/16x3/16	3 "	.05
1/4x1/4	2 "	.05
1/2x1/2	1 "	.03
1/2x3/4	1 "	.04
1/2x1	1 "	.05

18" Sheets

1/8x2	3 for	.10
1/8x3	4 "	.10
1/16x2	5 "	.10
1/8x2	3 "	.10
3/16x2	2 "	.10
1/4x2	2 "	.10

18" Planks

1x1	1 "	.08
1x2	1 "	.15
2x2	1 "	.29
2x3	1 "	.25
2x6	1 "	.40

18" Birch Dowels

1/8 dia.	1 for	.01
3/16 dia.	1 "	.01
1/4 dia.	1 "	.02

15" Bamboo

1/16x1/4 .01 ea	12 for	.10

Machine Cut Propellers

5"	3 for	.10
6"	1 "	.05
8"	1 "	.07
10"	1 "	.10

Hand Carved Propellers

5"	.10	8"	.20
6"	.12	10"	.25
7"	.15	12"	.35

Aluminum Props

1¾" long 1" dia., 3 bladed	3 for	.05

Celluloid Motors

1½" dia	each	.20
2" dia.	"	.25
3" dia.	"	.35

Balsa Wheels

¾"	per pr.	.05
1"	per pr.	.06
1¼"	per pr.	.08
1½"	per pr.	.08
1¾"	per pr.	.10
1⅞"	per pr.	.12
2"	per pr.	.15
2½"	per pr.	.20
3"	per pr.	.25

Celluloid Wheels

¾"	per pr.	.06
1"	per pr.	.08
1½"	per pr.	.10
1½"	per pr.	.10
1⅞"	per pr.	.17

Aluminum Wheels

1"	per pr.	.10
1½"	per pr.	.20
1⅞"	per pr.	.25

Celluloid Pants

For ¾" & 1" wheels per pr.	.25
For 1⅛" & 1⅞" wheels per pr.	.35

Tweezers

Each	.15

Brushes

Pointed	.05
Flat ⅜"	.10

Cast Metal Props

1½"	2 Blades	.10
2½"	2 Blades	.15
3½"	2 Blades	.25
1½"	3 Blades	.10
2½"	3 Blades	.15

Aluminum Motor Nose Plates

⅞" for 1½" Motor	.08
1¼" for 2" Motor	.10
1¾" for 3" Motor	.15

Cast Guns

1"	per pr.	.10
2"	per pr.	.27
1½"	per pr.	.20

Cast Guns with Ring Mount

1½"	each	.20
2"	each	.25

Bombs

¾"	each	.05
1⅛"	each	.10

Wing & Tail Lights

Small	3 for	.10
Medium	3 for	.20
Large	3 for	.25

Hair Wire

34 gauge, per spool	.10

Metal Fittings Wing Clips

Small	2 for	.05
Large	2 for	.05

Prop Hangers

Small	2 for	.05
Large	2 for	.05

Rear Hooks

Large	2 for	.05
Small	2 for	.05

Steel Beads

Per doz.	.03

Washers

⅛" dia.	per doz.	.02
¼" "	" "	.05
Small	per doz.	.05
Medium	" "	.05
Large	" "	.10

Rubber Motors

.045	30" for .10
1/16 sq.	25" for .10
1/32x1/16	20" for .10
1/32x3/32	25" for .10
1/32x1/8	15" for .10
1/32x3/16	23" for .15

Music Wire

No. 5	10' coil	.05
No. 8	" "	.05
No. 12	" "	.05

National Cement

Tube	.05
1 oz. Bot.	.10
1 pint can	.75

Clear Dope

1 oz.	.10
1 pint	.75

Colored Dope

1 oz. White, Black, Orange, Brown, Olive, Blue Gray, Red, Green	.10

Acetone

1 oz.	.08

Tissue

White	2 for	.05
Colored	each	.05

Corrugated Paper

Yellow, 4x5"	.03

Insignia

4 ¾" Stars, Army or Navy Tail	.03
4 1½" U.S. Stars, Army or Navy Tail	.04
2 3", 2 1½" U.S. Stars, Army or Navy Tail	.05
4 ¾" French Insignia with Tail Stripes	.03
4 1½" French Insignia with Tail Stripes	.04
4 3" French Insignia with Tail Stripes	.05
4 ¾" U.S. War-time Insignia with Tail Stripes	.03
4 1½" U.S. War-time Insignia with Tail Stripes	.04
4 3" U.S. War-time Insignia with Tail Stripes	.05
Set of Maltese Crosses for 12" models	.02
Set of Maltese Crosses for large models	.05
Set of Iron Crosses for 12" models	.02
Set of Iron Crosses for larger models	.05
4 ¾" British Insignia with Tail Stripes	.03
4 1½" British Insignia with Tail Stripes	.04
4 3" British Insignia with Tail Stripes	.05

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Best Models of 1936

A wealth of valuable information is revealed in this exclusive Model Workshop feature that lists complete specifications of the year's outstanding designs.

IN everything we do, there's no better road to success than to study the achievements of those who succeed. By learning from them the details of the work in which they have excelled, we can pattern our efforts after theirs with a fair chance of duplicating their results. Equally important, also, is the fact that by such study we can often discover for ourselves, behind the practical details, a good deal about the correct theories and principles that are involved.

These things hold true in model airplane building as well as elsewhere. For this reason The Model Workshop of AIR TRAILS has gathered together for its readers the specifications of the outstanding model designs of 1936, which have been tabulated in the accompanying charts.

There were so many outstanding models developed during the year that it was impossible to include all of them. Those which we picked for the tabulation have proved outstanding in contests and are the work of outstanding designers. Thus they can be considered representative of the year's trend in model design.

Included in the list are the models of some of the year's trophy winners—Carl Goldberg, Frank Tlush, Bruce Luckett, Ervin Leshner, Albert Judge, Vernon Gray—and many others whose consistent good work has put them in the top flight among model builders and fliers.

The charts have been prepared as a collection for handy reference. A few minutes' inspection will show the difference and likeness among the models. A little arithmetic applied to the statistics presented will also reveal many other significant points, such as particular and average wing loadings per given area, percentage of elevator area to wing, relation of span to length, and so forth. It should be interesting to compare the specifications of these record-breakers to those of your own design. If you make a habit of referring to the charts when designing a new model, you certainly can't go wrong.

It was necessary to abbreviate many specifications to keep the charts compact and easy to read. Abbreviations have been standardized on the charts. They are listed as follows:

TYPE: RUBBER OUTDOOR — DESIGNER & BUILDER	CLASS	TOTAL WEIGHT IN OZS	SPAN	OVERALL LENGTH	RUBBER LENGTH	WING: AREA IN SQ. IN.	WING: INCIDENCE	WING: AIRFOIL	WING: DIHEDRAL	ELEV.: AREA IN SQ. IN.	ELEV.: INCIDENCE	ELEV.: AIRFOIL	PROP: DIAMETER	PROP: PITCH	PROP: OFFSET THRUST	PROP: PROP. RUN (MAX)	RUDDER AREA	FUSELAGE LENGTH	DIRECTION OF TURN	RUBBER SIZE & COLOR	NUMBER OF STRANDS	GLIDE RATIO (SINKING SPEED)	BEST UNOFFICIAL FLIGHT	BEST OFFICIAL FLIGHT	REMARKS
DANIEL CLINI	STICK TRACTOR	4¼	42"	44"	36"	169	2°	CLARK Y	6"	60	-2°	S	18"	21"	N 2° R 0°	—	28	35"	L	1/8 x 1/30 BR	20	—	5M	39M	18M GLIDE FROM 3000 FEET
ERVIN LESHNER	CABIN FUSELAGE	4½	49	37	39	196	0°	EIFFEL 400	6	84	-2°	CLARK Y	18	25	N 3½° R 0°	110s	22	37"	R	1/8 x 1/30 BR	22	60 FT PER MIN	3M	36M	STOUT WINNER
JIM CAHILL	CABIN FUSELAGE	4.6	56	34	40	199	2½°	CLARK Y	6	75	0°	MOD. CLARK Y	18	25	N 1½° R 1°	120	22	27"	R	1/30 x 3/32 BR	18	5:1	4M	3M	FLOWN IN ONLY ONE CONTEST
DICK EVERETT	CABIN FUSELAGE	2.8	36	25	20	125	2°	EIFFEL 430	3½	47	1½°	CLARK Y	16	22	N 2° R 2°	90	22	24"	R	1/8 x 1/30 BR	14	10:1	—	10M	——
DICK EVERETT	STICK TRACTOR	3.5	52	34	27	165	3°	EIFFEL 400	5	65	1°	CLARK Y	17	23	N 2° R 2°	120	31	33	R	1/8 x 1/30 BR	16	16:1	H.W. 3M	26M	TWIN RUDDERS W-SHAPED WING 500 FT CLIMB
BOB JEFFERY	CABIN FUSELAGE	4	42	37	27½	195	4°	R.A.F. 32	3½	59	0°	CLARK Y	18	22	N 3½° R 1½°	90	19.5	35	R	1/8 x 1/30 BR	16	—	—	11M	TWO SUCH SHIPS LOST IN THE MOFFETT CONTEST
BRUCE LUCKETT	STICK TRACTOR	2¾	32	26	—	125	2°	EIFFEL 400	5"	38	-2°	CLARK Y	—	—	N 3° R 2°	—	18	—	R	— RED	—	—	3M	41M	MULVIHILL WINNER
EDW. J. LIDGARD	CABIN FUSELAGE	3.7	38	29½	25	180	5°	MOD. CLARK Y	3½	52	-2°	CLARK Y	16	21	N 0° R 0°	60	22	28½	L	1/8 x 1/30 BR	16	10:1	95M	15M	——
ROBERT COPLAND	CABIN FUSELAGE	5¼	41	32	40	195	2°	R.A.F. 32	3¼	54	-1°	LIFT SECTION	17	24	N 0° R 2°	115	30	28	R	1/30 x 3/16 BR	14	20:1		20M	ENGLISH WINNER
HARRY CORNISH	STICK TRACTOR	2.9	36	26	20	139	2°	R.A.F. 32	3	45	-4°	CLARK Y	14	21	N 2° R 1¼°	—	18.5	25¼	R	1/8 x 1/30 BR	14	—	—	61M	——
ALBERT JUDGE	CABIN FUSELAGE	4¼	44	31½	60	195	1°	MOD. CLARK Y	4	50	-1°	CLARK Y	15½	14	N 0° R 0°	—	23	30	—	1/4 x 1/20 BL	6	—	—	4M AVE	WAKEFIELD
CHESTER LANZO	CABIN FUSELAGE	4.1	42	36	35	200	3°	MOD. CLARK Y	5	80	0°	CLARK Y	18	24	N 2° R 0°	60	40	35	R	1/8 x 1/30 BR	24	—	—	49M	——
ROY WRISTON	CABIN FUSELAGE	4	45	30		200	2°	MOD. EIFFEL 400	4"	68	-1°	CLARK Y	—	—	N 2° R 2°	—	24	—	R	— RED	—	—	—	24M 41M	——
BRUNO MARCHI	CABIN FUSELAGE	4.3	43	35½	34	200	6°	CLARK Y	4"	55	0°	CLARK Y	18	40	N 2° R 4°	70	18	33½	R	1/16 x 3/16 BR	16	7:1	—	8M	——
VERNON GRAY	CABIN FUSELAGE	2.8	39	27¼	19	132	3°	CLARK Y	3½	52	-1°	MOD. CLARK Y	16	22½	N 2° R 2°	—	16	26¼	R	1/8 x 1/30 BR	16	—	—	44M	MOFFETT

TYPE: INDOOR DESIGNER & BUILDER	CLASS	TOTAL WEIGHT	SPAN	OVERALL LENGTH	RUBBER LENGTH	WING				ELEV.			PROP.			RUDDER AREA	FUSELAGE LENGTH	DIRECT OF TURN	RUBBER SIZE & COL.	NO. STRANDS	BEST OFFICIAL	BEST UNOFFICIAL	REMARKS
						AREA	INCIDENCE	AIRFOIL	DIHEDRAL	AREA	INCIDENCE	AIRFOIL	PITCH	OFFSET THRUST	RPS								
MAYHEW WEBSTER	"C" TRACTOR	.051	33"	26"	40"	142	1.25°	ORIG	2.25"	34.2	-3.5°	FLAT	25.6	0°	1.5	—	14	W.T.	3/32" BR	2	24	—	SEMI CANTILEVER
CARL GOLDBERG	"C" TRACTOR	.073	35"	27	40	149	2.5°	McB	2.5	47	-2°	ORIG.	32	—	1.5	9.5	15¼	W.T.	3/32 BR	2	33½	—	———
S. AXELROD	"C" TRACTOR	.089	38"	27	40	145	2.5°	McB	2.5	49	0°	ORIG	VAR	—	1.4	9.5	15"	W.T.	5/64" BR	2	19'	21	VARIABLE PITCH PROP
WM. GOUGH JR.	"D" FUSELAGE PAPER	—	32"	27	40	198	2.0°	ORIG	3.0	90	0°	—	35.0	—	1.7	10.0		W.T.	1/8" BR	2	8½	11¼	LARGE TAIL TISSUE COVERED
L. SMITHLINE	"C" TRACTOR	.065	34	25	45	149	1.5°	ORIG	1.5	41	-1.5°	ORIG	30.6	0°	1.2	12.5	15	W.T.	7/64" BR	2	22	—	LARGE PROP AREA
WALLACE SIMMERS	"A" GLIDER	.26	13½"	14½	—	30	—	ORIG	1¾"	8	—	FLAT	—	—	—	3½	14½	R&L	—	—	43	—	———
BRUNO MARCHI	"B" GLIDER	.545	17½"	16	—	49.5	1°	ORIG	3	16¾	0°	S	—	—	—	6	15½	R&L	—	—	42.2	—	NEVER FLOWN IN BUILDING ABOVE 50 FT
M. HUGUELET	"A" GLIDER	.24	13 7/8"	16"	—	29	2°	ORIG	2¼	8.1	0°	ORIG	—	—	—	2.2	16"	LEFT	—	—	—	46.5	SWEPT FORWARD SURFACES

BR—BROWN S—STREAMLINE McB—McBRIDE WEIGHTS DO NOT INCLUDE RUBBER WT.-WITH TORQUE

Make of gas motor is designated by C—Baby Cyclone, T—Tlush Super ace, B—Brown Junior, H—Hurleman.

The abbreviation "mod" in the listing of airfoils indicates that the designer has made some slight modification in the airfoil section for his own use. The word "original" shows that the builder has designed his own special airfoil shape.

The dihedral angle is given in inches. This means that each tip of the wing is raised the indicated number of inches from a level position.

In listing elevator airfoil shapes, the capital letter L indicates a lifting section, while S designates a symmetrical section. Where the shape of the elevator airfoil is definitely known, the name of it is listed.

Under the heading "Offset Thrust" the notation N indicates negative thrust, followed by the number of degrees. R indicates right thrust.

In considering the direction of turn, the letter R means right circle against torque. L indicates left circle or with torque. In the classification of indoor models, the abbreviation W. T. indicates turn with torque.

The speed of the gas motors is given in thousands of revolutions per minute. In designating the color of a rubber motor, the abbreviation BR indicates brown rubber, while BL is black.

The durations listed under the column "Best Official Flights" have all been made at N. A. A.-sanctioned contests with accredited timers.

To get the most out of these charts, you should clip them from the magazine and put them up on the wall of your shop, where you can refer to them frequently.

All of the models are the embodiment of successful model aerodynamic laws. If you make your models check with these, your designs are certain to have the same characteristics.

We want to express our appreciation to the builders who have enabled us to compile this tabulation. It is in no sense a complete roster of all the expert designers competing in this country, and no slight is intended to those who may have been omitted. We feel certain, however, that it may be taken as exemplifying the best work that is being done to-day.

TYPE: GAS DESIGNER & BUILDER	TOTAL WT.	MOTOR	SPAN	OVERALL LENGTH	WING				ELEV.			RUDDER AREA	PROP DIAM.	PITCH	OFFSET THRUST	RPM IN 1000	MIXTURE RATIO	FUSELAGE LENGTH	DIRECTION OF TURN	BEST OFFICIAL FLIGHT	BEST UNOFFICIAL FLIGHT
					AREA SQFT	INCIDENCE	AIRFOIL	DIHEDRAL	AREA SQFT	INCIDENCE	AIRFOIL										
VERNON BOEHLE	6	C	14'-8"	7'-1"	19	1½°	ORIG-INAL	19"	6.5	-1½°	L	—	13	—	NONE	—	3:1	6'-11"	R	24M	—
TLUSH BROS.	6	T	9'	5'-3"	8	1°	EIFFEL 400	10"	2.4	0°	S	.55	16	6	NONE	3½	5:1	5'	R	45M	2HR
KENNETH ERNST	4¾	B	8'-2"	8'-2"	7½	1°	KOVEL MOD.	11"	2	-1°	S	—	14	6	N 2°	3	5:1	5	L	55M	66M
BRUNO MARCHI	4	H	7'	4'	6	0°	CLARK Y	10"	1.9	-3°	S	—	15	25	N 4° R 2°	3	4:1	3'-4"	R	45M	—
CLYDE GOEHRING	4¾	B	7'-6"	4'-8"	7	0°	ORIG-INAL	5"	1¾	0°	S	—	16	6	NONE	3	6:1	4'-4"	L	20M	1HR

LEGEND: C-BABY CYCLONE T-TLUSH B-BROWN H-HURLEMAN L-LIFT ELEV. S-SYMMETRICAL SECTION



The MODEL WORK-SHOP



Conducted by Gordon S. Light

1936, Meet 1937!

IT'S about time to discard old calendars and replace them with new ones. But before we consider the new year, and what it holds for modeling, we should reflect on the past year's activities. Ideas which have proved to be good should be expanded during 1937. The bad ideas should be discarded as emphatically and thoroughly as we dispose of the worn-out 1936 calendars. Keeping this in mind, let's look back at the year's results.

The popularity of the gas model continued to increase. The "hardy pioneer" attitude which accompanied the first few gas models has completely disappeared. Even some unskilled beginners now make their début into the hobby with gas jobs, attaining success that is conclusive evidence of gas-model advancement. In a few years construction of these models has spread from a select group of experts to any one who has ordinary mechanical ability and the price of a motor—this latter requirement still proving the obstacle in too many cases. Our first wish for 1937 therefore is that the price of motors be reduced. No one with energy enough to build a model should be grounded for lack of a motor.

There are several dark spots on our 1936 record. These concern the loss of two famous trophies—the Wakefield and the Moffett. One went west and the other east, but 1937 should see them back again, each one resting atop some American builder's mantel.

Before waging a campaign to bring back the Wakefield, the complete English rules governing this competition should be available to every American contestant. The misunderstanding of rules at the 1936 event took all the fun out of the contest. We hope to publish the complete rules just as soon as they're agreed upon by the English society. The only information available now is that the weight requirement will probably be boosted from 4 to 8 ounces.

One appealing feature of the year's activities was the increase in model contests. The national meets of various organizations at Detroit, Buffalo, Boston, St. Louis, and Indianapolis, along with scores of smaller State and local meets, kept the airports, parks, and open fields well filled with modelers from the time the snow melted until it returned. The builders maintained a continuous bombardment of the records and by the end of the year only a few of the old ones were still standing.

The year's flying brought out some interesting technical developments. One is the disappearance of the twin pusher. This 35-year-old favorite has been replaced by the small single tractor. With a phenomenally steep climb and flat glide, it makes an ideal contest model. In the hands of such experts as the boys from Tulsa, Oklahoma, it is a sure winner. It must be remembered, however, that Vernon Boehle of Indianapolis was the real pioneer. Back in 1934 his single tractor was already winning contests.

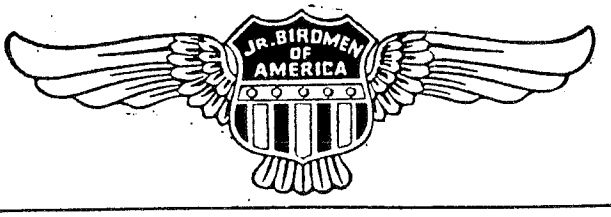
One of the year's disappointments was the failure of the radio-controlled model to materialize. Whether radio control was too difficult or whether interest was lacking is difficult to determine. Next year should bring a definite answer.

An important development was the formation of the American Academy for Model Aeronautics, to raise modeling to its rightful scientific level. Another was the announcement of a $200 prize for a radio-controlled model and large cash awards in other 1937 events.

But a survey of the year would be different for each of us. Probably the most important event for you personally was when you first saw daylight between the ground and the wheels of your first model, or if you're not a beginner, when you test-flew a new design or lengthened your flights. All that is past history now. As we look forward, accept the heartiest wishes of a dyed-in-the-wool balsa-and-tissue enthusiast that each of you will have a *model* year during 1937!

The Contest Calendar

JUNIOR BIRDMEN National Indoor Contest, San Antonio, Tex., Dec. 28. Open to winners of the elimination contests held in nineteen wing cities during Thanksgiving week.



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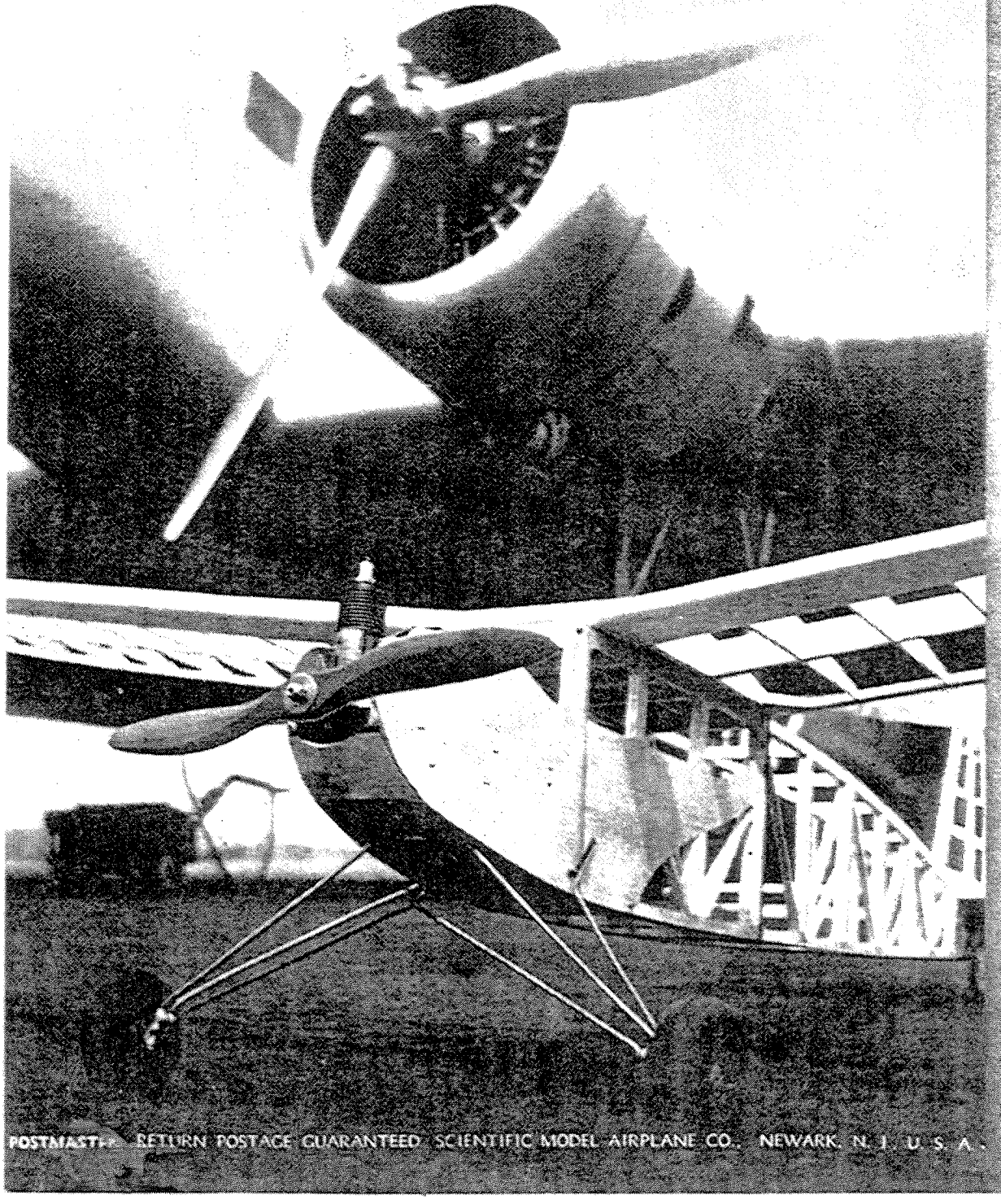
GAS MODELS



CONTENTS

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FOREWORD

. . . No matter how great the craftman's skill only the best of material can produce the best of results.

● With this fact in mind Scientific has endeavored at all times to supply the model builder with only the best of model material obtainable, and to keep up-to-the minute with the latest phases of the model building hobby.

● Last year Scientific pioneered with gas model kits and supplies. This year Scientific goes still further and gives you the greatest selection in the gas model line that can be offered anywhere.

● But the gas model line is only one phase of Scientific's leadership. New up-to-the minute features are included in the entire line—no item is too small to be overlooked.

● It is this alertness to all latest developments in the model field that has gained Scientific the patronage of thousands of model builders not only in the United States but throughout the world.

● As quality and assortment of stock are important so, too, are price and service. Scientific's prices are kept as close to cost as possible, and all orders are given prompt, careful attention.

● Go to your dealer today and have him show you the Scientific line. Or, should there be no dealer in your locality, send your order direct to us.

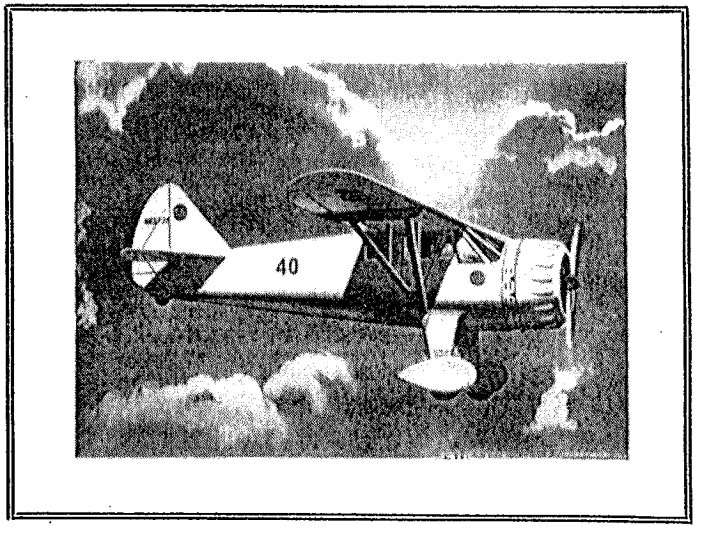
● If you are not already a regular Scientific customer we are confident a trial order will make you one.

SCIENTIFIC MODEL AIRPLANE CO.

218-220 MARKET STREET, NEWARK, N. J., U. S. A.

BEN HOWARD'S "MISTER" MULLIGAN

THE ONLY AIRPLANE TO EVER WIN BOTH THE BENDIX AND THOMPSON TROPHY RACES IN THE SAME YEAR



A JUNIOR

Science-craft

MODEL AIRPLANE

"The Air Race Favorite"

25 Inch Wingspan—Movable Controls—Bridge-Type Landing Gear

●Here it is! A true-to-life model of the famous plane that won both the Bendix and Thompson Trophies at the Air Races in the same year. A sensational record, and the model is a winner too! This new Scientific model of Benny Howard's "Mister Mulligan" is a sensational flyer and what a beauty she is to look at! Here is a kit that is worthy of the Science-Craft name, — the first Junior in the line, and it represents the most popular plane of the day.

$1.50

COMPLETE KIT POSTPAID or at Your Dealer

Kit No. J-29

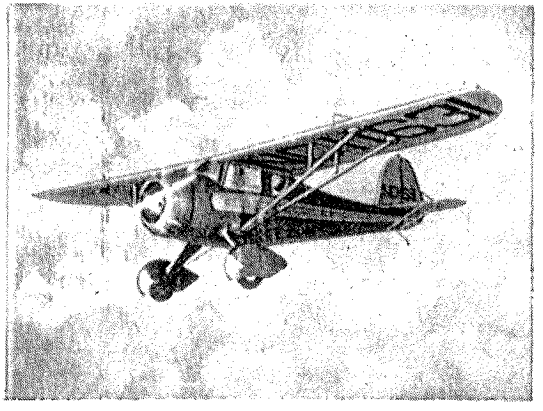
●The kit is the most complete on the market. Here is what it contains: All ribs, bulkheads, etc., printed on finest grade balsa. Machine cut balsa propeller; finished balsa cowling and crankcase in one. Streamlined balsa wheels. All liquids. Fresh rubber. Formed wire parts. Full size plans and accurately detailed instructions. All insignia printed on gummed paper. In fact everything to build a complete flying model of this world famous plane!

AGAIN SCIENTIFIC WRITES MODEL HISTORY

THE NEW **Science·craft** MODEL AIRPLANES

Monocoupe Model 90A

Wingspan 50"; Length 32"; Weight 10 oz.
Colors: White, green, and silver



Again SCIENTIFIC steps forward and introduces new features on the latest Monocoupe model. You must build this model to appreciate it. The kit contains everything to build a perfect model—one that is beautiful in appearance and gives real performance. It includes a finished 12" propeller; ribs, bulkheads, fairings, wing tips, etc., printed on balsa; finished balsa wheels; fresh rubber; cement; tissue cement; green tissue; etc., as well as full size plans with all details and necessary instructions. It's sure to give you much pleasure in building and hours of enjoyment in flying the model.

COMPLETE KIT

$5.00

POSTPAID

Kit No. SC-30

Note: *These Exclusive Science-Craft Features Included in These Kits:

GUARANTEED TO FLY 500 FEET



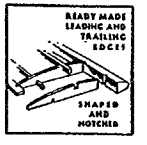
CUSTOM CABIN WACO

Wingspan 60"; Length 43½"; Weight 21 oz.
Colors: Silver wings, red fuselage and tail surfaces.

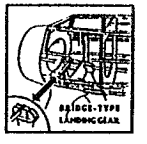
COMPLETE KIT $6.00 POSTPAID

SCIENTIFIC'S Cabin Waco Model's distinctive sleek lines are detail for detail the same as the real plane's. This model further emphasizes SCIENTIFIC'S leadership for design, performance, and value. The kit is complete in every detail, including a finished 15" balsa propeller; ribs, bulkheads, fairings, wing tips, etc., printed on balsa; finished balsa wheels; fresh rubber; cement; tissue cement; colored tissue; etc., and full size plans with all details and instructions.

Kit No. SC-31









NOW ANYONE CAN BUILD A MODEL AIRPLANE THAT WILL FLY 500 FEET OR MORE

BUILD AND FLY THESE

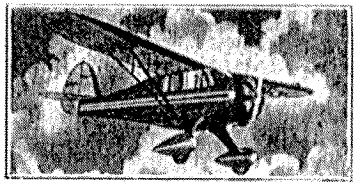
DeLuxe "HI-FLYER"

MODEL AIRPLANES—25" Wingspan

BIGGEST DOLLAR FOR DOLLAR VALUE EVER OFFERED IN MODEL AIRPLANES

If you want beautiful, accurate, easily-constructed, and perfect flying models of the popular planes of the day, here they are! Every essential detail of these present day planes is copied in these DeLuxe Models, and material furnished in the kits so you can reproduce them perfectly. As usual, SCIENTIFIC-designed kits make building easier because more of the time-taking work is done for you. All ribs, bulkheads, outlines, etc., are printed on balsa, ready to be cut out; formed wire parts; new machine-cut balsa props are furnished in all kits; all strip balsa is cut to size; liberal quantities of banana oil, cement, rubber, colored tissue, and other supplies come in each kit; full sized plans with detailed instructions that are simple to follow—everything needed to complete the models and make construction as easy as possible. Select yours now and order today for immediate delivery (remember to see your dealer first for SCIENTIFIC kits and if he has not as yet received his supply, then order direct from us).

Only $1.00 Postpaid



MONOCOUPE MODEL 145

The Monocoupe is well known as the most beautiful small cabin job in existence. It might be said that light planes in the cabin class the world over are patterned very closely after this design. The model is a steady and beautiful flyer. Colors are blue and white with black details.

COMPLETE KIT $1.00 POSTPAID

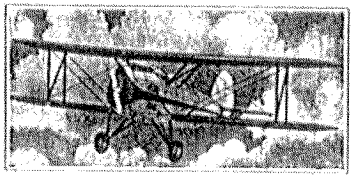
Kit No. D-32

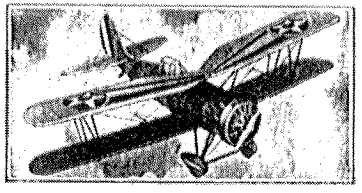
GREAT LAKES SPORT TRAINER

The Great Lakes Sport Trainer is well known in the commercial world for its fine performance and exceptional beauty. This new model will fly far better than the original design, which for a long time held an official world's record. Colors are red and white with black detail.

COMPLETE KIT $1.00 POSTPAID

Kit. No. D-33





VOUGHT "CORSAIR" MODEL V80

This Corsair V-80 is a very fine addition to the famous line of Corsairs known the world over. It makes a beautiful, fast, and steady flying model. It is colored the usual blue wings and tail surfaces of the Navy, with the top of the upper wing yellow, balance of detail black, except for the special red markings on the top of the upper wing.

COMPLETE KIT $1.00 POSTPAID

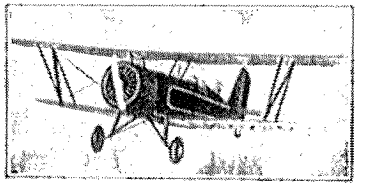
Kit No. D-34

STEARMAN MODEL 81

Here's a model that is exclusive with SCIENTIFIC. It has already established an excellent reputation for itself. We have adopted the most popular color combination which is yellow wing and tail surfaces, red fuselage with wide band of black outlined in white. The model is capable of beautiful flights, graceful and even. It makes a "hit" with everyone instantly.

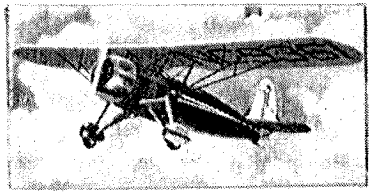
COMPLETE KIT $1.00 POSTPAID

Kit No. D-35



THE MODEL AIRPLANE KIT SENSATION OF THE SEASON!

FAIRCHILD



WARNER POWERED MODEL "22"

Newly designed landing gear is built into the fuselage with special shock absorbers in wheel housings.

KIT INCLUDES A COMPLETELY FINISHED N. A. C. A. ALUMINUM COWLING
50" Wingspan; Length 35"; Weight 8 oz.

Takes right off the ground within 12 feet. A steady, consistent flyer. Will rise, in most cases, to about 75 feet altitude and FLY FROM 500 TO 750 FEET, although longer flights have been made. Red and blue fuselage, yellow wing and rudder. A special shock absorber eliminates shock upon landing.

Kit contains: Giant full-sized detailed drawing; five large clear photographs; ready finished 12" balsa wood propellor; all wire fittings ready made; celluloid for windshields; all balsa strips cut to size; all ribs, bulkheads, etc., clearly printed on sheet balsa; 6 large sheets colored tissue; generous supply of cement; rubber; etc. Send for one of these fine kits today—we'll see that it is rushed to you. And we're sure you'll be more than satisfied with the kit, and with the finished model.

COMPLETE KIT—POSTPAID

$3.50

At Your Dealer or Order Direct

Kit No. F-43



MONOCOUPE MODEL 110

GUARANTEED TO FLY 600 FEET

22" WINGSPAN

A picture can hardly do justice to this beautiful model. Has already made record height of 150 feet. A hound for high altitude. It heads for the clouds, speeds through them, flirts up its tail, and noses to earth in a soul-stirring glide, with a perfect landing! Non stall type. This is actually a fool proof plane and one that will give you much pleasure building and hours of enjoyment in flying.

COMPLETE KIT—POSTPAID

75c

Kit No. M 44

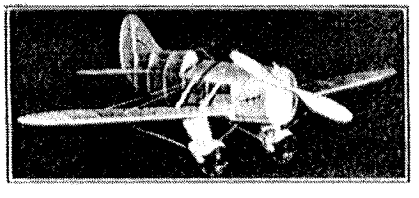
GEE BEE MODEL "D"

22" WINGSPAN

Here's the real thing. As sensational as the performance of its famous prototype, is the performance of this model. In the Gee Bee Sportster D are embodied features you'll marvel at. A perfect reproduction of the record breaking airplane, easy to build, perfectly balanced, graceful, and yet so strong you'll have a hard time crashing it! Kit is complete in every detail, including ribs, bulkheads, pants, etc., clearly printed on balsa; bamboo; banana oil; cement; wire forms; balsa strips; full size plans; etc.—in fact everything needed to complete a perfect scale flying model Gee Bee.

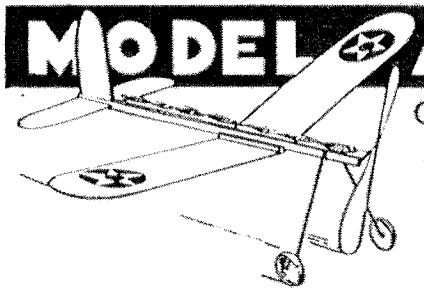
COMPLETE KIT—POSTPAID

75c



Kit No. GBD 45

MODEL AIRPLANE



GUARANTEED TO FLY 300 FEET

COMPLETE KIT **25¢**

EDUCATIONAL VALUE UNSURPASSED!

The educational value of this kit is unsurpassed for teaching the fundamentals of Aeronautics. Models of this type have been used for years in such schools as New York University's Division of Aeronautical Education, Y. M. C. A.'s, and numerous summer camps all over the United States use this model as a project in their model airplane work. It comes to you with all parts formed and cut, and can be assembled in a very few minutes. Flys from 300 to 500 feet, 2 to 3 minutes.

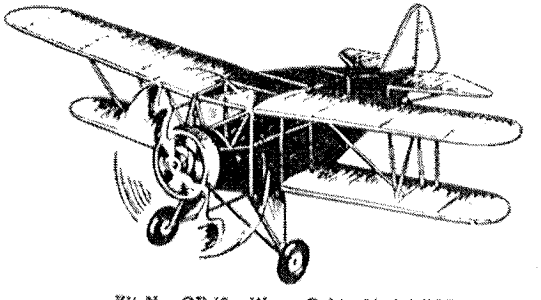
Kit No. B-46

GREATEST KIT BARGAIN EVER OFFERED!

GUARANTEED ★ FLYERS

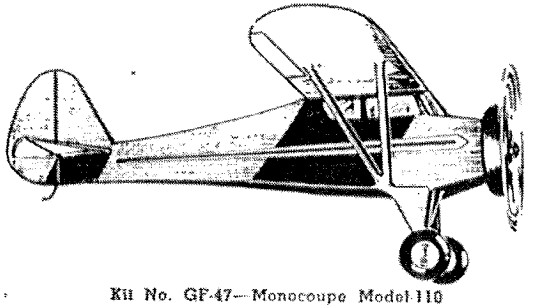
15-Inch Wingspan

After hundreds of requests from the younger model builders for a "2-bit" kit, we have created this series of GUARANTEED "FLYERS, consisting of two of the country's most popular sport planes—two planes that you can see at almost any airport you visit, and which never fail to show fine performance. These planes are the Monocoupe Model 110 and the Waco Cabin Model "C". The price on these kits is so very low that you can afford to order both planes at once or, if you want proof of their fine quality, send a trial order for only one of them—we'll wager you'll order the other model promptly.



Kit No. GF-48—Waco Cabin Model "C"

COMPLETE KIT—POSTPAID 25c



Kit No. GF-47—Monocoupe Model 110

The Complete Kits Contain:

Ready made propeller, drilled for shaft; ready made wheels, drilled for axle; ready made nose plug, drilled for shaft; ready made wire fittings; all ribs, bulkheads, etc., printed on balsa; 2 sheets colored tissue; bottle cement; bottle banana oil; washers; rubber motor; split bamboo; all balsa strips cut to size; and full size plans with detailed instructions.

COMPLETE KIT—POSTPAID 25c

WORLD FAMOUS!

HI-FLYER

Reg. U. S. Pat. Off.

MODEL AIRPLANES

20 in. Wingspan! Guaranteed to Fly! Bridge-Type Landing Gear!

Scientific HI-FLYERS are going places these days. Wherever you ask you'll find that HI-FLYERS are winning new contests every day—breezing right along to greater popularity.

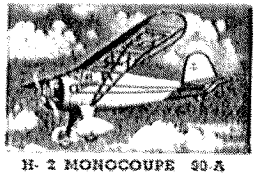
An important exclusive feature is the Bridge-Type Landing Gear. How many times have you had the landing gear of your models, glued to the fuselage in the old method, break in the shock of landing? Model builders report hundreds of flights are now possible without the slightest damage to the landing gear with this new method of inserting it into the fuselage. How model builders rave about it! It's a sensation—and only Scientific offers it to you! Order your kit today.

Brown Contest Rubber in all Scientific Kits Adds 25% to Flight Duration.

These kits contain everything to build these models—and that means EVERYTHING. All ribs, bulkheads, fairings, etc., are clearly printed on sheet balsa, ready to cut out. New machine-cut 6" balsa propellers are included in all kits. Many kits contain finished turned balsa cowls, others have correct size balsa blocks. Liberal quantities of cement, rubber, tissue, ready-made wire fittings; insignia, and wing lettering printed in color on gummed paper; all strip wood of the finest quality obtainable accurately cut to size; full-size detailed drawings giving every bit of information needed for building and flying the plane. Absolutely everything necessary to build a flying model airplane!



H- 1 WACO CUSTOM CABIN



H- 2 MONOCOUPE 90-A



H- 3 WACO F-5



H- 4 CURTISS HELL DIVER



H- 5 WACO "D"



H- 7 MR. MULLIGAN



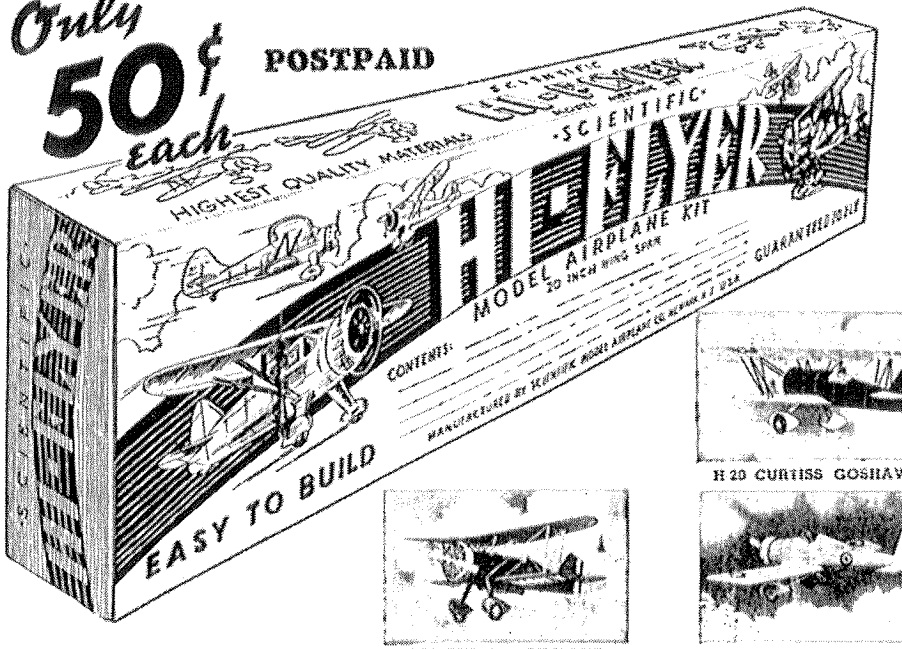
H- 8 GRUMMAN FIGHTER



H- 9 ART CHESTER

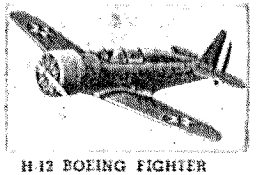


H- 6 CURTISS HAWK P6-E

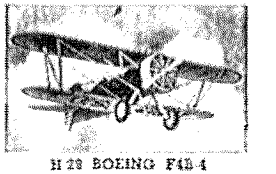




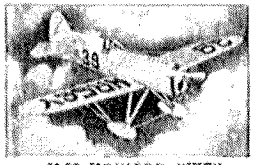
H-10 FOKKER D-7



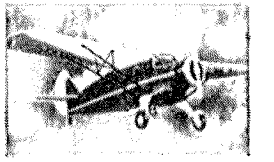
H-12 BOEING FIGHTER



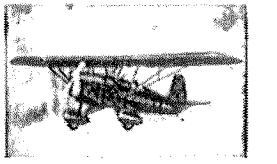
H-20 BOEING F4B-4



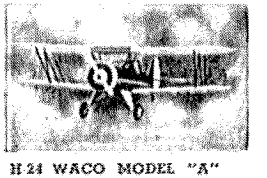
H-23 HOWARD "IKE"



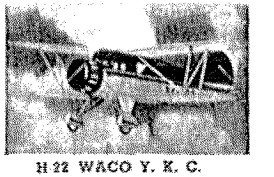
H-27 STINSON RELIANT



H-21 FAIRCHILD MODEL "22"



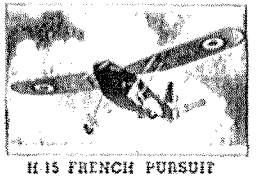
H-24 WACO MODEL "A"



H-22 WACO Y. K. C.



H-25 FAIRCHILD CABIN

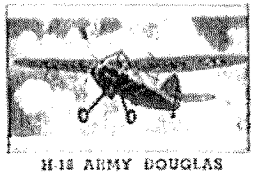


H-15 FRENCH PURSUIT



H-14 BELLANCA PACEMAKER

H-28 CURTISS GOSHAWK



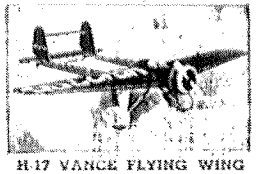
H-18 ARMY DOUGLAS

H-13 CURTISS CYCLONE

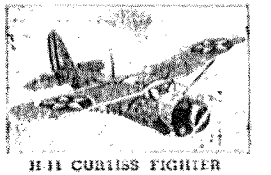
H-26 VICKERS JOCKEY



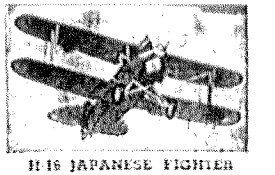
H-19 NIEUPORT SCOUT



H-17 VANCE FLYING WING

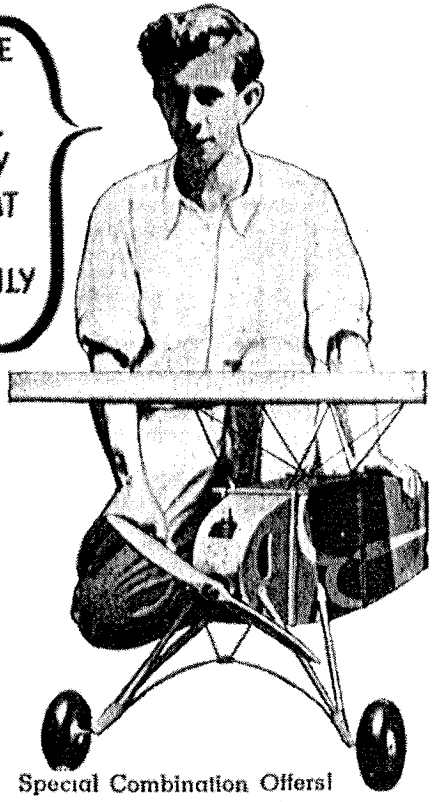


H-11 CURTISS FIGHTER



H-16 JAPANESE FIGHTER

YES, FELLOWS! SCIENTIFIC SURE HAS MADE A SWELL KIT OF MY "MISS PHILADELPHIA" GAS MODEL. THE PLANS WERE DRAWN DIRECTLY FROM MY ORIGINAL MODEL SO THAT THE KIT WILL BUILD AN EXACT REPRODUCTION. THIS KIT CERTAINLY IS A HONEY!



8 FT. WINGSPAN, 57 INCHES LONG

Weight (less motor): 3½ Pounds

Flies for One Hour on an Ounce of Fuel

SPECIAL FEATURES

STABILITY: High wing above fuselage improves stability of model 60%.

FLEXIBLE WING SUPPORTS: Should end of wing hit any obstacle on landing, the flexible wing supports eliminate any possible damage to the model.

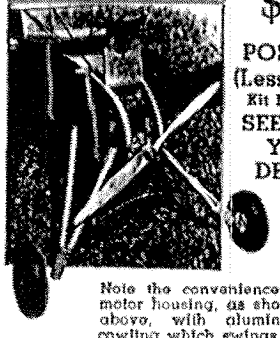
CRASH PROOF LANDING GEAR: Landing gear is attached to sides of fuselage with bolts which allow it to pivot. Rubber bands hold the "V" struts together at axle and provide the "Give" required when landing. Should the landing gear become twisted in an exceptionally hard landing, it can easily be straightened again since all parts are movable.

BEAUTY: The high-set wing adds grace and beauty to the model, which is colored blue with yellow scallops on the wing, and a yellow and blue fuselage.

OTHER FEATURES: Detachable wing. Adjustable rudder control. Aluminum cowl hatch swings open for easy access to motor.

Special Combination Offers!

Special Combination Offer No. 1	**ALL FOR**
"Miss Philadelphia" kit $ 9.95	
Brown Jr. motor 21.50	**$29.00**
Tru Pitch propeller 1.95	
$33.40	**POSTPAID**
Special Combination Offer No. 2	**ALL FOR**
"Miss Philadelphia" kit $ 9.95	
Ohlsson motor 18.50	**$27.00**
Tru Pitch propeller 1.95	
$30.40	**POSTPAID**
Special Combination Offer No. 3	**ALL FOR**
"Miss Philadelphia" kit $ 9.95	
Baby Cyclone "D" M. 17.25	**$26.00**
Tru Pitch propeller 1.95	
$29.15	**POSTPAID**



Note the convenience of motor housing, as shown above, with aluminum cowling which swings up to permit easy access to motor.

$9.95

POSTPAID (Less Motor)

Kit No. MP-4

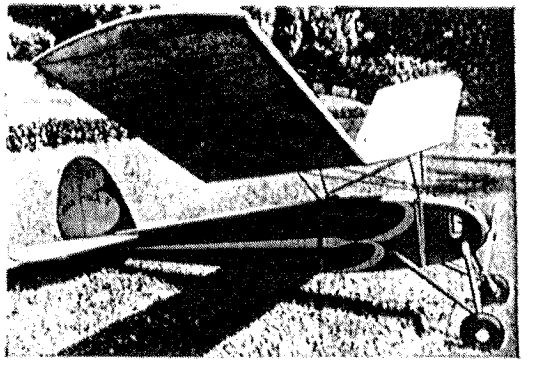
SEE IT AT YOUR DEALER

"MISS PHILADELPHIA" IS 100% COMPLETE

SPECIAL DESIGN FINISHED 14" HARDWOOD PROPELLER; PAIR OF PNEUMATIC RUBBER WHEELS; READY-MADE BALSA WOOD RIBS; complete printed balsa including bulkheads, rudder sections, etc.; all strip wood of finest quality accurately cut to size, and ample quantity to complete model; bamboo covering paper; large amounts of gas model cement and special yellow and blue gas model dope; streamline tail wheel; aluminum hatch printed on the correct gauge sheet aluminum; complete set of hardware, such as knife switch, 2 sets of jacks and plugs for attaching booster batteries, nuts, bolts, machine and wood screws, tough landing gear wire, threaded and complete with 4 nuts, sheet metal; battery wire, washers, etc.; finest strip spruce for parts needing added strength; complete assortment of numerals, lettering, and "Miss Philadelphia" insignia printed in color on gummed paper; and 3 jumbo full-size detailed plans giving every bit of information needed for building, along with photographs, instructions for building and flying, diagrams, etc. Unquestionably the finest Gas Model Kit ever offered by anyone!!

SCIENTIFIC MODEL AIRPLANE CO., NEWARK, N. J., U. S. A.

. . . . . For six months we have been working on Plans and Specifications of the world-famous "Miss PHILADELPHIA" Gas Model, under the personal supervision of Mr. Maxwell B. Bassett. We have spared no expense to bring the model builder the finest in gas powered planes. Every detail has been duplicated exactly as employed on the original model. The "Miss PHILADELPHIA" won FIRST PLACE in every CONTEST entered in 1936—a record in itself! Now you, too, can have this championship model. Here is the



BIG NEWS!

HERE AT LAST—AN EXACT DUPLICATE OF

MAXWELL BASSET'S

CONTEST WINNING GAS POWERED 8 FT. MODEL

"Miss PHILADELPHIA"

YES SIR! Here is the Exact Model that has won every major gas model contest in recent years! Read the following partial list of records made by Maxwell Bassett with this sensational Model:

OCTOBER 1936—1st place I. G. M. A. A. Meet (for consistency and endurance) 1/16 oz. Fuel/lb. Time: 18 minutes.

OCTOBER 1936—1st Prize Winner in First Payload Contest at Hadley Field, N. J.

JUNE 1936—1st Place I. G. M. A. A. Semi Annual Contest (present holder of I. G. M. A. A. Gold Trophy) 1/16 oz. Fuel/lb. 5/16 oz. Fuel in Tank. Time: 24 Minutes.

AUGUST 1935—1st Place National Junior Birdmen Gas Model Contest. 1/8 oz. Fuel/lb. 5/8 oz. in Tank. Time: 18 Minutes, establishing New World's Record.

JUNE 1935—3rd Place "Nationals" St. Louis. Time: 37 Minutes with 1½ Minute Engine Run.

(All the above records were made without assistance of thermal currents which usually contribute to winning flights.)

The "Miss PHILADELPHIA" Gas Model has won 1st Place in every contest entered, with the exception of the 1935 Nationals at St. Louis, when engine trouble developed. Despite this handicap, the model showed a wonderful performance with a flight of 37 minutes with only 1½ minutes engine run, taking 3rd Place as listed above.

The original "Miss PHILADELPHIA" has flown more than 1,000 times, with almost 100 hours to its credit. This original model is still in good flying condition. The original model is powered with a Brown Jr. engine, but you can install either the Brown Jr., Baby Cyclone "D" or the Ohlsson, or any reliable engine on the market, and get perfect performance with the model you build.

MAXWELL BASSETT'S "Miss PHILADELPHIA" GAS MODEL

SCIENTIFIC LEADS

GAS MODEL DELUXE

Miss America

Winner of Grand First Prize at the Metropolitan Model League meet held at Hadley Airport and Always a Consistent Winner in Contests Entered.

STILL THE NATION'S BIGGEST KIT SENSATION!

7 Foot Wingspan — Weight (less motor) 2¾ lbs.
22 Minutes on 1 oz. — 18 to 1 glide

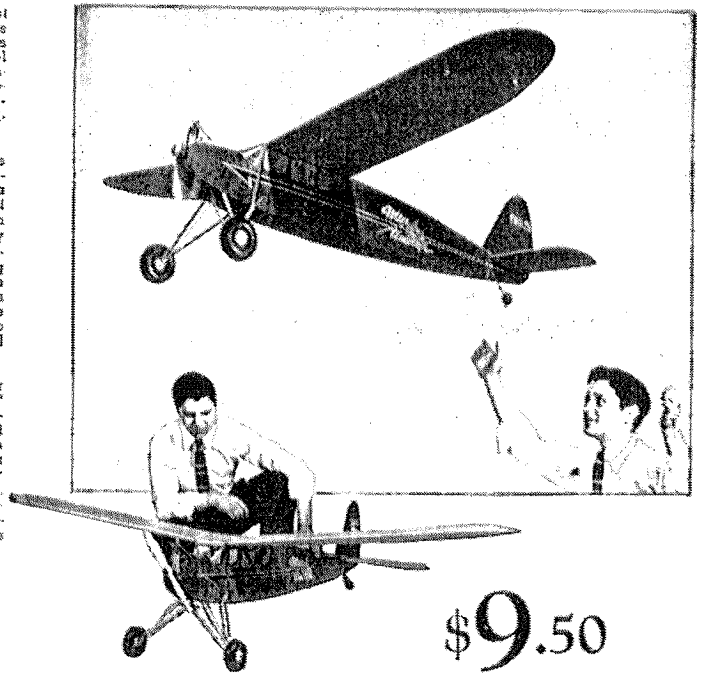
THE BIG RED AND BLUE PLANE THAT HAS ALL THE WANTED FEATURES!

●Here is truly the last word in gas models. This new kit for the "Miss America" Gas Model further emphasizes Scientific leadership in design, construction, performance, and outstanding value.

●The "Miss America" is the result of our determination to develop a really superior type of gas model. It has been cut into kit form only after many months of experimenting and testing until it is no longer an experiment but a gas model with every feature worked out perfectly so that it gives exceptional performance.

●In order to give to our customers the "perfect" gas job, the finest qualities aerodynamically and structurally have been incorporated into this model. This is actually a miniature airplane, embodying the same features of design and construction as full scale ships. A real winner.

★



$9.50

THIS KIT IS 100% COMPLETE.

1 Pair Pneumatic Rubber Wheels; 1 Finished Hardwood gas Model Propeller; 3 giant full size detailed plans giving every bit of information needed for building and flying the plane; streamlined tail wheel; large amounts of special wood cement, bamboo paper cement, red, blue, and black dopes; complete printed-out wood containing ribs, bulkheads, wing tips, etc.; all strip wood of the finest quality accurately cut to size; special covering material; celluloid; rubber; complete set of hardware such as terminals, knife switch, nuts, bolts, machine and wood screws, heavy landing gear wire, landing gear brackets, brass grommets, aluminum angles for motor mount, sheet aluminum, battery wire, washers, etc.; strip spruce for parts needing added strength; complete assortment of numerals, lettering, and "Miss America" insignia printed in red and blue on gummed paper; also many more parts too numerous to mention.

COMPLETE KIT

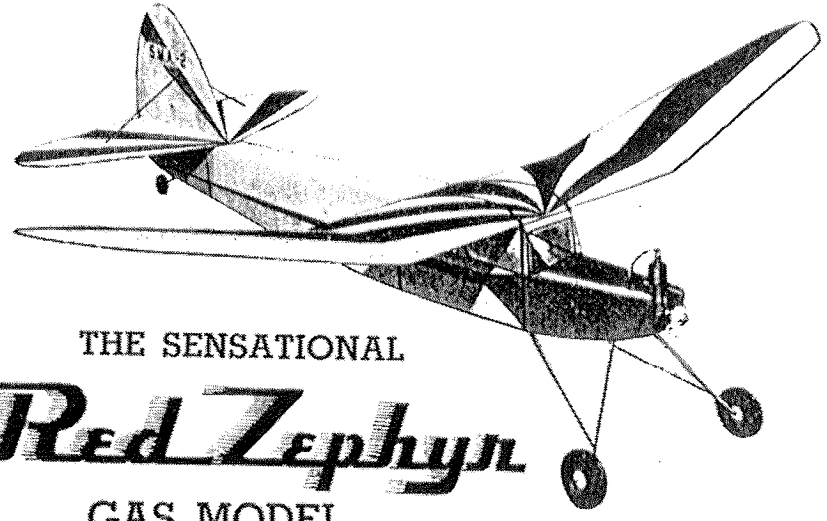
(Less Motor) Postpaid or at your Dealer.

KIT NO. SMA-1

SPECIAL COMBINATION OFFERS!

"Miss America" Kit	$ 9.50	"Miss America" Kit	$ 9.50
Brown Jr. Motor	21.50	Baby Cyclone Motor	17.25
Special 14" Prop.	1.95	Special 13" Prop.	1.95
Regular Value	$32.95	Regular Value	$28.70
ALL FOR ONLY	$29.00	ALL FOR ONLY	$25.50
POSTPAID		POSTPAID	
KIT NO. SMA-2		KIT NO. SMA-3	

WITH GAS MODELS!



THE SENSATIONAL

Red Zephyr

GAS MODEL

6 FT. WINGSPAN; 56" LONG; WEIGHT (LESS MOTOR) 2½ LBS.

DESIGNED IN RESPONSE TO THE DEMAND FOR A RELIABLE GAS MODEL AT A REASONABLE PRICE. THE ONLY LOW PRICED MODEL WITH ALL THESE VITAL FEATURES:

PRECISION BUILT! Accurate, fully detailed, full size drawings and complete instructions guarantee you a perfect model, easily and quickly constructed.

QUALITY FEATURES! Simple and highly efficient aerodynamic design with low wing loading.

PERFORMANCE! Takes off from the ground unassisted in about 25 feet, climbs beautifully, and lands perfectly.

ECONOMY! The most inexpensive GOOD model to buy, so simple in construction that upkeep cost is nothing.

SPECIAL FEATURES! Full shock-absorbing landing gear with new type, easily attached brackets. Vibration absorbing motor mount. Reinforced nose and hood to protect motor. Wings quickly demountable for easy transportation. 3½" pneumatic rubber balloon wheels—puncture proof, shock proof, fine appearing.

THIS KIT IS 100% COMPLETE.

$6.95

The Finest Low-Priced Gas Model Kit Obtainable!!!

COMPLETE KIT (Less Motor) POSTPAID—Or at your dealer.

KIT NO. RZ 1

Here's What This Kit Contains:

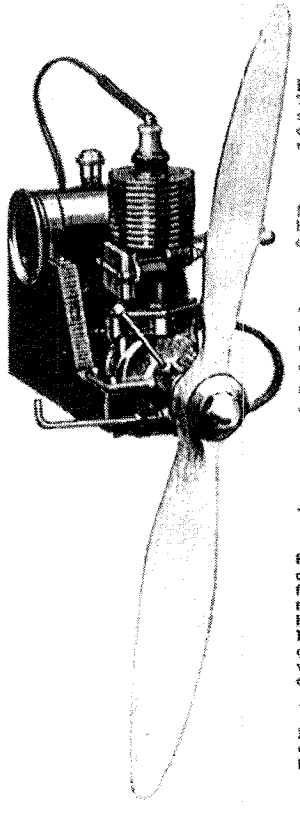
1 PAIR PNEUMATIC RUBBER WHEELS; 1 FINISHED HARDWOOD PROPELLER; complete printed out wood, including ribs, bulkheads, wing tips, rudder sections, etc.; all strip wood of finest quality accurately cut to size and ample quantity to build complete model; bamboo covering paper; rubber; complete set of hardware including nuts, bolts, landing gear brackets, and heavy wire, battery wire, washers, etc.; strip spruce for reinforcing parts; large can gas model cement; streamlined tail wheel; complete set of numerals, insignia, and lettering for wings and tail; 2 large sheets of Full Size Plans with instructions, photographs, diagrams, and detailed illustrations—everything you need to build this wonderful gas model.

SPECIAL COMBINATION OFFERS:

"Red Zephyr" kit	$ 6.95	"Red Zephyr" kit	$ 6.95
Brown Jr. motor	21.50	Baby Cyclone motor	17.25
Special 14" prop	1.95	Special 13" prop	1.95
Regular price	$30.40	Regular price	$26.15
ALL FOR ONLY	$27.50	ALL FOR ONLY	$23.50
POSTPAID		POSTPAID	

Now MORE POWER!

More Efficiency.. Less Vibration



BABY CYCLONE ENGINE

Order Your New Super-Powered "Model D" Today

Extra! Big News that can come only from miniature engine headquarters. The new Baby Cyclone Engine "Model D" is here! It is even more outstanding in performance, economy, dependability, and long life than any of the other famous Baby Cyclone Engines. It has startling new improvements that make it one of the greatest miniature engines of the time.

New "Model D" Alive with Advancements

Newly engineered to deliver more power—more R.P.M.'s—more dependability, longer life—and with no increase in weight, piston displacement, or fuel consumption—this new "Model D" will make history.

These 6 Features Defy Competition!

- ✱Revolutionary new controllable spark advance
- ○New hardened and lapped piston
- ✱New special formula high-speed main bearing
- ○New hardened and ground crank shaft
- ✱New improved firecracker coil
- ✱Only engine to complete 100 hour throttle test

The Bargain Buy at $17.25 Postpaid

COMPLETE WITH 13" HARDWOOD PROPELLER.

DOUBLE GUARANTEE

Every engine sold by Scientific carries a Double Guarantee—One from the engine manufacturer—the other from Scientific. Model builders have made Scientific headquarters for Miniature Engines because they know they will get the full value for every cent spent.

FREE PROPELLER

With every Baby Cyclone Engine sold we will include free of charge a special 13" hardwood propeller that has been designed expressly for this engine. With this propeller you can be sure that your Baby Cyclone will deliver maximum performance.

NOTE! Included with every motor is a booklet giving full instructions on its operation, care, and installation. Included also is a can of breaking in oil.

SPECIFICATIONS

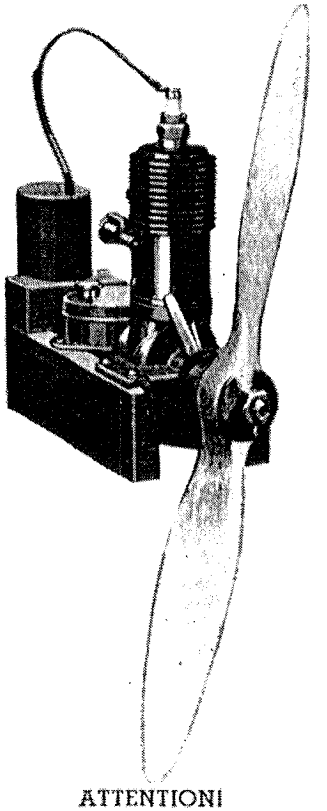
TYPE: 1/6 H. P. rotary valve, 2 cycle, ¾" bore, 13/16" stroke. Variable speed from 500 to 4000 R.P.M. with 13" propeller. 1¾ oz. capacity gas tank.
IGNITION: Special AC pointed plug, 2-oz. coil, foot-proof timer. Size 3¼" deep x 1⅞" wide x 4¼" high.
WEIGHT: Including engine, tank, coil, and condenser 10½-oz. Engine shipped on wood base after actual factory run-in test.

The New Improved "BABY CYCLONE" ENGINE

SCIENTIFIC MODEL AIRPLANE CO., NEWARK, N. J., U. S. A.

WORLD'S FINEST MINIATURE ENGINE

YOU CAN FLY A CHAMPION



BROWN JR. MOTOR

Records are being made every day by planes powered with the Brown Jr. motor. It is heartening to know that, no matter how critical or detailed the inspection this motor will give a practical revelation of its supremacy.
On one flight a model equipped with a Brown Jr. flew in large circles which carried it over three States—New Jersey, Pennsylvania, and Delaware on about 17 oz. of fuel, and attained an altitude of 8,000 ft.

NEW IMPROVED FEATURES

The new fuel tank assembly unit is more compact and cleaner in design. The tank has been made smaller to hold ¾ the amount held by the old style tank. An important feature of the new tank is that it may be taken apart for cleaning, and it has a spring cap on the filler tube. This cap prevents foreign matter from entering the tank and also makes it easier to fill.

The motor skid has been shortened with the coil and condenser in a position so that they may be taken off without unsoldering or changing the wiring hook-up. This change has also lightened the entire assembly for those wishing to install the skid as the motor bearer in their plane.

FREE PROPELLER

With every Brown Jr. motor we will include free of charge a special 14" hardwood propeller that has been designed especially for this engine. With this propeller you can be sure that your Brown Jr. motor will deliver maximum performance.

DOUBLE GUARANTEE

Every engine sold by Scientific carries a Double Guarantee—one from the engine manufacturer—the other from Scientific. **NOTE!** With every motor a booklet giving full instructions on its operation, care, and installation, is included.

ATTENTION!

The three engines illustrated in this catalog are items which we stock in large quantities, at all times, assuring you of immediate shipment—absolutely no waiting! After very severe tests and trials, Scientific finds these engines the finest on the American market today. They are sold with an Ironclad Double Guarantee.

If, however, you are interested in any other make of gasoline engine than those illustrated, we may be able to fill your requirements as we have a stock of all nationally advertised gasoline engines on hand. Write us fully stating the type, make, size, horsepower, etc., motor you require and we will endeavor to fill your particular need. Write today—we are sure we can supply you with that engine you want and, like all engines sold by Scientific, it will carry the usual Double Guarantee, and a free propellor designed to run the engine at its best.

SCIENTIFIC—Headquarters of America for American Gas Engines.

OUTLINE SPECIFICATIONS

⅞" Bore x 1" Stroke — 1200 to 10,000 R.P.M. — 1/5 Horsepower

CRANKCASE: Die cast aluminum Silicon Alloy, light, strong, with smooth finish.

CYLINDER: Alloy steel, with cooling fins machined from solid bar stock.

PISTON: Alloy steel, machined from solid bar stock. Hardened, ground, and lapped to perfect fit.

CONNECTING ROD: Drop forged from special Alloy steel. Hardened and lapped to perfect fit on crank and wrist pins.

CRANKSHAFT: Drop forged from special alloy steel. Heat treated and finished all over.

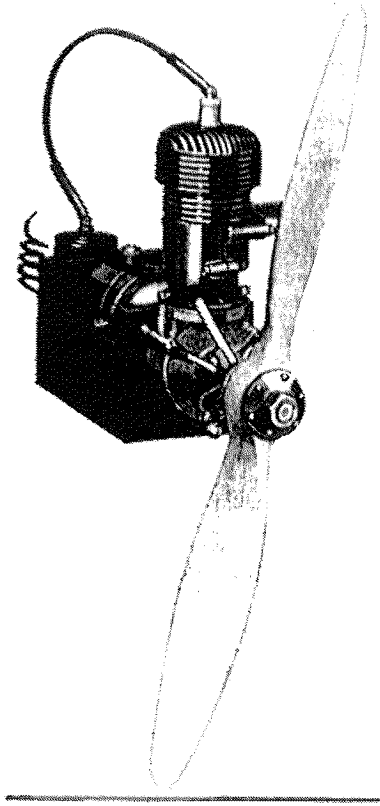
SPARK PLUG: To fit ⅜"-24 S.A.E. thread. High tension core.

IGNITION COIL: Light weight aircraft coil and condenser.

ACTUAL SCALE WEIGHTS:
Bare Motor: 6½-oz.
Complete, with tank, coil, and condenser, as furnished: 11½-oz.
Ready to run, with gas, 2 batteries, and prop: 20½-oz.

$21.50 POSTPAID

Announcing



The New OHLSSON RADIAL MOUNTED MOTOR

PERFORMANCE PLUS DEPENDABILITY

At the take off, in the air, no matter how steep the angle of attack, Ohlsson motors keep running. They won't quit until the gas runs out and there is always plenty of power in reserve. From prop hub to spark coil each part is designed to give maximum efficiency. Parts precision finished to .0001" makes efficient operation possible day after day.

WITH PLATINUM BREAKER POINTS

Power, performance, dependability, and economy, the Ohlsson motor has them all. Choose an Ohlsson Radial Mounted motor for your model. Compare it with other motors, and prove for yourself its superiority.

EASY STARTING

Just a twist of the propellor and off it goes.

DOUBLE GUARANTEE

Every engine sold by Scientific carries a double Guarantee—one from the engine manufacturers the other from Scientific. Model builders have made Scientific headquarters for miniature engines because they know they will get the full value for every cent spent.

FREE PROPELLER

With every Ohlsson motor sold we will include free of charge a special 14" hardwood propeller that has been designed expressly for this engine. With this propeller you can be sure that your Ohlsson will deliver maximum performance.

NOTE!

Included with every motor is a booklet giving full instructions on its operation, care, and installation.

SPECIFICATIONS

Horsepower: 1/5—**Bore:** 7/8"—**Stroke:** 15/16"

Motor Speed: 500-750 r. p. m.

Bare Engine Weight: 8¾ oz.

Flying Weight less Batteries: 11-oz.

Mounting: 3 point radial mounting gives greater strength and less danger of serious damage in case of crack-up.

Cylinder: Alloy Steel, machined to .0001" with dural finned cooling head for efficient cooling at all speeds.

Crankshaft: Fully counterbalanced one-piece crankshaft is pin tapered to take up play as shaft wears.

Piston: Electric furnace cast iron, machined to .0001".

Crankcase: Cast in two removable sections. Allows periodic examination and main bearing replacement without purchase of new crankcase.

Gas Tank: Allows 18-22 minute flights depending on speed and mixture.

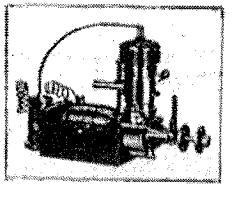
Carburetor: Special needle type mixing valve allows perfect fuel adjustment for all flying speeds.

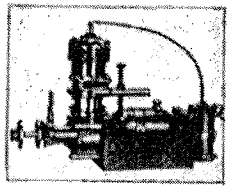
Timer: Adjustable spring steel with platinum breaker points allows accurate motor speed control.

Motor Operation: Ohlsson motors operate upright or inverted.

OHLSSON GIVES YOU ALL THE LATEST FEATURES

These photographs of the beautiful Ohlsson motor are two views that will give you a clear idea of its arrangement, disclosing the position of the streamline gas tank, the radial mounting of the engine, and other details.





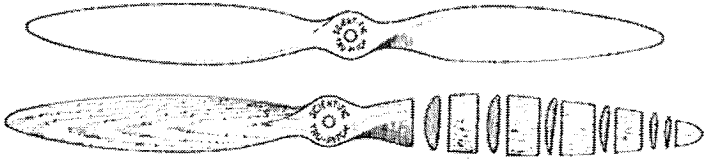
$18.50 POSTPAID

GAS MODEL TRU-PITCH PROPELLER

Tru-Pitch DeLuxe Gas Model Propellers

MADE IN AMERICA

It has often been said that the propeller is the heart of any model plane, and in gas models this is most true. A good true pitch propellor can make a big difference in the performance of your model. Don't be satisfied with any propellor—buy a Scientific Tru-Pitch Prop and be sure of results. These propellers are hand carved of clear maple, have a highly polished natural wood finish, have a hole drilled for prop shaft, are the right weight, and perfectly balanced. Tru-Pitch propellers are designed for use on all gas engines. 13" propellers are used on engines of 1/6 h. p. or less, 14" and larger props are used for 1/5 h. p. or more.



SCIENTIFIC TRU-PITCH GAS PROP

Now offered at low prices that every model builder can afford to pay and still have the most efficient propeller obtainable.

$1.75 EACH

13"	$1.75 each
14"	1.75 each
15"	1.95 each
16"	1.95 each

TRU-PITCH GAS MODEL PROPELLERS

MADE IN AMERICA

These are true pitch gas model propellers of a very good quality. In spite of their extremely low price these propellers still maintain a high quality of efficiency being true pitch, accurately carved and shaped by hand, with the right size hole drilled for shaft. Made of hard wood, with a beautiful natural wood finish. We can safely say that these are the lowest priced gas model propellers in America today for the quality given.

13"	$ .99 each
14"	.99 each
15"	1.25 each
16"	1.25 each

99c EACH

THE LOWEST PRICED FINE QUALITY GAS MODEL PROP ON THE MARKET! At their ridiculously low price you can afford to buy 2 or 3 props.

SCIENTIFIC PNEUMATIC RUBBER WHEELS



$1.50 PER PAIR POSTPAID ON AT YOUR DEALER

Lightweight—Puncture Proof—Shock Proof—Gas model fans have gone wild over these new wheels. Most of the gas jobs flown at the Nationals last year were equipped with them and found to give 100% satisfaction. Now every builder can equip his gas model with these rubber shock-proof wheels. SUPPLIED IN ONE SIZE ONLY for use on models with 3 to 8 foot wing span. Black tires with aluminum colored hubs. Size 3½", weight 3 oz. per pair.

Price, per pair $1.50

GAS MODEL COVERING MATERIAL

BAMBOO "AIRTITE" PAPER

The most popular covering for use on gas models. When treated with water and a coat of dope it forms a strong, tight, skin-like surface. This is the finest grade of bamboo paper on the market today. Use it on your next job and you will be surprised at the added efficiency of your model.

24" x 36" sheet .....$ .07; 3 for .....$ .20

"ZEPHYR" SILK

Guaranteed Japanese silk, finest quality, weight per yard ¼ oz. "Zephyr" silk is guaranteed by us to be the best gas model fabric obtainable. It is strong, light in weight, and will withstand severe wear. Get only the best when you buy gas model fabric—buy "Zephyr" silk.

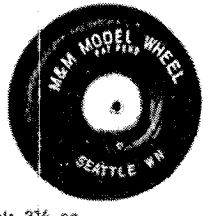
Genuine "Zephyr" Grade A Silk, 36" wide, per yard .....$ .50

HEAVY SILK

This silk is slightly heavier than the regular and about twice as strong, being of a finer weave. We recommend this silk for large models where a really fine covering job is desired.

Heavy Silk, Grade AAA, 36" wide, per yard ...$ .79

M & M GAS MODEL WHEELS



All wheels come individually packed 1 pair to a box, including inflating tool. 3¼" diam., weight per pair 1½ oz.

Per Pair, Postpaid $1.50

3½" diam., weight per pair 2¾ oz. per pair, postpaid $3.50

4½" diam., weight per pair 5 oz. per pair, postpaid $3.75

6" diam., weight per pair 6 oz. per pair, postpaid $4.50

The 3¼" diam. wheels are intended for use on very light gas models—the larger sizes for heavier models.

SHAPED PROPELLER BLANKS



Correctly shaped blanks for the gas model builder who prefers to carve his own propeller. Made of selected hard maple wood. A true pitch propeller can be obtained by using these blanks because they have the right proportions of width to length.

In 4 Sizes

13", 14", 15", 16" .....each $ .35

ELECTRIC ACCESSORIES

MIDGET TIP JACKS



This item is made of light weight material. It is mounted in model with only a small portion protruding, into which a plug is inserted to give additional current from outside batteries. This has been found to be the best way to hook up booster batteries as they can be unhooked in a jiffy by simply pulling out the plugs.

Each .....$ .10

NEW SOLDERLESS PLUGS



Can quickly be attached to wire without soldering or the use of tools. These are especially recommended for use with our Midget Tip Jacks. This is the newest idea for attaching booster batteries for additional power while starting engine.

Each .....$ .10. Extra small, each .....$ .10

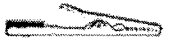
REGULAR PLUGS



Can be used in the same manner as our solderless plugs except that the wires to these plugs must be soldered.

Each .....$ .05

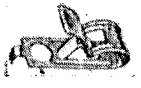
ALLIGATOR CLIPS



Good firm grip. Another way of attaching outside batteries is to have two wires attached to points or terminals which protrude on outside of model and to which outside wires are connected by using alligator clips. They are small in size and are the ideal thing for work in tight places.

Size 1½", each .....$ .10

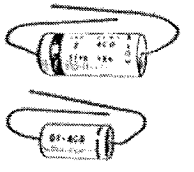
TERMINALS (Spring Clips)



Made of light weight material and small in size these clips are economical and easy to install on gas jobs. Make a good battery box hook-up. When fastened on inside of box its spring tends to hold batteries tight in place as well as to connect current.

3 for .....$ .05

CONDENSERS



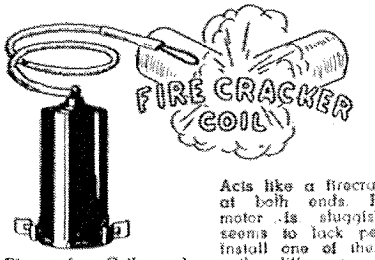
Size	Price
No. 1—1¼" long	$ .20
No. 2 1⅜" long	.25

Light in weight and of the highest quality. For all engines.



MODEL KNIFE .....Each $ .10

FIRECRACKER COIL



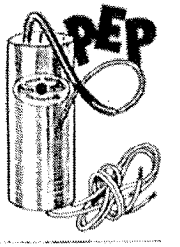
Acts like a firecracker lit at both ends. If your motor is sluggish and seems to lack pep then install one of these new Firecracker Coils and see the difference. This is absolutely guaranteed the finest coil for miniature gas motors on the market. Can be used with all engines. Each $2.50

A C SPARK PLUGS



Want a quicker starting, more responsive engine? Then treat your motor to one of the finest spark plugs made. Steps up the performance of your engine 100%. The A C Spark Plug is the choice of hundreds of gas model builders and is used by many of the prize winners at the Nationals. Many engine manufacturers include this spark plug as regular equipment on their engine. Priced exceptionally low, each .....$ .75

BROWN JR. COIL



This is the famous Brown Jr. Spark Coil that has been used on many of the winning gas models at the Nationals in the past few years.

Price .....each $3.50

BROWN JR. SPARK PLUGS



The Brown Jr. Spark Plug has long been known as the "Miracle Plug" because of its ease in starting balky engines. There are times when an engine refuses to run on the standard spark plug but will pop off instantly when a Brown Jr. Plug is applied. Formerly sold for $1.50,

now only $1.00

NEEDLE VALVE



This is a special hardened needle valve for use on Baby Cyclone Engines (all series, X, A, B, C, and D.

Guaranteed. Each .....$ .50

HURLEMAN ARISTOCRAT SPARK PLUG



This spark plug is the result of extensive experiments with many different kinds of insulating materials and electrode alloys tested in many different shapes and forms and we believe it to be one of the best plugs available for model motors. Easily taken apart for cleaning and, if not abused, will remain leak-proof indefinitely.

Weight ¼ oz., each $1.00

MOISTURE-PROOF HOOK-UP WIRE



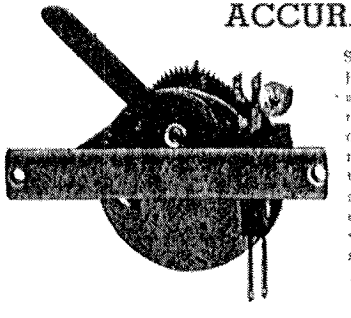
Most motor trouble is caused by the ignition system. Often the gasoline and oil from a motor will dissolve the covering of the wire and make a short circuit. After putting numerous kinds of wire through severe tests we find this the finest on the market today as it is oil, gas, and water proof.

In packages of 5 feet $ .20



Price .....$.10

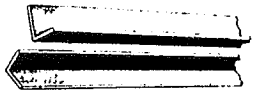
ACCURATE FLIGHT TIMER



Specifications: Weight 2¼ ounces; time of flight adjustable from 0 to 120 seconds; silver contact points; switch with snap action, no other on-off switch is needed; no hair springs to get out of order; rugged and vibration proof; accurate time; easily mounted in many positions; the long arm is intended to stick through a slot in the fuselage; no winding of springs; simply set the lever at the desired time and let her go. Invaluable for very short test hops when adjusting your model. A necessity for the 45 second National Finals.

PRICE
$3.00
POSTPAID

ALUMINUM ANGLE BEAM



This angle is excellent for motor mounts and has many other uses. 1/16" thick. Supplied in 1, 2 and 3 foot lengths.

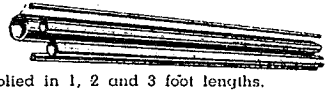
½" x ½", per foot ..... $ .15
¾" x ¾", per foot ..... .25

DURAL ANGLE BEAM

This angle has four times the tensile strength of the regular angle yet weighs only half again as much. 1/16" thick. Supplied in 1, 2 and 3 foot lengths.

½" x ½", per foot ..... $ .20

BRASS TUBING



Supplied in 1, 2 and 3 foot lengths.

1/16" outside diam. ..... per foot $ .10
3/32" outside diam. ..... per foot .10
⅛" outside diam. ..... per foot .10
3/16" outside diam. ..... per foot .15
¼" outside diam. ..... per foot .20
5/16" outside diam. ..... per foot .20

HEAVY SHEET ALUMINUM

Excellent material for parts on gas jobs, for motor mounts, etc.

	3" x 6"	3" x 12"	12" x 12"
1/64" (.016")	$ .08	$ .15	$ .45
1/32" (.032")	.10	.20	.60
1/16" (.063")	.20	.35	1.25
3/32" (.094")	.30	.55	1.85

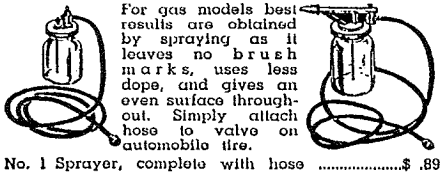
AXLE



Threaded, with 4 nuts, complete. This axle is made of ⅛" steel and is supplied perfectly straight. It can be bent to any shape desired.

24" long, each ..... $ .35

AIR SPRAY GUNS



For gas models best results are obtained by spraying as it leaves no brush marks, uses less dope, and gives an even surface throughout. Simply attach hose to valve on automobile tire.

No. 1 Sprayer, complete with hose ..... $ .89
No. 2 DeLuxe Sprayer, complete with hose and extra jar 1.19

BANANA OIL

In cases where the gas model is small and ordinary Jap tissue is used, banana oil will serve well as an adhesive for the tissue.

3-oz bottle ..... $ .25
½ Pint Can ..... $ .50
1 Pint Can ..... .75

SCIENTIFIC GAS MODEL FINISHES



This line of finishes has been especially formulated for use on gas model airplanes. All materials entering into the manufacturing of Scientific Finishes are of the finest quality and are subject to frequent laboratory tests. The finish on a gas model does a great deal in making a successful model. Don't take chances with inferior, low-priced finishes.

CLEAR NITRATE DOPE

This dope is durable, permanently tautening, brushes easily, and gives a smooth finish. Supplied at brushing consistency, it may be thinned with our Nitrate Thinner for spraying.

3 oz. bottle ..... $ .25
½ pint can ..... .50
1 pint can ..... .75

COLORED NITRATE DOPE

This is a quality dope having excellent tautening power, good durability, and producing a smooth, well-filled fine surface. For spraying reduce approximately 50% with Nitrate Thinner. Colors: Red, yellow, blue, green, orange, silver, olive drab, black, and white.

3 oz. bottle ..... $ .25
½ pint can ..... .50
1 pint can ..... .75

NITRATE THINNER

This is the finest grade material for reducing clear and colored dopes for spraying, and for thinning cement, paper cement, and banana oil.

3 oz. bottle ..... $ .25
½ pint can ..... .50
1 pint can ..... .75

HEAVY COLORLESS CEMENT

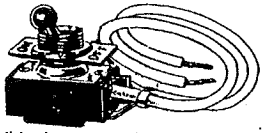
A new cement developed by Scientific especially for gas models. It is excellent for gluing hard balsa, pine, spruce, basswood, and plywood. We strongly recommend this cement for your gas model requirements.

3 oz. bottle ..... $ .25
½ pint can ..... .50
1 pint can ..... .75

BAMBOO PAPER CEMENT

Here's a new preparation for attaching bamboo paper to the framework of gas models. It can also be used for attaching silk and other coverings.

3-oz. bottle ..... $ .25
½ pint can ..... .90
1 pint can ..... .75

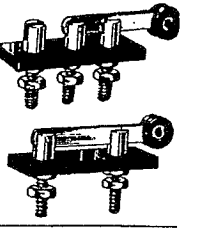


TOGGLE (on-off) SWITCHES

This is a superior type of switch for gas models. New type ball joint facilitates easy toggle switch movement. Will not stick.

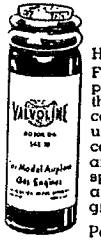
Priced low ..... each $ .39

MINIATURE KNIFE SWITCHES



An excellent switch for gas models. Perfectly designed, constructed of light weight metal with black Bakelite base and insulated handles. Firm contact assured. Size of base ½" x 1¼".

-pole switch ..... each $.25
-pole switch ..... each .35



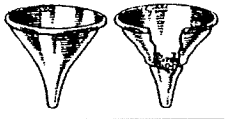
VALVOLINE MOTOR OIL

HERE IS THE OIL YOUR ENGINE NEEDS.

Finest Pennsylvania oil, refined by a new process. Ordinary motor oils can't stand the high speed of miniature motors and can ruin your engine in one or two minutes running. Valvoline Motor Oil's process of refining removes sluggy elements and as a result you get better power and speed. This oil comes in SAE-70 grade and is for use in all miniature gas engines. Buy the best—Valvoline SAE-70.

Per bottle, with instructions ..... $ .20

FILTER FUNNEL



assures clean fuel in otor tank by use of a ter screen which is ilt into the funnel. This an important piece of uipment that every gas odel fan will want.
ice ..... each $ .30



GLASS DROPPERS

Each ..... $ .05

PLANS

"MISS AMERICA" GAS MODEL

omplete set of plans for building the "Miss Ameri-" gas model as illustrated elsewhere in this talog. This includes 2 giant full-size detailed ans measuring 36" x 48" and 1 measuring " x 24". They give every bit of information needed r building and flying the plane, and show all bs, fairings, bulkheads, etc., full size. Complete t of 3 plans $1.50

"RED ZEPHYR" GAS MODEL

e gas model you can build from these plans is real winner and one of the easiest-to-build gas bs on the market. Plans are full size and consist 2 large sheets measuring 34" x 44". They give ery bit of information needed for building and ing the "Red Zephyr" and show all ribs, fairgs, bulkheads, etc., full size.

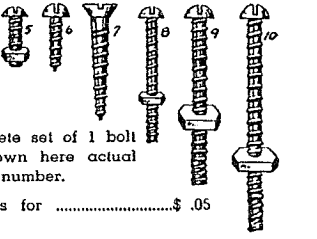
mplete set of 2 plans $1.00

FINEST SPRING MUSIC WIRE

This is the best and toughest rustproof music wire for the use of gas models. It is extremely springy and is excellent for landing gears. This music wire is tinned to prevent rusting and facilitate soldering. Comes in perfectly straight lengths.

3/32" diam., per 5 ft. length ..... $ .15
⅛" diam., per 5 ft. length ..... .25
1/16" diam., per 3 ft. length ..... .10

NUTS AND BOLTS



Sold as a complete set of 1 bolt and 1 nut. Shown here actual size. Order by number.

Any size, 3 sets for ..... $ .05

WOOD SCREWS

Shown here actual size, No. 6 and No. 7.

6 for ..... $ .05

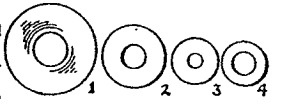
AIR VENTS



Stamped brass with wire screen. Just the thing to put over the air intake tube on your motor to prevent small particles of dust from entering. Can also be used as a ventilator where motor is entirely covered as on scale gas models.

Each ..... $ .10

WASHERS



Shown here actual size. All sizes (except No. 3) will fit over ⅛" rod.

Per Doz. ..... $ .05



GAS CAP

This is a standard size gas cap and can be used with all gas engines. Has small pin hole in top for air to enter.

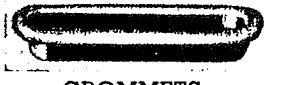
Each ..... $ .10

PROP SHAFT NUT



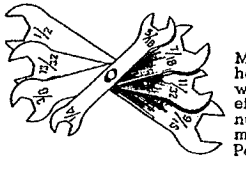
Standard size—will fit all engines.

Each ..... $ .05



GROMMETS (Oblong Eyelets)

These are used to reinforce slots on sides of fuselage where landing gear enters and slides for shock absorbing effect. Has many other uses. Per pair $ .15.



WRENCHES

Made of fine quality hardened steel. Four wrenches, which include eight sizes—one for any nut or bolt used on any miniature gas engine.

Per set ..... $ .25

Flight records and contestants in competitions.

Model Matters

Club notes and news of model organizations.

(In contest tabulations, results are to be read as minutes (to left of colon), seconds, and fractions.)

Massachusetts Gas Ban

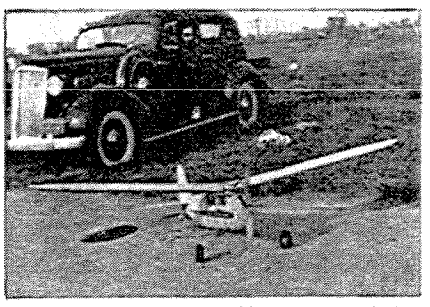
Gas models have been banned in Massachusetts. State Registrar Frank A. Goodwin ruled that gasoline-powered models are legally aircraft and cannot be flown in the State unless licensed and operated by licensed pilots. This verdict was first enforced July 24th, when William E. Heaton, State aviation inspector, halted gas-model flights at the Bowles Airport, near Springfield, Massachusetts.

The gas-model ban is still in effect despite the appeals of the modelers. Anyone who flies his model without a license and an operator's permit is liable to prosecution by the commonwealth.

The Boston Gas Modelplane Society has urged its members, as well as all other gas modelers, to write to the Bureau of Air Commerce, Washington, D. C., asking for a special license for their gas models. Once the modeler has been issued such a license the Massachusetts State aviation commissioner will issue a special operator's license.

We extend the Massachusetts modelers our sympathies and, even more, our energies in a drive to have this ban lifted. Modelers living outside Massachusetts should take steps now to make sure a similar restriction is not put into force in other States. The close cooperation which gas modelers have received from the aviation industry in the past indicates that we will have plenty of assistance in our fight to keep the gas-model hobby free from restrictions.

We agree with the Boston Gas Modelplane Society when they write in their club publication that this present confusion would have been avoided had not certain discontented factions in the model group conducted a propaganda campaign against the gas model. All this criticism is based on personal prejudices and not with a view toward bettering the model hobby. It's a pity that the model hobby should suffer from the "ax grinding" of one discontented model organization.



Bill Effinger of Brooklyn entered his latest "Buccaneer" at the Detroit meet.

The Reading Contest

Perfect weather greeted the contestants of the 10th Annual Model Meet of Croll & Keck Model Airplane Club. Flying was done at Whander Field, outside of Reading, Penn. Contestants came from Pennsylvania and neighboring States. A full schedule of outdoor events, including a scale-model contest, was run off under N. A. A. rules.

Gas models were limited to a fuel supply of $\frac{1}{10}$ ounce per pound weight. But this was sufficient fuel to carry 2 of the models into Lake Ontelaunee, about 2 miles from the airport. Robert Gable, of Reading, retrieved his plane from the lake after it had been clocked at 13 minutes and 3 seconds, the winning time in the contest. Late in the afternoon another gas model landed in the lake. It was flown by Stephen Kowalik, Wilmington, Delaware. The flight was 12:32—second highest of the day.

We can't blame the gas models for seeking out the lake. The weather was so hot that we began to think that a dip in the lake was the only sensible thing.

The meet was the biggest ever conducted in Reading. The full list of entrants, together with a record crowd of spectators, helped turn in a rousing day of model flying. Boy Scouts from Reading acted as timers. Judges were John F. Wolfinger, Orris D. Brown, and Robert Shultz—all prominent in aviation and boys' recreation activities in Reading.

Union County, N. J. Gas Meet

Frank Yuhasz, of Linden, whose model remained aloft for 11:56, won the first Union County gas-model championship in the meet held August 23rd at Hadley Field.

Yuhasz's winning model was a TD coupé, Cyclone-powered. He represented the Linden Club, of which he is treasurer.

Competition for the next four places was keen, with Walter Marionschek of the Queen City Gas Model Club, taking second with 6:7.4; Howard Simmons of the same club taking third with 5:5; and the Linden Club's own plane placing fourth with 4:43.

Crackups during the meet were scarce, as contrasted to those prominent in other meets. Only two occurred during the entire day's activities. Motion pictures were made of the contest and will be shown at a future meeting of the Linden Model Aircraft Club, Linden.

Mid-Western States Gas Model Contest

Sponsored by the Gas Model Aeronaut Club of the Chicago Park District and directed by Mr. B. C. Friedman, the Mid-Western States Contest was held at the Harlem Airport on August 8th. The official registration listed 129 contestants from cities throughout Illinois, Indiana, Ohio, Missouri, Wisconsin, Michigan, and Iowa. Approximately 5,000 spectators witnessed the event. Prizes, valuing $500, consisted of trophies, engines, kits and subscriptions. The awards were made at the Victory Banquet, held at the Sherry Hotel. Following are the results of the meet:

Duration

1st	Michael Roll, Dearborn, Mich.	36	:16.0
2nd	Richard Kliefuth, St. Louis, Mo.	31	:15
3rd	Carson Carol, Indianapolis, Ind.	18	:15.2
4th	John Honboldt, McHenry, Ill.	17	:20.3
5th	Henry Gebhard, Milwaukee, Wis.	15	:25
6th	Frank Nekimken, Chicago, Ill.	15	:24.8
7th	Irving C. Goebel, Chicago, Ill.	14	:55
8th	Henry Schmaltz, Chicago, Ill.	14	:5 .5
9th	E. Shearhod, Chicago, Ill.	12	:18.6
10th	Buddy Johnson, Joliet, Ill.	11	:11.5
11th	Joseph Konefes, Chicago, Ill.	10	:25.2
12th	Robt. Forester, Riverside, Ill.	10	:16
13th	John Jackson, Chicago, Ill.	10	:4
14th	Arnold Johnson, Joliet, Ill.	9	:30.5
15th	Harold Stofer, Indianapolis, Ind.	9	:10.5
16th	Roy Marquardt, Burlington, Iowa	9	:2 .5
17th	E. P. Lott, Chicago, Ill.	8	:20.4
18th	Wm. Briggs, Detroit, Mich.	7	:51.6
19th	Sterling Harper, Chicago, Ill.	7	:38.8
20th	Melvin Yates, Joliet, Ill.	7	:30
21st	Kenneth Ernst, Indianapolis, Ind.	7	:28.5
22nd	Ray Nazar, Chicago, Ill.	7	:5
23rd	Ed Burd, Chicago, Ill.	7	:1

Consistency Event

(Average three official flights—⅛ oz. total gas)

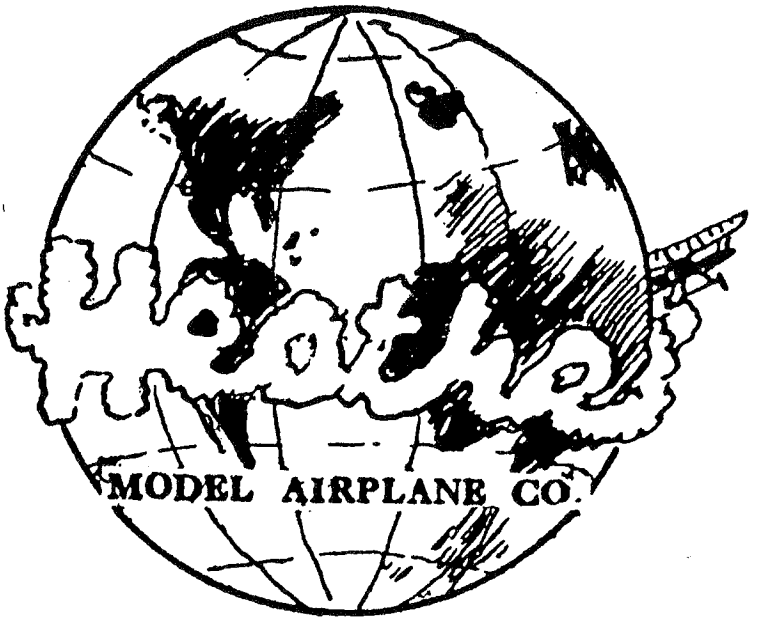
1st	Dr. G. C. Covington, Chicago, Ill.	5	:27
2nd	Edward Konefes, Chicago, Ill.	3	:23
3rd	Melvin Yates, Joliet, Ill.	2	:47.3
4th	Joseph Konefes, Chicago, Ill.	1	:43
5th	Frank Dallaire, Detroit, Mich.		:51.6
6th	G. E. Shearhod, Chicago, Ill.		:38
7th	Barney Johnson, Joliet, Ill.		:36
8th	Carson Carol, Indianapolis, Ind.		:22



Frank Zaic, of New York, left, and Wilbur Tyler, Boston, prepare Zaic's fuselage model for a flight at the Nationals.

1937

FROM



438 East 98th St. Brooklyn, N. Y.

Return Postage Guaranteed

SHARE THE PROFITS WITH HEATHE!

We are always working to further good-will between our company and our customers and here is another one of the instances. We want our friends to share in our profits. With all orders sent to the HEATHE MODEL AIRPLANE CO., we will include HEATHE PROFIT-SHARING COUPONS which are redeemable for valuable gifts and prizes. Remember, this is not a contest; everyone shares our profits.

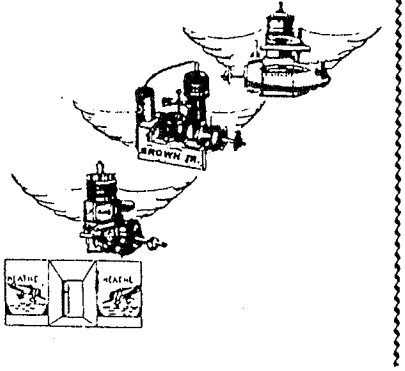
For your past favors to us, we are sending you one (1) coupon and also our latest premium sheet which, we hope, will help you in selecting your FREE PRIZE. Send in your order today! Every order of $1.00 or more sent to us within 10 days after receipt of this catalog will be rewarded with 5 EXTRA coupons for Promptness. WRITE NOW! Every delay means losses to you.

NEW MOTORS FOR OLD!!

HEATHE TRADE-IN PLAN

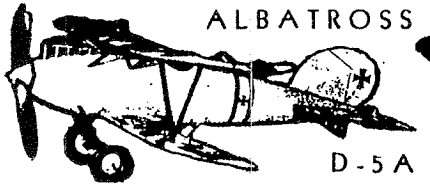
Up to $15.00 allowed on your old motor toward the purchase of any brand new Engine.

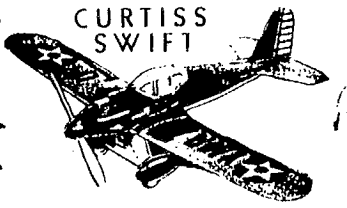
Send us your old motor — with your order for a new one. We will air-mail you our appraisal value. If satisfactory to you, we ship new motor at once. If offer is not satisfactory, we will return your old motor.



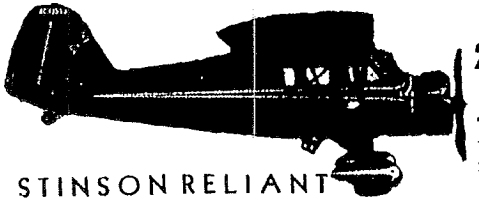
SEE LAST COVER FOR ORDERING INSTRUCTIONS

1937









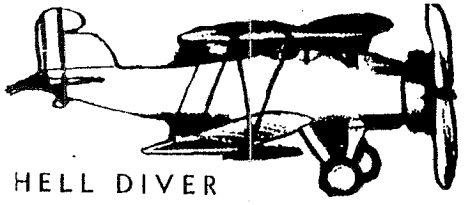
25" WINGSPANS

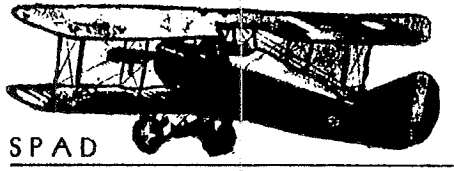
SuperDetail

100% Scale Models

These are the only authentic scale models on the market to sell at this price. The finished model represents the real plane in every respect, even down to having its control parts movable from the cockpit as shown in the accompanying sketch. Kits come complete with aluminum cowl, full-sized plans, strips, cement, insignia, carved props, etc. etc.

1. SPAD
2. HELL DIVER
3. STINSON RELIANT
4. ALBATROSS
5. CURTISS SWIFT
6. DOUGLAS

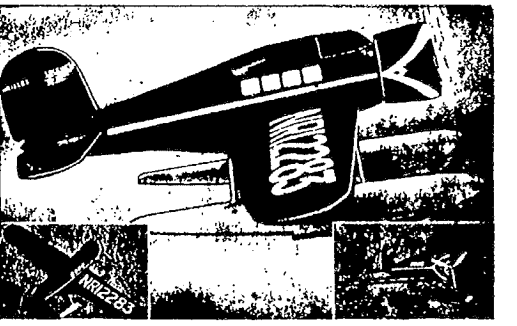




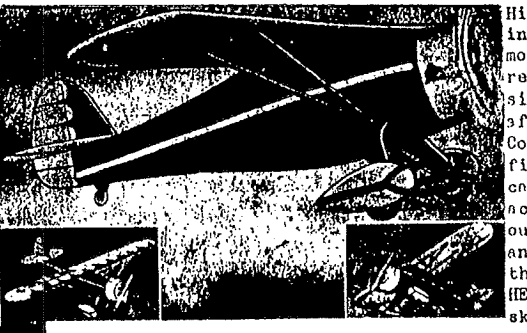
EACH $1.00



You'll want to build this 36" record breaking flyer as a memento! Duplicated in every detail. Each kit contains the famous new HEATHE copyrighted, simplified plans and instruction sheets. All parts printed on balsa. Optional supplies for movable controls from cockpit, carved prop, aluminum cowl, etc. May be flown as a land plane.



EACH $1.50 Rogers - Post Lockheed

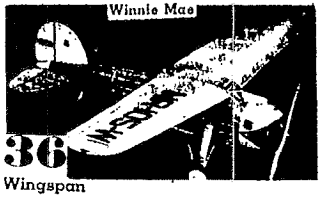


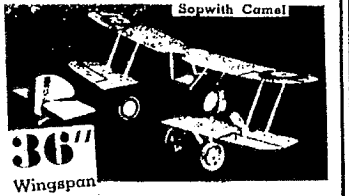
High as the stratosphere in quality. A flying model that has broken all records. Accurately designed by our engineers after months of planning. Complete Kit contains finished aluminum cowl, carved prop, all supplies, accessories, and the famous HEATHE copyrighted and simplified plans. Be the first to fly this new HEATHE mistress of the skies!

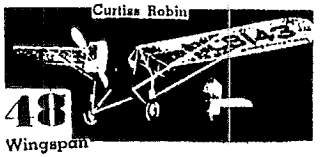
EACH $1.25 Monocoupe "145"

HEATHE Profit-Getters

FREE 5x7 photo of Post and Rogers taking off from Fairbanks, Alaska on their last flight. FREE with each 3 ft. Scale Craft Flyer.



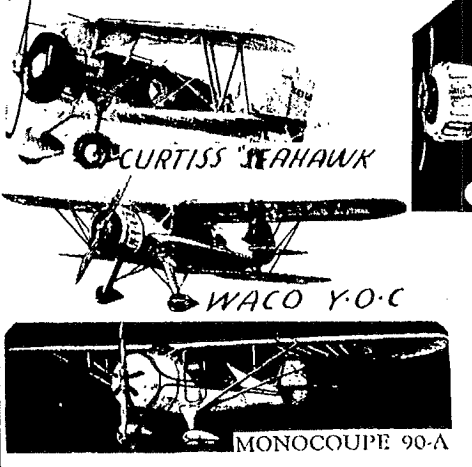




Fellows, here's the biggest thrill of all. Giant models packed with thrills in building and thrills in flying. These kits are complete with large full size drawings and explicit instructions; all ribs, bulkheads, fairings, etc., clearly printed on sheet balsa; ready-made balsa wheels; nose plug; wire fittings; carved balsa props; silk tissue; rubber; cement; banana oil; all balsa strips cut to size; etc.

1. CURTISS ROBIN
2. WINNIE MAE
3. SOPWITH CAMEL

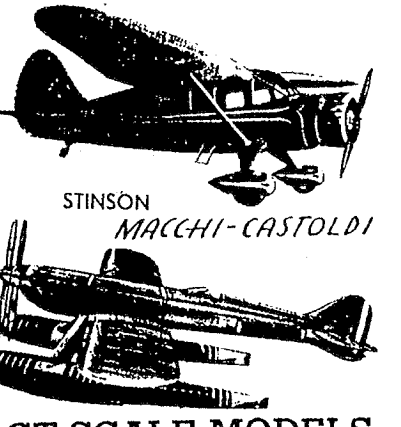
EACH $1.00



EACH .50



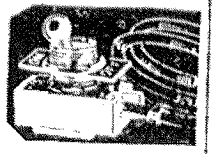
1. MONOCOUPE
2. WACO
3. CURTISS SEAHAWK
4. MISTER MULLIGAN
5. MACCHI-CASTOLDI
6. STINSON



EXACT SCALE MODELS

Extra! Extra! Sensational new models! Read all about these new exact scale, 1"=1'0", having actual working, shock-absorbing landing gears and tailskids. No need to tell you why they are going over like wild fire!

GAS JOB IGNITION



TOGGLE SWITCHES

An on off switch for gas models which will not jam; very useful.

Each ..... $ .05

TERMINALS
(Spring Clips)

Clips are handy, economical, and neat for all connections on gas jobs.

4 for ..... $ .05

HANDY LUGS

For quick connections, the lugs are soldered to wires which connect to screws.

6 for ..... .05



ALLIGATOR CLIPS

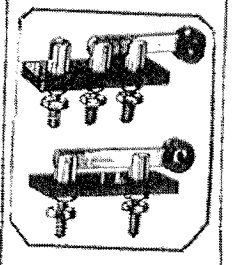
Each ..... $ .10

HOOK UP WIRE

For best results on gas job ignition use moisture proof hook-up wire.

Grade AA, 5 ft. .25
Grade 18B, 5 ft. .15

ACCESSORIES



KNIFE SWITCHES
Used in place of Toggle switch

2 pole — 1 for — .20
3 pole — 1 for — .30



SPARK PLUGS
Brown Jr. Plugs

A needle point plug for engines. Recommended for balky motors especially.

Each $1.00

A. C. Plugs

Each ..... .60

CHAMPION PLUGS

Each ..... .65

GAS MOTOR COWLS

6½" — 1 for — $1.25
8 " — 1 for — $1.50



NEW SOLDERLESS PLUGS

Special plugs for our jacks. Wire is attached without soldering.

Each ..... $ .10

MIDGET TIP JACK

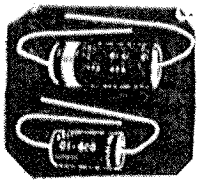
A light weight jack which is used to secure current from outside batteries.

Each ..... $ .10

REGULAR PLUGS and JACKS

Used same as our solderless plugs, but wires must be soldered. Extra small - wt. 1/3oz.

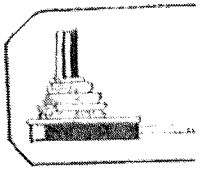
Per set of 4 ..... .25



CONDENSERS

Special gas model condensers.

1½" long — 1 for .25
1¾" long — 1 for .25



ROTARY SWITCH

Special gas model switch — used in place of the toggle.

Each ..... $ .25



BROWN JR. COILS

The famous Brown Jr. coil that has not been copied as yet.

Each $3.50

CARVED GAS PROPELLORS

Scientifically designed, especially made for every engine according to the manufacturer's specifications. Made to get the most out of your engine! When ordering specify make of engine.

12" to 13½" ea. $1.00
14" to 16" ea. 1.25

GAS MODEL WHEELS

Special Pneumatic wheels good for gas model from 3' to 8' size 3½".

Price per pair $1.35

4" WOOD WHEELS

A strong wheel for rugged gas model use.

Per Pair ..... .50

SPUN ALUMINUM WHEELS

5" dia., per pair $1.35

M & M GAS WHEELS

3¼" per pair — $1.50
3½" per pair — 2.75
4 " per pair — 2.75
4½" per pair — 2.75
6 " per pair — 4.00

PNEUMATIC WHEELS
With Valves — For Gas Models

3½" — per pair $1.50
4½" — per pair $1.75



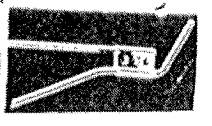
FILTER FUNNEL

Assures clean gas — no more clogged feed lines

Each ..... $ .35

GLASS DROPPERS

Each ..... $ .05



LANDING GEAR BRACKETS

2-piece, with the wire slipped in between, very light and effective.

Per set ..... $ .05

FOR ORDERING INSTRUCTIONS SEE LAST COVER

ALUMINUM ANGLE BEAM

Angle is used for motor mounts and to strengthen other parts of the ship.

½"×½", 1 ft. — .15
¾"×¾", 1 ft. — .25

DURAL ANGLE BEAM

½"×½", 1 ft. — .20
¾"×¾", 1 ft. — .30

BRASS ANGLE BEAM

¼"×¼", 1 ft. — .20
⅜"×⅜", 1 ft. — .25
½"×½", 1 ft. — .35

NUTS AND BOLTS

3/16, 1, 1¼, 1½

Any 3 sets ..... .05

GAS MODEL TIMERS
(Like Auto Knips)
1½ oz. wt.)

Each $1.00

WOOD SCREWS

½, ¾, 1 — 6 for .05

ALUMINUM RIVETS
(Lightweight)

3/32×3/16, 1 doz. .15
1/16×1/4, 1 doz. .05
5/32×3/8, 1 doz. .05

APPROVED GAS MODEL KITS

All the kits listed below are complete in every respect with extra material for replacing parts which may be spoiled during construction. These kits are all recommended and approved by HOBBY INSTITUTE OF AMERICA.

QUAKER FLASH — 5'7" wingspan; wt. 2 lb. 4 oz. with airwheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $4.95

FLYING QUAKER — 7' wingspan; wt. 2¾ lb. Complete with airwheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $5.95

BUCCANEER STANDARD — 5½' wingspan; wt. 3⅛ lbs. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $5.00

SUPER BUCCANEER (Contest ship) 6½' wingspan; wt. 4 lbs. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $8.50

CUSTOM CAVALIER — 9' wingspan; wt. 4¼ lbs. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $15.00

RED ZEPHER — 6' wingspan; wt. 2½ lbs. Complete with 3½" air wheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $6.95

MISS AMERICA — 7' wingspan; wt. 3 lbs. Complete with air wheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $8.50

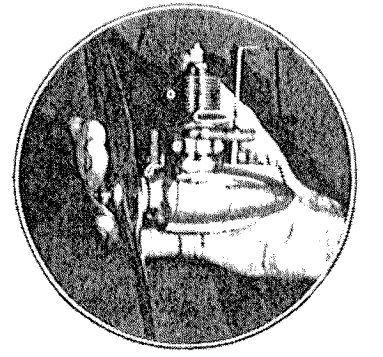
MISS PHILADELPHIA — 8' wingspan; wt. 3½ lbs. Complete with air wheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $9.95

CURTISS ROBIN — 6' wingspan; wt. 2 lbs. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $4.95

CHIEFTAIN — 7' wingspan; wt. 4 lbs. Complete with carved prop and air wheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $7.00

HEATHE STARLET — 6½' wingspan; wt. 3 lbs. Complete with carved prop and airwheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $7.95

HEATHE BUHL PUP — 7' wingspan; wt. 4½ lbs. Complete with carved prop and airwheels. Recommended motor — Brown Jr. B or C, or Syncro Ace.
Postpaid in U. S. A. $7.50



MOTORS

SYNCRO - ACE is the first modern, streamlined gasoline engine designed for model airplanes. Each engine is block tested at factory. Equipped with new, high efficiency coil, developed by Delco-Remy, oilite bearings and new, high efficiency Champion spark plugs. Develops 1/5 H. P. Bore, 7/8"; stroke 15/16"; speeds from 800 to 8000 R. P. M. Special matched steel piston; special alloy connecting rod; counterbalanced crankshaft. Improved timer. Each engine factory tested, mounted on skids and sold ready to run. (Less batteries.) Only $15.00

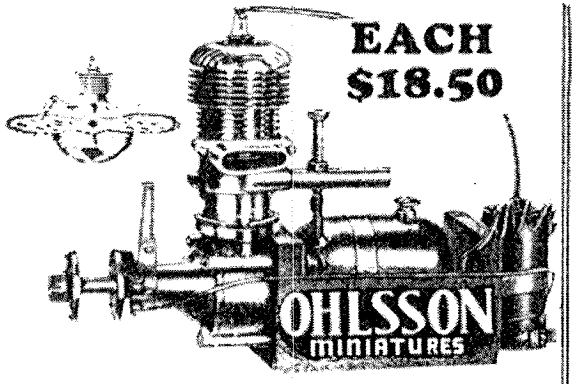
TROJAN Jr.

One piece Roller Bearing crankshaft with special seal. Absolutely Leakproof. "New Type solid skirt" piston gives better compression. Cylinder and Piston specially designed to prevent fouling of spark plug when installed in Inverted Position. Trojan Motors are built of the finest materials and workmanship and are fully guaranteed. Ready to fly with batteries, weighs 9 ounces. Flies ship weighing 1 to 2½ pounds and 3 to 4 ft. span. Shipped complete with coil, condenser, and hardwood prop. Mounted on block. Ready to run. — $18.50

YOU CAN BUILD YOUR OWN GAS ENGINE

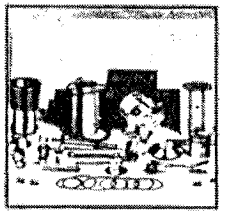
with these motor kits. MIGHTY - MIDGET — The Model sensation of the year — can be assembled and run in a few hours. Complete kit Postpaid $9.85. Assembled and block tested — Postpaid $14.00. GWIN AERO — claimed to be the finest high speed miniature engine obtainable at this low price. Complete kit — Postpaid $11.35. Assembled and block tested — Postpaid $18.25.

SEE LAST COVER FOR ORDERING INSTRUCTIONS



EACH $18.50

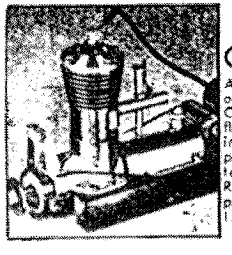
MIGHTY MIDGET MOTOR KIT



A real precision fitted motor complete with assembly and running-in directions. This is not a kit requiring machine shop knowledge. Anyone capable of twirling a screw driver can assemble this amazing little power plant in a jiffy. In fact, the cylinder head has the piston assembly already put together. Two piston rings are on the piston, a feature which prevents power loss even after many hours of wear. The parts on this motor are identical to the Gwin-Aero listed above. Specifications same as for Gwin. Complete kit including, coil, tank, condenser, spark plug, and instruction manual.

GAS MOTOR KITS

Mighty Midget Upright	$ 9.85
Mighty Midget Inverted	10.10
Gwin Aero Upright	11.35
Gwin Aero Inverted	11.60



The **Gwin Aero**

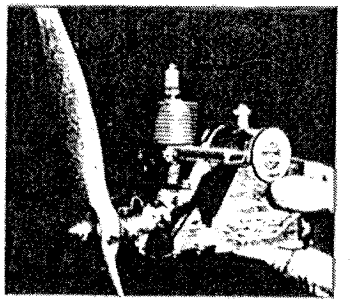
A 5 yr. success record! Bench tested. Operates at all flight positions. Flying weight complete without battery—12 oz. 500-7500 R.P.M. with design propeller. 1 5th H.P.

READY BUILT GAS MOTORS

Mighty Midget Upright	$16.50
Mighty Midget Inverted	$17.50
Gwin Aero Upright	$17.50
Gwin Aero Inverted	$18.25

FLASH

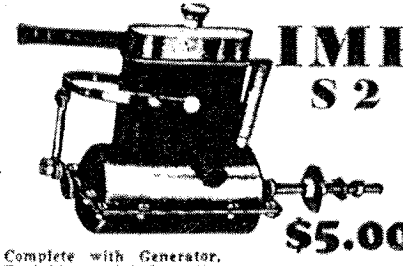
We will accept your old motor as trade, regardless of condition or make. Write to us for details, stating make and model of your old engine. Up to $15.00 allowance on old Brown Junior Motors!



THE NEW MODEL "D" BABY CYCLONE GAS ENGINE

BORE — 3/4". **STROKE** — 13/16".
WEIGHT — 10-1/2 oz. (With coil, tank, condenser)
SPEED — Variable from 500 to 5000 R.P.M. also depending on pitch of propeller.
The new D is practically the same as the older C design shown above with the exception of contact points and a small lever for advancing and retarding the spark.
Complete with coil, tank, condenser and instruction manual, but without batteries and propeller.

EACH $17.25



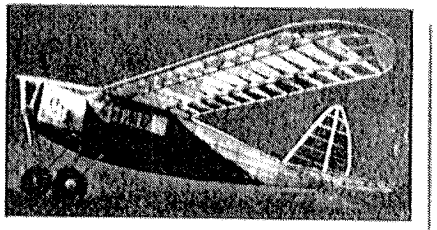
IMP S 2

$5.00 EACH

Complete with Generator, Feed Line, and Safety Clip. Regular $5.00 Value for.....

DEALERS ONLY CAN TAKE ADVANTAGE OF THESE LOW PRICES. WRITE FOR QUANTITY DISCOUNTS.

Model V 4 (FOUR CYLINDER) **EACH $7.50**



THE CHIEFTAIN

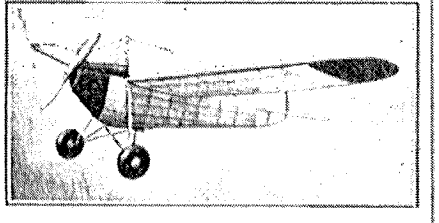
Wingspan 7 ft., Wt. 4 lbs.
A Streamlined Gas Job that took first place in the 1936 Kresge meet . . . can be powered with any of the standard gas motors on the market . . . One of the steadiest fliers, over 700 successful flights . . . Complete in all respects; Full-size wood, wire, cement, plans, dope, bamboo paper, blocks, wheels, etc., etc.

STANDARD SET, Only	$4.00
DELUXE SET, Only	$7.00

THE HEATHE STARLET

Wingspan 6½ ft., Wt. 3 lbs.
A model which flies well with the lighter motors . . . over 600 successful flights with the original, powered with a Baby Cyclone . . . The best ship of them all, Complete and guaranteed in all respects, full-size strips, cement, dope, plans, etc., same as our Chieftain Set.

STANDARD SET, Only	$3.00
DELUXE SET, Only	$5.75

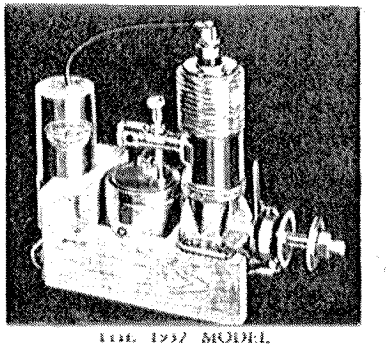


THE HEATHE "BUHL PUP"

Wingspan 7 ft., Wt. 4½ lbs.
A consistent scale model flyer . . . looks like the real ship in the air . . . took third place at the Kresge meet . . . This kit contains full-size wood, cement, paper, plans, etc. . . . Same as Chieftain.

STANDARD SET, Only	$4.10
DELUXE SET, Only	$7.10

ALL OUR DELUXE MODELS contain in addition to the regular materials supplied in each kit; 1 finished carved propeller, 1 pair airwheels, 1 set cut-out ribs, 2 ½-pint cans of any colored dope. Buy the deluxe models and save money.



THE 1937 MODEL
BROWN JR. MOTOR

For model planes. Length overall 5¾" New, improved model, made with the same fine workmanship that has made this motor famous for reliability and for performance.

NEW FEATURES

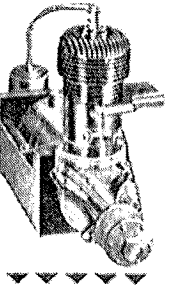
Improved precision construction, designed to give top performance—More compact. Requires less space — Improved gas tank may be cleaned easily — Skids may be removed without disturbing ignition wiring. Each $21.50

BROWN JR. MODEL C MOTOR

New lower priced C-Model. Weight bare, 6½ oz. 1/5 h. p. 4¾ high. 5¼ long. R. P. M. 1200 to 10,000

Before you buy any motor see this new precision made BROWN JR., selling for only $17.00 complete, ready to run.

OHLSSON



At a recent meet in California, of 160 entrees, over 30% were Ohlsson powered and 4 out of the 10 place winners were Ohlsson powered models. All parts interchangeable. Rated at 1/5 H. P. Complete — Postpaid $18.50

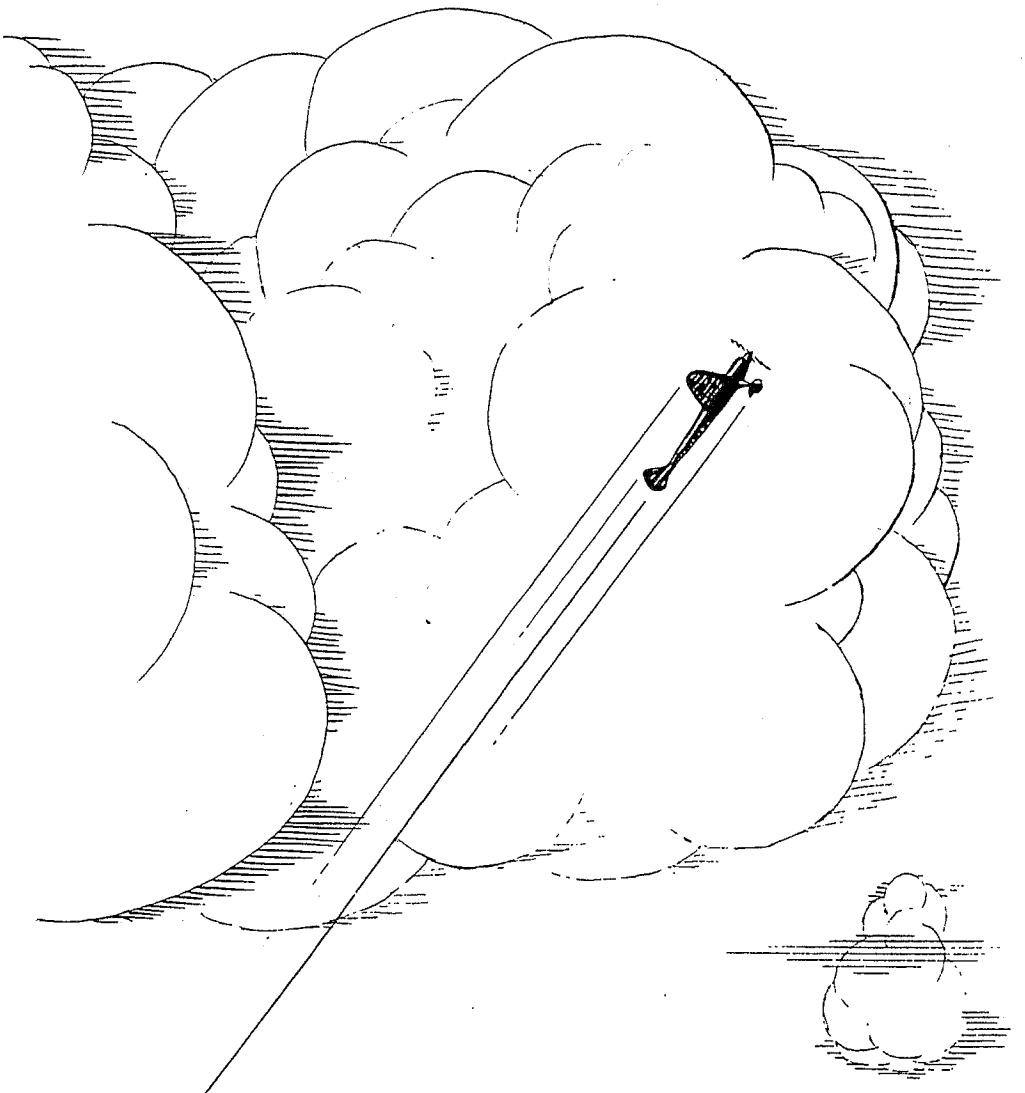
HOW TO ORDER

No orders under 25 cents accepted. No foreign currency or stamps accepted. Add 15 cents for packing and postage on ALL supply orders up to $1.50. On orders of $1.51 or over, add 10 per cent of the total for packing and postage. Add 20c. to all orders that contain balsa or wire in 5-foot lengths to cover special handling.

CANADIAN and FOREIGN ORDERS: Add 30 cents for postage on all orders up to $2.00. On orders of $2.00 or more add 20% of the total for postage and special handling.

Heathe Model Airplane Co.

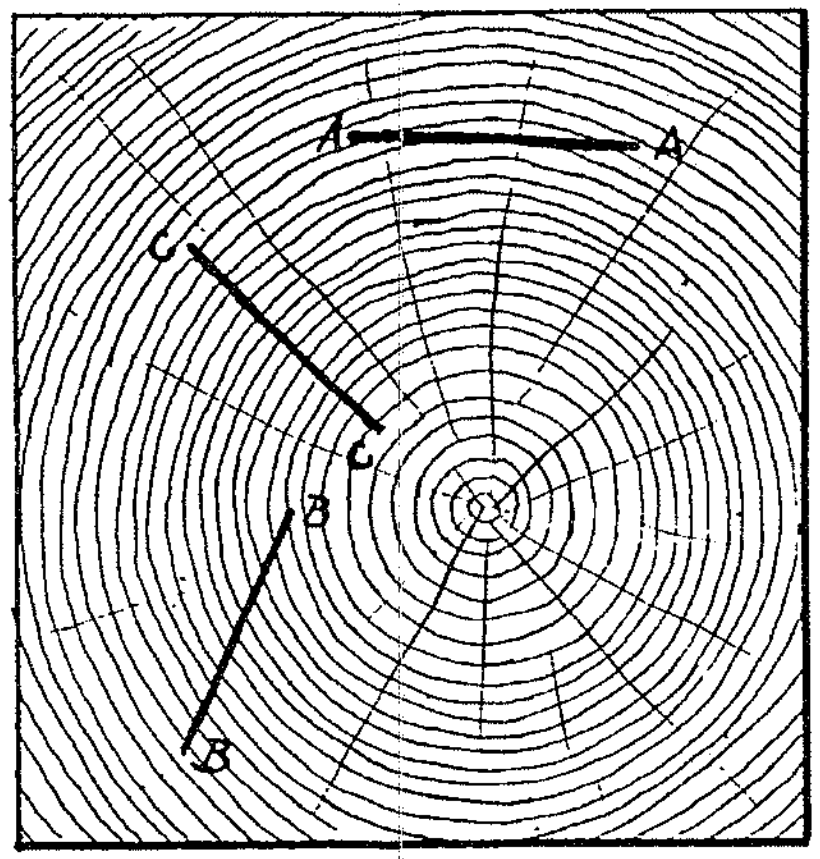
438 East 98th Street, Brooklyn, N. Y.



JASCO PRODUCTS

1938 CATALOG

Junior Aeronautical Supplies Co.
83 East 10th Street New York, N.Y.



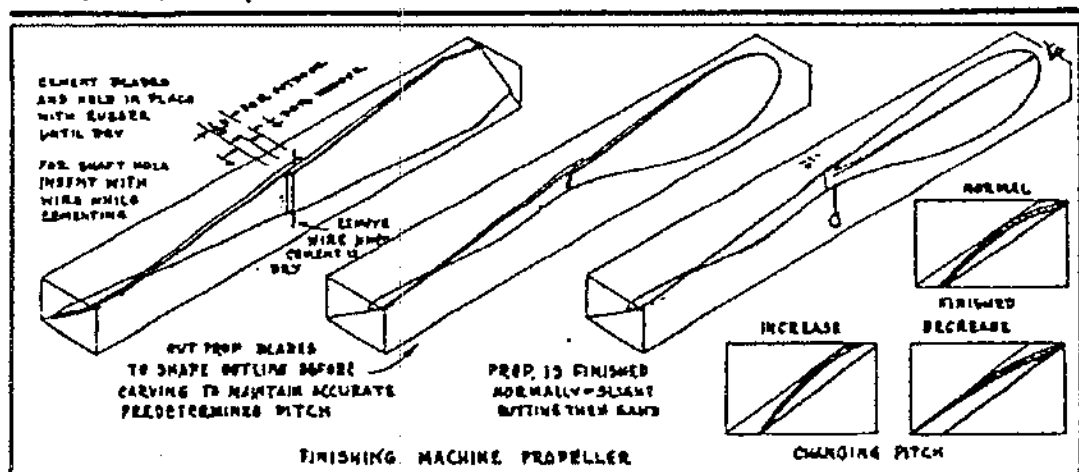
JASCO Balsa

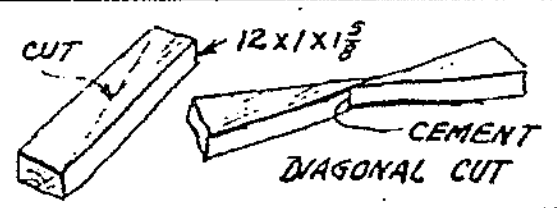
"Lightness with Strength" is the end which all engineers strive to achieve. In the model game this means that the model which carries the most rubber or power in proportion to its weight has by far the best chance of winning contests, or establishing new records. Since balsa is the most commonly used material, a study of its grain structure should enable us to achieve the above and as closely as possible.

The favorable climatic conditions under which balsa grows, provide an almost uniform texture throughout the log, although a change in the seasons is definitely marked by an increase or decrease in the rate of growth. However, the degree of change is usually comparatively small so that the texture is fairly uniform. The growth rate determines the strength and texture. A moist set of years will produce fast growth with light but weak wood, while a dry set of years will cause a slow growth with consequent heavier and harder balsa. Soft or light balsa is also likely to be streaked with mineral colors because of the relatively larger pores through which the moisture can carry the fine sediment. This color streaking does not in any way impair the strength, as it is more of a coloring nature than an accumulation of foreign material.

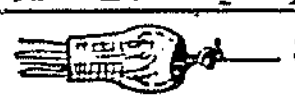
The growth of the tree is obviously from the center outward. It might be said that the structure is similar to a group of concentric tubes very finely cemented together, each tube representing a period of growth. From this analogy we can see that if we were to cut the log along the C-C line we would have a laminated sheet. A cut on the A-A line would give us a sheet of uniform structure. The physical characteristics of the C-C cut are scallopy appearance, and a resistance tube to bending. The A-A cut has an even and uniform surface, is almost velvet-like in the softer grade, and can be easily bent into tubes. These different characteristics, plus the weight or strength grading make possible the maximum strength with the minimum weight when the wood is used correctly. The specific use of each grain is listed in the size and price list under the individual headings.

If you have not as yet used JASCO Grain-Grade **balsa**, you have several pleasant surprises in store for you. It is hard to believe that insignificant factors make such a great difference where "Lightness with Strength" is concerned.





Sketches show procedure for Indoor machine cut props. Use same method for outdoor one piece prop but make them much stronger and finish as for block props.



SPECIAL RUBBER TUBING

It is slipped over rubber and shaft junction. Prevents bunching & climbing. Has 5/16" inside dia. Because of its high elasticity it will accomodate up to 20 strands of 1/4. Use lengths of ½" to 1". Indispensable: 4 in.--5¢

1937 MODEL AERONAUTICS YEAR BOOK

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Alex Nekimken A 43.3s
CONTRIBUTIONS
About Radio Control..........Alex Bugs
R. L. Gliders ....Tex Rickard
Indoor Pushers ......Jim Throckmorton
Flying Scales .... Roger Hammer
Co-Axial Props .... Jim Haffey
Low Speed Airfoils......Fred Rogerson
Twin Pushers.......... Ed Manulkin
Towline Gliders ....John Eggleston
Papier-Mache Models....Fred Mayfield
"X" Ribbed Wings .. John Whithouse
Little Things Count..Clement Turansky
Thermals .... Dick Everett
From Experience .. Henry Stigimaier
Patent Model Hints. Capt. C. E. Bowden
Building a Gas Job .... Rod Doyle
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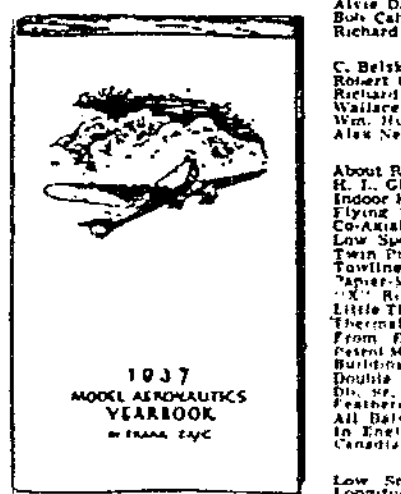
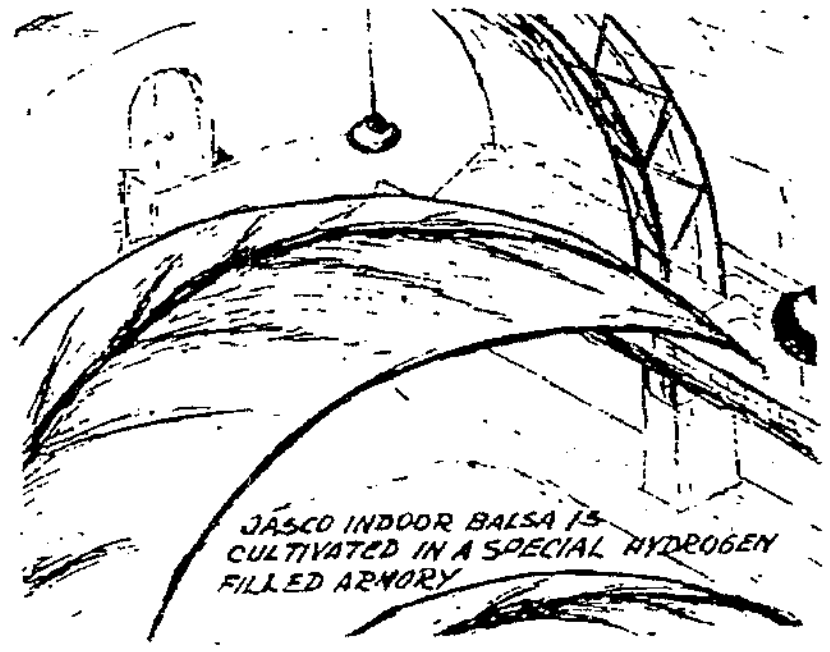


- The only book to have 83 plans of scientific models. All plans in detail except few gas models. More than 200 explanatory sketches. You simply cannot do without a copy! Order yours today!

Only $1.00, Postpaid anywhere!

1938 MODEL AERONAUTICS YEAR BOOK

1938 Edition will be ready in March. Will have 160 pages, about 80 plans, articles from all over the world, new ideas in theory and practice. Completely new in every respect. You need all editions to realize how different one is from another. Price will be $1.00, Postpaid.



JASCO Special Indoor Balsa

JASCO Special Indoor Balsa is an established item, used throughout the world. There can be no doubt as to its contribution to the science of indoor building. It enables experts to continuously break the existing records, while beginners can easily achieve what was formerly considered a very creditable mark, within a short time. In using this special balsa, all that we ask is that you try to conserve it as much as possible, so that we can keep on meeting the steady growth in demand.

We are especially careful to grade JASCO Indoor Balsa as closely as possible to the grain line. The "Uses" chart should be followed to the letter by the beginners. The more experienced builder can take advantage of the "C" or quarter-grained characteristics for tube construction. This grain is very hard to bend, but it is possible to do it if the wood is sanded to 1/64" or less, soaked thoroughly in hot water, and held in constant tension while it is being bent over the form. The slightest lessening of pressure will allow it to crack. The reasons behind the "Uses" chart will be apparent after examining the log cross-section. It will be noted that beside the "A" and "C" grains there is an additional grade "B". This grade is somewhere between "A" and "C" and should be used for spar work where grain structure is not so important. It is carried in a slightly heavier grade than the tube stock, since it has been discovered that spars must have a certain strength for practical use. Most of the "B" stock has a slight stringy structure which makes it especially adaptable for tip and outline work.

The sizes listed will fill all standard requirements. The weight of balsa varies from 3.8 lbs. to 5.5 lbs. per cu. ft. The weight grading is done in accordance to the final use, that is, items requiring a large amount of balsa are cut from the lightest balsa stock. Whenever in doubt as to the grade that you should use, just mention your requirements and the correct grade will be sent. Sand indoor balsa as little as possible, and use 10-0. A coarse sandpaper will tear too deeply into the fibers and will weaken the structure.

Special Indoor Balsa

SHEETS 18" Long--Cut for special use from 3.8 to 5.5 lbs. Light Balsa

GRADE	SIZE	PRICE	USES
A-B-C	1/64 x 1	1/8---4¢	A ROG sticks, Tailbooms, O Spars, C sp. B&C stick
A	1/32 x 1	1/8---3½¢	Regulation B & C Motor Sticks, Tubular Stock.
B	1/32 x 1	1/8---3½¢	ROG Wing and B&C Tail Spars. Stringy for Outlines.
C	1/32 x 2	x 12--4¢	For cut or sliced Ribs. Will not warp after cutting
B	1/20 x 1	1/8---3½¢	Tapered B Spars, tail outlines, Longerons. Mk. prop
B	1/16 x 1	1/8---4¢	Tapered B&C wing tip and mike prop spars. Tailboom
B	3/32 x 1	1/8---5¢	C Spars, Tapered tailbooms, Large mike prop spars

STRIPS 18" Long--Cut of "B" Stock--Sold in Sprays only.

SIZE	Spray Price	USE	SIZE	Spray Price	USE
1/32 x 1/32	22 for 12¢	Tips, ROG Spars	1/20 x 1/20	18 for 8¢	Longerons
1/32 x 1/16	22 for 10¢	Tails, Outlines	1/20 x 3/32	18 for 11¢	Sp.-Ld.Gr.
1/32 x 3/32	22 for 12¢	Prop Spars	1/16 x 1/16	14 for 14¢	Spars

Indoor Propellers

A perfect Indoor Prop was a lucky accident before JASCO began to specialize in Indoor Supplies and stress the importance of balsa graining and grading. Now any handy beginner can duplicate record props by following basic carving principles and using the best balsa foundation such as only JASCO can keep on producing year after year.---A prop should never be rushed. If it cannot be finished, put it aside. Carve and complete the concave side first. Carve with very sharp knife in long thin slices. Constantly inspect for thinness. Use every bit of will power to sand AWAY! Try your utmost to have both blades of same pattern, thickness, taper and bend under power.---Lightest Props are carved from quarter grained stock (C). Therefore, JASCO Machine Cut Blades Cut side by side and close as possible to perfect quarter grain they cannot be matched closer under any circumstances!

INDOOR TWO PIECE MACHINE CUT PROPELLERS

Dia.	Thick.	Price	Dia.	Thick.	Price
7	9/16	5¢	13	15/16	13¢
8	5/8	6¢	14	1	16¢
9	11/16	7¢	15	1 1/16	20¢
10	3/4	8¢	16	1 1/8	24¢
11	13/16	9¢	17	1 3/16	29¢
12	7/8	11¢	18	1 1/4	34¢

The above machine cut propellers may be had in 1.6 and 2.0 Pitch/Diameter Ratio. Right is reserved to substitute in case of shorts.

INDOOR PROPELLER BLOCKS

Dia.	Size	Price
7	9/16 x 7/8	3¢
8	5/8 x 15/16	4¢
9	11/16 x 1 1/16	5¢
10	3/4 x 1 1/8	8¢
11	13/16 x 1 3/16	9¢
12	7/8 x 1 5/16	10¢
*12	1 x 1 5/8	12¢

*Special block for diagonal cut balsa block prop.



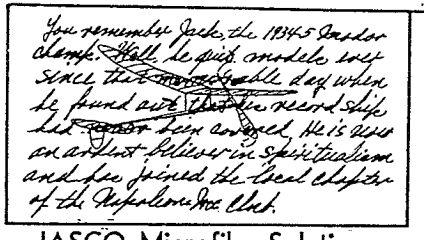
JASCO Tungsten Wire

At the moment there are two schools of thought in the indoor field. One believes in fine, light construction, to enable it to use a small-section rubber motor, and a propeller to suit the conditions. The other side goes in for rugged construction, and a large-section and long looped rubber motor with a very large propeller. At the time of writing, the light weight school seems to have the edge in the record list, but the rugged class seem to pull in most of the cups. However, no matter which side will eventually reach the pinnacle, tungsten wire will undoubtedly contribute greatly to the final result.

Tungsten wire has almost twice the strength of ordinary steel wire. It is rustproof, does not stretch under strain, and can be obtained in gauges small enough for use on indoor models. It weighs less than any other rigging material, strength for strength, and it has only about 1/10th the drag of the finest thread. The method of application is a bit difficult at the first, but if the wire is kept tight and above white paper, no difficulty should be experienced. The first step in bracing is to double the end of the wire to provide a large cementing surface. When the cement has set, tighten the wire either by tying the loose end to a fixed post or having it under tension. Several used and methods are shown in the sketches. For use on fuselages, be sure that you do not pull the wire too tight, thereby forcing the construction out of line. Just lay it on the edge and cement it. When rigging a wing, cement the loose end of the wire to balsa strips to allow easy handling. The wire comes wound on machined fiber spools. Be sure to replace the loose end in the notch when you are finished.

Tungsten Wire

No.	Wt. per in.	Stress	10 ft.	25 ft.	USES
1	.0000024 oz.	1½ oz.	25¢	50¢	Almost invisible; 1/5 hair; For magical and electrical surprises.
2	.0000054 oz.	3 oz.	20¢	40¢	For small models. Recommended for use after experience.
3	.0000097 oz.	6 oz.	20¢	40¢	Clearly visible: Wing rigging Low power motor stick overrigger.
4	.000022 oz.	13 oz.	20¢	40¢	Single wire overrigger. Identical to wire used by Boston group.
5	.000061 oz.	37 oz.	25¢	50¢	Too large for indoor use except wheels. Hair size. For Scale job.
6	.000155 oz.	96 oz.	30¢	60¢	For Flying Scales. Uses which do not exceed the given stress point
7	.00035 oz.	16 lbs.	40¢	80¢	Radio Control Wires. Twin X bracings and extra strong rigging.



JASCO Microfilm Solution

Quietly and gradually, JASCO Microfilm has assumed the leadership of its field. It has passed severe tests throughout the world. Because we have carefully checked every batch of mixture, and because we have improved each succeeding one, we have a uniform formula, which we can reproduce time after time. We are still on the lookout for improvement, however, and we experiment constantly in our own workshop.

Our formula gives a fairly flexible film without tackiness. Where extreme flexibility is required for compound curves, the addition of a few drops of Trycresyl Phosphate or Castor Oil will give the required result. Be sure to mix this new solution well, and let it set for a few hours before using. The choice of the color, or the thickness of the film depends upon the framework to be covered. Extremely light work should be covered with a very thin film, to prevent the frame from warping. Our solution is fairly concentrated so that it will be ample for a large number of sheets. It is placed in cans for your safety and convenience.

Although fair results will be obtained on soap-free water regardless of its temperature, unless the water is extremely cold or the room is drafty, the best film and control of its thickness will be obtained if the temperature is between 70° and 80°, and the water absolutely soap-free. The spreading or the size of the film is determined by the surface of the water. More explicit instructions, hints, and color charts will be found on the label.

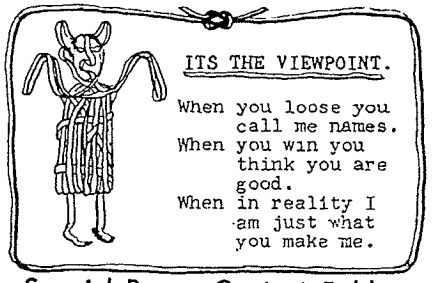
Can Size	2 oz.	4 oz.	8 oz.	16 oz.
Price	20¢	35¢	60¢	$1.00



JASCO Aluminum Wire

One of the most exasperating things of a model builder's life is a microfilm hoop that simply will not keep its needed shape. If one uses aluminum wire instead of the usual steel or galvanized wire, a hoop can be bent to any shape with the assurance that it will remain in that shape. The advantages of aluminum wire are especially appreciated if the hoop must be bent for dihedral, or even twisted for microfilm propeller covering and patching. When removing the film from the water, place the hoop on top of the film, instead of underneath. Press the hoop slightly below the water surface, and let the fringe film fold over the wire. Pat the film to wire and remove with a side and upward swing. JASCO Aluminum Wire can be obtained in any length up to 12 feet. It is rolled for packing.

Aluminum Wire 1/8 Dia.—3¢ per ft.



Special Brown Contest Rubber

We stock only the original Brown Contest Rubber. It has been definitely proved through several years of gruelling contest work to be the one most suited to our needs. Besides re-stocking often from the manufacturers, we keep the rubber stored in a specially constructed closet which excludes light and keeps the rubber slack. You may, therefore, be assured of the best possible grade when ordering from us.

However, no matter how fresh or how good the rubber may be when you receive it, its final quality is very often decided upon by the climatic conditions, and your own method of taking care of the rubber. Extreme heat and cold have definite detrimental effects. Therefore, keep the rubber under cover during the summer, and warm it in winter by carrying it in your pocket, or by keeping it near a warm spot. It is needless to enumerate the dangers of grit. For strenuous contest work, it is best to prepare the rubber motors at home. At the same time also break one of the motors to determine the possible number of turns that you will get at the contest. This will check the condition of your rubber supply against the condition of the day. Remember that it takes twice as long to make a motor at the field as it does at home. In fact, do as much of the preliminary work as possible at home.

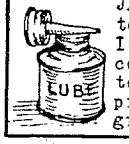
Special Brown Contest Rubber

SIZE	PRICE		USE
1/32	20 ft.-5¢	sk.-20¢	Baby ROG
3/64	20 ft.-5¢	sk.-25¢	Baby ROG
1/16	15 ft.-5¢	sk.-30¢	Paper ROG
5/64	15 ft.-5¢	sk.-35¢	CL B Trct
3/32	12 ft.-5¢	sk.-45¢	B-ROW C-Tr
7/64	12 ft.-5¢	sk.-55¢	C-Tr & Fus

The above sizes are for indoor work: Packed in footage indicated for 5¢

Outdoor Rubber Sizes: Cut to ordered lengths: sk--Skein--225 feet

1/8	10 ft.-5¢	sk.-60¢	Indoor C Tr.& Fus. Outdoor limit 18 Strands
5/32	15 ft.-10¢	sk.-75¢	For 20" Indoor Props: Outdoor limit 18 Strands
3/16	15 ft.-10¢	sk.-90¢	For 24" Indoor Props; Outdoor Limit 20 Strands
1/4	10 ft.-10¢	sk-$1.10	Holding Gas Surfaces; Outdoor unlimited strands



JASCO LUBE is guaranteed to make any rubber wild! It contains Triatomic Alcohol (Glycerine) to make to motor forget itself & provides the slipperiest green soap to slide on!

JASCO Rubber Lubricant

JASCO Lubricant is a veteran of many years. It is a concentrate of chemically pure non-injurious ingredients. You can thin it with boiled or distilled water if you wish. It is now sold in cans with the spout type of cover, which makes application much more simpler. It also eliminates messy model boxes, caused by spilled lubricant.

In applying the lubricant, be sure to cover the entire rubber surface. Rub it in well and remove the excess. Check after every flight, and re-apply the lubricant if necessary. Also make certain that the rubber has no nicks or tears which will develop into points of breakage when winding to capacity.

NOTE: Rough wool or cotton socks will be handy in keeping your hands clean.

Lubricant 2 oz. spout can --25¢



JASCO Indoor Washers

JASCO Indoor Washers are the lightest flat washers obtainable. They are made of the thinnest brass that it is practical to use. They are 3/32" in diameter with a minus 1/64" drilled shaft hole. JASCO Indoor Washers are highly polished and all shaft holes have the burrs removed. For best results, use two washers, and be sure to oil them often. Oiled flat washers have less friction than cupped ones, but they must be oiled, or the friction will be greater. Check your washers often for possible grit, which spoils their purpose.

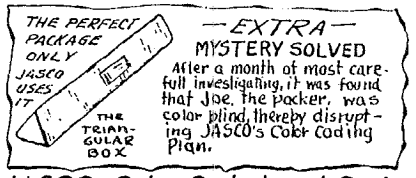
Washers Wt..00018 oz.--1 doz.--5¢

JASCO Indoor Bearings

One of the small things that has contributed a great deal to the success of indoor flying is the JASCO Special Indoor Bearing. Although it weighs no more than one made of .020 wire, there is no comparison between the merits of both. A dural bearing with its larger cementing area will stay in place under repeated maximum wind-ups. The large bearing surface steadies the propeller and holds it in the correct thrust adjustment. If a model glides well, but stalls under power, a slight bend for down thrust will correct it, a bend for up thrust will be the correction for a diving model. A slight side thrust may also be obtained by careful bending. The single bearing will allow fair adjustment, but a double bearing is much better for fine adjustments. A double bearing can be made by using an extra wire adjuster, two standard bearings, or the special double bearings. Naturally, the special bearing is best because it shows the relative adjustments at a glance, and also prevents any possible misadjustments due to weakened cement joint.

Both types of bearings are made of the smallest guage dural that it is practical to use. The width is just the right size to take 1/8" rubber at the maximum turns. The shaft hole is carefully drilled to a minus 1/64". The contact area is burr-free and highly polished. The double bearing is bent at one end only. When bending the other end to your requirements be sure to bend it in a gradual arc. Do not bend it too often or the dural will crack. The bearings may be filed thinner for a smaller size of rubber, when re-using the bearings be sure that the hole has not been worn too much to one side.

Bearings = Single-Wt..0008 oz.--5¢ / Double-Wt..0012 oz.--15¢



JASCO Color-Coded and Grain-Graded Outdoor Balsa

In our attempts to bring some semblance of scientific designing into the model game, we very often strike out into new and unknown paths of supply production. So it was with our latest experiment, the color-coding and grain-grading of outdoor balsa. The response from scientific builders during the short time that we have had this service, has definitely convinced us that we are correct in our assumption that color-coded and grain-graded balsa can do a great deal towards increasing the average flight time, as well as increasing the record possibilities. Since this is a new idea in the balsa industry, the mechanics of the job are known only to the small circle of scientific builders who have been with us since we started our pioneering program for better supplies. Therefore, a more explicit explanation of this new development will not be amiss.

The usual method in converting balsa planks into sheets and strips, is to buy balsa at the lowest possible price to cut it up as fast as possible, and then to advertise it at the lowest permissible price. This is all well and good, as the exceptionally low prices of model supplies have attracted many newcomers to the game. They usually start by whittling balsa for the fun of it, and by building replica models, without a thought towards flying or contest activities. However, when we consider balsa to be used for flying and scientific work, the specifications for quality take another aspect. For this type of work, the balsa must be of the best to take advantage of the "Lightness with Strength" maxim. The wood must be perfect in every respect, as each part is serving a definite purpose, at its smallest possible dimensions. Then again, some parts may b elighter than others and yet be strong enough, other parts of the model must be covered in curves, and some parts need to withstand forces in one direction only. In all, every engineering problem is encountered in the building and flying of contest models, and the sooner we realize this, the more enjoyable and lasting will be this scientific hobby.

How can we hope to take care of these varied requirements with material whose specifications change with every piece? We have eliminated as much of this guesswork as possible, by introducing a new method in producing sheet balsa and strips: This is done by color-coding by weight every piece of balsa to be used in outdoor and gas model work, the moment that it reaches the plant. This balsa is then segregated according to the different grains. This grading is simple in principle, but it involves extra time and the service of experienced men. In the first place, we assure ourselves of the highest quality of balsa by paying a premium price for the privilege of picking out the stock we want. Then the balsa is cut into small segments, which are individually weighed and the ends are colored. From that moment on, no matter what is done to the wood, the telltale color of the end will identify it. After the color is applied, the grain grading begins, and not until then is the balsa is ready for cutting. The cutting is done with saws designed by ourselves to assure a polished surface with few saw marks. After the cutting the finished sheets or strips are again checked for defects and finer grading.

From this short resume of our work you can realize that we have a job on our hands, especially with competitive prices at such ridiculously low figures. However, our standby customers appreciate this special service, and they are amply repaid in their faith by their constant record flights and winning contests.

The following color and grain charts were compiled after a series of experiments to determine the maximum strength that the balsa can be counted upon to produce.

Wt. Ft.³ in lbs.	COLOR CODE	SUGGESTED USES:--Keep color record on all models. STRIPS	SHEETS
6	Yellow	Planking, filleting	"A"Covering."C" Flat sides
7	Lt.Green	Stringers, multi longs.	"C"Flat sides, ribs,"A" tubes
8	Orange	Light Spars & longs.	Edge cover, tips, 200" Ft.Sds.
9	Lt.Blue	Spars, Longs up to 14-st.	"C"ribs,box spars, "A" tubes
10	Red	Sp.& Long. lt.mot.stk.	"C"gas ribs, bx spars, tips
11	Green	Large Sp.&Long. to 200"	"C"bulkheads, "A" motor tubes
12	Blue	Heavy mot.stk. Sp.&Long	Strong parts mostly for gas

36" Balsa Strips

The strips are so cut that the "C" grain is on the widest dimension, for extra strength.

1/16 x 1/16--2 for 1¢	1/8 x 1/8---7 for 5¢	1/4 x 3/8---------3¢
1/16 x 1/8---3 for 2¢	1/8 x 1/4---2 for 3¢	1/4 x 1/2---2 for 7¢
1/16 x 3/16--4 for 3¢	1/8 x 3/8---------2¢	1/4 x 5/8---------4¢
1/16 x 1/4---------1¢	1/8 x 1/2---2 for 5¢	1/4 x 3/4---------5¢
1/16 x 3/8---2 for 3¢	5/32 x 5/32--------1¢	3/5 x 3/8---2 for 7¢
1/16 x 1/2---------2¢	3/16 x 3/16--2 for 3¢	3/8 x 1/2---------5¢
3/32 x 3/32--3 for 2¢	3/16 x 1/4---------2¢	3/8 x 5/8---------6¢
3/32 x 3/16--------1¢	3/16 x 3/8---2 for 5¢	3/8 x 3/4---------6¢
3/32 x 1/4---2 for 3¢	3/16 x 1/2---------3¢	1/2 x 1/2---------5¢
3/32 x 3/8---------2¢	1/4 x 1/4---2 for 5¢	1/2 x 3/4---------8¢
3/32 x 1/2---2 for 5¢	If you are in doubt as to the correct color to use, write us the requirements	

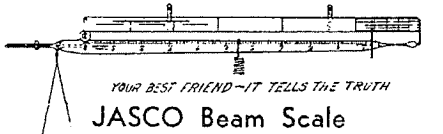
JASCO Outdoor Sheet Balsa

It is now possible to make the entire model using sheet balsa, without increasing the weight beyond that of an ordinary paper covered framework. But there simply is no comparison between the two in strength. The all-balsa or monocoque construction simply does not know when it has had enough. Half of its structure may be torn away by a broken motor, without impairing the strength

Since special grain cuts are mostly used in sizes up to 1/8" in thickness, we do not have specific grain cuts in larger sizes. However, all thicker sheet are cut as close as possible to the "C" grain. The physical difference in grain is given on Page 2. For ordinary work, where slight bending and fair compression resistances are needed, order the "B" grain, which is between the two extremes, "A" and "C".

36" Sheet Balsa

Size	2"	3"	Size	2"	3"
1/64	6¢	xx	5/32	8¢	12¢
1/32	5¢	9¢	3/16	8¢	12¢
1/20	5¢	9¢	1/4	10¢	15¢
1/16	5¢	9¢	5/16	12¢	18¢
3/32	6¢	10¢	3/8	12¢	18¢
1/8	7¢	12¢	1/2	15¢	20¢



JASCO Beam Scale

The progress of a model builder is marked by the use he makes of a scale. His early efforts are mainly concerned with keeping the parts together, but as his construction skill increases, he begins to cast his eyes towards records and he soon realizes that the weight of the rubber in proportion to the total weight of the model, is an important factor in its performance. Constant use of his scale will give him an uncanny skill in using just the right sizes of balsa for the particular uses. The use of a scale is especially recommended to those whose occupation is such as to be of a heavy nature, which tends to dull the weight sensitivity of the hands. In such cases just prepare a weight chart of every item, and then cut or sand to your requirements. A flight test will show whether or not you may increase or decrease the weights of the various parts in your next design.

The JASCO Beam Scale Kit was developed to bring an accurate and sensitive scale within the reach of every builder. The beauty of its design lies in the fact that it incorporates standard stamped metal parts in such a clever combination, that the sensitiveness is of a 5/10,000 nature. A 1/10,000 ounce variation can be easily detected.

The kit consists of ready-formed and shaped sheet metal fittings, including a knife-edge balancing point. Screw counterbalancing adjustments are used. There is a balsa beam and base, cement, and a carefully planned and drawn full-size plan, including a double scale reading, ounce to gram, gram to ounce, and grain to ounce conversion tables and examples. It is complete with 1/100 and 1/10 ounce weights which countercheck the complete scale for correct alignments. For work over 8 ounces, bind and cement the fittings. Use a one gram weight for direct metric system readings. The construction time is about one hour.

JASCO Beam Scale Kit --Complete--50¢ P.P.

EXTRA WTS.--1/100, 1/10 oz.-10¢ each

JASCO Special Glider Sections

JASCO Special Glider Sections have helped to make history, in the last few years. Besides helping considerably towards raising the hand launched glider records to heights undreamed of before 1930, they have also been the cause of requiring other companies to produce these sections. Although this has undoubtedly increased glider activity, we would like to have you know that there are several other things besides the section, which make JASCO Sections outstanding. We have the experience of a pioneer which enables us to know just what grain, weight, and thickness are best for the season. In addition to stocking the best grade for the particular time of the year, we also have a large assortment of grade for individual requirements. We have so often repeated that mechanics of hand launching gliders in these pages, that for the time being we refer you to any good current magazine article dealing with gliders.

The glider sections shown need very little finishing in order to obtain accurate and efficient airfoils. Just sand off the corners. The stock used is from the "B" to the "C" grade in grain, and is of 6-8 lbs. per cu. ft. weight. This grain will take a certain amount of bending for adjusting, but do not be too forceful. If a coat of cement is applied above and below the adjusting point, it will prevent cracking and will help to also keep the adjustments. Do not cement the thin trailing edge, as it may warp. The fuselage stock is a heavier grade, so that it may be well streamlined and still have the needed strength. The tail stock is also of the "B" to "C" grade grain. Be sure to make the tail surfaces strong enough to keep their shape, and cement them well. (For finishing instructions see the sections dealing with Glider Polish and Wood Filler.)

WING SECTIONS	18" FUSELAGES
3/32 x 2 x 18--5¢	3/16 x 3/4--2¢
5/32 x 3 x 24--10¢	3/16 x 1 --3¢
3/16 x 3½ x 24--13¢	1/4 x 3/4--3¢
1/4 x 4 x 24--16¢	1/4 x 1 --3¢
	5/16 x 1 --4¢

TAIL STOCK------1/20 x 3 x 18----5¢

JASCO Outdoor Propeller Blocks



The propeller is the most important part of the model. It is the only means of converting the energy stored in the twisted rubber into forward motion. The performance of the model depends upon the propeller more than anything else, especially when we consider that the torque is responsible for most of the spiral stability problems. Since torque is a subtraction from the useful work (the thrust), we must strive to decrease the torque as much as possible. This can be accomplished by taking more care when shaping, carving, and finishing the propeller. The shape should be elliptical, the camber should be a regular airfoil, (deeply cambered for heavy work and almost Clark Y for the streamline models,) and finally, the finish of the blades should be very smooth. The final finish and the general propeller layout are especially important after the power is exhausted and freewheeling takes place. It is in the freewheeling stage that imperfections are manifested in terms of increased propeller drag with a consequent poorer glide. More explicit explanations of propeller theory, recommendations, and instructions, will be found in the 1937 Year Book.

The block sizes were selected after consulting the plans of a large number of contest and record models, as well as relying upon our own personal experience. Note the generous sizes of the small diameter propeller blocks. Although color coding is not used for selection, your preference of texture will help us in filling your order. Also mention the fact when the blocks are to be used for twin motor jobs, so that we may match the blades.

MACHINE CUT PROPELLERS

Machine Cut Props are recomended for beginners since very little work is needed to finish them into efficient blades. Also for models having a high Power/Weight Ratio. There is nothing like a machine prop when you are in a hurry!

OUTDOOR PROPELLER BLOCKS					
Dia.	Block Size	Price	Dia.	Block Size	Price
5	5/8 x 7/8	2¢	12	1 x 1 1/2	8¢
6	5/8 x 1 1/8	2½¢	13-1	1 1/8 x 1 5/8	13¢
7	3/4 x 1 1/4	3½¢	14-1	1 1/4 x 1 3/4	14¢
8	7/8 x 1 3/8	5¢	15-1	3/8 x 1 7/8	16¢
9	1 x 1 1/2	6¢	16-1	1/2 x 2	18¢
10	1 x 1 5/8	9¢	17-1	5/8 x 2 1/4	22¢
11-1	3/16 x 1 3/4	12¢	18-1	3/4 x 2 1/2	25¢
12-1	3/16 x 1 7/8	13¢	Larger sizes on request		

MACHINE CUT PROPS		
Dia.	Thick.	Price
9	13/16	4½¢
10	7/8	5½¢
11	19/32	6½¢
12	1 1/32	8¢
13	1 1/8	10¢
14	1 3/16	12¢
15	1 1/4	14¢
16	1 7/32	17¢

BALSA LAMENT

Scratched by tiger's paws,
Crushed by coiling boas,
Crunched in the deep Amazon
By jaws of scaly amphibians,
Torn apart by steely teeth,
Shipped 3,000 miles over briny deep,
Parched to dryness by terrific heat,
Haggled over by a pair of Scrooges,
Bought by a couple of stooges,
Who turned-out to be balsa butchers.
Tis a sad and pitiful end for me,
The lightest of the jungle trees.

Gasoline Models

"Just a word to let you know that my dad is starting a gas job!"

Momentous words, these! It means that the grown-ups have at last succumbed to the spell of the model's uncanny flying. But it also means that many persons will try to make their models purely with luck as their guide, as their experience with aerodynamics is nil, as they have not benefitted by the flying of rubber-powered models. To help these newcomers, the following points are presented:

The most important fact to remember is that a half-hearted job can be the most exasperating object imaginable, as the adjustments simply will not stay put. Make up your mind to make the model of clean lines and sturdy construction. Your first model should be simple. Use just a four longeron, paper-covered framework fuselage, and a straight wing and tail. Shun all doodads, as the model must be fairly light to have a 1/2 lb. (or less) wing loading per sq. ft. A heavier wing loading will necessitate higher speed, with consequent finer adjustments, and also greater damages in collissions. Keep in mind that you must first learn how to make and fly a model before you venture on a more difficult job.

Another important point that you should heed is to try not to be influenced too much by full-size power planes, or by any special fetish advocated by someone. Just be sensible. Use a Clark Y airfoil, a 1/2 lb. or less wing loading, and 1" to 1 1/2" dihedral for every foot of span. The stabilizer area should be as per formula. There should be strong motor and landing gear mountings, accessibility to all parts, the thrust line should go through the center of the fuselage, and correct rudder area.

Except for the motor, most of the trouble will be caused by spiral instability, resulting in disastrous spins. This is caused by a rudder that is too large, not enough dihedral, or too much torque. It is almost impossible to give an exact formula for the rudder area, as there are too many variables to account for. A good rule to follow is to have the center of the side area of the model about 3 or 4 inches behind the C.G. If your model perists in spinning, increase the dihedral or decrease the rudder, but first make certain that a warp or a poor thrust line is not the cause of the spinning.

All models rather glide or fly into the ground. This makes the position of landing gear very important for good landings. It has been found that by placing the wheels well forward of the C.G. the model is more likely to make three-point landings. This can be easily explained by the diagram. Note that the wheels are the first contact with the ground. If they will roll, the C.G. will set the tail down gently as the speed decreases. A poor roll, or a landing gear that is too far back will give the ship a chance to continue to move, with a consequent turning-over, in which almost anything can happen.

Gas Model Balsa

Most of the early gas models were made of hard wood, but at present the all-balsa type of construction predominates and is expected to hold its place. The balsa used for gas model work must necessarily be of the "hard and heavy" variety. We make certain of having only the suitable grade by continuing our color coding scheme into the gas model division. This special service will enable you to use balsa of equal strength and weight whenever balancing is required, such as in the two halves of a wing, or in fuselage construction. The suggested uses have been flight-tested on many occasions and can be taken as standard.

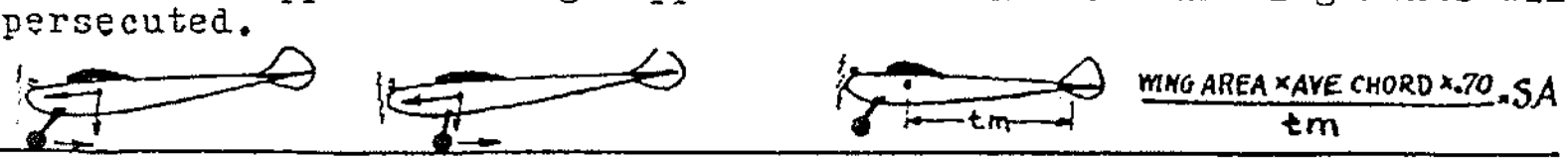
Wt.Ft.^{3} in lbs.	COLOR CODE	SUGGESTED USES
10	Red	Stringers, Outlines.
11	Green	Lead. & Trail. edges
12	Blue	Light Spars & Longe.
13-14	Brown	Spars, Long., Braces.
15	Black	Strong Long., &Spars.
Over	White	Large and Heavy work.

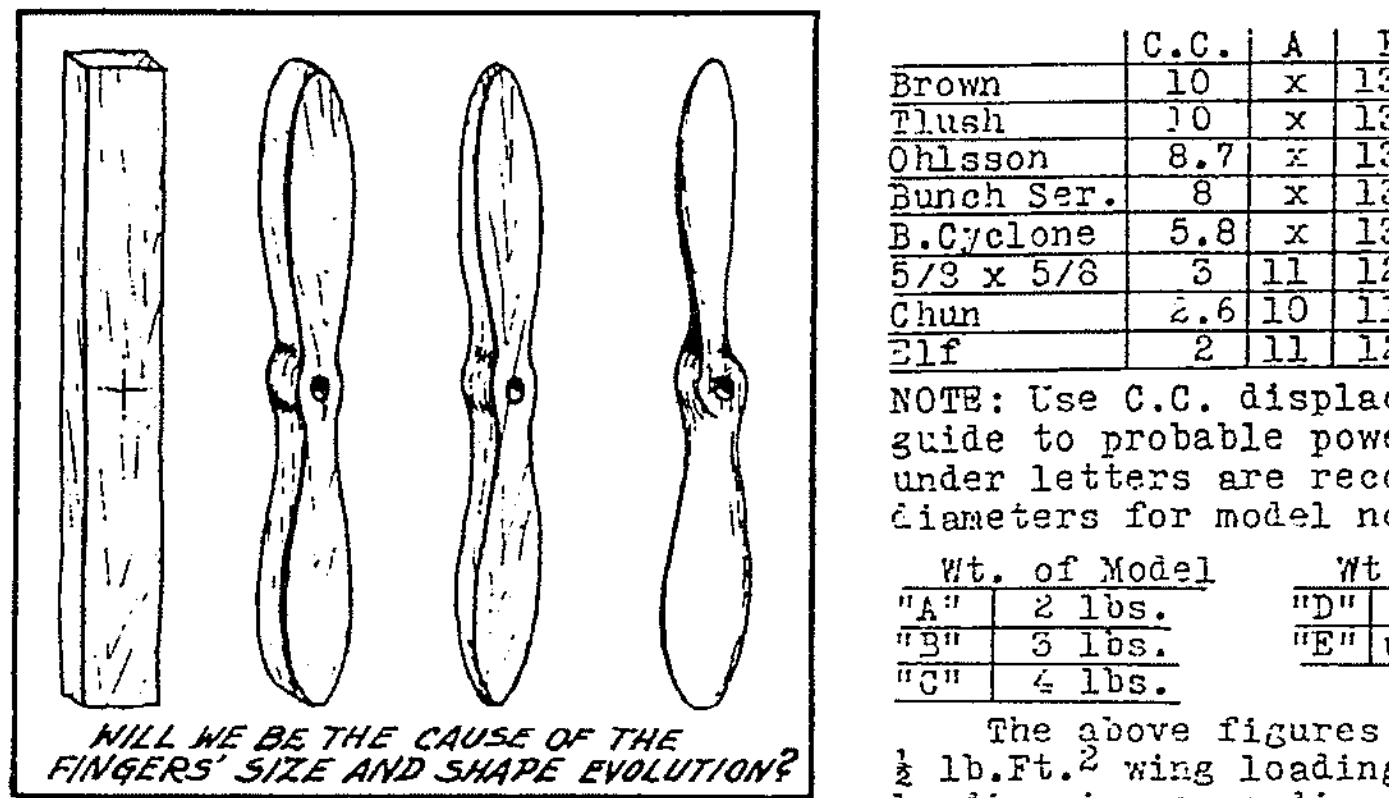
Gas Model 5 Foot Balsa Strips

The strips are so cut that the "C" grain is on the widest dimension, for extra strength.

3/32 x 3/32------2¢	1/8 x 2 ------14¢	1/4 x 3/4------8¢
3/32 x 3/4------7¢	3/16 x 3/16-----3¢	1/4 x 1 ------10¢
1/8 x 1/8------2¢	3/16 x 3/8------4¢	1/4 x 1½ ------14¢
1/8 x 1/4------3¢	3/16 x 1/2------5¢	1/4 x 2 ------18¢
1/8 x 3/8------4¢	3/16 x 5/8------6¢	5/16 x 5/16-----3¢
1/8 x 1/2------4¢	3/16 x 3/4------7¢	3/8 x 3/8------8¢
1/8 x 5/8------6¢	3/16 x 7/8------8¢	3/8 x 3/4------14¢
1/8 x 3/4------7¢	3/16 x 1 ------9¢	1/2 x 1/2------10¢
1/8 x 7/8------8¢	3/16 x 1¼ ------12¢	1/2 x 3/4------12¢
1/8 x 1 ------8¢	3/16 x 1½ ------14¢	1/2 x 1 ------15¢
1/8 x 1¼ ------10¢	1/4 x 1/4------4¢	3/4 x 3/4------20¢
1/8 x 1½ ------12¢	1/4 x 1/2------6¢	1 x 1 ------25¢

When ordering, be sure to specify the color needed. If in doubt state specifications and the correct grade will be sent. Also read special shipping instructions for long lengths.---Special Note; COLOR CODED is Jr. Aero. Supp. Co.'s Reg. App. for TRADE MARK and infringements will be persecuted.





WILL WE BE THE CAUSE OF THE FINGERS' SIZE AND SHAPE EVOLUTION?

JASCO Propellers for Gasoline Models

In the search for better gas model stability, many builders overlook the propeller. Most of them are under the impression that as long as the blades are set at an angle, the matter can be forgotten, but they wonder what the trouble is when the model is not controllable after everything has been double-checked. It has been found that a poorly made, poorly designed propeller develops considerable torque without increasing the thrust, and also places extra strain on the motor. To overcome this excessive torque, the wing has to have a strong sideslip effect upon the dihedral, to keep the torque under control. This situation is clearly shown by the steep power banks which sometime develop into spins when side areas are incorrectly proportioned. Corrective adjustments usually lower the overall efficiency.

The torque is proportional to the propeller diameter. It can therefore be readily seen that the diameter should be determined by the size of the model. It is surprising what a difference a substitution of a smaller propeller for the regulation sizes makes on the controllability and stability of a small model. The chart below lists the recommended combinations. Just keep in mind that it may be necessary to reduce the torque, even at a sacrifice of the thrust, where controllability is important. Luckily, small models, where stability and controllability are difficult to achieve, can get along on very little thrust. A decrease in the diameter wil not affect the r.p.m.'s of the motor if the propeller weight is kept about the same.

To meet all the propeller requirements, we stock a large assortment of propeller materials, from the block to finished laminated propellers. Specific description and instructions will be found under each item.

	C.C.	A	B	C	D	E
Brown	10	x	13	14½	14½	16
Flush	10	x	13	14½	14½	16
Ohlsson	8.7	x	13	14½	14½	x
Bunch Ser.	8	x	13	13	14½	x
B.Cyclone	5.8	x	13	13	13	x
5/8 x 5/8	3	11	12	x	x	x
Chun	2.6	10	11	x	x	x
Elf	2	11	12	x	x	x

NOTE: Use C.C. displacement as a guide to probable power. Numerals under letters are recommended prop diameters for model noted below.

	Wt. of Model
"A"	2 lbs.
"B"	3 lbs.
"C"	4 lbs.

	Wt. of Model
"D"	5 lbs.
"E"	up to 8 lbs.

The above figures are based on ½ lb.Ft.^{2} wing loading. For heavier loading increase diameter if motor can turn it at sufficient speed.

PROPELLER BLOCKS: Basswood or like. 3/8 x 1 x 12--10¢ ½ x 1 3/8 x13--12¢ 5/8 x 1½ x 16--15¢

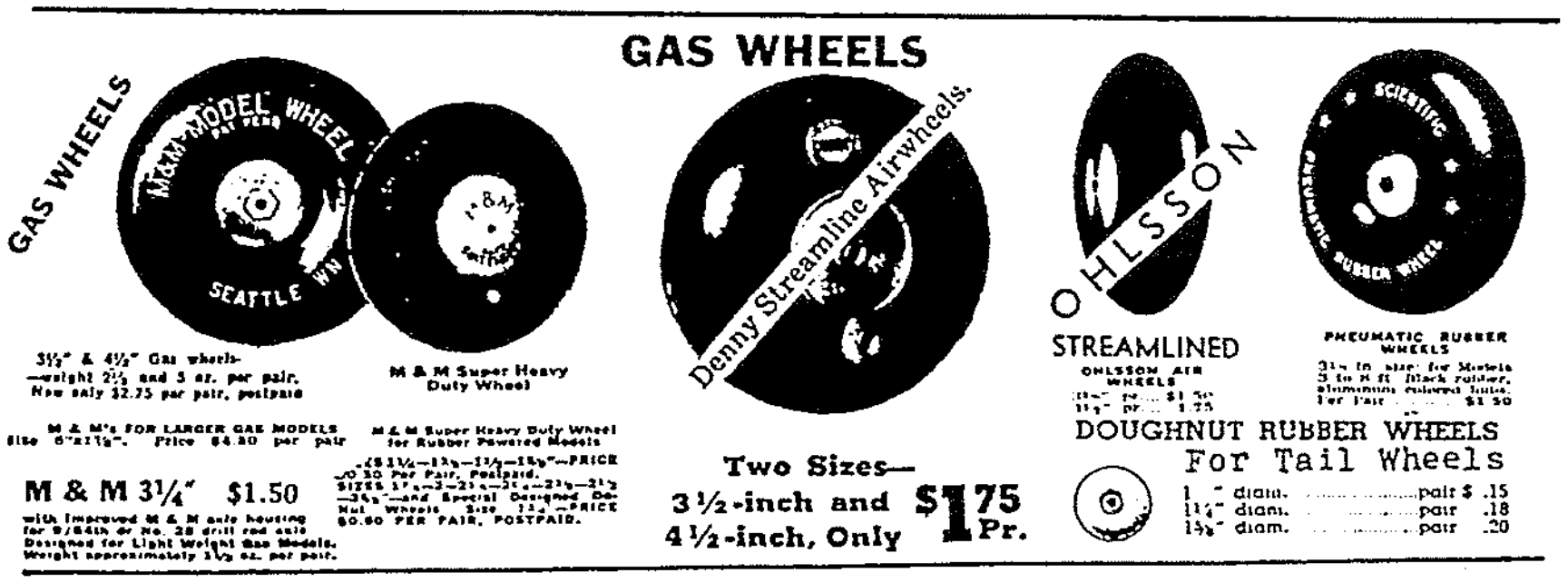
PROP OUTLINE BLANKS with shaft hole. Basic dimensions same as Fin. Props 10, 11, 12---20¢ 13, 14½, 16---25¢

SEMI-FINISHED PROPS: Carved to correct pitch and airfoil section. Just needs final sanding and balancing. FINISHED PROPS: Completely finished including balancing and polishing.

LOW POWER	Sem.Fin.	Fin.	HIGH POWER	Sem.Fin.	Fin.
10"	35¢	50¢	13"	50¢	75¢
11"	35¢	50¢	14½"	65¢	90¢
12"	55¢	50¢	16"	75¢	$1.25

SPECIAL 16" LAMINATED PROP. Walnut and Basswood. Beatifully finished. Semi-Fin.--$1.00 Finished--$1.85

JASCO GAS MODEL PROPS are manufactured exclusively for us here in America. We can therefore specify special P/D Ratios to suit particular motor. Please mention motor when ordering finished props as well as weight and wing area of the model.





JASCO Covering Material

Most experienced builders have their own method of covering. The beginner should be prepared to go through his quota of wrinkles before he gets the knack of covering perfectly. Here are a few pointers that might be of help to him: Always keep your paper rolled and tidy. Allow about an inch all around the outline for handling. Use regular dope for adhesive on outdoor models and castor-oil-plasticised banana oil for fine work, where the paper is not to be doped. When trimming, leave an excess on bamboo tips or any other small outline. A fine mist spray is better than soaking. Use a good brush for doping. Lacquers and enamels are preferable for trimming because of their richer colors and their even spread. Keep your eyes open for warping tendencies, and correct them as soon as they are noticed. When covering round surfaces, much more area can be covered at a time if the paper is slightly moistened just before it is applied. The dope will hold it in place even if it is moist.

JASCO Outdoor Tissue has a definite grain which should run spanwise. For the best visibility use an orange, a red, or a yellow wing, and a blue, a black, or a red fuselage.

20 x 24 **JASCO Outdoor Tissue**

COLORS: Red, White, Blue, Orange, Yellow, Black----4 sheets for 9¢

SILVER TISSUE--just clear dope--5¢

JASCO Superfine Tissue is the lightest paper used for model work. It is used mostly on indoor models. It has a glazed surface, and criss-cross fibers which can be tightened in all directions. This makes it especially suitable for the cross braces used on indoor fuselages.

18 x 24---**JASCO Superfine Tissue**-------5¢

JASCO Bamboo Paper is used mostly on gasoline models. This paper may be used on large outdoor models, especially those with round paper-covered surfaces. Use outdoor cement for adhesive. Strips of bamboo paper, when laid layer upon layer, make very light fillets. Methods of doping, coloring, and finishing are described in the portion of the catalogue dealing with liquids.

24 x 36---**JASCO Bamboo Paper**-------5¢

JASCO Model Silk should be used on the finer gas jobs. It gives a much finer finish than paper, and is especially good for covering high performance models, as its transparency makes the model visible for a long distance. Solid colors seem to merge into the skies much more readily. Silk should be used also for reenforcing planking, balsa propellers, wire fittings, and any other points which need extra strength. Silk is applied like tissue; that is, to the center first, then to the tips and then to the sides. The doping will fix it to the ribs. Silk is flexible enough to cover compound curves.

36" Width--**Model Silk**--per yard--40¢

Doping and Finishing

A good finish, besides creating a favorable impression, gives the model a personality, and as such it receives special care in handling and flying, and is remembered longer. The preliminary finishing steps are explained in the section devoted to "Covering Material".

Light Models, and Flying Scale Models: Use one or two coats of Banana Oil or thinned dope. It is assumed that colored paper is used for color reproduction. It is not advisable to use colored dopes on these models, as the additional weight will require the use of more rubber, with a consequent lower duration. If colored dope must be used, use it fairly thin, as full-strength colored dope will very probably give a splotchy appearance if applied in one coat.

Contest Models: One coat of full strength clear dope will usually be sufficient for tightening the paper. An additional coat of slightly thinned Glider Polish will give the desired high gloss for reflected visibility. Trim with lacquer or enamels.

Bamboo Paper and Silk Covered Models: Use one full strength primary coat. Sand off the fuzz with fine sandpaper. (For extra good finish apply two thin coats of JASCO Wood Filler with intermediate sandings.) Apply two thin coats of colored dope with a good sable brush. Thinned dope flows smoother and gives a more even color, and is also easier to apply. For a final coat, use Banana Oil or thinned Glider Polish for Gloss effect. Use Scotch Tape for striping. Work in a dust-free place, and avoid drafty and humid air, as they cause the dope to blush. Use thinner to remove blush spots.

Planked, All-Balsa, Models: Plain or silk covered models have numerous and deep pores which must be filled in before dope is applied. Therefore, the first step is to brush on one or two coats of JASCO **Prepared Wood Filler**. Allow it to dry, and sand off the surplus. Now brush on or spray about two coats of thinned colored dope on the surface. Rub down with 320 "Wet or Dry" paper. For solid models, or where weight is not important apply as many coats as are necessary to completely hide the surface which normally shows through dope or lacquer. Rub down with 320 "Wet or Dry" paper. Add several more coats of Add several more coats of dope or lacquer. Finally rub down with 400A "Wood" paper. For the final finish, rub down with a good polishing compound such as **JASCO Polishing Compound**. For additional weather and moisture protection apply two coats of Simonize. Apply it with a wet cloth to prevent a burning of the finish. A high gloss may be obtained by rubbing briskly with flannel. The results will be in direct proportion to the application of "elbow grease".

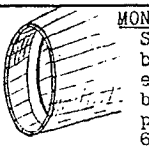
Gliders: Use one or two coats of **JASCO Wood Filler**. Sand smooth with 6 Nought and finish with 10 Nought and wax. For weight rule gliders, add several extra coats of clear or colored dope. Finish as in the above paragraph.

Note: Be sure to let the lacquer, paint, or dope, dry thoroughly between each coat, and allow them to harden before rubbing.

CANS	2 oz.	4 oz.	8 oz.	16 oz.
Clear Dope	12¢	20¢	35¢	55¢
Colored Dope	15¢	25¢	40¢	70¢
Thinner	12¢	20¢	35¢	55¢
Banana Oil	15¢	25¢	40¢	70¢
Glider Polish	18¢	30¢	45¢	80¢

COLORS: Red, White, Blue, Yellow, Silver, Orange; Black and White

The above nitrated compounds are of high quality. Mix COLOR DOPES before using. THINNER has a slight reducing action for Anti-Blush. 4-6 coats of BANANA OIL will give celluloid surface. GLIDER POLISH has High-Gloss and non-warping properties.



MONOCOQUE CONSTRUCTION

Simplifies all balsa building. Just needs exact bulkheads. Can be sanded down to fit purpose. Extra light 6-7 lbs. balse.

1/16 x 3/8 x 36----30 for 20¢
1/8 x 3/8 x 36----20 for 25¢

A perfect **Stooge** would bite cement off your finger tips.

JASCO Model Airplane Cement

Model airplane cement is made by dissolving nitrated cotton with a solvent. The result is a gummy mass which, when left exposed to air, hardens into celluloid. That is the basic formula. However, in actual production the final cement resulting depends upon the quality of the various materials put into it as well as the knowledge of what constitutes a good cement for model work. Although we do not make our cement on the premises, our knowledge of nitrated cotton processes and just what is needed for model work, has enabled us to carry only the best cement. A constant check assures uniformity.

Our cement is graded into three classifications: Indoor, Outdoor and Gasoline Model. At present their main difference is in the consistency; that is, light for indoor, and extra heavy for gas models. We are also experimenting with a special indoor formula which will give a comparatively thick cement that will almost completely disappear by the time it sets. This cement will have a deep penetration power and good butt joint qualities with a minimum of actual final weight. As soon as it is perfected for commercial use the can will be marked "Special Indoor."

To obtain the best results from cement joints, the following precautions should be noted. If possible, all work should be done in jigs which will keep the joints in an undisturbed condition long enough to allow the cement to set securely. Be sure to be generous when applying it to Outdoor and Gasoline Model work. Where a butt joint must take a load, be sure to strengthen the joint with a bamboo sliver. All the joints on a gas model should be gone over at least three times, with several hours of intermediate drying. If a joint fails, scrape off the old cement before recementing. In cementing balsa to hard wood, be sure to roughen the hard wood surface so that the cement can anchor. Bind all metal or wire fittings where stresses or vibrations are present. Although JASCO Cement will set under almost all atmospheric conditions, for the best results work in a dry and warm place. (Also remember that all nitrate cements require air to evaporate rapidly, and, therefore, do not expect a fast job where the major portion of the cementing surface is covered, such as in a lamination.) JASCO Cement is placed in cans for your convenience and safety.

Cement

CANS	2 oz.	4 oz.	8 oz.	16 oz
Indoor	12¢	20¢	x	x
Outdoor	12¢	20¢	35¢	55¢
Gas	x	20¢	35¢	55¢

For applying use Wire or Bamboo

JASCO Prepared Wood Filler

JASCO Prepared Wood Filler has a nitro-cellulose base, upon which dope, lacquer, or paint can be applied without fear of the filler rising from under the finished surface. It also contains the lightest possible filler ingredients obtainable, which no standard commercial filler has. It is of a clean transparent nature, and it is plasticised to prevent the warping of thin surfaces. It can be sanded smooth with ordinary sandpaper without fear of clogging the sandpaper. (For best results use Wet-Dry sandpaper.) It should be applied evenly with a brush, first in the direction of the grain, and then against it. The surface should be sanded until the paper begins to scrape the top of the surface.

CAN	2 oz.	4 oz.	8 oz.	16 oz.
PRICE	20¢	35¢	60¢	$1.00

BE SURE to mix well before using!

JASCO Plywood

Plywood has innumerable applications to gas models. It is especially useful in building up strong front portions which have to take severe punishment. It can be cemented into place with ordinary cement, but where the stresses are strong, it is best to screw or bolt it to hardwood bulkheads. The thicker sizes can be used for formers and bulkheads to which the landing gear and motor mount are fixed. Just remember plywood, whenever you need light and strong construction.

Three-Ply plywood can be had in the following thicknesses: 3/64, 1/16, 1/8 & 1/4. 3/64 & 1/16 are made of Birch; 1/8 is Poplar and 1/4 Pine. Same price for all thicknesses.

6x6	6x12	6x18	6x24	12x12	12x18	12x24
10¢	18¢	26¢	34¢	34¢	48¢	60¢

BAMBOO: Straight grained and matured. 1/16 x 1/4 x 15--1¢ each. Doz.---8¢

SANDPAPER: All final work is done with sandpaper. Begin with coarse grade and end with the very finest. Do not sand too deeply with rough grade as it destroys balsa fibers. Use WET/DRY variety for finishing painted or color doped parts since ordinary dry paper will clog up. Be sure to wet it before using. Use sanding block for smooth and even results. Only fine grades, unobtainable in your local store, are carried on stock.

SANDPAPER	WET/DRY
6 Nought---2 for 3¢	360A-----4¢
10 Nought--------2¢	400A-----4¢

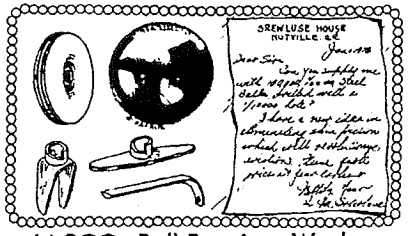
SHEET CELLULOID: Gas job gauge. For windows, cowlings, funnels & tanks. Celluloid 8x14--10¢ 14x16--20¢

SCOTCH MASKING TAPE: Has close adhesion but can easily be removed. Be sure paint is dry. 3 feet----5¢

SCOTCH CELLULOSE TAPE: Transparent, has strong but not permanent adhesion. Extra strong; for holding wing fairings, doors, removable wires, temporary covering repairs. Can be reused.--100" Roll ¾" width---10¢

FIBER: Excellent substitute for plywood. Use 1/64 for curves and 1/16 for mounting electrical appliances.

1/64"size	3x6--5¢	1/16" size
6x6--10¢	6x12--18¢	3x6---15¢



JASCO Ball-Bearing Washers

Our latest Ball-Bearing Washer is a marvel of precision and machine-work, far beyond the price listed. Although the outward appearance is similar to the original design, changes have made it the best washer now on the market. This is a rather bold statement, but a comparison will prove our statement. The most important change is the addition of a center retaining washer. This washer keeps three 3-32" high grade steel balls separated at all times, thereby avoiding internal friction, and also keeps them free from dust and grit. The size of the washer has been kept the same, as a smaller size necessitates finer parts which do not stand up under the ordinary abuses common to models. The larger bearing surface also keeps the propeller more readily in the correct thrust adjustment. The improved JASCO Ball-Bearing Washers can be used for as many strands as you can use on the model. During a recent test, the washer was compressed between a high speed electric drill and a wooden table, under a pressure of about 50 lbs. After being subjected to a high speed run of over 10,000 r.p.m.'s for several minutes the washer showed no signs of wear although the table top was charred by the heat generated.

With all these improvements we have also managed to decrease the weight to .013 oz. This has been made possible by using brass. races, by having a hole-lightened center Monel washer, and by using only three balls. The washer is slipped on the shaft like an ordinary flat washer. It can be used time after time as it is the only washer to have the eyelet-retaining feature. The shaft hole will take wire up to 1/16" diameter. The advantages of using Ball are that more power is delivered to the propeller, and Bearing Washers are self-evident. The most important ones also that there is a definite friction reduction between the propeller and the plug when the propeller is freewheeling. We might mention that the majority of the 1936 contest-winning models were equipped with Ball-Bearing Washers.

Ball-Bearing Washer ---10¢ each--3 for 25¢

Flat Washers Use two oiled flat washers for thrust. Less friction than cupped, but must be oiled. Be sure to keep grit free.

Dia.--1/8. 3/16, 1/4,--3¢ per doz.

JASCO Freewheeler

The JASCO Freewheeler has withstood tests of thousands of flights. Its rugged construction easily withstands the torque of 20 strands of 1/8" rubber. The special shape provides a large cementing surface and several different means of attachment. In an emergency, it may just be bent to a "U" shape and slipped onto the propeller all ready to work. Many times have we heard the ominous whizz of a homemade freewheeler on its way to destruction, and after we handed the poor lad a JASCO Freewheeler, his grateful look had to be seen to be appreciated. The spiral cut provides automatic disengagement when the power is exhausted. The elimination of springs considerably lessens the pressure of the propeller hub against the plug during the freewheeling period, and results in a consequent decrease of drag. The only precautions to bear in mind, when using a JASCO Freewheeler, are to use a large size of wire to prevent the straightening of the bend in the shaft, and to have the shaft hole as far from the spiral cut as possible to eliminate the possibility of the bend curve chewing the engaging point. A tube bushing is furnished with each JASCO Freewheeler.

JASCO Freewheeler, -Right or Left--5¢ each

JASCO Thrust Bearing

There is nothing like a weak bearing to discourage any further contest efforts of even the most fanatical builder. A strong bearing will keep the propeller adjustment and save a great deal of time. JASCO Thrust Bearings are made of semi-round wrought iron, and are not tempered. A tempered bearing cannot be bent to any other shape except that of the original, and it is more likely to crack if it is in a collision or if it is overloaded. All thrust bearings and any other metal parts that carry a load should be roughened before being cemented and bound to the balsa. If the bearing becomes loose during a contest, when time is at a premium, bind in place very tight with rubber instead of thread.

The figures of the Maximum Safe Load on the chart are a little on the safe side. A slight increase may be made, but be sure to test your own figures at home before entering a contest. Since thrust adjustments are very important in every design, a simple double bearing is given with each #2 and #3 bearing. These are sent and bound to the sticks, as shown. The bearing shaft hole is large enough to accommodate the largest diameter wire usually used for that particular number of strands.

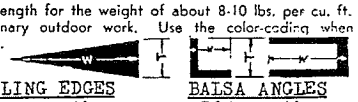
#	Size	Shft.Hole	Safe Load	Price
1	Small	.023	4 str. 1/8	2¢
2	Medium	.046	8 str. 1/3	3¢
3	Large	.046	14 str. 1/8	4¢



JASCO Special Balsa Structural Sections

Our 1936 Catalogue listed a very complete assortment of structural sections. This was for the purpose of determining just what sections and sizes were applicable to practical model work. Our present list will fill every practical need. You will note that the sections shown can be used advantageously in a great many combinations. At present the use of the sections is not comparatively widespread probably because few model builders realize the advantages of structural sections for model work. With the weight rules changing and the high power fetish slowly gathering momentum, the use of structural sections will soon be taken for granted. Why not look deeper into this phase of engineering?

The sections listed are made of stock that is straight and of even grain, and cut on the grain line which gives the most strength for the weight of about 8-10 lbs. per cu. ft. for ordinary outdoor work. Use the color-coding when ordering.



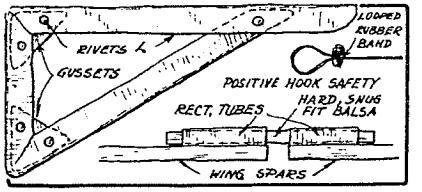
TRAILING EDGES — 36" Length

W	T	Price
1/4	5/64	3¢
5/16	3/32	3¢
3/8	1/8	4¢
1/2	5/32	5¢
48" Length		
5/8	3/16	8¢
3/4	1/4	10¢
7/8	9/32	14¢
1	5/16	18¢

BALSA ANGLES — 36"Length

W	T	Price
1/8	1/8	3¢
5/32	5/32	4¢
3/16	3/16	5¢
1/4	1/4	6¢
3/8	3/8	12¢
"U" BEAMS		
1/2	1/4	8¢
3/4	3/8	10¢
1	1/2	14¢

Stock Color-Coded--from 8 to 12 lbs.



Aluminum and Duraluminum

JASCO Aluminum and Dural have almost unlimited applications in model work, as they are light and can be easily formed to whatever shape is needed. When working with metal, the importance of good workmanship cannot be overemphasised. Sloppy fittings, rough edges, and poor foundations will cause more trouble than you can imagine. A hack saw, a drill, a file, a hammer, pliers and a vise are about all the tools you will need.

The aluminum is the softer of the two, and it can be bent, shaped, and hammered very easily to sharp corners. The dural is normally brittle and it can be bent only in an arc. Rebending will very likely produce a fatigue crack. However, it can be temporarily annealed by heating it just under a blistering temperature. Let it cool and then bend it to whatever form is needed. This annealing condition will last from a few hours to a day.

SECTIONS—Angles are used mostly for motor mounts, although other sections may also be used for this purpose, but they are especially suited for joining two piece wings.

Aluminum & Dural Angles

1/16 | 1/2 x 1/2--15¢ | 3/4 x 3/4--20¢ | 3/64

Rectangular Aluminum

1/2 x 1--25¢ | 3/4 x 1 1/2--35¢

Price per foot

SHEETS—The smaller guages are ideal for covering curves, fire walls, control tabs, and other parts that have to take abuse. The large guages of aluminum can be hammered into compound curves, and the dural can be cut and worked into motor mounts and landing gear fixtures.

Size	Aluminum 6x6	Aluminum 6x12	Aluminum 12x12	Dural 6x6	Dural 6x12	Dural 12x12
.006	6¢	10¢	18¢	x	x	x
.010	7¢	12¢	20¢	10¢	18¢	30¢
.016	8¢	14¢	25¢	14¢	25¢	40¢
.025	x	x	x	16¢	30¢	50¢
.032	14¢	26¢	45¢	20¢	34¢	60¢
.040	x	x	x	22¢	38¢	65¢
.064	30¢	50¢	90¢	40¢	70¢	$1.20

TUBING—Tubing is useful for freewheeling, telescoping wing connections, landing gears when flattened, axle and shaft bearings, and motor mount braces. Flatten and roughen when fixing with cement and thread to balsa and drill for bolts when fixing to hard wood.

Aluminum Dia.	Aluminum Price	Aluminum Dia.	Aluminum Price	Dural Dia.	Dural Price
.010	Wall	1/32	Wall	.035	Wall
1/16	9¢	3/16	10¢	1/4	15¢
3/32	9¢	1/4	10¢	3/8	25¢
1/8	9¢	5/16	12¢	1/2	30¢
5/32	10¢	3/8	14¢		

RIVETS—Rivets are best for permanent connection, especially where the vibrations are strong. Expose one diameter length for riveting and have a firm backing to prevent any enlarging of the hole.

Dia.	Length	Price per doz.
1/16	1/8	4¢
3/32	3/16	4¢
1/8	1/4	5¢

DURAL & ALUM.

JASCO Brass

JASCO brass is used wherever soldering is needed for strength or for something that is to be airtight, such as, a gas tank. When repairing gas tanks, use a soldering iron. Never use a torch, as a torch often sets off gas fumes in the tank with a consequent explosion. Soldering is a comparatively easy task if you clean the surface to a shine. In repairing, wash off the oil with gasoline, and then scrub with a wire brush or sandpaper. Use a large soldering iron, as the heat necessary to melt the solder must be transferred to the work with it. After the object is clean, coat it with flux and apply the iron. As soon as the solder on the tinned iron begins to flow to the brass, more solder should be melted on the iron and transferred to the brass. Do not use too much solder, and be sure to have it flow upon the joints smoothly. Avoid lumpy soldering, as it usually indicated insufficient heat, and this condition has a habit of just overlapping the openings without actually sticking to the metal.

SHEETS—Used for making gas tanks and electrical connections.

Size	6x6	6x12	Size	6x6	6x12
.010	10¢	17¢	.032	14¢	24¢
.016	11¢	19¢	.050	28¢	50¢

TUBING—Used for freewheelings, gear shafts and bearings, and gas connection bushings.

Dia.	Wall	Price	Dia.	Wall	Price
1/16	.016	10¢	1/4	.035	15¢
3/32	.016	10¢	5/16	.035	20¢
1/8	.016	10¢	3/8	.035	25¢
3/16	.016	12¢	Price per Foot.		

JASCO Wire

Wire parts should be made with smooth curves and bends. Ends should be smoothed with a file or a stone. Always use the size of wire that will provide a generous safety factor. Use safety hooks for rubber motors. Sand and oil dull or rusty wire. The larger sizes of wire can be bent in sharp curves by placing them in a vise and hitting just above the jaws. The wire cannot be threaded without annealing, which can be done by heating the wire red hot and by letting it cool very slowly. To cut heavy gauges, file a groove all around and then bend sharply. File off any protruding burrs to avoid injuries.

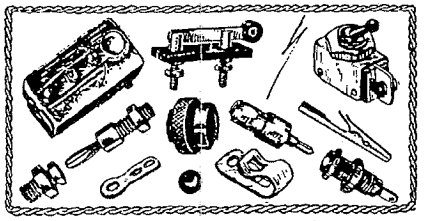
STRAIGHT POLISHED MUSIC WIRE
3 Foot Lengths

No.	Gage	Price	Max. Rubber Loads
1	.010	2¢	ROG Clips, Springs
3	.012	2¢	1/32 & 3/64 Rubb.
5	.014	2¢	1/16 & 5/64 "
6	.016	2¢	3/32, 7/64, 1/8
8	.020	2¢	Bearing, 1/8, 3/16
10	.024	3¢	4 Strands of 1/8
13	.030	3¢	6-8 Str. 1t. Ld. Gr.
15	.034	4¢	8-12 " 3 oz. "
16	.038	4¢	10-14 " 4 oz. "
18	.040	5¢	14-18 " 5 oz. "
1/16	.062	8¢	18-36 " 8 oz. "
5 Foot Lengths for Gas Models			
3/32	.094	15¢	Ld. Gr. up to 3 lbs.
1/8	.125	25¢	Ld. Gr. up to 8 lbs.

JASCO Celluloid-Treated Cambric Tubing

Cambric tubing is superior to rubber tubing for covering wire hooks. Its tenacious interlaced threads prevent chaffing and tearing. No amount of rubber pressure will be able to cut it in two. It can be re-used, and it will save many motors. Will take 1/16 wire

CAMBRIC TUBING------1 Foot------15¢



JASCO Electrical Appliances

It is true that most motor troubles are caused by poor electrical wiring and connections. If you will keep in mind that every splice is just another spot where a connection may be broken completely or cause a high resistance, you will realize the importance of having the fewest possible connections. All connections should be soldered, or bolted, and taped to prevent oil, cement, or dope and other insulating materials from saturating the splice. Also, if possible, make all connections behind the fire wall to keep the wire free from oil. Take care to keep the wires away from any sharp edges which might cut through the insulation, thereby exposing the wire for possible short circuits.

SWITCHES: Mount switches away from oil sprayed area since oil is an electrical insulator. Toggle design with covered movement is best, but be sure that it has positive action or your coil might burn up if contacts are touching and switch on. JASCO Toggle Switch is the best obtainable and made by reputable manufacturer. Look for the H & H mark when buying switches.

MIDGET KNIFE SWITCH S.P.S.T.---25¢
JASCO SPECIAL TOGGLE SWITCH----35¢
With 1 foot soldered leads-----40¢

CONNECTION CLIPS: For battery box, neat connection points for removable wire points----------2 for 5¢

JACKS & PLUGS:--For Booster Battery connections. Mount on Fibre and keep away from oil. Solder connections. Midget TIP &PLUG combination is for light connection. For best and positive connection use Midget BANANA JACK&PLUG combination with their large contact surface.

MIDGET JACK--10¢ No Solder PLUG-10¢
BANANA JACK--10¢ No Solder PLUG-10¢

HOOK-UP & HIGH TENSION WIRE:-Multi-strand tinned wires. Hook-up wire is rubber covered and can be easily peeled and soldered for connections. High Tension is Cambric covered celluloid treated wire for maximum insulation of the coil and plug connection. Best by actual use.

HOOK-UP wire---------6 feet for 10¢
HIGH TENSION Ignition Wire-1 ft.-5¢

CONNECTION LUGS-No Solder-6 for 5¢

INSULATION GROMMENTS:-For passing wires through metal or wood bulkheads. Has a nut for fixing. 1/8" Dia. hole, needs 3/8" mounting hole.
INSULATION GROMMETS--------10¢ each

ACCURATE CUT-OFF TIMER:-Precision device for timed flights. Can be mounted with small metal bands. With ON & OFF lever. Needs external switch Most reliable and lightest timer yet found. 1 to 50 seconds range.
CUT-OFF TIMER-------$1.50 Postpaid

MIDGET ALLIGATOR CLIPS:-Should only be used for temporary and testing connectiors----------10¢ each

Brass Screws and Nuts

The bolt and nut method of fastening is the most practical method for holding hard wood or metal parts together. On gas model work where vibration often loosens the nut, it is advisable to use lock washers for all metal fixtures and a flat washer for wooden type. Also use a double nut lock for extra precaution. The Fillister type of head is furnished in as many sizes as obtainable. Wood screws should be used on fairly hard wood, for best results.

Size	Mach.	Wood	Spec.
¼, ½	8¢	6¢	10¢
¾, 1	12¢	8¢	15¢
1¼	18¢	10¢	20¢

All fit 3/32 dia. hole. Price per dozen complete with nuts. Note self-locking feature on the special split-screws.



FLAT & LOCK WASHERS to fit above screws.---------per dozen-----4¢

Block Plane

Inexpensive but serviceable planes. Screw operated cap clamps. Bottoms polished. Cutter 1 inch. Length 3½ inches. 60¢



NOSE PLUG ACCESORIES



HARD WOOD PLUGS: Small size for low power and axle bush. Large will take 24 str. 1/8. Drill off center for adjustable thrust. Have one on every shaft for easy prop removal. Both for 1/16 wire.
Small ½" Face ¼" Hub------1¢
Large 1" Face ½" Hub------3¢



BRASS BUSHING: ½" Lt. for 1/16. Force fit into above ½ Doz.--5¢



EXTRA LARGE FACE BRASS BUSHING: ¼" protrusion, 7/8" face. Crimp edges for cementing---3 for 5¢



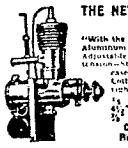


SPECIAL THREADED BRASS BUSHING: Just what we have been looking for! 1"Lt., 1/8 dia. 1/16 accurately drilled center hole. For shaft bearings on plugs, gears, wheels, adjust, thrust, tension spring holder & prop removal. Will take any power.--5¢ each.

THE NEW **WARRIOR**

"With the finest features in model engines." Aluminum Piston with two Piston Rings—Adjustable Spark Advance—Needle Valve Extension—Steel Cylinder, Aluminum Crankcase—Condenser Spark Plug—Special Coil. Engine runs perfectly in upright or inverted position.

¼ H.P.
¾" Bore
COMPLETE Ready To Run **$12.00** Postpaid





Mighty Midget Engine

The motor sensation of the year. A motor with unique reverse that gives remarkable control in any emergency. Also made Convertible with condenser, coil and spark plug

Upright model..... $14.00
Inverted model..... 17.25



GWIN AERO ENGINE

Another sensational engine featuring with Hi-Speed piston and exhaust manifold. Assembled and ready to run. Tested. Complete with condenser, coil and spark plug.

Upright model..... $17.50
Inverted model..... 18.25

BUILD YOUR OWN GAS ENGINE

Save money by ordering the Stanley Starter or Gwin Aero engine Construction kit. Assemble it yourself. All parts are machine finished and guaranteed to perfect. STANLEY MIDGET Upright kit $9.65—Inverted Kit.....$10.10
GWIN AERO Upright kit $11.25—Inverted Kit.....$11.80



MODEL BOAT ENGINE

The ideal model boat engine. Streamlined and efficient at high speeds. Easily adjusted, reliable, full power runs all day. Completely assembled and ready to run on your boat. Construction kit complete with Propeller. Postpaid $11.40.



New 1938 OHLSSON ENGINE

This new model is vastly superior with many improved features including an enclosed timer which is absolutely foolproof. New lugs on sides of motor permit any type of mounting. Radial or otherwise. No advance in price. Complete ready to run with coil, condenser, and Propeller, Postpaid $18.50



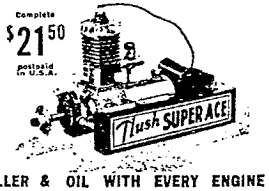
THE CHURN "CHUM"

New 3½ cu. motor for 3 to 5 ft. models 1/10 H.P. Easy starting and delivers sufficient power to fly models up to 5 lbs. Complete Postpaid $17.50



At "NATIONALS" in DETROIT securing coveted Texaco Trophy —MEANING—

Flush Super Ace leads all others in the field. Don't guess! Be sure with a Flush Super Ace! Buy a winner!



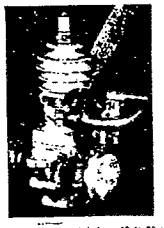
Complete **$21.50** postpaid in U.S.A.

PLENTY IN RESERVE!

900-12,000 R.P.M.
⅛ B.H.P. at 4500 R.P.M.
Weight (bare motor) 7 oz. Has greater strength to weight ratio than any other motor of this type. Order today!

FREE—PROPELLER & OIL WITH EVERY ENGINE

THE ELF ENGINE



ELF-powered planes weigh from 12 to 20 oz. Static thrust of propeller at 3500 RPM is 10 oz. Engine runs 45 to 50 min. at 1500 RPM on 1 oz. of fuel. Price $21.50 either upright or inverted. Price includes coil, condenser, propeller and gasoline tank.

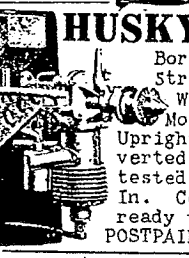


CONDOR MIDGET MOTOR $18.50

The Condor Midget is the World's Finest gasoline engine built today. Bore 9/16", stroke 9/16", weight 3½ ounces, flying wt. 3½ ounces, developing ¼ H.P. at 13,000 R.P.M.

Alloy steel cylinder, hardened and ground racing type, double ball bearing roll, crankcase made of Dow metal, duralumin heat treated aluminum alloy piston with hardened wearbushing, duralumin connecting rod, Stainless steel cowl, counterbalanced, solid shaft ¼" thick, hardened and ground, bearing special alloy bronze. Type of overall design with hardened and ground breaker arm with over-size adjustable tungsten points, timer locks in any position desired, steel cam.

Carburetor one piece design. Motor can be inverted by simply turning on axis. Carburetor equipped with built-in filter insuring continuous dependable operation. Speed of motor controlled by throttle. Coil and condenser unit of special design eliminating all ignition troubles. Has new type tank—easy to fill, less drop. FULLY GUARANTEED! Immediate Delivery



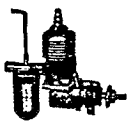
HUSKY JR.

Bore 5/8"
Stroke 5/8"
Wt. 4 oz.
Motor runs Upright or Inverted. Fully tested and Run In. Complete ready to run.
POSTPAID $12.50



BROWN JR. MODEL "B"

For years the standby of all model airplane engines and the most popular motor on the market today. Equipped with all steel piston. Factory tested and ready to run. Complete with coil, condenser, gas tank, spark plug and fully finished hardwood propeller.
Postpaid..... $21.50



FLY A 3-foot GAS MODEL WITH THE TROJAN JUNIOR GAS MOTOR

This small 3½ in. engine gives tremendous power and durability in the small size. Entirely new features of mounting, ignition complete ready to run with coil, condenser, propeller, fuel, oil and Trouble Guarantee. Mounted on skids. Postpaid $18.50



BROWN JR. MODEL "C"

An entirely new 1938 model with aluminum piston and special piston rings. Also newly developed needle valve giving perfect gas mixture control.

Delivered unmounted as illustrated above, ready for installation in your own plane mounting. Complete with coil, condenser, gas tank, spark plug and fully finished hardwood propeller. $17.50

STANDARD COIL used on the leading engines made today. $2.50

Improved with clip connector to fit spark-plug and high-voltage wire. A quality product throughout.



IGNITION CONDENSER made for airplanes especially. Flexible stranded connections. Tubular aluminum case. Side bracket for mounting 35c

TUNGSTEN POINTS for your breaker system. Diameter ⅜ inch. Set consisting of one rivet type and one screw type with nuts size 3-48 ..... 40c



SPARK PLUGS
Brown--$1.00
Champion 65¢
A.C.-----75¢





SAE-70 VALVOLINE OIL. 4 oz. Spout Funnel Can for tank refilling. 4 oz.--25¢

When in power doubt, consult us.

SHIPPING INSTRUCTIONS

No orders under 50¢--Cash with order. No CODs, please.--Only U.S.A. coins and unused stamps accepted. Remit by Checks, Postal or Express Money Orders payable to--JASCO--83 E 10 St. New York, N.Y.

PACKING & SHIPPING CHARGES

15¢ for orders up to $1.50--10% for orders over $1.51.--Orders for $5.00 and over are sent Postpaid and Packing free.---SPECIAL 10% DISCOUNT!! On orders of $10.00 and over!

EXTRA PACKING CHARGES

10¢ for 24" & 36" lengths. 20¢ for 5 foot. No charge for 18" or under.

EXTRA SHIPPING CHARGES FOR WEST OF MISSISSIPPI & INTERNATIONAL ORDERS

Add 10¢ to all orders:-3¢ for every 2 oz. can over 3:-4¢ for every 4 oz. can:--10¢ for every 8 oz. can:---- 15¢ for every 16 oz. can.

EXPRESS COLLECT SHIPMENTS

U.S.A. shipments by request. Include only specified extra packing charge. All Canadian orders over 40" sent EXPRESS COLLECT. International 40" and over packages sent by most economical & convenient transportation.

JASCO JUNIOR AERONAUTICAL SUPPLIES CO. JASCO
83 East 10th Street New York, N.Y.

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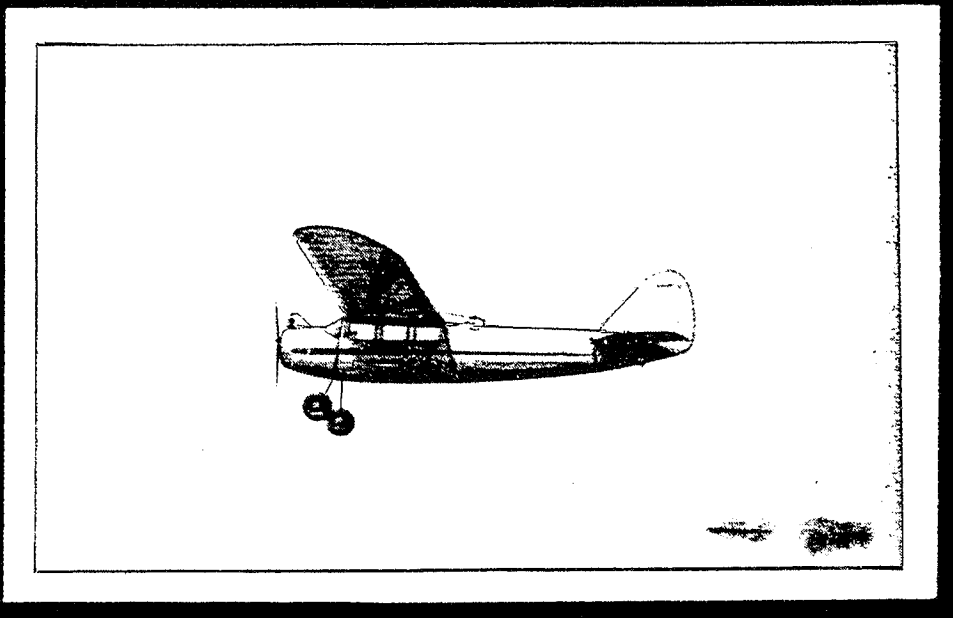
BERKELEY



MODEL SUPPLIES



A FEW WORDS ABOUT BERKELEY

From a small model shop in 1933 to the largest custom manufacturers of gasolene powered model aircraft. These few words are our biggest sales talk. The reason for this growth is no secret. The formula is simply value, service and reliability. We employ no expensive sales organization as the good will of our satisfied customers sell most of our products for us.

We believe without boasting that our available engineering information cannot be matched by any other model company. Since we first introduced gas models commercially, acquaintances with leading national engineers have been made, their helpful advice being invaluable.

Berkeley has always kept a few steps ahead of the industry in design practice on models. Designs which break records and win contests consistently are not "luck" or the result of "paper" theory. They are the results of systematic test flights with gradual improvements. Our only "paper" design work has been in properly stressing and balancing the model. The results are models which fly better and are practically uncrashable.

TESTIMONIALS

We have received thousands (yes, thousands!) of testimonials but we do not make a habit of exploiting our customers. However, we would like to print this excerpt from one letter we received:

Dear Sir:

Received your letter and wish to thank you for the interest shown in our club.

The other evening we went to the N. A. C. A. at Langley Field and put some of our airfoil sections through smoke and tunnel tests. This was very interesting to us, and we learned quite a bit from it. Out of six sections tested, we found that the wing from the "SUPER BUCCANEER" gave the best results. Most of the wings now being used were proven to have very little lift and too much drag.

Very truly yours,
TIDEWATER GAS MODEL ASS'N,
Ocean View, Va.

NOTE:

The models illustrated in flight in this catalog are in actual flight. The photo of the "Super-Buccaneer" was taken at the start of a record-breaking 57-minute flight!

VISIT US
NEXT TIME
YOU COME TO
NEW YORK CITY.
ONLY 20 MINUTES
FROM TIMES SQUARE

We will be glad to have you visit our new headquarters. All the Berkeley gas and rubber powered models are on display and also many other objects of interest to model builders.

DIRECTIONS:

From New York:

Take Independent City Subway to Hoyt Street; change to Queens "GG" Crosstown to Classon Avenue Station.

From Long Island and Queens:

Take Independent City Subway Queens Crosstown to Classon Avenue Station.

Berkeley Model Supplies is located between Lafayette and DeKalb Avenues.

NEW!



Model in flying position with landing gear retracted and ailerons working.

FOLKERT'S SPECIAL RACER

AMERICA'S
No. 1 RACING PLANE
in 1936 and 1937

1937 Thompson Trophy Winner
1936-37 Greve Trophy Winner

FEATURING

"AUTOMATIC MODEL PILOT"

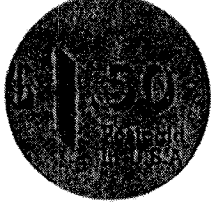
(Copyrighted)

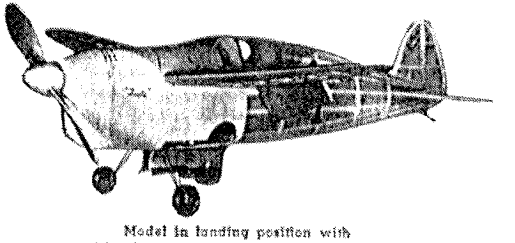
20⅜" Overall Length — **1" = 1' Scale**

"Automatic Model Pilot" puts a new thrill into model airplane building. The model is launched and flies at 40 m.p.h. for 200 feet. When the power dies, the wheels and "air brakes" automatically drop, and the plane glides slowly for a perfect landing.

KIT INCLUDES:
METAL SPINNER
CELLULOID WHEELS
SEMI-FINISHED NOSE BLOCK
COLORED DOPES

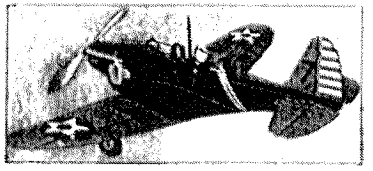
Wooden parts printed on sheet balsa, carved propeller, strips cut to size, large amounts of cement and clear dope, covering material, and full size plans with special instructions.





Model in landing position with "Air Brakes" and landing gear down.

INTERNATIONAL FIGHTING AIRCRAFT



AMERICAN CONSOLIDATED P-30

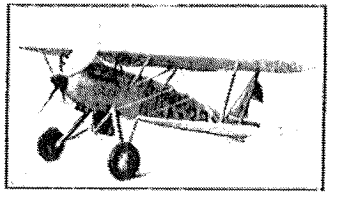
This fighter is reported to have a top speed of 252 m.p.h. when powered with a Curtiss Conqueror engine. The model has beautiful clean lines. Builders report it to be one of the most stable models they have ever built. Colors: Army Blue, Orange, and Silver.

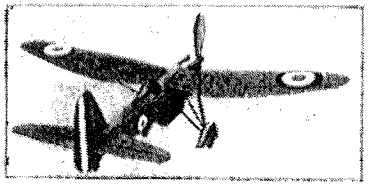
$1.00 Postpaid

DUTCH FOKKER D-XVII

The modern Fokker Fighter, Designed by Tony Fokker, famous for his World War Planes. It is the backbone of the Dutch Air Forces. The model is sturdy and well designed for flying. Letters on file report it to be a consistent flyer for as high as 95 seconds. Colors: Gray and White.

$1.00 Postpaid





FRENCH MUREAUX PURSUIT

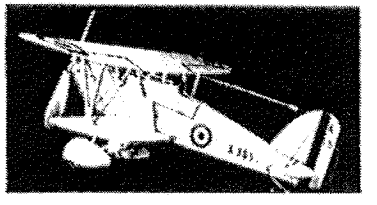
France, with the world's largest air force, gives first prize in the Monoway Pursuit. It is highly developed and has a 231 m.p.h. top speed. The model has been called by many "the finest flying scale model ever designed." Flights of two minutes are not exceptional. If you intend to enter flying scale model contests, you can expect the Monoway Improved Model 69 to win for you. Colors: Red and Blue.

$1.00 Postpaid

BRITISH HAWKER SUPER-FURY

Can you imagine a military biplane sweeping across the sky at 273 m.p.h.? The British Hawker Super Fury represents the latest development in British fighters. The model with its clipped wings, long slender fuselage, performs like its prototype. Without a doubt, this kit is the biggest dollar value on the market. Colors: Silver and White.

$1.00 Postpaid



KITS INCLUDE:
Printed cut balsa parts; special sheet balsa for reinforcing the leading edge of the wing (an exclusive feature that doubles the model's strength); carved propeller; colored, clear dope and an extra large tube of cement; all strips and blocks cut to size; metal fittings; covering material; insignia; full size plans; all in an attractive box.

$1.00 EACH
Postpaid in U.S.A.

BROWN CONTEST RUBBER IN ALL BERKELEY KITS
Add 25% to Flight Duration

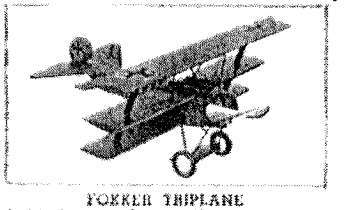
BERKELEY MODEL SUPPLIES, BROOKLYN, N. Y.

BERKELEY'S FAMOUS MASTER MODELS

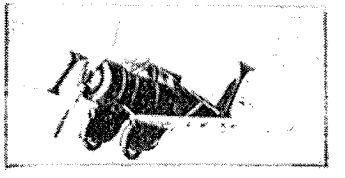
20" WINGSPAN
50c EACH POSTPAID IN U.S.A.



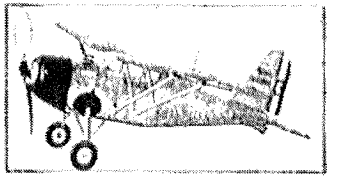
BROWN B3 SPORTPLANE
220 m.p.h. sportplane, in a class by itself. Model has dural wire cleat, dowel in propeller hub. A real speed model. All red with details in black and white. 50c Postpaid



FOKKER TRIPLANE
Model of the Richthofen's Famous World War fighter. Has wire reinforced for flying speed. Finished in red with black details. 50c Postpaid

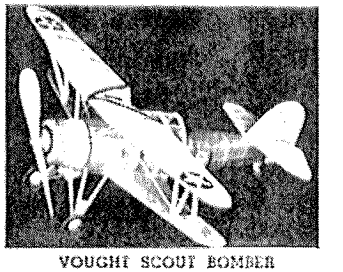


BEECHCRAFT A 17R
The type in private aircraft. Cruises at 205 m.p.h. Has dural removable motor plate and controllable-pitch style prop. Red and white, with black details. 50c Postpaid

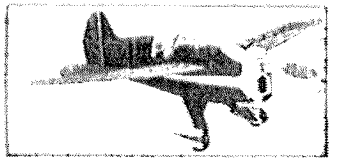


CURTISS FIGHTER F13C-1
Now 300 m.p.h. Navy Fighter. Model has cowl shock-absorber, wire landing gear, dural motor plate, controllable-pitch style prop, wire rear view plate, and controllable-pitch style prop. Yellow with black details. 50c Postpaid

FREE WHEELING PROPS and MOVABLE CONTROLS



VOUGHT SCOUT BOMBER
Sensational new army bomber powered with a 14 cylinder radial engine. Is carefully and profusely detailed. Yellow and silver, with red, black and white ring and full color insignia. 50c Postpaid



CHESTER RACER
World's fastest biplane. Has wire reinforced landing gear and bent wheels made of spinner. Green and yellow, with details in black and white. 50c Postpaid



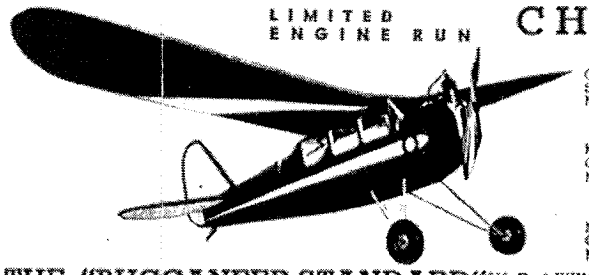
SEVERSKY FIGHTER
U. S. Army 250 m.p.h. pursuit. Has dural removable motor plate and controllable-pitch style prop. Army blue and yellow with black details and full color insignia. 50c Postpaid



LUSCOMBE PHANTOM
World's finest flying plane. Has a speed of 350 m.p.h. A true flyer. Has large dural motor plate, controllable-pitch style prop, wire reinforced landing gear, and new sleek streamlined cowling. Landing gear fillet. Canary yellow with black stripe.

50c Postpaid

All 50c Master Models Include: Printed wood parts, carved propeller, full size tube of cement, clear dope, full size layout plans with complete step by step instructions.



CHAMPION

FIRST PLACE

Quaker City Meet, Philadelphia, September 11, 1937. 40 second Motor Run. Official Time—8 min.

FIRST PLACE

Kresge Club Meet, Hadley Field, October 16, 1937. 40 second Motor Run. Official Time—5 min.

FIRST PLACE

M. M. L. Meet, Seversky Field, October 31, 1937. 35 second Motor Run. Official Time—5 min.

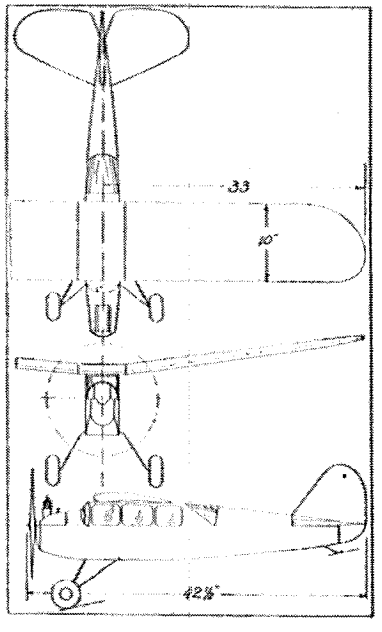
THE "BUCCANEER-STANDARD"

51½ Foot WINGSPAN — 1/6 to 1/5 h.p. Motor. Weight 3¼ lbs. Complete with Power Plant.

After experiments and wind tunnel tests we found that through proper proportions and using a special airfoil design (Copyrighted), a gas model powered with a full size model motor could be built to a small enough size for easy transportation and still be able to perform against its bigger brothers.

When the new "Buccaneer-Standard" was flight tested, we found that we had a ship that would climb at the rate of 1000 feet per minute and then soar! Nothing can compare with it for perfected design. Nearly twice as strong as necessary, with practically no engine vibration.

This is the model you have been waiting for. Easy to build—it takes only a few days because all wooden parts are printed out. Flyability—proven by its contest record. Price—no model at even several dollars more is as near complete. The plans are full size and easy to follow with views of the construction and complete instructions. You can build the model without spending one penny more because the kit includes a large can of cement, three colors of dope, and all ignition equipment, not found in any other low price kit.





$5.00 Prepaid in U.S.A.

Complete Kit
Less Wheels & Power Plant

COMBINATION PRICE

Complete Materials including 3½" Ohlsson Wheels and Standard 14" Propellor.

$7.00 Postpaid in U. S. A.

(Deluxe Combination) Complete Materials including 3½" M. & M. Wheels and Deluxe 14" Propellor.

$8.50 Postpaid in U. S. A.

KIT ALSO INCLUDES:

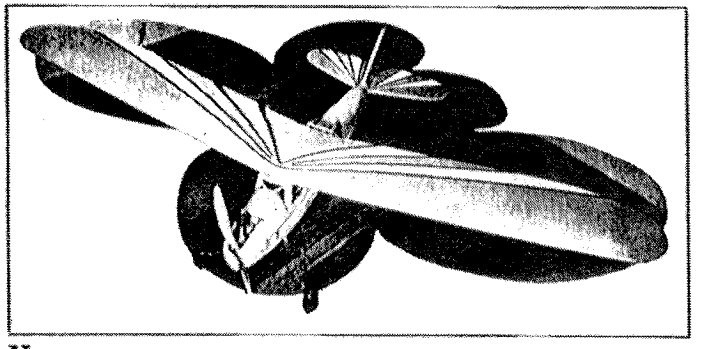
Complete Printed Wooden Parts
All Balsa Strips and Blocks cut to size
Motor Mount and Battery Box Material
Special Steel Wire for Landing Gear
Sheet Celluloid for Windows
Hardware and Metal Fittings
Bamboo Paper for Covering

COMPLETE PLANS

Three Big Drawings, each 20" x 40" with Instructions and Complete List of Materials

Only $1.00 Postpaid

No. 1 CONTEST SHIP



The New "Super Buccaneer"

I. G. M. A. A. RECORD BREAKER

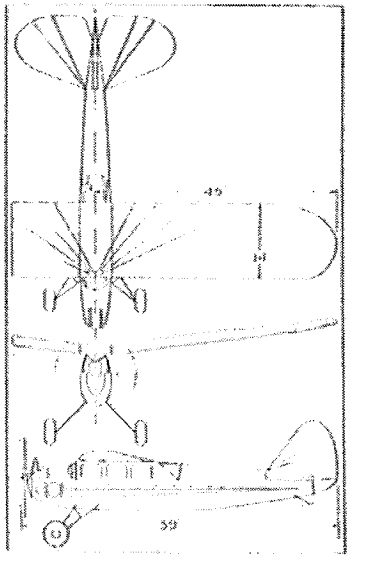
57½ Minutes Official Time—2 Min., 10 Sec. Motor Run.
71½ Foot WINGSPAN—1/8 to 1/3 h.p. Motor.
Weight Complete with Power Plant—5½ lbs.

The "Super Buccaneer" is the improved streamline version of the famous original "Buccaneer" which set a 64 minute record that remained unequaled until the N.A.A. rules were changed. The new model has already won number one position in the contest world.

LOOK AT THESE RECORDS

During the 1937 Full Contest Season the Super Buccaneer won first place in events at Philadelphia, Grand Rapids, Trenton, Seversky Field, and Staten Island. Besides these first places, we have had seven second places and four third places reported to us!





$8.50 COMPLETE
Less Wheels and Power Plant

Kit Includes:

Full Size Plans with Complete Instructions
Ribs and Bulkheads printed out
All Balsa Strips and Blocks cut to size
Special Steel Wire for Landing Gear
Material for Motor Mount and Battery Box
Sheet Celluloid for Windows
Hardware and Metal Fittings
Bamboo Paper
Pint Can of Cement and two 2 oz. Tubes for Covering
Choice of two colors of dope
All Ignition Accessories, including Toggle Switch

COMBINATION PRICE

Complete materials, including 4½" Ohlsson Wheels and standard 15" propeller.

$10.50 P. P. in U. S. A.

(Deluxe Combination) Complete materials, including 4½" M. & M. Air Wheels and deluxe propeller.

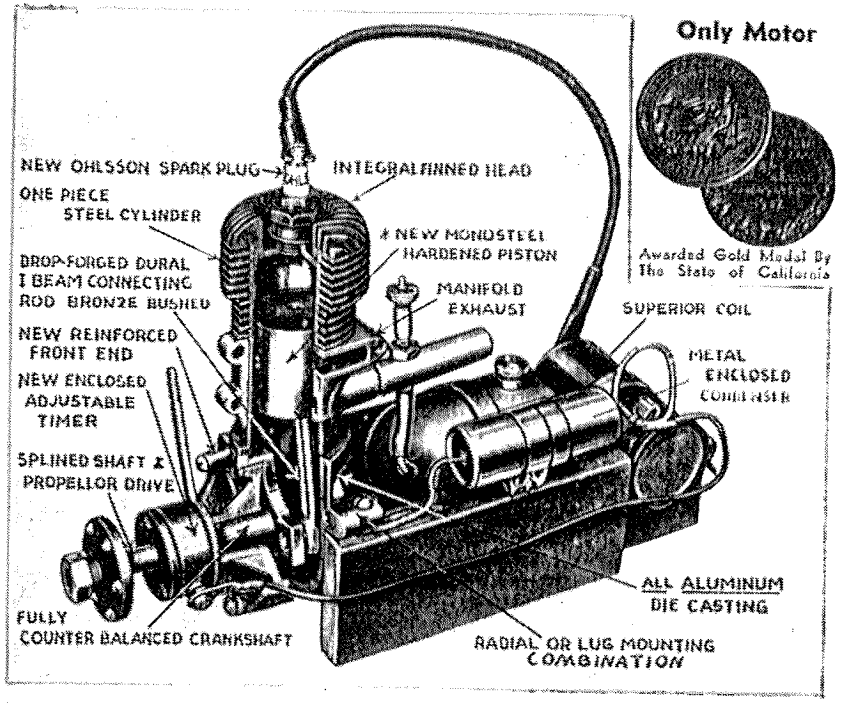
$12.00 P. P. in U. S. A.

COMPLETE PLANS

Four big drawings, nearly 30 sq. ft. of plans with clear sketches, photographs, instructions and a complete list of material.

Only $1.50 P. P. in U. S. A.

BERKELEY APPROVED . . . .
OHLSSON GOLD SEAL MOTOR



SPECIFICATIONS

¾" Bore x 15/16" Stroke—1000 to 10,000 r.p.m.

Rated at 1/5 Horsepower

Authoritative and unbiased brake-horsepower tests reveal that the Gold Seal Motor develops more power per cubic inch displacement than any miniature gas motor on the market. A rugged, speedy motor that won every important meet in California during 1937. Factory tested and completely guaranteed against defects in parts and workmanship.

New Monosteel Hardened Piston is the newest and greatest advancement in model engine design. This piston is stamped from one piece with a dome shaped piston head and heavy bronze wrist pin bearings. It combines the advantages of both the solid steel and the aluminum piston.

COMPLETE
Assembled
Ready to Run

$18.50
P. P.

IMMEDIATE DELIVERY

NEW!!

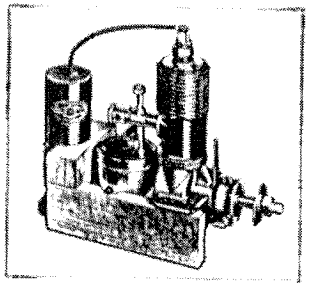
TRANSPARENT TANK

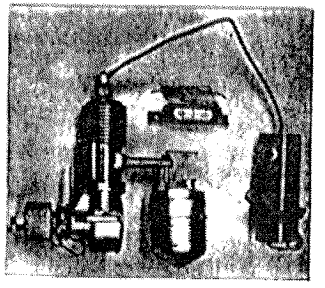
A last minute feature that allows you to see the exact quantity of fuel in your tank. No more guess-work and lost models.

RECOMMENDED POWER PLANT
FOR ALL
BERKELEY DESIGNED GAS MODELS

BERKELEY MODEL SUPPLIES
IS
EASTERN DISTRIBUTOR
FOR
OHLSSON MOTORS, REPLACEMENT PARTS, AND WHEELS

BERKELEY APPROVED . . . .
NEW 1938 SERIES
BROWN JR. MOTORS
NOW IN FOUR DISTINCTIVE MODELS





MODEL "B"

NOW!!

RUST-PROOF PLATED

This is the world-wide famous model "B" motor which has won more contests than all other motors combined! No cost is spared in using the highest quality materials available. A fitted steel piston, choke nut and a chrome-moly forged crankshaft, are all fitted to the closest tolerances known in modern machine-shop practice. As the piston and cylinder expand equally, it is impossible for the engine to seize except due to poor oil. This engine requires less oil than aluminum piston motors and is therefore more economical for contest duration flights.

COMPLETE (as illustrated) **$21.50** P. P.

MODEL "C"

NOW!!

RUST-PROOF PLATED MOUNTED ON SKIDS

This is the peppy new model with all the features of the model "B" except that it uses an aluminum piston with rings, and employs an easy-to-operate fuel system. The dome-shaped piston gives high compression and easy starting. After long usage, the engine can be made as good as new by simply renewing the piston rings. Now mounted on skids and plated for protection against rust at no increase in price.

COMPLETE (as illustrated—mounted on skids) **$17.00** P. P.

OUTLINE SPECIFICATIONS

ALL MODELS

⅞" Bore x 1" Stroke—1200 to 8,000 r.p.m.

1/5 h.p. at 5,000 r.p.m.—¼ h.p. at 10,000 r.p.m.

Bare Weight—6½ ounces — **Flying Weight** 20 ounces

Cylinder: Alloy steel with cooling fins and head machined from solid bar stock.

Manifolds: Spot-welded and brazed to cylinder.

Crankcase: Die-cast aluminum alloy.

Timer: New hardened steel type; points are adjustable.

Gas Tank: Funnel type; feeds at all angles of climb, can be taken apart and cleaned.

Spark Plug: New improved Brown Jr. Plug.

MODELS "B," "C" AND "D"
RECOMMENDED FOR ALL
BERKELEY-DESIGNED GAS MODELS

"B" AND "C" MODELS FEATURE:

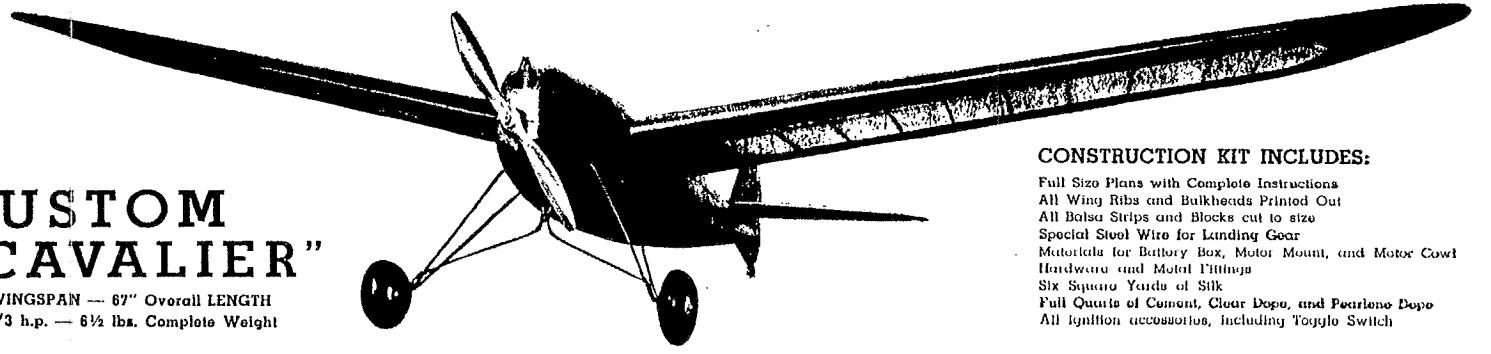
1. Rust-proof Plating. (On outside surfaces only.)
2. Skid mounting.
3. Drop-forged steel connecting rod.
4. Chrome-moly forged crankshaft.
5. Condenser with mounting brackets.
6. Heavy duty spark coil.

IMMEDIATE DELIVERY

SEE REAR COVER:
NEW "D" & "M" MOTOR
BROWN JUNIOR
LOWEST PRICE MODEL MOTORS

BERKELEY MODEL SUPPLIES
IS
NEW YORK DISTRIBUTOR AND SALES AGENCY
FOR
BROWN JUNIOR MOTORS AND REPLACEMENT PARTS

"THE ARISTOCRAT OF MODEL AIRPLANES"



THE "CUSTOM CAVALIER"

9-foot WINGSPAN — 67" Overall LENGTH
1/6 to 1/3 h.p. — 6½ lbs. Complete Weight

The new 1938 "Custom-Cavalier" is the best model airplane kit that money can buy. Incomparable in beauty, size, durability, construction, and flight-performance.

This beautiful mid-wing design employs the features of modern soaring gliders. Monocoque construction, cantilever wings and tail unit, and a soaring airfoil section. All the available knowledge on model airplane and glider design have been combined and incorporated into this superb model. During test flights, she glided over thirty minutes on only a one minute engine run!

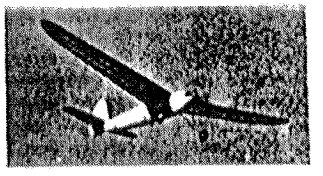
When you have built the "Custom-Cavalier," you will have the "top" in model airplanes. You will stand out among other model builders. Owning a "Custom-Cavalier" is a source of real satisfaction to any model builder. It is truly "The Rolls Royce of Model Airplanes."

$15.00 P. P. in U. S. A.

COMPLETE
Less Wheels and Power Plant

CONSTRUCTION KIT INCLUDES:

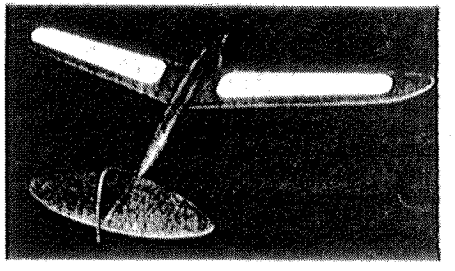
Full Size Plans with Complete Instructions
All Wing Ribs and Bulkheads Printed Out
All Balsa Strips and Blocks cut to size
Special Steel Wire for Landing Gear
Materials for Battery Box, Motor Mount, and Motor Cowl
Hardware and Metal Fittings
Six Square Yards of Silk
Full Quarts of Cement, Clear Dope, and Pearlene Dope
All Ignition accessories, including Toggle Switch

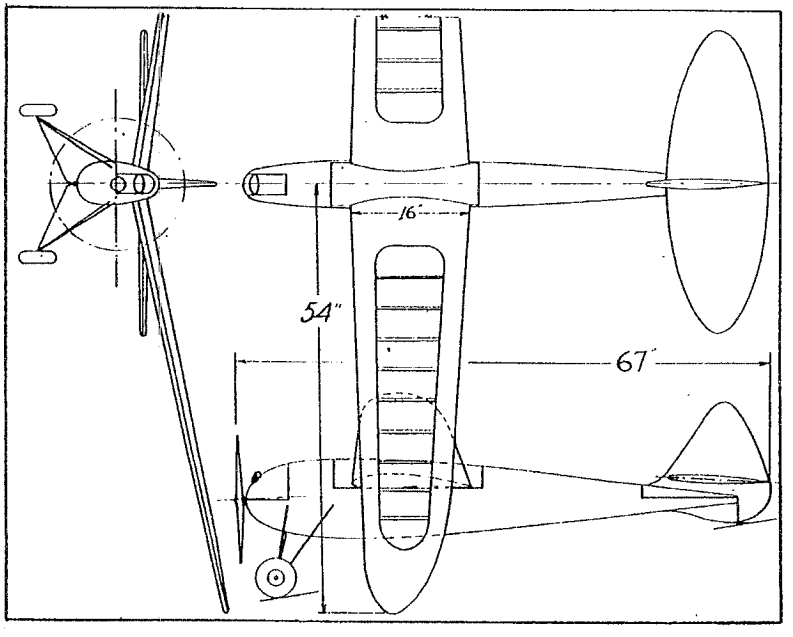


COMBINATION PRICE

Complete Materials including 4½" M. & M. Wheels and 16" de luxe Propeller.

$18.50 P. P. in U. S. A.





SIMPLIFIED MONOCOQUE CONSTRUCTION

Removable Wing and Tail Units

Perfect cooling cowl
Filleted wing and tail
Tail adjustment tabs
Extra strong landing gear

FEATURES FOUND EXCLUSIVELY IN BERKELEY GAS MODELS

1. Every Berkeley Gas Model is developed from a series of similar models.
2. Every Berkeley Gas Model must pass a rigid structural and flight test before being sold on the market.
3. All Berkeley Models are designed by Berkeley's own designing staff. Being the oldest commercial gas model company in the country, we have collected more data on flight performance and design than any individual designer could possibly obtain. Berkeley designs cannot be obtained elsewhere under any other name.
4. Every kit is custom assembled. We can supply you with whatever color dopes you wish. Simply specify the color.

   Buccaneer Standard — Choice of three colors
   Super-Buccaneer — Choice of two colors
   Custom-Cavalier — Choice of one pearlene color

5. Every kit includes aircraft ignition cable, toggle switch, nuts and bolts, metal fittings, solder, etc.
6. Every kit has full-size plans with structural drawings for clearness, all ribs and bulkheads printed on balsa and a complete list of materials so that you can check the contents of the kit.
7. Every model shows the installation of the Model "B" or "C" Brown Motor with instructions for installing other engines of the recommended horsepower.
8. Removable tail surfaces (except on the Buccaneer Standard) that are slotted into a keyway in the fuselage. They cannot lose their correct setting. (Wings are removable on all models.)

BERKELEY APPROVED . . . .

MOTOR ACCESSORIES

SMITH SPARK COILS

FIRECRACKER COIL

Weight 2½ ounces. Standard equipment on the Ohlsson Motor. Improved with clip connector to fit spark plug and high voltage wire.

$2.50 P.P.



"LITE WEIGHT" COIL

Weighs only 1¾ oz. Intended to operate on two per cells. Operates without any condenser. For models whose weight must be limited.

$3.00 P.P.

BROWN JR. SPARK COIL

Standard equipment on the Brown "B" and "C" Motors. Weight 3½ ounces. Always dependable

$3.50 P.P.

HURLEMAN IGNITION UNIT

A new spark coil with bracket for mounting. Very neat and gives the hottest spark of any model coil. Weighs only 2½ oz. ..... **$2.50 P.P.**

CONDENSER

Standard condenser for all motors. Same type as included with the Brown Motors. Only ..... **25c P.P.**



NEW! BROWN SPARK PLUG

This spark plug that is standard equipment with the Brown Motors. Improved porcelain and electrodes. Formerly $1.00. Only ..... **65c P.P.**



HURLEMAN SPARK PLUG

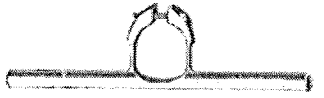
This plug formerly sold for $1.00. The new price on this dependable and popular plug is only **65c P.P.**



CHAMPION SPARK PLUG

Made by the famous makers of automobile spark plugs. Standard ⅝" S.A.E. Thread or the special ½" Thread for pee wee motors. **65c P.P.**

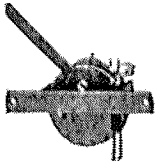
EXHAUST MANIFOLD



For Brown Jr. Motor, all models. Clamps directly around cylinder ..... **$1.00 P.P.**

FUEL TANK

Newly designed tank that feeds at all angles of climb. Standard equipment on all new Brown Jr. Motors ..... **$1.50 P.P.**



FLIGHT TIMER

For controlling your time of flight from 1 to 60 seconds inclusive. Weight 2½ oz. Indispensable for flying models in small fields. Rugged, vibration - proof, accurate. Easily mounted ..... **$3.00 P.P.**

HI SPEED BREAKER SPRING

This breaker spring replaces the standard equipment on all old Brown Jr. Motors. Especially suited for high r.p.m. in speed boat models. This spring will not lose its tension. Only ..... **$2.50 Complete P.P.**

TOGGLE SWITCH

Radio type, ON-OFF Switch. A 50c value, specially low priced **30c**

AIRCRAFT IGNITION CABLE

This cable is waterproof and gasoline proof. High conductivity reduces the voltage loss between the batteries and the spark coil. No booster batteries are necessary when using this cable. Special price due to a large quantity order ..... **2 ft. for 5c**

ENGINE REPLACEMENT PARTS

We carry a complete line of replacement parts for all Brown and Ohlsson models. Order from the parts list included with motor or regular factory prices.

TRADE IN YOUR OLD MOTOR

BERKELEY MODEL SUPPLIES have originated a plan whereby owners of old or obsolete engines can trade them in for on up to the minute Brown or Ohlsson Motor. Often it is cheaper to trade in your old motor rather than repair it.

The plan is that you simply send us your old motor, regardless of condition or make, and we will immediately send you an appraisal of the motor, stating exactly how much we can allow for it in trade. If the allowance is satisfactory, you mail us the balance and receive a new motor by return mail. If the allowance is unsatisfactory, your motor is returned promptly, free of charge. If you want an approximate appraisal before mailing us your motor, we will be glad to do so.

We have a ready market for your used motor and we can therefore give you an exceptionally reasonable allowance.

BERKELEY MODEL SUPPLIES, BROOKLYN, N. Y.

BERKELEY APPROVED GAS MODEL WHEELS

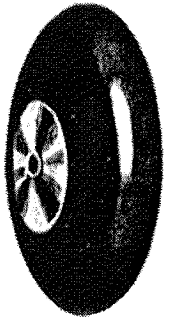


M. & M. MODEL WHEELS

SUPER HEAVY DUTY WHEELS

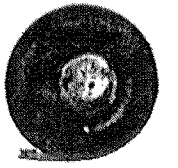
These wheels were the first pneumatic wheels for gas models and have set the standard of quality and long service. The aluminum hub grips into sponge rubber, when the outside of the tire is filled with low pressure air. The hub cannot possibly pinch the tire. All M. & M. Wheels can be inflated and deflated by means of a patented valve.

3½" Dia. ..... per pair $2.75 P.P.
4½" Dia. ..... per pair $2.75 P.P.



NEW LIGHTWEIGHT WHEEL

A newly designed wheel for models weighing up to 3 lbs.
3¼" dia., per pair ..... $1.50 P.P.
5" Dia., suitable for radio controlled models and models weighing over 7 lbs., per pair ..... $4.50 P.P.



OHLSSON "STREAMLINE" WHEELS

The new Ohlsson Wheels have an improved patented valve for inflation and deflation. Beautifully streamlined and exceptionally durable. Look at these low prices!

2½" dia. ..... per pair $1.25 P.P.
3½" dia. ..... per pair 1.50 P.P.
4½" dia. ..... per pair 1.75 P.P.

STREAMLINE WOODEN WHEELS

Aerodynamically designed for minimum air resistance. Turned from clear white pine, they make a beautiful appearance when painted with a silver hub and black tire. (These wheels should only be used where the landing gear will absorb the shock.)

4" dia. ..... 50c per pair
5" dia. ..... 60c per pair

SPUN ALUMINUM WHEELS

Suitable for large models with shock absorbing landing gears.

5" dia. ..... $1.50 per pair

GAS MODEL PROPELLERS

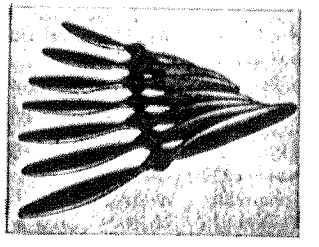
NOW! A COMPLETE PROPELLER SERVICE

Get the most out of your model with the correct pitch propeller. If you are in doubt as to the proper pitch, state the size, weight and power of your model when ordering.

FINISHED CARVED PROPELLERS

All our propellers are hand carved and polished. Standard Propellers are stained and varnished. The Deluxe Propellers are given a metallic finish, waxed and hand polished. Note the low prices.

	Standard Finish	Deluxe Finish
10" dia. (8" or 10" Pitch)	$ .50	$ .65
12" dia. (8" or 10" Pitch)	.60	1.00
13" dia. (8", 10", or 12" Pitch)	.70	1.15
14" dia. (8", 10", or 12" Pitch)	.75	1.25
15" dia. (8", 10", or 12" Pitch)	.85	1.35
16" dia. (10" or 12" Pitch)	1.00	1.50
18" dia. (12" Pitch)	1.25	1.75





LAMINATED PROPELLERS

Beautifully finished laminated propellers, made of four laminations of Spruce and Mahogany. Varnished finish.

13" dia. $1.35
14" dia. 1.35
14" dia. (Left Hand) 1.50
15" dia. 1.50

BASSWOOD PROP BLANKS

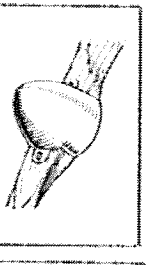
Cut to outline shape, drilled for propeller shaft, and tapered. When ordering, state if high or low pitch is desired.

12" dia. 20c
13" dia. 25c
14" dia. 25c
15" dia. 30c
16" dia. 35c

ALUMINUM PROPELLER SPINNER

Attached to the propeller with small wood screws and is easily removable. Highly polished. It adds 100% to the looks of your gas model. Complete with instructions for attaching and necessary wood screws

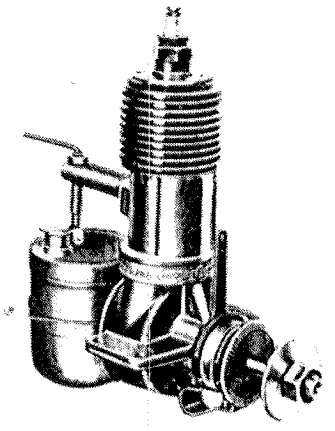
1" dia. x 1" long ..... 25c ea.
1¾" dia. x 1¾" long ..... 35c ea.



BUY ONLY BERKELEY APPROVED ACCESSORIES

BERKELEY INTRODUCES

Lowest Price Model Engines



Model "D"

MODEL "D" BROWN JR.

READY-TO-RUN

Including Coil and Condenser

Berkeley Approved

and

Unconditionally Guaranteed to Run

$10.00

P. P.

ORDERS FILLED IN ROTATION

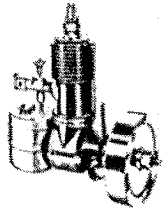
NO TRADE IN MOTORS ACCEPTED

Sensationally low-priced, this new model gives you the chance to install a precision-built motor for less cost than any of the poorly built, ill fitted "toys" which have flooded the model market. This low priced engine can be produced only because of standardization of many of the parts of the mass operation Brown Motors over a period of five years. Mass production precision equipment has been employed to give you the best at the very lowest price. This motor must not be compared with other model motors in the lower price brackets. Absolutely better materials and workmanship are used in the Model "D" than in any $15.00 motor on the market. Best of all, it bears the Brown name and the Berkeley approval, symbols of dependability and long life, the world over!

FEATURES OF THE "D" MODEL:

1. Standard Brown ¾ cylinder, gas and compression, and boost spring.
2. New long-life ignition unit.
3. New "Z" metal crankshaft.
4. Aluminum Connecting Rod.
5. Dome-shaped piston with rings.
6. Easy-to-operate fuel valve.

NEW "M" MARINE MODEL



Model "M"

READY-TO-RUN

INCLUDING COIL, CONDENSER AND FLYWHEEL

RUST-PROOF PLATED — PRECISION NEEDLE VALVE

$15.00

P. P.

Develops ¼ h.p. at 6000 r.p.m. Will power a 24" to 30" clip-hydro plane at speeds up to 35 m.p.h. Best type of marine propulsion engine for the money. This model does not require any form of reduction gears, chains or belts connected to the crankshaft. Simplest marine motor to install and operate. Similar to the "D" model except that it employs a propeller shaft with valve and choke nut. Motor is equipped with a balanced, finished flywheel and heavy-duty spark coil.

Printed in U. S. A.

PREMIER GRADE

BALSA WOOD

More expert builders use Berkeley Premier Balsa than any other grade. In spite of the exceptionally low prices, Premier Balsa is kiln dried and wormless. It comes in five different textures ranging from extra soft for indoor models to extra hard for gasoline powered models.

Our shop is equipped with the latest 1938 precision machinery to accurately cut Premier Balsa with the minimum variation in thickness. The low prices result from our nearness to the shipping port, efficient equipment, and capable workers. NOT from using inferior quality. We can supply you with extra soft, soft, medium, hard, and extra hard textures from large stock on hand.

18" SHEET BALSA

	each	doz
1/32 x 2	2c	20c
3/64 x 2	2c	22c
1/16 x 2	2c	22c
3/32 x 2	2½c	25c
1/8 x 2	3c	30c
3/16 x 2	3½c	35c
1/4 x 2	4c	45c
5/16 x 2	5c	55c
3/8 x 2	6c	65c
1/32 x 3	3½c	33c
3/64 x 3	4c	37c
1/16 x 3	4c	40c
3/32 x 3	4½c	45c
1/8 x 3	5c	50c
3/16 x 3	6c	60c
1/4 x 3	7c	70c
5/16 x 3	8c	80c
3/8 x 3	9c	90c

18" STRIP BALSA

	each	per 100
1/32 x 1/16	4 for 1c	18c
3/64 x 3/32	4 for 1c	18c
1/16 x 1/16	6 for 1c	14c
1/16 x 3/32	4 for 1c	18c
1/16 x 1/8	4 for 1c	20c
1/16 x 3/16	3 for 1c	25c
1/16 x 1/4	2 for 1c	30c
3/32 x 3/32	4 for 1c	22c
3/32 x 1/8	3 for 1c	24c
3/32 x 1/4	2 for 1c	40c
1/8 x 1/8	3 for 1c	25c
1/8 x 3/16	2 for 1c	33c
1/8 x 1/4	2 for 1c	42c
	each	per 25
1/8 x 3/8	1c	17c
1/8 x 1/2	1c	20c
1/8 x 1	2c	35c
3/16 x 3/16	1c	15c
3/16 x 1/4	1c	19c
3/16 x 3/8	1½c	25c
3/16 x 1/2	1½c	30c
3/16 x 5/8	2c	35c
3/16 x 1	2½c	50c
1/4 x 1/4	1c	20c
1/4 x 3/8	1½c	28c
1/4 x 1/2	2c	35c
1/4 x 5/8	2c	42c
	each	per 10
1/4 x 3/4	2½c	20c
1/4 x 1	3c	25c
5/16 x 5/16	1½c	12c
3/8 x 3/8	2c	16c
3/8 x 1/2	2c	18c
3/8 x 5/8	2½c	22c
1/2 x 1/2	2½c	24c
1/2 x 3/4	3c	28c
5/8 x 1	5c	45c
3/4 x 3/4	5c	45c
3/4 x 1	6c	55c

18" PLANK BALSA

Dressed on all four sides, accurately mitered and cut.

½ x 2	6c
½ x 3	10c
⅝ x 2	7c
⅝ x 3	12c
¾ x 2	8c
¾ x 3	14c
1 x 1	7c
1 x 1½	10c
1 x 2	12c
1 x 3	15c
1 x 4	20c
1 x 6	25c
1½ x 1½	13c
1½ x 2	15c
2 x 2	18c
2 x 3	25c
2 x 4	35c
2 x 6	50c
3 x 3	40c
3 x 4	50c
3 x 6	75c
4 x 4	70c
4 x 6	$1.00

PROPELLER BLOCKS

½ x ¾ x 5"	6 for 5c
½ x ¾ x 6"	5 for 5c
⅝ x 1 x 7"	3 for 5c
⅝ x 1 x 8"	2 for 5c
¾ x 1¾ x 10"	4c
¾ x 1¾ x 12"	5c
1 x 1½ x 15"	8c

SPECIAL BALSA BLOCKS

For noses, cowlings, fillets, solid models, etc.

1 x 2 x 6"	5c
1 x 3 x 3"	5c
2 x 2 x 3"	5c
2 x 2 x 6"	8c
2 x 4 x 6"	12c
2 x 6 x 6"	18c
3 x 3 x 3"	10c
3 x 3 x 6"	15c
3 x 6 x 6"	30c

SPECIAL SHEET BALSA

For covering, indoor models, etc.

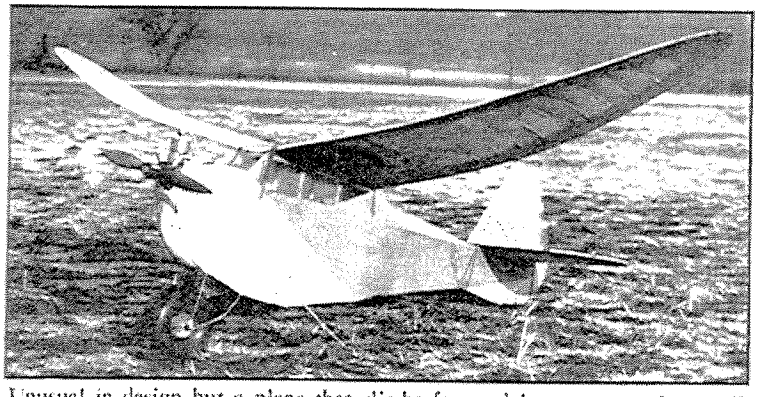
1/64 x 2 x 18"	2 for 5c

36" LENGTHS DOUBLE 18" PRICE

GOOD MODEL BUILDERS ALWAYS

. . . . . **BUY BERKELEY**

How to Build A Universal One Wheeler

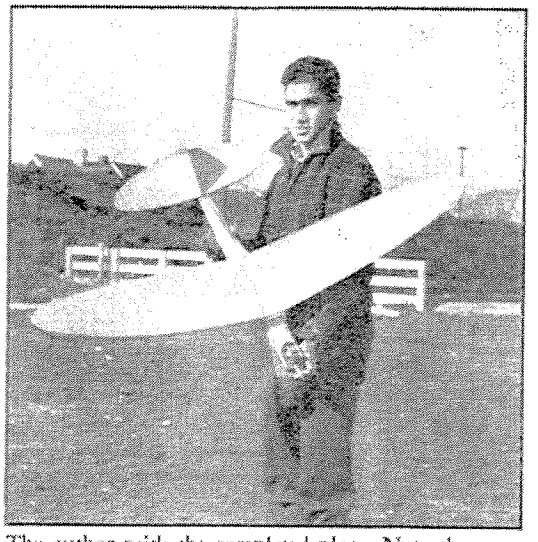


Unusual in design but a plane that climbs fast and has great soaring qualities. A wing section of the latest design is used

A Gas Model That Will be a Consistent Winner in Any Contest. It Recently Won a Contest at Miller Field, Staten Island, N.Y., by Making a Flight of Seven Minutes With a Thirty Second Engine Run. It Has a Very Flat Glide

By LEON SHULMAN

SOMETHING new in gas model aviation—a one-wheeler gas model that will accommodate most any motor on the market. To date the ship has been flown with a Trojan, Husky, Cyclone, Gwinn-Aero and Brown "B," "C," and "D"; giving most gratifying results with all of them. The ship can be flown in both the large and small N.A.A. events at contests. On occasions it has flown over five minutes without covering more than 200 feet distance from the take-off spot. Its outstanding flight characteristic is the extreme stability. Due to a low center of gravity and a low center of lateral area, the climb is a tight, vertical spiral. The glide is very flat and slow due to the high lift, stable airfoil. A great deal of airfoils were tested on this ship till the present airfoil was chosen. The ship rides thermals with remarkable facility as has been proven at various times. An associate model builder who constructed the same job, and used a Husky for power, attained flights of over eight minutes. The ship weighed 1½ pounds at the time. If a small motor is used, it is recommended that the builder use lighter wood which will cut down on the wing loading.



The author with the completed plane. Note the compact but efficient design

Construction

Fuselage

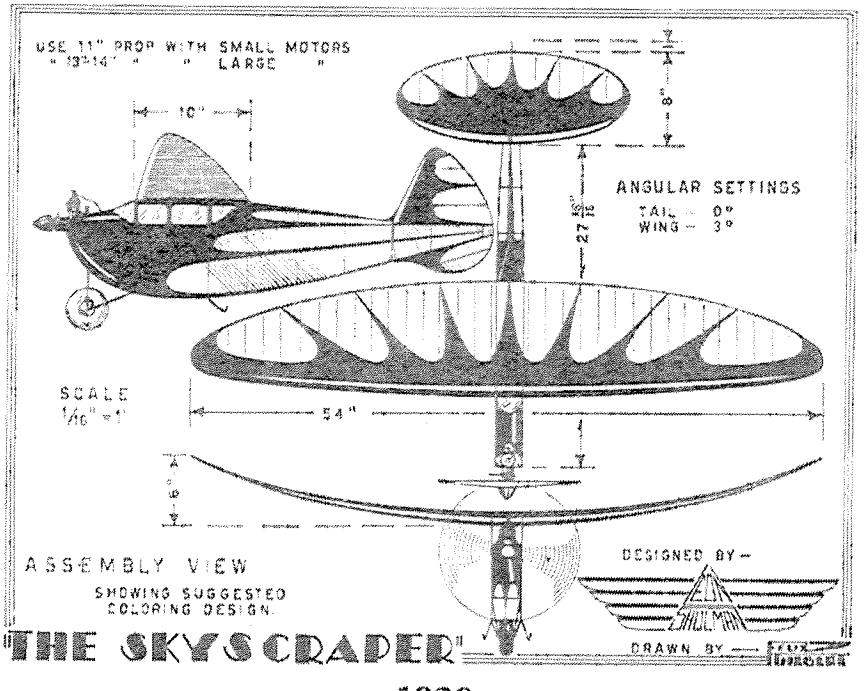
The fuselage is built of 3/16" square balsa strips. From the nose back to section X-X the fuselage has an oblong cross-section, and that part of the body is built in the orthodox manner. While building it allow the side longerons to extend the full length of the fuselage. Note that the outside motor mounts are integral with the side longerons. Make all the joints running into the motor mount especially accurate and stong, as this part of the body must absorb a great deal of strain. The two sides are completely joined from X-X forward before the rear of the body is built up. Then the two side longerons are joined at the back.

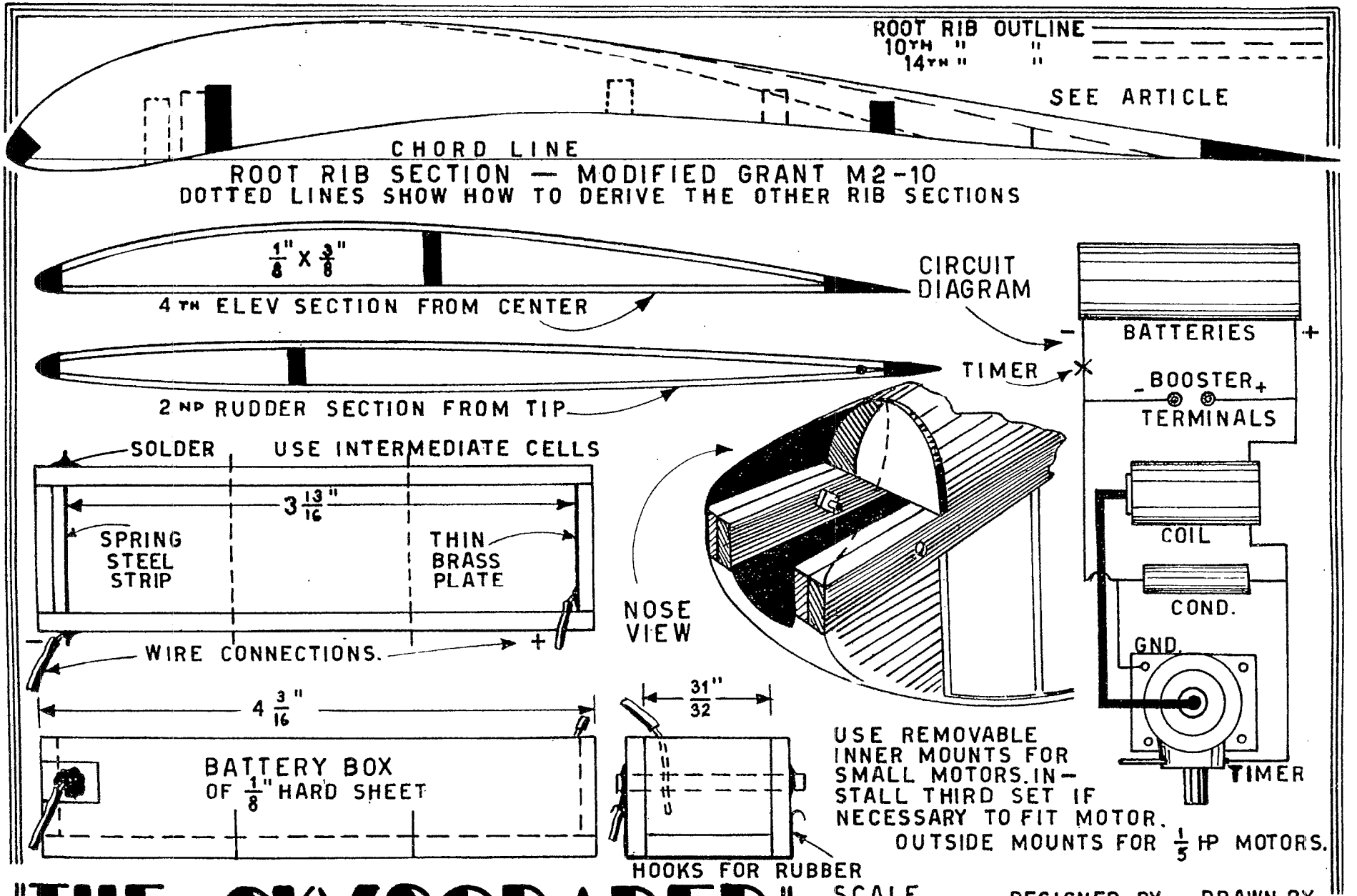
The front of a new top and bottom longeron is now glued in place, and then joined to the respective rear positions as indicated on the plans. The rest of the braces are now set in place; so that when finished, the sections from Y-Y to Z-Z will be diamoned shaped, and from Z-Z to the back they will be triangular. The nose block of soft balsa is glued to the body and then carved to conform to the outline of the nose. It should be rounded as much as possible. The cowl formers are shown in full size on the bottom right of plate one. Landing gear and skid details are shown clearly on plate one with everything labeled. Note that the skid is one complete piece.

The landing gear is one piece. The axle is a straight piece of wire, bound with iron wire and soldered to the wire struts. Battery box details are shown on plate two. The coil box is built around the coil. Note the hooks near the side longerons to hold the wing rubber bands. The circuit diagram is shown on plate two. The upper timer is the self-timer, while the lower one is the one on the motor.

Tail

All tail construction is covered completely on the plans. The rib sections are shown on plate two and should be used as a guide in con-





"THE SKYSCRAPER"

SCALE FULL SIZE

PLATE 2

DESIGNED BY- LEON SHULMAN

DRAWN BY- FEUX GILBERT

How to Build a Universal One Wheeler

(Continued from page 1)

structing the rest of the tail sections. The bent strips will assume a natural curve. In building the elevator, first do the bottom, which is straight.

Wing

Oll the stock is labeled. The wing outline is a double-ellipse which is highly streamlined. The front minor axis is three inches at the center, and the back minor axis is seven inches, thus giving the root chord of ten inches. Or else, the drawings may be scaled up to four times the size of those on the page by means of dividers or proportional dividers which would save time.

To cut the ribs, note that they are all derived from the root rib. As the ribs get shorter, they are decreased from the trailing edge, but they must always taper to 5/32" at the back, which is the trailing edge thickness. The wood that is removed is always taken away from the top and at the back, never at the bottom. The drawing at the top of plate two illustrates this method exactly. This system provides a negative angle at the tips, approaching a symmetrical section which offsets stalling tendencies.

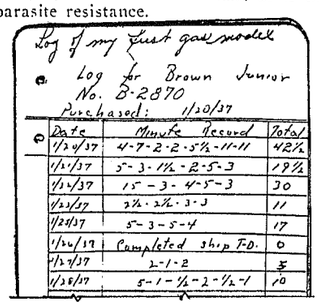
The method of putting diedral into the wing is clearly outlined in the top and bottom center of plate one. This type of dihedral not only enhances the appearance of the wing but provides a much smoother airflow, especially at the tips.

Flying

It is highly recommended that the model be absolutely complete before any sort of testing is undertaken. The model should balance when held by the extreme tips.

The plane should be tested on a calm evening in a large field. The model should be pushed along the ground by the tail till it lifts a few feet and then glides in gently. If a small motor is used, give it about half-throttle and push it off the ground gently into the wind. The climb should be slow and with the torque, For better flights "rev" up the motor.

For big motors, set the spark to neutral, lean the mixture and close the choke about half then launch the ship the same as with a small motor. With big motors and at this power the model should nose up steeply with torque and climb. The glide on both ships should be flat and slow, and against torque. The skids should keep the model in an upright position. Due to the one wheel on the nose the prop toll is at a minimum, as is the parasite resistance.

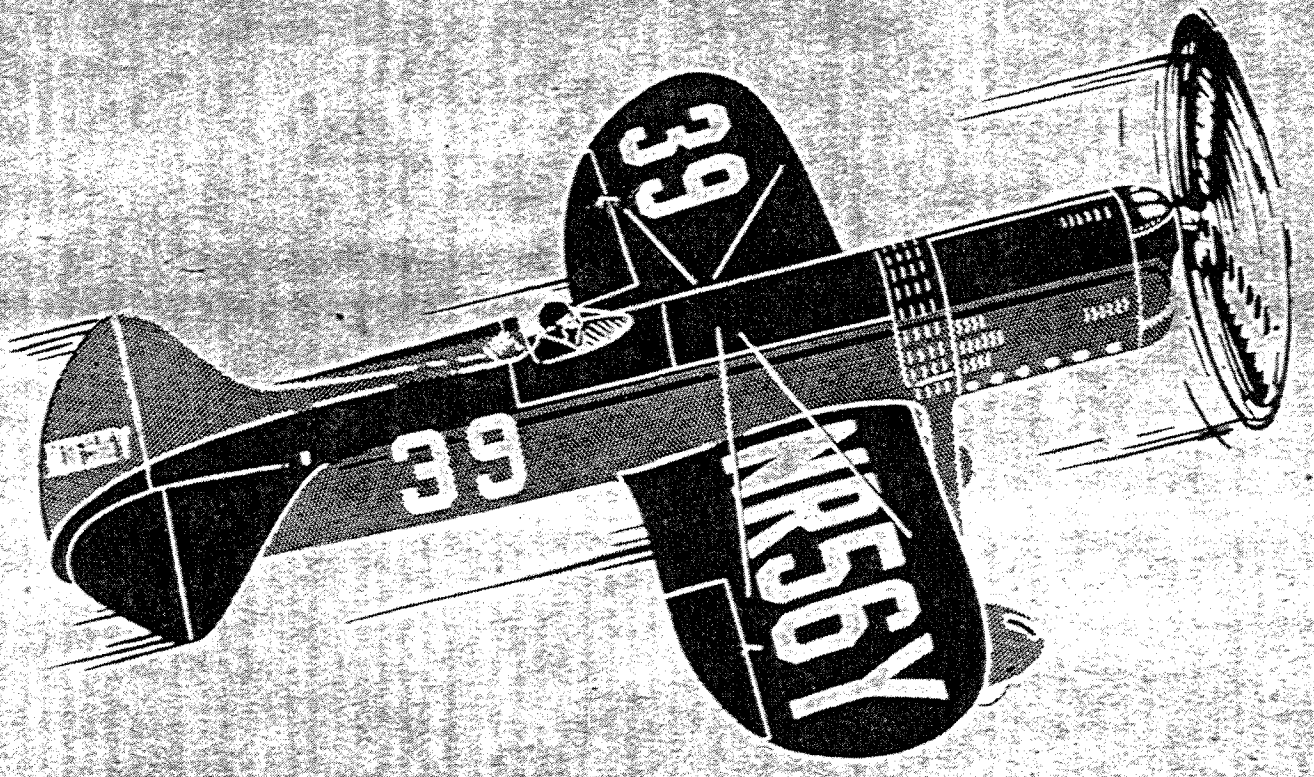


Log of my first gas model

a Log for Brown Junior
No. B-2870
Purchased: 1/20/37

Date	Minute Record	Total
1/23/37	4-7-2-2-5½-11-11	42½
1/25/37	5-3-1½-2-5-3	19½
1/24/37	15-3-4-5-3	30
1/23/37	3½-2½-3-3	11
1/24/37	5-3-5-4	17
1/24/37	Completed ship F.O.	0
1/27/37	2-1-2	5
1/28/37	5-1-½-2-½-1	10

PEERLESS



flying MODELS

PRICE FIVE CENTS

PEERLESS TEN CENT FLYERS



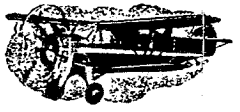
FOKKER DVIII
No. 100
World War Monoplane.
Colored all Red. True Insignia.



CESSNA C-37
No. 101
The World's Most Efficient Airplane.
Colored Light Blue. Great flyer.



REARWIN SPEEDSTER
No. 102
Newest creation in Sportplanes.
Colored all Orange. Swell flyer.



WACO CABIN
No. 103
Popular American Cabin Plane.
Colored all Green. Attractive Ship.



RED BIRD R. O. G.
No. 104
Designed for indoor Flying.
Easy to build. Will always fly.



MONOCOUPE
No. 105
The 90 A with all modern features.
Popular plane among private pilots.



AERONCA LOW WING
No. 106
Latest Low Wing Cabin Aeronca.
Clean lines. Good flyer.



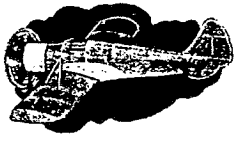
STINSON TAPER WING
No. 107
High speed commercial transport.
Newest taper wing job.



HOWARD'S DGA-8
No. 108
Howard's latest commercial plane.
High speed. Modern design.



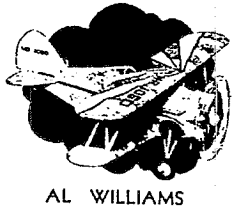
RYAN S-T
No. 110
1937 Winner of Amelia Earhart
Memorial Trophy Race.



KINNER SPORTWING
No. 111
A two place light commercial.
Colored all Green. Great flyer.



VOUGHT V-143
No. 113
Low wing military demon.
Colored Blue & Yellow. Insignia.



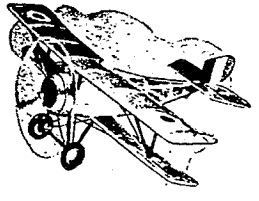
AL WILLIAMS
GULFHAWK
No. 112
Specially built Grumman for Al
Williams, noted Air Race stunter
and aviation executive. Detailed
model, very realistic.

PEERLESS COMPLETE KITS

EACH KIT contains clean accurately printed wood, saw cut strips, blocks cut to size, Quik-Set cement, colored tissue, turned wheels, detailed, easily read plan with all instructions, rubber, bent wire parts, and tiny washers.

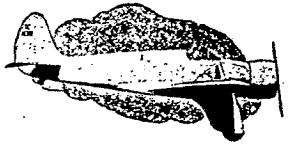
The models all make good flyers and are easily built.

10c • EACH • 10c



NIEUPORT 17 C1
No. 109
A famous French Wartime fighter.
Noted for its flying characteristics.
This model is detailed and exact.

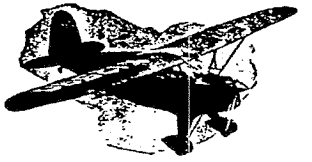
24" WING SPAN FLYERS



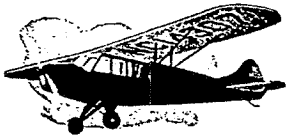
KINNER "SPORTWING"
No. 251
Well known sport plane, side by side seating.
Model is colorful and makes a nice flyer. Kit
has turned cowl.



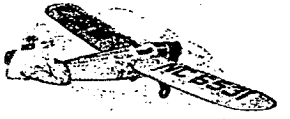
MONOCOUPE 90A
No. 252
Best known of all light planes. Equally popu-
lar as a model for its simplicity and long flights.
Kit has turned cowl.



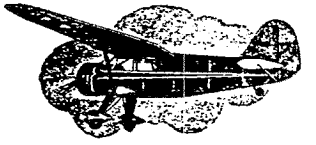
REARWIN SPEEDSTER
No. 253
A snappy looking, speedy flying ship. Model
is all blue, and easy to build. A good flying
design for beginners.



TAYLOR CUB
No. 254
America's first production airplane. Built and
sold by the thousands. There's one at every
airport. Beginner's model.



HEATH MIDWING
No. 255
A neat, clean design. This plane has made
many records. Model is orange with black
trim. Builds easily and flies well.

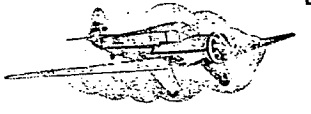


STINSON TAPER WING
No. 256
Known and flown everywhere. Our model
is green and white, and is a good flyer. Kit
contains turned cowling.

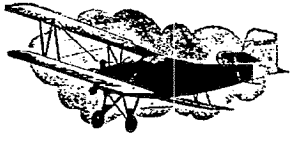
ALL MODELS ARE FULL 24" WING SPAN

Get yourself one of these big wing span flyers and see how fast it goes together! Notice the wealth of fine detail, and the completeness of each big kit. Look closely at the quality of these Peerless kits, feel the smooth cut balsa, check the measurement of the clean cut strips. You sure get your value in these easy to build PEERLESS flyers.

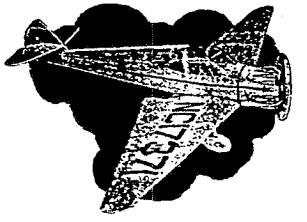
Each of these fine Peerless kits contains all the necessary balsa sheets and strips, bent wire parts, turned wheels, model rubber, jap tissue, cut balsa propeller, washers, and big full size, easy to work with plan.



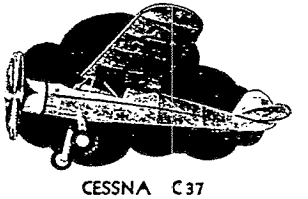
AERONCA LOW WING
No. 257
The first cabin Aeronca. A very beautiful
airplane. Model is all yellow with black trim
and has turned cowl. High climbing flyer.



FLEET TRAINER
No. 258
First used as an army trainer, then sold to
schools all over the world. Kit has a turned
cowl and builds the largest model in the line.



RYAN S-C
No. 260
Made by the builders of the 'Spirit of St Louis'
and is an up to the minute design. Model is
quickly built. Kit has turned cowling.

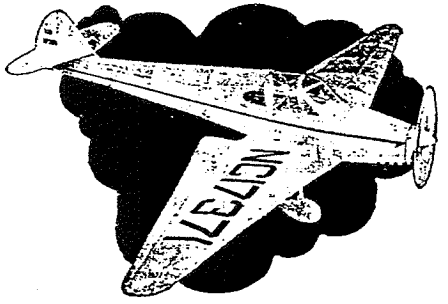


CESSNA C37
No. 259
Advertised far and wide as "World's most
efficient lightplane". Model is very easy to
build and it flies well. Kit has turned cowl.

EACH . . . 25c

30" WING SPAN - - 50 CENTS

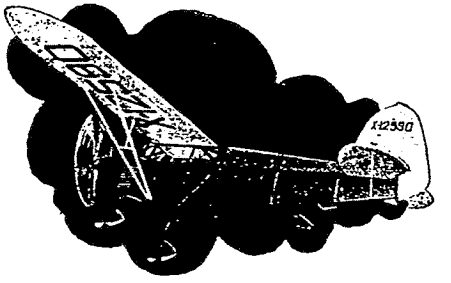
RYAN S-C



The Ryan S-C the latest model of a distinguished line of airplanes which was headed by the "Spirit of St. Louis" is a comfortable three place cabin plane designed for sport and executive flying. It is very modern with a strongly tapered wing, neat single strut landing gear. It is powered with a Menasco engine. The model makes a good flyer, is light and strong. It is easy to build and the kit has all materials.

RYAN S-C KIT NO. 552 $.50

REARWIN SPEEDSTER



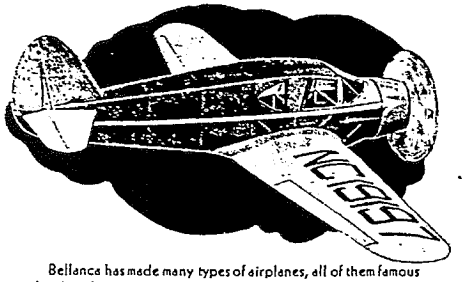
The Rearwin is known wherever airplanes are flown. It is perhaps the most popular design for model making. It is a good flyer and is very easy to build. The plane itself is used for sport flying and is well known as an easily handled ship.

The model is colored yellow and blue and the kit features drilled nose block, plenty of materials in balsa wood, Quik-Set cement, Tissue cement and other Peerless quality items.

REARWIN SPEEDSTER KIT NO. 551 $.50

THESE PEERLESS MODELS ARE EASY TO BUILD

BELLANCA JUNIOR

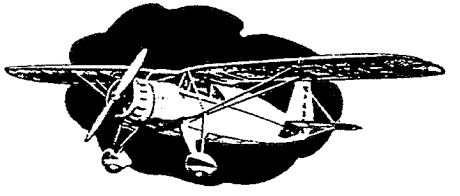


Bellanca has made many types of airplanes, all of them famous for their load carrying capacities. The Airbus for example, of several years ago, was especially well known.

Our model of this plane is designed especially for beginners. It is easy to build. The cabin is square and built strongly of cut strips. The wing tips are characteristic of all Bellanca designs, and have straight sides. You will like this new big wing span kit. Colored blue and white.

BELLANCA JUNIOR KIT NO. 554 $.50

FAIRCHILD "24"



The Fairchild "24" sport plane has always been a popular airplane with pilots.

This model is slightly more difficult to build than the Bellanca or Rearwin, but it more than makes up for it in its superb flying qualities. Our model of this plane takes off quickly with a short run and has flown many times for 1000 feet. In the kit is the latest type plan showing a pictorial representation of the uncovered model to help you in construction. Colored all yellow.

FAIRCHILD "24" KIT NO. 553 $.50

These big wing span kits are designed to give maximum size together with the greatest amount of value. Some of the finer details have been simplified in the effort to make the building of these models easier and quicker.

The plans are drawn full size and the material in the kit is of the best quality. Full instructions for building and flying are given in each kit.

DETAILED SCALE FLYERS

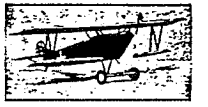
18 AND 20 INCH WING SPANS

AERONCA C-3
No. 501



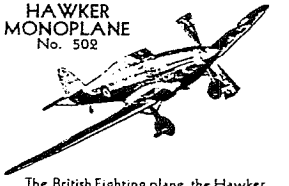
Graceful model of the well known Aeronca Lightplane. You will want to see this plane in action.
Colored all Yellow. Span 20".

FOKKER DVII
No. 503



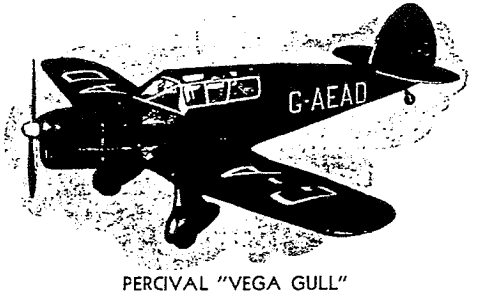
Exact replica of the marvelous wartime fighter. Good model for those who want a simple biplane flyer.
Colored Yellow & Black Span 18"

HAWKER MONOPLANE
No. 502



The British Fighting plane, the Hawker Hurricane which squadron leader, J. W. Gillan flew 327 miles in 48 minutes or at an average of 408.75 miles an hour.

It is claimed that this is the first time a land airplane has exceeded 400 M. P. H.
Colored all Silver. Span 20"



PERCIVAL "VEGA GULL"
NO. 507

The English sport and racing plane, the "Vega Gull", was designed to answer the demand for an easy to handle two place light plane. Almost immediately it was taken up by famous flyers and its great success on numerous flights proves its worth. The "Vega Gull" holds the record from Australia to England. It is a recent winner of the King's Cup Race, a popular annual classic for light planes. It has made records on flights from Cape Town, South Africa to England, and was flown across the Atlantic by Byrle Markham.

Our kit of this model shows all details on the full size plan. We have selected the model as manufactured originally. Complete materials to build quickly and easily a fine scale flying model of this well known plane are included.
Colored Silver and Blue. Span 20"

TAYLOR CUB
No. 504



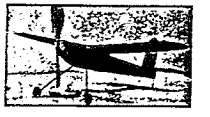
Precision scale model of the famous lightplane. Easy to build.
Like the real ship, a slow easy flyer.
Colored Green & Orange. Span 18".

MONOCOUPE
No. 506

The old standby. Modeled the world over by builders who want good performance in easy to build model.
Colored Silver and Red. Span 18"



JUNIOR ENDURANCE
No. 505



Designed expressly for the builder who wants his model to out-fly any of those of his friends. Great for classes in instruction.
Colored Red & Yellow. Span 18"

YOU CAN'T GO WRONG WITH A PEERLESS KIT

This line of well known detailed scale flyers answers the demand for "something a little better". These models are designed with extreme accuracy, no detail being too small to overlook. The kits are complete, and contain extra quantities of everything. A special bottle of colored dope is now being included with these kits as well as colored tissue.

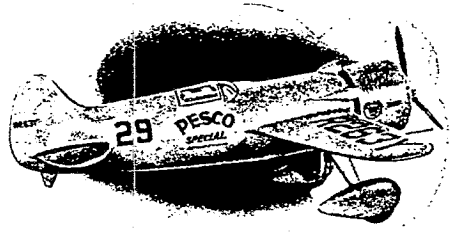
These models are quick and easy to build. They have been flown by experts and all pronounce them excellent performers. The Junior Eudurance has repeatedly turned in flights of three and four minutes, the latest being a flight in an indoor contest in New York State of four minutes, twenty three seconds, using rubber lubricant and a mechanical winder

COMPLETE KIT
NOTHING ELSE TO BUY

50c

PEERLESS 1 - 2" SCALE FLYING MODELS

TURNER'S PESCO SPECIAL



WINNER OF THE 1938 THOMPSON TROPHY RACE

SPAN 12 1-2" 1-2" SCALE LENGTH 11 1-2"

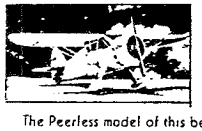
Roscoe Turner's latest racing flash, rebuilt since the previous year when it was paced by Wittman's Conqueror powered plane, this time lead all the way to take the longest Thompson Trophy race ever staged. The addition of cooling scoops aided the engine, while the streamlined wheel pants added several miles to the topspeed.

The Peerless 1/2" scale model of this now famous racer is designed directly from the actual plane itself. Every detail, no matter how trivial is included in our design which also features several construction innovations.

The model is colored silver and silver gray, with red and black lettering and black trim. Included in the kit is a special turned cowl and many other exclusive Peerless quality items.

TURNER'S PESCO SPECIAL KIT No. 1007 $1.00

BEN HOWARD'S «MISTER» MULLIGAN



SPAN 16"

LENGTH 12 1/2"

1/2" SCALE



The Peerless model of this beautiful ship was designed from the original and only set of construction blueprints. With this data and many photographs and measurements of the real ship, the model was designed to incorporate even the most minute detail.

The Peerless kit of this combination racing and commercial plane, has all the materials needed even to the black outlined gold numbers. There is all the dope, cement and tissue cement you require. In the kit are the dashboard and racing numbers and on the full size accurately detailed plan is shown how to build a most realistic scale model.

COMPLETE KIT No. 1454 $1.45



LOCKHEED VEGA

SPAN 20 1/2" 1 2" SCALE LENGTH 13 3/8"

The best flyer of the Peerless 1/2" scale models. Great looking, this orange model with the black and silver trim, and easy to build, too. Models built from this kit have won and placed in many flying scale contests throughout the country.

Kit has Fuselage Jig, as well as complete colored dopes, cements, printed wood, and many other finished and semi-finished parts. COMPLETE KIT No. 1451 $ 1.45

VICKERS SUPERMARINE S-6-B

SPAN 15 1/8" 1/2" SCALE LENGTH 14"

Accurate true scale model of the former world's speed record holder. A fine flyer, rising off the water quickly. Makes plenty of speed. Kit has Fuselage Jig for both body and pontoons. Colored Blue and Silver with Peerless colored dopes.

COMPLETE KIT No. 1501 $ 1.50



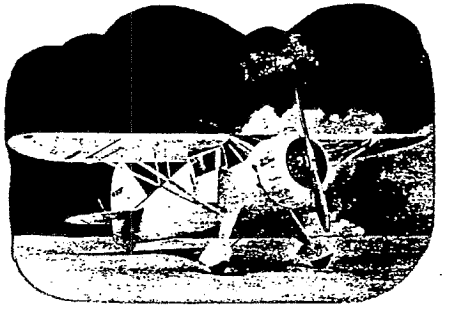
QUICK LIST OF PEERLESS KITS

No.	Name	Price
100	Fokker DVIII	$ .10
101	Cessna C37	.10
102	Rearwin Speedster	.10
103	Waco Cabin	.10
104	Red Bird R. O. G.	.10
105	Monocoupe	.10
106	Aeronca Low Wing	.10
107	Stinson Taper Wing	.10
108	Howard's DGA 8	.10
109	Nieuport XVII C1	.10
110	Ryan S-T	.10
111	Kinner Sportwing	.10
112	Al William's Gulfhawk	.10
113	Vought V-143	.10
151	Grumman G-22 Gulfhawk	.10
152	Curtiss Hawk IIIC	.10
153	"Mr." Mulligan	.10
154	Waco Military "D"	.10
155	Rearwin Speedster	.10
156	Ryan S-C	.10
157	Seversky BT-8	.10
158	Beechcraft B-17	.10
159	Curtiss P-36	.10
160	Bellanca Junior	.10
161	U. S. Army Autogiro	.10
162	Turner's "Pesco Special"	.10
251	Kinner Sportwing	.25
252	Monocoupe 90A	.25
253	Rearwin Speedster	.25
254	Taylor Cub	.25
255	Heath Midwing	.25
256	Stinson Taper Wing	.25
257	Aeronca Low Wing	.25
258	Fleet Trainer	.25
259	Cessna C37	.25
260	Ryan S-C	.25
501	Aeronca C-3	.50
502	Hawker Monoplane	.50
503	Fokker DVII	.50
504	Taylor Cub	.50
505	Junior Endurance	.50
506	Monocoupe 90A	.50
507	Percival "Vega Gull"	.50
551	30" Rearwin Speedster	.50
552	30" Ryan S-C	.50
553	30" Fairchild "24"	.50
554	33" Bellanca Junior	.50
751	Laird Supersolution	.75
752	British SE5-A	.75
1001	Benny Howard's "Ike"	1.00
1002	Gee Bee Supersportster	1.00
1003	Boeing P26A	1.00
1004	Curtiss Hawk P6-E	1.00
1005	53" Taylor Cub	1.00
1006	50" Fairchild "24"	1.00
1007	Turner's "Pesco Special"	1.00
1451	Lockheed Vega	1.45
1452	Senior Endurance	1.45
1453	Boeing F4B-4	1.45
1454	1/2" "Mister" Mulligan	1.45
1455	54" Cessna C37	1.45
1501	Vickers Supermarine S-6-B	1.50
1751	Hawker Hind	1.75
1752	Sopwith Camel	1.75
1753	Fokker Triplane	1.75
1951	Corbin Super Ace	1.95
2502	Bird Biplane	2.50
2751	Curtiss F11C-2 Hawk	2.75
2752	Curtiss Swift	2.75
3001	3/4" "Mister" Mulligan	3.00
3002	Waco Cabin Biplane	3.00
3501	Rocket Gas Model	3.50
5501	Gas Powered Taylor Cub	5.50
5501AW	Airwheel Gas Cub	6.90

Please order by name as well as number.

3-4" SCALE MODELS

BEN HOWARD'S «MISTER» MULLIGAN



SPAN 24"

LENGTH 18 3-4"

NO. 3001

$ 3.00

Ben O. Howard, the designer of this airplane, deserves no end of credit for the plane's performance. It is the fastest passenger carrying plane in the world. With a top speed of 290 M. P. H. in level flight with three passengers, it is more than 50 M. P. H. faster than its nearest competitor. This plane won both the Thompson and Bendix Trophies in 1935.

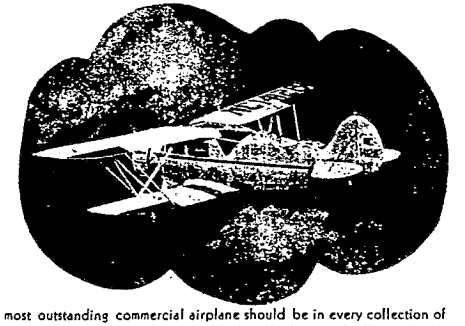
The kit is complete, containing all necessary parts for the construction of the model: Fuselage Jig; white, black and silver colored dopes; printed wood and many other Peerless materials.

WACO CABIN BIPLANE

SPAN 24 7-8"

LENGTH 18 3-8"

No. 3002 $ 3.00



A model of this most outstanding commercial airplane should be in every collection of famous planes. Colored all cream, trimmed in green, black and silver, with all tiny details correctly placed, it makes a most attractive model. Besides, it's a great flyer.

The kit, besides an enormous sheet of drawings and instructions, contains all PEERLESS materials, such as large bottles of colored dope, QUIK-SET Cement and Tissue Cement, special balloon wheels, printed wood for each tiny piece, smooth cut strips, etc.



THE HOWARD "IKE"

SPAN 15 1/2" LENGTH 12 3/4"

Benny Howard's racer "IKE" is known far and wide as the granddaddy of all modern racing planes. Our plans are approved by the designer, and this guarantees to all that they are exact. The model is a clean cut, fast flying plane. Just like the real one.

COMPLETE KIT No. 1001 $1.00

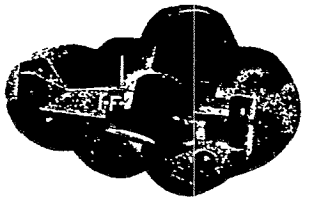


FOKKER TRIPLANE

SPAN 18 1/2" LENGTH 14"

The Peerless Triplane was redesigned to show the details of one of the squadron members of the "Flying Circus". These were taken from photos in the possession of a noted German Ace.

COMPLETE KIT No. 1753 $1.75

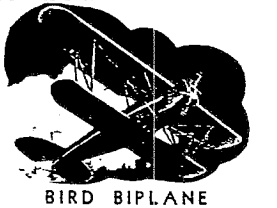


CURTISS NAVY HAWK

SPAN 22 5/8" LENGTH 16 5/8"

This a well detailed model of the famous shipboard fighter. An adaptation of the Army's Hawk designed to take the Wright Cyclone engine. This model is accurately detailed and shows complete equipment for fighting. Kit has five colors of dope and all other high quality materials.

COMPLETE KIT No. 1751 $1.75



BIRD BIPLANE

SPAN 25 1/2" LENGTH 17 1/2"

The Bird Biplane is one of the safest sport planes in the world. This Red and Silver model is an exact replica of the real ship, even to the tiny working model engine. A great flyer, smooth and steady.

COMPLETE KIT No. 2502 $2.50



CURTISS SWIFT

SPAN 27" LENGTH 20 3/4"

The Army's streamlined fighter. A super detailed model that flies far and fast. The kit contains all the materials you need to build this great model, including four colors of dope.

COMPLETE KIT No. 2752 $2.75



SOPWITH CAMEL

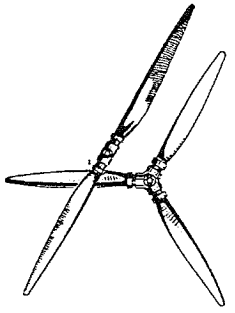
SPAN 20" LENGTH 14 3/8"

The Sopwith Camel is one of best remembered fighters of the World War. Our model is colorful, with all correct details. Dandy flyer.

COMPLETE KIT No. 1752 $1.75

PEERLESS MODEL SUPPLIES

PLEASE ORDER BY NAME AS WELL AS NUMBER



SCALE PROPELLERS

CHROMIUM PLATED

2 BLADE

2"	5HS.10	5"	9H .25
2 1/2"	6H .12	6"	10H .30
3"	7H .15	7"	11H .40
4"	8H .20		

3 BLADE

1 1/2"	12HS.10	4"	16H .30
2"	13H .15	5"	17H .35
2 1/2"	14H .20	6"	18H .45
3"	15H .25		



STAMPED METAL PROPS

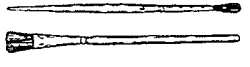
For solid models. An easy way to get that "professional" look in your planes. Packed in sealed envelopes

2 BLADE

1" dia.	per doz. 25H$.10
1 3/8" dia.	per doz. 26H .12
1 3/4" dia.	per doz. 27H .15
2" dia.	per doz. 28H .15

3 BLADE

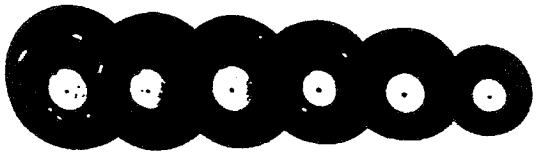
1 1/8" dia.	per doz. 29HS.18



BRUSHES

Fine quality brushes for dope and tissue cement.

Size 1, 2 & 3	3 for	2HS.10
3/8" flat brush		3H .10



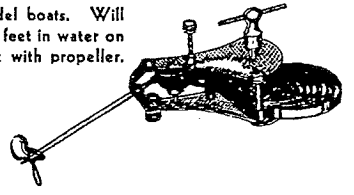
TREXLER PNEUMATIC MODEL WHEELS

Finest pneumatic rubber air wheels for those cushioned landings. You will have fewer crack-ups if your model flies with air wheels. Trexler wheels have a patented inflating tube attached to the wheel itself that makes it simple to inflate and deflate.

1 1/4"	per pair 19HS.40	2"	per pair 22H .50
1 1/2"	per pair 20H .40	2 1/4"	per pair 23H .60
1 3/4"	per pair 21H .50	2 1/2"	per pair 24H .60

Strong spring motor for model boats. Will drive boats for as much as 800 feet in water on one winding. Ready to mount with propeller. Boat motor No. 30H

Only $1.25



This strong spring motor for model boats is just what you need for that speed boat. With one winding it will drive your model 800 feet or from five to seven minutes. It is built like a good clock, with all brass parts and sturdy steel spring. Has built in speed control. No. 30H each $1.25



Only 40c

MODEL BUILDERS SOLDERING IRON

Super brand. 40 watt. Length 1/8". Copper tip 7/8". 3 1/2 ft. rubber covered cord. Bakelite plug. ea. 4HS.40



BRASS WOOD SCREWS

ROUND HEAD

0x1/4" doz. 31HS.05	gross 32HS.55	
0x3/8" doz. 33H .05	gross 34H .55	
1x1/2" doz. 35H .07	gross 36H .80	
2x5/8" doz. 37H .09	gross 38H .95	
2x3/4" doz. 40H .10	gross 41H1.00	

STEEL WOOD SCREWS

ROUND HEAD

0x1/4" doz. 42HS.03	gross 43HS.30	
0x3/8" doz. 44H .03	gross 45H .30	
1x1/2" doz. 46H .05	gross 47H .50	
2x5/8" doz. 48H .07	gross 49H .60	
2x3/4" doz. 50H .08	gross 51H .75	



STEEL MACHINE SCREWS

ROUND HEAD

2-56 x 3/8" long	doz. 62HS.05
Same	gross 63H .35
2-56 x 3/4" long	doz. 64H .08
Same	gross 65H .40

HEXAGON NUTS

FOR THE ABOVE SCREWS

3/16" x 1/16" 2-56 hole	doz. 66HS.05
Same	gross 67H .35

BRASS STRIP

Used extensively as light-weight, strong motor mount material. Easy to solder.

1/4 x 1/16	per foot 81FS.12
3/8 x 1/16	per foot 82F .18

PEERLESS MODEL SUPPLIES

GAS MODEL SUPPLY SECTION



CONDENSERS

Specially designed for gas motors. Shielded ends, heavy leads.

Condenser	each 95HS.15



ALLIGATOR CLIPS

Use these spring clips for booster connections. Teeth extend all around jaw.

2 1/2" long	each 94HS.08



LARGE BRASS WASHERS

1/4" dia. 1/16" hole	doz. 58HS.05
Same	gross 59H .45
1/4" dia. 3/32" hole	doz. 60H .05
Same	gross 61H .45



SCREWEYES

Thread the wiring in your gas model thru the holes and it won't work loose. 5/8" long., 1/8" hole.

Screweyes	doz. 90HS.03
Same	gross 91H .25



STEEL COTTER PINS

1/32" x 3/8"	doz. 52HS.03
Same	gross 53H .25
3/64" x 1"	doz. 54H .05
Same	gross 55H .40
1/16" x 2"	doz. 56H .08
Same	gross 57H .75



TIMER CONTACTS

Tungsten breaker points for your engine. One rivet type and one screw type with nuts and lug. each 20JS.40



GAS MODEL PROPELLERS

Use these specially designed propellers to get greater performance from your motor. Carved from Birch. Oil free finish.

Brown Jr.	13 1/2"	each 70HS.75	Syncro Bee	10 3/4"	each 77H .65
" "	14"	each 71H .75	" "	9"	each 78H .50
" "	15"	each 72H .90	Syncro Ace	13 1/2"	each 79H .75
" "	16"	each 73H .90	" "	14"	each 80H .75
Cyclone	13"	each 74H .75	Dennymite	14"	each 81H .75
Gwinn	12"	each 75H .75	" "	15"	each 82H .90
Trojan	10 3/4"	each 76H .65	" "	16"	each 83H .90

PERFECTION GAS MODEL PROPELLERS

9" Ash	84HS 50	13" Ash	86HS.70
12" "	85H .60	14" "	87H .80



SMITH SPARK COIL

Heavy duty hot spark coils. Encased in Bakelite and complete with spark plug wire, connector, and stamped metal mounts Weight 2 1/2 oz.

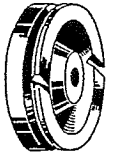
Spark coil each 96HS2.50



SMITH SPARK COIL

Light weight coils for those tiny motors. Weighs only 1 3/4 oz. complete with mounts, and connector wire and clip. Bakelite case.

Lightweight coil each 97HS3.00



SYNCRO FLYWHEEL

Cast iron, machined all over. Accurately balanced, with slots milled in rim for starting string. 1/4" hole.

each 1JS1.50



GASOLINE FUNNELS

A small servicable funnel for gas model flying. Made of brass.

Funnel 92HS.10

A larger funnel with built in filter.

Filter funnel 93HS.30



SYNCRO VARIABLE PITCH PROPELLER

Aluminum hub, maple blades, positive locking, blades marked for true pitch. Real airplane type 14" size only.

each 98HS1.95

Extra blades each 99H .60



SYNCRO "SUPER-LIGHT" COIL

The latest thing in super light weight coils. Very efficient on 3 volts, weighs only 1 3/4 oz. Bakelite case.

each 2JS1.95

SYNCRO HEAVY DUTY COIL

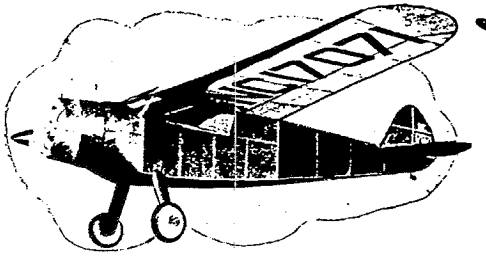
Standard on Syncro Ace engines. Very efficient.

Coil each 21JS2.50

BIG WING SPANS

THE CESSNA C-37

SPAN 52" SCALE 1 1-2"



Described by the makers as "The World's Most Efficient Airplane" and flown the world over by knowing pilots, the Cessna C-37 makes a grand flying model. It is noted for its long flat glides that keep it in the air long after the rubber has unwound.

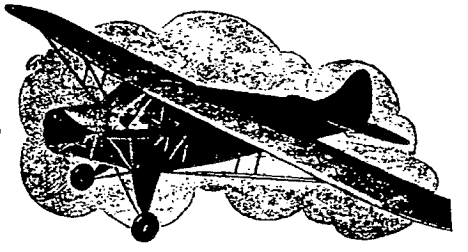
The kit is complete as are all PEERLESS kits, with a turned cowl 4" in diameter, clean clear printed wood, and a full size accurate drawing.

The model is easy to build; it is designed to be constructed in a short time.

KIT NO. 1455 54" CESSNA C-37 **$1.45**

THE TAYLOR CUB

SPAN 53" 1 1-2 SCALE



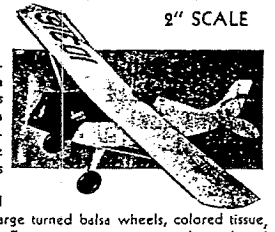
A big model designed to be built in a short time even by beginners. Constructed light though strong of best grade materials. Kit has all parts including an enormous drawing, showing each part full size.

Included in the kit are special turned balloon wheels, plenty of Quik-Set cement, Tissue cement, rubber, music wire, cut balsa propeller, drilled nose block, best quality printed wood and tough accurate strips, colored tissue.

KIT NO. 1005 53" PEERLESS TAYLOR CUB **$1.00**

THE CORBEN SUPER ACE

SPAN 54 1-2" 2" SCALE



A real flying model, designed for easy construction and good flying. Flights are controllable through adjustable ailerons, stabilizer and rudder, a feature not usually found on models of this size.

Kit includes drilled and countersunk nose block, large turned balsa wheels, colored tissue, plenty of Quik-Set cement, Tissue cement, strips, printed wood, and many other exclusive parts.

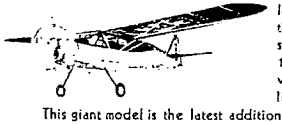
Full size plans show all parts, as well as notes for use in changing to gas powered model.

KIT NO. 1951 THE CORBEN SUPER ACE **$1.95**

FAIRCHILD "24"

Span 50" Scale 1 1-2"

Ready after November 1st 1938



The Fairchild "24" has found favor with sport pilots in many countries. In this particular version it is shown powered with a 150 H. P. Ranger engine which improves its streamlined appearance.

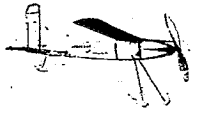
This giant model is the latest addition to the Peerless line and represents a great value. For long flights it can't be beat. Construction is simplified so that it is one of the easiest models to build. This is especially so because of the type of material which is used. Built of 1/8" sq. balsa there are no "tiny" parts that are easy to break.

The kit is complete with all features, including drilled nose block, full size plan with detailed instructions.

KIT NO. 1006 FAIRCHILD "24" **$1.00**

THE PEERLESS SENIOR ENDURANCE

Span 36" Wing Area 300 Sq. In. Length 26"

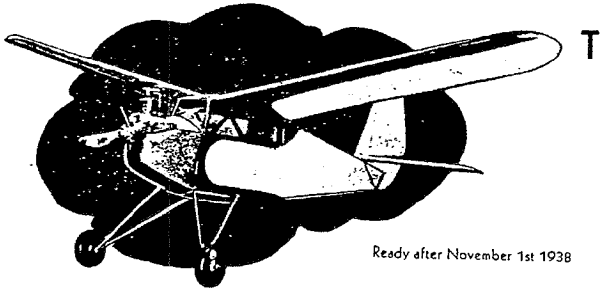


The Peerless Senior Endurance conforms to the N. A. A. weight rules of one ounce to every 50 square inch wing area. To change to the new rulings cover the fuselage with sheet balsa. This design is unusually stable, and the model will fly well in gusty winds as well as soar on thermals.

The kit includes a 16" cut balsa propeller, plenty of firm cut strips, clear printed flat balsa sheets on 1/16" and 1/32", best grade tissue in red and yellow, Quik-Set cement and Tissue cement, turned wheels, bamboo for landing gear (which is practically unbreakable), drilled nose block, oversize bearing, and other Peerless materials. There is plenty of brown contest rubber for flying.

The super strong wing on the Senior Endurance features the Peerless Stress Spar, found only in Peerless kits, a modern way to make a wing able to carry heavy loads. Kit No. 1452 THE PEERLESS SENIOR ENDURANCE **$1.45**

NEW SMALL GAS MODEL



Ready after November 1st 1938

THE PEERLESS ROCKET

COMPLETE KIT

$3.50

WITH BALSA WHEELS

LESS MOTOR AND PROPELLER

SPAN 48" LENGTH 28 1-2"

WING AREA 2.29 sq. ft. WEIGHT 24 ozs. Ready To Fly

A SCIENTIFICALLY DESIGNED SMALL GAS MODEL

The Peerless ROCKET is designed after the latest figures on light gas model performance. Every calculation, no matter how slight has been taken into consideration, weights and areas accurately measured, to bring you for the first time a high performance gas model for small bore engines. Although the design was produced for the Syncro BEE engine, others of from 1/2" to 5/8" bore may be used.

This modern kit features quick dismantling of wing, stabilizer, motor and landing gear. It can be packed in a very small space for storage or carrying. Included in the design is an easily built motor switch made in the door on the side of the model. Plan shows you how to make and use a weight box for those new weight lifting contests. A new feature; the coil is adjustable for balance. Booster connections have been incorporated without added weight. Everything that makes for great success in long flights has been thought of and designed for this remarkable model.

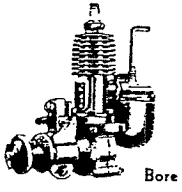
The ROCKET is a model born of long experience in building and designing the best in gas models and has been tested and flown by experts.

An innovation on the drawing is the many views in perspective which are clearer than a photograph and which shows you just how each part will look when assembled. The wing plan is given full size and there are detailed views that demonstrate the more difficult parts.

This kit has everything! From the specially selected strips and sheet stock to the green colored dope, the large sizes of Quik-Set cement and Tissue cement, it is the most complete model kit assembled anywhere. You will agree with the experts --- the Peerless ROCKET is a winner!

COMPLETE WITH BALSA WHEELS **$3.50**

MOTOR AND ACCESSORIES FOR YOUR LIGHT WEIGHT GAS MODELS



THE SYNCRO BEE

Bore 1-2" Stroke 5-8"

Weighs less than 4 ozs.

A new featherweight gas motor that is powerful enough to fly models weighing up to three pounds.

Complete with coil and condenser $12.50



CHAMPIONS USE CHAMPIONS

CHAMPION SPARK PLUGS for greater performance. Two sizes both standard in motors everywhere 3/8 x 24 thread and 1/4 x 32 thread. Each $.65

TIMERS. A new lightweight timer that will last forever. 0 to 55 seconds. Weighs 2 ozs. Each $2.00

BATTERY CLIPS for those boosters. Neat alligator clips made of the best steel with teeth that grip all the way around. Each $.08

WHEELS. Clean cut balsa wheels with brass bushings. True running. These wheels have that "real" appearance.
2 1/2 11/16" Per pair $.20

PNEUMATIC WHEELS. Real pneumatic wheels with inflating valve and tool. These wheels make for soft landings. Used by experts. 2 1/2" diameter Per pair $1.25

The Peerless Model Airplane Company reserves the right to make any changes or additions to the kits listed in this catalogue without incurring any obligation to include these changes or additions in kits and supplies previously sold.

PEERLESS MODEL SUPPLIES

GAS MODEL SUPPLY SECTION

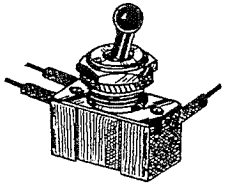


TOGGLE SWITCHES

SINGLE POLE SINGLE THROW

This handy lightweight switch is used where extreme lightness is desired.

each 88H$.25



SINGLE POLE DOUBLE THROW

Use this high grade switch for changing over from booster to flying batteries while the motor is running. Made by Cutler-Hammer, it is tested for use on 110-220 volts. Can be used for reversing model train circuits, for desk lamps, and as a motor switch.

This switch weighs but 1 oz. and comes fitted with three flexible leads 5" long, one of which is common to both circuits. each 89H$.50

BAMBOO TISSUE

Heavy bamboo jap tissue.

24 x 36 sheet each 5E$.08

AMERICAN BAMBOO TISSUE

American made bamboo tissue is strong and light in weight. Available in White, Red, Yellow, Dark Blue and Green. Use initial letter and number when ordering.

24 x 36 sheets each 6J$.10



BURGESS BATTERY

A hot-shot battery in a small package. Light enough for almost any model and powerful enough to start your motor without boosters. each 23J$.80



VOIT

RUBBER AIR WHEELS

STREAMLINED

Beautiful appearing streamlined air wheels with new style foolproof valve. Heavy black rubber with polished aluminum hub discs. Will last forever.

New size for small gas models.

2 1/2" x 3/4" per pair 3J$1.25

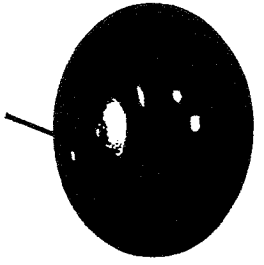
Same, inflated, no valve needed.

2 1/2" x 3/4" per pair 4J$1.00

TAIL WHEEL

SPONGE RUBBER

1 1/2" dia. each 5J$.15



TREXLER GAS MODEL WHEELS

Black balloon wheels inflated by the ingenious tube attached to the wheel.

2 3/4" dia. per pair 7J$1.00

3" dia. per pair 8J 1.25

3 1/2" dia. per pair 9J 1.50

4 1/2" dia. per pair 10J 1.75



SPECIAL TREXLER PUMP

For inflating Trexler wheels.

Each 11J$.25

PURE SILK

For covering gas models. Finest grades obtainable.

No. 1 silk 36" wide per yard 24J$.40

No. 2 silk 36" wide per yard 25J .60



S A E 70 MOTOR OIL

World's finest motor oil packed by Peerless for all standard model gas motors.

4 oz. can each 12J$.25



REDI-MIX

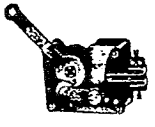
A tested mixture of the finest white gasoline and SAE 70 oil in two formulas. No. 1 red label for new motors. No. 2 blue label for motors that are broken in.

NO. 1 REDI-MIX

4 oz. can	13J$ 20
1/2 pint can	14J .30
1 pint can	15J .45
1 quart can	16J .75

NO. 2 REDI-MIX

4 oz. can	17J$ 20
1/2 pint can	18J .30
1 pint can	19J .45
1 quart can	20J .75

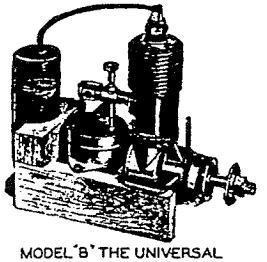


GAS MODEL TIMER

A real watch-like precision timer. Weighs only 1 1/4 oz. Dural construction with steel spring. Very accurate. Complete with mounting screws.

Each 22J$2.00

Brown JUNIOR MOTORS



MODEL "B" THE UNIVERSAL STANDARD. NOW $21.50

GENERAL SPECIFICATIONS

½" Bore, 1" Stroke

1,300—10,000 R.P.M.

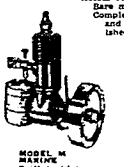
Height 4½" in., ½th horsepower

Actual scale weights:

Bare motor ..... 8½ oz.

Complete with coil, tank and condenser as furnished ..... 11½ oz.

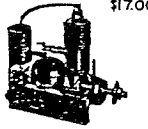
NOW ONLY $17.00



MODEL M MARINE

Built to high exacting standards for use on model boats. Complete, ready to run.

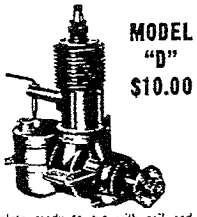
$15.00



MODEL—C - $17.00

Cadmium plated to give maximum radiation. PISTON: Aluminum alloy with 2 special rings.

BURETOR: Simplified pin type control. Packed completely as it is tested ready to run. Tested & guaranteed.



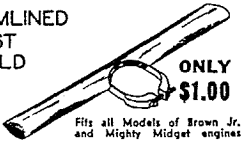
MODEL "D" $10.00

Complete ready to run with coil and condenser. The New Sensational Brown Jr. Model "D" at the low price of $10.00

COMPLETE BROWN JUNIOR REPAIR PARTS LIST

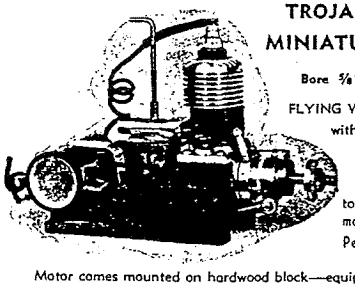
Part No.	Models	Name	
1	All	Crankcase & Bearing	$2.25
2	All	Cover Plate	.50
2A	All	Cover Plate Gasket	.05
3	All	Cylinder & Manifolds	5.00
3C	All	Cylinder Gasket	.05
4	B	Steel Piston and Bearing	2.50
4A	C,M,D	Aluminum Alloy Piston & Pin	1.50
4B	All	Bronze Wrist Pin	.10
4C	C,M,D	Set Piston Rings (2)	.50
5	B,C	Connecting Rod	1.25
5A	M,D	Connecting Rod	1.00
6	B,C	Crankshaft	3.00
6	M,D	Crankshaft	2.75
6A	All	Retaining Washer	.05
6B	B,C,D	Cam Washer	.75
6C	B,C,D	Propeller Clamp Washer	.25
6D	All	Clamp Nut	.05
6E	All	Thrust Washer	.05
7A	B,M	Needle Valve Nut & Stem	.50
7B	All	Needle Valve Body	.50
7D	B,M	Choke Nut	.20
7E	B,M	Choke Nut Spring	.15
7F	All	Choke Nut Spring Nut	.05
7G	C,D	Needle Valve Pin	.10
8	All	Breaker Spring, Contact & Ferrule	1.00
8A	All	Tungsten Contact (not fitted)	.15
8B	All	Breaker Clamp & Contact	1.00
8C	All	Breaker Bushing	.50
9	All	Fuel Tank Assembly	1.50
10	All	Spark Plug complete	.65
11	B,C	Spark Coil	3.25
11A	M,D	Spark Coil	2.75
12	B,C	Condenser	.25
12A	M,D	Condenser	.20
13	All	Connection Wire (6 feet)	.25
14	All	Exhaust Manifold	1.00
16	All	Motor Skid	.50
17	All	Combination Flywheel & Cam Washer	1.50

STREAMLINED EXHAUST MANIFOLD



ONLY $1.00

Fits all Models of Brown Jr. and Mighty Midget engines



TROJAN JUNIOR MINIATURE ENGINE

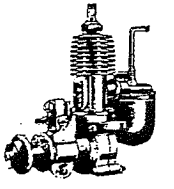
Bore 5/8" — Stroke 5/8"

FLYING WEIGHT 9 ounces with batteries.

A well designed motor for small wing span models. Tested in the Peerless Rocket

Motor comes mounted on hardwood block—equipped with coil, condenser and hardwood prop—ready to run. $18.50

SYNCRO BEE MOTOR

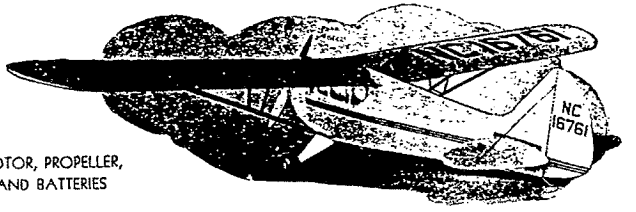


A NEW DESIGN FOR LIGHT MODELS

The Syncro Bee engine is now of the same high type construction as the famed Syncro Ace. Bore is 1/2". Stroke is 5/8". Weight ready to fly is under 4 oz. Motor comes complete with coil, a new light weight model, and condenser. Now only $12.50

TAYLOR CUB GAS MODEL

AN EASY TO BUILD MODEL

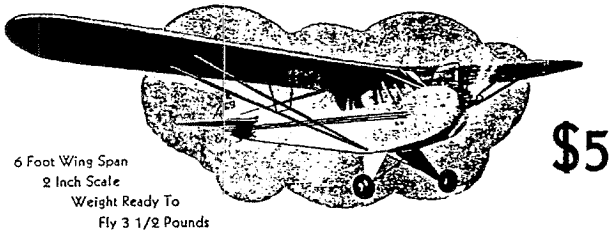


COMPLETE KIT
WITH AIR WHEELS
AND SWITCH

$6.90

LESS MOTOR, PROPELLER, GAS AND BATTERIES

Kit Number 5501 AW



6 Foot Wing Span
2 Inch Scale
Weight Ready To
Fly 3 1/2 Pounds

COMPLETE KIT
WITH BALSA WHEELS

$5.50 Kit Number 5501

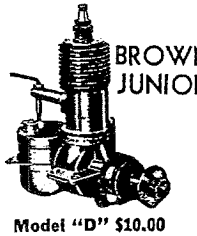
LESS MOTOR, PROPELLER, GASOLINE, AND BATTERIES

IT'S EASY TO BUILD AND FLY THIS SCALE TAYLOR CUB

The PEERLESS TAYLOR CUB gas model is an easy to build large size model that has everything. The kit is complete, containing all the materials necessary---printed balsa sheets, accurately cut strips that are color coded for easy reference, plenty of bamboo tissue, yellow colored dope, metal parts, screws, nuts, cotter pins, heavy wire for landing gear, Quik-Set Cement and special Tissue Cement. You will find there is more than enough to build this true to life scale flying model.

On the full size plans are all instructions for the building of this fine model, as well as detailed views of many of the more complicated parts. This is an accurate scale model of one of America's most popular light planes, and it has been proven by its consistant placing high in the list of winners at contests. A real flyer, easy to build, uses any standard 1/5 H. P. motor. A complete kit, producing a real scale model, that's the PEERLESS TAYLOR CUB.

SUGGESTED MOTORS FOR THE TAYLOR CUB



BROWN JUNIOR

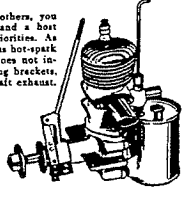
Model "D" $10.00

Complete and ready to run with coil and condenser.
The new Brown Jr. model "D" at the low price of $10.00
Model "C" $17.50
Model "B" $21.50

STANDARD AIRSTREAM DENNYMITE

For less money than others, you get full streamlining and a host of other Deeny superiorities. As illustrated at right, plus hot-spark coil and condenser. Does not include DeLuxe mounting brackets, spring choke, down-draft exhaust.

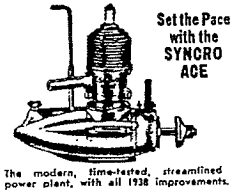
$15.85



DE LUXE AIRSTREAM DENNYMITE

Includes down draft exhaust, aluminum motor mount, and spring choke.

$17.85 Complete



Set the Pace with the SYNCRO ACE

The modern, time-tested, streamlined power plant, with all 1938 improvements.

SYNCRO ACE

Now only $13.75

CHAMPION SPARK PLUGS



THESE CUTS ARE ACTUAL SIZE



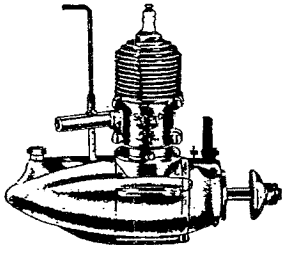
We are distributors for
THE CHAMPION SPARK PLUG COMPANY.
Spark plugs for miniature gasoline motors.

Introducing sillimanite Insulation, the patented process that prevents leakage, compression loss and electrode destruction.

V	3/8 x 24 --- Hook wire Electrode	96F	$.65 each
V	3/8 x 24 --- Straight wire Electrode	97F	.65 each
V-2	1/4 x 32 --- Hook wire Electrode	98F	.65 each

COMPLETE STOCK

SYNCRO ACE

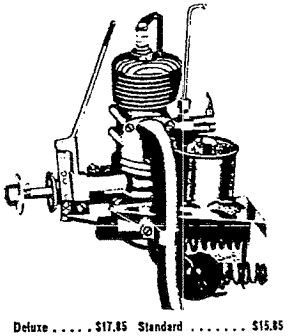


SYNCRO ACE ENGINE
Bore: 7/8"
Stroke: 15/16"
Motor speed: 800 to 8000 R.P.M.
Piston: Aluminum alloy with two fitted rings.
Cylinder: Machined steel.
Connecting rod: Aluminum alloy.
Crankshaft: counterbalanced, machined from special stock.
Timer: Steel and fiber construction above oil and grime.
Ignition coil: Delco-Remy, light, highly efficient.
Sparkplug: New Champion 3/8".

The Syncro Ace model gasoline engine is now at its highest point of development. Improvements have been made in both design and construction which make it a very dependable motor.

Now only $13.75

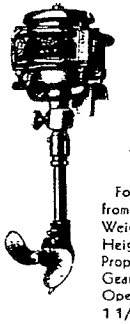
NEW AIRSTREAM DENNYMITE



Deluxe . . . . $17.85 with outside exhaust, dural mounts, superior coil and outside control choke.

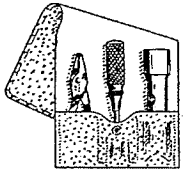
Standard . . . . . $15.85 does not include DeLuxe mounts, spring choke and down draft exhaust. Same construction as DeLuxe.

ELECTRIC OUTBOARD MOTOR



ONLY $3.50 COMPLETE

For model speedboats, from 15" to 24" length.
Weight 5.9 oz.
Height 5 inches.
Prop. dia. 1 1/2".
Gear ratio 2:1
Operates by batteries 1 1/2 to 6 volts.
Each 31J $3.50



MOTOR REPAIR SET

Designed by Peerless for all model gas engine repairs and adjustments, this socket set is handy for all light machine work. A special double ended wrench that fits both sizes of Champion spark plugs, and also many of the propeller lock nuts. A neat pair of pliers is included, as well as a sturdy screwdriver. The set is packed in a fabric carrying case that can be carried in the pocket.
Each 30J $1.00



SYNCRO JUNIOR SAW

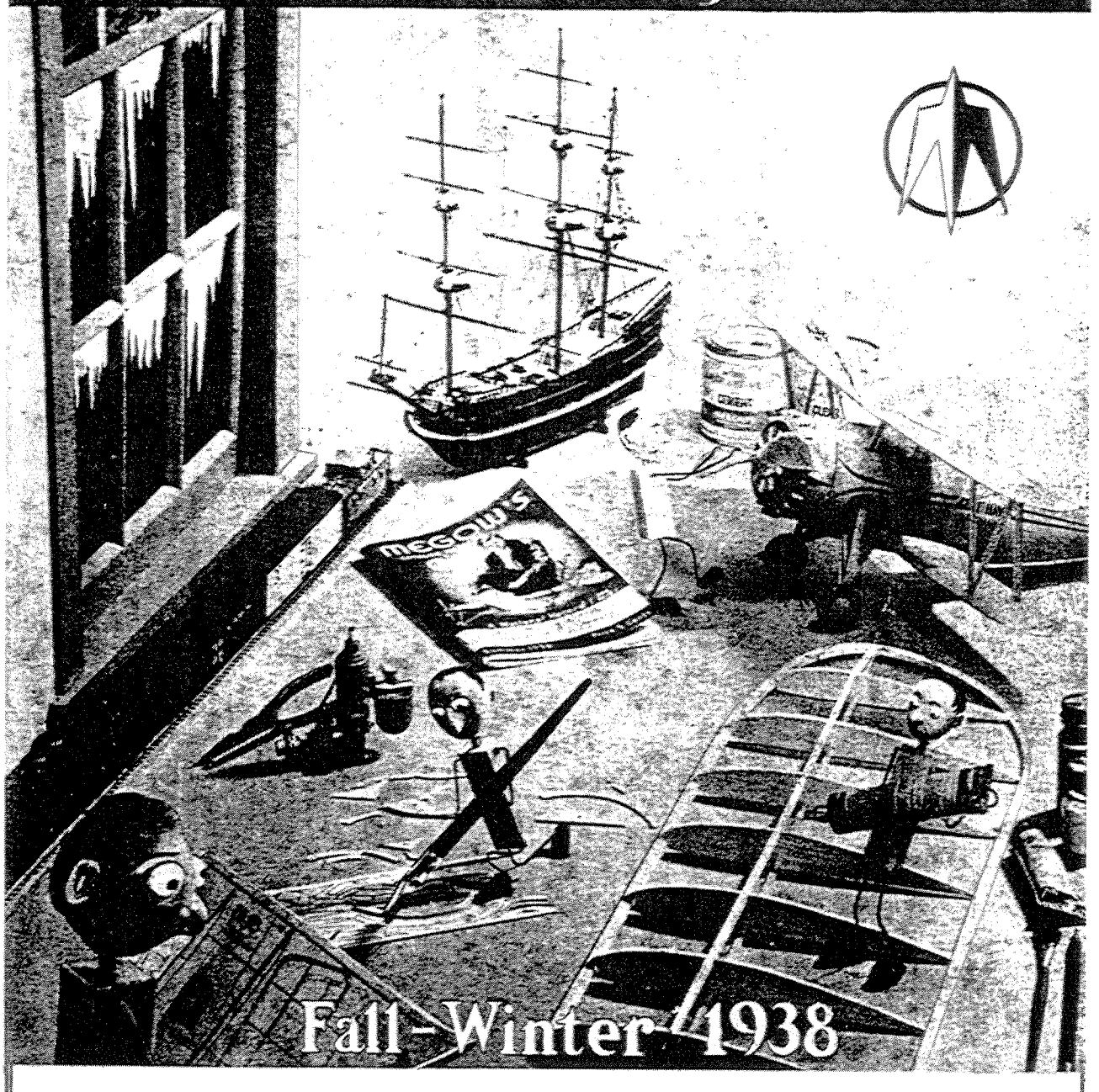
For cutting balsa and other wood in model making. No motor needed, run from any light socket on 110 volts, 60 cycle. Saw has 8" swing, and makes 7200 strokes per minute, giving a smooth cut. Just the thing for gas model building and those thick pieces that are hard to cut with a razor knife.
Each 26J $4.95
Extra Blades each 27J .05

SYNCRO SENIOR SAW

A larger saw that handles all classes of work. Fine for schools. Get one for your Gas Model club. This saw has a lifetime power unit. each 28J $9.95
Extra blades each 29J .05

MEGOW'S

Modern Hobbycraft



Fall-Winter 1938

Catalog No. 6 Price 5 Cents

FLYING
Gas Powered Model Airplanes

by

MAXWELL B. BASSETT

Pioneer Gas Model Builder and Designer



The gasoline powered model is the greatest development in the model plane field that has come for many years. Today this new type of plane appears foremost in the mind of the model builder, and justly so, for it is absolutely no harder to construct and fly, than the average rubber powered plane. It opens new fields for experimentation and knowledge that were thought impossible several years ago. The greatest thrill of your life will be experienced when your first gasoline powered model takes off with its tiny but real gasoline engine purring away.

Those builders who have been used to working with smaller rubber powered planes should have no fear of attempting one with a real motor, for this is essentially the only difference between the two. Probably the hardest thing to get used to in constructing the new type plane will be the increased size of everything. The members of your gasoline powered model will look like large timbers to you after working with fine microfilm and delicate structures.

If you study the few precautions which are to be set forth in the following paragraphs, and take a little care in building your model, no trouble whatsoever should be experienced with your plane.

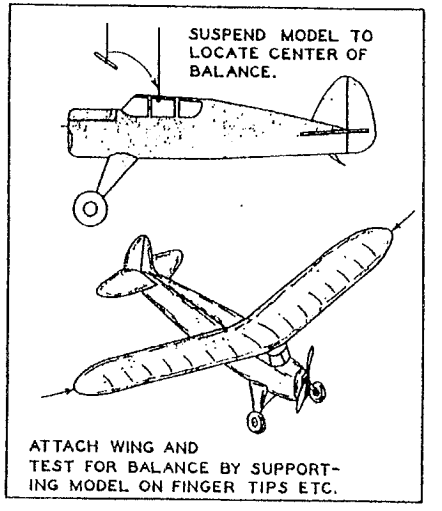
First of all, before actually going out on the field to fly the model, a few details must be checked. In the process of building your plane you should have made sure that everything was in perfect alignment. However, even if you did this, check again the wing, to see that there is no wash or twist in it, line up the tail surfaces, and go over all the settings, such as angles of incidence of wing, etc. Make sure that all the joints are secure, and that the motor installation has no loose wires, or parts that will vibrate off.

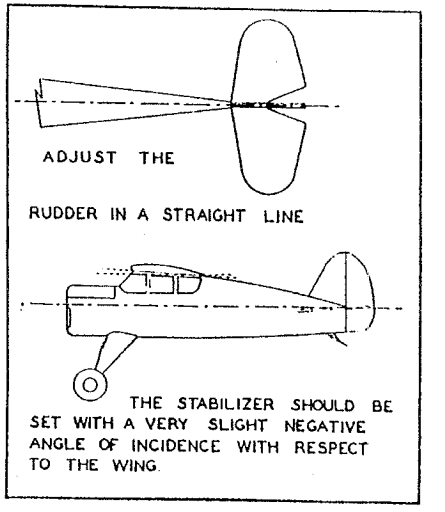
Balancing the plane and finding the exact position of the center of gravity is very important. There are numerous ways of determining the point at which the ship balances, such as supporting the plane somewhere near the center of gravity, and moving this support until the plane actually balances. The support may be placed under the fuselage or whatever way you are used to doing it.

After the center of gravity of the plane has been determined the wing should be placed so that the vertical line through the balancing point will fall at a point approximately two-fifths to one-third of the distance from the leading to trailing edge of the wing. This point of balance in the case where the wing is permanently fastened to the fuselage may be brought into agreement with the point on the wing by simply shifting some weight such as the batteries, forward or backward in the fuselage.

Adjust the rudder in a straight line with the fuselage, so there will apparently be no turning effect. The elevator and stabilizer should be set with a very slight negative angle of incidence with respect to the wing. This angle might vary anywhere from 0 to 3 or 4 degrees depending on the original design of the ship, and just what is called for on the plans.

The motor should be thoroughly tested before taking the plane out for a flight. Be sure that you run the motor until you become entirely familiar with its characteristics and functioning. Most motors will differ in some little respect and consequently you should run the motor until you can adjust it to perform just as you desire. One should practice adjusting the engine for different speeds, because you will have to know how, when you test the plane. Many of the standard motors can be throttled down by retarding the spark; however, you should also try richening the mixture to obtain an almost stalling speed. It is very essential on the first test flight that the motor be throttled, as slow as possible.





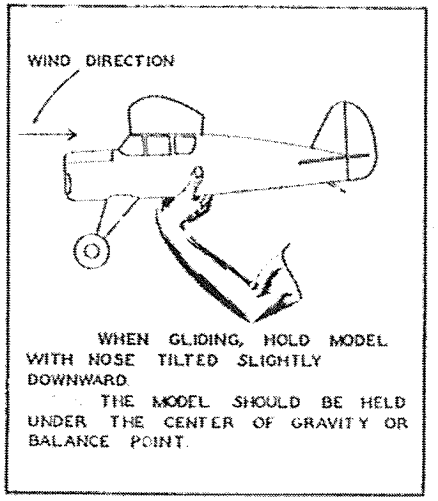
You are now ready for the first series of test flights. First of all it is very important that you test the model under the most ideal weather conditions. Do not try to rush out the first day you have completed the model and fly regardless of what the weather may be. Wait for a day with no wind. Choose some field to fly the model in; one which is level and free from obstructions such as trees, fences, etc. It is also best to have short grass from which the plane can take off and land, so it will not have a tendency to get caught and nose over.

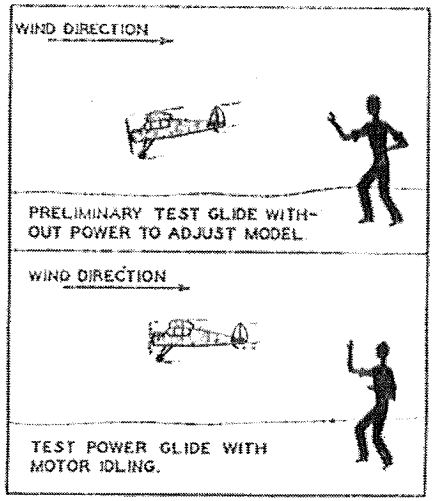
In test flying a plane there is one thing that should be foremost in your mind. *Gliding is the secret of flying.* In other words, if you glide your plane before testing it with power, it will more than likely fly well. Choose some very level stretch of ground on which to glide the model. Before launching the plane make sure of the following: The wing is securely held on the fuselage; nothing has been knocked out of adjustment, such as the rudder; and set the propeller horizontal so if the plane should accidentally nose over you will not have to get the knife out and carve another.

The plane may be grasped on the underside of the fuselage at about the center of gravity for launching. Caution must be taken to see that it is launched into the wind and that the nose is pointed level or slightly down. If the model should accidentally be launched when the nose was above the horizontal a stall followed by a nose dive would be the probable result. It is difficult to describe the velocity or rapidity at which the model should be thrown. The flying speed of the model will be dependent on the wing loading and the general design. However, if the plane is heavy for its size, the launching speed should be rather fast. Comparing it to an ordinary base ball, it should be thrown about as hard as a medium pitch. The slower type plane, of course, needs less of a start on its glide. The best thing is to use your own judgment as to how fast to launch the ship. Remember that it is better to launch it too fast than too slow, for if the flying speed is not reached the plane will simply drop to the ground and crash, whereas, if the speed is excessive the only result will probably be a prolonged glide.

Whether the results of the first glide are good or bad, correct any fault and try it again and again until you are satisfied the adjustment of the plane is perfect. If on the first glide you find the plane has a tendency to stall, move the wing back a little, or change the position of the batteries. Remember in making any adjustments all movements or changes should be very slight. Always keep the adjustment of the previous flight in mind so you can return to it if the new adjustment does not improve the flying characteristics of the ship. Even if it is necessary to spend several days doing nothing but gliding your plane and becoming familiar with it, you will be rewarded in the end, for much better flights will undoubtedly result.

Now we have finally come to that long-awaited-for test flight under power. Instead of making the plane zoom into the air under full power on this first great flight it is advisable to again use caution by merely running the motor at its slowest speed, and making the first flight little more than an extended glide. First of all, before flying the model try out the automatic timer, or make sure there is not too much gasoline in the tank, for many a model has flown away on its maiden voyage never to return, or if so, only after





a long search.

On the first flight the motor should be running so slow that the plane will barely hold its altitude, or preferably will gradually sink to the ground in a very long, flat glide. Due to this fact, it will be necessary to hand launch it just as though you were gliding the ship. One or two final precautions; make sure the engine is running steadily but yet slowly, and whatever you do, do not get excited and launch the plane at some ridiculous angle, forgetting everything you ever knew.

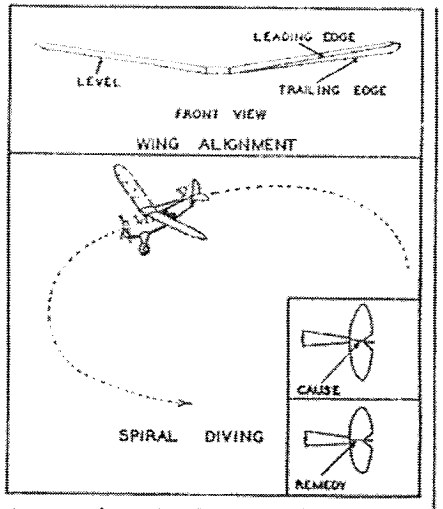
Gradually work the speed of the motor up on following flights until the plane is flying with wide open throttle. Remember that as the speed of the plane increases, all the bad characteristics will be multiplied, such as a tendency to stall, or spital dive. Consequently, be careful to adjust the model after each flight and do not try to fly the plane at its slowest speed, then suddenly open the throttle wide on the next flight.

If you have followed the above instructions carefully and have constructed your plane according to the original design, you should not have any trouble making it fly successfully. However, below are listed some common troubles with suggestions for their correction. It will be assumed that in correcting the troubles that the design of the ship will not be altered, but changes will simply be made in the adjustment. Stalling or diving is a common ailment which is usually simple to correct. Moving the wing forward or backward will usually correct it, and also the center of gravity of the plane may be changed by moving the batteries, coil, etc., as mentioned before. Sometimes a plane will have a tendency to stall or climb when under power, but as soon as the engine stops it will dive or not glide at a normal angle. This is due to two causes. First, the engine thrust line may not be in line with the wing, and may be corrected by simply removing the motor and changing its mounting. The second and chief cause is too much negative angle of incidence on the elevator. Reduce this angle to a minimum of 0 degrees.

Spiral diving or banking too steeply is a bad fault. This might be the result of numerous causes. The first and most effective way to cure it is simply by careful adjustment of the rudder. If this proves unsuccessful the entire plane should be examined for warped surfaces, such as wing or elevator. Sometimes a plane will circle in one direction while under power and when gliding will circle in the extreme opposite direction. A correction for this fault is to place a slight degree of wash in and wash out in the wing.

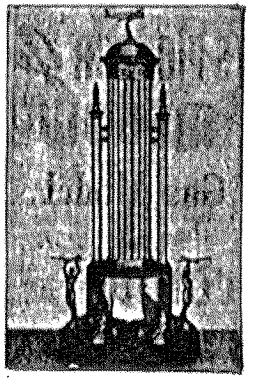
Should the plane have a tendency to dive while under power the wing probably needs more positive incidence, or the elevator requires a larger negative angle of incidence.

More than likely if you are successful with your plane you will wish to enter it in some contest or competition. Contest flying is undoubtedly an art of its own, and the best way to acquire the knack of winning contests and making consistent flights is to actually take part. There are a few things, however, which you should keep in mind. First, and most important of all, you must know your ship. That means flying it many, many times, and getting acquainted with every peculiarity about it. Next you should try to adjust the motor and plane so you are getting maximum performance from them. The plane should be adjusted to climb at a steady rate and in as large circles as possible so no altitude is lor. in banking. The plane should be tried out with different propellers, and when one is found which



gives good results do not replace it with any others on your official flight. Many times another propeller will change the entire performance of the ship. If you should know how to apply a formula to your plane which will give you the correct pitch propeller, all the better, but for the beginner trial is the best method. The last but probably the most unheeded warning at a contest is *do not get excited*. When you go to the runway for an official flight take plenty of time to let your motor warm up and get it running at its maximum speed; make sure of the wind direction, see that everything is adjusted properly, and finally, launch your plane with care.

In the preceding paragraphs some suggestions have been offered to help you get better flights with your gas model. Study these hints, try them in practice and you should get good results.



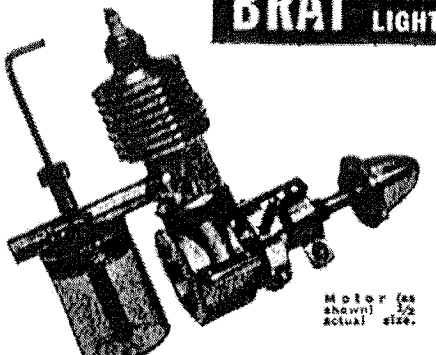
AKRON CLUB WINS TROPHY

For the first time, at the 1938 National Model Airplane Contest held in Detroit, July 6th to July 9th, organized clubs competed for the Megow Trophy.

The trophy was finally awarded to the Edith Van Orman Chapter of Akron, Ohio, which is affiliated with the Junior National Aeronautical Association. Winning team members are as follows:

LEO BAILEY
HENRY THOMAS
BERNARR ANDERSON
MICHAEL GAJDOS
ROBERT HOFFMEYER
JACK SWARTZ
JOE STAAB

The trophy is perpetual. A plaque was given for permanent possession and each member awarded a medal



BRAT THE ORIGINAL LIGHT CLASS MOTOR

YOU CAN GET 'BRATS AT ANY MEGOW DEALER!

The **POWER PLANT** *for Champions*

THE 1938 MODEL BRAT is the most complete motor of its size. All parts are precision finished to gauge and are completely interchangeable. THE BRAT IS TOPS for appearance, performance, power and dependability and is one of the easiest motors to start. With such features as transparent and unbreakable gas tank, strong aluminum crank case, foolproof and adjustable spark system, etc., the Brat is the lightest weight motor for its size on the market. Specifications: Bore . . . 9/16", stroke . . . 5/8", Overall height . . . 3 1/4", Weight . . . 8 1/4 oz., Flying weight . . . 9 oz. (including batteries), Speed . . . 5500 to 7500. Shipped Complete with coil, condenser, plug, propeller and can of S.A.E. 70 oil.

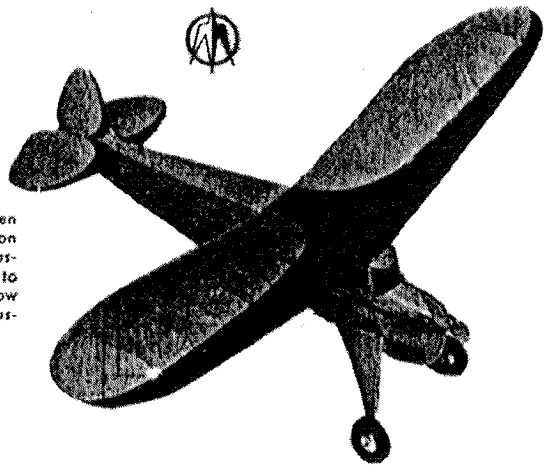
READY TO RUN **$16.50**

WORLD'S PIONEER *Gas Model Builder*

Designs MEGOW'S

Latest Gas Model the "Cardinal"

This amazing new Megow model has just been designed by Maxwell Bassett, National Champion and widely-known builder of world's record gas-powered model airplanes. Small . . . easy to build, transport and fly . . . and sensationally low in price, everyone can now have his own gas-powered model.



A Potential Winner—



Kit No. E14

Designed by Maxwell Bassett

Featuring SMALL WING SPREAD and LIGHT WEIGHT, which makes this model CRACKUP PROOF, since landing shock impacts are lessened. DETACHABLE WING readily removable. ADJUSTABLE RUDDER with positive control. FINISHED PROPELLER ready to install. ALUMINUM COWLINGS—specially die stamped to exact shape. SPECIAL CUT OUT window outlines. SHOCK ABSORBING LANDING gear with SPECIAL RUBBER WHEELS—long life and puncture proof!
This Kit contains EVERYTHING! Balsa and Bass Wood, Liquids, Wire, Bolts, Screws, Full Size Plans and Shaped Leading and Trailing Edges.

PLANS personally drawn and checked by MAXWELL B. BASSETT!

SPECIFICATIONS	
WING SPAN	48"
OVERALL LENGTH	29½"
CHORD	5"
Weight Complete (Average)	19½ oz.
Power—any Motor Approx. ⅝" bore or less	

COMPLETE KIT

$3.95

With a semi-finished propeller, special rubber wheels and all metal parts die-cut, this new Megow wonder is the most complete model in its field. It has been tested in practical flying for over nine months. Wingspan 48 in. Weight 19½ ounces. Uses any small motor with approximately ⅝ in. stroke and bore.

A RECORD BREAKER!

The QUAKER FLASH



Here's what this up-to-the-minute kit contains: 3½" diameter—specially developed rubber wheels that will not puncture and will absorb the hardest landing shocks. Two full sized plans—28" x 34", with five clear photographs. Extra hard balsa wood cut to proper sizes. Special steel wire, celluloid, aluminum for cowl and bamboo paper. Plenty of cement, etc.

Roland Fischer's Quaker Flash recently set a world's record of 26 minutes, 25 1/5 seconds using a fuel allowance of 3/16 oz.



The ease with which it can be transported is a very important advantage. Wings easily removable, and landing gear folded back if necessary. Wheels are placed well forward of the propeller to make safe landings and prevent broken propellers. Fail-proof landing gear absorbs even the hardest landing shocks. The rudder is fully adjustable and the stabilizer semi-adjustable by loosening of bolts and blocking if necessary. Motor accessible and easily removed.

Specifications: Wing Span, 5' 7"; Chord, 9¼"; Length Overall, 47"; Weight Complete (average), 2 lbs. 14 oz.; Weight Without Motor, 1 lb. 13 oz.

Kit No. E 2

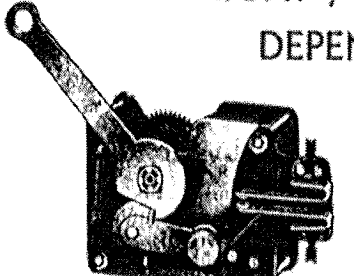
$4.95

GAS MODEL FLIGHT TIMERS

This timer is made mostly of dural and weighs only one ounce. It can be adjusted for flights from 0 to 55 seconds. The snap action, silver contact pointed switch makes sure of positive contact when in operation. There are no delicate parts to get out of order; consequently this timer is rugged and vibration proof. By mounting the timer inside and allowing the control arm to project through a slot in the model a very compact installation is obtained. Winding is accomplished by pulling the control arm back to the desired position.

$1.95

LIGHT, STURDY DEPENDABLE



The standard timer is made just like our featherweight timer except that it weighs two ounces. The same number of parts are present; the difference in weight is caused by the use of steel, in most cases, instead of dural. It can be adjusted for flights from 0 to 55 seconds.

$1.50

A CONSISTENT WINNER

IS THIS POPULAR GAS JOB!



THE FLYING QUAKER

This is America's best known gas model! Span 7'. Weight with motor, 5 lbs. Our kit contains: Three full sized plans, 28" x 34". Cut out prop blank, extra hard balsa wood cut to proper sizes, special steel wire, sheet aluminum, celluloid, bamboo paper, plenty of cement and many other features.

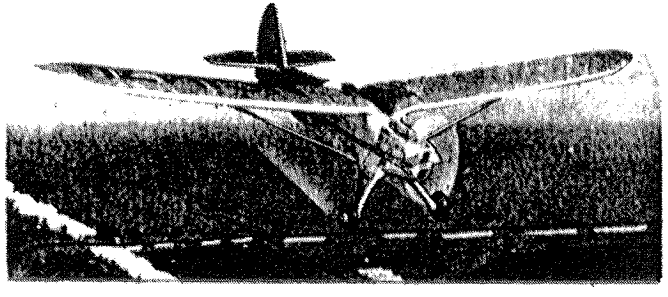
Kit No. E1

$5.95

This ship adheres to conventional practice in gas model design and construction. Yet it embodies all the desirable qualities which many models do not have. It has a fool proof landing gear that absorbs the hardest landing shocks. A fully adjustable rudder. Stabilizer is semi-adjustable if necessary. Motor is mounted in such a way as to be easily accessible, and removable. Wing is mounted in the conventional manner with rubber loops. For transportation the model can easily be dismantled by removing tail surfaces, detaching the wing and prop, and folding back the landing gear.

SPECIFICATIONS

Wing Span	7 ft. 0 in.
Chord	12 in.
Wing Section	Clark Y
Wgt. minus motor	3 lbs. 12 oz.
Wgt. complete with Brown Jr. Motor	5 lbs.

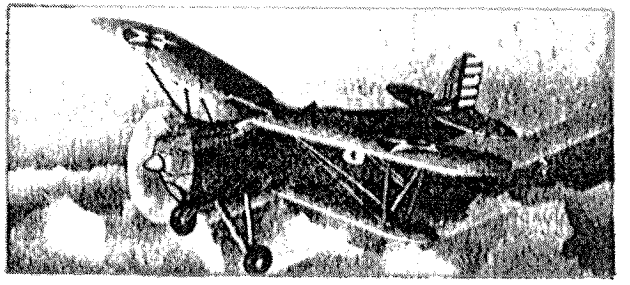


SILVER FLYER Kit No. E3

Span, 72" Length, 40"
Weight complete ready to fly, 3 pounds. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in silver and red trim. Kits come complete with cut to shape ribs, formers, wing, elevator, and rudder tips. Semi-finished cowl. Formed landing gear, formed motor mount. Screws, bolts, metal fittings, switches, all liquids including colors, sheet aluminum, finished leading and trailing edges and full sized blueprints, license numbers, genuine streamlined rubber tire wheels.

$6.50

Kit No. E4



$8.00

B/J ARMY PURSUIT

Scale, 1¾" equals one foot Span, 59½"; Length, 48"
Weight complete ready to fly, 3 pounds, 4 ounces. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in blue fuselage with army yellow wings.

Kit No. E5



$11.00

LUSCOMBE PHANTOM

APPROVED: By LUSCOMBE AIRPLANE CORPORATION
Scale, 2½" equals one foot Span, 76"; Length, 51"
Weight complete ready to fly, 3 pounds, 14 ounces. Colored in yellow with a red trim. Any 1/5 or 1/6 H. P. motor is adaptable to this ship.

Kit No. E6



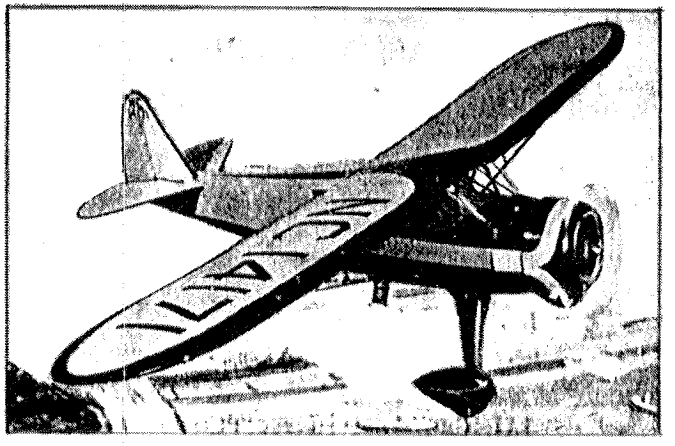
$12.50

MONOCOUPE 90

Monocoupe Scale, 2-7/16" equals one foot Span, 76½"; Length, 50"
Weight complete ready to fly, 3 pounds, 10 ounces. Colored in blue, trimmed in silver. Any 1/5 or 1/6 H. P. motor is adaptable to this ship.

For BIG PLANE PERFORMANCE....
Get These Approved Gas Model Kits

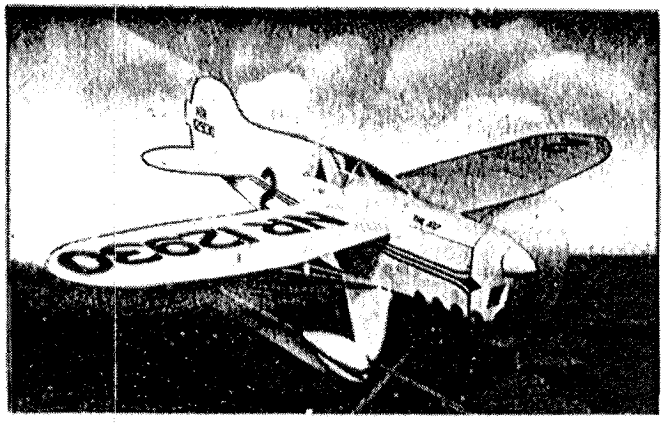
Complete with cut to shape ribs, formers, wing, elevator, and rudder tips. Spun aluminum motor cowl. Formed landing gear, formed motor mount. Screws, bolts, metal fittings, switches, all liquids including colors, sheet aluminum, semi-finished leading and trailing edges and full size blueprints, semi-finished wheel pants, license numbers, streamlined wheels.



HOWARD DGA-8 — Kit No. E7

APPROVED: By BEN O. HOWARD

Scale, 2" equals one foot — Span, 76"; Length, 51"
Weight complete ready to fly, 3 pounds, 4 ounces. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in rich orange and black combination **$12.50**

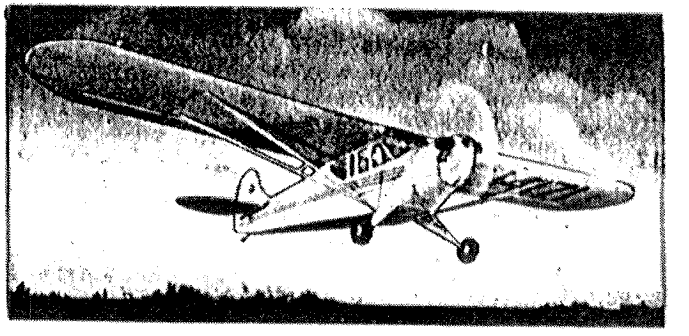


ART CHESTER "JEEP" — Kit No. E8

APPROVED: By ART CHESTER

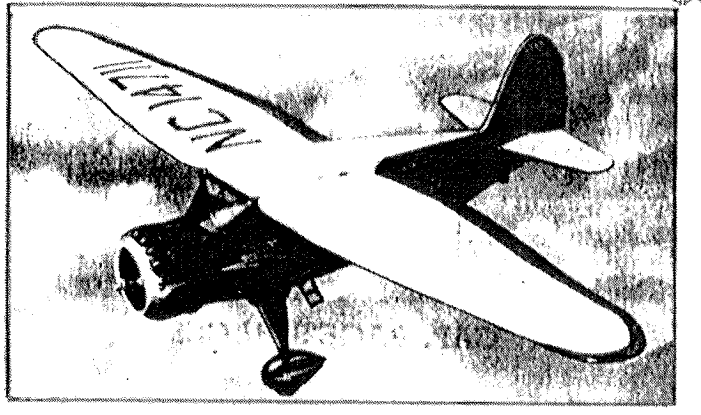
Scale, 4" equals one foot — Span, 71½"; Length, 56½"
Weight complete ready to fly, 3 pounds, 12 ounces. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in cream, trimmed with dark green. **$12.00**

EACH A RECORD BREAKER!



TAYLOR CUB — Kit No. E9

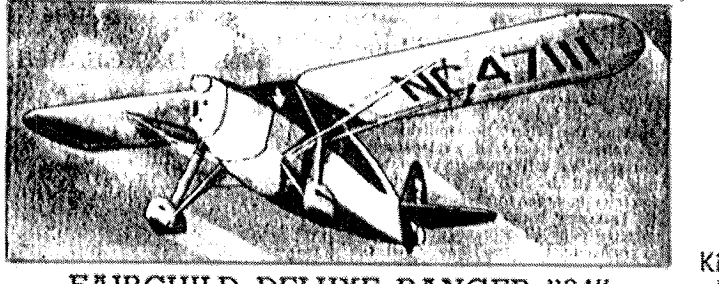
Scale, 2½" equals one foot — Span, 79½"; Length, 50"
Weight complete ready to fly, 3 pounds, 6 ounces. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in yellow with red trim. **$8.50**



STINSON RELIANT — Kit No. E 10

APPROVED: By STINSON AIRCRAFT CORPORATION

Scale, 2" equals one foot — Span, 83¾"; Length, 53"
Weight complete ready to fly, 4 pounds. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in black and yellow. **$14.50**



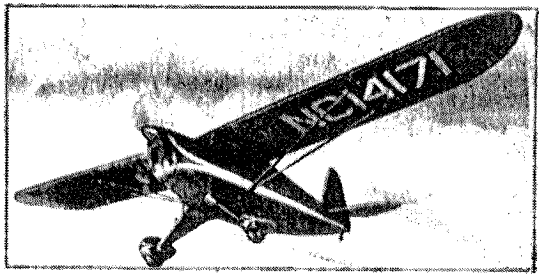
FAIRCHILD DELUXE RANGER "24" — Kit No. E 11

APPROVED: By FAIRCHILD AIRCRAFT CORPORATION

Scale, 2¼" equals one foot — Span, 80¾"; Length, 58"
Weight complete ready to fly, 4 pounds. Any 1/5 or 1/6 H. P. motor is adaptable to this ship. Model colored in gray with red trim. **$10.00**

MODEL these SMOOTH PERFORMERS

Kit No. E 12



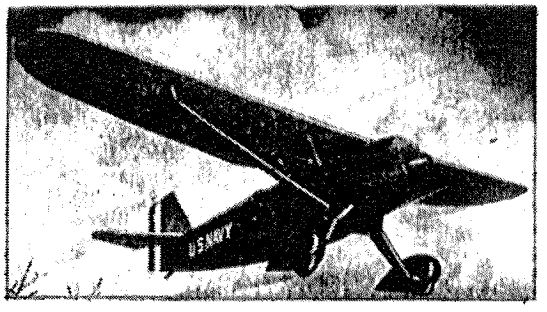
$9.85

REARWIN SPEEDSTER

Scale, 2½" equals one foot — Span, 78"; Length, 52"

Weight complete ready to fly 3 pounds, 6 ounces. Colored in bright red, trimmed with silver. Any 1/5 or 1/6 H.P. motor is adaptable to this ship.

Kit No. E 13



$9.85

CAP. PAGE'S RACER

Scale, 2⅞" equals one foot — Span, 72"; Length, 52"

Weight complete ready to fly 3 pounds, 4 ounces. Colored in regulation Navy blue and orange. Any 1/5 or 1/6 H.P. motor is adaptable to this ship.

RE-NU STORAGE BATTERY for Gas Models

At last! A dependable, lightweight storage battery designed especially for model aircraft use.

This is a lead-acid type, 3-plate storage battery in which the electrolyte instead of being in liquid form as in the free acid type of battery, is absorbed 100% in the separators between the plates, thus making the battery non-spillable.

Voltage is 2.1 volts. A word of explanation about this seemingly low voltage. We call your attention to the exceedingly low amperage of all dry cell batteries which makes the 3-volt dry cell necessary in order to get any kind of satisfactory service out of it. This new battery has the very high amperage that is characteristic of all storage batteries and thus a voltage of 2.1 is sufficient to more than equal the dry cell performance.

You will find that this battery will furnish uninterrupted even service, far exceeding that of the average dry cell. With proper care it should last from one to two years.

When fully charged, will deliver a continuous discharge of 500 milliamperes (½ amp.) for one hour

RE-CHARGEABLE

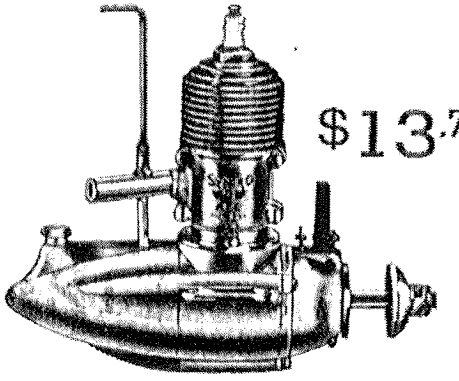
Weight . . . 4½ oz.
Size . . . 3⅞x1¼x⅝

NON-SPILLABLE



PRICE $2.50

SYNCRO ACE MOTOR



$13.75

Parts All Interchangeable Every Engine Factory Tested

Part Number	PARTS LIST	Price Each
1A	Crankcase	$1.25
1	Crankshaft Housing	.75
2	Gas Tank	.75
3	Commutator Case	.50
4	Commutator Cam	.40
5	Propeller Hub	.25
6	Connecting Rod	.75
7	By-Pass Manifold	.50
8	Intake and Exhaust Manifold	.60
9	Exhaust Pipe	.35
10	Crankshaft Bearing	.50
11	Piston	1.50
11A	Set Piston Rings (2)	.50
12	Cylinder	4.00
13	Crankshaft	1.50
14A	Contact Point	Sold as unit only
14	Commutator Rider Bar	Sold as unit only
15	Commutator Rider Bar Spring	.50
16	Fibre Commutator Arm	.40
17	Screw Contact Point	.40
18	Screw Contact Nut	.10
19	Propeller Clamp Nut	.10
20	Wrist Pin	.25
21	Gas Tank Filler Cap	.25
22	Venturi Tube Assembly	.45
23	Needle Spring	.20
24	Needle Spring Washer	.10
25	Gas Throttle Needle	.25
26	Crankcase & Gas Tank Gasket (2)	.05
27	Cylinder Gasket	.05
28	Crankcase Assembly Screws (3)	.10
29	Exhaust Manifold Screws (2)	.10
30	Commutator Arm Screw	.10
31	⅛" Assembly Screws (5)	.10
32	Spark Plug	.65
33	Spark Plug Gasket	.05
34	Condenser	.25
35	Coil	2.50
36	Retainer Washer	.10
37	Ground Wire Lead	.10

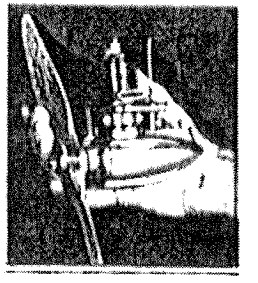
When ordering parts be sure to include serial number of motor

The new SYNCRO ACE — the popular priced streamlined miniature gasoline engine for model airplanes and boats, designed by John L. Doll and produced in the factory of SynerO Devices, Inc., Detroit—is equipped with new high efficiency coil, oilite bearings, and the new specially designed CHAMPION Spark Plug.

GENERAL SPECIFICATIONS:

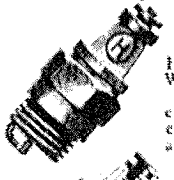
Horsepower—Approximately 1/5.
Bore—⅝"
Stroke—¾"
Motor Speed—800 to 8,000 R. P. M.
Cylinder—Machined steel.
Piston—Aluminum alloy with rings.
Connecting Rod—Cast of special aluminum alloy.
Crankshaft—Counterbalanced, machined from special accuracy stock.
Timer—Improved steel and fiber construction placed conveniently above oil and grime interference.
Ignition Coil—Light weight, high efficiency, developed by Delco Remy Corporation.
Spark Plugs—New CHAMPION, Standard ⅜"

SYNCRO ACE



SYNCRO ACE Gasoline Engines are now a proven product and enjoy a national reputation for their high standard of quality and reliability. Through greater production facilities and ever-increasing quantity of production, the saving is now passed along to the consumer in a lower selling price.

SPARK PLUGS (Actual Size)



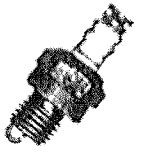
HURLEMAN
Wt. ¼ oz. ⅜" x 24 Thread
The result of extensive experiment and now a proven product. Easily taken apart and cleaned 75c



BROWN JR.
⅜" x 24 Thread
Of special design to operate all miniature motors of this type. Concentrated spark gives easy starting and smooth operation 65c

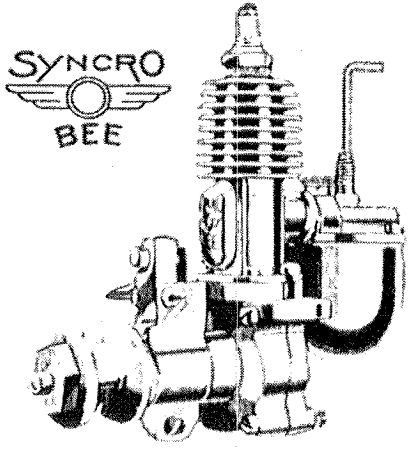


CHAMPION V 1
⅜" 24 Thread
Of one piece construction. Includes many new features. Gives all around top performance 65c



CHAMPION V 2
¼" Thread size
The only plug developed exclusively for "Midget" motors. A worthy addition to the Champion line 65c

THE SYNCRO BEE

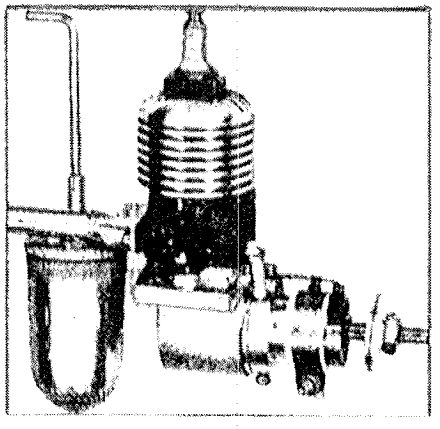


The new **SYNCRO BEE** — the smallest practical model gasoline engine ever put into production — the ideal power plant for those tiny new planes. Design has been so planned that the advantages of quantity production methods enable us to pass along this saving to you. Equipped with the new SyncrO lightweight, specially-designed, high-efficiency coil, Oilite bearings, new Champion V-2 Spark Plug.

GENERAL SPECIFICATIONS:

Horsepower—Approximately 1/8.
Engine Weight complete—3¾ oz.
Bore—½".
Stroke—½".
Motor Speed—1000 to 8000 R. P. M.
Cylinder—Special machined steel.
Piston—Special aluminum alloy with 2 rings.
Connecting Rod—Cast of special aluminum alloy.
Crankshafe—Precision machined from specially treated steel stock.
Timer—Steel and fiber construction placed conveniently above oil and grime interference, as used on the famous SyncrO Ace.
Ignition Coil—SyncrO's new "SUPER LITE"—weighs 1¾ oz., specially developed for the SYNCRO BEE
Spark Plug—New Champion (V-2) ¼".

$12.50



Motors May Be—

Vertical or Inverted

Every Engine Factory Tested

Parts All Interchangeable

TROJAN JUNIOR

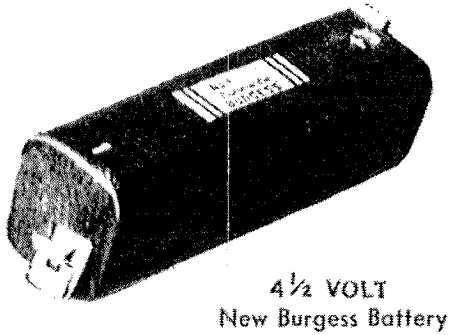
HIGH POWER! DURABILITY!

5/8" BORE — 1/8 HORSEPOWER

THE ONLY MOTOR USING **ROLLER-BEARINGS!**

WILL outperform and outwear any motor of its size on the market. TROJAN MOTORS are used by all LEADING model builders.

$18.50



4½ VOLT
New Burgess Battery
No. 4Z3SC
Price.....$1.30

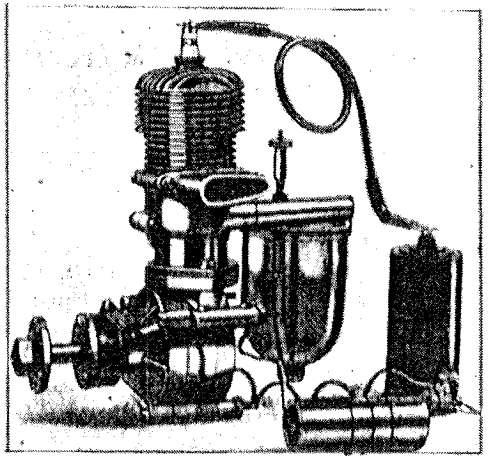
3 VOLT
BURGESS BATTERY
Light Weight - Long Life - Hot Spark

The Burgess Battery is specially built to meet the exacting requirements of model airplane builders. Thousands of demonstrations have proved the No. 4Z2SC far superior to ordinary flashlight cells for this type of service.

It's light weight, only 4½ ounces, as against 7 ounces for two flashlight cells is a distinct saving. Its size, 4⅞" x 1⅛" sq., permits installation in any model easily and efficiently.

PRICE EACH 3 Volt ... 80c

OHLSSON MOTOR $18.50



The new gold seal Ohlsson motor for 1938 is one of the most excellently designed and constructed motors on the market today. It develops 1/5 H.P. at 4700 R.P.M. Precision workmanship is evident throughout this motor. The piston, like all other bearing surfaces, is machined to .0001"!

The new and improved features that keep this motor "tops" in its field, are almost innumerable; some of which are—radial or lug mounting, transparent fuel tank (which takes all the guesswork out of fueling) one piece cylinder, hardened Monosteel piston, fully counter balanced crankshaft, two piece crankcase, which means that the main bearing can be renewed without buying an entire new crankcase, a detachable exhaust and a metal covered condenser. Power, performance, dependability and economy, the Ohlsson motor beats them all.

Bore ⅜" Stroke ½"
Bare engine wt 8 oz.
Flying weight (less batteries) 13 oz.
R P M 500 to 10,000 with propeller

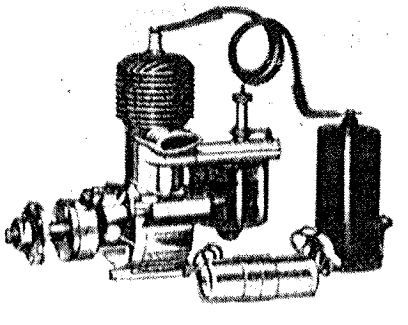
Motor operates upright or inverted and is sold only as a complete, ready to run, factory guaranteed product.

PARTS LIST

Cylinder (Only)	4.50
Piston (Only)	2.00
Piston Fitted to Your Cylinder	3.00
Wrist Pin Pads (per Pair)	.20
Wrist Pin	.35
Connecting Rod	1.00
Crank Shaft	2.50
Crank Case (Rear Section)	2.00
Crank Cover and Bearing (Front Section)	1.50
Intake Manifold (Includes Intake Tube)	1.50
Exhaust Manifold (Pipe)	.40
By Pass Manifold	1.00
Needle Valve	.50
Needle Valve Body	.50
Needle Valve Nut	.05
Timer Adjusting Arm	.40
Timer Spring	.10
Ignition Insulator Washers	.10
Point Stationary (Screw Type)	.25
Timer Housing with Rocker Pin	.75
Moving Breaker Point and Arm	.35
Splined Prop Driving Washer	.35
Front Prop Washer	.25
Prop Nut	.05
Gas Tank (Complete)	1.10
Gas Cap (Only)	.25
Gas Tubing	.05
Spark Plug (¼ - 28 Thread)	1.00
Gasket	.35
Coil	2.50
Hook-Up Wire (5 Feet)	.15
Complete Set Screws, Nuts and Gaskets	.40
Cork (Each)	.10

When ordering parts be sure to include serial number of motor.

THE OHLSSON "23"



A RUGGED baby brother of the famous Ohlsson Gold Seal Miniature Motor — only 3 9/16" high, but packed with more power, speed and stamina than any other motor for its size on the market.

The Ohlsson "23" has plenty of power to fly a 3-lb. model, yet is small enough to fly a 20-oz. job — in other words, it's the perfect "5/8" for every small ship.

Like its big brother the Ohlsson "23" is built from the finest materials money can buy and is assembled and tested under the rigid supervision of the same men who have made Ohlsson motors first choice with model fans the world over.

See your Megow dealer right away. Compare the Ohlsson "23" part by part with any other motor of comparable size on the market — and we'll let you be the judge!

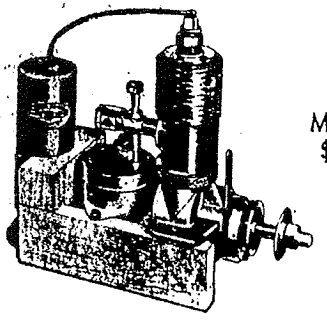
Horsepower 1/7
Bare Engine Wt 4½ Oz.
Clear Composition Gas Tank

ALL PARTS INTERCHANGEABLE

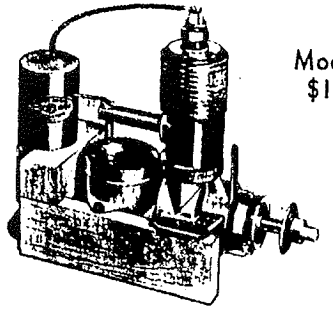
$16.50

Announcing . . . . . New—

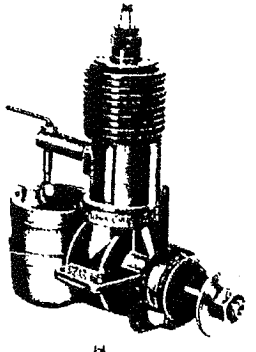
BROWN JR. MOTORS



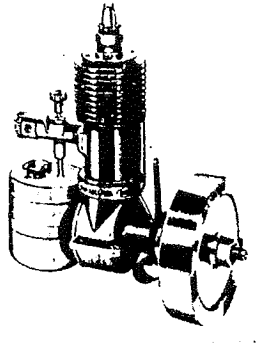
Model B
$21.50



Model C
$17.00



Model D
$10.00



Model M
$15.00

As pioneers in the model gasoline motor field the makers of the Brown Junior again step to the front with an announcement due to bring this great motor within the grasp of every model builder. So great a saving has been effected in the past year that this saving is passed on to the public with FOUR (4) MODELS of the famous BROWN JUNIOR MOTOR, ranging from the finest in the low-priced field to the ever-popular B-model, including an adaption of this power plant to a mighty Marine Motor.

Think of it! For less than you expect to pay for an ordinary motor kit, you can now buy this champion power plant complete--for only $10.00. This new model-D has everything that the model users have come to expect of Brown Junior Motors: power, speed, stamina combined with sound engineering advances. In every way it lines up with the famous Brown Motors that have won first places and flight records everywhere.

All models of the Brown Junior Motor are block tested at the factory before shipping and fully guaranteed against defective workmanship or materials.

SPECIFICATIONS

Each model contains the following improved parts:

SPARK PLUG .....: Newly designed with concentrated spark.

CRANKCASE .....: Newly designed, extra strength die cast aluminum silicon alloy with high speed bronze bearing.

TIMER .....: Improved tension spring with tungsten contact points.

FUEL TANK .....: New type, two piece, detachable for cleaning.

SPARK COIL .....: Water proof, oil proof, gas proof.

Each model has the original specifications of the standard "B" motor, viz:

⅞" Bore — Approximately 1/5 Horsepower
1" Stroke — 1,200 to 10,000 R. P. M.

ADDED FEATURES:
MODEL—D $10.00

PISTON .....: Aluminum Alloy with 2 special rings.
CARBURETOR ....: Pin type simplified control.
CRANKSHAFT ....: Specially designed counter-balanced Z-metal.

Packed in Natural carton complete ready for mounting, tested & guaranteed.

MODEL—B $21.50
Cadmium plated to give lustrous finish.
PISTON .....: Hardened steel, ground and lapped to fit.
CARBURETOR ....: Micrometer type needle valve control.

Packed in Blue carton completely mounted, ready to run. Tested & guaranteed.

MODEL—C $17.00
Cadmium plated to give lustrous finish.
PISTON .....: Aluminum Alloy with 2 special rings.
CARBURETOR ....: Simplified pin type control.

Packed in Red carton completely mounted, ready to run. Tested & guaranteed.

MODEL—M $15.00
Cadmium plated to give lustrous finish.
PISTON .....: Aluminum Alloy with 2 special rings.
CRANKSHAFT ....: Specially designed counter-balanced Z-metal.
CONNECTING ROD: Forged aluminum alloy.
FLYWHEEL .....: Specially designed Z-metal.
CARBURETOR ....: Micrometer type needle valve control.

Packed in Green carton complete ready for mounting in boat. Tested & guaranteed.

PARTS LIST

Part No.	Name	
1	Crank Case and Bearing	$ 2.25
2	Cover Plate	.50
2A	Cover Plate Gasket	.05
3	Cylinder and Manifolds	5.00
3C	Cylinder Gasket	.05
4	Piston and Bearing	2.50
4B	Wrist Pin	.20
4C	Wrist Pin Lock Washer	.05
5	Connecting Rod (B and C)	1.25
	Connecting Rod (M and D)	1.00
6	Crank Shaft (B and C)	3.00
	Crank Shaft (M and D)	2.50
6A	Retaining Washer	.05
6B	Cam Washer	.75
6C	Propeller Clamp Washer	.25
6D	Clamp Nut	.05
6E	Thrust Washer	.05
7	Needle Valve Assembly (B and M)	1.00
	Needle Valve Assembly (C and D)	.60
	Needle Valve Pin (C and D)	.10
7D	Choke Nut	.20
7E	Choke Nut Spring	.15
8	Breaker Spring Contact and Ferrule	1.00
8A	Tungsten Contact (not fitted)	.15
8B	Breaker Clamp and Contact	1.00
8C	Breaker Bushing	.50
9	Fuel Tank Assembly	1.50
10	Spark Plug Complete	.65
10D	Spark Plug Gasket (outside)	.05
11	Spark Coil (B and C)	3.25
	Spark Coil (M and D)	2.50
12	Condenser (B and C)	.25
	Condenser (M and D)	.20
13	Connection Wire—6 feet	.25
14	Exhaust Manifold	1.00
15	Set of Washers, Gaskets and Nuts	.50
16	Motor Skid	.50
	Flywheel (M)	1.50

When ordering parts be sure to include serial number of motor.

GAS MODEL
ELECTRICAL EQUIPMENT

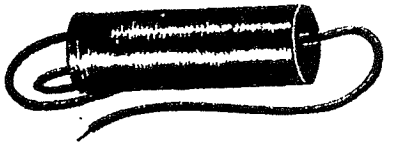
GAS MODEL IGNITION COIL

Weight—2¼ ounces. Moulded extra strength bakelight case. Clip terminals on primary and renewable high tension lead in case of injury or oil soaking into insulation.



Liberal length of lacquered high tension lead furnished and is finely stranded to prevent breaking due to excessive vibration. Operates on flashlight cells and no booster is required if wiring and plug are in good shape.

EACH $2.50



GAS MODEL IGNITION COIL $1.50

Weight—3½ ounces. This coil throws the hottest and longest spark of any on the market today. It operates on three volts, using standard flashlight cells. Liberal free ends of wire are attached, ready for installation in your model.

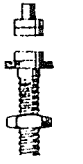
MIDGET TIP JACKS



Two of these jacks are required on a gas model. Only a small portion will protrude from the fuselage. To boost the current for starting your motor, plug in two leads from an outside source. You can run your motor until it is warmed up, then detach the plugs.

Price each 10c

ELECTRICAL CONTACTS



Tungsten Points for your breaker system. Diameter ⅛". Set consisting of one rivet type and one screw type with nuts.

Set 40c

SOLDERLESS PLUGS.



Very easily attached, merely by loosening, inserting the wire and tightening again. They plug into our tip jacks very easily and certainly are efficient.

Price Each 10c

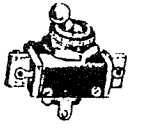
REGULAR PLUGS



Are just as effective as the solderless plug except that they must be soldered to the ends of the wires.

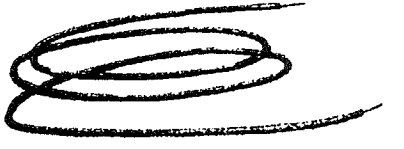
Price each 5c

TOGGLE SWITCH



This is the most efficient type switch obtainable. Small, light weight, with a positive on-off movement.

Each 39c



SPECIAL HOOKUP WIRE

Finely stranded and moisture proof—6 ft., 25c

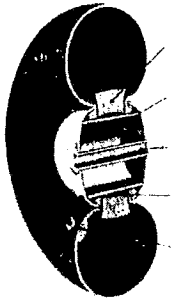
Insure Your Models with M & M WHEELS

ALL M & M WHEELS CAN BE INFLATED and DEFLATED

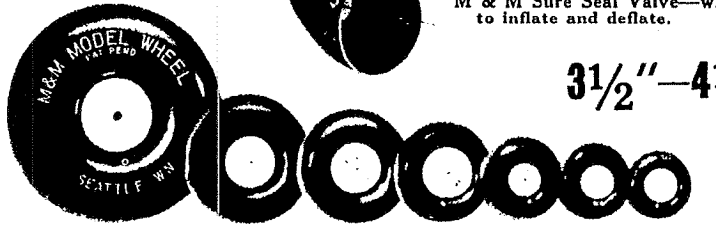
Super-Construction of M & M 3½—4½ and 6" Wheels

5 Reasons Why These Wheels Are Popular the World Over

Why not protect your model and eliminate complicated landing gear? Buy a pair of M & M's.



- Special Designed Hub giving added protection on heavy landings.
- Aluminum Spreader giving added strength and cutting weight to minimum.
- 9/16" Axle Housing—note heavy roll on tube ends —also large bearing surface.
- Addition Air-Cushion found only on M & M Super Gas Wheels.
- M & M Sure Seal Valve—why they are easy to inflate and deflate.



3½"—4½"—$2.75 PER PAIR

SIZES 1¼—1⅜—1½—1⅝"—PRICE $0.50 Per Pair, Postpaid.
SIZES 1⅞—2—2⅛—2¼—2⅜—2½—2⅝"—and Special Designed Do-Nut Wheels, Size 1¾"—PRICE $0.60 PER PAIR.

M & M 3¼" GAS WHEELS

with improved M & M axle housing for 9/64th or No. 28 drill rod axle $1.50
Designed for Light Weight Gas Models.
Weight approximately 1½ oz. per pair.

M & M's FOR LARGER GAS MODELS
6"x1⅞". Price $4.50 per pair
4½"x1¾". Price $2.75 per pair
4½"x1⅝". Price $2.50 per pair

New Sensation "Trexler Balloon Wheels"



For Rubber & Gas Powered Model Planes.

Can be inflated and deflated at will.



A new patented tube eliminates the use of any apparatus to inflate or deflate the tire. As simple as a toy balloon. The tire and hub are separate, allowing the tire to be easily removed for repairs. They are made of the finest latex rubber available and in actual tests have remained inflated six to eight weeks. Each wheel is factory tested to remain inflated for 72 hours. "Trexler Balloon Wheels" are positively guaranteed against defective workmanship and materials.

	Price per Pair
No. 1 inflates 1¼" to 1⅜"	.40
No. 2 inflates 1½" to 1⅝"	.40
No. 3 inflates 1¾" to 1⅞"	.50
No. 4 inflates 2" to 2⅛"	.50
No. 5 inflates 2¼" to 2⅜"	.60
No. 6 inflates 2½" to 2⅝"	.60

Gas Model Wheels

No. 9G inflates to 3"	$1.25
No. 10G inflates to 3½"	1.50
No. 11G inflates to 4½"	1.75

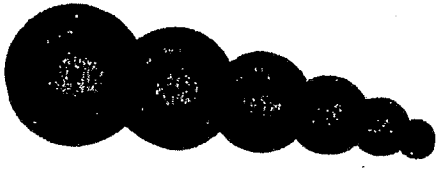


VOIT

Streamlined Gas Model Wheels

Heavy duty, can be inflated and deflated through new type valve. Strong aluminum hub will fit ⅛" axle.

3½" Dia., $1.50 per Pair
4½" Dia., $1.75 per Pair



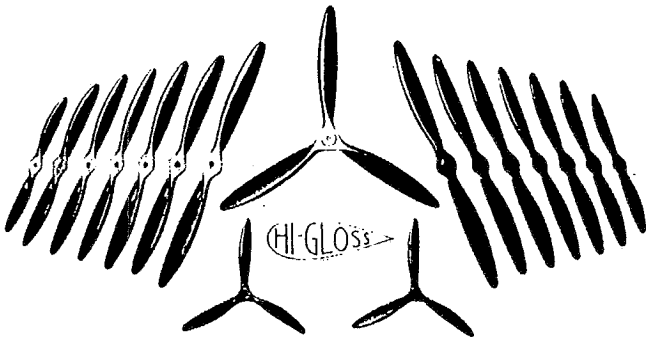
MEGOW'S NEWLY DEVELOPED SPECIAL RUBBER GAS WHEELS

Developed specifically for gas model use. These wheels have certain advantages not found in pneumatic air wheels. Made of special sponge rubber, they eliminate the bothersome punctures, and deflation attending the air wheels.

Special Low Prices per Pair

1" dia.	30c
1½" dia.	40c
2" dia.	50c
2½" dia.	60c
3" dia.	70c
3½" dia.	75c

PROPELLERS



Hi-Gloss propellers are low-cost propellers. They are carved by hand in the U. S. with a sensible combination of aerodynamic and structural characteristics. Selected hardwood and precision jigs insure absolute uniformity of pitch on every propeller.

Hi-Gloss Propellers Are Scientifically Designed and Finished

Propellers are given 4 base coats of primer, with each coat sanded. This is followed by a special polychromatic lacquer which is sprayed and rubbed down. Eight coats of lacquer are applied, and each rubbed down. The final finish is rubbed to a glass-like surface and waxed. This intricate procedure eliminates all possible skin friction and induced drag.

Would You Put a 16" Tire on a 14" Wheel?

Then why equip your engine with any propeller? Hi-Gloss Propellers are specifically designed for the engine on which they are to be used. The pitch-diameter ratio selected on the above chart is designed to afford the maximum thrust horsepower that your engine is prepared to deliver at maximum efficiency. When ordering, consult the Nomograph for the proper propeller. For instance: A 5-pound plane with a Brown Jr. Engine requires a 14" prop with a "B" pitch.

	Hi-Gloss	Varnished	Natural
9" Prop.	$.85	$.75	$.50
10"	.85	.75	.50
11"	1.00	.85	.60
12"	1.10	.90	.65
13"	1.25	.95	.70
14"	1.25	.95	.70
15"	1.35	1.00	.85
16"	1.50	1.25	1.00
18"	1.75	1.50	1.25

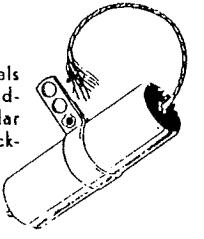
NOMOGRAPH

Make of Engine	Wt. of Model in lbs.	Prop. Dia. in ins.	Pitch Selection
Brat	.9 to 1.15	9	B
	1.15 to 1.30	9	A
Elf	.9 to 1.15	10	B
	1.15 to 2.00	11	A
"Husky"	.9 to 1.25	11	B
	1.25 to 2.00	10	B
Trojan	.9 to 1.25	10	B
	1.25 to 2.00	10	A
Baby Cyclone	2.75 to 3.50	12	B
	3.50 to 4.50	13	A
	4.50 to 5.00	13	A
Bunch	3.00 to 4.00	13	B
	4.00 to 5.00	14	A
Denny Mite	3.00 to 4.00	13	B
	4.00 to 5.00	14	A
Brown Jr.	3.50 to 4.00	13	C
	4.00 to 4.50	14	C
	5.00 to 6.00	14	B
	6.00 to 7.00	16	A
Syncro-Aca	3.50 to 4.00	14	C
	4.00 to 5.00	16	B
	5.00 to 7.00	14	A
Ohlsson	3.50 to 4.00	14	B
	4.00 to 4.00	15	A
	5.00 to 6.00	15	B
Forster Bros.	4.00 to 5.00	14	B
	5.00 to 6.00	16	A
	6.00 to 8.00	16	B
	8.00 & over	16	A

IGNITION CONDENSER

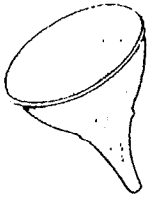
Made for gas models especially. Flexible stranded connections. Tubular aluminum case. Side bracket for mount.

Price each 35c

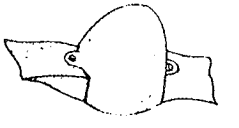


Gasoline Funnel

A necessary item in any gas model servicing kit. It is fitted with a wire screen filter to keep foreign material from entering the fuel tank. Eliminates wasteful spilling of gas, consequently keeping nose of model dry and clean. Each..... 35c







Propeller Spinners

Spun from heavy aluminum, this spinner makes a very attractive accessory for your gas model. It is attached by screws to the propeller after the hub nut on the prop has been tightened. We furnish the hub as shown in first illustration. It can be altered to fit any propeller.

Each..... 35c

MEGOW SENDS YOU

The New

STINSON RELIANT SR7A

Beginning with this new ¾" scale model, Megow sets a standard in value in completeness and quality that is unequaled today. We do not hesitate to say it is the finest development in scale model building that has been offered model enthusiasts.

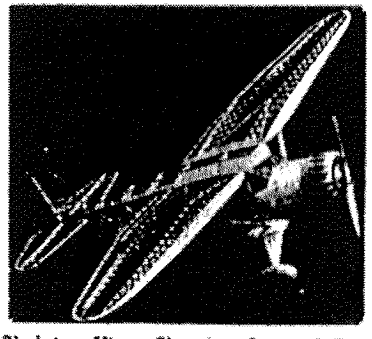
Wing Span 31 Inches

Price $3.25



Megow's new ¾ inch scale models reach new heights in completeness and perfection of detail. Each kit comprises complete detailed plans and separate sheets showing step-by-step photographs and instructions. Finished flying prop and blank for scale prop. Shaped wheels, aluminum drag ring. Movable controls on tail and wings. Heavy celluloid for cabin windows. All insignia. Correct colors in paper. Oversize quantities of cement, tissue cement and colors. Description and material to complete cockpit with blocks to make pilot's figure. Seats and hinged cabin doors.

In Ordering Mention Kit Number A1



Skeleton View Showing Internal Details

THE MOST COMPLETE KIT OFFERED. BUILDERS TODAY.

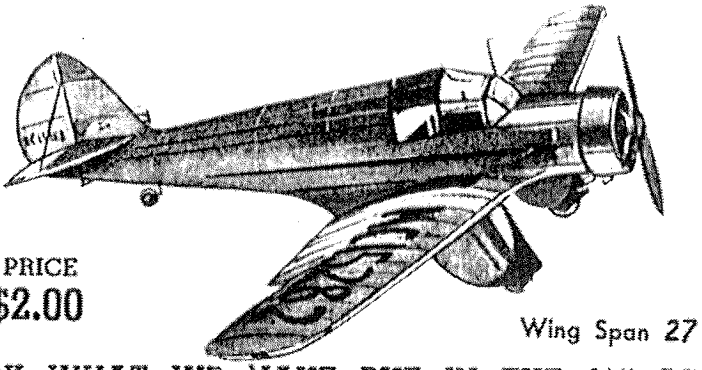
Also Made in a Complete Accurate ½ Inch Scale FLYING MODEL

Kit Number B1 Price 80c

Just as accurate in detail and as complete in materials as the larger kits. Everything, including cement and colors in extra quantities needed to produce a beautiful job. Wing Span, 20⅝ inches.



A GREAT NEW LINE



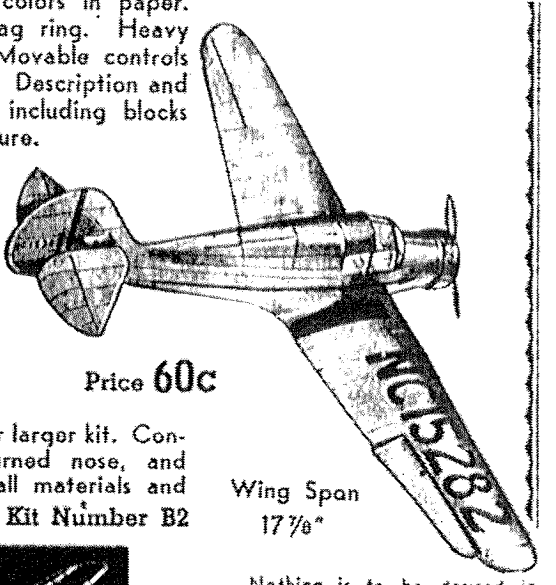
PRICE **$2.00**

Wing Span 27"

LOOK WHAT WE HAVE PUT IN THE ¾" SCALE AERONCA KIT

Complete detailed plans and photos of skeleton and finished models. Finished flying prop and blank for scale prop. Oversize quantities of cement, tissue cement and colors. Correct colors in paper. Shaped wheels. Aluminum drag ring. Heavy celluloid for cabin windows. Movable controls on tail and wings. All insignia. Description and material to complete cockpit, including blocks and coloring to make pilot's figure.

Kit Number A2.



The New

AERONCA

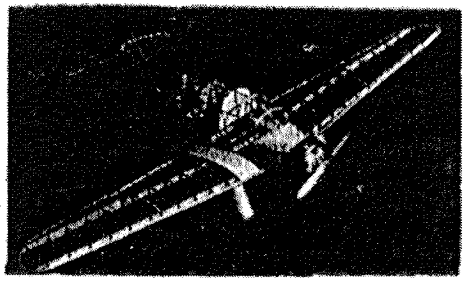
Also Made in a Complete, Accurate ½ Inch Scale Kit.

Price 60c

An exact reproduction of our larger kit. Contains all liquids necessary, turned nose, and wheels. Complete supply of all materials and detailed plans.

Kit Number B2

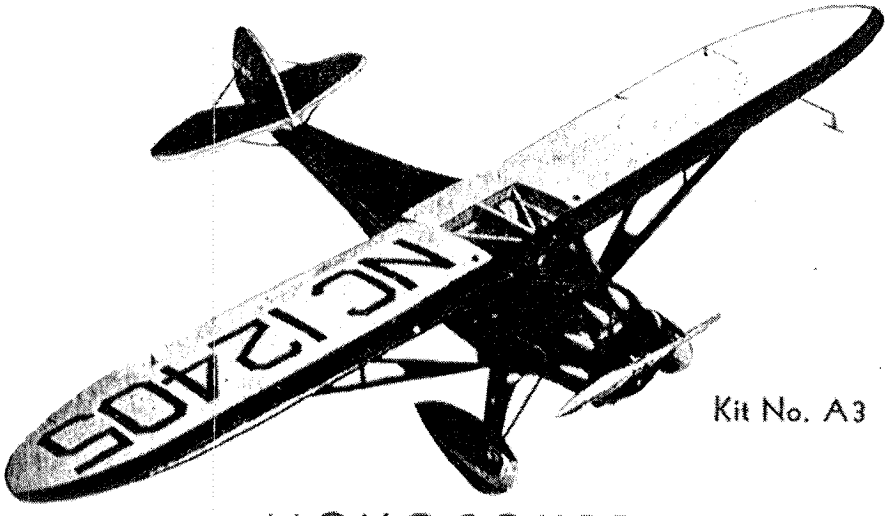
Wing Span 17⅞"



Skeleton View Showing Internal Details

Nothing is to be desired in completeness nor in perfection of detail. Every precaution has been taken to make construction simple and durable. Several months of experimental building and planning is behind the accuracy, the flying ability, and the completeness of these new kits. Read the description of what the new ¾ inch scale kits contain and then compare the prices with other makes. There is no comparison.

¾ INCH SUPER DETAILED



Kit No. A3

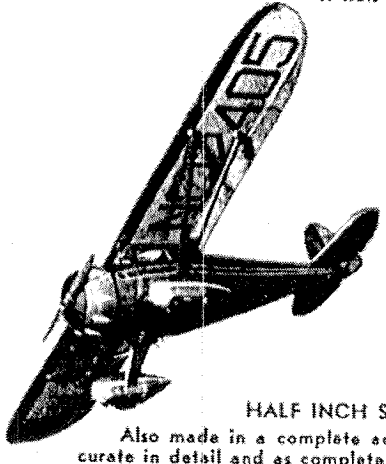
MONOCOUPE

¾" Flying Scale Model - Wing Span 24" - Length 15¼"

Two place cabin ship powered with 90 H. P. Lambert engine. Easy to build, makes an attractive and good flying model. Each kit comprises complete detailed plans with step by step instructions. Semi-finished flying prop. and blank for scale prop. Shaped wheels. Aluminum cowling. Heavy celluloid for cabin windows. All insignia, correct colors in paper. Oversize quantities of cement, tissue cement and colors. Description and material to complete cabin interior, with blocks to make pilot's figure and seats. Provition for movable controls on wings and tail and hinged cabin doors, if desired.

When Ordering This Kit Use Kit Number A3

PRICE — **$2.00**





Skeleton View Showing Internal Details

HALF INCH SCALE "MONOCOUPE"

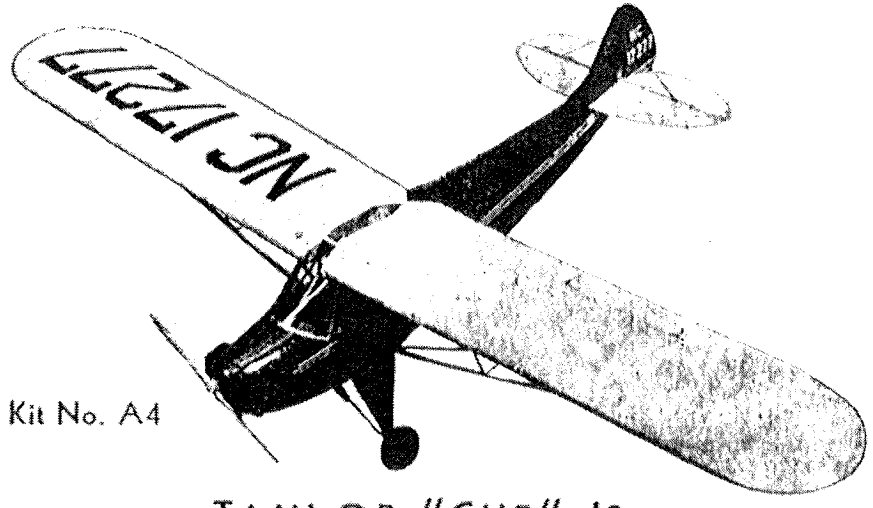
Also made in a complete accurate ½" scale flying model, just as accurate in detail and as complete in materials as the larger kit. Everything, including cement and colors needed to produce a beautiful job.

WING SPAN - 18" LENGTH - 10 3/16"

COMPLETE KIT — **60c**

In Ordering This Kit Use Kit Number B3

FLYING SCALE MODELS



Kit No. A4

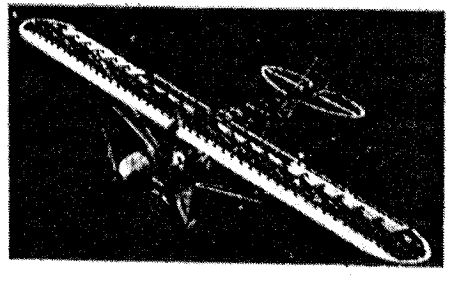
TAYLOR "CUB" J2

¾" Flying Scale Model - Wing Span 26⅜" - Length 16½"

A two place, tandem seating, sport lightplane powered with a 4 cylinder twin opposed continental engine. Very popular among the lightplane pilots and found at almost every airport. A remarkable flyer and very easy to build. Kit contains complete detailed plans and photos of skeleton and finished model. Semi-finished flying prop and blank scale prop. Over-size quantities of cement, tissue cement and colors. Correct colors in paper. Shaped wheels. Heavy celluloid for cabin window. All insignia. Description and material to complete cabin interior including blocks to make pilot's figure. Movable ailerons and tail surfaces.

When Ordering Be Sure to Mention Kit Number A4

COMPLETE ¾" SCALE KIT — **$2.00**



Skeleton View Showing Internal Details



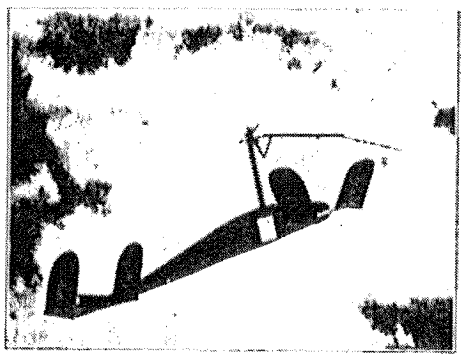
HALF INCH SCALE "TAYLOR CUB"

This ship is also made in a ½" scale model kit containing the same features as in the larger kit. Included are all necessary liquids and parts to complete this model. WING SPAN 17½", LENGTH 11 3/16".

COMPLETE KIT — **60c**

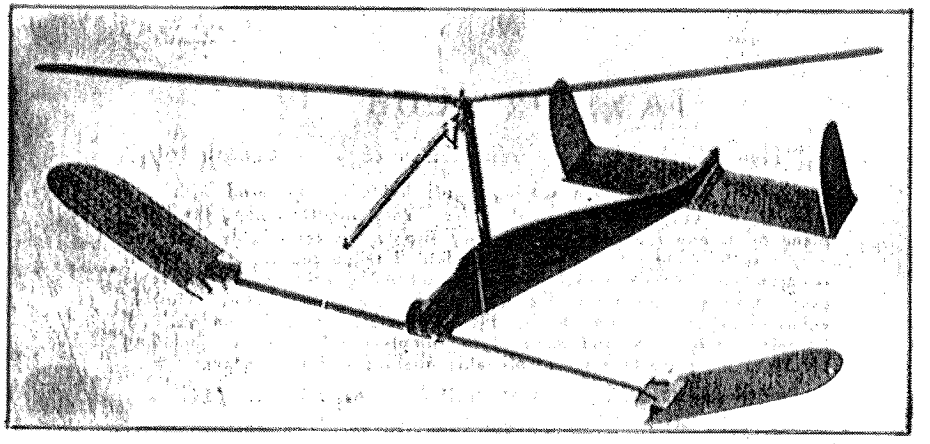
When Ordering Be Sure to Mention Kit Number B4





he Thrills of MECHANICAL FLIGHT *are yours —*
with this SCIENTIFICALLY DESIGNED

Captive Model AUTOGIRO



The Captive Autogiro Model F is a scientific model embodying and perfectly illustrating the principles of Autogiro flight. All the necessary parts of an Autogiro are arranged in their correct relation to each other so that they function exactly as in the full-sized machines.

Like its big brothers, the Model F is capable of very slow flight, thus it can be flown on a tow string. When there is no wind the model will fly when towed at the rate of a brisk walk. If there is more than five miles per hour of breeze, it floats on up as the tow string is let out, lifted by the action of the wind on the auto-rotating rotor.

The model F consists of a balsa wood fuselage cut to a silhouette cabin shape with horizontal and vertical fin area on the tail. Extending out on each side of the nose is an outrigger supporting upturned fins which are used for lateral stability.

A pylon extends above the fuselage and supports the two-bladed rotor and its ball-bearing hub. The blades are hinged to the hub which allows them to "cone" and "flap" as they auto-rotate.

This model, finished in bright colors, comes complete and can be assembled in a few minutes. Its rotor is 3 ft. in diameter, the span of its side fins is 42 in.

KIT NO
M 4

READY TO FLY
ONLY **$1.95**

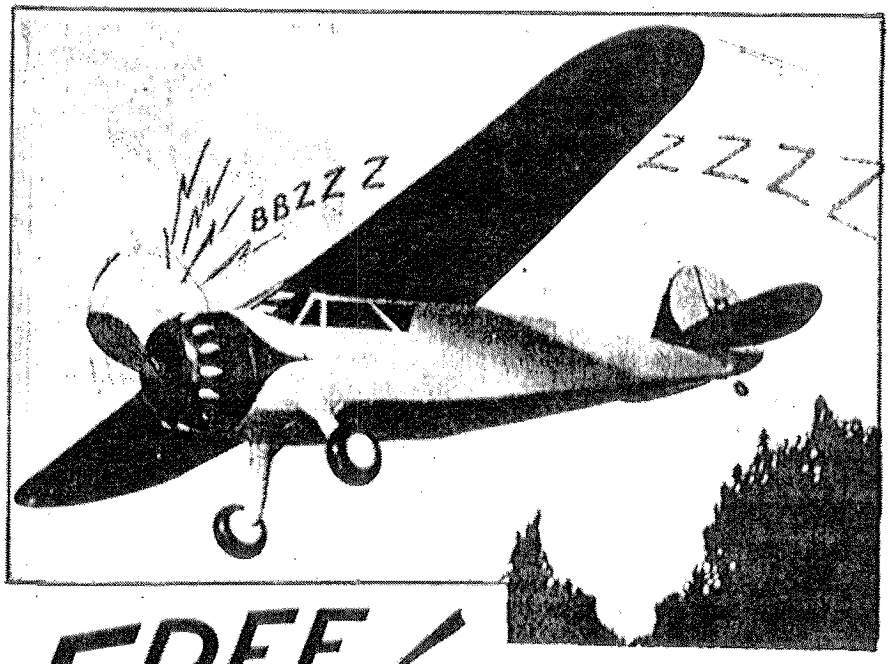
Developed by
C. B. Chapin and James G. Bay
Autogiro Company of America

Distributed Exclusively by:

MEGOW'S

MODEL AIRPLANES

That Look, Fly and Sound—
LIKE REAL AIRPLANES!



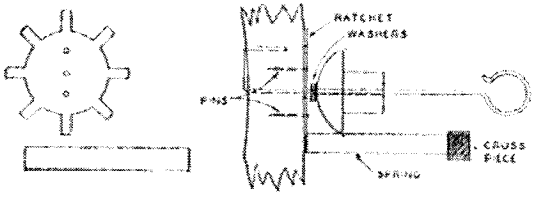
FREE!

Special Motor Hum Device Included in Each Kit!

An Innovation! Our Flying Models Are No Longer Silent! A device comes with each kit to reproduce the sound of a motor

Yes, it's true, all our flying models now can be made to sound like real airplanes. The "Motor Hum Device" is complete with instructions for installation. This was developed after considerable experimentation and is included FREE in the Giant Flying, 30" Flying Models, and the 25c Flying Line.

MEGOW'S "MOTOR HUM" DEVICE



Put that added "ZIP" into your rubber powered models — equip them with this featherweight device. Easily installed, produces a humming sound similar to a plane aloft. Device is enclosed in a glassine envelope with instructions for installation printed thereon.

PRICE 10c

MEGOW'S GIANT FLYING MODELS

We have been making these kits for quite some time. Yet they are still as popular as ever. For a very low price we offer a really large model. Due to their size, and light, though strong construction, they have tremendous endurance possibilities. However, nothing has been sacrificed in the way of scale or authentic design. These models are really flying scale models in the endurance class.

FREE!

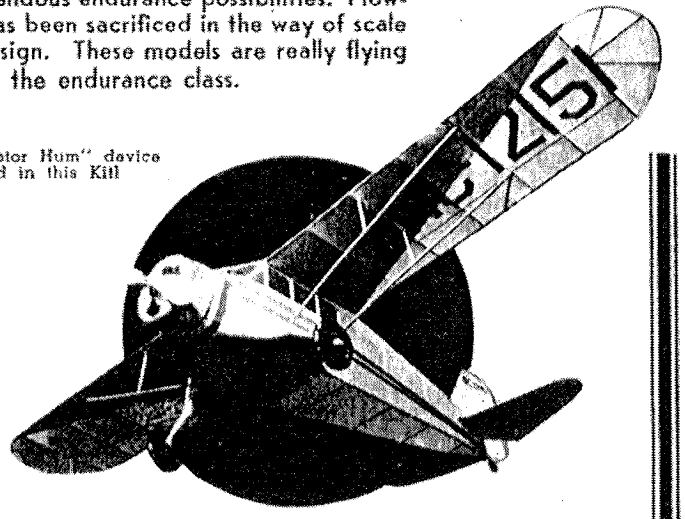
Special "Motor Hum" device included in this Kit

Complete Kit

$1.50

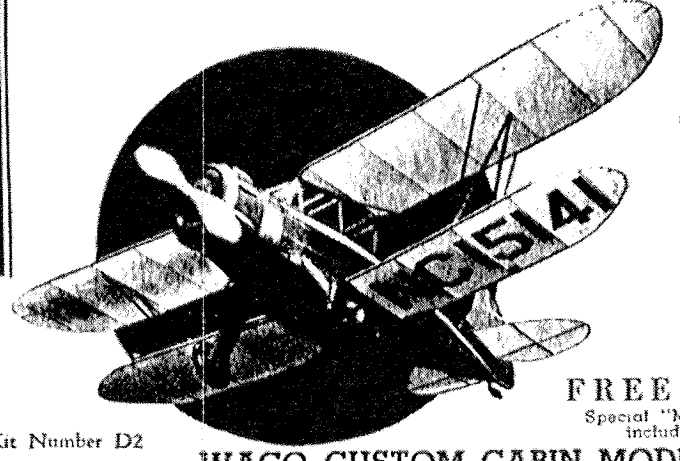


TURNED NOSE Included



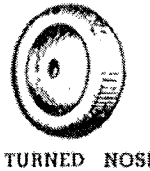
STINSON RELIANT SR. Kit Number D1

Wing Span 60", Length 38½", Weight complete 8 ounces. Accurate design and exactly to scale. Megow construction features make it amazingly easy to build. Easily overshadows all the models of your friends.



Complete Kit

$2.00



TURNED NOSE Included

FREE!

Special "Motor Hum" device included in this Kit

Kit Number D2

WACO CUSTOM CABIN MODEL

Wing Span 50", Length 37", Weight complete 8½ ounces.

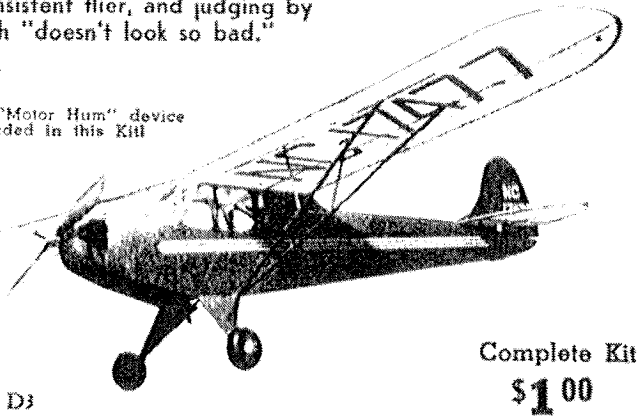
A model of the most popular American plane, for both business and pleasure. This Waco not only looks like the real thing, but flies just as well, too. You will want to be among the first in your neighborhood to have one of these models.

The TAYLOR "CUB"

Although it was very popular in it's old form, Megow's in keeping with the modern trends, has worked out a fifty inch model of the latest Taylor Cub J2. It is a very highly consistent flier, and judging by the photograph "doesn't look so bad."

FREE!

Special "Motor Hum" device included in this Kit

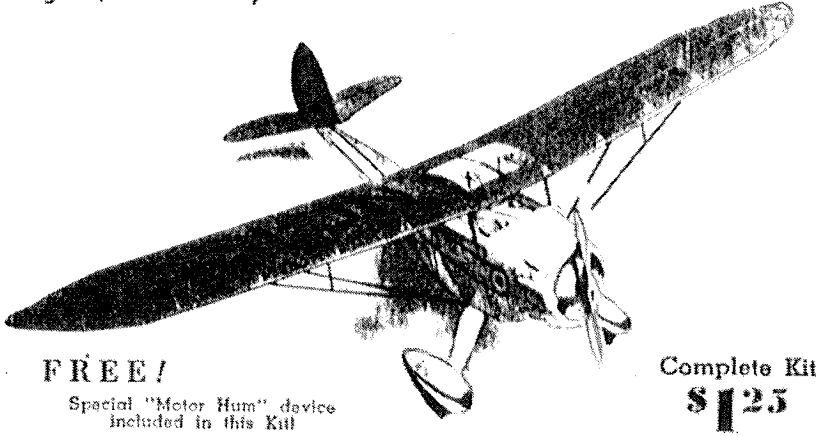


Complete Kit

$1.00

Kit Number D3

Wing spread 50", Length 31", Weight complete 5¼ ounces. A popular model of a two place sport ship. Being of light weight construction and not too complicated, it is an ideal model for both a beginner and for one whose experience demands that a model be a good, consistent flyer.



FREE!

Special "Motor Hum" device included in this Kit

Complete Kit

$1.25

LAMBERT MONOCOUPE

Wing spread 50", Length 32", Weight 6 ounces.

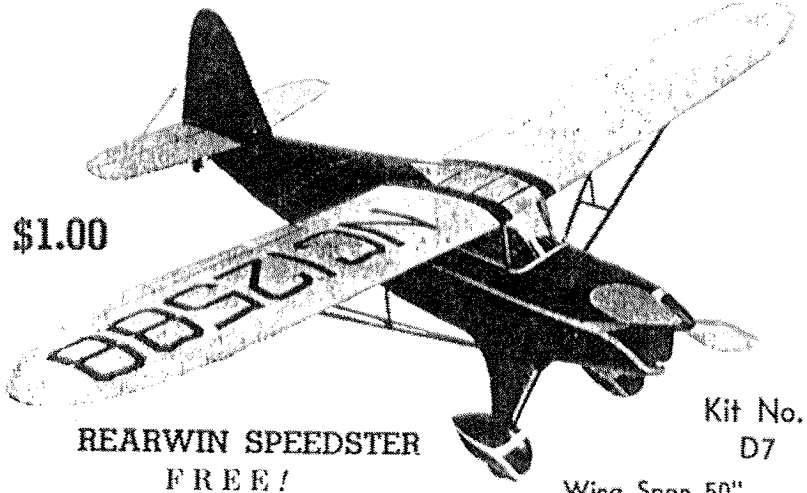
The Monocoupe has always proved popular in our Giant Model Series. When properly constructed and adjusted the model will taxi, take off, and fly under its own power. Its powerful motor will quickly take it up to a high altitude where, after the power is expended, it will gracefully glide to the ground.

TURNED NOSE Included



Kit Number D4

50" Models—*Late Additions!*



$1.00

REARWIN SPEEDSTER

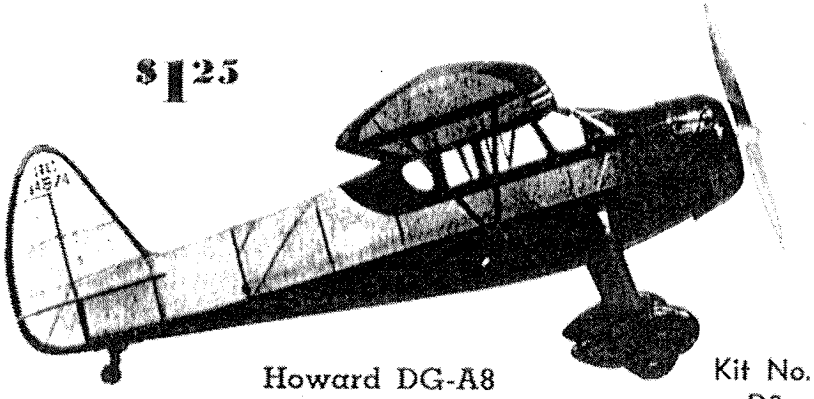
Kit No. D7

FREE! Special "Motor Hum" device included in this Kit!

Wing Span 50" Overall Length 36"

Here is the plane that modelists are enthusiastically acclaiming everywhere. It is the most sleek, racy appearing sport plane of today. The aerodynamic set-up, even though it is an exact scale model, is perfect and guarantees long, stable flights and flat glides. A worthy addition to our 50" line, this plane embodies all the features that you have found in Megow Kits

$1.25



Howard DG-A8

Kit No. D8

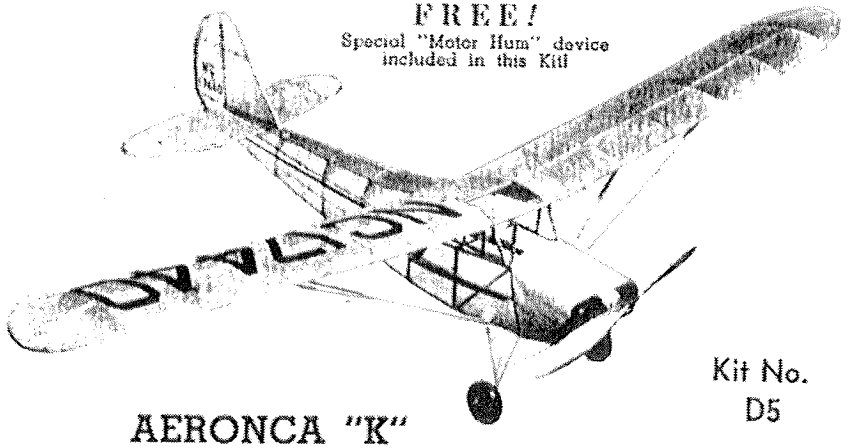
FREE! Special "Motor Hum" device included in this Kit!

Wing Span 50" Overall Length 35"

When a famous racing plane designer enters the commercial field, you can be sure of a sensational development. And our new model lives up to its famous prototype. This ship has been designed to provide excellent flying ability and is of very strong, yet light, construction. The kit contains everything necessary to build an authentic scale model (TURNED NOSE Included

50" Models—*Late Additions!*

FREE! Special "Motor Hum" device included in this Kit!



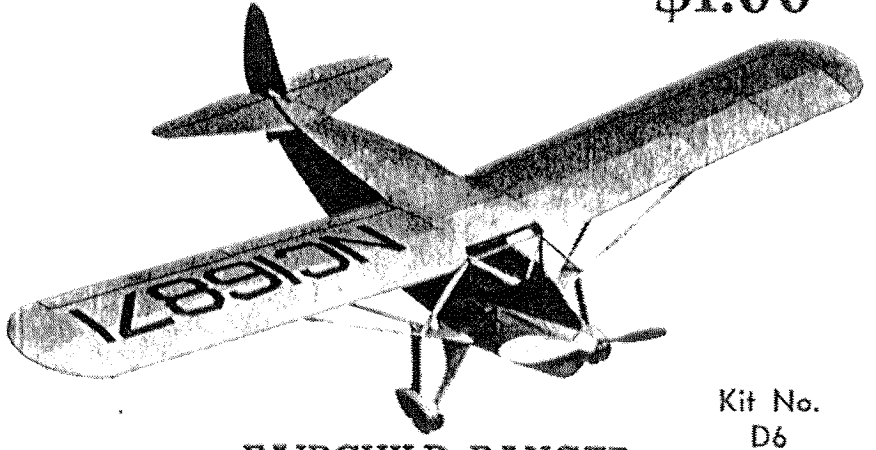
AERONCA "K"

Kit No. D5

Wing Span 50" Overall Length 28"

A lightplane model streamlined from propeller hub to rudder tip, this ship immediately impresses you with its air of aliveness, alertness, its eagerness to take off and go places. A regular fifty inch span model, it embodies all the regular features necessary for an easy to build, easy to fly authentic scale model.

$1.00



FAIRCHILD RANGER

Kit No. D6

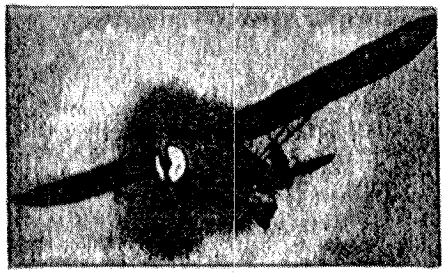
Wing Span 50" Overall Length 34"

The Ranger embodies numerous features which are distinctly appealing to the model enthusiast. The "in line" engine with its small frontal area—lends a sleek, racy appearance. With all its detail the model is of amazingly light and strong construction. You will get excellent service from this ship.

FREE! Special "Motor Hum" device included in this Kit!

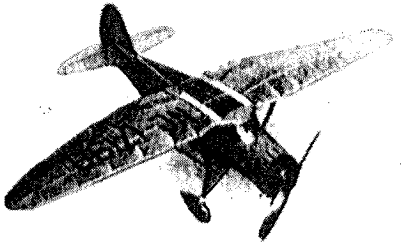
$1.00

50¢ FLYING MODELS
30" Wing Span



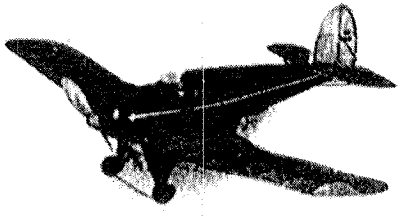
MONOCOUPE

The Monocoupe has always proved popular with model builders. We picked it as the first model in our new series for this reason. The kit, complete as all Megow Kits are, contains all necessary material for a good, accurate flying model. Special Feature! A turned nose is included! ..... Kit J1



STINSON RELIANT SR7A

This model has become very popular in our other lines of kits. All external details are described on the plan so that in reality this is a "flying exhibition" model. Complete materials are included in each kit, including a specially turned nose! Kit J2



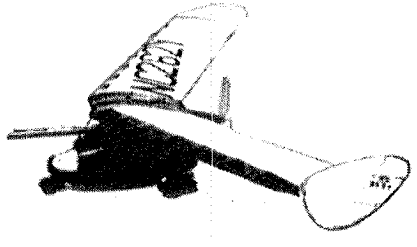
ARROW SPORT

Any airplane powered with an automobile engine, always attracts attention. The new "Arrow Sport" powered with a Ford V-8 motor has aroused more than ordinary interest. As pictured above, our kit builds itself into a very life-like model. Here too, we include a specially turned nose! ..... Kit J3



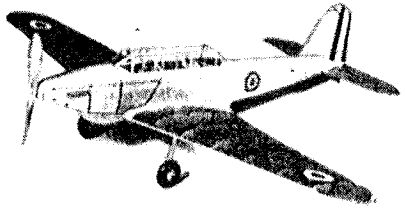
AERONCA K

This new Aeronca is a development of the well-known C3. Based on the past popularity of the Aeroncas, we feel certain that this model will be heartily welcomed. Although a turned nose is not included, due to the odd shape, the model is easy to build. ..... Kit J4



WATERMAN ARROWBILE

Here is the ship that you have been hearing so much about! Powered with a 6-cylinder Studebaker motor and featured as the sky auto, Our model was thoroughly tested and flies unusually well. Kit J5



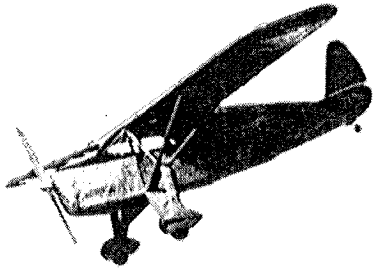
FAIREY BATTLE

An excellently designed flying model of England's latest and most formidable battle plane. Our kit is complete with all necessary material, including a turned nose! ..... Kit J6

"Motor Hum Device" Included with Each Kit!

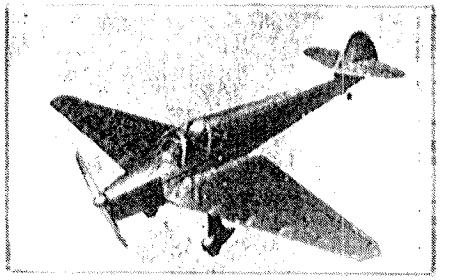
Kits 50¢ each

50¢ FLYING MODELS
30" Wing Span



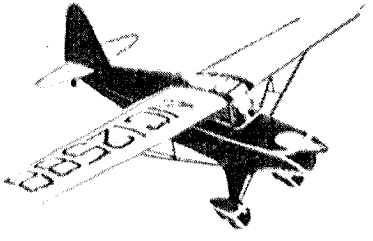
FAIRCHILD RANGER

Here is a model with plenty of detail that will delight the most exacting scale model builder. Of light, yet very strong construction this model flies exceptionally well and its slow flying speed makes it ideally suited for scale model endurance contests. ..... Kit No. J7



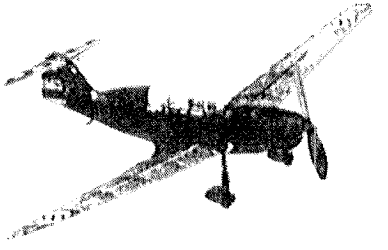
RYAN SC

This new cabin plane developed by the Ryan Aeronautical Co. (builders of the Spirit of St. Louis), is a worthy companion of their famous "ST." Your model, with its beautiful lines and appearance will draw admiring glances from everyone. The completed ship is very light and flies exceptionally well. ..... Kit No. J8



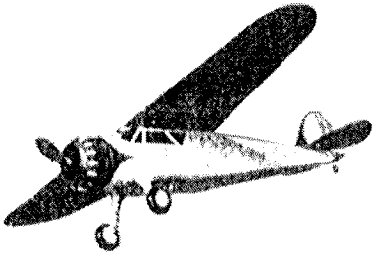
REARWIN SPEEDSTER

The plane that is taking America by storm! The appearance of this ship speaks for itself, and is a worthy addition to your collection. Careful design insures fast, stable flights. Kit is complete, with all details included. ..... Kit No. J9



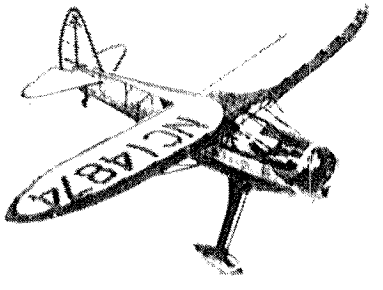
MESSERSCHMITT M-29

The photographic ship of the new German Air Force! Of low wing design with efficient streamline and plenty of dihedral angle to insure stable flights. The kit is amazingly complete, including instructions to construct a miniature aerial camera for your model! ..... Kit No. J10



CESSNA C-34

Acclaimed the most efficient plane, this custom built airplane has been tops for many years among private owners. Its deluxe appearance makes for a model of unusual beauty. Among many other features, this kit contains a turned balsa nose and provides for making streamlined, "hub less" wheels. Kit No. J11



HOWARD DGA8

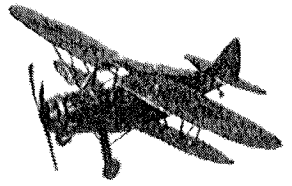
Ben Howard's latest! This fast cabin plane, developed for private owners makes a beautiful flying scale model. High landing gear permits use of a large propeller, which will greatly increase the duration, making it ideal for contests. Kit is complete to the last detail. A turned balsa nose is included. ..... Kit No. J12

TWENTY-FIVE CENT

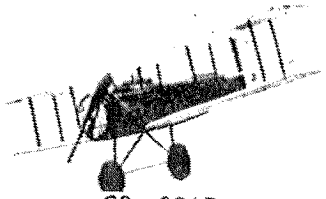
TWENTY-FOUR INCH SPAN



C1 FOKKER DVII



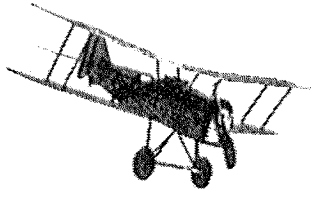
*C7 WACO



C2 SPAD



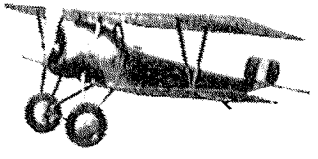
*C8 MONOCOUPE



C3 SE5



*C9 CONSOLIDATED



C4 NIEUPORT



*C10 KINNER



*C5 STINSON



C11 SENIOR R.O.G.

This is strictly an endurance model, but we include the M.H. Hum Device for those who may desire it



*C6 CORBEN

Megow's famous twenty-four inch flying models are the biggest values ever offered for the price. Simple construction and sound design characterize these ships, resulting in very fine flying models. They are purposely designed with light and sturdy construction, a quality which makes for greater duration. Nevertheless, all the details of the real ships have been faithfully carried out.

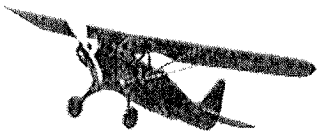
The models pictured here are all built from our kits and go to show how authentic the models really are. As the majority of model builders are familiar with this line of models, a description of each is not necessary. We list them according to number for your ease in ordering.

FREE—"*Motor Hum Device*"

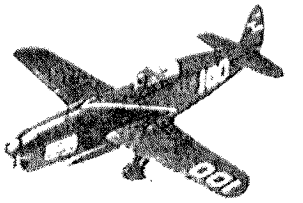
Included with Each Kit!

FLYING SCALE MODEL SERIES

TWENTY-FOUR INCH



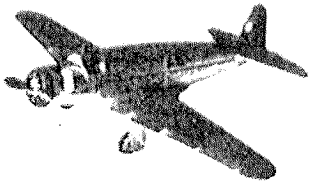
*C12 FAIRCHILD 22



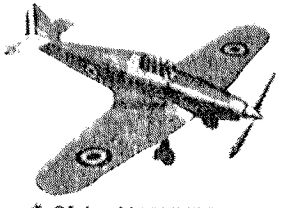
C17 CAUDRON



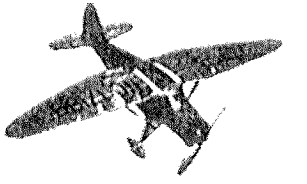
*C13 BEECHCRAFT



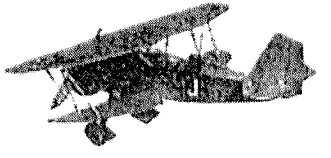
*C18 VULTEE



*C14 HAWKER



*C 20 STINSON



C15 CURTISS HAWK

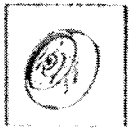


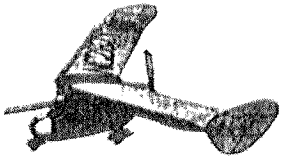
C21 AERONCA



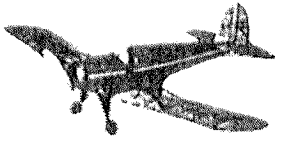
C16 TAYLOR CUB

* TURNED NOSE Included





C22 WATERMAN

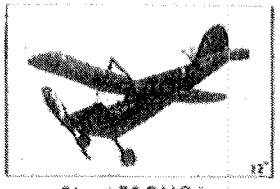


*C 23 ARROW SPORT

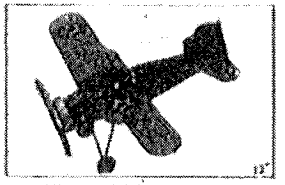
15" FLYING MODELS 10¢

*Kits contain turned balsa cowls

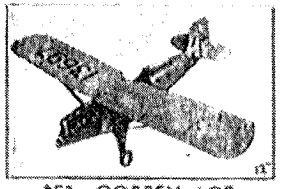
THERE ARE FIFTEEN MODELS HAVING A 15" WING SPREAD. THE REMAINING MODELS HAVE A 12" WING SPAN. SEE LOWER RIGHT HAND CORNER OF PHOTO FOR CORRECT SIZE.



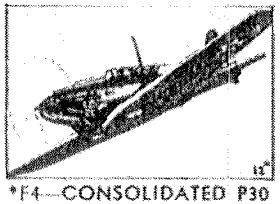
F1—AERONCA



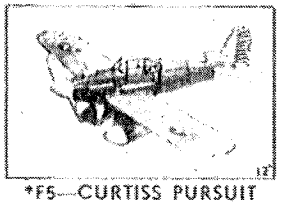
*F2—BOEING P12E



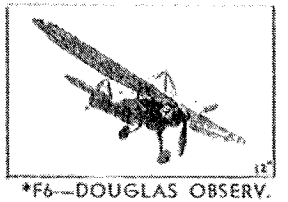
*F3—CORBEN ACE



*F4—CONSOLIDATED P30



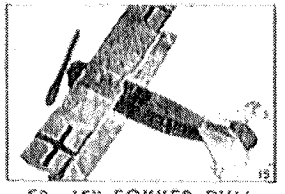
*F5—CURTISS PURSUIT



*F6—DOUGLAS OBSERV.



*F7—EXPORT FALCON



F8—15" FOKKER DVII



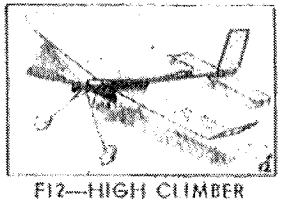
*F9—FOKKER TRIPLANE



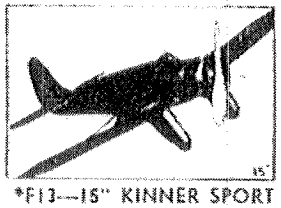
F10—FOKKER DVIII



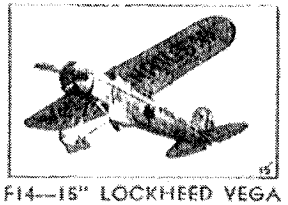
*F11—HELL DIVER



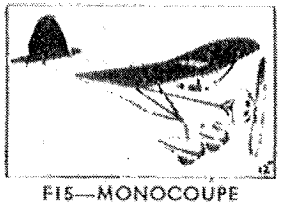
F12—HIGH CLIMBER



*F13—15" KINNER SPORT



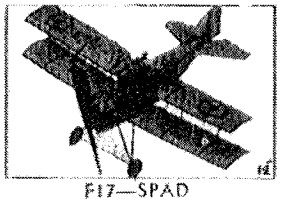
F14—15" LOCKHEED VEGA



F15—MONOCOUPE



F16—SOPWITH CAMEL



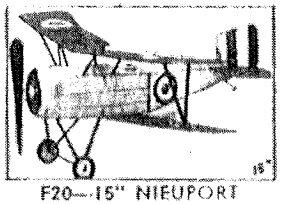
F17—SPAD



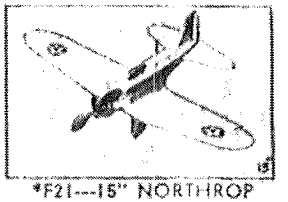
*F18—POLISH FIGHTER



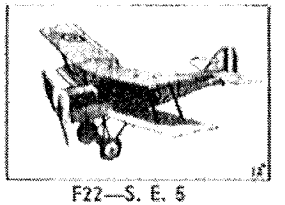
F19—PUSS MOTH



F20—15" NIEUPORT



*F21—15" NORTHROP



F22—S. E. 5



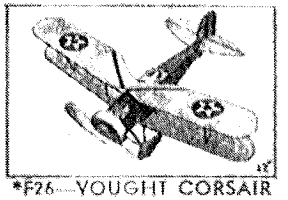
*F23—15" STINSON RELIANT



F24—15" TAYLOR CUB



*F25—VULTEE VIA



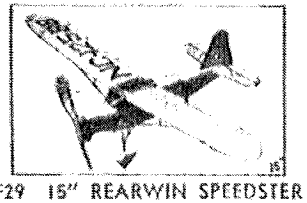
*F26—VOUGHT CORSAIR



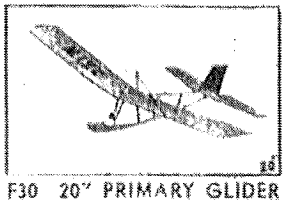
F27—WACO BIPLANE



F28 15" RYAN ST



F29 15" REARWIN SPEEDSTER



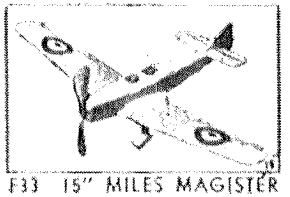
F30 20" PRIMARY GLIDER



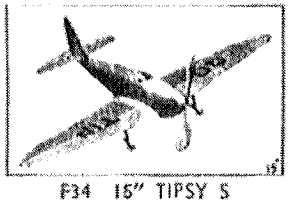
*F31 15" CESSNA C34



F32 De H. HORNET MOTH



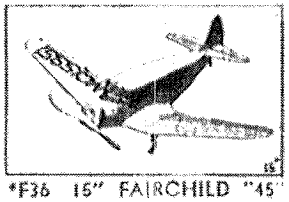
F33 15" MILES MAGISTER



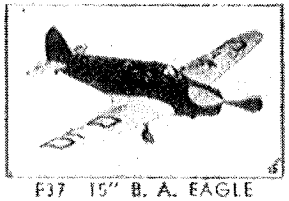
F34 15" TIPSY S



*F35 FLEET TRAINER



*F36 15" FAIRCHILD "45"



F37 15" B. A. EAGLE

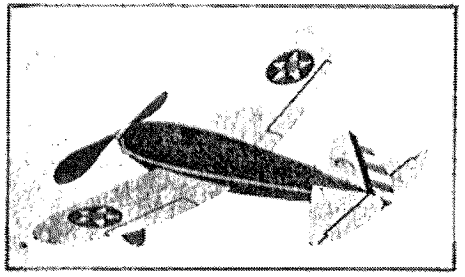


*F38 GULFHAWK



F39 15" MESSERSCHMITT

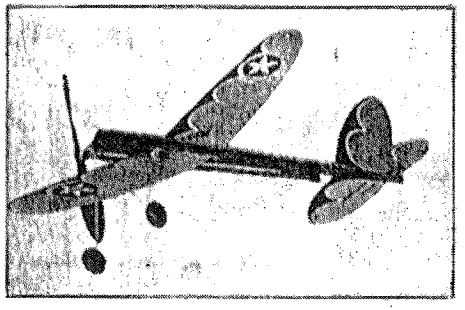
READY TO FLY Model Airplanes!



A J 44 Army Model

An all balsa plane 14¼" span, finished in standard army colors. Perfect oval streamlined fuselage. This model is extremely light and can be flown indoors as well as outside. Light weight and flexible construction make this an excellent model for straight flying and stunting. There is a real thrill for you in this modern army model.

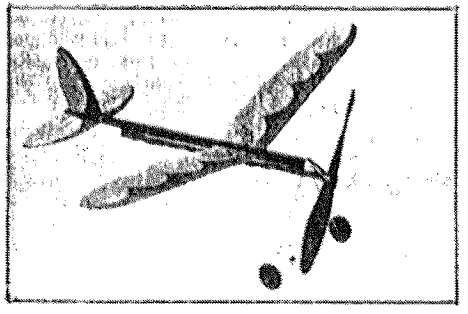
A J 44 Army Model $1.00



A J Pursuit

A new and sensational flying plane! Self-aligning, shaftless 3-ply propeller runs on REAL BALL BEARINGS, makes possible superflights of 1,000 feet or more. Wing cambered for speed, high altitude and long glides. You'll thrill to see its remarkable performance. Wing span 19¼", weight 1⅓ oz.

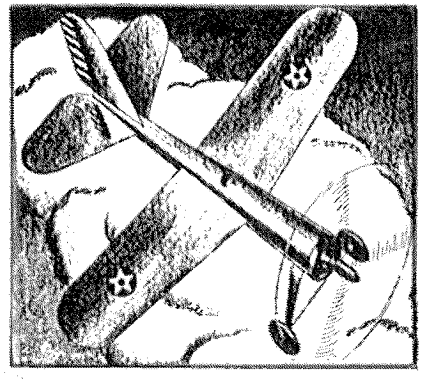
A J Pursuit ..... $ .50



A J Hornet

A high climbing, fast flying plane that "takes off" under its own power. Self-aligning shaftless propeller, assures perfect stability in take-off and flying. Will glide to a three-point landing after power has been expended. Wing cambered for high performance. Attractively colored — red, white and blue. Wing span 18", weight ¾ oz.

A J Hornet ..... $ .25



FLYIN' FOOL SCOUT

This little airplane really keeps pace with modern aircraft. It is an all metal plane constructed of aluminum and dural, with natural finish. This plane can be flown indoors as well as outside, and is practically indestructible due to the flexibility of its construction. Army insignia included.

Price ..... 25¢

DIE CAST PARTS AND FITTINGS



2 BLADE PROPELLER TYPE ST.

2"	dia.	10c
2½"	"	10c
3"	"	15c
4"	"	20c
5"	"	25c
6"	"	30c
7"	"	40c



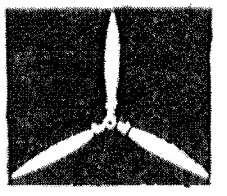
2 BLADE PROPELLER TYPE SP.

2¼"	dia.	10c
3"	"	20c
4"	"	30c
6"	"	50c



2 BLADE PROPELLER TYPE W.

2"	dia.	10c
2½"	"	15c
3"	"	20c
4"	"	30c

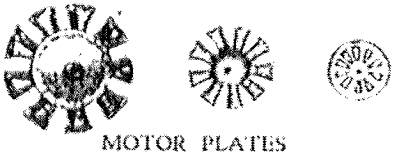


3 BLADE PROPELLER TYPE ST.

1½"	dia.	10c
2"	"	15c
2½"	"	15c
3"	"	20c
4"	"	30c

DIE CAST MOTORS, HOLLOW WITH PROP. BUSHING

1"	dia. 9 cylinder	20c
1½"	" 9 "	30c
2"	" 9 "	50c
1¼"	" 3 "	20c



MOTOR PLATES

⅞"	dia. for 1" motor	10c
1¼"	" " 2" "	12c
1¾"	" " 3" "	15c



VICKERS

1¾" long with mount — pair 14c
1¾" long with swivel — ass. 22c



LEWIS MACHINE GUNS WITH SPECIAL MOUNT

1" long	5c
1¾" long	15c
2" long	20c



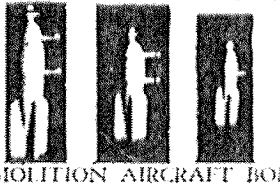
PURSUIT TYPE MACHINE GUNS

¾"	long Browning	3c
1½"	" "	5c
2"	" "	10c
1½"	" Marlin	5c
2"	" "	12c



SPANDAU TYPE MACHINE GUNS

1⅞" long — per pair 10c



DEMOLITION AIRCRAFT BOMBS WITH SPECIAL MOUNTING

⅞"	long	pair 5c
1¼"	"	each 10c
1½"	"	each 12c



CONTROL HORNS, FOR RUDDER AND STABILIZER, WITH PIN MOUNTING

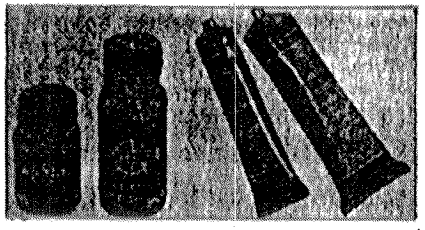
¾"	long, Set of 6	20c
1"	" " " 6	25c



Drag Ring — Open Face — Closed Face

SPUN ALUMINUM COWLS

Dia.	Drag Ring	Open Face	Closed Face
1"	10	10	10
1½"	15	15	15
2"	18	18	18
2½"	20	20	20
3"	25	25	25



MEGOW'S KWIK-DRI CEMENT

Large Tube	10c
Small Tube	5c
½ oz. Bottle	5c
1 oz. Bottle	10c
2 oz. Bottle	15c
Half Pint Can	35c
Pint Can	60c
Quart Can	1.15



MEGOW'S PIGMENTED DOPES
(Bottles)

Clear Dope
Paper Cement (banana oil)
Thinner
Stain
Colored Dope:

White	Yellow	Red
Black	Orange	Blue
Gray	Silver	Olive
Light Green	Dark Green	

½ oz.	5c	Half Pt. Can	35c
1 oz.	10c	Pint Can	65c
2 oz.	15c	Quart Can	1.20

OPALESCENT DOPE

Here we have those metallic colors you are raving about. Popularly used on present-day automobiles. You can have a distinctly individual color scheme for your model.

2 oz. bottles	$0.20
Half Pint Can	60c
1 pint can	1.10

Opalescent colors:

Sky Blue	Gray	Aquamarine
Gold	Old Rose	Green

HOW TO USE MEGOW MODEL AIRCRAFT DOPE

Megow's colored dopes are a proven product, tested and tried on all types of covering, and have been found to be superior to any other model aircraft finishes.

You will find that the colored dopes are very rich in color and of a fairly heavy body. The colors are dense, so that they can be thinned out more than ordinary dopes. In fact, for ordinary model use the dope you receive in the can can be thinned out to about 50 p.c. and still have wonderful coverage. For instance, ivory, used from the can, will cover black in one coat.

The paint should be thoroughly stirred so that all the pigment is in suspension in the body of the paint. If you are going to brush the paint on, use the best brush you can buy. Cheap brushes generally have a tendency to lose bristles, ruining any paint job. In using Megow's dopes, always have a full, wet brush and flow the paint on, letting it level itself out. Avoid brushing and going back over an already painted surface. Before using the dope, thin it out until it flows fairly freely (about 25% - 50% thinner). Generally, three coats are enough, allowing at least an hour between coats. Sand lightly with either wet or dry sand paper after each coat has dried.

For spray use, thin out the dope until it sprays freely and evenly. When the entire part or model has been sprayed, return to the starting point and follow up with a second coat. In this manner a smooth finish may be built up with as many coats as desired.

PAINT BRUSHES

We handle a line of very high grade soft hair brushes, for fine, smooth paint jobs. You can new paint with lacquer or any other quick drying paint without fear of leaving brush marks.

⅛" width	10c
½" width	15c
¾" width	20c
1" width	30c

RUBBER LUBRICANT

Developed by M.R.L. this well known rubber lubricant is used by every one. A few drops spread along your rubber motor will enable you to "pack" hundreds of extra turns into your motor, which will greatly increase the performance and endurance of your model.

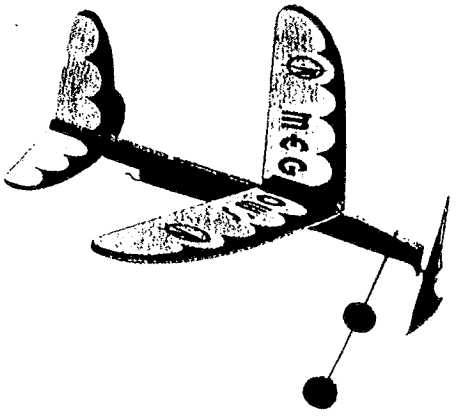
1 oz. Bottle.....12c
2 oz. Bottle.....20¢

MICROFILM SOLUTION

This transparent, super light covering for indoor models, developed by M.R.L., will add minutes to your indoor time. Do as thousands do and you, too, can be a consistent winner.

1 oz. Bottle.....12c
2 oz. Bottle.....20¢

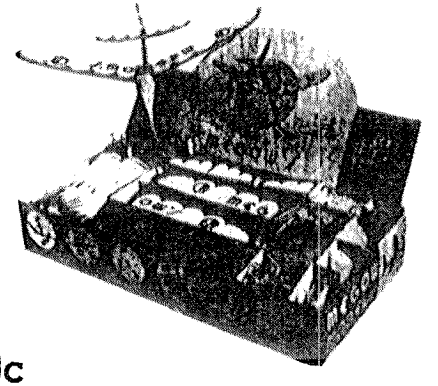
The "ARROW R.O.G."



Eighteen Inch Wing Span! Yes, for only ten cents this is the biggest airplane ever offered. Absolutely nothing to make, merely assemble the parts as instructed and the model is ready to fly! A feature of the design is the wing with sweep back and dihedral. You will find this to be the most stable airplane you've ever flown!

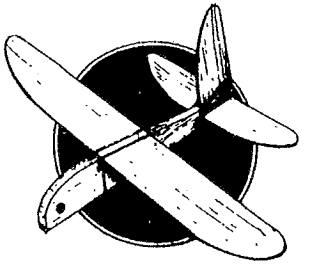
Complete Parts Ready to Assemble and Fly! —10c

ARROW R.O.G. Models Ready to Fly



Some youngsters dislike assembling their own models and would rather buy something all ready to go. At Megow Dealers you will find this counter Display Box with several assembled models for your inspection. You can buy one or more, ready to fly, and enjoy having many thrilling flights!

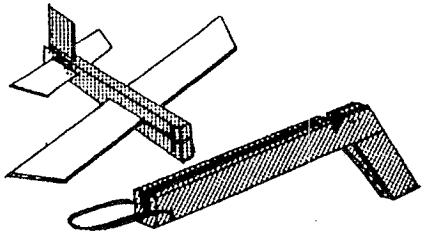
EACH **10c**



A SENSATIONAL GLIDER
18" Span—5c

No model builder can understand the principles of powered flight until he masters those of motorless gliders. Megow's new 18-inch glider is just the thing for teaching the principles of flight. It comes all ready to assemble and fly. Slight adjustments will enable it to perform any maneuver.

DEALERS: We will print any name or design on the wing at an extra charge of $5.00 for the cut and 60 cents per thousand printings.



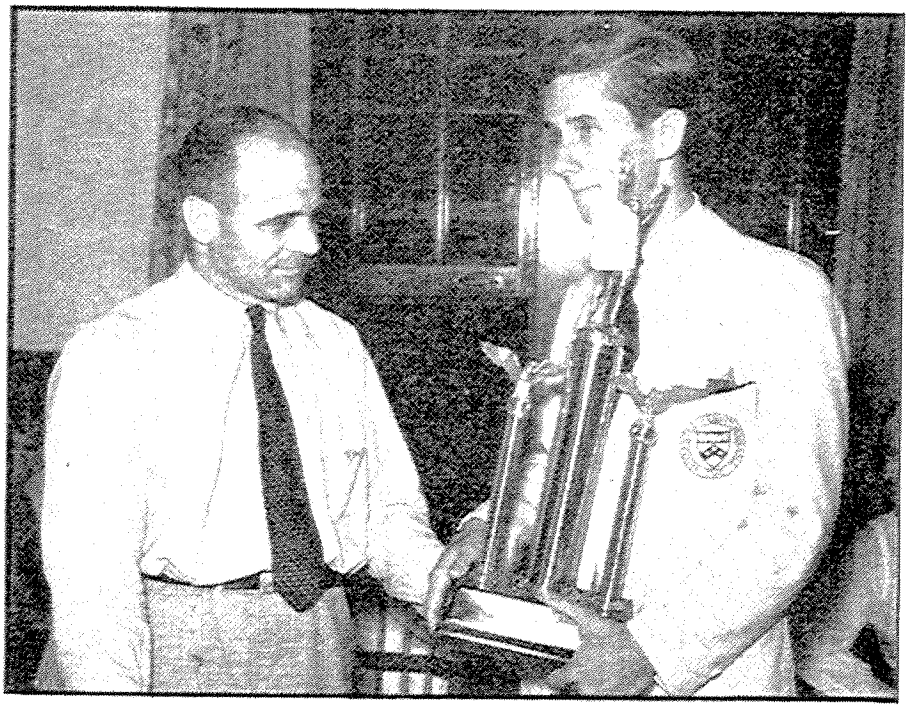
CATAPULT BATTLE PLANE

A thrilling novelty for those who like to fly gliders. You aim it like a gun or pistol, press the trigger and zowie! Away she goes for a big loop, barrell roll or some other breath taking maneuver.

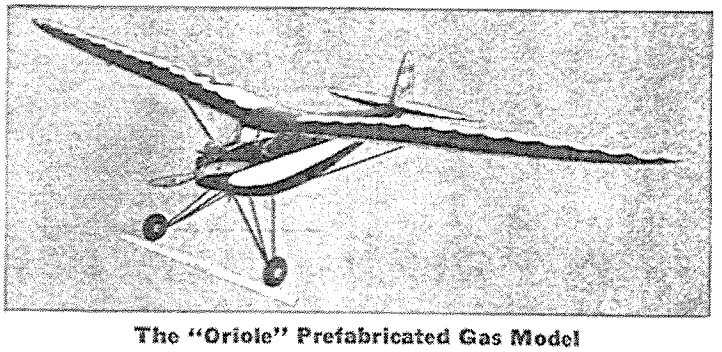
Ready to Fly!—15c

1938 NATS

Maxwell Bassett of Phila., Pa. A well known modeler and consistent winner; receiving the Gar Wood Trophy from Major James Doolittle, of the Shell Oil Co. From a flight over 70 minutes in the open event - Model lost but found 25 miles from Detroit River, in Canada --- making a flight of approximately 50 miles.



Radio Control!



The "Oriole" Prefabricated Gas Model

Consider its possibilities and the broad field for experimentation. We have just the plane and power plant complete expressly for this purpose, ideal for photography, etc.

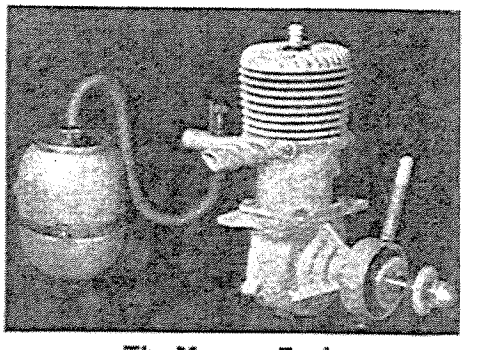
ANNOUNCING with the same complete "ORIOLE" prefabricated kit including new improved shock absorbing landing gear, detachable externally by merely releasing two hooks and removing three bolts, our new (interchangeable) high lift gull wings and the "MERCURY" engine incorporating all the power, performance, light-weight, quality and durability that can be desired.

For the discriminating model builder who wants and expects results at lowest cost without patient taxing labor. A plane and engine complete giving exceptional excellent performance and durability enabling you to proceed with utmost confidence to make desired installations.

PRICES F. O. B.—ORIOLE prefabricated kit with regular (optional) or new high lift gull wings. Span 10 ft. 7 in. Length 75 in. Height 20⅞ in. Weight complete including 4½ in. M & M wheels ready to fly, 11 lbs. 12½ oz. $21.50
Dry Kit, less wheels, dope and cement 14.75
MERCURY ENGINE less propeller 25.00
Special recommended propeller 3.50

Send for particulars

AVION MODEL AIRCRAFT MFG. CO.
P. O. Box 906 **Woonsocket, R. I.**

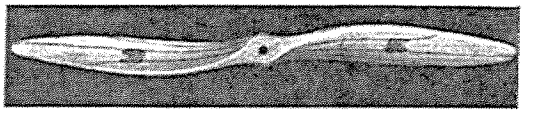


The Mercury Engine

Engine Specifications: Material
Duralumin, high carbon steel, high speed bronze, precision ball-bearings, alloy pistons and special rings.

Weight:
Engine with tank (separate to place near center of gravity) and 14 in. of neophrene fuel line, 1 lb. 5¼ oz. With propeller made to order 1 lb. 8¾ oz. Engine complete with coil and condenser 1 lb. 14 oz.

Power:
Bore and stroke 1¼"x1¼"—B.H.P. 0.7 at 3800 R.P.M. Traction with our propeller 8 lbs.
Note. This is according to dynamometer reaction tests.



Avion Gas Model Prop

The correct propeller is essential to good performance.

DEC. 1938 The First Radio Control AD For Gas Model Airplane

Model Making

GUEST EDITORIAL

By BEN E. SHERESHAW

Noted gas model designer and engine manufacturer.

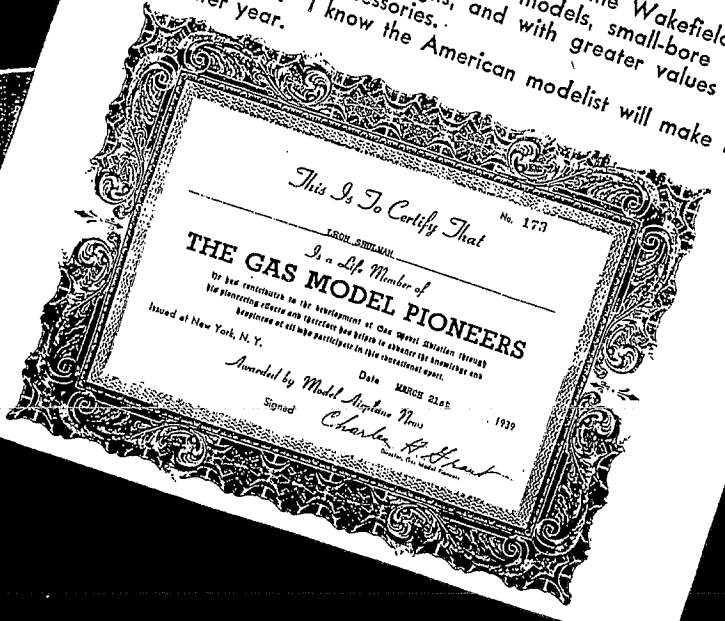
1938, one of the greatest years in model aviation, is just about to pass. We have definitely established throughout the world and driven home the meaning of "Yankee ingenuity." American youth leads the world today for outstanding achievement in model aviation. We look ahead and try to contemplate what 1939 has in store for us. If we look back a short while, and review our rapid, painstaking progress, it is but a simple matter to foretell the future. In but a relatively short period, the model aircraft industry has grown from a pastime of a small group to an industry catering to tens of thousands of consumers with an investment of several million dollars. One model motor company alone is turning out engines at a rate of two hundred daily.

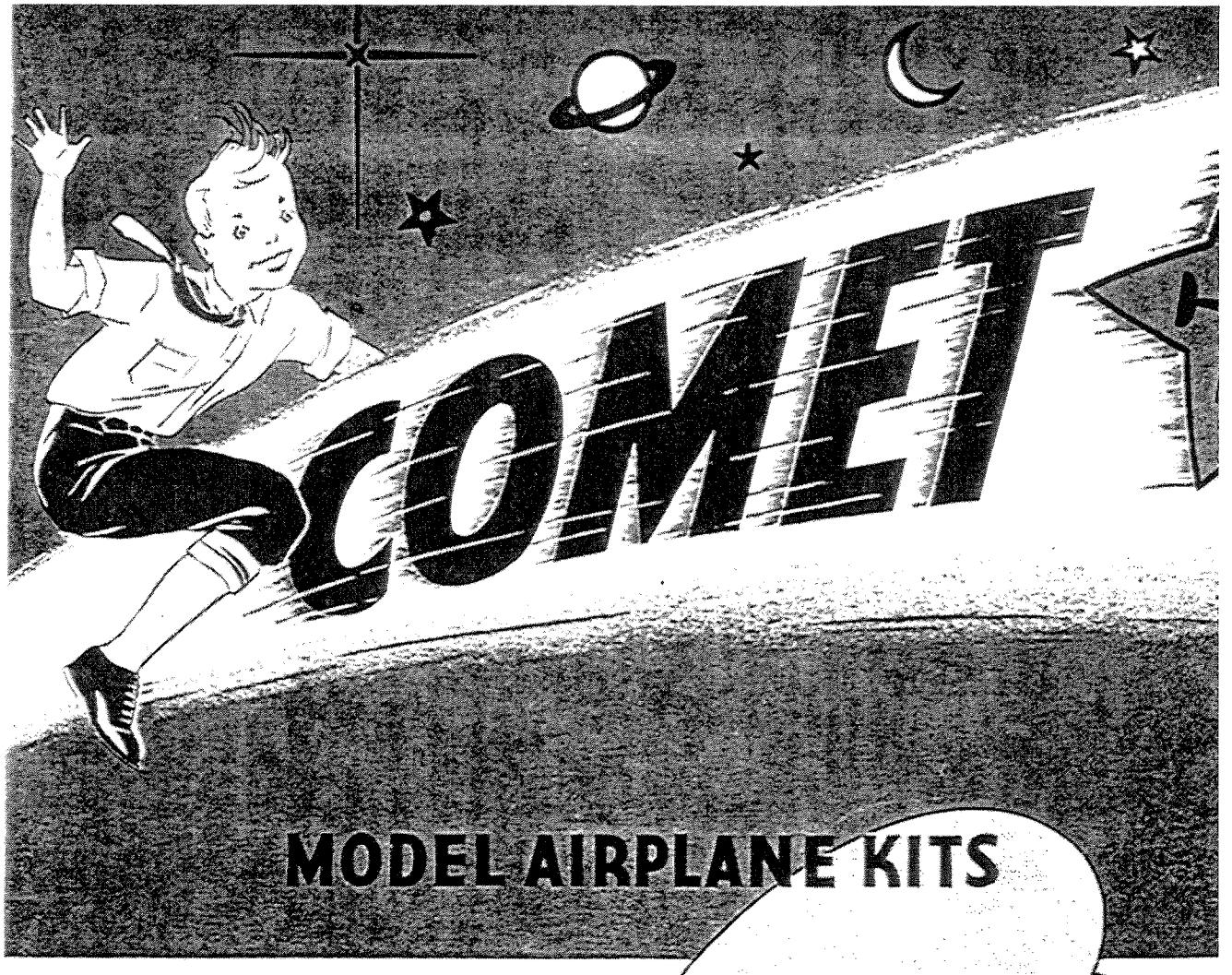
Model designs have rapidly improved from the old type box-car construction to clean and efficient designs, capable of climbing almost a thousand feet per minute, and remaining aloft forty to fifty minutes on a thirty-second motor run.

Radio control of gas-powered planes is about to become a reality for many builders. It does not require much effort on our part to visualize what new fields of conquest are in store for us the day radio control comes within easy reach of the average model builder. And I may venture to say that within a year, construction sets for transmitters and receivers for the control of model aircraft will be on the market. What legislation would have to be worked out pertaining to amateur licenses is one of the problems we face. Before any of the new problems can be tackled, old ones must be settled, such as: 1. Gas model insurance. 2. A separate event for small-bore engines. 3. Adaptation of the model rules set down by Mr. Effinger, limiting the power loading of models to five pounds per cubic inch of motor displacement. 4. The creation of precision flying events besides endurance, to bring about more efficient designs. These problems must be solved before any solutions for our future needs are contemplated.

Yes! 1938 was an eventful year, with the Wakefield Trophy here, the swing to rubber-powered models, small-bore engines, great strides in model designs, and with greater values in kits, motors, and model accessories.

Watch 1939! I know the American modelist will make this a still greater year.





10c FLYING DEMONS

10c BLOCK SOLIDS

25c FLYING MARVELS

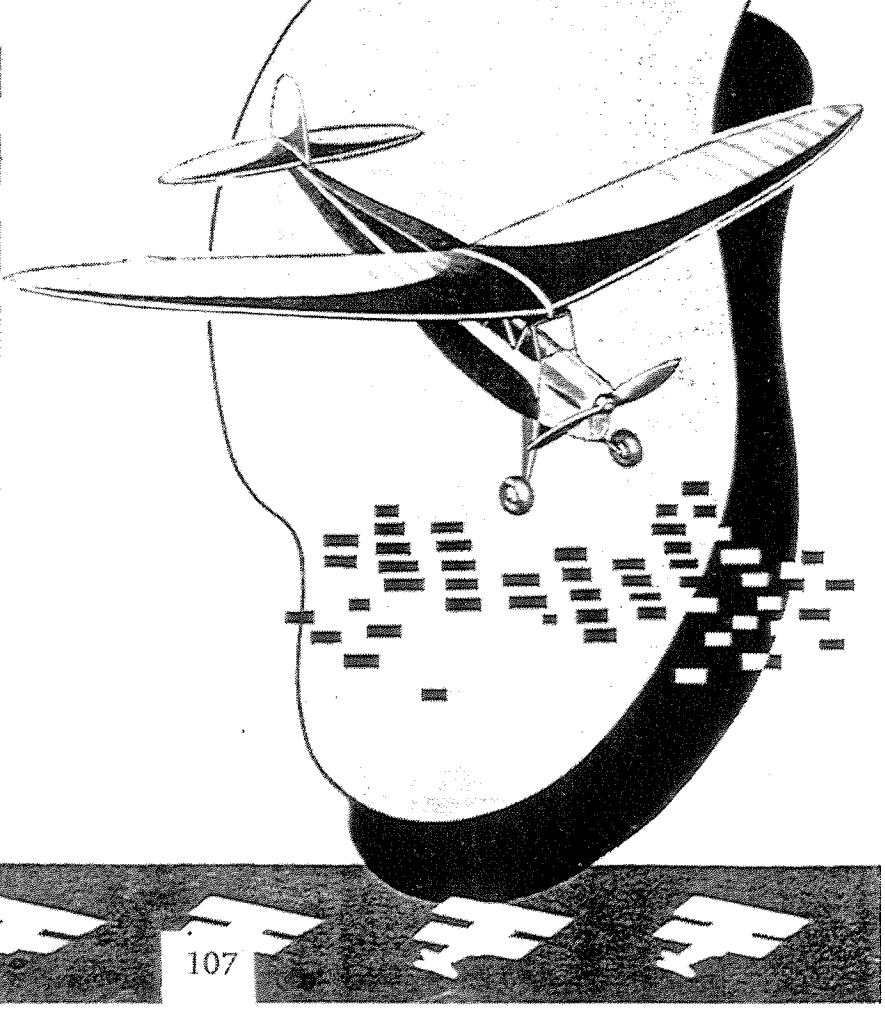
50c GIANTS

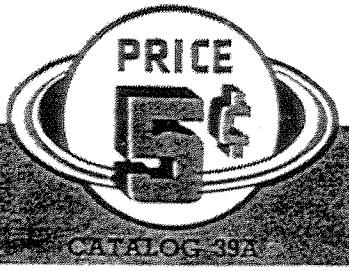
$1.00 BIG FLYERS

SHIP MODELS

GAS MODELS

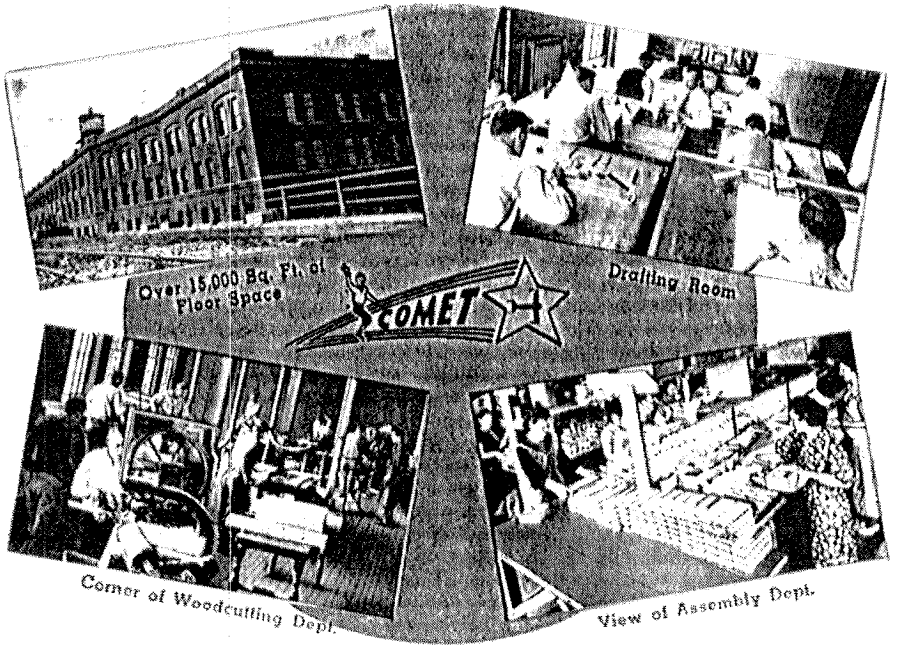
QUALITY ACCESSORIES





CATALOG 39A

The Organization Behind the COMET Trademark



Men, methods and machinery—all three are important factors in the designing and manufacturing of Comet Model Airplane Kits. And you may be sure that Comet has all three! Our designing staff is composed of experts with many years of experience. Our production methods are patterned along modern mass production lines, thus reducing overhead and manufacturing costs, and enabling Comet to give you greater value. Our machinery is of the latest design—ingenious mechanical wizards that do things you never believed any machine could do!

One amazing machine slices semi-finished propellers from blocks of balsa with uncanny precision; another saws balsa logs into smaller units within such close limits that no checking is required; and still another fills and seals thousands of tubes and jars of dope, colors and other liquids. Our huge store rooms contain a veritable forest of towering balsa logs, and stock room shelves are piled high with assembled and attractively boxed Comet models.

Accuracy and efficiency are the key words of the Comet organization. And you, the model builder, benefits by getting the best designed and most complete kits at the lowest possible prices! Look for the Comet trade mark on every kit you buy!

COMET MODEL AIRPLANE & SUPPLY CO., INC.

CHICAGO ● NEW YORK

A New ACHIEVEMENT in a GAS MODEL

Wingspan	6 ft.
Length	53½ in.
Weight (ready to fly)	2 lbs. 5 oz.
Wing Loading	8 oz. per sq. ft.

WITH NEW COMET AUTOMATIC TIMER!



The COMET CLIPPER

KIT NO. T7



Designed expressly for COMET by CARL GOLDBERG

In the short period of time the CLIPPER has been on the market, it piled up an enviable record. More CLIPPERS are flown in contests throughout the United States and foreign countries than any other commercial model. Its tremendous popularity alone proves it's "got the goods".

REMOVABLE POWER UNIT

"That's the best 'doggone' thing I like about my CLIPPER!" is what one enthusiast expresses about the removable power unit. Let us tell you more about this new idea. By releasing a lever, motor unit, including landing gear, battery track, timer, coil, condenser, etc., are removed from model for adjustments or inspection. In fact, you can run your motor separated from model. Think of the simplicity of it—how easy it is to locate that loose connection. Propeller, two large full-size layout plans, bamboo paper, generous quantities of cement, banana oil, red and light blue dope, special light-weight streamlined balsa wheels cross-grained for strength, leaflet, "How to Adjust and Fly Gas Models" written by Carl Goldberg.

Wing and tail unit separates from fuselage in event of collision. Many CLIPPERS have been spared tedious hours of repair by virtue of this feature. Wing is constructed of special die-cut ribs using air foil section developed by Carl Goldberg, enabling model to climb steeply and glide exceedingly flat.

All this for only $4.95

COMET CLIPPER with air wheels $6.50

COMPARE THE CONTENTS

COMET Timer included free, tapered spars, die-cut ribs, formed music wire, all wire and metal fittings furnished.

GAS MODEL PONTOONS

Can be readily installed on any gas model weighing up to 5 lbs. Weigh no more than most air wheels. Stressed for landing on ground, too. All balsa construction. Kit No. 19 ..... $1.00



BROKE WORLD RECORD

James E. Long, of Clarksburg, West Virginia, broke the world's record in open class on May 28, 1938, with his CLIPPER. (This can be verified by N. A. A.)

T. W. Schindler won first place in the Baltimore meet.

Rita Konefes won first place at the 1938 Greater Chicago meet.

Jack Bielt won first place in 1938 Scripps Howard Akron meet establishing a new record.

Dushon Deshich won second place at the 1938 Nationals in Detroit.

Robert Marel won the trophy for best flight over 1½ ft. at the 1938 Mid-Western States Meet.

R. T. Richard, of San Antonio won second place in the 1938 Houston State-Wide contest.

Printed in United States of America

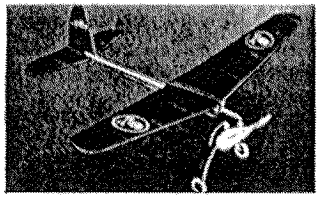
16" COMET Flying DEMONS 10¢

16" COMET Flying DEMONS 10¢

- BIG WINGSPANS — BIG VALUES!
- THE MOST POPULAR MODELS!
- PLENTY OF DETAILS — HIGHEST QUALITY!

COMET's "Flying Demons" are the top values of the model airplane industry! Here is the biggest money's worth of model airplane kit you've ever seen! You get big wingspans, of course —but that's not all: you get real Comet quality. Comet completeness. Comet's faithfulness to the original! A pleasure to build and fly—and a joy to look at when finished—that's Comet's famous line of "Flying Demons."

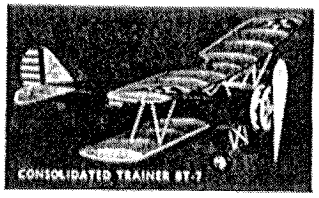
Here are more popular "Flying Demons"! You'll find your favorite models in this great group. And they're priced so low that you can build all you want! Build one a week—and before long, you'll have a whole fleet that you'll be proud of! Remember—every model in this group is a full 16" wingspan—not 12" or 15" like others on the market at the same price. When you combine big wingspans like these with genuine Comet quality you have a value that just can't be beat!



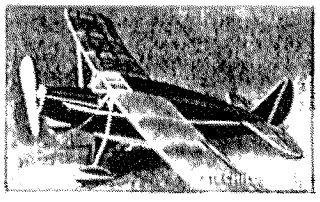
No. A1 Phantom Flash R.O.G.

Every builder should assemble one of these Phantom Flash's — because in flight performance, they're "tops." Pull 16" wingspan.

Army students eagerly await the day when they'll fly the Consolidated. It's really some ship to "solo" in.



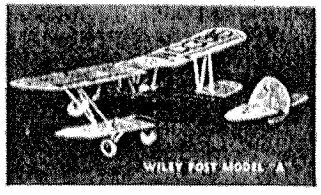
No. A7 Consolidated Trainer BT-7



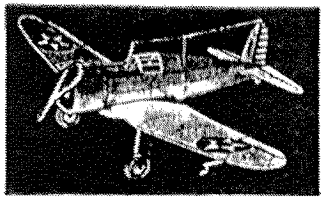
No. A3 Fairchild "24"

That Fairchild ranks ace high with private flyers. It's an excellent performer.

A model "A" Ford engine powers this clean-cut training biplane endorsed by the late Wiley Post.



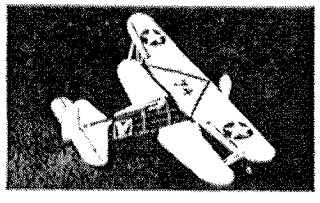
No. A8 Wiley Post Model "A"



No. A5 Vought Pursuit

Vought has produced a real demon in this pursuit. Performance figures are still military secrets—but you can bet it's fast.

All model builders know the Hawks. They were built a few years back, but still rate high with Army fliers.



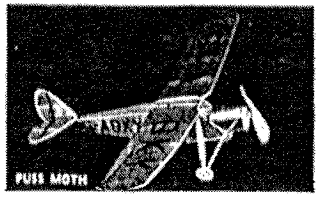
No. A9 Curtiss Hawk P6-E



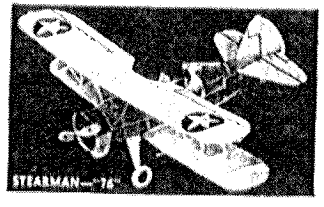
No. A6 Aeronca Seaplane

"Throw your luggage into the compartment and we'll fly up to the lakes for the week end." That's the life of sportsmen pilots who own these Aeroncas.

Capt. Mollison made the first East-to-West-Atlantic hop in a Puss Moth. It's very popular among British sportsmen pilots.



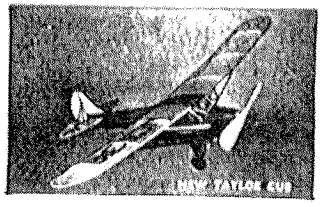
No. A10 Puss Moth



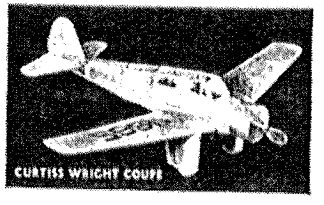
No. A11 Stearman "76"

See the snappy two-color cowling on that Stearman? The Navy can sure make use of those guns mounted in the lower wings and rear cockpit.

The Cub is a favorite among student pilots. Many prominent airline pilots flew these Cubs in their training days.



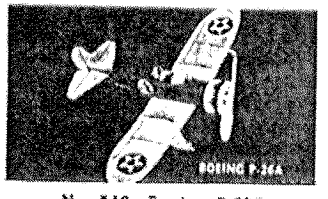
No. A15 New Taylor Cub



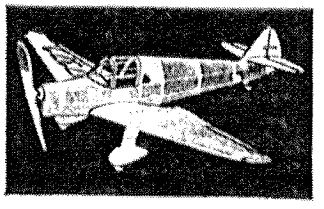
No. A12 Curtiss Wright Coupe

The Curtiss Coupe is a sleek all metal low wing plane for the private pilot. It has the class and distinction of an airliner.

Boeing P-26A's are making Army history. These fighting little demons are the pride of all who fly 'em. Note the trim wheel pants and fuselage insignia.



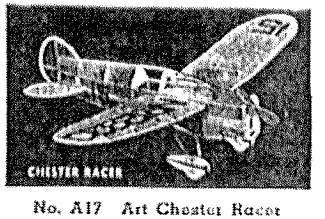
No. A16 Boeing P-26A



No. A-13 Ryan Cabin

The Ryan cabin is the latest design of the company which built Lindbergh's famous "Spirit of St. Louis."

Art Chester's snappy little racer always is "in the money" at air races. It has a 16" wing. Imagine setting it down at 90 M.P.H.



No. A17 Art Chester Racer



No. A14 Low Wing Aeronca

Note the sleek lines on that Aeronca. The yellow plane with black trimming makes you say, "It's a honey."

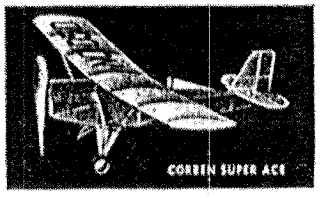
Wiley post did all his stratosphere exploring in this rebuilt Winnie Mae. Notice the supercharger air intake on top of the cowling.



No. A18 Winnie Mae

16" COMET Flying DEMONS 10¢

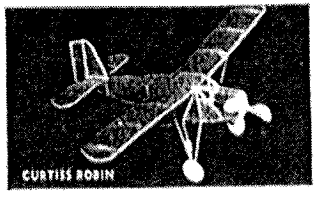
Every "Flying Demon" kit has everything you need to build the complete plane—and plenty of it! You'll never run short of materials when you build a Comet kit! Finest quality tissue, license numerals, clear, smooth balsa that's a pleasure to work with—these are only a few of the features you find in these low-cost, big value COMET kits.



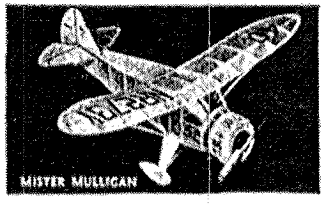
No. A18 Corben Super Ace

The Corben Super Ace is popular among light plane pilots. Many were successfully home built in private workshops.

The Curtiss Robin has a well-earned record for flight performance and stability. Model of famous ship flown by Douglas Corrigan.



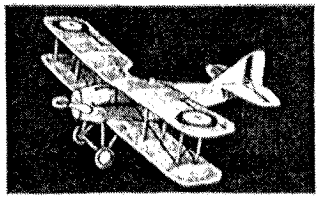
No. A24 Curtiss Robin



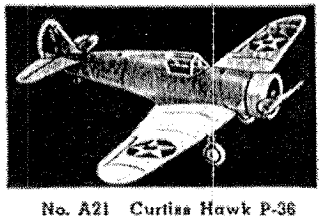
No. A20 Howard's Mr. Mulligan

The famous Mr. Mulligan gained its popularity winning the Thompson Trophy race.

Capt. Eddie Rickenbacker once flew a SPAD. Most famous of all World War Planes.



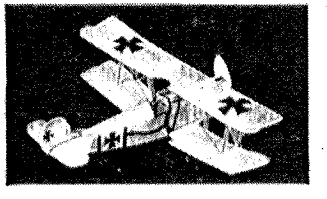
No. A25 Spad



No. A21 Curtiss Hawk P-36

Hundreds of these P-36 Hawks are seeing service in the U. S. Army today. They carry four machine guns—two in the wings and two fire through the prop.

Baron von Richtofen glorified the well-known old FOKKER D-7. It was in this ship that most of the famous pilots of the Central Powers fought.



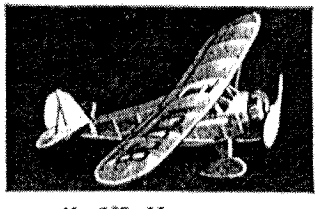
No. A26 Fokker D-7



No. A22 Great Lakes Trainer

The Great Lakes, a great favorite for training purposes, is one of the most beautiful ships in its class.

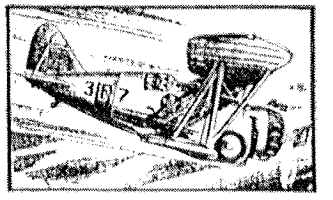
Build the MONOCOUPE if you want a snappy looking real flying model. Looks just like the real ship.



No. A27 Monocoupe

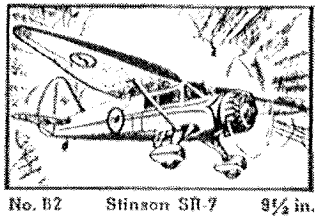
COMET SOLIDS 10¢

EVERYONE IN EXACT ¼"=1'-0" SCALE



No B1 Grumman Fighter 7¼ in.

Pick your choice — everyone a dandy. Rich in detail, true to scale. Each contains a generous sized balsa fuselage block—a joy to carve. All parts are clearly imprinted on choice balsa. Plenty of cement, wheels, propeller, large three-view plan, sandpaper, etc. included. Best dime's worth on the market. Build a collection of these COMET beauties—they're a cinch to build, and a pleasure to own.



No. B2 Stinson SR-7 9½ in.

That Grumman is one of the latest fighters in the Navy. Note how wheels retract into fuselage "belly." A sliding hood covers the cockpit.

•

Several oil companies own these new Stinsons for flying their executives. Notice the unusual taper on the wing.

•

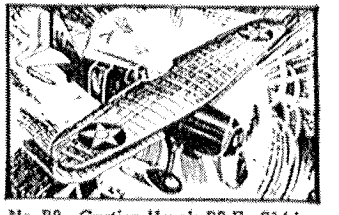
The Hawk P6-E speaks for itself. For years these fast fighters have won fame for the Army.

•

The Mr. Mulligan has earned an enviable reputation. It is Ben Howard's special cabin plane that has won the Thompson Trophy Race against more powerful ships.

•

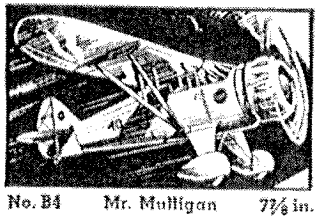
A model collection wouldn't be complete without the Navy's famous Boeing F4B-4. It has corrugated tail surfaces and an auxiliary "belly" gas tank.



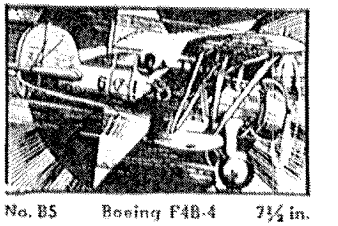
No. B3 Curtiss Hawk P6-E 7¾ in.

EASY TO BUILD

LOOKS REAL



No. B4 Mr. Mulligan 7⅞ in.

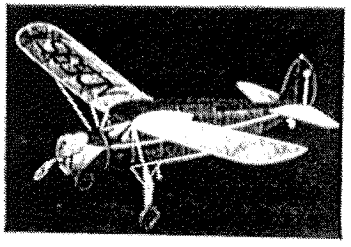


No. B5 Boeing F4B-4 7½ in.

SEE NEXT PAGE FOR MORE FAST MOVING SOLIDS.

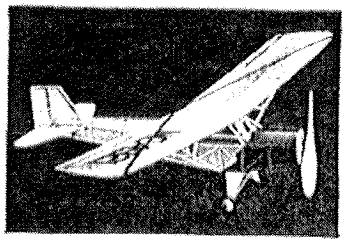
COMET MARVELS 25¢ 25" —tops in Completeness!

Comet Marvel kits are complete in every respect. Just check this partial list of contents: enough tissue to cover wings on both sides, license letters for both sides of wings, printed balsa sheets for all parts, plenty of cement, finished propeller, wheels, thrust button, two colors of tissue, large full-size plan—and much more besides. Guaranteed Comet quality throughout.



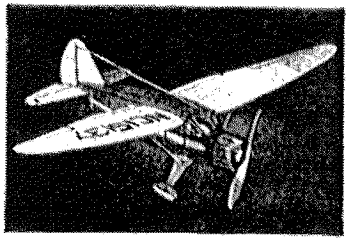
No. E7 Fairchild CE-8

Notice the trim fuselage design on the Fairchild CE-8. Many private flyers own them. One of the sweetest flying models you can build.



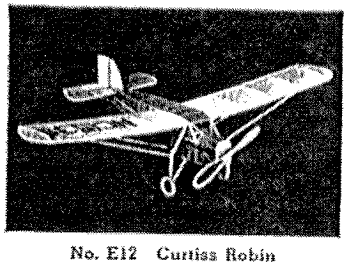
No. E10 Taylor Cub

Who hasn't heard of the Taylor Cub? Some of the topnotch commercial pilots trained in a "Cub."



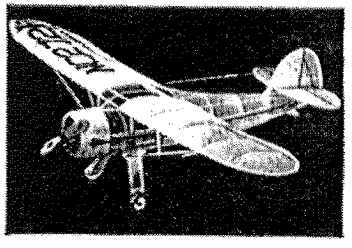
No. E8 Stinson SR-7

That Stinson has the latest type taper wing. Look at all the details—aerial, step, exhaust, rocker housings, etc.



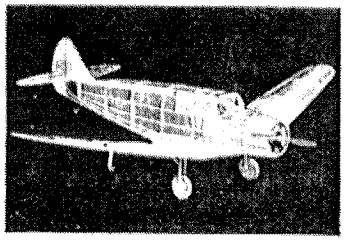
No. E12 Curtiss Robin

When it comes to flight performance and stability, it's the old standby—Curtiss Robin. Flown by Douglas Corrigan on famous ocean hop.



No. E9 Luscombe Phantom

There's a plane with snap! That new Luscombe—round fuselage and single strut landing gear.

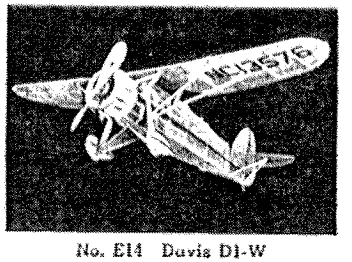


No. E13 Fairchild F-45

The Fairchild F-45 is hard to beat when it comes to light transport work. Model has pilot tube, wing fillets, etc.

COMET MARVELS 25¢ 25" —all Winners

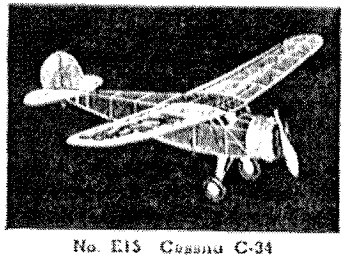
Comet has chosen all popular models in this series of planes — all designed exactly to scale. Through the close cooperation of the firms building real ships, Comet has been able to secure photographs and exact blueprints to aid in design of the model. And the designs are flight tested and "bugs" ironed out before releasing the kit for production. So—when you get a Comet Marvel, you get a SCALE model that has built in flyability.



No. E14 Davis DI-W

This sturdy STEARMAN 2-place biplane fighter sure can go through its paces.

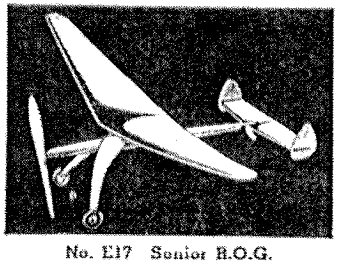
The Davis is a speedy private owner's delight. Art Chester owns one so it must be fast.



No. E15 Cessna C-34

Well here we have the RYAN to the right. And what a sweet looking job she is. Gleaming in the sun, the all metal, silvery covering stands out among all other ships.

Major Alex P. de Seversky knows his stuff about fast pursuit ships. Many speed records have been won by Seversky ships.



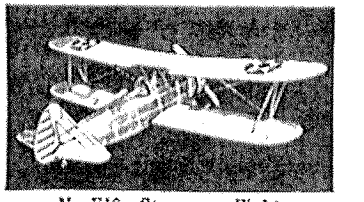
No. E17 Senior R.O.G.

The world's most efficient airplane is the title earned by the Cessna.

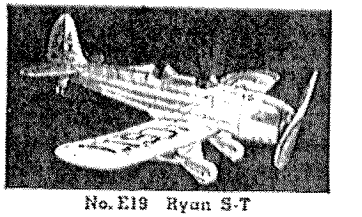
Comet's newest sensation is the WHIPPET. Fits together like A.B.C. Balsa sides and tail die cut. All the parts are completely finished and colored. Just glue them together, wind 'er up, and away she zooms!

Outstanding feature of the Senior R.O.G. is the adjustable one piece wing and landing gear.

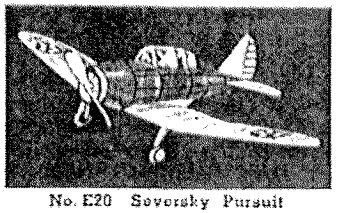
You've seen BOEING PURSUITS many times in newspaper photos, newsreels, etc., flying in close formation with uncanny precision.



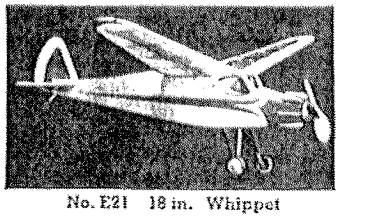
No. E18 Stearman Fighter



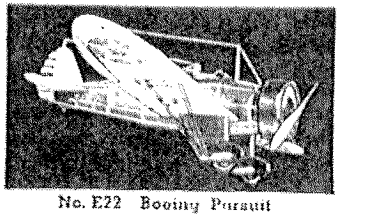
No. E19 Ryan S-T



No. E20 Seversky Pursuit



No. E21 18 in. Whippet



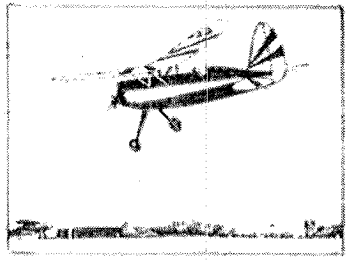
No. E22 Booting Pursuit

Sensational FLYERS Ready-to-fly MODELS

HERE ARE THREE MODELS THAT REALLY FLY!

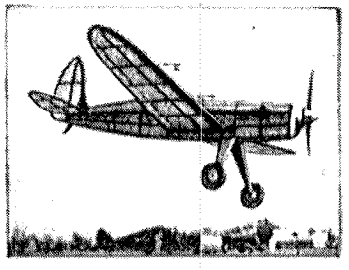
SEE THEM AT YOUR DEALER

PRICED AT ONLY **50¢** EA.



No. M1 Senior Dipper 24 in.

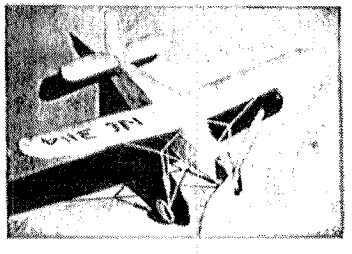
Designed to fill a real demand for models any novice can build and fly. Yes, sir, these models don't have to be coaxed to take the air. They just seem to fly themselves. Many tedious hours in designing, testing, revamping, final testing, etc., were put into these models until the chief of design staff was satisfied with their performance. Remember this, boys, it's easy to produce a model with good flying capabilities, but you have to go some to accomplish this in models that even a beginner can slap together, wind up, and fly.



No. M2 Senior Dart 24 in.

FEATURES

Models in this group fully adjustable for perfect stability. Wings are movable fore and aft on DIPPER and DART, in order to properly locate center of lift in relation to center of gravity. Wings are mounted to body in such a manner that it is impossible to mount them out of alignment. This insures correct angle of incidence. The backbone construction is featured in the DART and DIPPER. This is an exclusive COMET invention.



No. M3 Curtiss Robin 17 in.

EACH KIT COMPLETE

Everything furnished—nothing else to buy. Plans, balsa strips, balsa imprinted sheets, wheels, finished propeller, propeller shaft, tissue, generous quantity COMET cement, banana liquid, nose blocks, propeller spinner, plenty of rubber, sandpaper, washers, etc. You'll enjoy building up one or more of these sensational flyers without the fear of running out of materials.

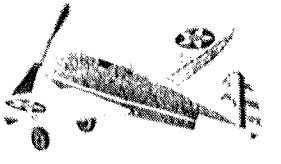
NO EXPERIENCE REQUIRED

Pictured on this page we have a group of finished models. Merely take them out of the box, and in ten seconds the model is circling overhead. Very sturdy construction—models will last for many flights. All are brilliantly colored. Propellers are made of a special flexible wood which prolongs their life considerably. Get one today and enjoy the thrill of a lifetime.



AJ PURSUIT **50c**

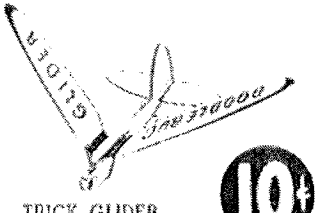
Wingspan—18¼", weight—1½ oz. Self-starting, shaftless 3 ply propeller runs on real ball bearings. Runs absolutely true and without effort. Makes it possible to obtain flights of one thousand feet or more. Wings are cambered, thereby improving performance.



AJ 44 ARMY PLANE

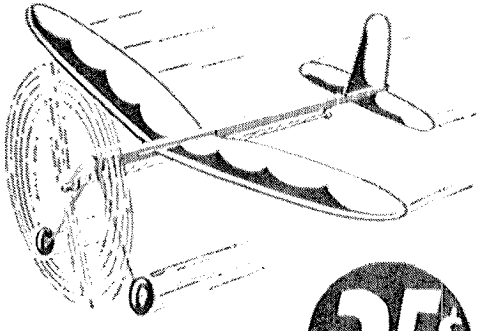
Colored in traditional U. S. Air Corps colors. Has regulation insignia. Really a beautiful flyer. All balsa light-weight oval fuselage. Can be flown indoors or outdoors. Will take off from ground and soar gracefully up—up, until power is exhausted, and then glide gradually to a smooth three-point landing. Adjustable for various short flights. Fly it over and over again. Get yours today!

$1.00



TRICK GLIDER **10¢**

A real performer! Fold the wings back and throw it sky high. Wings flap open at top of climb and glide begins. Many of these have flown out of sight under favorable weather conditions. Comes packed in box, nothing to build. Each 10c



AJ HORNET **25¢**

A fast flying, high-climbing plane that "takes off" under its own power. Polished hardwood crash-proof propeller. Heavy-duty rubber motor. Plane is colored red, white, and blue. This is a ready-to-fly airplane—nothing to build—and here's the specifications: Wingspan, 18"; weight, ¾ oz.; power, 250 revolutions; high speed, 26 m. p. h.; landing speed, 9 m. p. h.; rate of climb, 475 ft. per min.; service ceiling, 80 ft.; cruising range, 500 ft. Ready to fly, only—25c.



COMET STREAK GLIDER **5¢**

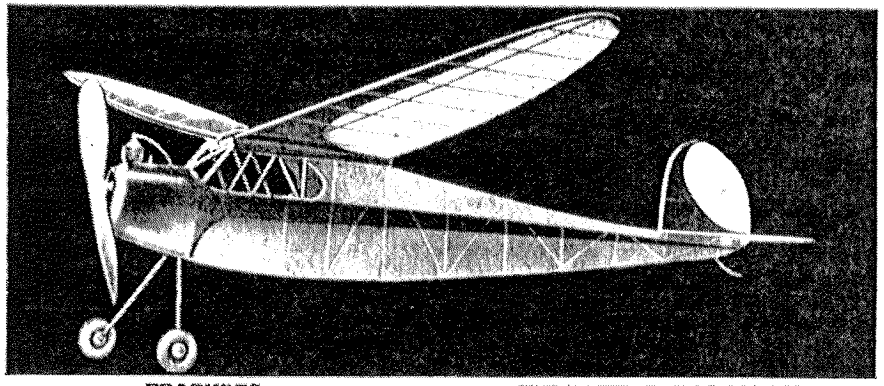
Full 15" wingspan. Streamlined. Made to withstand rough handling. Wings and tail parts fit into grooves and slots. Easy to assemble.

Only .....

BIG COMET FLYERS BIG COMET FLYERS

36 IN. CLIPPER JR. $1.00

Kit No. P5



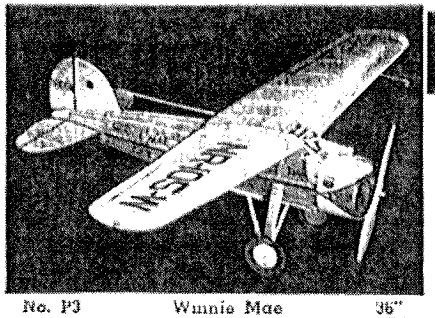
FEATURES

- 36" elliptical wing.
- Detachable wing—protects it in event of collision.
- Engine roar device—whines just like the real thing.
- Metal cylinder flanges.
- Finished propeller.
- Plenty of fresh, peppy rubber.
- Formed spring wire landing gear.

FLIES LIKE A GAS MODEL

Exact duplicate of famous COMET CLIPPER in every detail—looks exactly like it. You can't tell it apart from a gas model. Its high climb, roaring motor, and flat glide will fool even experts. Building and flying the CLIPPER JR. gives you fundamentals of gas model building and flying. Experts recommend it before building first gas model.

BIGGEST VALUES EVER PRODUCED



WINNIE MAE

The Winnie Mae is an exact duplicate in model form of the ship as rebuilt for Wiley Post's daring stratosphere flights.

You've got a thrill coming when you assemble one of these—and it's easy. Each individual part is largest and easiest to handle.

Kit includes all details: supercharger intake, belly skid (for landing after wheels are dropped off) built up motor, slide off transfers and a host of other high grade fittings. Many gas model enthusiasts have stressed this model for the installation of a small gas engine and have had very gratifying results.

No. P3 Winnie Mae 35"

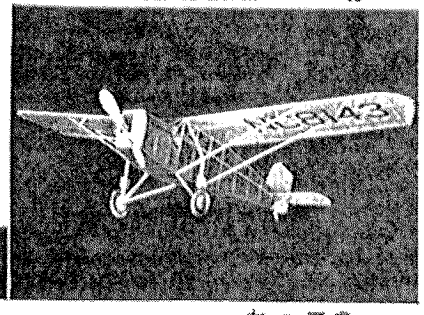
No. P4 Curtiss Robin 48"

BIG VALUES ONLY $1.00

The biggest value you've ever seen! Not only four feet of size—but completeness and flyability.

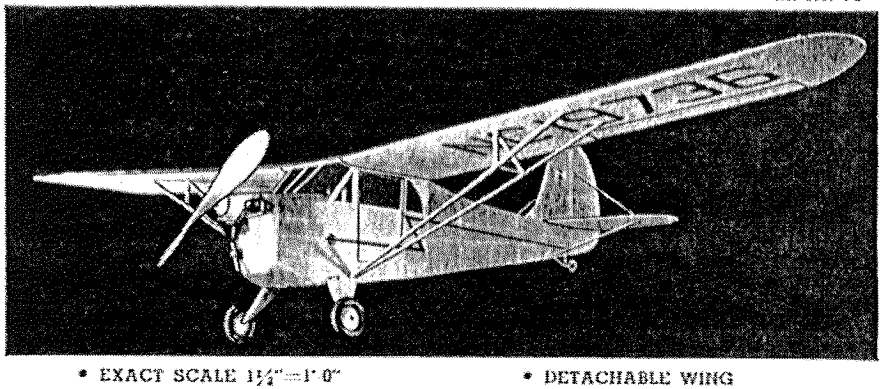
Stable, record-breaking flights are available with this popular Curtiss Robin. Its size makes it a consistent outdoor flyer. Kit is complete with large, finished balsa prop, plenty of rubber, balsa, tissue, etc. Start to build yours now. A few easy changes in construction, by the model builder, and you have a dandy gas model for those small engines. However, this should be undertaken by the advanced modelers only.

CURTISS ROBIN



54" AERONCA "K" $1.00

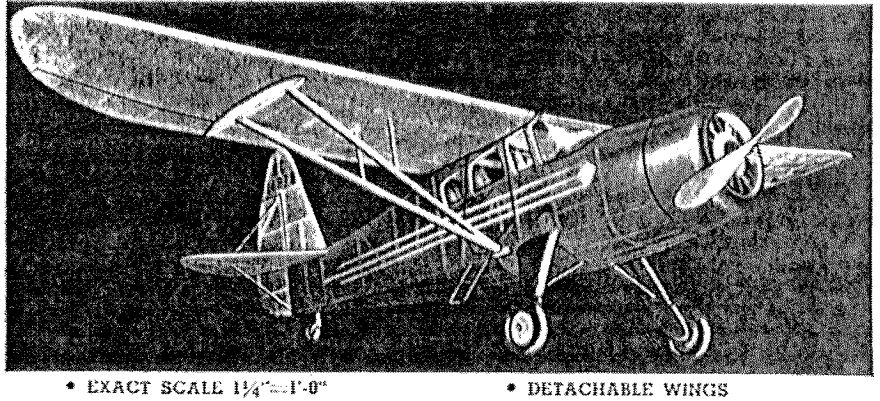
Kit No. P2



- EXACT SCALE 1½"=1'-0"
- SHOCK PROOF LANDING GEAR
- MOVABLE CONTROLS
- CABIN DOOR AND INTERIORS
- DETACHABLE WING
- FINISHED PROPELLER
- MOTOR ROAR DEVICE
- AUTOMATIC WING JIG

47½" Howard DGA-9 $1.50

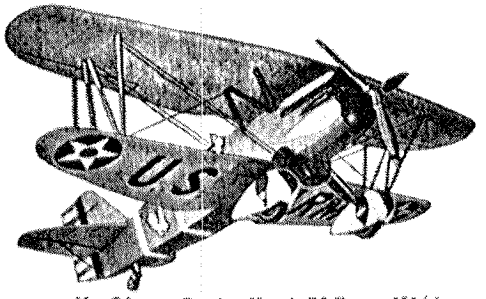
Kit No. T1



- EXACT SCALE 1¼"=1'-0"
- SHOCK PROOF LANDING GEAR
- MOVABLE CONTROLS
- CABIN DOORS AND INTERIORS
- DETACHABLE WINGS
- FINISHED PROPELLER
- MOTOR ROAR DEVICE
- AUTOMATIC WING JIG

SUPER DETAIL *Models* — COMET

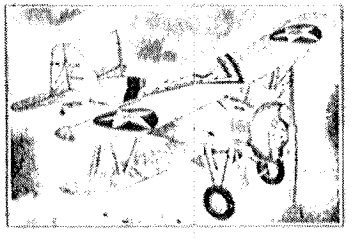
BUILD THESE FAMOUS MODELS



No. O1 Curtiss Hawk P6-E 15½ in.

More CURTISS HAWK models have been built than any other model. They've been made famous by the pilots of the best pursuit group **50c**

No detail, no matter how minute, has been left out of these faithful flying reproductions of famous ships! These war planes have machine guns and plenty of other details! Easy to build, because the famous COMET "backbone" construction system is engineered into these great kits. Every effort has been made to make this group of models the best money can buy. Rich in detail, generous in contents, superb in appearance, yes, and just the kind of models any red-blooded boy wants. They're each and every one of them scaled right down from Uncle Sam's most glorious fighters.

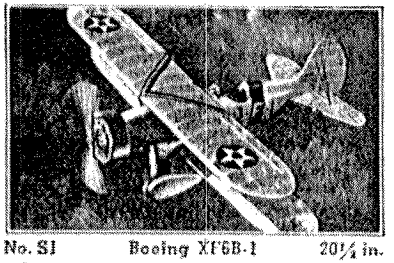


No. O2 Boeing F4B-4 15 in.

Here's the old stand-by of the U. S. Naval Air Corps. This trim biplane is one of the most easily manoeuvered fighters **50c**

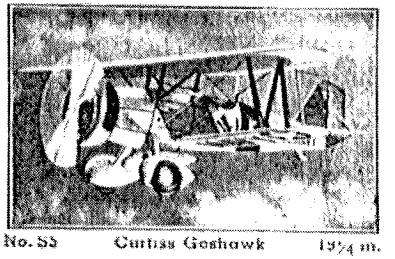
MANY FINISHED PARTS

COMET has taken all the grief out of building these models. We've made it dead easy to assemble these dandies and have added many finished parts, such as cowlings (where needed), semi-shaped pant cores, etc. Plenty of balsa strips, printed balsa sheets, wheels, cement, banana liquid, propeller, rubber, tissue, 2-colored military insignia, headrest blocks, nose blocks, shutter cowl blocks, strut balsa, thread guy wires, prop. shaft, washers, cockpit coaming, etc. You must examine these kits at your dealer to fully appreciate their value.



No. S1 Boeing XF6B-1 20¼ in.

Double banked motors were first used on the Boeing XF6B-1 by Navy Experimenters. This plane outperforms any other airplane of its time. Movable controls, cowling, 2-color insignia. Host of finished parts included **$1.00**

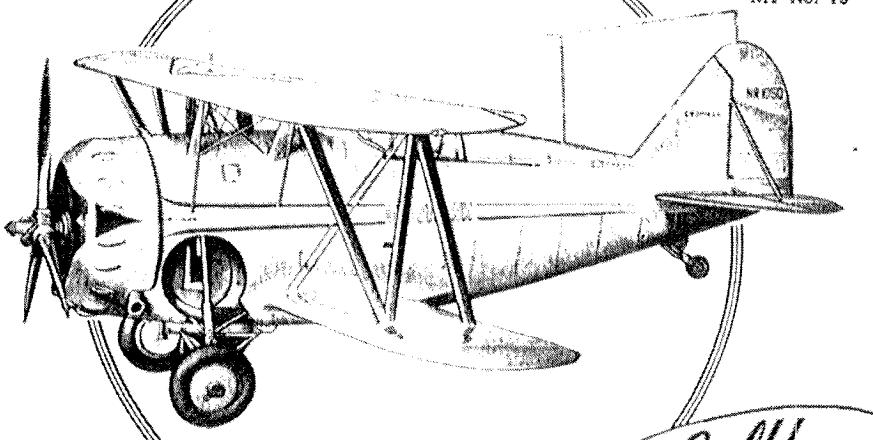


No. S5 Curtiss Goshawk 19¼ in.

Silver, yellow and gray coloring give the Goshawk a striking appearance. Graceful tapered wings carry this plane over 350 m.p.h. in a power dive. Auxiliary gas tank fits to bottom of fuselage increasing service range **$1.00**

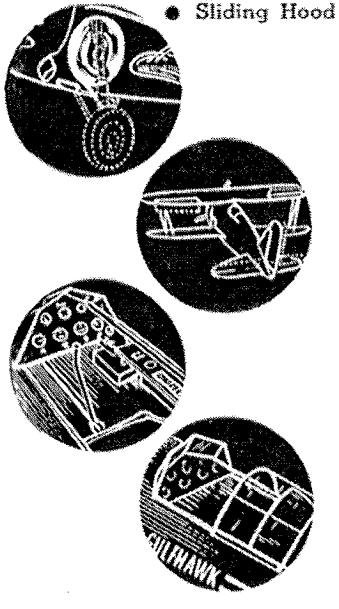
A NEW COMET TRIUMPH!

EXACT SCALE 1"=1'-0"
KIT No. T5



THE GRUMMAN *Gulfhawk* $3.95

- Won First 7 Places out of a Total of 9 in recent Scripps Howard contest.
- Retractable Wheels
- Movable Controls
- Cockpit Details
- Sliding Hood



THE FINEST SCALE MODEL EVER PRODUCED

An absolutely exact scale model of the ship that was made to order for Major Al Williams! The wingspan of this great model is 28¼", accurately scaled down from the original, which has a wingspan of 28½ feet. At every stage in the designing of this kit, blue prints and details supplied by the Grumman Aircraft Corporation were closely followed. Motor details were taken from data received from the Wright Aeronautical Company, and propeller details were checked with drawings from the Hamilton Propeller Company. Two members of our designing staff measured, sketched and photographed the plane at the airport. No guess work—no compromise—everything had to be perfect—and it is! All controls movable from cockpit. Exact rib spacing in wings and tail surfaces. Simple balsa covered fuselage developed for this model. All seams and rivets exactly as on prototype. Truly a masterpiece! Landing light controlled from cockpit. Cockpit hood slides, shock absorbing tail wheel swivels and retracts. Landing gear also retracts. Many parts furnished complete or semi-complete; shaped struts, completed gas tank, shaped tail block, wheels and leading edges, even a decalcomania that dolls up the finished model like a million dollars! Highest quality selected balsa and other material. Generous quantity dope. A typical Comet value worth many times the price!

A MESSAGE from Al Williams

Happy landing, fellows! Yes, and many happy hours while you're building this swell model of the GRUMMAN GULFHAWK. I know you will have a lot of fun building it, and flying it, because the method of construction outlined in the plan is so simple. It's a mighty faithful reproduction of the Grumman ship which was designed and built especially for my use. Go to it fellows and once more I say happy landings!

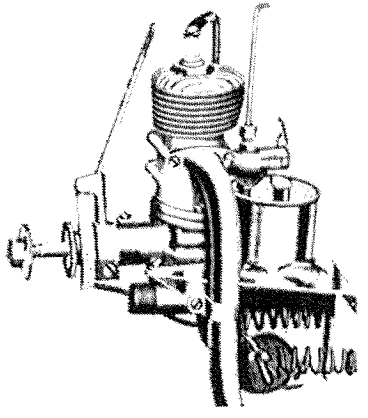
(Signed) AL WILLIAMS

Gas Model MOTORS

Descriptive Circular on any motor will be sent Free upon request.

Note: Following motors are for models having wingspan of 5' or more.

DENNYMITE AIRSTREAM



Most up-to-date motor on market today. New streamlined head permits rest of cylinder to be cooled, thereby preventing cylinder distortion due to uneven cooling. Notice long timer rod away from hot motor and propeller.

Cylinder and piston of molybdenum iron, micro lapped. No rings. World's largest bearings for size of motor. Special aluminum alloy crankcase. Withstands 2100 lb. breaking test. Surest timer—replaced free if one ever breaks.

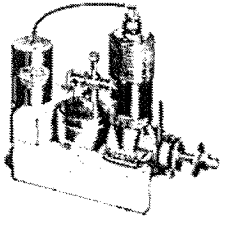
DeLuxe Dennymite Airstream complete with exhaust, motor mount, coil and special choke $17.85

Standard Dennymite exactly as above, but without exhaust, mount and special choke $15.85

Unit Dennymite same engine as standard but does not include coil and condenser. Especially planned for replacement installation to avoid wasteful duplication of parts $13.85

BROWN JR. MOTORS

MODEL "B"



A dependable engine that is a consistent winner.

Specifications: ¾" bore, 1" stroke, 1200 to 10,000 R.P.M. Crankcase and piston machined from steel. Adjustable gap. Total weight including coil, condenser and tank, 11½ oz. Complete ready to run less batteries and propeller $21.50

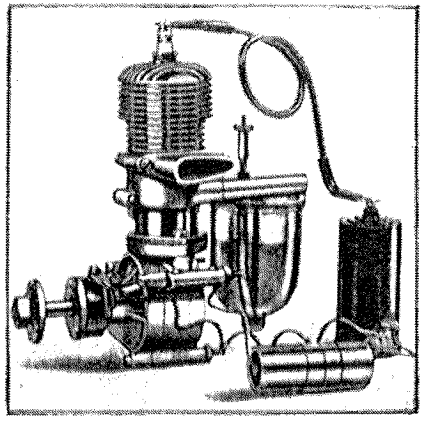
MODEL "C"

Same specifications as for standard engine listed above except for aluminum piston (2 rings), new needle valve and few minor changes. Complete ready to install in model $17.00

MODEL "D"

One of the finest motors made for the price. Complete with coil, tank, condenser, etc. $10.00

1938 GOLD SEAL OHLSSON

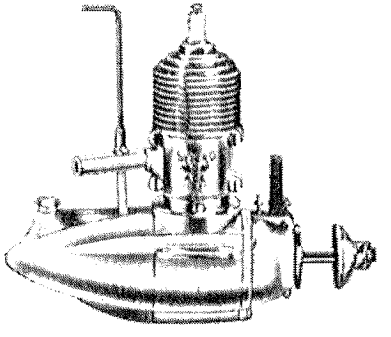


Note new patented transparent fuel tank—an outstanding feature! Not celluloid—will not burn and will not break.

This tank is unbreakable, is easily and quickly taken apart for cleaning and shows you at all times exactly how much fuel you have.

One piece steel cylinder with integral finned head, radial or big mounts provided, new adjustable fully enclosed timer; and a host of other refinements too numerous to mention here. ⅝" Bore, ½" Stroke, 1/5 h.p. Complete with coil, tank, condenser and instructions mounted $18.50

NEW SYNCRO ACE

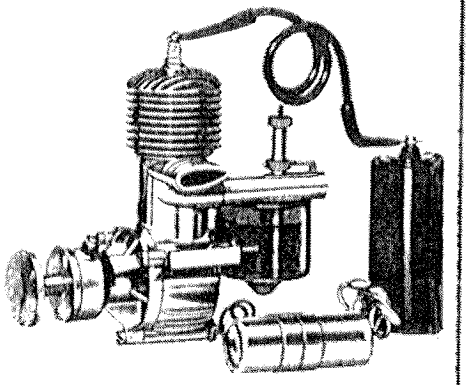


Improved to point of perfection—most dependable engine made. Fully enclosed timer, streamlined gas tank, vibration proof needle-valve and a host of other refinements. Send for free circular giving detailed specifications.

Complete with coil and condenser $13.75

Complete descriptive circulars on any motor sent free upon request.

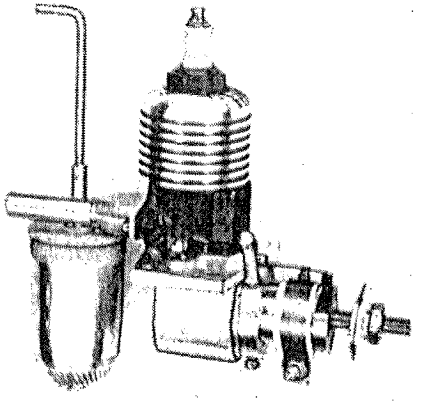
OHLSSON "23"



A rugged baby brother of the famous Gold Seal Ohlsson. This little Ohlsson has plenty of power to fly a 3 lb. model yet is small enough to fly a 20 oz. job. Specifications: Horse Power 1/7, Stroke ¾", Bore ⅝", Bare engine weight only 4½ ozs. Mounting—combination radial or lug. Dural I-Beam connecting rod. Bronze Bearings. Carburetor—Special needle type mixing valve. Crankshaft ½" machined from solid stock. Timer—fully enclosed, adjustable. Smith ignition coil. Spark plug—Champion ¾" x 32. Gas tank—special clear transparent composition. The fact that all parts are completely interchangeable makes replacement easy and economical. Ohlsson motors operate upright or inverted.

Complete with coil, condenser and transparent fuel tank $16.50

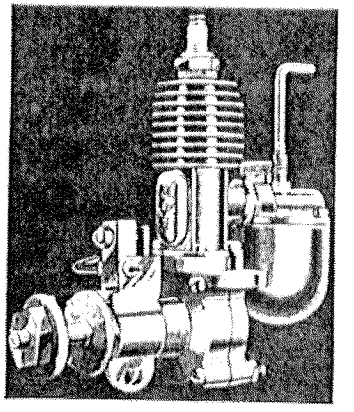
TROJAN JUNIOR



TROJAN JUNIOR fills a VITAL need for powering smaller ships (weighing from one to two pounds). These ships bring easy to make and to transport makes them very desirable and TROJAN JUNIOR gives them the power necessary for LARGE PLANE PERFORMANCE.

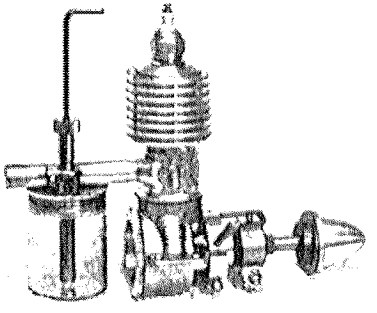
Made of finest materials (only a remarkable engine). ¾" Bore and stroke—⅛ h.p. Flying weight 9 oz. (equipped with 4 penlite batteries) 500 to 15,000 R.P.M. with 12 oz. Flywheel. New exclusive roller bearings on crankshaft, sealed against compression. Motors are now equipped with transparent fuel tank and enclosed timer (not shown in above illustration). Complete equipped with coil and condenser and enclosed timer (not shown in above illustration) and mounted on skids ready to run $18.50

SYNCRO BEE



Smallest practical engine made. Equipped with new Syncro "Super-Lite" coil, oilite bearings, Champion V-2 spark plug, ½" bore, ¾" stroke. Can be inverted without any dismantling. Every engine is tested at factory. General Specifications: Horsepower approximately ⅛. Engine weight complete 3¼ oz. Motor Speed 1000 to 10,000 R.P.M. Cylinder Special Machined Steel. Piston—Special Aluminum Alloy with two rings. Connecting Rod—Cast of Special Aluminum Alloy. Crankshaft—Precision machined from specially treated steel stock. Timer—Steel and fiber construction placed conveniently above coil and prime interference, as used on the famous Syncro Ace. Write for descriptive folder. Complete $12.50

BRAT ENGINE



New transparent unbreakable fuel tank. Will not burn. Precision built to .0001" tolerance.

The 1938 model Brat is the most complete motor of its size on the market. All parts are precision finished to .0001" and are completely interchangeable.

The Brat is tops for appearance, performance, power and dependability and is one of the easiest starting motors on the market, regardless of make or price.

The best materials are used in its construction, producing the absolute maximum in power, speed and long life.

Motor is furnished complete ready to run. Equipment includes: Transparent fuel tank, coil, condenser, plug, propeller and can of S. A. E. 30 oil.

SPECIFICATIONS

BORE	.17/32"	Weight	3½ oz.
STROKE	.½"	Flying weight	8 oz.
Overall height	3½"	(excluding batteries)	
SPEED	500 to 7500		

Price $16.50

Gas Model PARTS

ALUMINUM ANGLE

Ideal for motor mounts. Light in weight yet strong. Will "give" in a severe crash to protect motor. Walls are 1/16" thick.

	Per 12" Length
1/2" x 1/2"	15c
3/4" x 3/4"	20c

ALUMINUM SHEET

The perfect material for cowlings. Gives your model a professional "dressy" appearance.

Thickness	6" x 12"	12" x 12"
.006"	15c	25c
.010"	17c	30c

BRASS SHEET

Thin brass sheet, ideal for developing formed motor mounts.

.010" x 6" x 12" 35c

BRASS STRIP

Many champion builders use this brass strip for their motor mounts. Very strong yet flexible in head-on crash.

3/64" x 1/2" x 24" 20c

BAMBOO PAPER

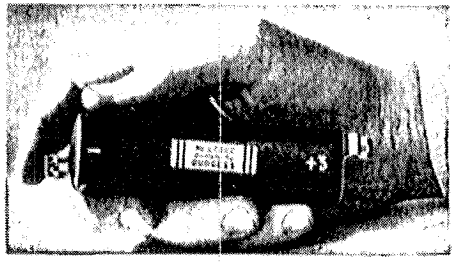
Very durable, easy to apply. Popular with gas model fans because it has those long fibers necessary to give the paper that extra strength.

White—24"x36" sheet 8c
Red, Yellow, Green and Blue—24"x36" 10c

SILK

Extremely light weight yet possessing great strength. Perfect for covering large gas models. Can be shrunk to drum tight tautness. Comes in 36" width. 50c per yd.

BATTERY



Developed in the famous Burgess laboratories especially for model use. Thousands of demonstrations have proved this unit far superior to flashlight cells. Outlasts, delivers a hotter spark, and weighs 1 3/4 oz. less than flashlight cells. Easier to install because it is in one unit and has terminal clips. Instant starting without aid of "boosters". Moistureproof and leak-proof ..... 80c ea.

BURGESS UNI-CEL



Made especially for the small motors. This unit is far superior to ordinary pen light cells ..... 5c ea.

MIDGET STORAGE BATTERY



Just out! Special non spillable; rechargeable; gas model battery. Measures 1"x2 1/2"; weight 4 to 4 1/4 oz. Will easily last two years. Actually cheaper to use than dry cells. Maintains higher voltage under load than any dry cell. Readily recharged with any automobile battery. Don't be without this wonderful unit.

Complete with directions $2.50

BRUSHES



CHISEL POINT BRUSH. 1/4 inch width. Used for doping wings, fuselage, etc. Every modeler should have one ..... 35c ea.

BRUSHES. Superior quality pointed trimming brushes ..... 10c ea.

BALSA FOR GAS MODELS

Comet gas model balsa is the finest obtainable. It comes in straight grained, 60" lengths and is precision cut from select balsa of just the right grain and texture.

1/16" x 1/4"	2c	1/4" x 1/4"	4c
1/16" x 1/2"	2c	1/4" x 1/2"	6c
1/16" x 3/4"	4c	1/4" x 3/4"	8c
1/16" x 2"	14c	1/4" x 2"	20c
1/8" x 1/4"	2c	3/4" x 3/4"	8c
1/8" x 1/2"	5c	3/4" x 1"	15c
1/8" x 3/4"	7c	1/2" x 1/2"	10c
1/8" x 2"	15c	1/2" x 3/4"	12c

BASS AND SPRUCE

These sizes available in 60" bass or spruce for fuselage longerons.

1/8" x 1/8" x 60" 6c
1/4" x 1/4" x 60" 8c

SPECIAL SIZES IN BALSA, BASS AND SPRUCE CUT TO ORDER

PLYWOOD

Genuine three-ply wood of select birch. Just RIGHT for firewalls, gussets, etc.

	4" x 12"	8" x 12"
1/16"	25c	50c
1/8"	15c	30c
1/4"	18c	35c

CEMENT



Best model cement money can buy. Champion model builders insist on it. Holds with bulldog tenacity, yet has just the right amount of flexibility.

1/2 pint in metal can 35c
1 pint in metal can 65c

BANANA LIQUID

Mix half-and-half with Comet cement to give a real practical covering liquid for applying bamboo paper or silk. Excellent for doping covered surfaces.

1/2 pint in metal can 30c
1 pint in metal can 55c

COLORED DOPE

Dope that has been developed for model aircraft use. Is very opaque and dries fast, producing a lustrous finish.

Red	Orange	Brown
Yellow	Cream	Gold
White	Aluminum	Khaki
Black	Light Blue	Olive Drab
Dark Blue	Battleship Gray	Green

1/2 pint in metal can 35c
1 pint in metal can 65c

THINNER

Used for thinning dope, wood filler, or for cleaning brushes. Best quality.

1/2 pint in metal can 30c

WOOD FILLER

Apply this over bales wood to fill in the grain. Gives wood a surface that takes paint perfectly.

4 oz. 35c

COWLINGS

Smoothly spun from aluminum. Put one on your gas job. Gives model a real scale appearance.

4 1/2" dia. $0.45
6 1/2" dia. 1.00

CELLULOID SHEET

8" x 10" ..... 12c ea.

CELLULOID ROD

1/4" dia. 2 ft. long. Very excellent for wing tips, tail outlines, bracing, etc. ..... 5c ea.

COLLAR



Most practical means of holding wheels on axle. Easy to change wheels. Does away with soldering. For 1/8" axles. Per pair 15c

EYE DROPPER



An excellent means of filling tanks for measured flights ..... 5c ea.

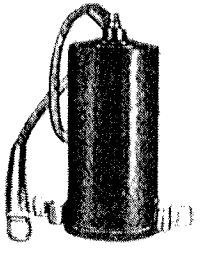
FUNNEL



Small funnel with wire mesh filter for putting fuel mixture in tank.

Each 35c

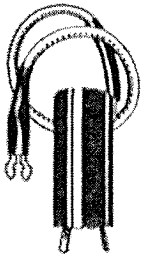
IGNITION COIL



New light weight (only 2 1/2 oz.) moulded extra strength bakelite enclosed coil. New improved screw type terminals. Detachable high tension lead. Coil is only 1" dia and 2" high. Will outlast many higher priced units. Coil including high tension lead ..... $2.50 ea.

HURLEMAN SPARK COIL. Weighs only 2 1/2 oz. complete with mounting clip and is 1 1/4" long, by 1 1/2" dia. The performance of this new coil is very efficient operating on two flashlight cells. Coil is mounted on special clip and can be removed without disconnecting any wires. Complete with mounting clip and directions $2.50





SMALL COILS

Smith Coil

A small coil designed for the tiny engines of about 3/4" bore. Weigh only 1 1/4 oz. and operate without any condenser. Coil and high tension lead $3.00

Syncro "Super Lite" Coil



A Brand NEW very light and highly efficient 3-volt coil. Weighs only 1 3/4 oz., solder terminals, bakelite case, really an excellent

Buy $1.95

CONDENSER



Can be used for any motor on market. Multiple strand leads. Mounting bracket attached to condenser. Each 30c

IGNITION FITTINGS



TERMINAL SPRING CLIPS. Only 5/8" long. Very light. Excellent for booster connections, terminals, etc. Bright nickel finish 2 for 5c



LUGS. These should be soldered to all wire terminals. Facilitates taking connections apart. Smallest ever made. One-half dozen in package for 5c



TOGGLE SWITCH. Size 1 1/8" over all. Weight, less than 1/4 oz. Smallest toggle switch obtainable. Works easily without stranding its mountings ..... 15c ea.

SWITCH LEVER. Very light in weight. Bright nickel finish. Contact point designed to maintain contact in spite of most severe vibration. Complete with mounting screws and nuts packed in bag 10c

TINY SCREW EYES. Only 1/8" dia. Good for keeping ignition wire in place. Package of 5 ..... 5c

GAS MODEL WASHERS



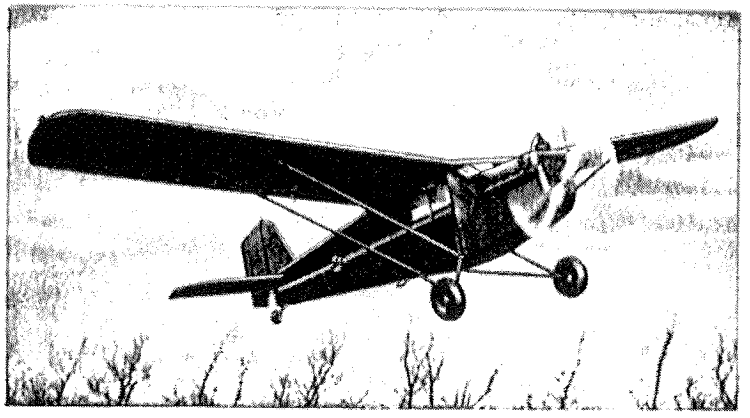
Package of 2 doz. 10c

GAS MODEL LOCK WASHERS

Package of 18 ..... 10c

The COMET GAS MODEL

Soaring Far Above All Others!

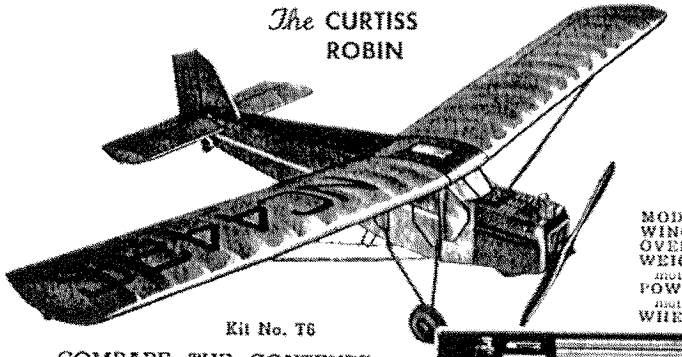


Check these FEATURES

DETACHABLE Wings and tail assembly. Wings "give" in event of collision, to protect them. ADJUSTABLE RUDDER and elevator setting. ADJUSTABLE MOTOR SKID accommodates practically every motor on market. Thrust line can be varied. SHOCK-ABSORBING LANDING gear and tail wheel—exclusive with Comet. Prolongs life of model by absorbing landing shocks.

Monocoque type, used by newest transports, chosen because of light weight, structural strength, and ease of construction. CURTISS ROBIN chosen because of unusual inherent stability and excellent flyability. MOTOR SKID gives in event of collision protecting motor. REMOVABLE COWL and hatches for easy accessibility to motor, battery and wing springs.

The CURTISS ROBIN



Kit No. T6

WHAT A VALUE!

$5.95 less air wheels, less motor

$7.50 with air wheels, less motor

SPECIFICATIONS

MODEL—Curtiss Robin.
WING SPAN—6 ft.
OVERALL LENGTH—46 in.
WEIGHT OF MODEL—2 lbs. less motor.
POWER—Any 1/5th or 1/6th H.P. motor.
WHEELS—3½ in. air wheels.

COMPARE THE CONTENTS

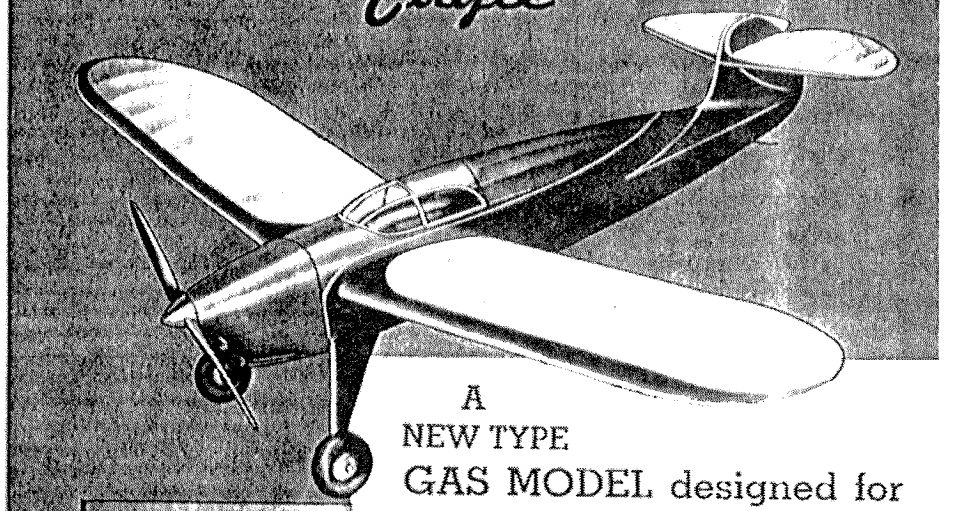
RIBS die-cut, ready to glue in place. LANDING GEAR WIRES bent to exact shape. IGNITION SWITCH. BOOSTER CLIPS. MACHINE SCREWS and nuts, washers, etc. LANDING GEAR, wing and tail wheel springs. PRINTED ALUMINUM cowl and fire wall. SPECIAL HOOKS and wire fittings all bent to shape. Generous quantities of CEMENT, covering liquid, red and yellow dope. 3 SHEETS BAMBOO PAPER. 2 LARGE PLANS giving all assembly layouts full size, no tracing to complete wing layout. AIR-wheels. RUBBER-TIRED TAIL WHEEL.

STREAMLINED STRUTS, leading and trailing edges of wing, completely finished. LEADING EDGES for tail, cowl blocks, etc., ready shaped. MANY PRINTED BALSA SHEETS. SPECIAL BASS BLOCKS. PROPELLER blank, outlined, drilled and tapered, ready to carve.

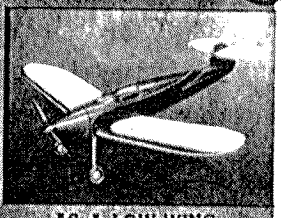


The COMET Golden Eagle

WITH NEW COMET AUTOMATIC TIMER! IN DE LUXE KIT



A NEW TYPE GAS MODEL designed for THE SMALL MOTOR



AS A LOW-WING



AS A MID-WING



AS A HIGH-WING

Comet designers present gas model enthusiasts with a distinctly new type of gas model especially designed for a small motor. Tested hundreds of times in actual flights. Its versatility alone is enough to stamp it an unique—think of being able to fly a gas model in three different ways—as a high-wing, mid-wing or low-wing—instantly interchangeable at the field in only a few seconds. The list of contents is impressive for its completeness.

Features of the GOLDEN EAGLE DeLuxe Kit

Wingspan 45"; Length 32½"; weight, ready to fly, including motor, 1 lb. Completely finished parts include Shaped and Rounded Leading Edges, Tapered Spars; Ribs die-cut; Shock-absorbing Bent Music Wire Landing Gear with streamlined Fairing; Bent curved Propeller. Motor Mount ready to install. Adjustable Battery Mount. 1 pair Air Wheels; Removable Cowling for motor inspection; Motor, Cowl and Battery instantly removable in one unit for servicing. Motor may be mounted inverted or upright. Sliding Cabin Hood for access to Battery. All wire and metal Fittings furnished. Many finished and semi-finished Hinges. Full size 3 view Plans with full size Patterns; Bamboo Paper; Generous quantities of Cement, Banana Oil, and Red, Blue and Yellow Dope.

Kit No. T8—DeLuxe GOLDEN EAGLE
Price, including Air Wheels and Timer **$4.75**

Standard GOLDEN EAGLE: Features identical with DeLuxe model. Bent Wire Fittings, Banana Oil and Cement included; no Dope, and a few of the simpler parts in unfinished form for those who prefer to do their own work. Special wheels included. Price **$2.75**

Above prices are less motors

Trojan motor for above	$18.50
Ohlsson "23" motor for above	$16.50

FREE LEAFLET: "How To Adjust and Fly Gas Models," specially written for Comet by CARL GOLDBERG, given with each kit.

SEE THE KITS AT YOUR DEALER.

1939 RULES

THE NEW POWER MODEL RULES. The Power Model Committee, consisting of Elbert Whethers, Barney Snyder, Irwin Ohlsson, William Atwood, Michael Roll, Roy Marquet, Maxwell Bassett, Alan Booton, Bob Somers, Philip Pepoon, Bob Allen, and Bob Forster, approved the power-model rules recommended by the Academy of Model Aeronautics at the meeting held in New York last November, with the recommendation that there also be an open class. Rules which go into effect immediately are as follows:

Class A: Models having a wing area up to 225 square inches. These models must use engines having up to and including .20-cubic-inch displacement. **Class B:** Models having 226 to 450 square inches of wing area. These models must use engines having up to and including .30-cubic-inch displacement. **Class C:** Models having 451 square inches of wing area and over. These models must be powered with engines having up to and not over 1.25-cubic-inch displacement. **Open Class:** Models of any wing area and any engine power providing they conform to the general power model rules.

Models in all classes shall conform to the following rules: In official contests the motor run must be no greater than twenty seconds from the instant the model rises off the ground. Models must weigh at least eight ounces per square foot of wing area. They must conform to the N. A. A. fuselage cross-section rule, and their total weight must not exceed seven pounds. The scoring time will be the *average* of three official flights.

There has been some delay in announcing these rules in full, due to some apprehension on the part of several academy members as to their satisfaction. A power-model committee was therefore appointed to study the rules and make recommendations if it was felt these were necessary. Nearly ninety percent of the committee felt that these rules were ample with the added classification. So these are the new power rules for 1939.

If academy members or model builders feel that these rules could be improved upon, they are asked to write to the Power Model Committee chairman, Maxwell Bassett, 66th Avenue and 11th Street, Philadelphia, Pa., suggesting changes which will be studied by the Power Model Committee and presented before the next academy meeting for consideration of the 1940 rules. This applies also to other rules and committees. Model builders are invited to submit their suggestions regarding any rules to the committee in charge of the particular model classification.

The complete 1939 rules governing model aeronautics in the United States will soon be available at the N. A. A. office at DuPont Circle, Washington, D. C. In requesting these rules, send a self-addressed stamped envelope or a five-cent stamp.

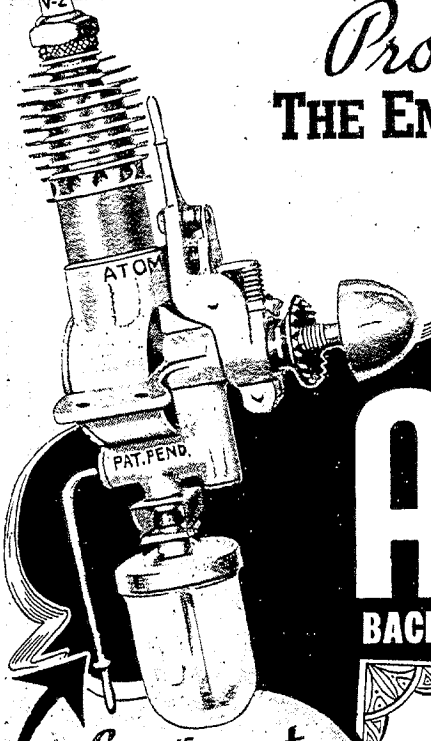
Introduction of First Real Production Miniature Gas Engine →

AMERICA'S FOREMOST ENGINEERS

Proudly Present

THE ENGINE *of* TOMORROW

Today



THE MIGHTY ATOM

BACKED BY (THIS) DRAMATIC

THE WORLD'S *Lightest* PRODUCTION ENGINE WEIGHS SCANT 2 OUNCES WITH SPARK PLUG and GAS TANK ATTACHED

Guarantee

ON A MONEY-BACK BASIS, THAT THE ATOM achieves a higher "Power-to-Weight" ratio than any other engine—BAR NONE! This unqualified guarantee demonstrates the supreme confidence of Laboratory Technicians and Manufacturer in the incomparable performance by The ATOM. We invite comparison—*on any standards!*

Signed *Microdyne Engines*
MANUFACTURER

Super Charged PERFORMANCE

MODELLERS! Presentation of The ATOM represents the ultimate achievement in miniature engine design, construction—and performance! It stands by itself, head and shoulders above the field! It reaches out into the stratosphere—delivering a performance hitherto dreamed of, but never achieved! We call it "The Engine of Tomorrow"! but it truly qualifies as the engine of the next decade! We back these claims up with an unqualified Money-Back Guarantee The ATOM makes good, or we do! You risk nothing!

30 YEARS ENGINE DESIGN EXPERIENCE BUILT THE ATOM!

Foremost engine designers and laboratory technicians contributed the sum total of their vast experience in bringing The ATOM to reality! Over 3 solid years of intensified experimentation and research were devoted to its development and perfection! As gratifying as its superb performance, is the low price: $12.50 COMPLETE —ready to run! Includes Coil and Condenser Postpaid anywhere in U. S.

ATOM BRINGS THESE FEATURES

Highest Power-to-Weight Ratio
New Principle Assures Instantaneous Starting
Molybdenum-Chrome Steel Cylinder and Piston.
(Heat-treated and lapped to .0001" accuracy!)
Flood-Proof! Instantly clearable with throttle lever
(Heat-treated) Tank eliminating crack-
Snap-ON and Off (Transparent)
up or damage in bad landings.
Superior Timing Design. (a) Minimizes Engine Load, (b)
Gives quicker break. (c) Consumes Less current, (d)
Same Hot Spark at all speeds, (e) Contact points last
longer.
Performance superior to any 2 cycle engine, irrespective
of size.
Superior Throttle Control, permits fine adjustments.
Superior Carburetion. Perfect scavenging at all speeds.

Model-Builders are urged to contact all reliable dealers (to which The ATOM will be restricted) for date of arrival, or send 5c (coin or stamps) for detailed brochure which will be mailed upon publication

$12.50 POSTPAID in the U. S.

READY SOON

Progressive, established dealers—and jobbers-distributors—are invited to communicate with us for attractive, introductory proposition on The ATOM. Inquiries and orders will be filled in order of receipt.

WRITE OR WIRE

delivers FROM 250 TO 17,500 RPM

ATOM

Specifications:
Bore ..... ½"
Stroke ..... ½"
Displace .097 cu. inches
Weight ..... 2 Oz.
(With Spark Plug and Gas Tank)
R. P. M..... 250 to 17,500

MICRODYNE ENGINES

P. O. BOX 245-M
GENERAL POST OFFICE
NEW YORK, N. Y.

NOW G. H. Q. GAS ENGINE KITS AT LOWEST WORLD PRICE $4.95

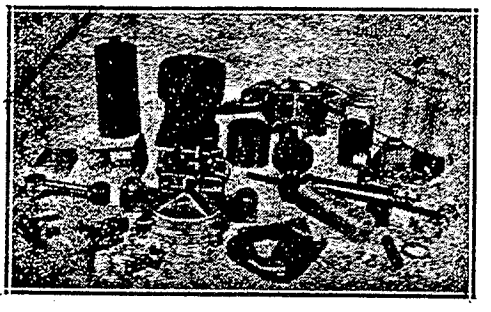
Here is your opportunity to buy a Kit of the famous G.H.Q. Motor. Absolutely complete—all machining done—ready to assemble. All you need is a screwdriver. Over 30,000 in use today. BUILD YOUR OWN ENGINE AND SAVE

AN ENGINEERING TRIUMPH . . .

Never Before at So Low a Price!!

Indeed an engineering triumph—accomplished by outstanding G.H.Q. designers and engineers, who have constructed into the G.H.Q. motor everything that years of exhaustive scientific aerodynamic research could produce—geared to the highest possible degree of perfection. But more than that, the acid test . . . an overwhelming response. Thousands of users in all parts of the country are praising, recommending, and endorsing this scientific achievement. It seems as if everyone in America wants one. The most hair-raising thrill you've ever experienced will be yours with the G.H.Q. motor—actually one of the most powerful motors ever constructed. Has broken records for amazing performance . . . and just imagine—flies model planes from 4 to 10 foot wingspread. AND JUST AS EFFICIENT FOR BOATS, MIDGET CARS, etc. (see page 2) AND STATIONARY USE. Easy to start and simple as ABC to assemble.

All Parts Warranted — Every Part Replaceable



Average Assembly Time 30 Minutes



Everything is in the kit including Champion spark plug, coil, condenser, tank and cap, ignition wire, cylinder, piston, connecting rod, timer, crankshaft, all screws, nuts, bolts, complete instructions, etc. Every part is fully machined and finished. No oil, gas, batteries, or propeller included. A SCREWDRIVER IS THE ONLY TOOL YOU NEED. No mechanical knowledge required.

EXACTLY THE SAME PARTS THAT GO INTO THE G.H.Q. ASSEMBLED ENGINE.

$4.95

SEE WARRANTY, SPECIFICATIONS AND OTHER DETAILS ON NEXT PAGE

Compare these Features that make the G.H.Q. Gas Motor a Winner!

1. Easy starting.
2. Steady running—as long as gas, oil and spark are supplied.
3. Motor cannot overheat.
4. All parts replaceable.
5. Cylinder and piston honed to .0001 inch.
6. Accurate die castings.
7. One-piece drop forged crank shaft, balanced and perfectly machined.
8. A light spark plug coil with clips that is oil, water and gas proof.
9. Coil will not overheat or shortcircuit.
10. Main bearing is high-speed bronze, reamed and lapped to size.
11. Condenser is gas, oil and water proof.
12. Cylinder and piston inspected to insure long life.
13. Champion "V" Spark Plug.
14. Chrome nickel steel shaft with 1⅛" bearing surface.
15. Connecting rod of high speed bronze.
16. Carburetor assembly accurately designed and made.
17. Needle valve and valve body machined together.
18. Timer assembly compact, fool-proof, long-wearing, replaceable and adjustable.
19. Easily inverted and runs in either direction.
20. Absolutely safe — impossible to explode.
21. Motor starts and runs on two flashlight cells.
22. Speed range 300 to 7,000 R.P.M.
23. Low gas consumption — runs 27 minutes on one ounce of gas.
24. Strongest miniature motor.
25. LOWEST PRICE EVER SET.
26. ILLUSTRATED AND DETAILED ASSEMBLY INSTRUCTIONS.

— SEE PAGE 6 FOR UNSOLICITED TESTIMONIALS RECEIVED BY US —

HOW TO ORDER GAS ENGINES

Send Only $1.00

We ship Express Collect C.O.D. for balance.

For shipments outside U. S. and Canada send full amount plus $1.00 for packing, postage and insurance.

(See also page 19)

ORDER FROM

G. H. Q. MOTORS, Inc.

MANUFACTURERS OF

Miniature Gasoline Engines and Hobby Supplies

40 EAST 21st STREET NEW YORK, N. Y.

ORDER TODAY-24 HOUR SERVICE

STORY OF THE G.H.Q. ENGINE

(Reprinted from "AIR TRAILS")

It was Lindbergh's flying the Atlantic in 1927 that really started the model gas engine industry. True, miniature steam motors had been in use for a considerable time, but the younger generation had its imagination captured by the Lone Eagle's feat, and model gas flying became first a novelty and then, in rapid succession, a fad, a hobby, and an industry.

Early in the first period of growth we find an anonymous experimenter who had a lathe in his home workshop. He had had considerable experience with model work, having built small steam engines and small boat parts. In addition he had considerable automotive engine data. The next logical step was to attempt the construction of a miniature gasoline engine. Our experimenter set to work.

Due to the smallness of the parts, he encountered considerable difficulty. We can get an idea of the uncharted fields he explored when we realize that he had to design and build his own spark plug because an automobile plug gave too large a compression space!

Failure followed failure, but each time a new point was learned and applied. When experiment had exhausted all possibilites of error, success was assured. The final miniature engine he made started easily and ran steadily with a powerful roar!

So elated was our experimenter with his little engine that he decided to give other model builders the benefit of his experience in the new, fascinating sport. He prepared an article describing his efforts in detail, and succeeded in having it published in one of the leading model publications of that day.

His article met with widespread interest and he was deluged with hundreds of requests for castings, plans, and further information. As this service cost him a considerable sum, he was forced to make a slight charge for his work. Soon, however, the pressure of this business became too great for his experimental nature, and he sold out to a small machine-shop owner who had purchased one of his casting sets and had become interested in gas engine work. The miniature gasoline engine now passed into its second stage.

The machine-shop owner continued to sell castings for a short while. In addition, he also provided finished parts on order for many customers who did not possess the necessary machinery and equipment to machine and finish the engines. As volume grew, he found that by ordering castings and other parts in larger quantities, he could furnish the motor in completely finished form and guaranteed to operate for only thirty-five dollars. This sensationally low price (for that time) resulted in quantity orders, which in those days meant approximately one hundred engines a year. This was his maximum productive capacity, so that orders sometimes had to wait three or four months before shipment.

In spite of the substantial price of thirty-five dollars per engine, the machine-shop owner felt that the effort was not worth the profit made; as each part was hand-machined, the profit per unit was negligible. The machine-shop owner decided to sell out.

G.H.Q. Motors, Inc., then producing about a million rubber-powered model airplanes a year, had long decided to enter the miniature gasoline engine field, and had cast about for a suitable design. G.H.Q. took over the machine-shop business and its accumulated store of knowledge and set about the intelligent production of the G.H.Q. engine with two points in mind; first, to keep the engine at its high point of development, and second, to lower the price to where it could be available to thousands of model builders.

Production was halted while a huge investment was made in dies, jigs, machinery and equipment. Quantity purchases of various parts were made to assure low price. Finally, in March, 1936, G.H.Q. offered a completely finished and assembled motor for only twelve dollars and fifty cents. This unprecedented low price threw a bombshell into the ranks of the industry and recruited thousands of new hobbyists who could afford for the first time to buy a model gas engine.

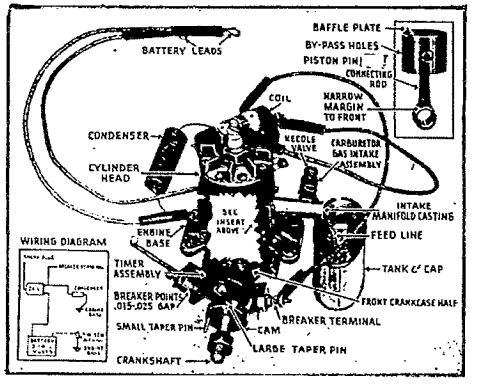
This 1936 model was a vast improvement over the older engines, having a special spark coil, AC spark plug, cast-iron piston (centerless ground to .0002") die-cast aluminum parts, et cetera. Response was terrific, orders for sixty thousand dollars worth of engines and parts pouring in before the end of 1936. G.H.Q.'s desire to produce only perfect engines necessitated checking and rechecking all parts, so that production was strained to the utmost to keep up with demand.

At about this time demand arose for a model gas engine "kit." Users were apparently interested in not only using the engine in model planes, boats, and the like, but wanted the knowledge acquired by taking finished parts and assembling their own engines. This demand G.H.Q. met by making available their engines in kit form for eight dollars and fifty cents, the parts being identical with those of the finished motor and requiring no equipment beyond a screwdriver and thirty to sixty minutes of assembly time.

The demand for G.H.Q. engines and kits prompted G.H.Q. to seek further methods to reduce costs and selling price, and still further improve the motor if at all possible. As the materials used in the engine then cost more than seven dollars and fifty cents to produce, we can understand the heroic efforts necessary to produce a better and complete engine to retail at only ten dollars in assembled form and at five dollars in kit form. But it was done. In the winter of 1937, G.H.Q. miniature engines were available at those prices, levels that have not yet been equaled.

G.H.Q. has not stopped there. Improvements since 1937 are: lighter and stronger connecting rod, Champion spark plug, Winston spark coil (oil, gas, and waterproof), lighter crankshaft of chrome nickel, new, unbreakable, lightweight steel piston, and new spring-control carburetor.

Without doubt, this company has played an important part in the development of the gas model field.



In response to requests from a number of readers, this graphic illustration reveals the design and features of the G. H. Q. engine. Note wiring diagram for reference.

G. H. Q. Ready-to-Run GAS MOTORS

—Everyone Unconditionally Guaranteed to Operate—



No oil, gas, batteries or propeller included.

$9.95

All America has acclaimed this engineering triumph accomplished by outstanding G.H.Q. engineers after years of exhaustive, scientific, aerodynamic research. It's the modern miniature motor designed exactly as present-day real motors and has broken records for amazing performance.

G.H.Q. Motor Gives You Long Wear

And look at the reason! In many cases we could have saved considerable money using inferior weak parts. Examine each part closely. Look at the life-time high-speed bronze connecting rod—and the crank shaft 5/16" thick as compared to other motors selling at twice the price having a thickness of only 3/16". Then, too, G.H.Q. has one of the largest crank shafts on any motor — as well as the fool-proof long-life timer. Complete with plug, coil, condenser, tank, etc.

G.H.Q. Motors Attain Highest Possible Degree of Perfection

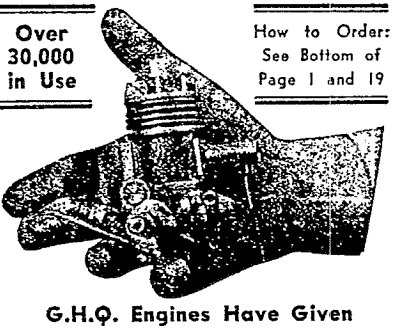
And each motor is uniform in every respect. Our tremendous output (thousands of motors are already in use) together with the fact that we are one of the largest concerns of this kind in the model airplane field, is your assurance that each G.H.Q. motor conforms to the same uniform high standard of performance. Because we are vitally interested in justifying your every confidence, we have spared no expense in modern factory production—enabling us to fulfill every claim you read.

SPECIFICATIONS

4 Port 2 Stroke Cycle — Turns 14" Prop.
¾" Stroke — 8" Pitch
15/16" Bore — Bearing Surface, 1¼" Long
300-7,000 R.P.M. — Crankshaft, 5/16" Diam.
Weight, 10 oz. (Motor) Rotation, Either Direction
Height, 4½"—Width, 2½" H. P. Approx. 1/5th

Over 30,000 in Use

How to Order: See Bottom of Page 1 and 19



STANDARD WARRANTY



"We warrant each new G.H.Q. gasoline engine manufactured by us, to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at our factory, any part or parts thereof, which shall, within ten (10) days after delivery of such motor to the original purchaser, be returned to us with transportation charges prepaid, and which our examination shall disclose to our satisfaction, to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale of our G.H.Q. gasoline engine."

G.H.Q. Engines Have Given 6 Years of Service

See page 6 for a few of the many testimonials received by us.

The Only Engine with a Warranty — Applies to Both Assembled Engines and Kits.

G.H.Q. GAS ENGINES HAVE BEEN USED IN

PLANES

Thousands of planes powered with the G.H.Q. motor are successfully flown daily. The combination of light weight and high power have made the G.H.Q. engine the ideal power plant for your gas model.

BOATS

Model builders everywhere agree that the rugged construction of the G.H.Q. motor and its easy starting ability make it the ideal gas engine for model boats. Its space requirements are very small and its design adapts itself readily to any boat without any changes whatsoever. Will not overheat.

MIDGET CARS

Devotees of this new fascinating hobby, rely upon the G.H.Q. motor. No provision need be made for cooling and the long crankshaft is exactly suited to provide a perfect drive. G.H.Q. motors are easily installed under the hood of any standard midget car, and will always deliver its steady, surging power.

SMALL PUMPS

Many homecrafters have successfully adapted the G.H.Q. motor to a pump application. This application requires easy starting and steady running over long periods of time and it has been found that the G.H.Q. motor operates more than satisfactorily.

GENERATORS

G.H.Q. motors have been hooked up with automobile generators and with small generators of special design to deliver approximately 50 watts. This is another example of an application where steady power is required over long periods of time. G.H.Q. motors also have been used to provide power for portable radio communication sets.

COMPRESSORS

The G.H.Q. motor can deliver a steady supply of compressed air at high speed.

And many other uses, including blowers, fans, grinders and other small power tools, and for various experimental purposes. No plans or information can be furnished regarding the applications mentioned above.

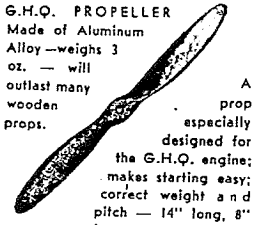
G.H.Q. GAS ENGINE ACCESSORIES

— Help You Get that Super-Perfect Performance —

(ADD 15c TO TOTAL ORDER FOR POSTAGE, PACKING AND INSURANCE UNLESS OTHERWISE SPECIFIED)

G.H.Q. PROPELLER

Made of Aluminum Alloy — weighs 3 oz. — will outlast many wooden props.



A prop especially designed for the G.H.Q. engine; makes starting easy; correct weight and pitch — 14" long, 8" pitch.

Only $1.50

G.H.Q. FLYWHEEL

For Boat, Midget Car and Stationary Use



For Quick Starting
Weight ¾ lb. — Diam. 3 in.
Properly Designed for Use with the G.H.Q. Gas Engine
Only $1.50

SPARK PLUG WRENCH



50c
Gives Tight Fit

Lasts A Lifetime
Aids Compression

Will Save Its Cost Many Times Over In Spark Plugs Saved



G.H.Q.
FUEL MIXTURE

The correct mixture of gas and No. 70 oil. Saves bother of mixing your own.

Per Bottle
25c



G.H.Q.
No. 70
ENGINE OIL

The Only Oil that Should be Used in Model Engines

Per Bottle
40c



G.H.Q.
MIDGET SWITCH

A Light and Convenient Ignition Control

Saves Coil, Condenser and Batteries Worth Having

Only 35c



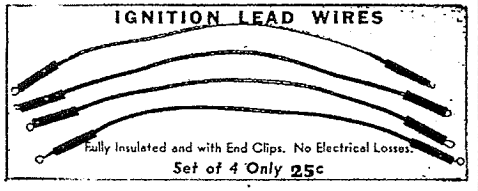
A new high-test oil preparation where maximum performance is desired. Obtains easy starting and maximum engine compression and performance. Lengthens engine life through super-lubrication of all moving parts and provides a life-time film of oil to protect your engine.

This product of six years of experimentation by G.H.Q. engineers guarantees a smooth and cool running motor.

Lubro should be used instead of ordinary No. 70 oil for the initial break-in period, but may be used permanently with benefit to the motor.

LUBRO
75c
Per Bottle
"And Worth More"

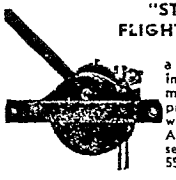
IGNITION LEAD WIRES



Fully Insulated and with End Clips. No Electrical Losses.

Set of 4 Only 25c

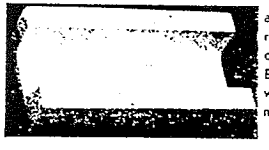
"STOP-WATCH" FLIGHT DURAL TIMER



Now you can install a "Stop-Watch" Timer in your lightest gas model at no increase in price. New dural timer weighs only 1⅜ oz. Adjustable with split-second accuracy up to 55 seconds.

NOW $2.00

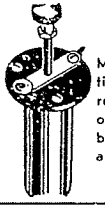
RUNNING STAND—



a one piece hardwood running stand especially designed for the G. H. Q. Engine. Complete with 4 wood screws. An absolute necessity for only

35c

AUSTIN FLIGHT TIMER



Improved, 1940 airdraulic timer. Most inexpensive and lightest timer made. ⅝ oz. Accurate and reliable. Will not jam or wear out. Not affected by engine vibration. Adjustable for any duration up to 2 minutes.

$1.25

SPECIAL "COMBINATION" ACCESSORY OFFER

Choice of G. H. Q. Propeller or Flywheel	$1.50	Set of 4 Ignition Lead Wires	.25
Spark Plug Wrench	.50	Running Stand and Screws	.35
G. H. Q. Lubro	.75	TOTAL VALUE	$3.70
Midget Switch	.35		

SPECIAL "COMBINATION" PRICE $3.00 (Plus 20c Postage, Packing and Insurance)

OTHER GAS ENGINE ACCESSORIES

(Add 15c to Total Order for Postage, Packing and Insurance unless otherwise specified)

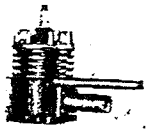


By using this combination of two No. 6 Eveready Dry Cells and three No. 950 Eveready Flashlight Cells in starting the engine (the large cells can be disconnected when engine is running) an important saving in battery consumption is made. At the same time, starting is made very easy through the use of the increased amperage. The large cells will last for hundreds of engine startings.

The small cells can be installed in your plane, boat, etc., with wires leading to the larger cells outside.

Price per Unit of Five (5) Batteries $1.20

(Plus 35c for Postage, Packing and Insurance)



G. H. Q. EXHAUST STACK

A sturdy brass exhaust stack designed for use with the G.H.Q. Gas Engine. Keeps your plane, boat or midget car clean by carrying away exhaust gas and oil as well as fumes. Adds a streamlined appearance and increases efficiency.

Price $1.00



SPARK COIL

Light weight, efficient Coil. Operates on 2 flashlight cells. Water, gas and oil proof.

$1.50

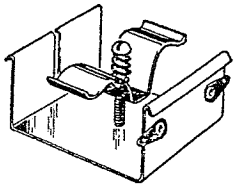
Champion V-1 Spark Plug



⅜" x 24 Thread

Absolutely gas and compression tight. One piece construction. Used in most 1/5 H.P. engines. The choice of Champions the world over.

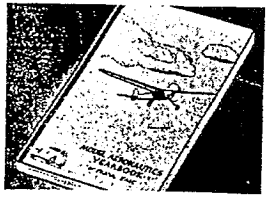
PRICE 65c



ALUMINUM BATTERY CASES

The finest, most practical battery cases available. The batteries are held securely and may be replaced easily without soldering.

Penlite Size, ¼ oz., each 40c
Intermediate Size, ¾ oz., each 40c
Regular Size, ½ oz., each 50c



LATEST EDITION MODEL AERONAUTICS YEAR BOOK BY FRANK ZIAC

PRICE $1.00

192 pages of priceless data and 112 plans of every type model imaginable. This book is acknowledged to be the best in the field and thousands of model builders would be at a loss without it. Every model fan should have a copy whether his interest lies in gas or rubber powered models.

FUNNEL (Contains Filter Screen)	30c
MOTOR COVER	25c
HOOK-UP WIRE, 6 feet	25c
SPARKPLUG WASHER	5c
CONDENSER	20c
AERO 1½ VOLT COIL	$3.00
ALLIGATOR CLIPS, each	10c
CHAMPION SPARK PLUG V3-¼" x 32 thread	65c

TEN BOOKLETS ON MINIATURE GAS ENGINE

THEORY AND PRACTICE

For gas engine operators who wish to become better acquainted with their hobby, G.H.Q. presents ten booklets covering the major points of miniature engine theory and operation.

The booklets are brief and non-technical, and will more than pay for themselves in acquainting you with the fundamentals of design, methods of operation, and, all in all, a better understanding of miniature engines.

1. Theory
2. Ignition
3. Lubrication
4. Metallurgy
5. Piston and Cylinder Finishes
6. Mathematics
7. Experiments
8. Accessories and Tools
9. "Don'ts"
10. Dictionary of Terms

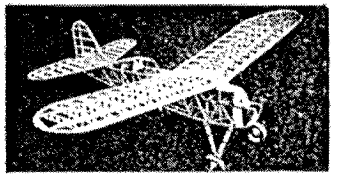
15c each postpaid. Ten for $1.00, postpaid

G.H.Q. SPORTSTER GAS MODEL KIT



The G.H.Q. Sportster Kit was especially designed for the G.H.Q. Gasoline Motor but may be used for any other motor of like weight and power. Built according to scientific aero-dynamic principles. — Has made hundreds of successful flights without crack-up. — Marvelous glider. . . . And what a climber! 4-hour flights are common!

A 6-foot 4-inch model that is built for many hours of successful flying. It can be taken apart and assembled very easily, is rugged enough for every day flying, but is light enough for contest flights. **Takes off in 6 feet.** Its soaring qualities are amazing. Its movable wing makes flight adjustments easy, even for the beginner. Shock absorbing landing gear insures a smooth, easy landing at the end of each flight. It is built to fly in practically any weather, and has flown consistently from four to five minutes on 3/16 of an ounce of fuel. A rugged motor mount that makes it easily accessible is a feature of the kit. The kit contains MORE than enough material to allow for mistakes and any possible crack-ups. This kit is complete with inspected Spruce, High Grade Balsa Wood, Special Cement, Bamboo Tissue, Finished Wheels, Special Spring Wires, Dural Angle and Rectangle, Dope, Tubing, Dowel, Etc., and a set of easily understood plans. All packed in a durable case. The kit is so complete that a beginner can build a perfect job by following our plans.



G.H.Q. Sportster, not covered, to show structural details.

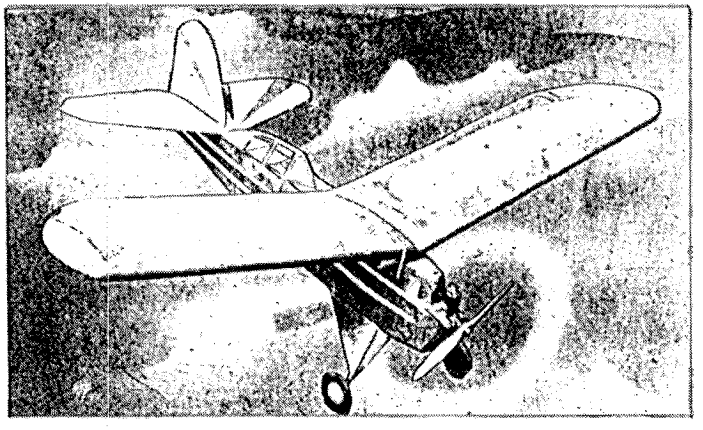
Send Only $1.00

Shipped Express Collect C.O.D. Same Day

COMPLETE KIT, Only.....$4.95

For Plan Only Send 35c.

NOT A PEE-WEE—A FULL 76 INCH WINGSPAN HUSKY



Don't risk your engine in a flimsy, low-priced plane. Build a Sportster — tested by actual users for five years — and today's model has been vastly improved. Hundreds of successful flights in store for you.

READ WHAT ONE BUILDER SAYS:

"I am writing to tell you that I am thoroughly satisfied with the performance of the G.H.Q. Sportster gas model which I built from one of your kits last winter. I believe that it is undoubtedly the strongest gas model on the market and that the aero-dynamic design is perfect, which statements are proven by its summer of flying with 45 flights to its credit and a total of 95 minutes in the air and it is still in perfect condition.

"I am enclosing a picture of the model after its thirty-eighth flight. An actual flying picture of this model is shown in the January issue of Model Airplane News. I wish to thank you for recommending such a fine stable model to the model building public as I am very pleased to have attained such a high degree of success with my first gas model."

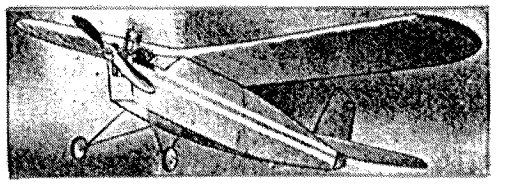
E. M. H., ARMSTRONG, CANADA.

OTHER RECOMMENDATIONS ON PAGE 6

OTHER GAS MODEL BARGAINS

(Send Only $1.00 — We Ship Express Collect C.O.D. For Balance)

You can purchase any nationally advertised gas model plane direct from G. H. Q. and bearing the G. H. Q. as well as the manufacturer's guarantee.



The ROBOTAIRE

A new trim, streamline gas model plane.

5 foot wingspan.

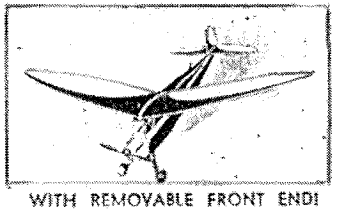
For Large and Small Bore Engines.

Small and light enough to take any engine in the market, and rugged enough to take engines up to 1/3 horsepower, the ROBOTAIRE was especially designed for the G.H.Q. Engine on which it has been flight-tested for over 100 hours in the experimental model. Construction has been planned so that even a beginner can build the ROBOTAIRE easily and quickly. Plans and instructions are detailed and simple.

Kit is absolutely complete including plans, bamboo paper, wood, wheels, metal motor mount, cement, dope, etc.

Order your ROBOTAIRE today and enjoy the thrill of flying a 1940 designed gas job.

Kit Priced at only $2.95 (For Plan Only Send 50c)



WITH REMOVABLE FRONT END!

Everyone who has seen this clever stunt says it's amazing! Motor, battery and coil, mounted in one unit which is instantly detachable. Cowling quickly removed for adjustments.

EASY TO BUILD BECAUSE DIFFICULT PARTS ARE FINISHED

THE CLIPPER

Wingspan, 6 ft.; Length, 53½ in. Weight (ready to fly) 2 lbs., 5 oz. Wing Loading, ½ lb. per sq. ft. Double elliptical wing—tapered section—highly efficient.

Tapered Spars, Ribs die cut, Shock-Absorbing Bent Music Wire Landing Gear with Streamlined Fairing; Semi-carved propeller. All wire and metal Fittings furnished.

Many finished and semi-finished Fittings; Full size three-view Plans with full size Patterns; Bamboo Paper; Generous quantities of Cement, Banana Oil.

Special light weight wheels.

With Balsa Wheels.....$4.95

Including Air Wheels..... 6.50

THE RED ZEPHYR



5 Ft. Wingspan

56" Long - Wt. 2¼ lbs.

DESIGNED IN RESPONSE TO THE DEMAND FOR A RELIABLE GAS MODEL AT A REASONABLE PRICE. THE ONLY LOW PRICED MODEL WITH ALL THESE VITAL FEATURES:

PRECISION BUILT! Accurate, fully detailed, full size drawings and complete instructions guarantee you a perfect model, easily constructed.

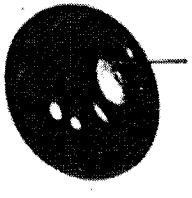
QUALITY FEATURES! Simple and highly efficient aerodynamic design with low wing loading.

PERFORMANCE! Takes off from the ground unassisted in about 12 feet, climbs beautifully, at about 700 feet per minute, and lands perfectly.

SPECIAL FEATURES! Full shock-absorbing landing gear with new type, easily attached brackets. Vibration absorbing motor mount. Reinforced nose and hook to protect motor. Wings quickly demountable for easy transportation.

CONTAINS: Complete printed out wood, including ribs, bulkheads, wing tips, rudder sections, etc.; all strip wood of finest quality accurately cut to size; bamboo paper; rubber; complete set of hardware including nuts, bolts, landing gear brackets, and heavy wire, battery wire, washers, etc.; large can gas model cement; streamlined tail wheel; 2 large sheets of full size plans with instructions, photographs, diagrams, and detailed illustrations—everything you need.

Complete Kit (with Balsa Wheels) ..$4.95 With 3½" Air Wheels ..$5.95



Pneumatic Gas Model Balloon Wheels

Made of best grade of extra tough rubber and offer the utmost in long life. Tested at factory for 48 hours.

Size	lb. Carried	Price (Pr.)
2¾"	6-8	1.00
3"	8-10	1.25
3½"	10-12	1.50
4½"	12-15	1.75
Hand Pump for Inflating		0.20

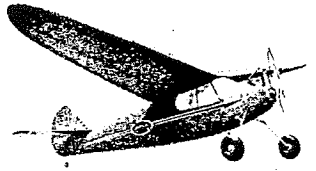
(Plus 15c for postage, packing, and insurance)

OTHER GAS MODEL BARGAINS

(Send Only $1.00 — We Ship Express Collect C.O.D. For Balance)

You can purchase any nationally advertised gas model plane direct from G. H. Q. bearing the G. H. Q. as well as the manufacturer's guarantee.

COMMODORE



Wingspan	6 feet
Overall Length	50 inches
Wing Area	5.2 square feet
Total weight with motor, etc.	3½ pounds
Rate of Climb	800 ft. per min.

Here are a few of the outstanding features of the "Commodore":

1. Mono Strut landing gear. Designed to insure against nose-overs in the roughest of fields.

2. Stressed to withstand loads twelve times in excess of that occurring in the severest crackups.

3. Differences between power-on and power-off flight altitudes have been cut to a minimum, resulting in the elimination of a critical dip after engine has cut.

4. Absence of spiral dive tendencies.

5. Efficient aerodynamic design resulting in a very flat glide ratio and low sinking speed.

6. Trim flaps for finer adjustments.

7. Semi-monocoque wing stressed to resist all torsion and bending imposed in flights and landings.

Kit is 100% complete including streamline balsa wheels, all ribs, etc., printed on finest quality sheet balsa, all metal fittings, etc., cement, 2 large sheets of full size plans with instructions, finished 14" prop. Everything you need to build a real contest flyer. Order your kit today.

STANDARD KIT

$6.50

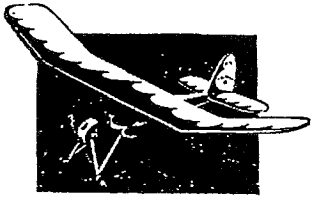
DE LUXE KIT

Complete as described, plus the addition of yellow, and red dope, and a pair of 3½" Pneumatic Rubber Wheels (in place of balsa wheels).

$7.95

"MISS PHILADELPHIA"

8 FT. WINGSPAN — 57" LONG
WEIGHT (LESS MOTOR) 3½ LBS.
Flies One Hour On An Ounce of Fuel



Flexible wing supports eliminate possible damage to model. Detachable wing, adjustable rudder control, aluminum cowl hatch for easy access to motor.

Complete kit with full size detailed plans.

PRICE $9.95

The "MUSKETEER STANDARD"



6 FOOT WINGSPAN

Feather weight construction is incorporated in the Musketeer Standard . . . has streamline valance which affords extra speed and extra endurance. Because of the fact that the wing and stabilizer are set at very high angles of incidence the customary dip is prevented as the engine cuts and you get added flying time which so often is the difference between a prize winner and a loser. Weighs 2 lbs. 4 oz.

Complete kit including 3¼" air wheels

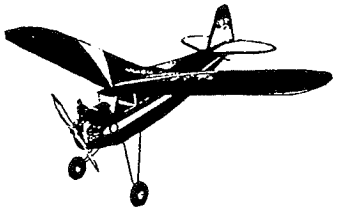
$5.95

OTHER GAS MODEL BARGAINS

(Send Only $1.00 — We Ship Express Collect C.O.D. For Balance)

You can purchase any nationally advertised gas model plane direct from G. H. Q. bearing the G. H. Q. as well as the manufacturer's guarantee.

BUCCANEER-STANDARD



LIMITED ENGINE RUN CHAMPION!—5½ FOOT WINGSPAN

This model climbs at the rate of over 1000 feet per minute and then levels off in a smooth soaring glide. Nothing can compare with it for perfected design. Nearly twice as strong as necessary, with practically no engine vibration. Easy to build—it takes only a few nights to construct. Specially recommended for beginners. Everything to build model (except wheels and power plant). Liberal supply of cement and colored dope; "Pervel" Covering. Standard colors: red, white and blue.

COMPLETE KIT $5.00 (less wheels)

Combination Price: Complete Materials including 3½" Pneumatic Wheels, Standard Wood Propeller and Flight Timer,

$8.50

SPECIFICATIONS:

Wing Area—630 sq. in.; Flying Weight—3¼ lbs; Airfoil Section—Special Design; Cantilever Monospar Wing with Balsa Covered Center Section; Heavy duty landing gear; Husky 5/16" square longeron construction: Vibration proof motor mount; Tail surfaces permanently attached cannot lose their adjustment.

THE "SUPER BUCCANEER"

7½ FOOT WINGSPAN—Winner of over two hundred contest prizes

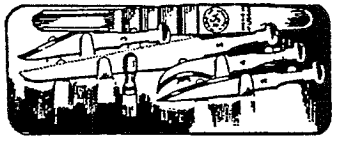


The "Super-Buccaneer" has won so many places in contests that it is impossible to keep an accurate account of its records. A first place winner at Philadelphia, Grand Rapids, Scranton, Trenton, Seversky Field, Long Beach, Calif., Boston and Staten Island. The ship is designed to take all the abuse you can give it. The average life of a Super-Buccaneer is over 400 flights, a record in itself.

Kit Includes: Everything to build the model as pictured (except wheels and power plant); special selected balsa for planking; "Pervel" covering; liberal supply of cement and colored dope with extra cement for planking. Standard colors: chrome yellow and red.

Complete Kit (less wheels): $8.50

MODELER'S KNIFE



Only $1.00

This knife has three razor sharp blades made of Swedish tempered and polished spring steel and one Sawblade for model makers. Comes in handy box with special holder for the blades all fit to the same handle. (The ideal gift for all model makers.) A well made knife, the blades do not break.

OTHER GAS MODEL BARGAINS

(Send Only $1.00 — We Ship Express Collect C.O.D. For Balance)

You can purchase any nationally advertised gas model plane direct from G. H. Q. bearing the G. H. Q. as well as the manufacturer's guarantee.

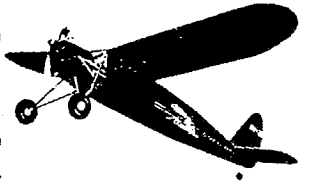


MISS AMERICA

GAS MODEL

7-ft. Wing Span

Weight 2¾ lbs.



Climbs appr. 800 ft. per min.

The finest qualities aerodynamically and structually have been incorporated into this model. This is actually a miniature airplane, embodying the same features of design and construction as full scale airplanes.

KIT IS COMPLETE, including Wheels, quantities of red and blue dopes; cement; all ribs, and curved parts clearly printed on balsa; all needed hardware, ignition wire, landing gear wire; Miss America decals; also a set of very complete, full size drawings with instructions.

STANDARD KIT — Including Balsa Wheels **$5.95**

DE LUXE KIT — Including 3½" Pneumatic Rubber Wheels **$7.50**

STREAMLINER



Wingspan 6 ft. — Length 43 in.

Weight (Less Motor) 2¼ lbs.

This type Gas Model is similar to big plane scale and still retains contest model performance. Has detachable wing, adjustable rudder control and stamped nose cowling which completely hides engine. Has hinged hatch for accessibility to engine.

KIT IS COMPLETE with streamline balsa wheels, ready-made balsa ribs with notches for spars, strip balsa, printed balsa, all nuts, bolts, washers and other hardware parts, ignition wire, spring steel wire, cement, bamboo paper and colored tissue, etc. Large full size plans with instructions.

STANDARD KIT $4.95

DE LUXE KIT — Including 3½" Pneumatic Rubber Wheels **$5.95**

THE MERCURY

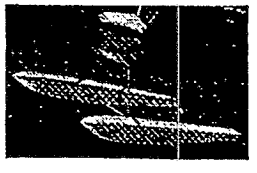
Champion of Champions

Your dream for performance becomes a reality in the possession of the extraordinary "Mercury" . . . she has transport speed and grace. She has 6 ft. Wingspan, 52 inches long, weight, including motor and ignition unit, 2¾ lbs. Climbs 1,000 ft. a minute. Will beat anything you ever saw take off in gas model flying field, regardless of price.



KIT IS COMPLETE with all necessary materials including a pair of 3½" streamline balsa wheels; shaped prop, blank, all hardware parts, ignition wire, cement, white bamboo paper, giant full size plan with instructions, etc. etc. **$4.95**

DE LUXE KIT—Yellow, Blue and Gold Dope and 3½" pneumatic rubber wheels **$6.95**



GAS MODEL PONTOONS

Weigh no more than the air wheels they replace. All balsa construction. Instantly interchangeable. Stressed for landing on ground as well as water. Suitable for models weighing up to 5 lbs.

Price of Kit $1.00

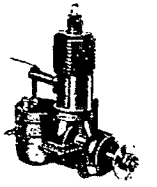
Plus 25c Postage and Insurance

GAS ENGINES

You can purchase any nationally advertised factory-assembled gas engine direct from G.H.Q. and bearing the G.H.Q. as well as the manufacturer's guarantee.

Send only $1.00 with your order. We ship Express Collect C.O.D. for balance.

BROWN JR. "D"

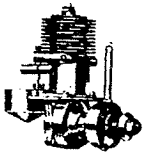


1/5 H.P.

$12.50

Other Brown Motors in Stock

FORSTER "B"

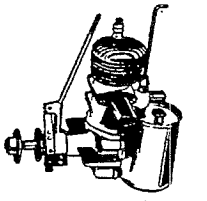


1/3 H.P.—14 Oz. Bare

$17.75

Other Forster Models in Stock

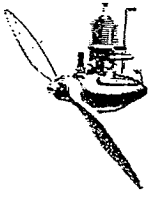
DENNYMITE STANDARD



1/4 H.P. **$15.85**

Other Dennymites in Stock

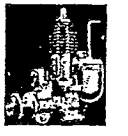
SYNCRO ACE DELUX



1/5 H.P.

$13.75

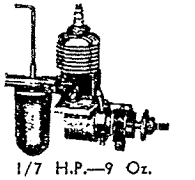
SYNCRO BEE



1/8 H.P.

$12.50

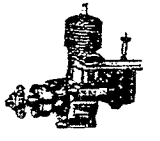
TROJAN JR.



1/7 H.P.—9 Oz.

$18.50

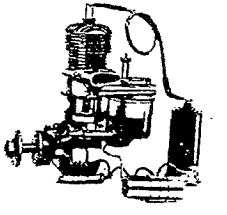
OHLSSON 23



1/7 H.P.

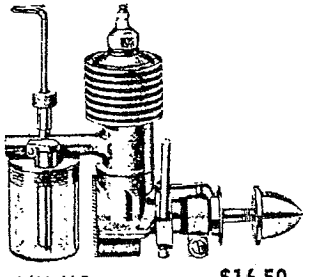
$16.50

OHLSSON 60



1/5 H.P. **$21.50**

BRAT



1/10 H.P. **$16.50**

Brown Jr. C	$18.50	O.K. Standard	16.50
Brown Jr. M	16.50	Hi-Speed Bullet	12.75
Brown Jr. B	21.50	Elf	21.50
Dennymite Airstream	17.85	Bantam	16.50
Gwin-Aero Upright	12.00	M & M 292	16.50
Mighty Marine	12.50	Hi-Speed Torpedo	16.50

Replacement parts and accessories on all gas engines listed above at factory prices. Place your order with G.H.Q. and obtain G.H.Q. service and guarantee. Only genuine manufacturers' parts and accessories supplied.

G.H.Q. Scale Models are the best Kits your money can buy for appearance and flights. Buy one today and you'll buy a whole fleet of them. Get acquainted with G.H.Q. Kits and no others will do.

12" SOLID SCALE MODELS 10c

Plus 5c Postage

Each Kit contains full size exact scale plans with instructions and details, one or more printed balsa sheets, fuselage block, cement. Pontoon block, nacelle block and wheels and bamboo where necessary. Order one or more of these Kits today. For plan only send 5c each.

Boeing 247-D
Ryan Racer
G. A. Coast Guard Amphibian
D. H. Comet
Lockheed Orion
Sikorsky S-41
Monocoupe 145-D
Douglas Airliner
Dawolfine D-33
U. S. Army Martin Bomber

Contains everything to build a 12" solid scale model of any of the above planes.

24" FLYING SCALE MODELS 25c

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Each Kit contains full size exact scale plans with instructions and details. All parts printed on balsa. Complete with cement, dope, wheels, wire, rubber, etc. For plan only send 10c each.

Bellanca
Stinson
Falcon
Monocoupe
Robin
Aeronca
Polish
Fokker D-7
Camel
Puss-moth
JN 4
Fokker D-8
SE 5
Fairchild
Douglas
Spad
Russian Fighter
Jap Kawasaki
Army Hawk
Aeromarine
Nieuport

36" FLYING SCALE MODELS 50c

Plus 20c Postage

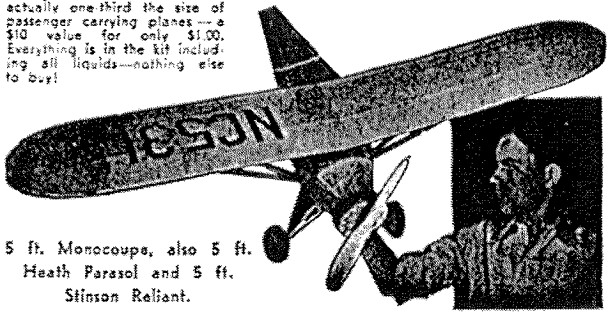
Each Kit contains full size plan, all wood printed out, large bottles cement and dope. Japanese tissue, endurance rubber, finished wheels, balsa strips and blocks, washers, wire and movable controls, scale details, etc. Complete in every detail. For plan only send 15c each.

Northrop Gamma "Sky Chief"
Curtiss A-8 Attack
Douglas Y 12

5 ft. Flying Scale Models $1 EACH
1/3 size of real planes!

These are the giant models that have amazed the model builders of America. Imagine strong outdoor flyers that are actually one-third the size of passenger carrying planes — a $10 value for only $1.00. Everything is in the kit including all liquids—nothing else to buy!

Plus 35c for Packing, Postage and Insurance. If Express Collect, Send Only $1.00.



5 ft. Monocoupe, also 5 ft. Heath Parasol and 5 ft. Stinson Reliant.

CONTENTS

Each of these new G.H.Q. Giant 5 ft. Model Planes contains full size plans all ribs, formers and curved parts clearly printed on best grade Balsa. Large bottles Cement and Dope, different colors Japanese Tissue, Special Endurance Rubber, Finished Ready-Cut 3" Wheels, Wire, Balsa strips cut to size, Washers and . . . Movable Controls, shock-proof Landing Gear, Scale Details, Lettering, Numbering and Insignias, Flight Log, etc.

For Plan only send 25c each

OVER 100,000 SOLD TO DATE

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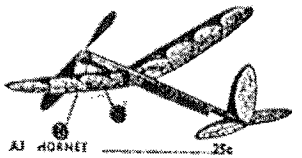
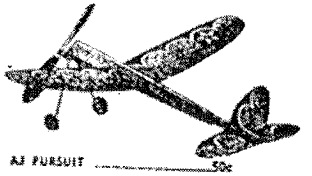
NO EXPERIENCE REQUIRED

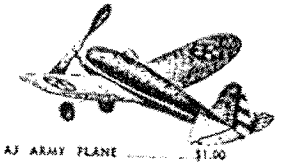
Illustrated below are the famous American Junior Airplanes. These models come completely finished, ready to fly. Just remove from their special containers, wind the propeller, and they're ready to take to the air! Every one a real flyer.



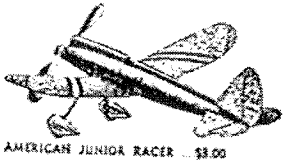
AJ HORNET 25c



AJ PURSUIT 50c



AJ ARMY PLANE $1.00



AMERICAN JUNIOR RACER ... $3.00

MODEL AIRPLANE SUPPLIES

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BALSA-WOOD 18" Lengths

1/16 sq.	20 for	$ .05
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1/16x1/4	12 for	.05
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1/8x3/16	8 for	.05
1/8x3/8	7 for	.05
3/16 sq.	6 for	.05
1/4x1/4	3 for	.05
1/4x1/2	2 for	.05
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1/16x2	6 for	$ .13
3/32x2	5 for	.13
1/8x2	4 for	.12
3/16x2	3 for	.14
1/4x2	3 for	.15
1x2	1 for	$ .15
2x3	1 for	.30
2x6	1 for	.45

COLORED DOPE

Red, Black, Blue, Olive Drab White, Yellow, Orange, Green

Bottle	$ .05
1 Oz.	.10
1 Pint	.65
1 Gallon	2.50

CLEAR DOPE

Bottle	$ .05
1 Oz.	.10
1 Pint	.60
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CLEAR CEMENT

Bottle	$ .05
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Red, White, Yellow, Blue, Orange, Green, Brown.

Sheets 20x24 ea.	$ .03
Sheets 22x24 doz.	.30

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Each, only	$ .15
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25"x34" Sheets	2 for $ .15

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3/32" dia. ft.	$ .05
10 ft.	.45

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1/2"x5/16"	ft. $ .15

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5" dia.	pr. $ .50
3 1/2" dia.	pr. .35
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1 1/4, 1 1/2 Inch	pr. $ .40
1 3/4, 2 Inch	pr. .50
2 1/4 Inch	pr. .60
2 1/2 Inch	pr. .60

BLACK PARA RUBBER

1/8 Flat	30 ft. $ .10

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All gas engines, gas model planes, midget cars, and boats can be ordered by merely sending $1.00. We will ship Express Collect, C.O.D., for the balance, the same day the order is received.

Express shipments are more rapid and safer than Parcel Post shipments and you are insured against loss or damage. If you wish your shipment sent by Parcel Post, you must specify this and we will be glad to accommodate you.

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Stamps, money orders, checks, or cash are accepted. We suggest, however, that you register letters containing cash or stamps in excess of $2.00 for your own protection.

G. H. Q. not only handles products of its own manufacture, but all items nationally advertised. When you purchase from G. H. Q., you obtain not only the manufacturer's guarantee but that of G. H. Q. MOTORS in addition.

Buying all your model and hobby supplies from G. H. Q. guarantees you not only the finest service but complete satisfaction.

Whenever you are in New York, you are cordially invited to visit our showroom and inspect our complete line of hobby materials.

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THE 1939 GAS MODEL

by CARL GOLDBERG

WHEN the thirty-second motor run rule was adopted early in 1938, the doom of large gas models for competitive work was sounded. Before long, experts began to agree with the prediction made in an article by the author in 1937 that a limited motor run would lead to small high-powered ships with unusual rate of climb. In January, 1938, the Gas Model Aëronauts of Chicago scheduled a contest for models with wingspan not to exceed 4½ feet, with thirty-second run. The writer was challenged to power such a model with the ⅓-horsepower Forster motor, on the theory that so much torque could not be controlled on such a short span. The ship was built and won the contest. In flight, torque wasn't noticeable, the ship handling itself smoothly.

At the same meet, a noted Midwestern model builder flew two 4½-foot ships powered with Browns. This design was a good-looking representative of conventional ideas in gas models. The thrust line was high, the center of lateral area "properly" located, and the wing had a normal dihedral angle of 1" or 1¼" per foot span. Under low power, the models acted nicely, climbing well. But every time the motor was opened up, all control seemed to be lost and a crash ensued. Because of the extreme ruggedness of the construction, it was possible to make several dozen attempts before the models became too badly damaged for further repair at the field. The slightest adjustment caused large variation in flight. It was evident that the reserve stability was zero.

At this time, the writer began work on a new design which had been under consideration for some six months, incorporating all the lessons in stability design learned from many years of flying indoor models. To draw up the ship and help design the structure, I sought the aid of Alvin Anderson, winner of the 1937 Berryloid finish contest. His broader experience with outdoor models was of considerable help, and later reflected in the ruggedness of the ship.

The basic thought behind the design was simply this: How low a horsepower loading can you get, and still keep close to the wing-loading rule? For example, if your ship weighs three pounds and has a $^1/_5$-horsepower engine, the horsepower loading is $3 \div {}^1/_5$, which equals fifteen pounds per horsepower. The lower the number of pounds per horsepower, the greater is the possible per-

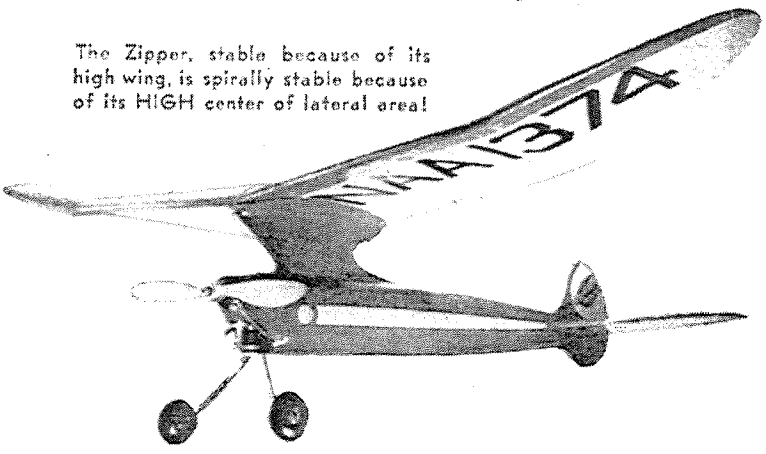
Joe Ott



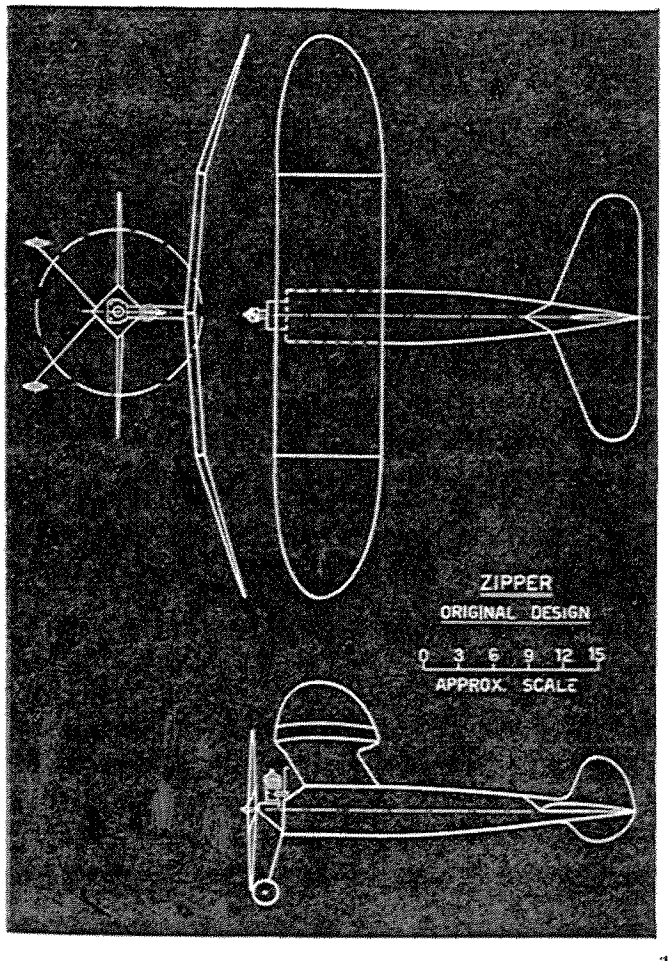
formance. By cutting the battery down to the minimum of one ounce—using two pen light cells which would last a dozen flights or more—and building a small ship, it looked as though it would be practical to get the flying weight down to 1¾ pounds. Using the ¼-horsepower Dennymite Airstream, this meant a horsepower loading of 1¾÷¼, or seven pounds per horsepower. Since the thrust of the Denny is over three pounds, it was obvious that such a ship could very easily climb straight up, even if released for flight in a vertical position.

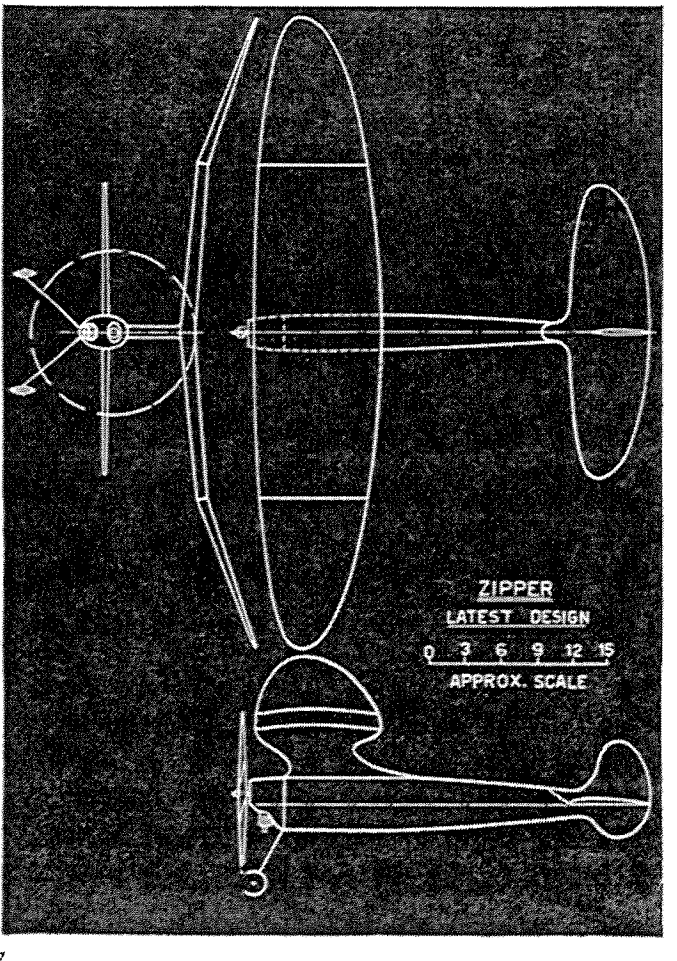
At the time, the wing-loading rule was ten ounces per square foot. For 1¾ pounds or twenty-eight ounces total weight this meant an allowable maximum of 2.8-square-foot wing area. To be on the safe side in avoiding differences in weighing scales at contests, I used a little less area, about 2.7 square feet so that a twenty-eight-ounce ship would be one ounce over the minimum. For strength, an aspect ratio of six was decided upon. This worked out at around four-foot span. Other parts of the general specifications followed usual rules for design: overall length two thirds of the wing span; lifting stabilizer one third of the wing area; rudder area six percent of wing area. The wing section was of the bird type used by discriminating builders for the past ten years. (For the convenience of more builders who might like to use it, several sizes of my version of this section are shown.)

The great question, of course, was how to handle the tremendous engine torque on such a small span, and how to have sufficient reserve stability so that small adjustments would not affect the flight to a great extent. This was solved by simply raising the wing about six inches



1939 rules are evolving a new kind of gas model. Goldberg's successful Zipper with its extraordinary high center of lateral area refutes a popular existing theory by its proven spiral stability and brilliant contest record.





above the center of the fuselage, and using a fair amount of polyhedral. This may be in defiance of certain theories regarding careful location of the center of lateral area, but every ship built to this design has been found to handle engine torque quite easily, and to be capable of proper adjustment. This will be shown later.

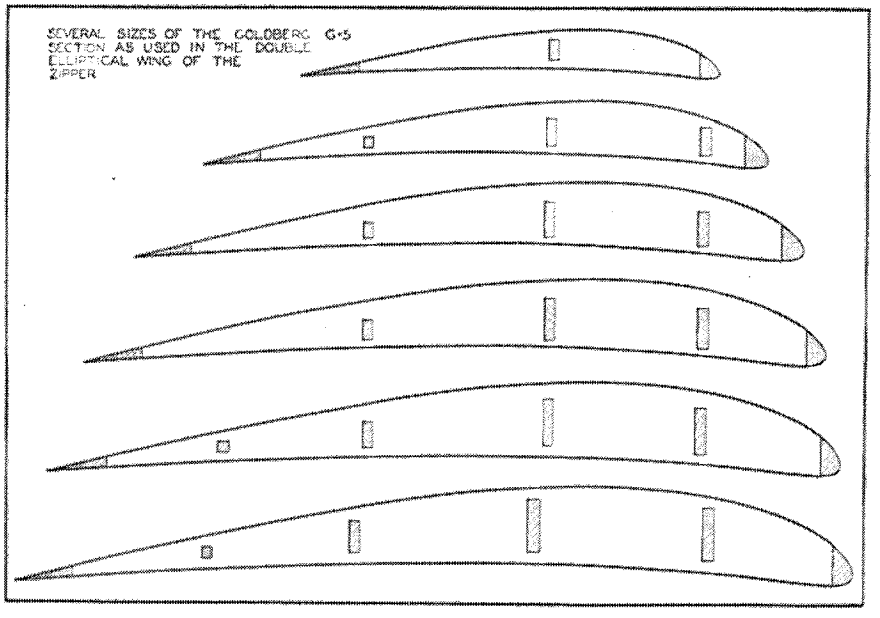
There wasn't any question about the need for quick accessibility of the ignition parts—many contests are won and lost on the ability to find and repair a broken wire, or replace batteries in a hurry. So of course the ship was equipped with an instantly removable fire wall to which was attached a simple battery rack carrying everything but the automatic timer. For low drag and light weight, the single-strut landing gear with balsa wheels was employed. Mounting the landing gear on the fire wall saved having to increase the strength and weight of some portion of the fuselage to take landing shocks. The fuselage structure was designed according to a principle fairly well known but

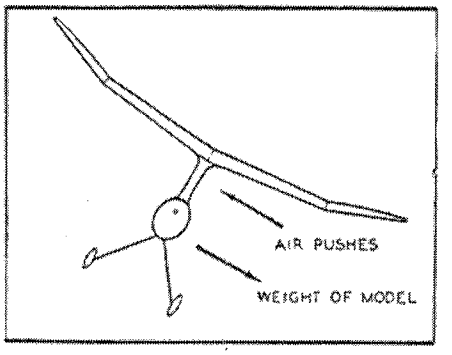


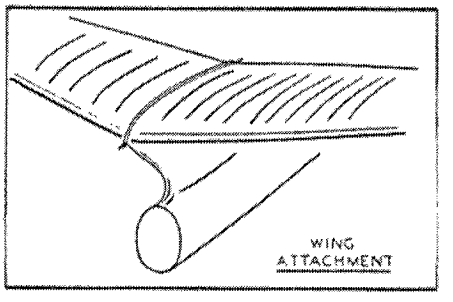
Chicago Park District Photo

Richard Obarski, Chicago Aeronuts Club, and prize-winning Zipper, his first gas job!

THE 1939 GAS MODEL



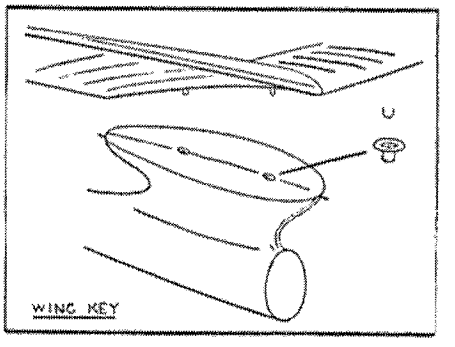


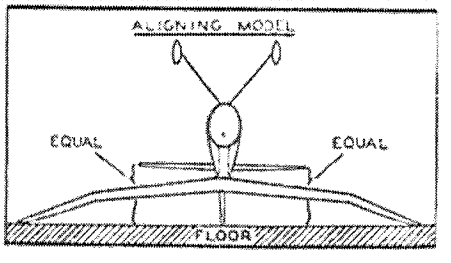


not often used. In a crash the stress grows greater and greater toward the nose because of the cumulative weight of the tail and each portion of the fuselage all pushing toward the point of contact with the ground. Therefore the portion on which the fire wall rested was made of a plywood ring to bind the balsa firmly together. Immediately behind was heavy sheet balsa, followed with medium balsa, et cetera. The idea was to make the fuselage *progressively* stronger from the tail to the nose.

Lastly, the wing attachment was the same as used on my old Valkyrie and Clipper, and which now is coming into wider use. This is the method employing a rubber band stretched tightly across the center of the wing, and attached to straight wires in the wing mount. The most important advantage is that the wing detaches from the fuselage on any hard impact by pushing the rubber band off one of the wires, which saves both wing and fuselage from a great deal of damage. The tail was attached in this way also, and for the same reason, as well as another. To avoid damage to this unit, it has to be able to slide off forward, because landing on rough ground occasionally causes a "cartwheel" onto the tail, smashing it if it is very firmly fixed.

That, briefly, is the gist of the thought that went into the model which later began to be called the Zipper. Several hundred flights were made with a number of test models, and naturally we found plenty of things to improve. The greatest source of trouble





was broken ignition wire—and it always broke at a soldered joint. We got away from this by using Fahnestock spring clips everywhere possible. Then if a wire showed signs of breaking near the clip, it was easy to cut the wire at that point, remove the insulation, and once more insert the wire into the clip.

Another thing was the difficulty in getting consistent flights because of small, unnoticed changes in the position of the wing or tail. The solution to this has been "keying" the wing and tail in one position with a simple key system which yet permitted them to be jarred loose on impact. An important point was found to be the horizontal alignment of the wing and stabilizer, to prevent unsuspected and perhaps undesirable circling adjustments. The easiest way to check this was to lay the ship upside down on the floor, with the wing tips touching, and then measure the height of each stabilizer tip. Changes were made until both tips showed the same distance from the floor, thus aligning them with the wing tips.

Anderson and I finished our models at the 1938 Nationals at Detroit, and I gratefully acknowledge here the aid rendered me by members of the up-and-coming Minneapolis Model Aero Club and my fellow members of the Chicago Aëronuts. Anderson, or Andy, as everyone calls him, didn't quite believe the model could be successful since it appeared so radical. So when his motor quit right after the first take-off and the ship was slightly damaged as a result, he didn't bother to fix it up, but went back to his well-tested large model. Bad luck continued to dog him, however, and this ship came out second best in an argument with a tree. Then his coil was ruined through the intense heat of the sun shining on his fuselage.

My ship didn't fare much better. It was finished at exactly 5 p. m. and the meet was due to close at 5:30. Two or three hasty test glides seemed to be O. K., and so I made the first flight an official one. With the motor throttled down, the ship climbed nicely; the glide seemed rather fast, but because of the very short time remaining and the high wind I didn't pay any attention to it. Running to the waiting line, I just managed to become the last one signed up for an official flight. There wasn't any choice but to open the motor wide, which I did. The model sped across the cement runway, lifting much too slowly, and was just starting a mild bank when it crashed into a car standing about two hundred feet from the point of release. When I tested the ship again back in Chicago some weeks later, the failure to rise properly was determined as being due to too much tail lift for fuselage have a decided stabilizing effect. However, for greatest efficiency, thin, lightweight balsa wheels are better, having much lower drag, and only one quarter the weight. This, in turn, calls for designing stability into the airplane. Raising the wing high above the fuselage with a wing mount does the trick, that position of the center of gravity. Moving the ignition parts toward the rear, and setting the stabilizer at a half degree negative angle flattened out the glide and produced a climb of better than 2,000 feet per minute.

The Midwestern States was the next big contest to come up. This meet, the most important in the Midwest, is conducted annually by the Gas Model Aëronauts of Chicago (not to be confused with the Chicago *Aëronuts),* in collaboration with the Chicago Park District. The prize list is always large, and the prizes well worth winning, so the competition is keen. Meanwhile, I had loaned the plans of the Zipper to Dick Obarski, an expert rubber-power model builder and a good friend of mine, who wanted to build it for his first gas model. He finished and tested the job on the morning of the Midwestern, and after four fine test hops he made two official flights and easily walked off with first place. My ship made six good test hops in the morning, running around three minutes each on twenty-second motor runs.

Then came timer trouble, and I just couldn't get rid of it. I lost two more contests for exactly the same reason before I woke up to the fact that the timer, too, must be removable with the rest of the ignition. At this meet the motor stuttered badly because of poor timer contact-point pressure, and on top of this I must have accidentally changed an adjustment, for when the ship finally got off it started looping violently. The third or fourth one broke the spar joints in the center of the wing, and that was all for me that day.

I fixed the small amount of body damage in a few minutes the following week, and tried a different type of spar joint for the wing which proved much more successful. That week end, at the big Mississippi Valley Meet, held in St. Louis each year by the Stix, Baer and Fuller Model Club, and the St. Louis chamber of commerce, a twenty to twenty-three-mile wind blew all day, but with motor running at half throttle, a sixteen-second motor run on my first flight managed to make first-place time.

We were really off to a string of "wins." The following week Andy took first at a meet by the Buzzard Model Club. Then, the week after that, with my timer refusing to do more than twenty seconds, my Zipper took second place at the American Legion National Contest held in Indianapolis, just a few seconds behind Gerald "Ritz" Ritzenthaler of Chicago, who was using the full thirty-second run. The next week end I got second place at the Scripps-Howard Junior Aviator National Contest in Akron, with an eight-minute out-of-sight flight, the Zipper flying nineteen more minutes before coming down, regardless of theories. Sure, it's a lot easier and a trifle lighter to simply slap the wing on top of the fuselage. But the extra stability *more* than repays the extra work in the wing mount.

To sum up the matter, the Zipper-type design has opened up the field which is going to expose many false notions of That was the last second place taken by the Zipper design. Since then Andy, and Barney McShane, of the Penguin Aëro Club, have won numerous firsts at Rockford and Chicago. All in all, entering eleven meets within a period of a few months, the Zipper came out first nine ti nes and second the other two times. The number of expert builders who asked for copies of the plans has been a further proof that the ship "had something."

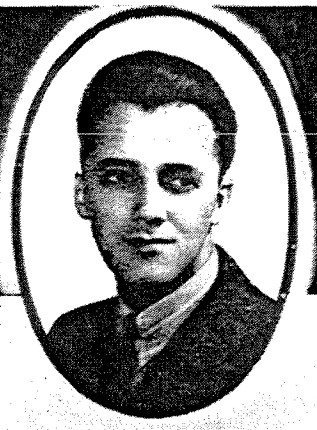
The small-motor class of model was given similar design treatment, and the result was a performance exceeding even the best that large-size models had normally shown. This model was named the Mercury. The first one had a wing loading of fourteen ounces per square foot, but a fifteen-second run on the excellent Willard engine (displacement about .19) got the ship up so high that the total flight was two minutes fifty seconds. This design was refined several times and the results have been such that it's going to be difficult from now on to say that small models haven't got a chance against big ships. The wonderful little Ohlsson "23" has also been used, and is about the most powerful engine per cubic inch displacement I've yet seen.

And now, perhaps it would be useful to explain some of the reasons for the high wing mount. First of all, both my observation of other models and experience with my own has taught that the higher the wing is above the center of gravity, the more stable is the flight. It has also shown me that the center of lateral area *contributes* to stability if it, too, is placed high—the higher the better. Building small high-powered models has been successful in proving that the common theory of placing the C. L. of A. near the C. G. is open to considerable question, as ships so designed have been extremely sensitive and difficult to adjust. On the other hand, the Zipper-type model with very high C. L. of A. has proven fairly easy to handle. The trouble with the theory of carefully located C. L. of A. is that it assumes an action in spiral diving which it seems to me is not the one which ordinarily takes place. That is, it assumes the model to be skidding outward. Observation indicates that in the spiral dive commonly seen there is a gentle *sideslip.* It seems that the ship is banked, getting insufficient lift from the wing, and is trying to "ride" the side of the fuselage in an effort to hold the nose up. In this case, then, it is obvious that extra side area above the center of gravity tends to right the ship, as shown in the accompanying sketch.

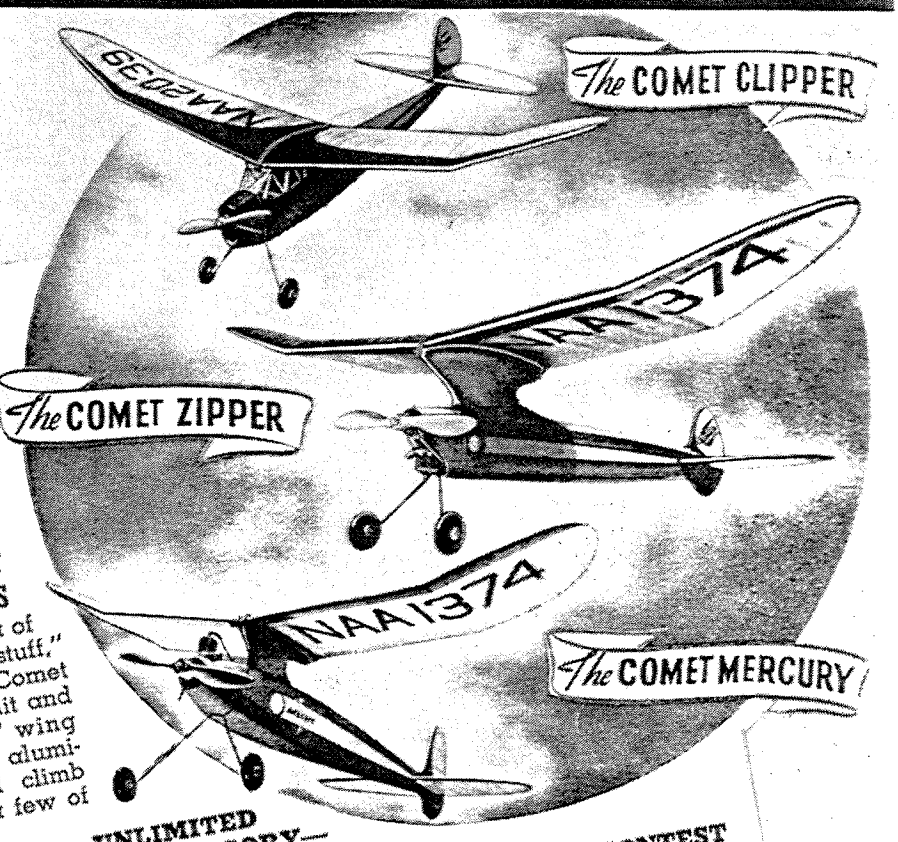
Of course, there are many other ways to get stability. The common way is to use a pair of rubber wheels. These average from three to seven ounces in weight, and when placed far below the stability, teach correct aërodynamic and structural design, and provide real enjoyment. It costs less to build, and is more convenient to transport. It is more rugged. And lastly, its performance is a model builder's dream.

(Note: Drawings for the above article were made by Robert Reder.)

VICTORY!



CARL GOLDBERG
Gas model wizard whose genius made the triumph of these Comet models possible.



COMET MODELS sweep the NATIONALS at DETROIT!

RESULTS OF THE 1939 DETROIT NATIONALS . . . GAS EVENTS

It's an impressive record—the result of model-builders who "know their stuff," and the many exclusive features of Comet Gas Models! Detachable motor unit and battery track, "automatic pilot" wing mount, shock-proof wing and tail, aluminum motor mounts, sensational climb and flat glide—these are only a few of Comet's outstanding features!

CLASS B—OPEN

1st—Mercury—Robt. Besse, Cleveland, Ohio.
6th—Mercury—W. H. Gowan, Jr., New Philadelphia, Ohio.

UNLIMITED CATEGORY JR.—SR.


Bob Wright

1st—Zipper—Bob Wright, Topeka, Kans.
2nd—Zipper—Vernon E. Krehbiel, Williamsville, N. Y.
3rd—Zipper—Henry Velkoff, Fort Wayne, Indiana.
4th—Zipper—Harry Lorenzen, Detroit, Mich.
5th—Zipper—A. Gordon Wheler, Jr., Syracuse, N. Y.
6th—Zipper—Bill Redeker, Cincinnati.
7th—Zipper—Dean Allen, Detroit.
9th—Zipper—Jack Dietz, Cincinnati.
10th—Clipper—Bob Grams, Wyandotte, Mich.


Bud McClellan

UNLIMITED CATEGORY—OPEN

1st—Zipper—Bud McClellan, Detroit, Mich.
3rd—Zipper—Chas. C. Hinkle, Janesville, Wis.
5th—Zipper—Louis B. Mander, Swissvale, Pa.

POWER MODEL CONTEST CLASS C—SR.—JR.

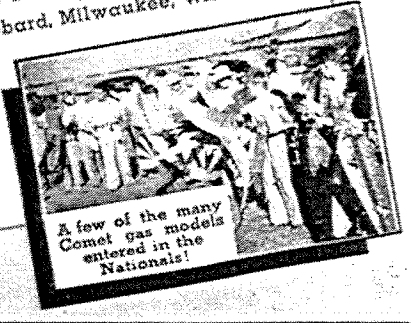
1st—Clipper—Roy Roush, Ferndale, Michigan
4th—Zipper—M. Spector, Cincinnati.
7th—Zipper—F. D. Page, Jr., Williamsport, Pennsylvania.
8th—Zipper—Oliver Pfeil, San Antonio, Texas.
10th—Zipper—Frank Vollrath, Indianapolis, Indiana.

FIVE FIRSTS out of a POSSIBLE SIX—and many other places!

POWER MODEL CONTEST CLASS C—OPEN


Dick Everett

1st—Zipper—Dick Everett, Elm Grove, West Virginia.
3rd—Zipper—Frank Draper, Charleston, West Virginia.
6th—Zipper—W. R. Cruthirds, Little Rock, Arkansas.
7th—Clipper—Henry Gebbard, Milwaukee, Wis.


A few of the many Comet gas models entered in the Nationals!

The COMET MERCURY
Kit No. T11
$2.95

The COMET ZIPPER
Kit No. T10
$3.95

The COMET CLIPPER
New 1939 Version
Kit No. T7
$4.95

Postage on each of the above kits 25c: none if ordered from dealer.

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1939 "NATIONALS" WINNERS

OUTDOOR CABIN CONTEST

Admiral Moffett Eliminations
Jr.-Sr. Age Div.

Robt. Toft	19	Minneapolis, Minn.	765.33	Stout Perpetual Trophy Peerless Model Airpl. Tr.
Geo. Reich	18	Cleveland, Ohio	515.53	Fleetwings Trophy
Edward Naudzius	20	Detroit, Mich.	444.73	Scient. Mercury & Xch. Cl.
Walter Dickinson	20	Newark, N. J.	440.46	Starliner and Xch. Cl.
Robt. Lichten	17	Philadelphia, Pa.	439.53	Exchange Club Award
Earl Stahl	20	Johnstown, Pa.	392.46	Exchange Club Award
Robt. Romeisen	15	Indianapolis, Ind.	352.66	Exchange Club Award
Lawrence Cowell	15	Pontiac, Mich.	308.06	Exchange Club Award
Jos. Vermoch	20	Chicago, Ill.	300.40	Exchange Club Award
Abraham Adler	17	Philadelphia, Pa.	294.66	Exchange Club Award
Ervin Leshner	20	Philadelphia, Pa.	285.20	Comet Award
Ted Just	17	Johnstown, Pa.	261.06	Comet Award
Rodney Streed	19	Waukegan, Ill.	241.13	Socony Vacuum Medal
Arthur Koslow	18	Perth Amboy, N. J.	227.20	Socony Vacuum Medal
Gilbert Shurman	17	New York City	215.33	Socony Vacuum Medal

OPEN AGE DIV.

V. C. Davis	24	Houston, Texas	527.13	Guillow Award
Kenwood Carter	29	1017 Maynor, Nashville, Tenn	503.73	OK Mtr. & Xch. Pl.
Kenneth Carpenter	21	Akron, Ohio	294.46	Starliner Xch. Pl.
Robert Redder	21	Chicago, Ill.	262.00	
Henry Thomas	23	1353 Grant, Akron, Ohio	204.80	Xch. Cl. Awd.
Henry Struck	22	1917 Roosevelt, Jack. Hghts., L. I.	185.60	Xch. Cl. Awd.
Dick Korda	24	Cleveland, Ohio	183.53	Xch. Cl. Awd.
Stephen Thomas	23	Akron, Ohio	176.06	Xch. Cl. Awd.
Frank Plachy	23	Chicago, Ill.	160.60	Xch. Cl. Awd.
Steve Herchick	21	Bridgeport, Conn.	134.26	Comet Award
M. W. Anderson	21	Staten Island, N. Y.	133.80	Comet Award
Dick Everett	21	Elm Grove, W. Va.	123.00	Soc. Vac. Medal
Curtiss Janke	23	Sheboygan, Wis.	122.66	Soc. Vac. Medal
Leo Bailey	21	Akron, Ohio	122.53	Soc. Vac. Medal.
Robt. Redder	21	Chicago, Ill.	118.66	Soc. Vac. Medal

WAKEFIELD INTERNATIONAL CONTEST ELIMINATIONS

			Open	
Dick Korda	24	Cleveland	263.66	Mechanix Illustrated Cup
James Cahill	21	Indianapolis	180.66	Syncro Ace Engine & Ex. Medal
Fred Mees	24	Columbus	156.46	Comet Award
Jas. Noonan	22	Milwaukee	141.33	Comet Award
Walter March	21	Chicago	116.33	Comet Award
John Kubilis	21	Chicago	114.06	Comet Award
Conrad Renning	28	Minneapolis	106.06	Comet Award
H. Thomas, Jr.	23	Akron, Ohio	89.66	Metro. Exch. Cncl. Medal
Magnus Anderson	21	Staten Island	87.40	Metro. Exch. Cncl. Medal
Henry Struck	22	Jackson Hghts.	85.00	Metro. Exch. Cncl. Medal

WAKEFIELD INTERNATIONAL CONTEST ELIMINATIONS—JR. AND SR.

R. Gene Chaille	16	Miami	489.20	Peerless Model Co. Trophy
Jack Thames	18	Pittsburgh	394.33	Fairchild Engine & Airplane Cup
James Bohash	20	Detroit	275.66	Syncro Bee Engine & Ex. Medal
Arthur Beckington	16	Rockford	213.46	Comadore Kit & Exchange Medal
Earl Stahl	20	Johnstown	190.60	Xacto Knife & Exchange Medal
Alvie Dague, Jr.	19	Tulsa	170.93	Xacto Knife
George Johnson	17	Minneapolis	167.60	Xacto Knife
Ed. Lingard	20	Chicago	165.26	Comet Award
Ray Beaumont	15	Philadelphia	160.40	Comet Award
Tony Carrara	19	Cincinnati	141.46	Comet Award
Walter Seemiller	16	Lakeland	112.53	Comet Award
Harvey Prochnow	18	St. Paul	106.80	Metro. Ex. Club Medal

RADIO CONTROLLED POWER MODEL EVENT

$100	Walter Good	89 Points	Ed. Roberts Trophy
50	Joe Raspanti	11 Points	General Battery Trophy
30	Elmer Wasman	9 Points	R.C.A.
15	Phillip Sonheim	8 Points	Burgess Battery
15	C. H. Siegfried	8 Points	Baby Cyclone Engine
15	Robt. Mende	8 Points	
15	Ervin Leshner	8 Points	
10	Jesse Bieberman	6 Points	
	Howard Flanigan	1 Point	
	Chester Lanzo	1 Point	
	Robt. Rose	0 Point	

All radio contestants receive Metropolitan Council Exchange Club Plaque.

AMERICAN WAKEFIELD INTERNATIONAL COMPETITION TEAM

Robert C. Chaille	16	Miami	8:09.2	Exchange Club Award
Jack Thames	18	Pittsburgh	6:34.3	Exchange Club Award
James Bohash	20	Detroit	4:35.7	Exchange Club Award
Dick Korda	24	Cleveland	4:33.7	Exchange Club Award
James Cahill	21	Indianapolis	Winner of Wakefield contest in Paris last August	Ex. Medal
Ralph Baker	17	Santa Ana, Cal.	Winner of the West Coast Elimination	Ex. Model

AMERICAN MOFFETT INTERNATIONAL COMPETITION TEAM

Edward J. Naudzius	20	Detroit, Detroit Chapter N.A.A.	186.00	Exch. Club Cncl. Awd.
Geo. Reich	18	Cleveland, Cleveland Balsa Butch	147.66	Exch. Club Cncl. Awd.
Robt. Toft	19	Minneapolis, Minn., Minn. Model Aero Club	110.13	Exch. Club Cncl. Awd.
Walter Dickinson	20	Newark, N. J., Kresge Aero Club	98.73	Exch. Club Cncl. Awd.
V. C. Davis, Jr.	24	Houston, Tex., Houston Miniature A.	60.06	Exch. Club Cncl. Awd.
Kenwood Carter	29	Nashville, Nashville Aero Club	58.20	Exch. Club Cncl. Awd.
Robt. Lichten	17	Phila., Quaker City M.A.A.	439.53	Exch. Club Cncl. Awd.

CANADIAN MOFFETT TEAM

Lavelle Walters	27	Windsor, Ont., Can.	93.93	Exch. Club Cncl. Awd.
Robt. Milligan	18	Toronto, Ont., Can.	66.73	Exch. Club Cncl. Awd.
Jeff Harris	23	Toronto, Ont., Can.	51.06	Exch. Club Cncl. Awd.
Roy Nelder	18	Toronto, Ont., Can.	49.06	Exch. Club Cncl. Awd.
Charles Fairfield	16	Toronto, Ont., Can.	34.66	Exch. Club Cncl. Awd.
Harry Lucas	15	Toronto, Ont., Can.	30.06	Exch. Club Cncl. Awd.

MOFFETT INTERNATIONAL COMPETITION WINNER & RUNNERS-UP

Richard Naudzius	20	Detroit	3:02	IMP. Prop Clock. Moffett Trophy
Geo. Reich	19	Cleveland	2:09.2	
Robt. Toft	19	Minneapolis	1:16.7	
Walter Dickinson	20	Newark, N. J.	1:12.9	
Lavelle Walters	27	Windsor, Ont.	1:11.3	
Robt. Milligan	18	Toronto, Ont.	1:00.9	

OUTDOOR FLYING SCALE MODEL CONTEST

		Wrkship and Fid.	*Open Age Class Flt. Pts.*	*Total Score*	*Joy Cash Award*	
Henry Thomas, Akron, Ohio	23	39.25	30	69.25	$25	Thos. Bourne Joy *Memorial Trophy* Exchg. Council Awrd.
Henry Struck, New York City	22	42.75	25.85	68.60	$20	Exchg. Council Awrd.
John Ogilvie, New York City	22	42.75	24.94	67.69	$15	Exchg. Council Awrd.
Herbert Wise, Akron, Ohio	21	25	27.37	52.37	$10	Exchg. Council Awrd.
Jas. Noonan, Milwaukee, Wis.	22	38	6.40	32.40	$ 5	Exchg. Council Awrd.
			Jr.-Sr. Age Class			
Roger Hammer, Newark, N. J.	18	35.75	24.63	60.38		Wm. O'Neil Trophy & Gas Eng. Exchg. Council Awrd.
Anthony Kaslouskas, Akron, Ohio	18			60.28	12.50	Exchg. Council Awrd.
Rancel Hill, Akron, Ohio	18	24.50	30	54.50	7.50	Exchg. Council Awrd.
Ted Just, Johnstown, Pa.	17	28.25	24.53	52.78	5.00	Exchg. Council Awrd.
Martin Phillips, Boston, Mass.	15	28.75	5.24	33.99		Exchg. Council Awrd.
Harry Lerman, Boston, Mass.	17	27.	5.95	32.95		Exchg. Council Awrd.
Wm. Hammer, Milwaukee, Wis.	17			27.75		Exchg. Council Awrd.
Leonard Baer	15			11.75		Exchg. Council Awrd.
Leon Kortas	16					Exchg. Council Awrd.

INDOOR STICK

Jr.-Sr.

Ed. Naudzius	20	Detroit	17.51 3/5	Stout Trophy C. A. Campbell Solventol Cronogran
Alvie Dague, Jr.	19	Tulsa	17.29 1/3	Torpedo Engine, Ex. Pl.
John Stokes	18	Huntington Valley	17.07 1/3	Syncro Saw, Ex. Pla.
Milton Huguelet	17	Chicago	16.09	Camera, Xacto & Pla.
Robert Jacobsen	19	Philadelphia	15.08	Ex. Pla.
Ted Just	17	Johnstown	15.04 1/3	Ex. Pla.
Gilbert Shurman	17	New York City	14.35 1/2	Ex. Pla.
Charles Belsky	20	Chicago	14.33 1/5	Ex. Pla.
Wilfred Bobier	15	Detroit	14.10	Ex. Pla.

POWER MODEL CONTEST

Class A - Junior - Senior Age Division

John Findra, New Brunswick, N.J.	66.68
Leon Shulman, Brooklyn, N.Y.	28.83
Arthur Block, New York, N.Y.	23.53

Class B - Junior - Senior Age Division

Max Wassem, New Philidelphia	535.33
Herbert Friedlander, Brooklyn, N.Y.	377.4
Robert Hoffmeyer, Akron, Oh.	103.4

Class C - Junior - Senior Age Division

Roy Roush, Ferndale	465
E. Barron, Jr., Grayslake	241.06
F. J. Lorenz, St. Louis, Mo.	208.93

Unlimited Category - Junior - Senior Division

Bob Wright, Topeda, Kan.	234.
Vernon E. Krehbeil, Williamsville	222.33
Henry Velkoff, Fort Wayne, Ind.	221.06

Class A - Open - Age Division

Frank Young, Lansing, Mich.	1st;
Charles Guarnieri, New York, N.Y.	

Class B - Open - Age Division

Robert Besse, Cleveland, Oh.	219.13
Henry Thomas, Jr., Akron, Oh.	113.
Dick Korda, Cleveland, Oh.	101.07

Class C - Open - Age Division

Dick Everett, Elm Grove	295.3
Wm. J. Alsopp, Detroit, Mich.	231.
Frank Draper, Charlestown	200.66

Unlimited Category - Open - Age Division

Bud McClellan, Detroit, Mich.	767.7
Edwin Schunke, Milwaukee, Wis.	329.33
Norman A. Cross, Detroit, Mich.	227.33

VICTOR STANZEL

1910 - 1977

G-Line - 1939

Monoline - 1949

Courtesy Victor Stanzel Co.



The Super Streamlined TIGER SHARK roars through the air at a speed of from 50 to 75 M.P.H. Always under full control. May be powered with any ½ H.P. motor.

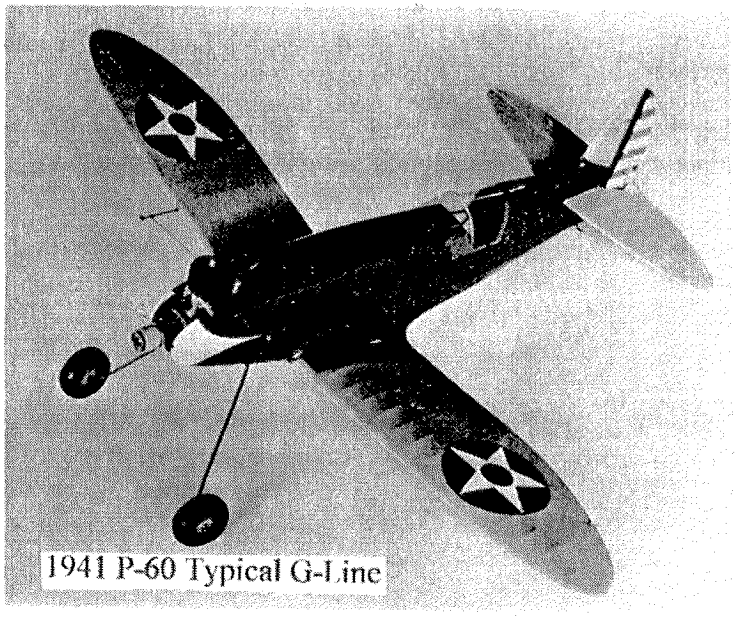
DELUXE CONSTRUCTION KIT is most complete, including plenty of balsa, printed parts, Airwheels, etc. Together with a generous amount of cement and dope. Also detailed drawings and instructions for building the ship and new control system. DO NOT DELAY, SEND US YOUR ORDER TODAY.

DEALERS WRITE FOR SPECIAL DISCOUNT.

VICTOR STANZEL & CO.
Schulenburg, Texas

Begining of a New Era
Control-Line Flying
First Ad for G-Line
In M.A.N. Dec. 1939





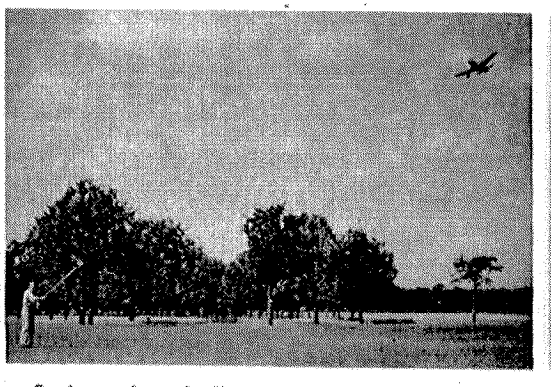
1939 LIGHTNING ON A LEASH - First Control-Line Airplane in Production (Single Line on a Pole)

"G-LINE" FLYING

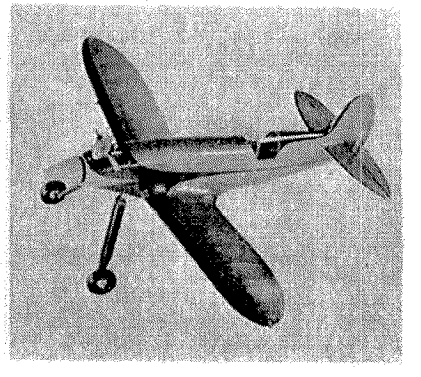
Here's a new wrinkle. Victor Stanzel's idea of controlling gas models in flight makes possible high-speed racing and indoor flying. You don't have to worry about motor run, either.



Stanzel readies Tiger Shark for take-off. Ship does 50-75 m.p.h. with 1/5 h.p. motor.



Pouring on the coal. The 50-foot guide cord runs from pole to arm on ship. Model can be dived and zoomed at will.



Tiger Shark spans 36", weighs 1¾ pounds. Guide cord should be either strong linen or silk. All set?

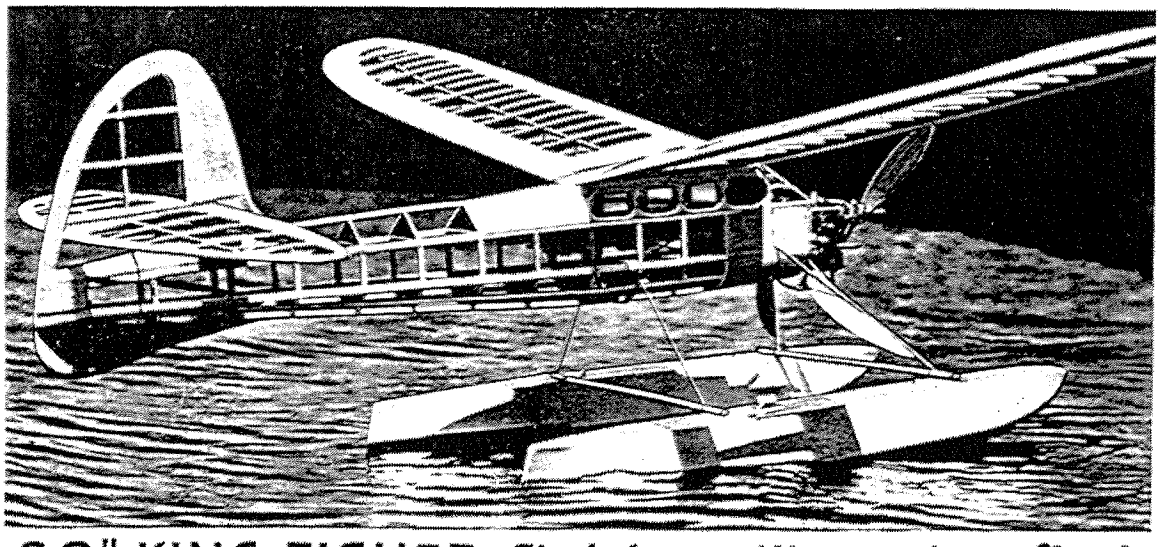
Effective January 1, 1940

LATEST 1940 *Joe Ott* MODEL AIRPLANE KITS

Our KINGFISHER lends itself very well to both land and water flying. Provision is made on our full size JOE OTT Blue Print Plans for a 6 foot wing when model is to be built for seaplane type. In this way the wing loading is maintained at 8½ to 9 ounces per square foot. However the model has been thoroughly tested for seaplane flying with a 5 foot (60") wing and found to perform perfectly with only a slight increase in the gliding and sinking speed. Experienced model builders will be agreeably surprised to find this model has an exceptional amount of inherent stability and it stays right-side up at all times. Designed for ⅞" bore motors using 14" propellers.



NOTICE CLEAN STREAMLINING — ILLUSTRATION WITHOUT MOTOR COWL.



60" KING FISHER *Skeleton-with seaplane floats*

FOR 20 YEARS Joe Ott—former U. S. Army aviation instructor — has designed and built Model Airplanes. He is considered one of the country's foremost authorities and KNOWS them from nose to tail. Mr. Ott is the author of "MODEL AIRPLANES—BUILDING AND FLYING" and has written many magazine articles on this fascinating subject.

No. 6001—Kingfisher Kit **$5.00**

(Motor Unit Extra) Weight of Kit packed for shipment 6 lbs.

Manufactured By

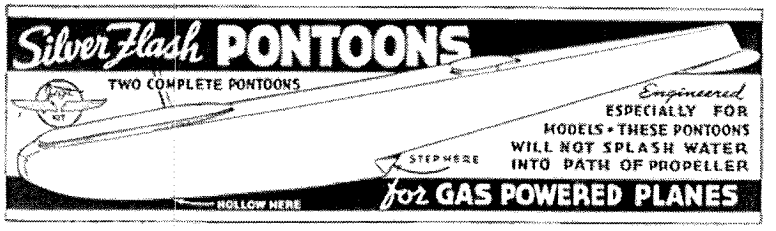
J. L. WRIGHT, Inc.

Makers of Lincoln Logs and Allied Toys

1443 MERCHANDISE MART **CHICAGO, ILLINOIS, U.S.A.**

25" Silver Flash 34"
PONTOONS

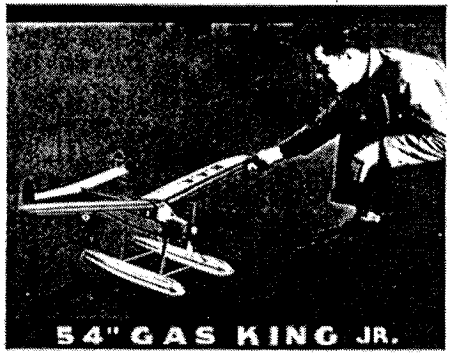
LIST PER PAIR $1.00 — LIST PER PAIR $2.00



The 25" size Pontoons are designed for gas motor driven seaplanes of four to five foot wing span, such, for example as our 54" Gas King, Jr. using ½" or ⅜" bore motors, illustrated to the right.

The total weight of the 25" pontoons ready for use will be from six to eight ounces depending upon slight variations of material and number of coats of dope and color applied. Total weight seaplane with pontoons 26 to 45 ounces.

25" Silver Flash Pontoons .... Kit—Per Pair **$1.00**

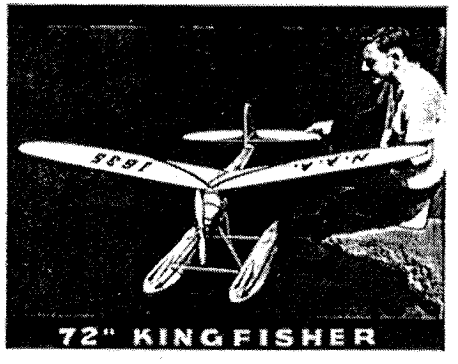


Our 34" Silver Flash pontoons are designed along similar lines to our 25" size and weigh between eight and twelve ounces completed. They will float seaplanes using ⅜" bore motors, having wing spans of 5, 5½, 6 and 7 ft.

Our pontoon design is entirely new - the bottom is concave at front and tapers to convex at step. Total weight seaplane with floats from three to five pounds.

34" Silver Flash Pontoons .... Kit—Per Pair **$2.00**

Floats can be removed from model and wheels put in their place in from fifteen to thirty seconds.



TYPES OF BATTLE PLANES

PURSUIT—Single place, used for patrol work carrying two to eight machine guns. Single motor in most cases and very fast.

FIGHTER—Two place, with 4 to 8 machine guns of heavy caliber, also carrying bombs—is twin motored and fast, and has long cruising range.

BOMBER—Multimotored, long flying range, average speed—heavy bombs, four to eight men. Also carries numerous machine guns of heavy caliber for protection.

RECONNAISSANCE—Usually two or more men and equipped for photography, capable of flying slowly over a given spot. Carries four machine guns, two fore, two aft.

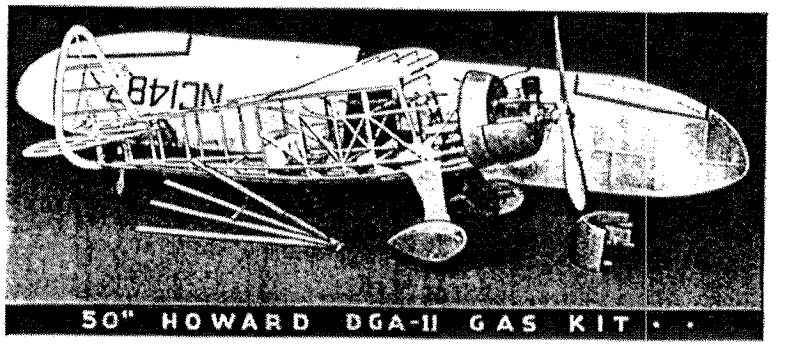
Build and Fly Gas Model Planes

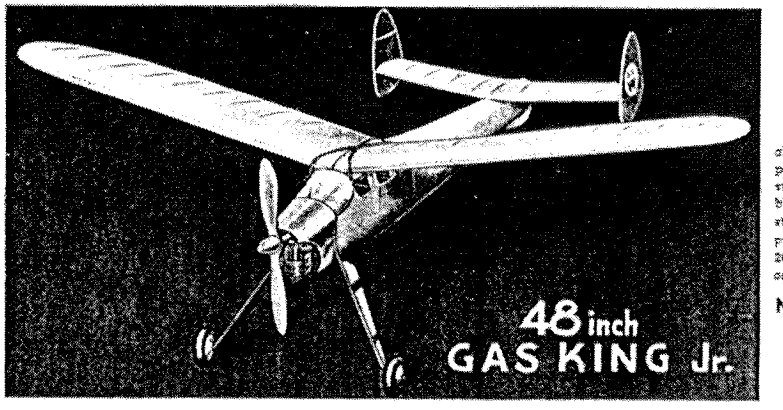
For a Real Flying Thrill Hear the Motor and Watch It Go!

HOWARD D.G.A.-11

This Howard D.G.A.-11 plane is designed along the lines of the famous "Mr. Mulligan"—Thompson Trophy, 1935 Winner. The original plane designed built and flown by Mr. Benny Howard, who recently completed the flying tests on the world's largest land plane the Douglas D.C. 4. Uses ½ to ⅝" bore motors with 8" propeller.

No. 5001-G ...$2.50





GAS KING Jr.

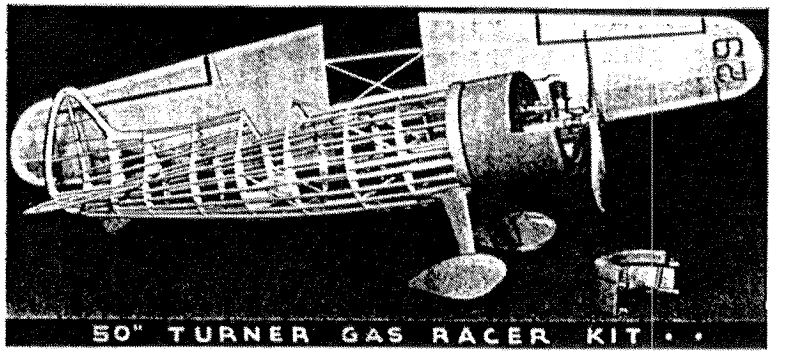
A special contest kit at a price all can afford. Small and compact for transporting. When constructed according to our full size blue prints it is exceptionally strong and will take a lot of punishment. Total weight 22 to 26 ounces—uses motors of ½" or ⅝" bore with 8" propeller.

No. 4801-G ...$2.50

TURNER RACER

World's most famous speed plane of today. Twice Thompson Trophy Winner. Makes a very beautiful gas model when built according to our detailed instructions. Exact scale is maintained throughout the model construction. ½" to ⅝" bore motors recommended.

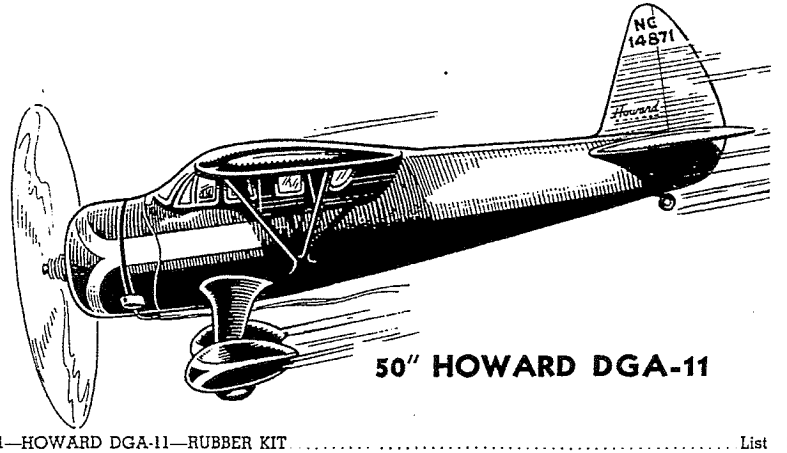
No. 5002-G ...$2.50



Motor and accessories are sold as separate items. These three planes to be flown with ½" or ⅝" bore motors, using 8" propellers. Standard package, 3 Kits assorted. Weight per package, 9 lbs. List per Package **$7.50**

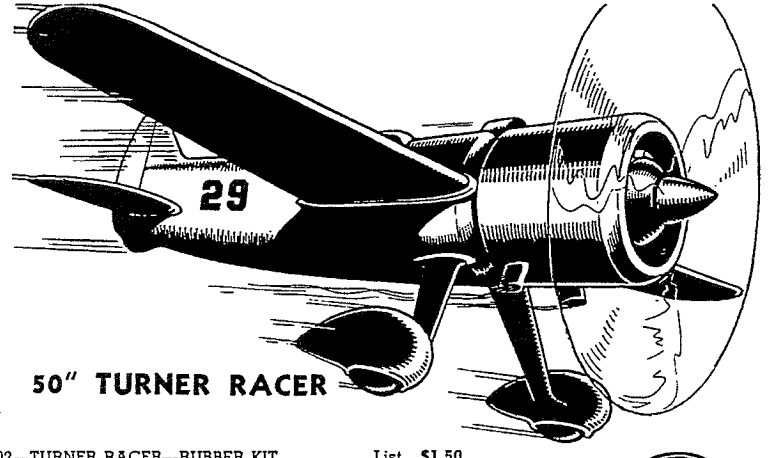
50" WING SPAN Rubber Motor Kits Complete $1.50

RUBBER BANDS AND ALL NECESSARY MATERIALS INCLUDED IN EACH KIT LIST EACH



No. 5001—HOWARD DGA-11—RUBBER KIT ..... List **$1.50**

Full Size 50" x 35" Blue Print Plans with Full Size Perspective Sketches on Each Plan
Designed along the lines of the famous "Mr. Mulligan" which carries five persons and cruises at 200 M. P. H.



No. 5002—TURNER RACER—RUBBER KIT ..... List **$1.50**

Twice Thompson Trophy Winner. Average speed around 300 miles per hour.

These Kits are complete in all respects—50" Full Size Joe Ott Blue Prints—Full Size Illustrated Sketches. Each piece is clearly printed on balsa for easy cutting to a perfect fit.

5000 SERIES—Standard Package, 4 Kits Assorted
Weight, 10 lbs. LIST, Per Package, $6.00

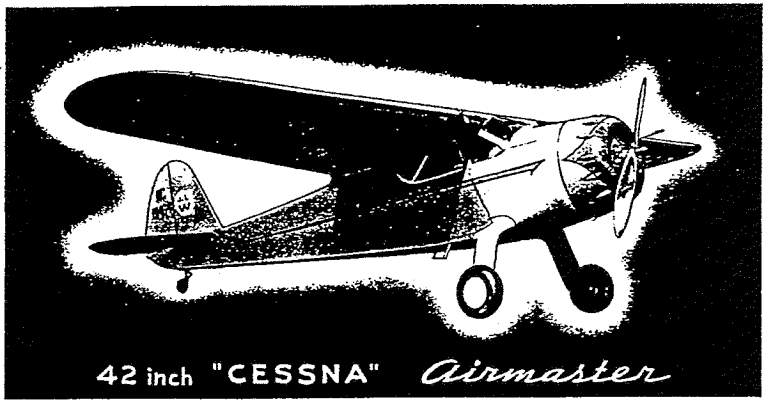
Joe Ott KITS

With New Blue Print Picture Plans. Full Size.

42" WING SPAN Rubber Motor Kits Complete $1.00

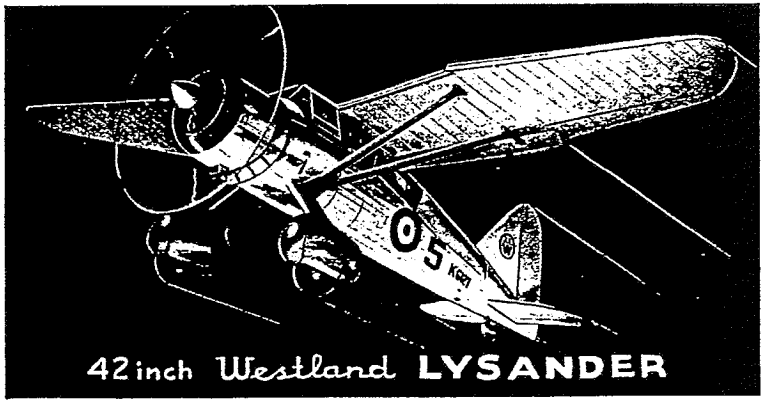
List Each

RUBBER BANDS AND COMPLETE CONSTRUCTION MATERIALS INCLUDED IN EACH PACKAGE



No. 4201—CESSNA AIRMASTER ..... List **$1.00**

Full size 36"x44" JOE OTT Blue Print Picture Plan. These plans include all necessary detailed perspective sketches which show construction step by step. An American Commercial Plane carrying four passengers, with 145 H. P. motor and cruising at 140 M. P. H.



No. 4202—WESTLAND LYSANDER (English) ..... List **$1.00**

An English Reconnaissance Plane used to Photograph the enemy's positions.

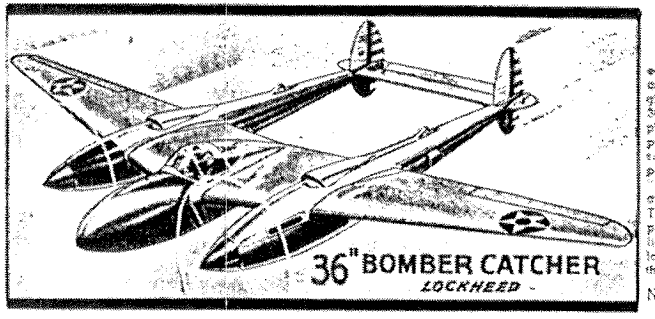
All 42" models have large full size Joe Ott Blue Print Picture Plans including full size perspective sketches.

4200 SERIES—Standard Package, 6 Kits Assorted
Weight 10 lbs. LIST, Per Package $6.00

Joe Ott KITS

36" WING SPAN De Luxe Scale Flyers 50c List Each

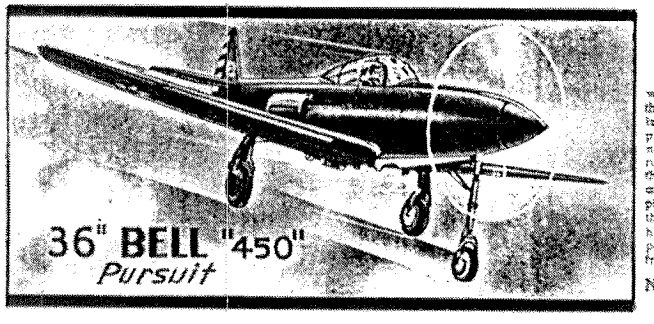
With New 3-View 38"x26" Full Size Blue Print Picture Plans and Perspective Sketches



BOMBER-CATCHER

A special twin motor design produced by the Lockheed Aircraft Corporation of California. High powered motors give this plane exceptional speeds of 360 miles per hour for cruising, and this plane is said to approach 460 miles per hour as a maximum. Strictly designed for military offensive use. The pilot sits in a middle body called a "Nacelle"—having clear vision—fore and aft—and to the left and right. This is very essential in a pursuit plane. The motors are 12 cylinders liquid cooled of inverted design. The landing gear is retractable reducing the resistance to a minimum.

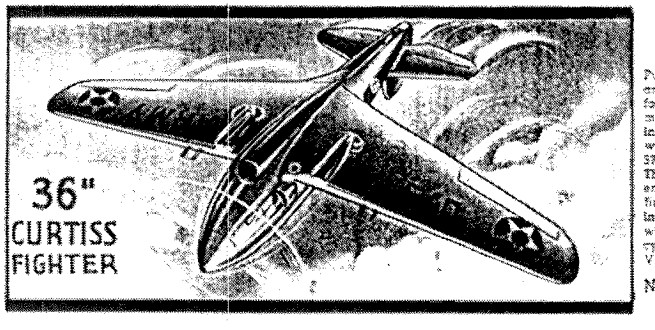
No. 3604 ..... Each 50c



BELL PURSUIT

A new departure in American design which mounts the motor directly above the wing spars. This position centralizes the heavy parts over the center of pressure, permitting the plane to maneuver quickly. The tail stabilizer and rudder is brought closer to the wing than usual, which allows an additional increase in maneuverability. The pilot sits directly over the motor with the propeller shaft running between his feet to the front of the ship and propeller. In this way the pilot is protected from gun fire from below.

No. 3605 ..... Each 50c



CURTISS FIGHTER

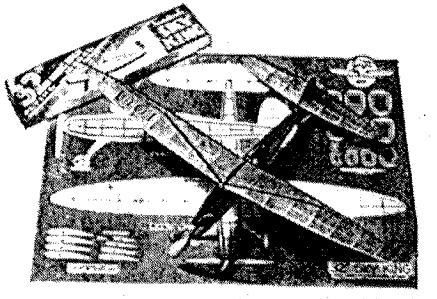
This is one of our fast American Pursuit ships now in high production and is being sold to foreign countries for military service. Capable of tremendous speeds especially for diving and attacking the enemy during which maneuvers they attain speeds of 375 to well over 600 miles per hour. The method of fighting is to sight the enemy from above and dive upon them, firing their guns as they approach within range. This type of plane is fitted with either a twin radial motor of 18 cylinders air cooled or twelve cylinder Vee-type motor liquid cooled.

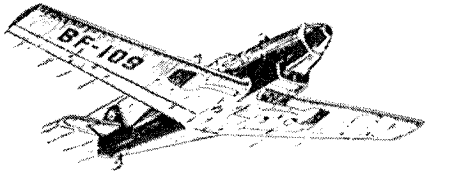
No. 3606 ..... Each 50c

3600 Series {Standard Package 12 Kits Asst. Weight 7 lbs. List per Package $6.00

32" WING SPAN De Luxe Contest Flyers 50c LIST EACH

With New 3 View Full Size Blue Print Picture Plans and Perspective Sketches





32" Messerschmitt Pursuit

No. 3201—Sky King DeLuxe—Cabin Type
No. 3202—Sea Hornet DeLuxe—Seaplane Type
No. 3203—Messerschmitt Pursuit

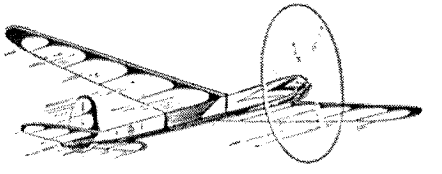
3200 Series { Standard Package, 12 Kits Assorted. Weight 7 lbs. LIST Per Package $6.00



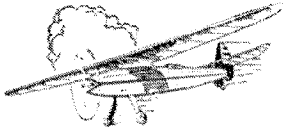
DeLuxe Contest Seaplane

28" WING SPAN Contest Endurance Flyers 25c LIST EACH

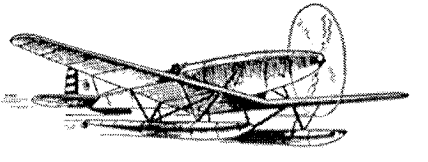
3 View Full Size Plans and Perspective Sketches.



CLOUD BUSTER.



SENIOR CABIN



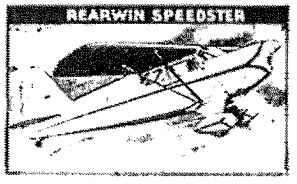
The ALBATROSS.

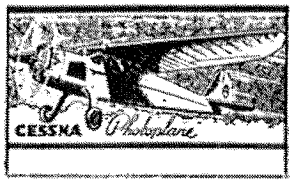
Lloyd KITS

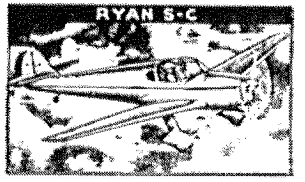
No. 2801—Cloud Buster—Stick Type.
No. 2802—Senior Cabin—Cabin Type.
No. 2803—Albatross—Seaplane Type.

2800 Series { Standard Package, 36 Kits Assorted. Weight 12 lbs. LIST Per Package $9.00

25" WING SPAN FLYING SCALE MODELS 25c LIST EACH

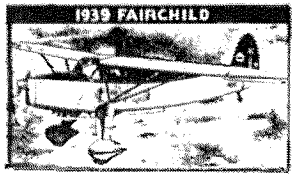


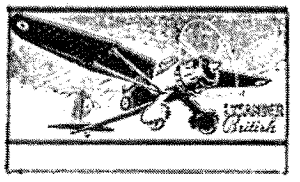




REARWIN SPEEDSTER—A very efficient and popular two-place low priced commercial airplane. When converted to a model makes one of the best scale type flyers known. The long nose permits the wings to remain in their exact location without necessitating extra weights for balancing and the body being thin and narrow is easily constructed.

RYAN S-C—A highly efficient modern type of plane with a side by side seating arrangement, giving extremely clear vision and ideally suited for training purposes. The ship is powered with either a 4 cylinder inverted or radial motor as preferred.

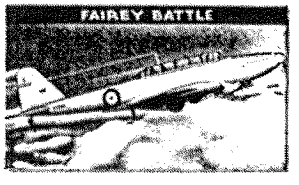


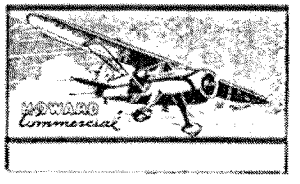


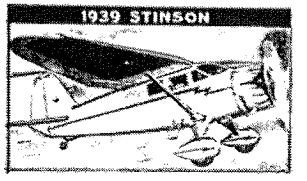


1939 FAIRCHILD—This plane is powered with an inverted 4 cylinder motor designed to carry one or two passengers and pilot. Makes an ideal flying model and is simple to construct because of its in-line motor.

BELLANCA RACER—Designed by Mr. Bellanca as a special racer. It has three 6 cylinder inverted motors. Extremely speedy. It is capable of maintaining flight with the center motor alone or the two side motors. Is equipped with large gas tanks for long distance flying up to and over 3,000 miles in one hop.







FAIREY BATTLE—A model of an English War Plane using a Rolls Royce 12 cylinder upright engine which is liquid cooled. This is one of the highest speed ships in the English Air Service. It is a two place job, carries machine guns for self-protection and is also equipped for light bombing.

1939 STINSON—An American Commercial ship carrying three passengers and pilot which is capable of cruising at 140 miles an hour with a 145 H.P. radial motor. A very popular airplane—is extremely safe and dependable.

PLANS ARE 3 VIEW AND FULL SIZE WITH LARGE PERSPECTIVE SKETCHES SHOWING STEP BY STEP CONSTRUCTION

No. 2501—Fairey Battle
No. 2502—Rearwin Speedster
No. 2503—1939 Fairchild
No. 2504—Ryan S-C
No. 2505—1939 Stinson
No. 2506—Bellanca Racer
No. 2507—Lysander
No. 2508—Howard
No. 2509—Cessna

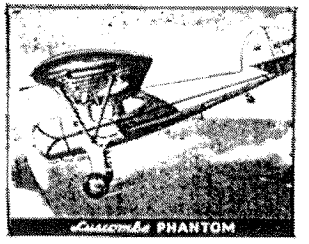
2500 SERIES Standard Package { 36 Kits Assorted, Weight 11 lbs. LIST Per Package $9.00

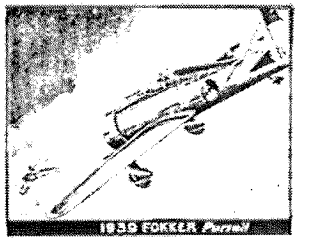
17" WING SPAN FLYING SCALE MODELS 10c LIST EACH

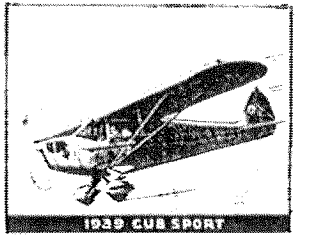
Each box contains all necessary materials for building one complete plane.

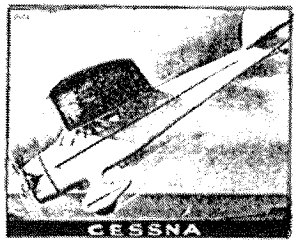
PLANS

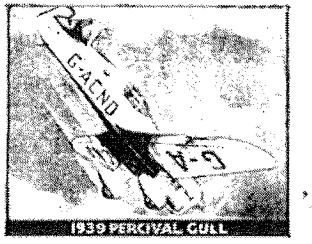
Are 3 VIEW and FULL SIZE with large perspective sketches showing step by step construction.

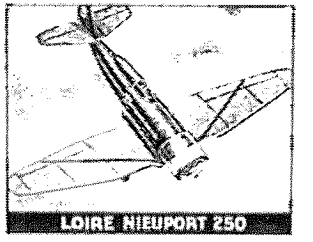


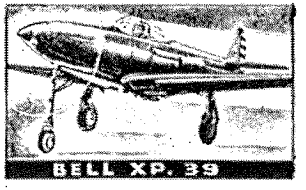


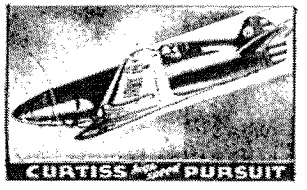


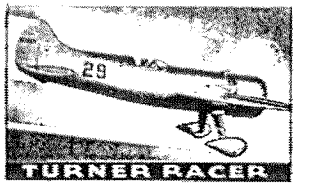




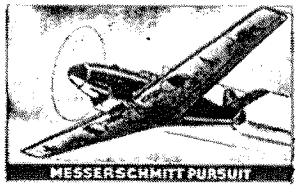












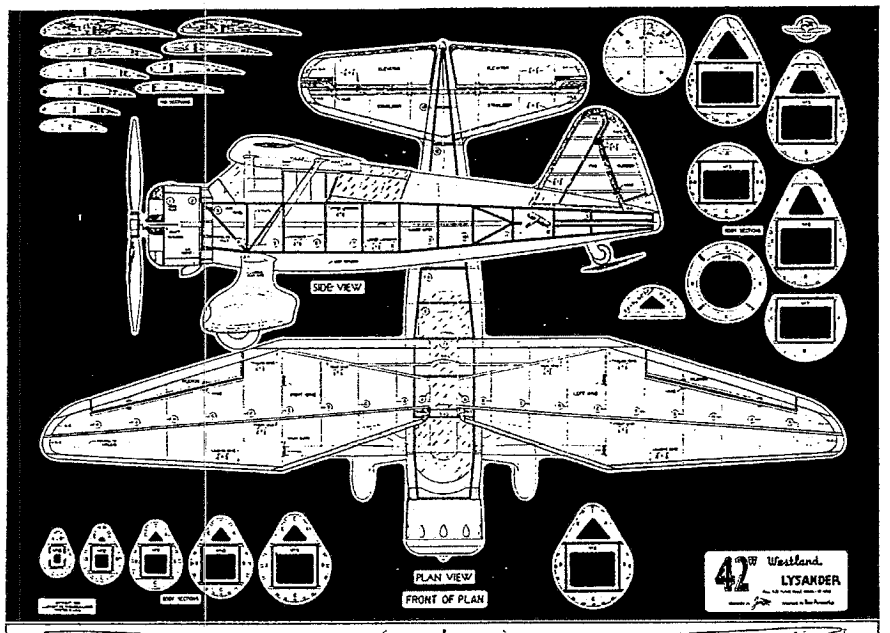


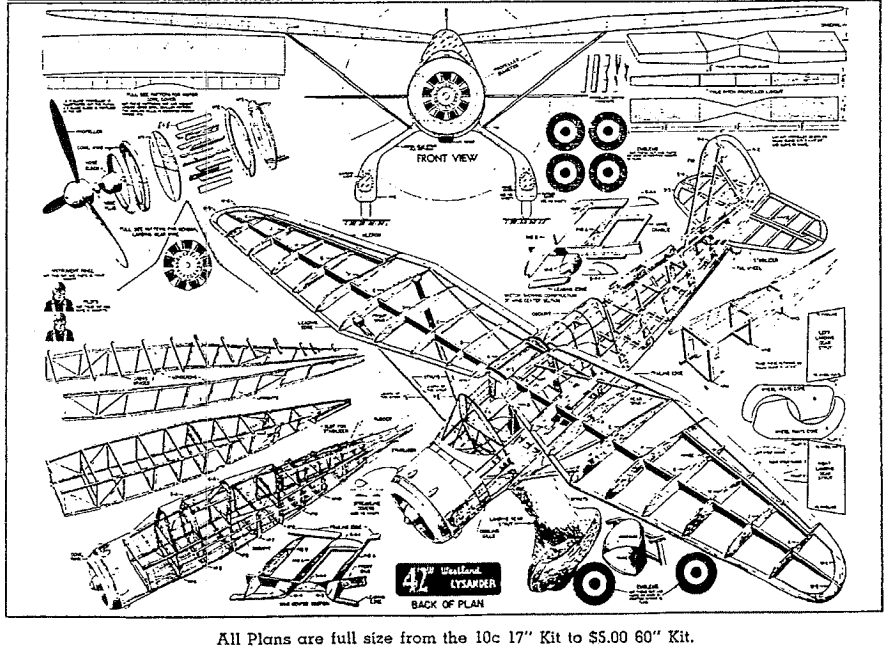
1701—Lusacombe Phantom
1702—1939 Fokker Pursuit
1703—1939 Cub "Sport"
1704—Cessna
1705—1939 Percival Gull
1706—Loire Nieuport 250
1707—Bell XP. 39

1700 SERIES { Standard Package 72 Kits Assorted. LIST Per Package $7.20. weight 11 lbs.

1708—Curtiss Pursuit
1709—Turner Racer
1710—No. American Scout
1711—Messerschmitt Pursuit
1712—Hawker Hurricane

With Each Kit





All Plans are full size from the 10c 17" Kit to $5.00 60" Kit.

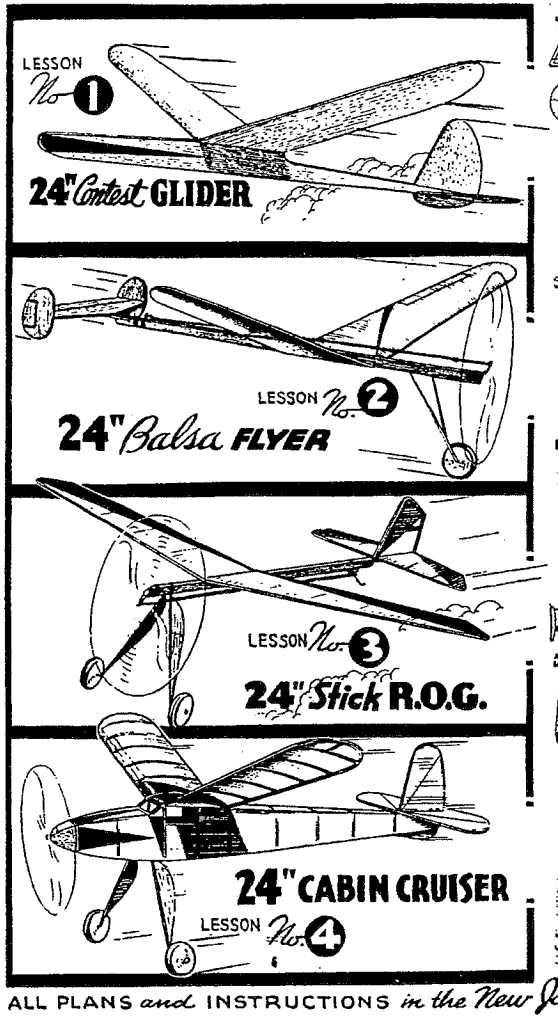
Something New!

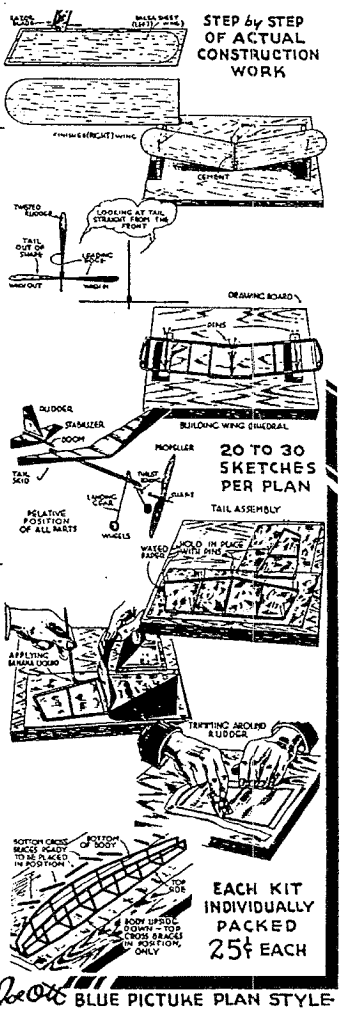
The ABC of Joe Ott AIRPLANE COURSE

• In 4 Lessons

MODEL AIRPLANE BUILDING

JOE OTT'S NEW MASTERPIECE of INSTRUCTION for BEGINNERS •





ALL PLANS and INSTRUCTIONS in the New Joe Ott BLUE PICTURE PLAN STYLE

This Model Course sold only in groups of four Kits. Standard Package, 36 Kits assorted, weight 11 lbs. List Per Standard Package **$9.00**

Printed in U. S. A.

MEGOW'S

Largest Hobbycraft Manufacturers in the World!



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A. WARNAAR, Voorburg, Holland
EASTERN MODEL, Kowloon, Hong Kong, China
G. ESTRADA, Mexico, D. F.

Catalog No. 8

1940

Price 5¢



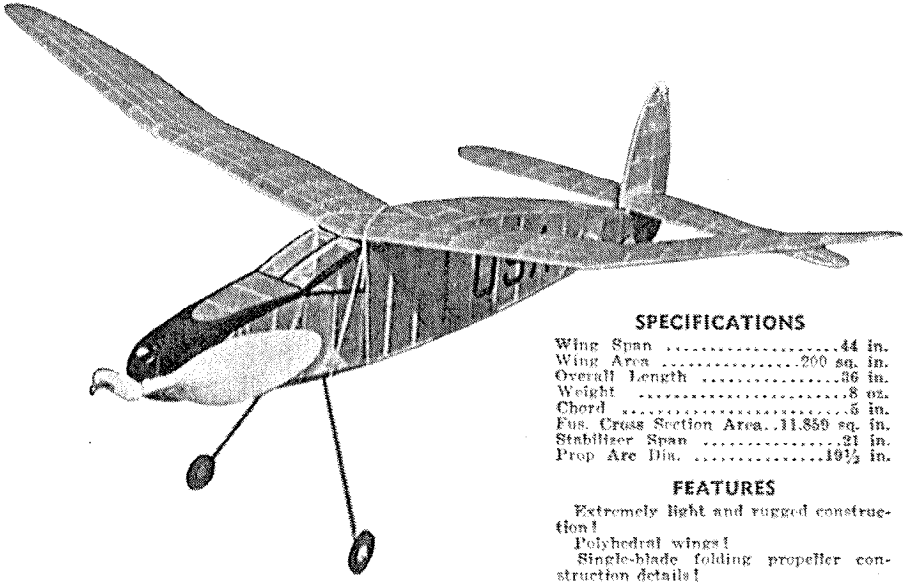
Dick Korda, his Model Airplane and the Wakefield Trophy

New World's Record

43 Minutes, 29 Seconds

MEGOW'S

Korda's Wakefield Winner



SPECIFICATIONS

Wing Span	44 in.
Wing Area	200 sq. in.
Overall Length	36 in.
Weight	8 oz.
Chord	5 in.
Fus. Cross Section Area	11.859 sq. in.
Stabilizer Span	21 in.
Prop Arc Dia.	19½ in.

FEATURES

Extremely light and rugged construction!

Polyhedral wings!

Single-blade folding propeller construction details!

SCOOP! No doubt you have read all about the Wakefield Competition!

How Dick Korda was the first to fly! How he stepped up and clicked off a 43 minute, 29 second flight. How his second and third flights boosted his three flight average of 950 2/5 seconds. Just think of being able to own a model which can perform like this! You can, you know, just by getting Megow's new kit which is a marvel in completeness!

Just think, with this model you can beat all others! Improve on it in some small detail and you may be the next international champion!

Since the great Wakefield events, Dick Korda writes us that his model recently won the Scripps-Howard Contest with a time average of 6 minutes, 22 seconds.

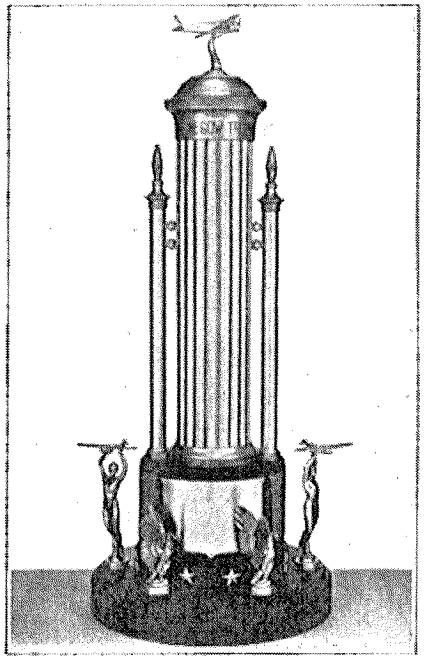
WHAT THIS GREAT KIT CONTAINS!

Megow's kit for building Korda's latest model contains Korda's original and official plan, and material specially selected for the purpose. It conforms exactly to official requirements and enables you to construct a model of marvelous performance and real beauty . . . . the thrill of a lifetime! A full supply of cement, dope, paper covering, all sizes of balsa wood, all hardware, wire, etc. In fact everything is included except rubber which we do not include due to danger of deterioration. For contest work, it is absolutely essential that you use fresh rubber which you may obtain at your local dealer!

Build This International Champion!

KIT No. Z-2

This Complete Kit only $1.00



NATIONAL MODEL AIRPLANE CONTEST—DETROIT
MEGOW TROPHY WON BY KRESGE AERO CLUB!

Competition at the 1939 National Model Airplane Contest held in Detroit was one of the keenest tournaments staged in model history.

One of the greatly contested events was the Club Competition, for which the Megow Trophy is annually awarded to the team winning the most points at the Nationals. Point scoring is carefully based on the value of places won and the distance traveled by the club to get to the meet.

This year's winning team was the Kresge Aero Club of Newark, New Jersey.

The Team Winners are as follows:

Benjamin Shereshaw, director

John Findra, Jr.	Roger Hammer	Herbert Friedlander
Leon Schulman	Henry Struck	John Ogilvie
Arthur Block	Joseph Raspanie	Walter Dickinson
	Gordon Murray	

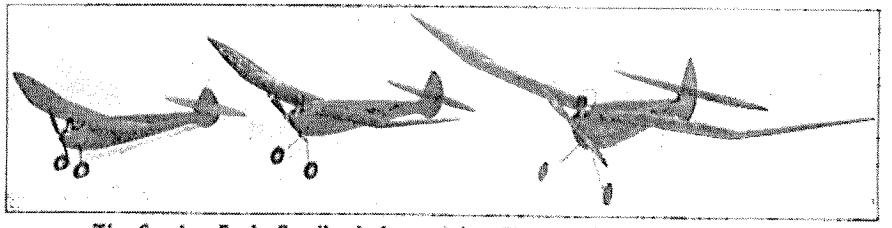
The 1940 competition promises to be greater yet! For full details of this event, club directors and members should write the National Aeronautic Assoc., Dupont Circle, Washington, D. C.

JOIN THE N. A. A.!

If you are a gas model or rubber powered model builder, the National Aeronautic Association, Model Division, Dupont Circle, Washington, D. C., is interested in promoting and advancing your activities!

Write them today for membership details!

GAS MODEL SECTION



The Soaring Eagle Family. Left to right: Class A, Class B, and Class C

MEGOW BREAKS THE NEWS!

The New "Soaring Eagle"!

A brand new ship which is already making history!

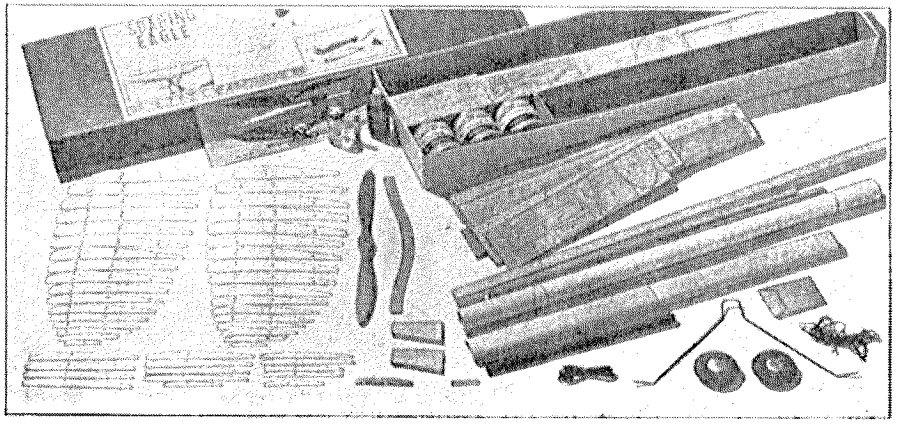
This new ship has been designed by Walter Eggert, Jr., ace Quaker City model airplane flier and designer, and member of Megow's Research Staff.

Based on three years' experience with models of a similar design, the "Soaring Eagle" is the last word in perfection, and is now being duplicated by hundreds of contestants.

Megow's, present the "Soaring Eagle" to you in three sizes! Class "A", Class "B", and Class "C".

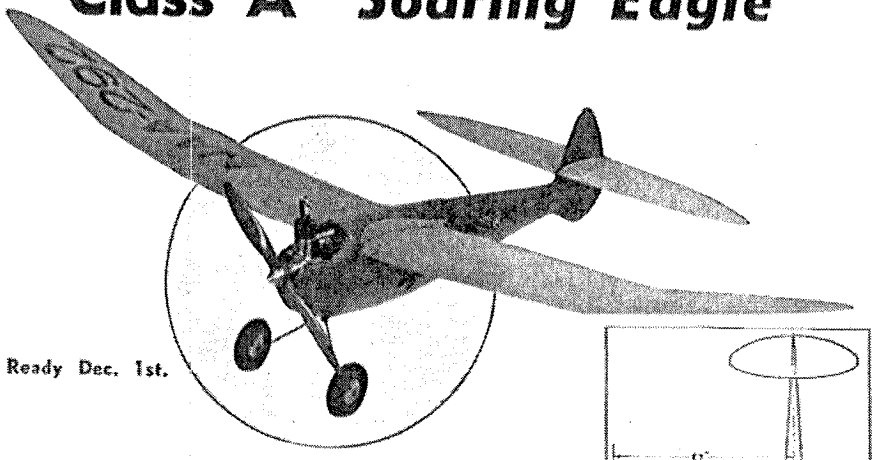
All three ships have been thoroughly proven at major contests! See the following pages for full information!

Kit Completeness ! !

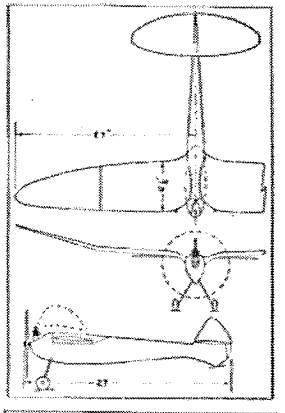


Just look at the completeness of the "Soaring Eagle" kits! A word description is not necessary. All Megow Soaring Eagles come to you like the one pictured above!

Class A "Soaring Eagle"



Ready Dec. 1st.



WINNER OF 1939 QUAKER CITY CONTEST, PHILADELPHIA.

Fellows! You have been waiting for a good Class A design for a long, long time!

At last! Megow's presents to you the marvel of all models, the "Class A Soaring Eagle"!

It is a fine little ship, carefully engineered to give the same flying characteristics you have noticed in the larger Class B and Class C Eagles! Nothing has been sacrificed.

Also with this model you get the same kit completeness as in the larger kits. Meets all N.A.A. rules and it is already a contest winner!

SPECIFICATIONS

Class A Soaring Eagle

Wing Span .....48 in.
Actual Wing Area...225 sq. in.
Projected Wing Area.220 sq. in.
Fuselage Length .....26 in.
Fuselage Cross Section
Required ..... 6¾ sq. in.
Actual ..... 7¾ sq. in.
Stabilizer Area .....76 sq. in.
Aspect Ratio .....2 to 1
Wing Loading...9 oz. per sq. ft.
Wing Section....Eggert Special
Flying Wgt.....14 to 15 oz. complete
Power Plant....Any motor under .20 cu. in. displacement

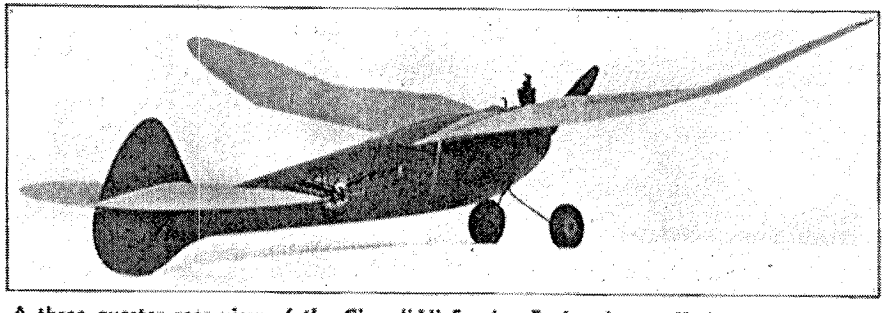
Complete Kit

$2.95 less power plant

Kit No. E20

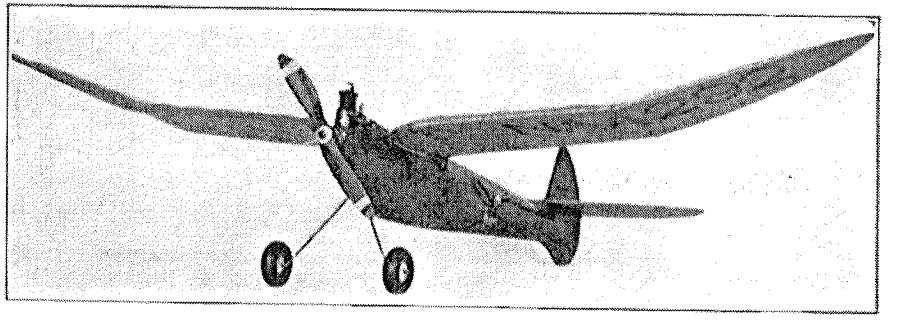


Ed Osterling admires Walt Eggerts Class "A" model, winner of first place, Quaker City Contest, Phila., Sept. 9, 1939. →

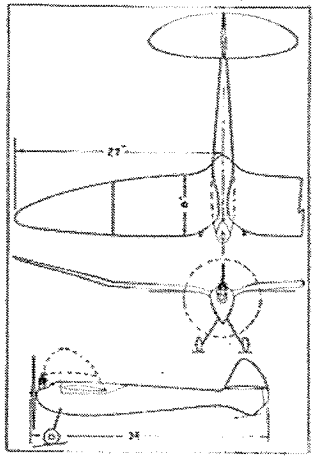


A three-quarter rear view of the Class "A" Soaring Eagle, shows off the very appealing lines of the model

Class B "Soaring Eagle"



This is the finest Class "B" gas model, yet designed! It is ideal for those builders who prefer a medium size job, not so small, yet not too large! It flies exceptionally well and will get the "gravy" at any meet.

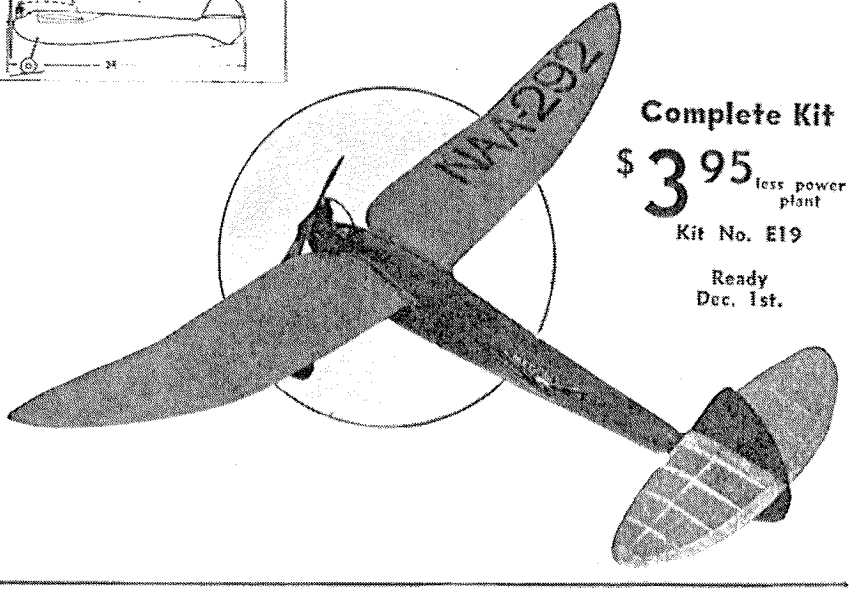


Just look at the fine clean lines of this superb new model! Study the specifications! Compare it with any other Class B ships. It cannot be surpassed!

This model has everything! Good sound aerodynamic design, sturdy structural design, and absolute kit completeness. We need say no more, the photo of the kit on page 3, tells you it's own thousand words!

SPECIFICATIONS

Wing Span .....54 in.
Actual Wing Area..300 sq. in.
Projected Wing Area....291 sq. in.
Fuselage Length.....33 in.
Fuselage Cross Section
Required .....10¾ sq. in.
Actual .....11 sq. in.
Stabilizer Area.....94 sq. in.
Wing Aspect Ratio.....10
Wing Loading..8 oz. per sq. ft.
Wing Section..Eggert Special
Flying Wgt.....17 to 19 oz. complete
Power Plant....any motor between .20 cu. in. and .33 cu. in. displacement.



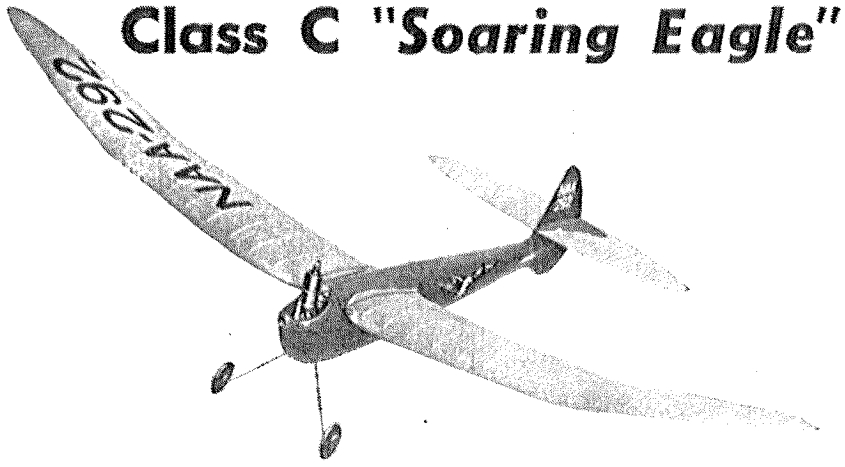
Complete Kit

$3.95 less power plant

Kit No. E19

Ready Dec. 1st.

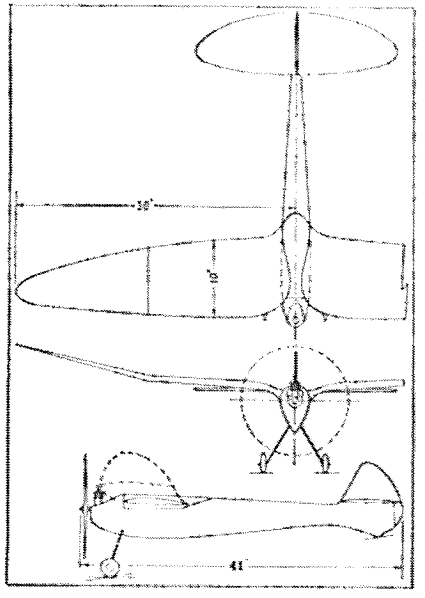
Class C "Soaring Eagle"



HERE IT IS! The ship that is taking the country by storm! Long before we produced the kit for this job, no less than thirty-six different builders liked this revolutionary new design so much, that they built ships for themselves, just like it! We can assure you that the kit you get, has incorporated in it, all the little kinks and ideas discovered in these ships, and that the design has been thoroughly proven.

Build one like it and be the Champion in your neighborhood!

FEATURING: 1. Rigid motor mount insures permanent thrust alignment. 2. Easily accessible ignition unit. Batteries, coil, condenser and wiring fully exposed for inspection by removal of one piece wing and center section. 3. Mid position of mounting wing in fuselage, removes all tendency toward looping, due to center of drag being lowered to the thrust line. 4. Shock-proof wing and tail. Method of mounting supporting surfaces allows them to fly off undamaged in a collision. Wing and tail are quickly detachable for ease of transportation. 5. Kit complete with finished propeller and streamlined puncture proof rubber wheels. 6. New type monocoque fuselage construction insures true alignment of fuselage and can be made in much less time than the standard form of construction. 7. Eagle "decals" (Planofilm) included with each kit. 8. Model does not hang on its propeller, but climbs at a steep angle without sacrifice of forward speed. 9. Balance boxes, front and rear, to attain balance and eliminate the necessity of moving ignition unit. 10. Model designed to catch thermals and soar after motor has cut.



SPECIFICATIONS

Wing Span	6 ft.
Wing Area	550 sq. in.
Wing Loading (per sq. ft.)	8.5 oz.
Aspect Ratio	9 to 1
Dihedral	7 in.
Stabilizer Area	162 sq. in.
Weight Complete	31 to 36 oz.
Climb	2000 ft. per min.
Overall Length	40½ in.
Fuselage Cross Section	17.7 sq. in.
Moment Arm	30 in.
Rudder Area	50 sq. in.
Overall Height	15½ in.
Stabilizer Span	26⅝ in.
Power	¾ in. bore (average)
Wheels	2½ in. dia.

Complete Kit

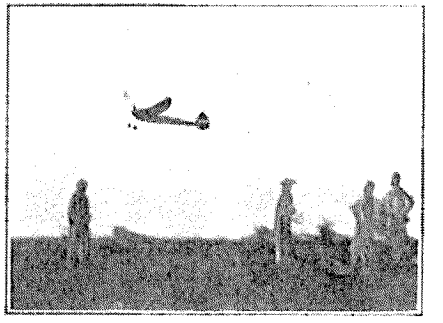
$4.95 less power plant

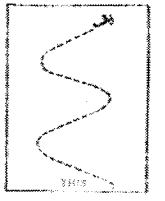
Kit No. E18

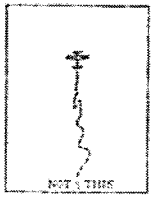
FREE! A Rite Pitch Propeller is given free with this kit!

The "Soaring Eagle" Is A Sure Winner!

The original basic design of the Soaring Eagle has already won many contests! The new ship has recently won: 3rd at Hadley Field, Aug. 12th; 4th at Quaker City, Sept. 9th; and 3rd at Trenton, Sept. 24th. 1st at Paoli, Pa., Oct. 15th.





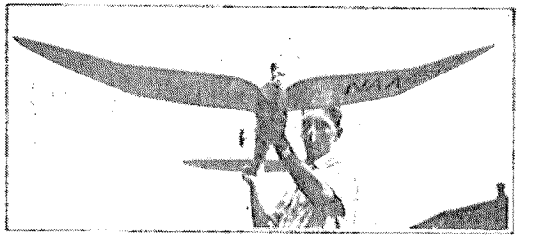


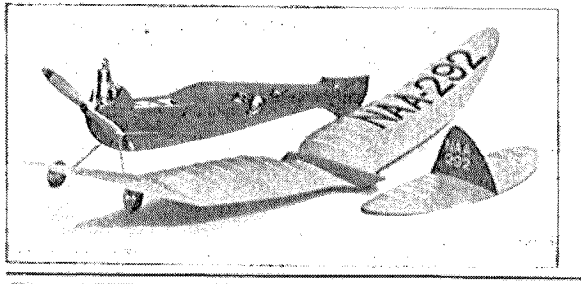
The "Soaring Eagle" Flies Like An Airplane!

We mean it! Too many ships today try to fly straight up, this is the most impractical way as the ship "hangs" on its propeller, and often falters. The Soaring Eagle climbs on the wing; always at full flying speed and does not lose precious seconds getting its altitude!

The "Soaring Eagle" Has Eye Appeal!

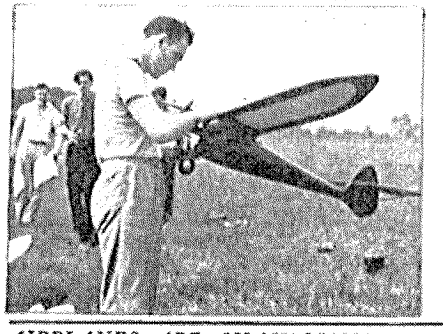
Your friends will marvel at the sleek bird like appearance of your model!





The "Soaring Eagle" Is Easily Transported!

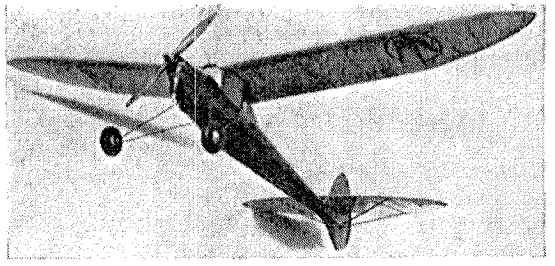
Wing and Tail easily detached! Takes up very little space.



NEWS FLASH!

Megow Commander Sets High Time at Quaker City Meet!

Charles Selight and Werner Lohe, Megow co-pilots set the high time for Class C at the Quaker City Meet, Sept. 9th, with a flight of 11 min. 11 sec. The model took 2nd place! Turn to next page for details on the "Commander."



SPECIFICATIONS — Commander Gas Model

Wing Span	6 ft.
Wing Area	570 sq. in.
Wing Loading per sq. ft.	10.6 oz.
Aspect Ratio	9 to 1
Dihedral	4½ in.
Wing Section	Clark Y
Overall Length	42⅛ in.
Fuse. Cross Section	27 sq. in.
Moment Arm	27.75 in.
Rudder Area	53½ sq. in.
Overall Height	14¼ in.
Stabilizer Span	29⅞ in.
Stabilizer Area	167 sq. in.
Weight complete with Brown Jr.	2 lbs., 10 oz.
Power	⅜ in. bore
Wheels	3½ in. Dia. Special

The Commander

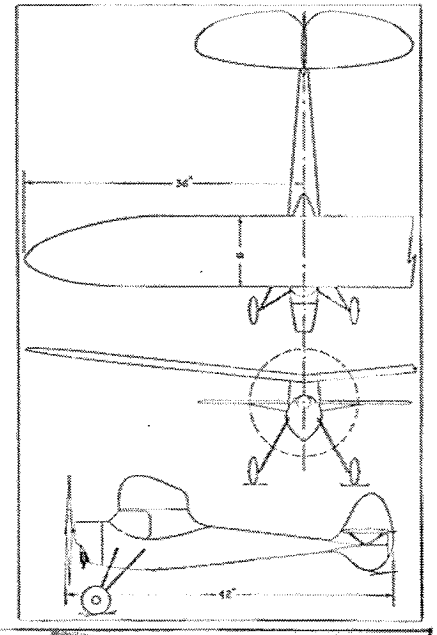
CLASS "C" GAS MODEL

The "Commander" is designed by Megow's primarily as a high performance contest job that can be easily built! Every detail of construction and every part of its design is planned with that end in view!

Notice the pleasing clean lines of this ship! Here is a model that is admired on the field, wherever it makes its appearance. Time and time again it has won "beauty" contests, as well as endurance events!

Our kit contains the usual Megow completeness! Full size plans, with illustrated step by step instructions help to make absolutely clear the revolutionary new construction methods used!

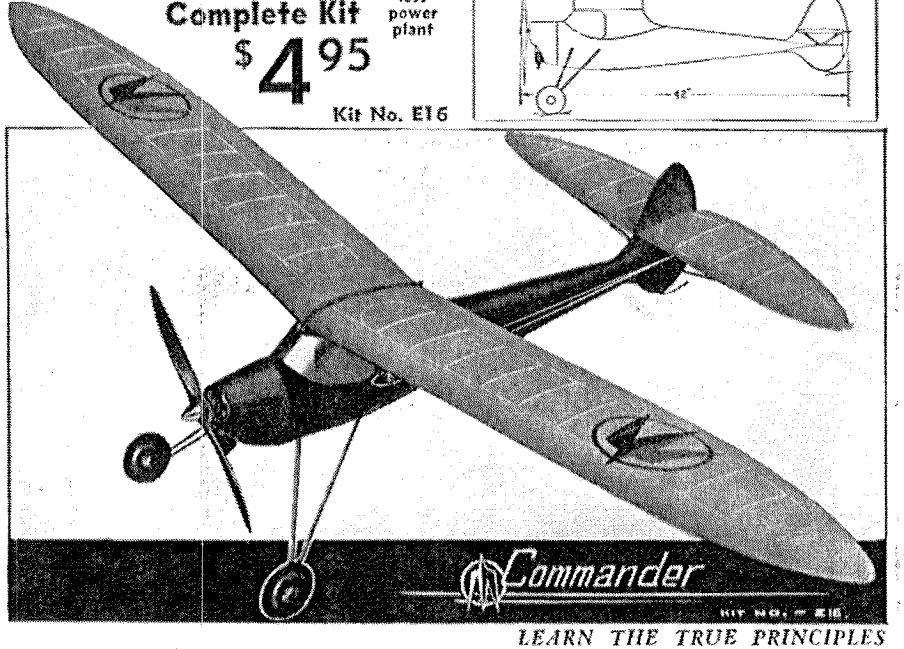
FEATURES: 1. Ready Carved Leading Edges, an exclusive Megow feature! 2. Revolutionary new type monocoque fuselage! 3. Universally applicable motor mounting. 4. Wing of strongest construction yet designed! 5. Special wing mounting allows wing to fly off in collisions. 6. Realistic Cabin. 7. Simplified wing construction. 8. Extremely flat glide. 9. Batteries and Coil easily accessible!



Complete Kit less power plant

$4.95

Kit No. E16

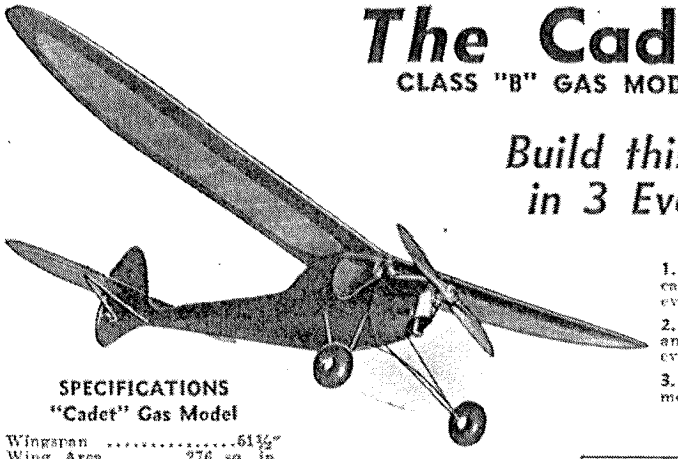


LEARN THE TRUE PRINCIPLES

The Cadet

CLASS "B" GAS MODEL

Build this model in 3 Evenings!



1. Assemble all parts easily and quickly, first evening.
2. Install your engine and ignition system 2nd evening.
3. Finish and paint your model, third evening.

SPECIFICATIONS
"Cadet" Gas Model

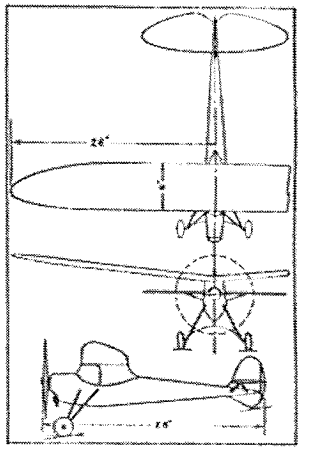
Wingspan	51½"
Wing Area	276 sq. in.
Overall Length	27⅝"
Wing Loading sq. ft.	10.2 oz.
Fuse. Cross Sect.	12 sq. in.
Dihedral	3"
Aspect Ratio	9.6 to 1
Power	⅜" bore
Weight complete with Ohlsson "23" motor	19.5 oz.
Stabilizer Span	18⅛"
Stabilizer Area	72½ sq. in.
Rudder Area	24½ sq. in.
Wing Section	Clark Y
Overall Height	9⅜"
Moment Arm	18½"
Wheels	2½" Dia. Special

SPECIAL

$3.95

Complete Kit less power plant

Kit No. E-17

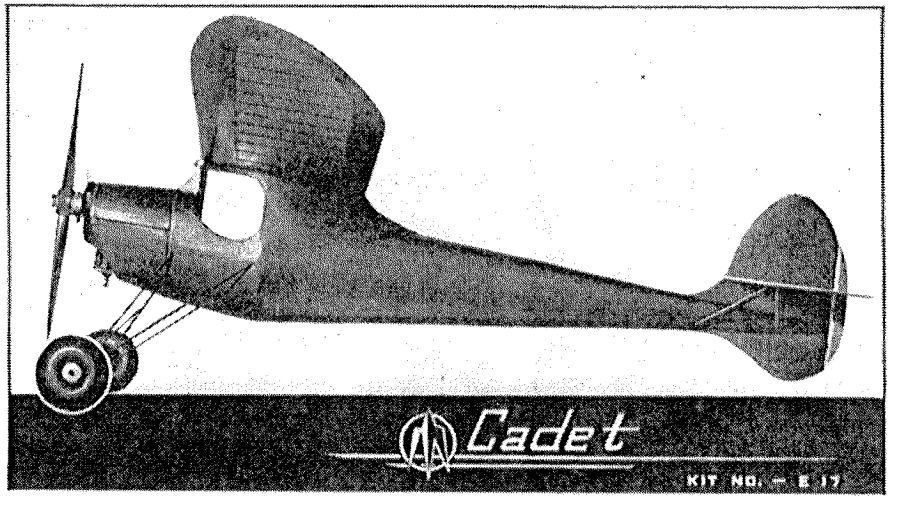


Here is the "little brother" to the larger "Commander" model! This "ship" has the same features and characteristics found in the larger job and is one of the few small Class "B" designs that "looks" like a real airplane!

Construction of this model is extremely easy, in fact, we have reports of fellows completing this job in less than 12 working hours!

Its small size, light weight and sturdy construction make this model practically indestructible!

Its features? You get the same as found in the larger ship!



OF POWERED FLIGHT!

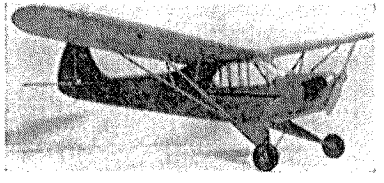
Gas-Powered!
PIPER CUB
CLASS "B" MODEL



For 5/8" bore engines
Scale—1 1/2" to 1'

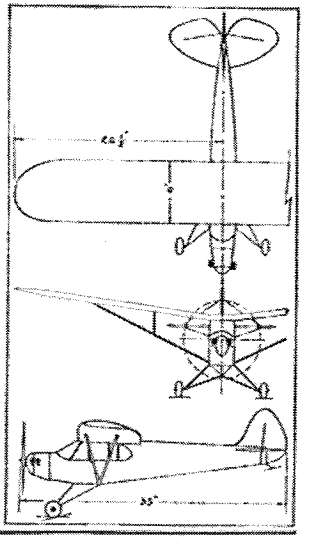
Experienced model builders know that Megow models can be built in a fraction of the time required for other kits. For instance, note the time-saving exclusive Megow Ready-Carved Leading Edge used on this new Piper Cub! Among other time-savers that help you produce expert jobs, remember that Megow plans are large, clear and easy to follow—that they have been thoroughly engineered and tested—and that Megow kits contain only complete materials of the very highest quality.

The PIPER CUB gas-powered model, is one of the small size, light-weight class that avoids crackups and is so easy to carry in a car and put into flight.



FEATURES

EXACT SCALE—Model, duplicates, the real "CUB" in every respect. Design has been carefully engineered for PRACTICAL FLYING and LONG LIFE. SMALL WING SPREAD and LIGHT WEIGHT make this model practically CRACK-UP PROOF!—ONE PIECE WING, fully cantilever, designed to fly off undamaged in collision, EASILY DETACHABLE—CARVED PROPELLER ready to sand and use. ALUMINUM COWLING, die stamped to proper patterns. SHOCK ABSORBING LANDING GEAR with SPECIAL RUBBER WHEELS. This kit contains EVERYTHING! Balsa and Bass Wood, Liquids, Wire, Bolts, Screws, Full Sized Plans. SPECIALLY DEVELOPED FINISHED LEADING and TRAILING EDGES and SPECIAL INSIGNIA!



SPECIFICATIONS

Wing Span	52¾"
Chord	8"
Overall Length	33½"
Weight Complete (Average)	22 oz.

Kit No. E 15

$3.95

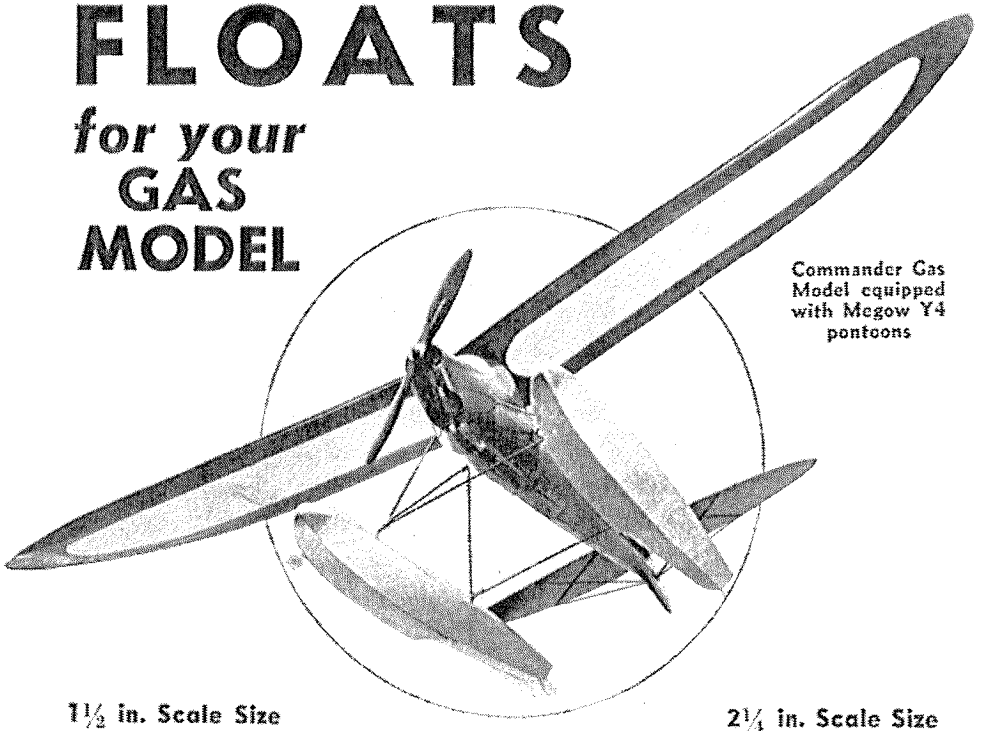
Plans approved by
PIPER AIRCRAFT CORPORATION
LOCK HAVEN, PA., U.S.A.



The latest and best in construction ideas, and the most practical in size. Features new ready-shaped Leading and Trailing Edge. Scale spacing of struts and ribs in wings and fuselage. Wingspan 52¾".

FLY A PIPER CUB SEAPLANE

FLOATS
for your GAS MODEL



Commander Gas Model equipped with Megow Y4 pontoons

1½ in. Scale Size

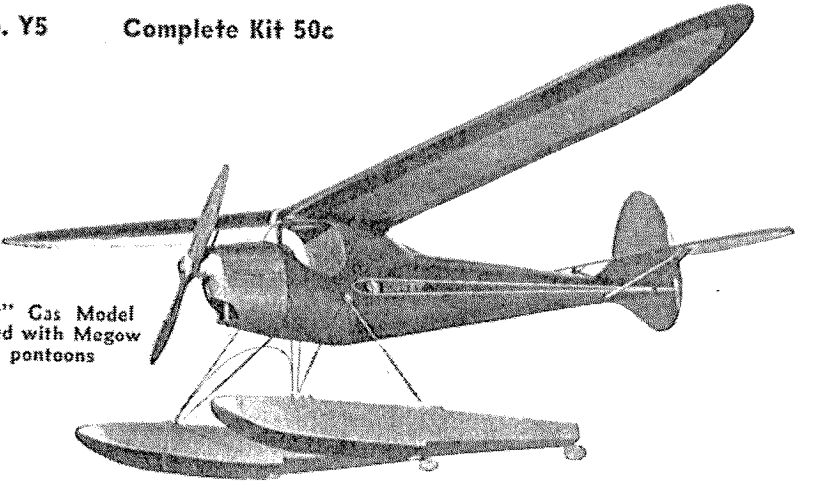
These floats have been scientifically designed for model use, from information supplied by the Edo Aircraft Corporation. The floats can be easily and quickly built if the plan is adhered to and when finished the complete assembly will weigh about 4.18 oz. Length over all is 19½ inches and the displacement is sufficient to support any model weighing between 1 and 2 pounds. They are light, yet strong enough to withstand the shocks encountered in a ground landing.

Kit No. Y5 **Complete Kit 50c**

2¼ in. Scale Size

These floats have proven to be as well adapted to gas models as have the smaller 1½" scale size. The large floats embody the same form of construction and the complete assembly weighs about 7.75 oz. Length over all is 28½ inches and they displace enough water to support any model weighing between 3 and 4 pounds.

Kit No. Y4 **Complete Kit $1.00**

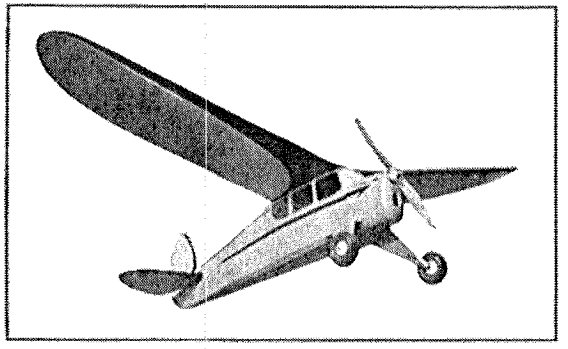


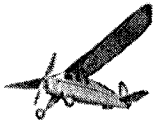
"Cadet" Gas Model equipped with Megow Y5 pontoons

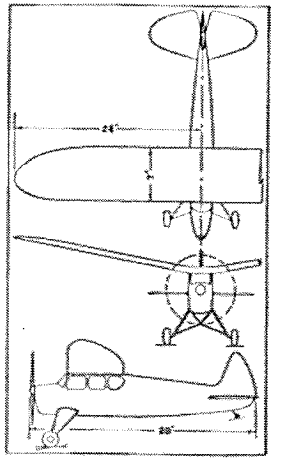
WITH MEGOW MODEL FLOATS

"Cardinal"

CLASS "B" GAS POWERED MODEL







Designed by

The Pioneer Gas Model Builder

Maxwell B. Bassett

This amazing Megow model has been designed by Maxwell Bassett, National Champion and widely-known builder of world's record gas-powered model airplanes. Small . . . easy to build, transport and fly . . . and sensationally low in price, every-one can now have his own gas-powered model.

SPECIFICATIONS

Wing Span .....48"
Overall Length ...29½"
Chord ..... 7"
Weight Complete (Average) ...19½ oz.
Power—any Motor Approx. ⅝" bore or less

FEATURING: SMALL WING SPREAD and LIGHT WEIGHT, which makes this model CRACKUP PROOF, since landing shock impacts are lessened. DETACHABLE WING readily removable. ADJUSTABLE RUDDER with positive control. FINISHED PROPELLER ready to install. ALUMINUM COWLINGS—specially die stamped to exact shape. SPECIAL CUT OUT window outlines. SHOCK ABSORBING LANDING gear with SPECIAL RUBBER WHEELS—long life and puncture proof!

This Kit contains EVERYTHING! Balsa and Bass Wood, Liquids, Wire, Bolts, Screws, Full Size Plans and Shaped Leading and Trailing Edges.

PLANS personally drawn and checked by MAXWELL B. BASSETT!



COMPLETE KIT

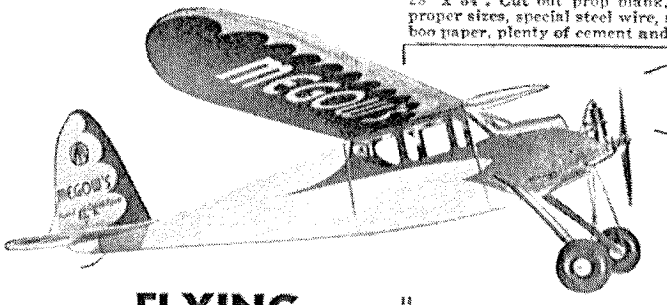
$3.95

less power plant

For 5/8" bore engines

Kit No. E 14

This is America's best known gas model! Span 7'. Weight with motor, 5 lbs. Our kit contains: Three full sized plans, 28" x 34". Cut out prop blank, extra hard balsa wood cut to proper sizes, special steel wire, sheet aluminum, celluloid, bamboo paper, plenty of cement and many other features.



FLYING QUAKER

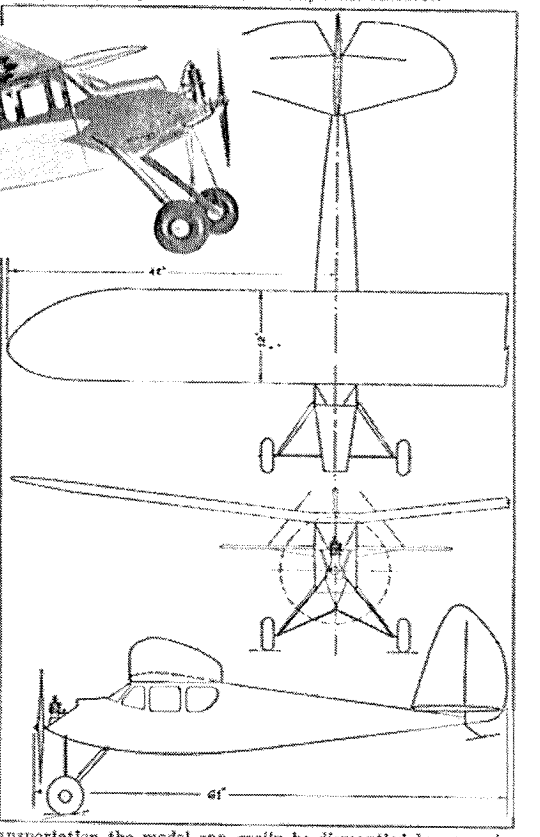
CLASS "C" GAS MODEL

SPECIFICATIONS

Wing Span .....7 ft. 0 in.
Chord .....12 in.
Wing Section .....Clark Y
Wgt. minus motor 3 lbs. 12 oz.
Wgt. complete with Brown Jr. Motor ....5 lbs.

Kit No. E1

$5.95 Complete less power plant



This ship adheres to conventional practice in gas model design and construction. Yet it embodies all the desirable qualities which many models do not have. It has a fool proof landing gear that absorbs the hardest landing shocks. A fully adjustable rudder. Stabilizer is semi-adjustable if necessary. Motor is mounted in such a way as to be easily accessible, and removable. Wing is mounted in the conventional manner with rubber loops. For transportation the model can easily be dismantled by removing tail surfaces, detaching the wing and prop, and folding back the landing gear.

NEW LEADING EDGES

Revolutionize Construction!

Wing Construction has always been the bugaboo in model airplane building.

Crooked spars, warped frames, unsightly results, and excessive bracing, are only a few of the evils encountered!

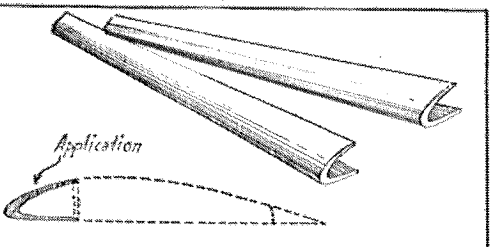
Not so with this new method!

Megow's Ready Carved Leading Edges employ a radically new engineering principle in model construction design.

We give you a carefully designed section that needs only the addition of a simple cap strip (shown by dotted line). You then have what is known as a full depth box spar.

Notice how the section thickens as it goes forward? This is specifically to withstand impacts of collisions.

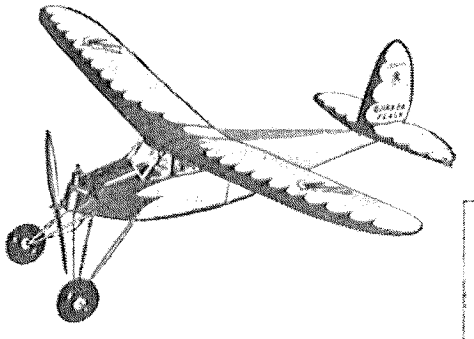
Leading edge sections conform to Clark Y, however, can be used on any section fairly close to this, merely by modifying the cap spars. ©F. W. Megow, 1949





No. 1 (Shown actual size)
For 6" average chords
Per pair (matched weights) 28" long .30¢

No. 2 For 9" average chords the leading edge section measures 1 1/16" high, 1 7/16" wide
Matched weights per pair—
30" Lengths .....40¢
36" Lengths .....50¢



QUAKER FLASH

CLASS "C" GAS MODEL

Here's what this up-to-minute kit contains: 3½" diameter—specially developed rubber wheels that will not puncture and will absorb the hardest landing shocks. Two full sized plans—28" x 34", with five clear photographs. Extra hard balsa wood cut to proper sizes. Special steel wire, celluloid, aluminum for cowl and bamboo paper. Plenty of cement, etc.

The ease with which it can be transported is a very important advantage. Wings easily removable, and landing gear folded back if necessary. Wheels are placed well forward of the propeller to make safe landings and prevent broken propellers. Fail-proof landing gear absorbs even the hardest landing shocks. The rudder is fully adjustable and the stabilizer semi-adjustable by loosening of bolts and blocking if necessary. Motor accessible and easily removed.

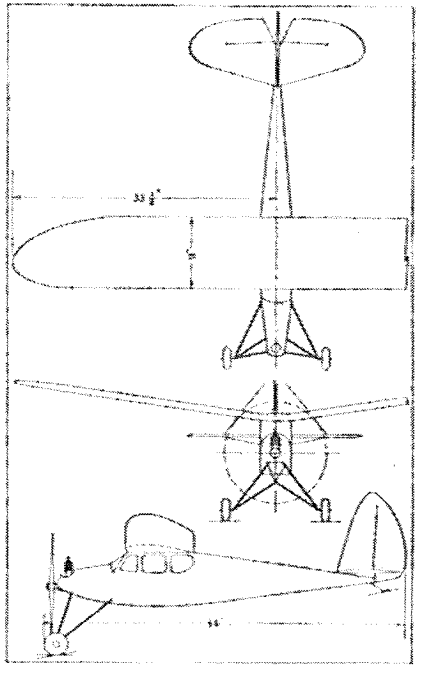
Roland Fischer's Quaker Flash recently set a world's record of 26 minutes, 25 ⅕ seconds using a fuel allowance of $\frac{5}{16}$ oz.

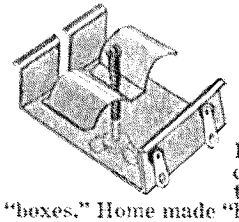
Complete Kit $4.95 less power plant

Kit No. E2

SPECIFICATIONS

Specifications: Wing Span, 5' 7"; Chord, 9"; Length Overall, 46"; Weight Complete (average), 2 lbs. 14 oz.; Weight Without Motor, 1 lb. 13 oz.





NEW BATTERY HOLDERS

Efficient and Light! You simply cannot do without these battery "boxes." Home made "boxes" are always a source of trouble. These battery holders are all metal (dural) and will securely hold your batteries with perfect contact!

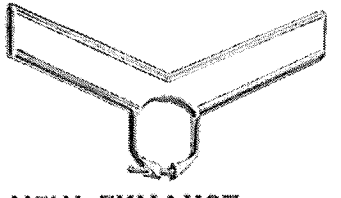
Three Sizes Available

For "Penlites" ..... 40¢ ea.
For Medium Size Cells .... 40¢ ea.
For Standard Flashlight Cells 50¢ ea.



GASOLINE FUNNEL

A new type made of brass and nickelplated enables you to fuel even the most inaccessible tanks!
Each .....35¢

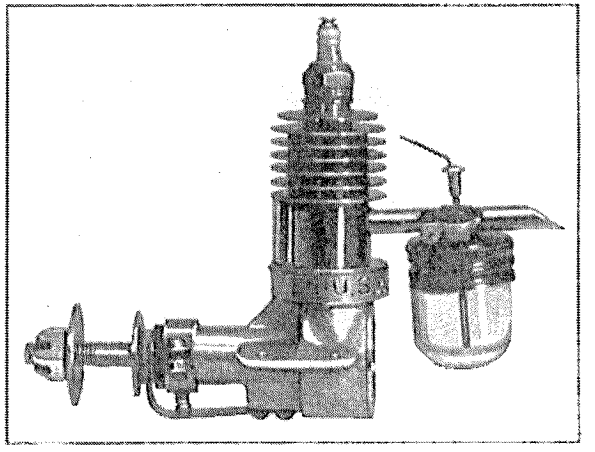


NEW EXHAUST

New type efficient exhaust fits almost all ⅞" bore motors, bright nickel finish!
Each $1.50

INDEX AND ORDERING INSTRUCTIONS

FLASH!



The New Lykens Brown

CLASS "A" GASOLINE ENGINE

We are now prepared to offer you exclusively one of the smallest gas engines on the market today. This engine despite its diminutive size is scientifically engineered, and very dependable. The credit for the design of this motor goes to William L. Brown, the pioneer designer and builder of gasoline motors for model use. William Brown also is the original designer of the famous Brown Jr. Motors, which are in use all over the world.

This new motor boasts several unusual features!

Due to the fact that the piston has no baffle plate, it can come closer to the top of the cylinder, therefore increasing the compression ratio. Elimination of the baffle is possible since the exhaust ports are placed in the front of the cylinder on each side of the by-pass, and do an efficient job of scavenging burnt gases!

Each motor is completely built and tested by Mr. Brown himself and comes ready to mount in your model. Only the finest materials are used in the construction of this motor. Included with each motor are coil, spark plug, condenser, wire, and complete instructions.

FEATURES

Crankcase cast of aluminum alloy.
Cylinder is turned from steel into which a hardened Menite piston is lapped.
Due to position of exhaust, on each side of by-pass, no baffle plate is needed on piston.
Steel crankshaft and connecting rod.
Champion V-2 spark plug is included.
Transparent, unbreakable gas tank.
Filler cap for gas has spring lid. Cannot be lost and tank can be filled easily.
Light-weight coil and condenser.
Foolproof timer assures positive ignition at all times.

SPECIFICATIONS

Bore .....$\frac{9}{16}$
Stroke .....½"
Weight .....3 oz.
Piston Displacement ..... .12 cu. in.
Overall Height .....3"
Speed (with prop.) .....4000-6000 R.P.M.

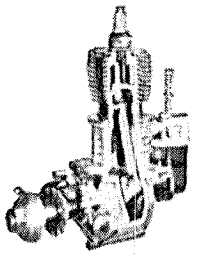
Complete less batteries and propeller ready to mount in your model. **$16.50**

MEGOW'S *Are Exclusive Distributors for Lykens Brown Motors*

AT BACK OF THIS CATALOG!

"O.K." MOTORS

CLASS "C"



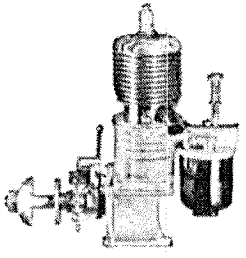
"O.K." SPECIAL 1/5 H. P.

Displacement .604 — $12.00

"O.K." Special motors represent one of the best dollar values on the market. Point for point comparisons show the "O.K." Special model to incorporate advanced engineering features not found in many higher priced motors. Cylinder is of one piece steel construction with walls finished by grinding and lapping. Piston is hardened steel, ground and individually fitted to the cylinder. Crankshaft has hardened bearing surfaces. Connecting rod is drop forged from steel and hardened. Piston pin is hollow drilled, hardened and lapped. Motor furnished complete with coil, condenser and spark plug.

Flywheel—$1.50 extra. Inverted—$1.50 extra. Manifold—$1.00 extra.

"O.K." MOTORS START EASILY!



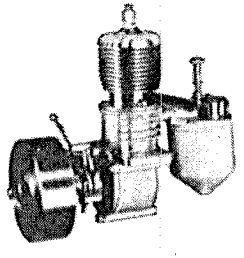
"O.K." Standard 1/5 H. P.

Displacement .604 — $16.50

"O.K." Standard motors have all the improved features found in the Special model plus being equipped with a cylinder having head fins in addition to the radial fins. The cylinder used on the Standard model actually has 29 square inches of heat dissipating surfaces. This motor keeps a cool head in a long race and is ideal for aircraft applications, marine applications and for race track work. This motor will take all the pounding received on the track. Motor furnished complete with coil, condenser and spark plug.

Flywheel—$1.50 extra. Inverted—$1.50 extra.

"O.K." MOTORS RUN CONSISTENTLY!



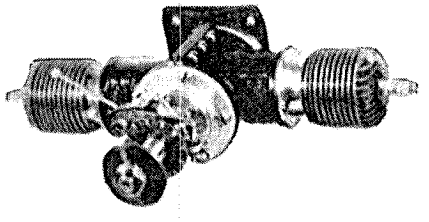
"O. K." DE LUXE 1/5 H. P.

Displacement .616 — $19.50

"O.K." DeLuxe motors are identical with the Standard models with the added feature of a one piece hardened crankshaft and being fully set up on a test skid ready to run. This model, like the Standard, can be operated for long periods without undue heating, really as fine a motor as can be produced. Motor furnished complete with coil, condenser and spark plug.

Flywheel—$1.50 extra. Inverted—$1.50 extra.

"O.K." MOTORS RUN COOL!



"O. K." TWIN

Displacement 1.2 — $35.00

Two cylinder opposed type . . . Bore and stroke .900 x .950 . . . Displacement 1.2 cubic inches . . . 800 to 10,000 r.p.m. 5,000 with 18" high pitch propeller . . . Half horsepower . . . Equipped with a ball bearing to take thrust and radial load . . . Radial mounting . . . Width overall 7¾" . . . Weight with gas tank 22 ounces . . . Champion plug and custom-made coil.

The "O.K." Twin solves the power problem for the radio control experimenter, the hobbyist flying big ships and for hobbyists in general seeking light weight power applications for canoes, ki-yaks, bicycles, gliders, etc.

All "O.K." motors incorporate a patented cylinder and crankcase design with manifolding integral and with the exhaust outside of the crankcase, eliminating the possibility of a crankcase explosion. The "O.K." Twin has a unique crankshaft design (patents applied for) permitting the use of one piece connecting rods. "O.K." motors are leading the field in advanced design.

"O.K." MOTORS ARE FACTORY TESTED

A COMPLETE PRICE LIST OF PARTS

The NEW OHLSSON "23"

Get this Champion Gasoline Motor!



Class "B" — .23 cu. in. displacement

A rugged little motor by which all model builders swear!

Only 3 9/16" high but packed with more power, speed and stamina than any other motor for its size on the market!

The Ohlsson "23" has plenty of power to fly a 3 lb. "ship", yet is small enough to fly a 20 oz. job. In other words it is the perfect Class "B" motor! This motor is built from the finest materials money can buy, and is assembled and tested under the rigid supervision of expert engineers!

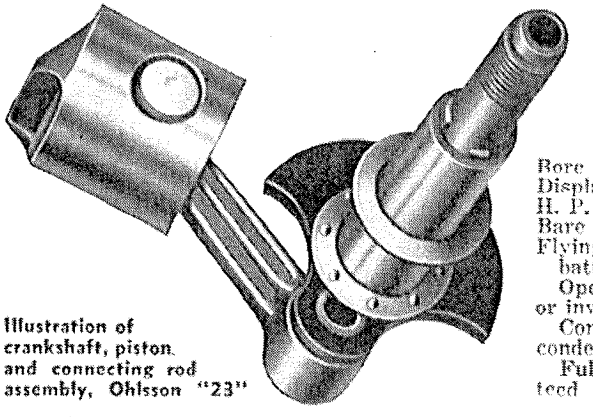


Illustration of crankshaft, piston and connecting rod assembly, Ohlsson "23"

$16.50

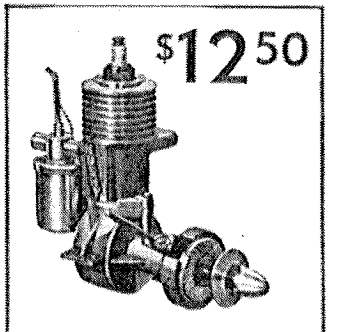
SPECIFICATIONS

Bore and stroke . . . 5/8" x 11/16"
Displacement . . . . . .23 cubic in.
H. P. rating. 1/7 at 6500 R.P.M.
Bare engine wgt. . . . . .4 oz.
Flying wgt. . .9 oz. with penlite batteries

Operates equally well upright or inverted.

Complete unit with coil and condenser.

Fully pre-tested and guaranteed $16.50



$12.50

THE NEW "HUSKY" JV

MOST POWERFUL CLASS "A" MOTOR

.19 cu. in. displacement

When competition is keenest, your chances of winning are far greater with a "Husky," which develops as much power as some larger motors! Turns an 11" prop. up to 8000 R. P. M. and is designed to fly models of from 16 ounces to 3 lbs.

SPECIAL NEW FEATURES: New hardened and ground crank shaft—New special connecting rod—New all metal auto type timer adjustable point—Special alloy cylinder with steel liner—Piston cast lapped fit (no rings)—New needle valve with spring lock, and improved port timing—The "Husky" comes to you with a 3-volt ignition system complete ready to run (less prop. and batteries).

NEW HUSKY SPECIFICATIONS: Displacement .19 cu. in. Class "A" N.A.A. rules. ⅝" bore, ⅝" stroke, wt. bare 3 oz., height 3½", length 4⅛", width 1⅜". Exact centers between holes for mounting width 1⅜", front to back hole ⅞". Complete motor unit ready to run with light weight spark coil and condenser—$12.50.

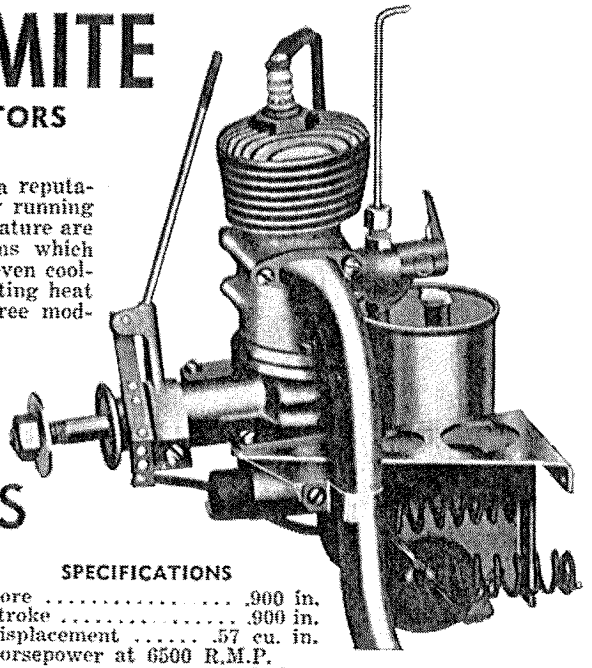
IS INCLUDED WITH EACH MOTOR

DENNYMITE

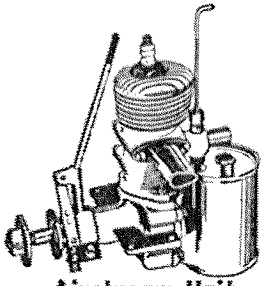
AIRSTREAM MOTORS

CLASS "C"

Dennymite Motors have a reputation for high power, steady running and endurance! A special feature are the streamlined cooling fins which allow thoroughly efficient, even cooling of the cylinder, eliminating heat distortion! Available in three models!



COMPARE THE FEATURES



Airstream Unit

Complete but less coil and condenser $13.85

SPECIFICATIONS

Bore ..... .900 in.
Stroke ..... .900 in.
Displacement ..... .57 cu. in.
Horsepower at 6500 R.M.P. ¼ h.p.
Cylinder, Piston — Molybdenum Iron.
Crankshaft fully counterbalanced.
Crankcase — Special Aluminum Alloy.

Standard Airstream

Complete with coil and condenser $15.85

Deluxe Airstream

Complete with aluminum outside exhaust, dural mounts, outside control choke, coil and condenser

$17.85

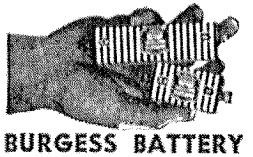
GAS MODEL BATTERIES!



"GENERAL" LIGHT WEIGHT

The 4A2 and 6A2 are for ignition during flight and will give exceptionally long life. The 2L2 is a booster battery designed to fit into the pocket, very handy for field service, and will outlast any other battery.

Battery	Length	Width	Height	Weight	Price
General 1A2	1⅛"	1⅛"	2½"	4 oz.	.50
General 6A2	2 "	1⅛"	2½"	6 oz.	.75
General 2L2	2⅝"	1⅛"	6½"	22 oz.	.60



BURGESS BATTERY

Light Weight, Long Life, Hot Spark!

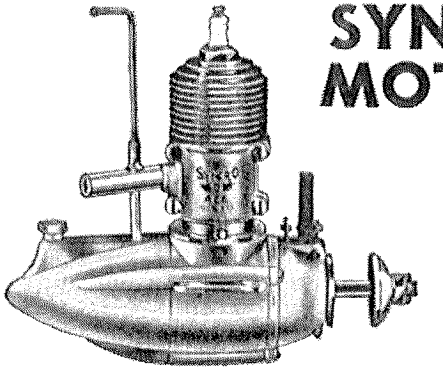
The Burgess Battery is specially built to meet the exacting requirements of model airplane builders. Thousands of demonstrations have proved the No. 4Z2SC far superior to ordinary flashlight cells for this type of service.

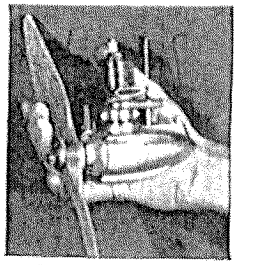
It's light weight, only 4½ ounces, as against 7 ounces for two flashlight cells is a distinct saving. Its size, 4⅞" x 1⅛" sq., permits installation in any model easily and efficiently.

No. 4Z2SC—3 volt—70¢.
Special long life.
No. 4Z3SC—4½ volt—$1.30.
No. 2Z2SC—3-volt—50¢.

A COMPLETE STOCK OF MOTORS

SYNCRO MOTORS





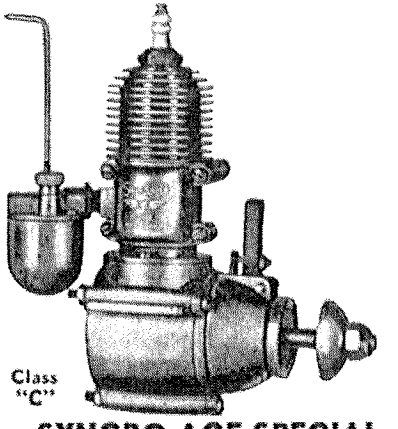
Comparative Size

SYNCRO ACE

"Class C"

The Syncro Ace motor is a popular streamlined engine for model airplanes, boats and race cars. Equipped with new high efficiency coil, oilite bearings and the new specially designed Champion spark plug. Bore—⅞". Stroke—$^{15}/_{16}$". Horsepower—¼. Complete ready to run, less batteries and propeller—

$13.75

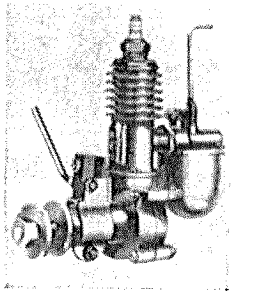


Class "C"

SYNCRO ACE SPECIAL

The Syncro Ace Special has the same specifications as the Syncro Ace, viz.: Bore ⅞"—stroke $^{15}/_{16}$" and is the ideal low cost motor for your boat or airplane! Complete with coil and condenser, ready to run but less batteries and propeller.

$9.95



Class "A"

SYNCRO BEE

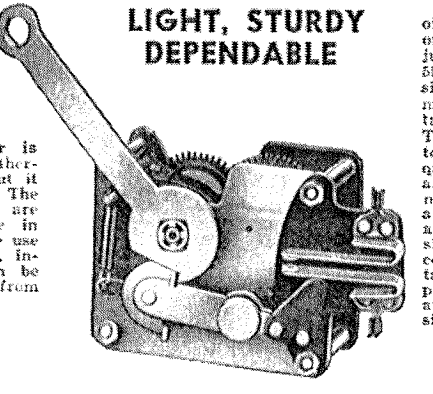
The Syncro Bee is one of the smallest engines made. It is a very practical motor and quantity manufacturing methods enable this motor to be produced at a very low price! Approx. ⅛ H.P.

Bore ½"—stroke ⅝". Complete unit with coil and condenser, less batteries and propeller.

$12.50

GAS MODEL FLIGHT TIMERS

LIGHT, STURDY DEPENDABLE



The standard timer is made just like our featherweight timer except that it weighs two ounces. The same number of parts are present; the difference in weight is caused by the use of steel, in most cases, instead of dural. It can be adjusted for flights from 0 to 55 seconds.

$1.50

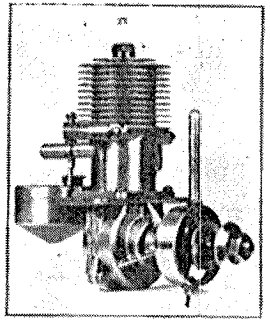
This timer is made mostly of dural and weighs only one ounce. It can be adjusted for flights from 0 to 55 seconds. The snap action, silver contact pointed switch makes sure of positive contact when in operation. There are no delicate parts to get out of order; consequently this timer is rugged and vibration proof. By mounting the timer inside and allowing the control arm to project through a slot in the model a very compact installation is obtained. Winding is accomplished by pulling the control arm back to the desired position.

$1.95

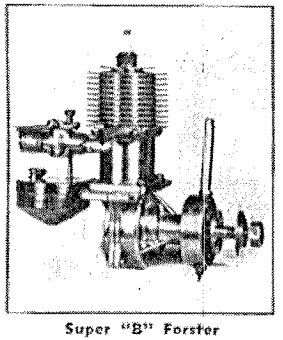
AND PARTS ON HAND ALWAYS!

MEGOW'S

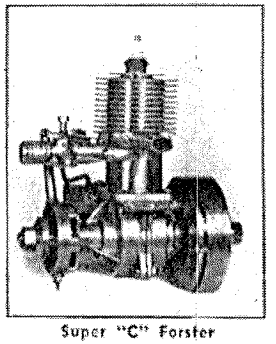
FORSTER MOTORS



Model "B" Forster



Super "B" Forster



Super "C" Forster

Forster Brothers Engines are the highest powered miniature motors used for model airplanes. They are widely used for contest work as well as radio controlled experimental models.

Constant improvements have made it the outstanding motor in its class, second to none! It is today's most modern model motor!

Forster Motors, due to their modern design embodying piston rings, run on a much cleaner gas-oil ratio than other motors. A fuel mixture of 10 to 1 of oil is ample. This burns cleaner, spark plug lasts longer, motor starts easier and develops more power.

Every motor is assembled, tested and run at factory, guaranteed to be in first class running order. It is made to perform before it is shipped!

SPECIFICATIONS

Model "B" Motor

Bore ..... 1 1/16"
Stroke ..... 1 1/8"
Displacement ..... .997 cu. in.
Power ..... 1/2 H.P. plus
Complete with Spark Coil, Condenser, Spark Plug and Gas Tank $17.75

Model "BB" Motor

With Ball Bearing Crankshaft
Same specifications as Model "B" with addition of ball bearing crankshaft to reduce friction, resulting in an even greater power output $19.50

Model "B" Super

With new "Speed Control" Carburetor
Same specifications as Model "B"
Develops 1/2 H. P. at 6000 R.P.M. $20.75

Model "BB" Super

Model "BB" motor with "Speed Control" Carburetor $22.50

Model "Super C"

For race cars and speed boats, disp. 14.5 cc.
Bore ..... 1"; Stroke ..... 1 1/8"
Equipped with "Speed Control" Carburetor, double end crankshaft, increased port area, and higher compression piston! Complete!
Model "C-Super" aircooled $25.50
Model "CW-Super" watercooled $27.00

AUSTIN FLIGHT TIMER

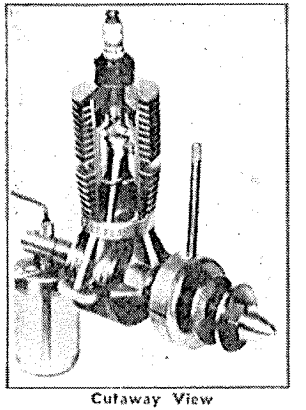
At last. A feather weight flight timer designed exclusively for gas models. Weighs only 5/8 of an ounce, 2 1/2" long. Cannot jam. Accurate. The duration may be adjusted from 15 to 60 secs. Built in contact points. Easy to install. All moving parts completely enclosed for protection against dust and dirt.

$1.25

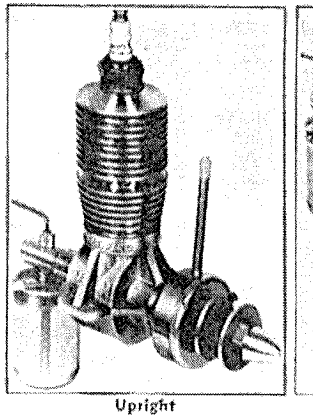
USE ONLY MEGOW' APPROVED

MEGOW'S

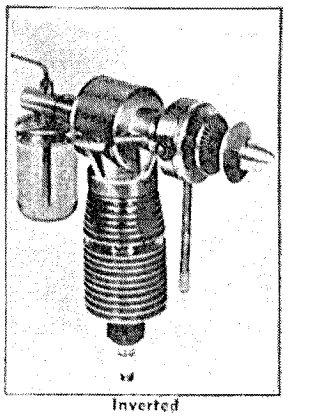
M & M MOTOR



Cutaway View



Upright



Inverted

M & M New Piston Valve

Class "B"—.292 Motor

A New Piston Valve motor with a complete circumferential exhaust that is revolutionary!

SPECIFICATIONS

Bore ..... 23/32"; Stroke ..... 23/32"
Displacement ..... .292 cubic inch
Bare motor weight ..... 4 1/2 oz.

Complete Unit

$16.50

CHECK THESE EXCLUSIVE FEATURES FOUND ONLY IN THE M & M .292

More power at slower speeds
It is not necessary to run this motor at burn-out speed to develop power. The slower the motor speed, the less wear on the motor.

400% more piston seal
Only motor with full length piston seal (holds compression better).

Rotating piston—permitting even cylinder wear
It is impossible to hold compression with an egg-shaped piston and cylinder.

No loss of power when motor is hot
Due to even piston and cylinder expansion and even wear.

Only motor with full length cylinder cooling fins
Adds strength and resists damage in event of crack-up.

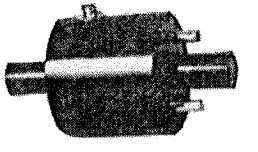
Special designed cast iron piston and cylinder with contrat intake port and circumferential exhaust
Permitting quicker fresh gas intake and rapid disposal of burnt gases. This also adds more power.

Pull tube carburetor needle, with micro-gas adjustment
No threads or pin holes to get clogged or damaged. It can be easily taken apart for cleaning.

Totally enclosed points
Special designed case. Impossible for bearing or cylinder oil to foul contacts.

Other features
Transparent gas tank which can easily be filled through hole in cap. Tank can also be easily taken apart for cleaning.

M & M .292 can be run upright or inverted
You can invert this motor in a few seconds.



AERO SPARK COIL

This coil was developed by an ignition engineer versed in gas model operation problems! This coil has increased the output of some engines as much as 800 R.P.M. without making any other changes! Reduce your battery expense bill by using an Aero Coil. You can fly on the batteries that other people throw away!

3 VOLT COIL

Operates on two penlite cells without using booster batteries! Wgt. 2 3/8 oz.

$2.75

1 1/2 VOLT COIL

Operates on one penlite cell, if desired for flight. Booster unnecessary if medium cell is used. Wgt. 2 1/4 oz.

$3.00

MATCHED AERO CONDENSERS

Specially matched for best performance with the two Aero Coils.

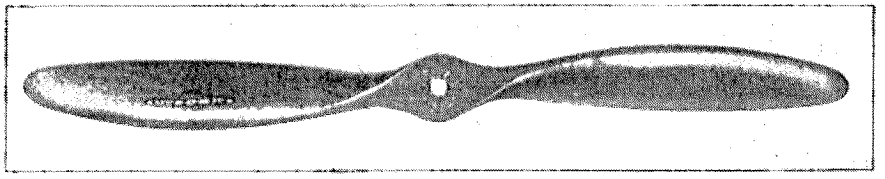
3 volt condenser ..... 20¢
1 1/2 volt condenser ..... 20¢

MOTORS AND ACCESSORIES!

"RITE-PITCH"

GAS MODEL PROPELLERS

SCIENTIFICALLY DESIGNED — **PERFECTLY BALANCED**



"Rite-Pitch" propellers are scientifically designed to produce maximum thrust horsepower; they are light enough to break, yet heavy enough to get finest performance from your motor. These propellers are semi-automatically manufactured by our own specially designed machines, are the correct weight for your specified motor, and are all perfectly balanced. We GUARANTEE you will have best results and a smoother running motor with "Rite-Pitch" propellers.

NEW LOW PRICES

DIAMETER In Inches	HARDWOOD Lacquer Finish	HARDWOOD High Gloss Finish
9	.10	.65
10	.10	.65
11	.15	.70
12	.45	.70
13	.50	.75
14	.50	.75
15	.60	.85
16	.75	1.00
18	1.05	1.30

9, 10, or 11 inch propellers are made in 6 or 8 inch pitch only. All other propellers are available in 6, 8, 10 or 12 inch pitch.

"ASK THE FELLOWS WHO USE THEM"

—— Order yours now and have your name in the winners' circle at every contest ——

In case your dealer does not yet stock these fast selling propellers, write, giving your dealer's name and address.

TABLE FOR SELECTING DIAMETER AND PITCH OF PROPELLER

FIRST FIGURE INDICATES DIAMETER, SECOND FIGURE PITCH OF PROPELLER

ENGINE \ WEIGHT	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7 AND OVER
BROWN		13 12	14 10	14 10	14 8	14 8	14 8	14 8	14 6	14 8	14 6	14 6	15 6
BANTAM	9 8	9 8	10 8	10 8	10 6	10 6	11 6	11 6	11 6				
BRAT	9 8	9 8	9 8	9 8	9 6	9 6	10 6	10 6					
CYCLONE "BABY"		13 10	13 8	13 8	13 8	13 8	13 8	13 8	12 10	12 10	12 8	13 6	13 6
DENNYMITE		13 12	13 10	13 10	13 10	13 8	13 8	13 8	13 8	13 8	15 8	13 6	14 6
ELF	10 8	10 8	10 6	10 6	10 6	11 6	11 6						
FORSTER			16 12	16 12	16 12	16 10	16 10	16 10	16 10	16 10	16 10	16 10	16 8
GWIN AERO		12 12	12 10	12 10	12 8	12 8	12 8	12 6	12 6	12 6	12 6	12 6	13 6
ATWOOD HI-SPEED	12 8	12 8	12 8	12 8	12 8	12 8	12 6	12 6	12 6	12 6	12 6		
HUSKY	10 8	10 8	10 8	10 6	10 6	11 6	11 6	11 6	11 6				
MADEWELL MITE	11 8	11 8	11 8	11 8	11 6	11 6	11 6	12 6					
M & M		12 8	12 8	12 8	11 8	11 8	11 8	11 8					
OHLSSON GOLD SEAL		13 10	15 10	13 8	13 8	13 8	13 8	13 8	13 8	13 8	13 6	13 6	14 6
OHLSSON "23"	11 8	11 8	11 8	11 8	11 8	11 8	11 8	11 6	11 6	11 6	11 6		
HERKIMER O-K		13 12	14 10	14 10	14 8	14 8	14 8	14 8	14 8	14 8	14 6	14 6	15 6
PEE-WEE	9 8	10 8	10 8	10 6	10 6	10 6	10 6						
SYNCRO "ACE"		13 10	13 10	13 10	13 10	13 8	13 8	13 8	13 8	13 8	13 8	13 6	14 6
SYNCRO "BEE"	9 8	9 8	9 8	9 6	9 6	10 6	10 6						
TROJAN	10 8	10 8	10 8	10 6	10 6	10 6	11 6	11 6	11 6	11 6			

MEGOW'S ARE EXCLUSIVE DISTRIBUTORS For "Rite-Pitch" Propellers!

A RITE-PITCH PROP ON A MEGOW MODEL IS A SURE WINNER!

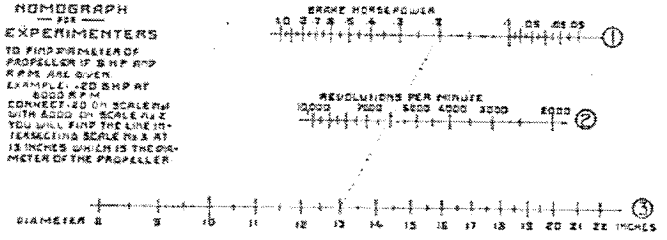


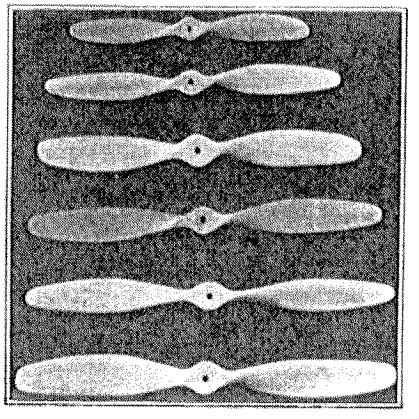
SENSATIONAL FOR ITS VALUE

The new "Rite-Pitch" shaped propellers for those who want to make their own; for those who want to give their individual final touch.

The "Rite-Pitch" shaped propellers have their flat sides finished to the correct pitch; only the remainder of the propeller needs a few minutes of sanding.

DIAMETER	PITCH	PRICE
9 in., 10 in.	6, 8	20 Cts.
11 in., 12 in.	6, 8	23 "
13 in., 14 in.	6, 8, 10, 12	25 "
15 in.	6, 8, 10, 12	30 "
16 in.	6, 8, 10, 12	35 "
18 in.	6, 8, 10, 12	40 "





Megow Approved

SPECIAL LOW PRICE PROPELLERS!

Why carve propellers? The price of these propellers is so low that you can carry a dozen or so, spare props in your tool box, when going out for a little gas model flying! Accurately carved and balanced!

9", 10", 11", 12", 13", 13½", 14"

Complete Range of Sizes

25¢ Each

"HI-GLOSS" PROPELLERS

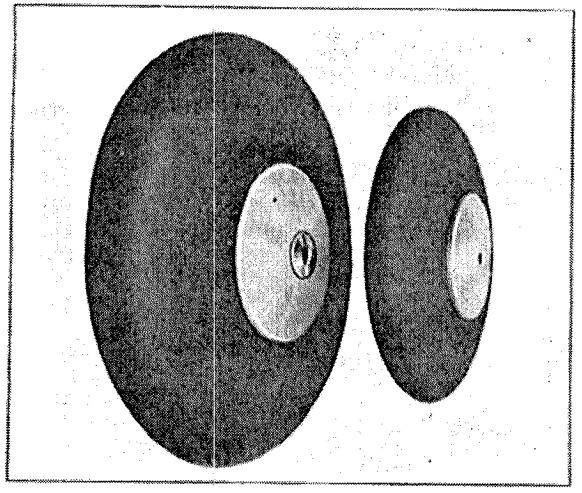
We have a limited supply on hand. Order yours *NOW*!

2-BLADE PROPELLERS

	Hi-Gloss
9"	$.85
11"	1.00
12"	1.10
13"	1.25
14"	1.25
15"	1.35
16"	1.50
18"	1.75

3 BLADE PROPELLERS

	Natural	Varnished	Hi-Gloss
12"	2.80	3.00	3.25
13"	2.80	3.00	3.25
14"	2.80	3.00	3.25
15"	3.15	3.40	3.50



MEGOW Gas Model Wheels

Newly Developed!

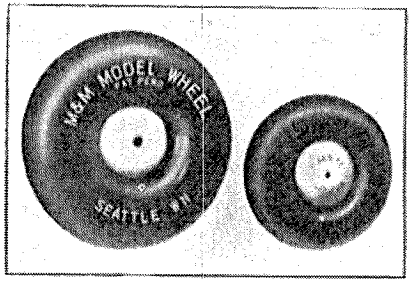
Sponge Rubber! Lighter and better than air wheels! Do not puncture!

Developed specifically for gas model use. These wheels have certain advantages not found in pneumatic air wheels. Made of special sponge rubber, they eliminate the bothersome punctures, and deflation attending the air wheels.

Special Low Prices
Per Pair

3½" Dia. .....50¢
2½" Dia. .....40¢

Megow Approved MODEL WHEELS



M & M Wheels

FOR GAS MODELS—
Light weight for models up to 2 lbs.
2⅜" Dia. .....$.90 per pair
3¼" Dia. .....1.50 per pair

Super Heavy Duty for Larger Gas Models
3½" Dia. .....$2.75 per pair
4½" Dia. .....2.75 per pair
6" Dia. .....4.50 per pair

M & M Wheels
FOR RUBBER POWERED MODELS
Shipped in special container with valve tube

Diameter 1¼"; 1⅜"; 1½"; 1⅝"
50c per pair

Diameter 1¾"; 1⅞"; 2"; 2⅛"
2¼"; 2⅜"; 2½"; 2⅝"
60c per pair

INFLATION PUMP For Trexler Balloon Wheels **20¢**



Trexler Balloon Wheels

Has a patented tube for inflation. Finest rubber, and is factory tested.

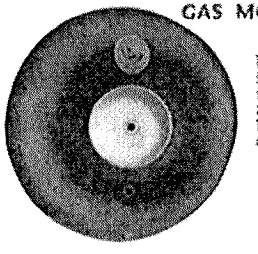
For Rubber Power Models

No. 1 inflates 1¼" to 1⅝" per pair $.40
No. 2 inflates 1½" to 1⅝" ..... .40
No. 3 inflates 1¾" to 1⅞" ..... .50
No. 4 inflates 2" to 2⅛" ..... .50
No. 5 inflates 2¼" to 2⅜" ..... .60
No. 6 inflates 2½" to 2⅝" ..... .60

Gas Model Wheels

No. 8G inflates to 2⅝" $1.00
No. 9G inflates to 3" 1.25
No. 10G inflates to 3½" 1.50
No. 11G inflates to 4½" 1.75

"VOIT" Streamlined GAS MODEL WHEELS



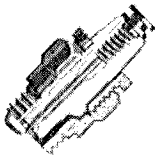
Heavy duty, can be inflated and deflated through new type valve. Strong aluminum hub will fit ⅛" axle.

Per Pair

2½" Dia., $1.25
3½" Dia., 1.50
4½" Dia., 1.75

GAS MODEL IGNITION EQUIPMENT

SPARK PLUGS—*Actual Size*



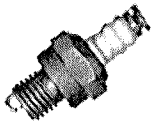
BROWN JR.
⅜" x 24 Thread

Of special design to operate all miniature motors of this type. Concentrated spark gives easy starting and smooth operation ..65¢



CHAMPION V
⅜" x 24 Thread

Of one piece construction. Embodies many new features. Gives all around top performance .....65¢



CHAMPION V-2
¼" Thread Size

The only plug developed exclusively for "Midget" motors. A worthy addition to the Champion line ....65¢



CHAMPION V-3

A smaller lighter spark plug for "super" small bore motors. Same thread as V-2 .....65¢

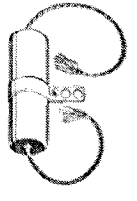


"Super-Lite" IGNITION COIL

A new, very light and highly efficient 3-volt coil; weighs only 1¾ oz., solder terminals, bakelite case, standard equipment on the SynerO Bee engine. Each $1.95

"SMITH" GAS MODEL IGNITION COIL

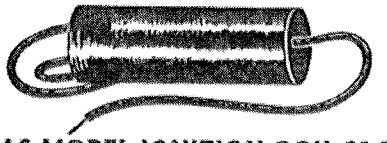
Weight 2¼ ounces. Moulded extra strength bakelite case. Clip terminals on primary and renewable high tension lead in case of injury or oil soaking into insulation. Liberal length of lacquered high tension lead furnished and is finely stranded to prevent breaking due to excessive vibration. Operates on flashlight cells and no booster is required if wiring and plug are in good shape $2.50



IGNITION CONDENSER

Made for gas models especially. Flexible stranded connections. Tubular aluminum case. Side bracket for mount.

Price each .....35¢



GAS MODEL IGNITION COIL $1.50

Weight—3½ ounces. This coil throws the hottest and longest spark of any on the market today. It operates on three volts, using standard flashlight cells. Liberal free ends of wire are attached, ready for installation in your model.

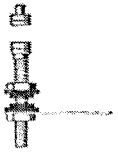
MIDGET TIP JACKS



Two of these jacks are required on a gas model. Only a small portion will protrude from the fuselage. To boost the current for starting your motor, plug in two leads from an outside source. You can run your motor until it is warmed up, then detach the plugs.

Price each ..... 10¢

ELECTRICAL CONTACTS



Tungsten Points for your breaker system. Diameter ⅛". Set consisting of one rivet type and one screw type with nuts.

Set ..... 40¢

SOLDERLESS PLUGS



Very easily attached, merely by loosening, inserting the wire and tightening again. They plug into our tip jacks very easily and certainly are efficient.

Price each ..... 10¢

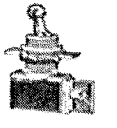
REGULAR PLUGS



Are just as effective as the solderless plug except that they must be soldered to the ends of the wires.

Price each ..... 5¢

TOGGLE SWITCH



This is the most efficient type switch obtainable. Small, light weight, with a positive on-off movement.

Price each ..... 39¢



SPECIAL HOOKUP WIRE

Finely stranded and moisture proof —6 ft. .....25¢

SHEET ALUMINUM (Half Hard)

Thickness	Price 6"x12"	Price 12"x12"
.010"	17¢	30¢
.016"	19¢	35¢
.020"	22¢	40¢
.050" Hard 17st	65¢	$1.20

SHEET BRASS (Half Hard)

Thickness	Price 6"x6"	Price 6"x12"
.005"	10¢	18¢
.016"	22¢	40¢
.032"	34¢	65¢

ALUMINUM RIVETS

Dia. Length	Dozen
1/16" x 3/32"	5¢
1/16" x 1/8"	5¢
1/16" x 3/16"	5¢
3/32" x 1/8"	5¢
3/32" x 1/4"	5¢
1/8" x 3/16"	5¢

BOLTS and NUTS

Diameter	Length		Dozen
1/16"	3—48	7/8"	12¢
3/32"	4—40	1 3/8"	15¢
1/8"	6—32	1 1/2"	20¢

LOCK WASHERS

Bolt or Screw Dia.	Dozen
1/16"	7¢
3/32"	7¢
1/8"	7¢

AIRCRAFT PLYWOOD (Birch)

Thickness	Size 5"x10"	Size 9"x10"
3/64"—3 ply	20¢	30¢
1/16"—3 ply	18¢	27¢
3/32"—3 ply	18¢	27¢
1/8"—3 ply	20¢	30¢

MUSIC WIRE

High grade real music wire for use on gas model landing gears. Smaller diameters are used for guys, wing yokes, etc. Comes in straight lengths. 50" wire is bent in half except when ordered with 60" wood.

1/8" Dia. (.125) x 50"	25¢
1/8" Dia. (.125) x 30"	15¢
3/32" Dia. (.093) x 50"	15¢
3/64" Dia. (.046) x 36"	5¢
1/16" Dia. (.062) x 28"	5¢

53S ALUMINUM ANGLE

Available in 36" Lengths

Size of Legs	Thickness	12" Length
1/2"x1/2"	1/16"	15¢
3/4"x3/4"	1/16"	20¢
1"x1"	1/16"	25¢

HARD BRASS ANGLE

Available in 36" Lengths

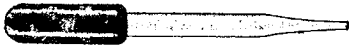
Size of Legs	Thickness	12" Length
1/4"x1/4"	.045	18¢
3/8"x3/8"	.045	22¢



STREAMLINED TUBING

Our streamlined metal tubing is very effectively used as structural members in gas model landing gears, wing cabane struts, etc. A special use, is in the mounting of motors above the wing in experimental jobs. Lengths from 6" to 36".

	Brass	Dural
1/4" per foot	23¢	32¢
5/16" per foot	25¢	36¢
3/8" per foot	28¢	42¢
7/16" per foot	33¢	48¢
9/16" per foot	35¢	52¢



EYE DROPPERS

Gas model flights are often gauged by the eye dropper method, when short test flights are desired. A simple but effective method! Anyway, it is also the best way to fuel your motor, especially if the gas tank is inaccessible.

Price each ..... 5¢

WOOD SCREWS

Length	Doz.	Gross
1/4" #0	5¢	55¢
3/8" #0	5¢	55¢
1/2" #1	8¢	60¢
5/8" #2	9¢	95¢



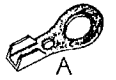


PEE-WEE SPRING CLIPS

These clips prove themselves more handy than any other type. Simply attach them to your booster wires on the battery. Price each 5¢



SPRING CLIP



A



B

LUGS

SPRING CLIPS AND LUGS

These spring (Fahnstock) clips are the smallest clips obtainable. They are handy for quick dismantling of connections. The lugs are soldered to wires which connect to screws, etc.

Spring Clips	3 for 5¢
Lugs Type A	6 for 5¢
Lugs Type B	6 for 5¢

SPECIAL COLLARS

Simplest means of retaining gas wheels, material-brass.
O.D. 1/4", Length 3/16".
Shaft Hole 1/8".
Price with set screw 10¢.



INDEX AND ORDERING INSTRUCTIONS

GAS MODEL SILK

The lightest and finest silk obtainable. Will shrink to form a drum tight surface. Sold in widths of 36 inches, any length desired.

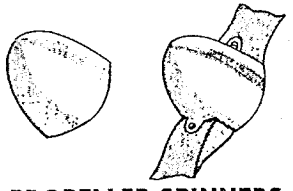
Light Grade..Per Yard	60¢
Heavy Grade..Per Yard	90¢

BAMBOO PAPER

The most widely used covering material for gas models. Is tough and durable. Will shrink when sprayed with water, and take dope with excellent results.

24"x36" sheet

White	8¢
Red, Yellow, Blue and Green	10¢



PROPELLER SPINNERS (Spun Aluminum)

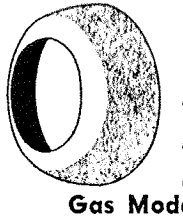
Spun from heavy aluminum, this spinner makes a very attractive accessory for your gas model. It is attached by screws to the propeller after the hub nut on the prop has been tightened. We furnish the hub as shown in first illustration. It can be altered to fit any propeller, and is excellent on scale models.

Size	Price
1/2" Dia. x 1/2" long	15¢
3/4" Dia. x 3/4" long	20¢
1" Dia. x 1" long	25¢
1 1/2" Dia. x 1 1/2" long	30¢
1 3/4" Dia. x 1 3/4" long	35¢

SOLID DURAL SPINNERS

Threaded to fit on propeller shafts.

3/4" Dia. x 3/4" long	25¢
1" Dia. x 1" long	30¢



SPUN ALUMINUM COWLS FOR GAS MODELS (Polished)

Open Face only

4 3/4" Dia.	$ .75
5" Dia.	1.00
5 1/2" Dia.	1.15
6" Dia.	1.30
6 1/2" Dia.	1.50

Gas Model Engine Oil

For safe and sure lubrication of a brand new motor, we recommend this oil. Ratio of gas to oil depends on condition of motor, and restriction as specified by motor manufacturer. A pint of this oil will be sufficient for about two and a half quarts of fuel, and is the reasonable amount to keep on hand.

Pint Can #70 SAE ..... 30¢

BALSA FOR GAS MODELS

In 60 inch Lengths

Our stock of wood has been increased to provide 60" lengths of wood in the following sizes. All wood is especially selected for gas models and is of uniform size and quality.

1/8" x 1/8" x 60"	2¢
3/16" x 3/16"	3¢
1/4" x 1/4"	5¢
3/32" x 1/4"	3¢
1/8" x 1/4"	3¢
1/8" x 1/2"	5¢
1/8" x 1"	8¢
1/8" x 2"	11¢
3/16" x 1/4"	4¢
3/16" x 1/2"	5¢
3/16" x 1"	7¢
1/4" x 3/8"	6¢
1/4" x 5/8"	6¢
1/4" x 1"	9¢
1/4" x 2"	15¢
3/8" x 3/8"	6¢
3/8" x 5/8"	9¢
1/2" x 1/2"	8¢
1/2" x 3/4"	12¢
5/8" x 5/8"	12¢
3/4" x 3/4"	15¢
1" x 1"	23¢
5/16" x 1"	11¢
1/16" x 2"	6¢
1/16" x 3"	10¢

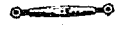
BASS AND SPRUCE

Basswood has certain qualities that make it preferable to the other woods for gas model construction.

Spruce is much more tougher, and is used where greater strength is desired. Specify spruce or bass, price for each is the same.

60" Lengths	each
3/32" x 3/16"	7¢
1/8" x 1/4"	7¢
3/16" x 3/16"	7¢
1/4" x 1/4"	9¢
1/4" x 1/2"	15¢
1/4" x 1"	20¢
3/16" x 1/2"	12¢
3/16" x 1"	17¢

TURNBUCKLES (Brass)



For use in tightening guy wires on tails, etc.

Take up	Dia.	Length of Body	Extended	Each
1/2"	3/16"	1/2"	1"	20¢
5/8"	1/8"	2 1/32"	1 3/8"	25¢
1 1/4"	3/16"	1 3/8"	2 13/16"	30¢

The FOLLOWING ITEMS are all listed in the Model Supplies and Parts section:

CELLULOID	OPALESCENT DOPE
REED	CEMENT
RUBBER	MODEL PINS
DOWELS	BRASS TUBING
CLEAR DOPE	ALUMINUM TUBING
COLORED DOPE	PAINT BRUSHES

AT BACK OF THIS CATALOG!

PLANEFILM!



PLANEFILM—IT'S MAGIC!

Planefilm was first introduced to the model world about a year ago as a revolutionary new model airplane covering!

It is recommended by us, for any model up to four foot wing spread. Models larger than this may be very easily covered, at the builders own discretion!

We particularly recommend this covering for exhibition scale model work! Planefilm covered models are marvels to look at and positively cannot be surpassed in any way! You must see PLANEFILM COVERED MODELS to appreciate their beauty!

FEATURES OF PLANEFILM

1. At least 50% lighter in weight than other coverings. Why? You use no glue or dope finishes!
2. Tough, Elastic—and very very glossy!
3. Planefilm stretches itself drumlike, smooth over any framework!
4. No Seams visible! Will not tear! But if pierced, repairs are invisible!
5. Impervious to water, oil or gasoline!
6. Scientifically manufactured on micrometer machinery! Assures absolute even distribution of weight throughout your entire model covering!
7. Planefilm comes attached to a backing sheet! Therefore is easily handled!
8. Speed of application unbelievable!
9. Appearance of a Planefilm covered model must be seen to be appreciated! Send a self addressed envelope to Megow's for special folder and sample on Planefilm!

SIZES

9" x 12" Sheet	18¢
12" x 12" Sheet	23¢
12" x 18" Sheet	32¢
18" x 18" Sheet	45¢
18" x 36" Sheet	80¢
36" x 36" Sheet	$1.50

Available in any length—36" wide..$1.50 per yard

PLANEFILM SOLVENT

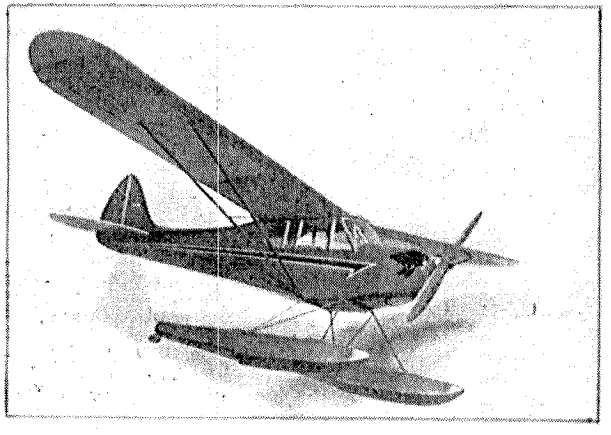
½ ounce...5¢ 1 ounce...10¢ 2 ounces...15¢

In ordering Planefilm be sure to order correct amount of solvent. Sheets up to 12" x 12" require—½ oz. up to 18" x 36"; 1 oz. and per yard 2 oz. This is more than ample.

COLORS

RED		WHITE
BLUE	CLEAR	BLACK
SILVER	GREEN	YELLOW

A model covered with PLANEFILM must be seen to really be appreciated!



PLANEFILM COVERED!

This is an unretouched photograph, and we must point out that a black and white photo does not do this beautiful job justice! Nevertheless upon close examination you will notice, the mirror-like smoothness of the covering; the sharp details of the striping. In fact if the model were in front of you, you would spend hours just admiring it. This model is Megow's Piper Cub equipped with scale floats. See page 16.

PLANEFILM— *the Magic Material!*

WRITE AND TELL US WHAT NEW



HOW YOU CAN IMPROVE YOUR MODELS WITH

PLANEFILM

Planefilm is not only a fine covering, but can also be used for other purposes!

Have you ever spent hours building a fine model, then spent more hours painting it, only to spoil it all when it came to trimmings?

Well! Planefilm not only is a wonderful covering material, but has hundreds of applications on other phases of model work! Here are a few suggestions of what can be done:— Fuselage stripes; Aileron, elevator and rudder outlining; Simulating of cowl lines, seams etc.; License numerals; Covering of all wood solid models, (this is lots easier than painting 7 to 10 coats); Insignia and emblems; In fact there are so many uses, there is not space to describe them all! You must try some Planefilm for yourself!

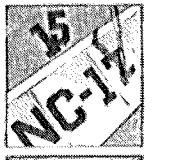
THERE ARE DOZENS OF APPLICATIONS WHERE PLANEFILM CAN BE USED TO ADVANTAGE!

Planefilm comes to you attached to a backing sheet. The reason for this is so that it is not damaged or wrinkled until it is ready for use. When covering a wing or any part of your model, cut a piece of Planefilm about ½ inch larger around the entire area you wish to cover. Strip the Planefilm from the backing sheet and it is ready to be attached to your framework. This is accomplished as follows: Lay the Planefilm on the surface to be covered. With a brush wet with Planefilm Solvent, touch the edge of the Planefilm and it will adhere to the wood. Cover your part completely and allow all seams to dry. When dry, take a large brush and quickly and lightly give the entire surface of the Planefilm a coat of Planefilm Solvent. Use solvent very sparingly! Do not go back over the surface once you have painted it, since you are liable to puncture the Planefilm in its softened state! After you have done this, you will see how quickly and easily a model can be covered with Planefilm, and the beautiful finish which is obtainable with this revolutionary covering for model planes.

LICENSE NUMERALS!

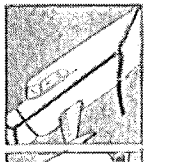
Don't ever use expensive decals! Don't ever try painting on your numbers!

Use Planefilm! You can cut it to any shape you want, precisely and exactly, and apply it in place with very little effort!



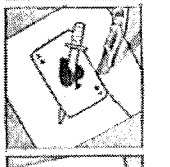
FUSELAGE STRIPING!

A lot of times you didn't stripe your models because you were afraid of a "punk" job! Right? Well, Planefilm striping is so easy a "kid" can do it!



INSIGNIA & EMBLEMS!

Again, because it was too hard, you probably left off that essential squadron emblem. The Planefilm method is easy! You cut out the different parts in different colors, fit them together and stick them down in place with Planefilm Solvent!



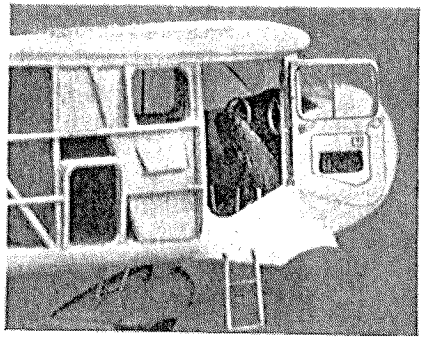
MAKE YOUR OWN DECALS!

Don't ever buy or use decals on model airplanes! They are subject to cracking, peeling, etc. Make your own, *the Planefilm way.* You can paint your design right on the Planefilm (while it still is on the backing sheet) then apply in the regular way when dry!



USES YOU HAVE FOUND FOR PLANEFILM!

MEGOW'S 3/4 INCH



Wing Span 31 Inches

KIT No. A-1

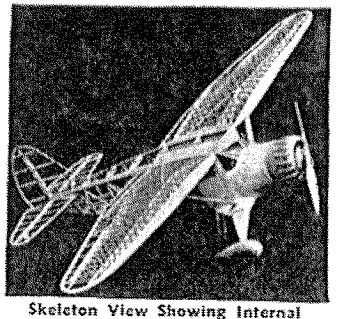
Price $3.25

STINSON RELIANT SR7A

Megow's ¾ inch scale models reach great heights in completeness and perfection of detail. Each kit comprises complete detailed plans and separate sheets showing step-by-step photographs and instructions. Finished flying prop and blank for scale prop. Shaped wheels, aluminum drag ring. Movable controls on tail and wings. Heavy celluloid for cabin windows. All insignia. Correct colors in paper. Over-size quantities of cement, tissue cement and colors. Description and material to complete cockpit with blocks to make pilot's figure. Seats and hinged cabin doors. Complete $3.25

In Ordering Mention Kit Number A1

The Most Complete Kit Offered Builders Today



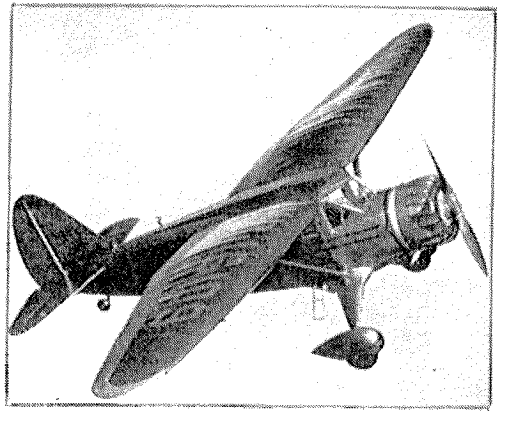
Skeleton View Showing Internal Details

Also Made in a Complete Accurate ½ inch Scale

FLYING MODEL

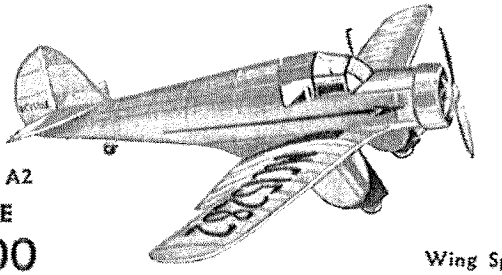
Kit Number B1 Price 80c

Just as accurate in detail and as complete in materials as the larger kits. Everything, including cement and colors in extra quantities needed to produce a beautiful job. Wing Span, 20⅝ inches.



MEGOW'S ¾ INCH MODELS

SCALE MODELS



KIT No. A2

PRICE

$2.00

Wing Span 27"

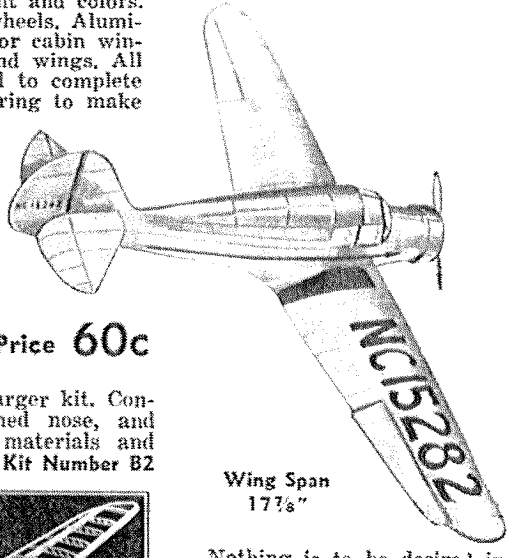
LOOK WHAT WE HAVE PUT IN THE ¾" SCALE AERONCA KIT

Complete detailed plans and photos of skeleton and finished models. Finished flying prop and blank for scale prop. Oversize quantities of cement, tissue cement and colors. Correct colors in paper. Shaped wheels. Aluminum drag ring. Heavy celluloid for cabin windows. Movable controls on tail and wings. All insignia. Description and material to complete cockpit, including blocks and coloring to make pilot's figure.

The New AERONCA

Also Made in a Complete, Accurate ½ Inch Scale Kit.

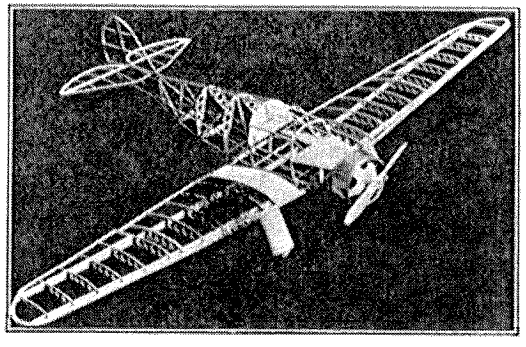
Price 60c



Wing Span 17⅞"

An exact reproduction of our larger kit. Contains all liquids necessary, turned nose, and wheels. Complete supply of all materials and detailed plans.

Kit Number B2

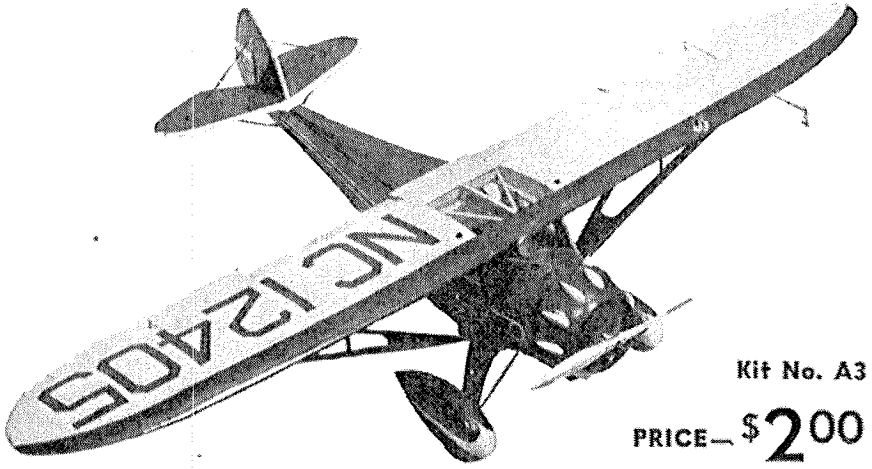


Skeleton View Showing Internal Details

Nothing is to be desired in completeness nor in perfection of detail. Every precaution has been taken to make construction simple and durable. Several months of experimental building and planning is behind the accuracy, the flying ability, and the completeness of these new kits. Read the description of what the new ¾ inch scale kits contain and then compare the prices with other makes. There is no comparison.

ARE SUPER DETAILED

3/4 INCH SUPER DETAILED



Kit No. A3

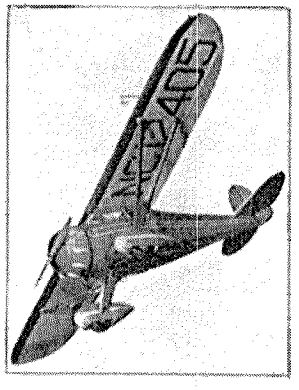
PRICE— $2.00

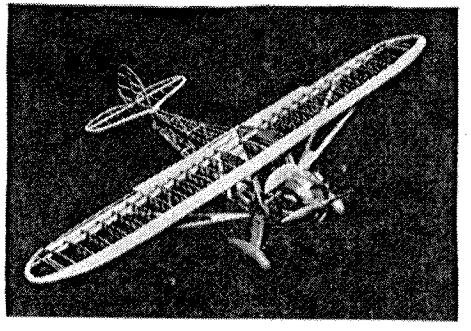
MONOCOUPE

¾" Flying Scale Model - Wing Span 24" - Length 15¼"

Two place cabin ship powered with 90 H. P. Lambert engine. Easy to build, makes an attractive and good flying model. Each kit comprises complete detailed plans with step by step instructions. Semi-finished flying prop and blank for scale prop. Shaped wheels. Aluminum cowling. Heavy celluloid for cabin windows. All insignia, correct colors in paper. Oversize quantities of cement, tissue cement and colors. Description and material to complete cabin interior, with blocks to make pilot's figure and seats. Provision for movable controls on wings and tail and hinged cabin doors, if desired.

When Ordering This Kit Use Kit Number A3





Skeleton View Showing Internal Details

HALF INCH SCALE "MONOCOUPE"

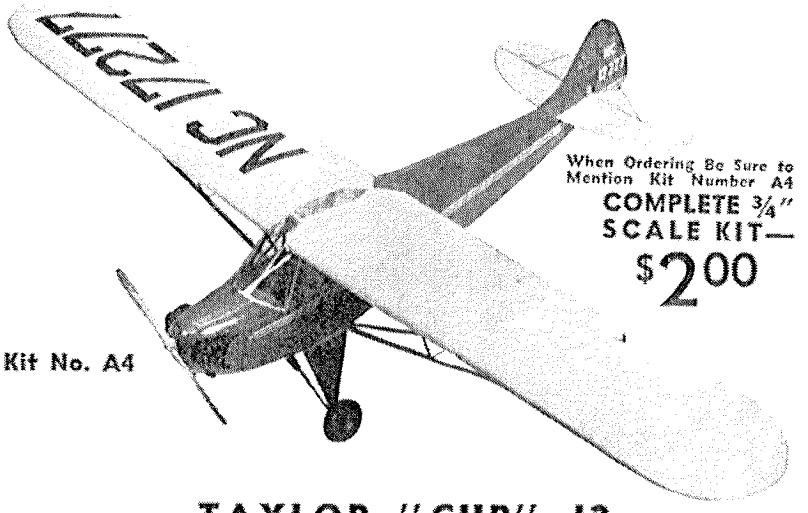
Also made in a complete accurate ½" scale flying model, just as accurate in detail and as complete in materials as the larger kit. Everything, including cement and colors needed to produce a beautiful job.

Wing Span - 16" Length - 10 13/16"

COMPLETE KIT—60c

In Ordering This Kit Use Kit Number B3

FLYING SCALE MODELS



When Ordering Be Sure to Mention Kit Number A4

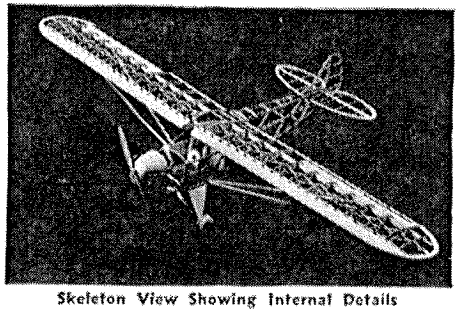
COMPLETE ¾" SCALE KIT— $2.00

Kit No. A4

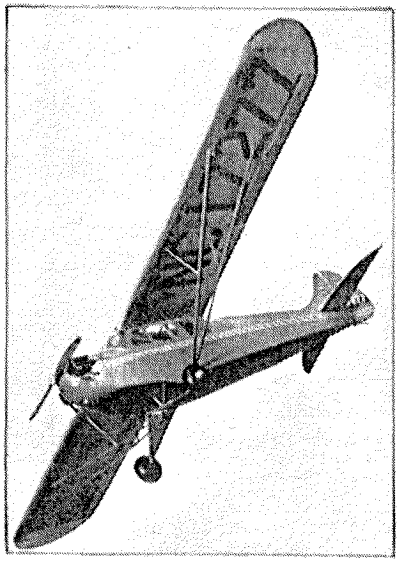
TAYLOR "CUB" J2

¾" Flying Scale Model - Wing Span 26⅜" - Length 16½"

A two place, tandem seating, sport lightplane powered with a 4 cylinder twin opposed continental engine. Very popular among the lightplane pilots and found at almost every airport. A remarkable flyer and very easy to build. Kit contains complete detailed plans and photos of skeleton and finished model. Semi-finished flying prop and blank scale prop. Oversize quantities of cement, tissue cement and colors. Correct colors in paper. Shaped wheels. Heavy celluloid for cabin window. All insignia. Description and material to complete cabin interior including blocks to make pilot's figure. Movable ailerons and tail surfaces.



Skeleton View Showing Internal Details



HALF INCH SCALE "TAYLOR CUB"

This ship is also made in a ½" scale model kit containing the same features as in the larger kit. Included are all necessary liquids and parts to complete this model. WING SPAN 17½", LENGTH 11 3/16".

COMPLETE KIT—60c

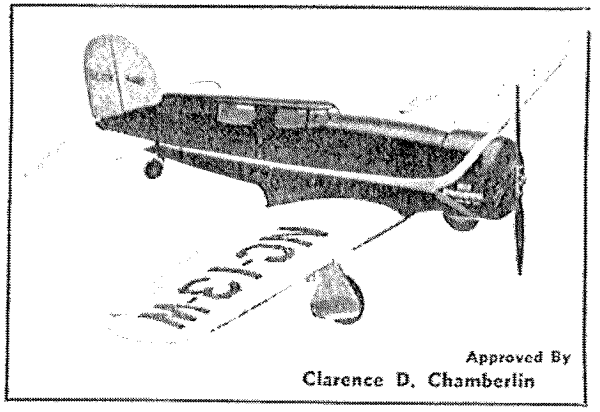
When Ordering Be Sure to Mention Kit Number B4

SPECIAL MODELS SPONSORED BY FAMOUS FLIERS

Chamberlin's "Miss Stratosphere"

FLYING MODELS

An Exact Model! At ½" Scale!



Complete Kit 60c

Approved By
Clarence D. Chamberlin

Thousands of you have no doubt witnessed Col. Clarence Chamberlin flying around in his sleek Lockheed "Altair." Usually it can be seen circling around the "Chamberlin Airlines" Condor, on almost every "barnstorming" hop, with motor "wide open." Perhaps you are one of the many who rode in the Condor and thrilled at seeing "Miss Stratosphere" swiftly zoom past. Then, you will want to build a model of this ship, as a souvenir of that flight.

The model pictured above is exact scale at ½ inch equals one foot. The kit builds a flying model with a true "Monocoque" fuselage. The wings and tail are tissue covered. For purely exhibition purposes, the model may be entirely wood covered. This is described in the plans for those who wish to make such a model.

This new kit is one of the regular ½ inch series and is complete in every respect, liquids included.

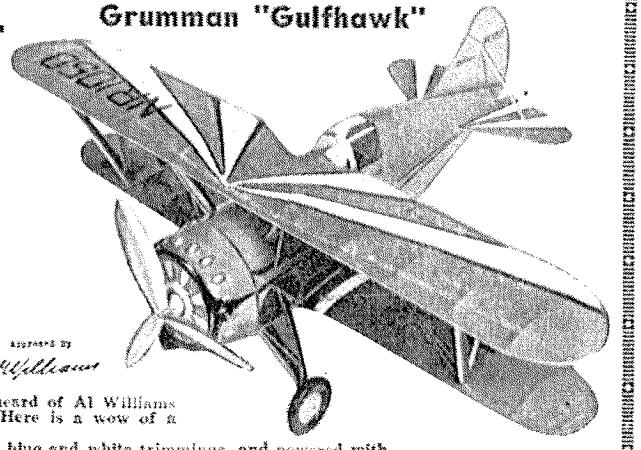
Kit Number B5 **Wing Span 21⅛"**

Al Williams' Grumman "Gulfhawk"

Complete Kit

Wing Span 17 Inches

Special Kit



Approved by
Al Williams

Many of you have heard of Al Williams and his "Gulfhawk." Here is a wow of a model!

Colored, orange with blue and white trimmings, and powered with a 1000 H.P. engine, it really stands out from the others.

The plans in these kits are personally approved and autographed by Al Williams, the famous flier.

KIT NUMBER L-1.

50c

MEGOW'S GIANT FLYING MODELS

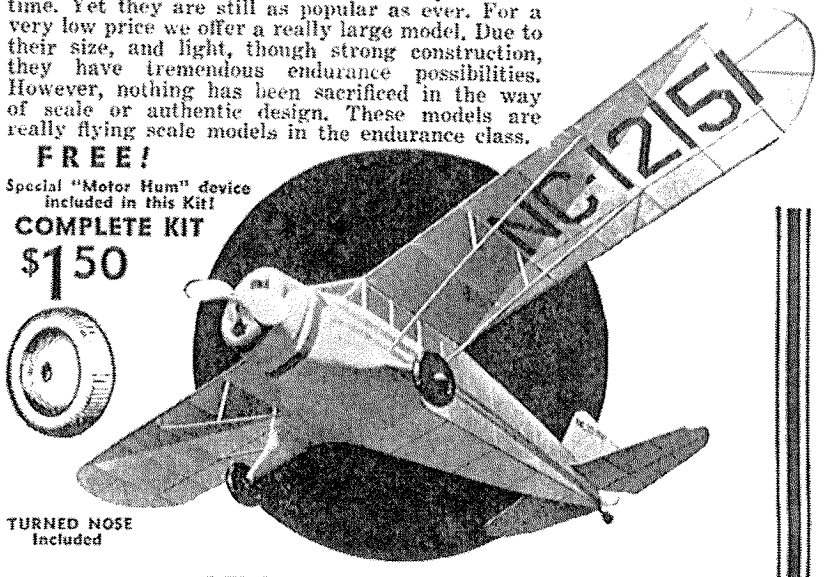
We have been making these kits for quite some time. Yet they are still as popular as ever. For a very low price we offer a really large model. Due to their size, and light, though strong construction, they have tremendous endurance possibilities. However, nothing has been sacrificed in the way of scale or authentic design. These models are really flying scale models in the endurance class.

FREE!

Special "Motor Hum" device included in this Kit!

COMPLETE KIT

$1.50



TURNED NOSE Included

STINSON RELIANT SR. Kit Number D1

Wing Span 60", Length 38½", Weight complete 8 ounces. Accurate design and exactly to scale. Megow construction features make it amazingly easy to build. Easily overshadows all the models of your friends.

NEW Low Price!

Complete Kit

$1.50



TURNED NOSE Included

FREE!

Special "Motor Hum" device included in this Kit!

Kit Number D2 WACO CUSTOM CABIN MODEL

Wing Span 50", Length 37", Weight complete 8½ ounces.

A model of the most popular American plane, for both business and pleasure. This Waco not only looks like the real thing, but flies just as well, too. You will want to be among those in your neighborhood to have one of these models.

The TAYLOR "CUB" "GIANT MODEL"



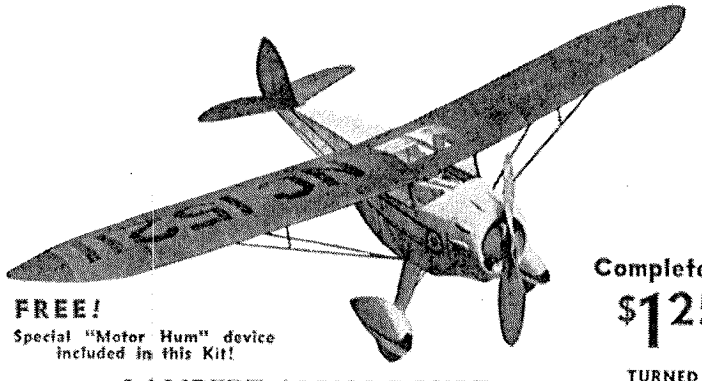
FREE! Special "Motor Hum" device included in this Kit!

TAYLOR CUB

Kit Number D3

Complete Kit $1.00

Wing spread 50", Length 31", Weight complete 5¼ ounces. A popular model of a two place sport ship. Being of light weight construction and not too complicated, it is an ideal model for both a beginner and for one whose experience demands that a model be a good, consistent flyer.



FREE! Special "Motor Hum" device included in this Kit!

LAMBERT MONOCOUPE

Wing spread 50", Length 32", Weight 6 ounces.

Complete Kit $1.25

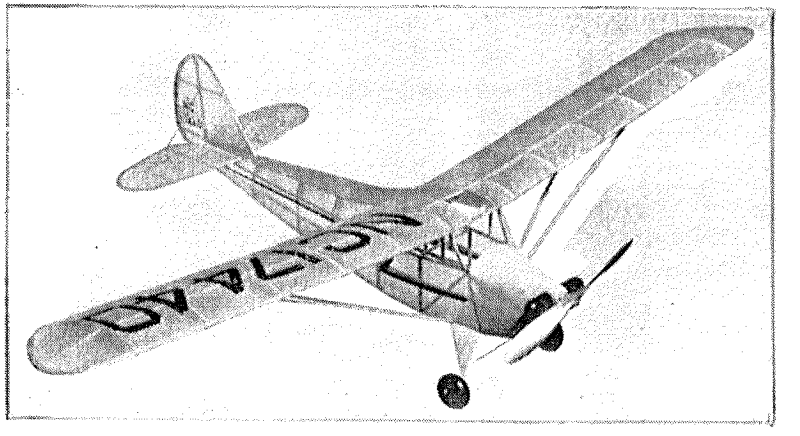
TURNED NOSE Included



Kit Number D4

The Monocoupe has always proved popular in our Giant Model Series. When properly constructed and adjusted the model will taxi, take off, and fly under its own power. Its powerful motor will quickly take it up to a high altitude where, after the power is expended, it will gracefully glide to the ground.

50" Models——"Giants"



Kit No. D5

AERONCA "K"

Special "Motor Hum" device included in this Kit! **FREE!**

Wing Span 50" **Overall Length 28"**

A lightplane model streamlined from propeller hub to rudder tip, this ship immediately impresses you with its air of aliveness, alertness, its eagerness to take off and go places. A regular fifty inch span model, it embodies all the regular features necessary for an easy to build, easy to fly authentic scale model.

$1.00



Kit No. D6

FAIRCHILD RANGER

Wing Span 50" **Overall Length 34"**

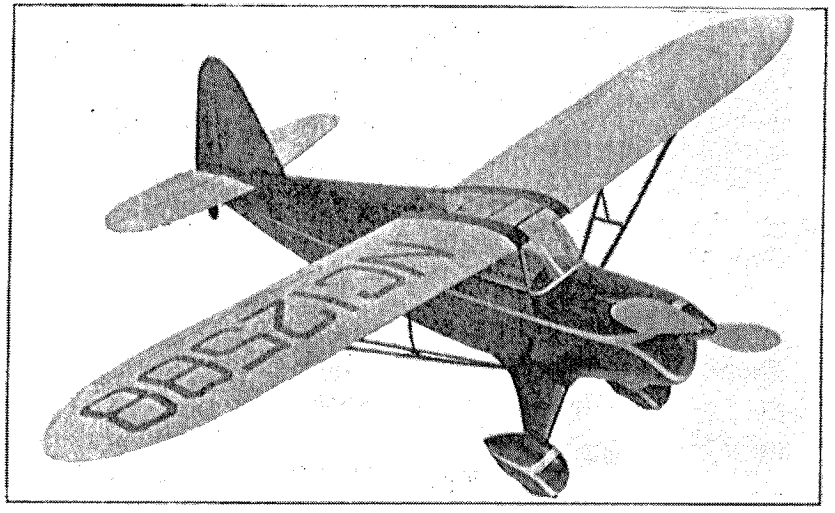
The Ranger embodies numerous features which are distinctly appealing to the model enthusiast. The "in line" engine with its small frontal area—lends a sleek, racy appearance. With all its detail the model is of amazingly light and strong construction. You will get excellent service from this ship.

FREE! Special "Motor Hum" device included in this kit!

$1.00

50" Giant Models

FREE!
Special "Motor Hum" device included in these kits!



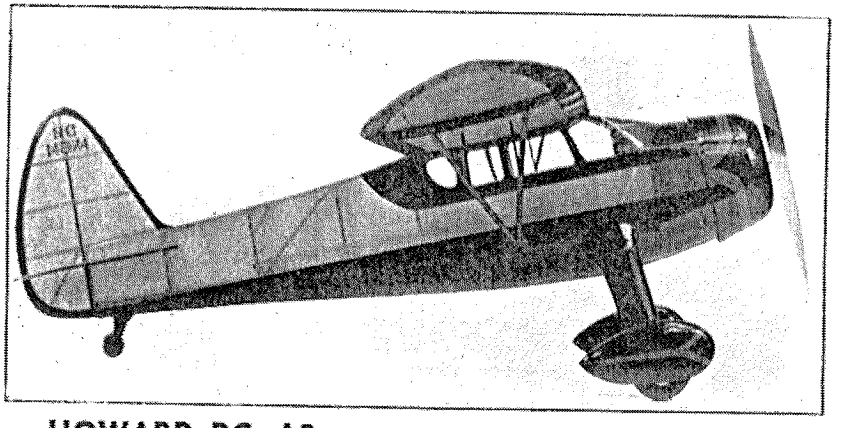
REARWIN SPEEDSTER

Wing Span 50" Overall Length 36"

Kit. No. D7

Here is the plane that modelists are enthusiastically acclaiming everywhere. It is the most sleek, racy appearing sport plane of today. The aerodynamic set-up, even though it is an exact scale model, is perfect and guarantees long, stable flights and flat glides. A worthy addition to our 50" line, this plane embodies all the features that you have found in Megow Kits.

$1.00



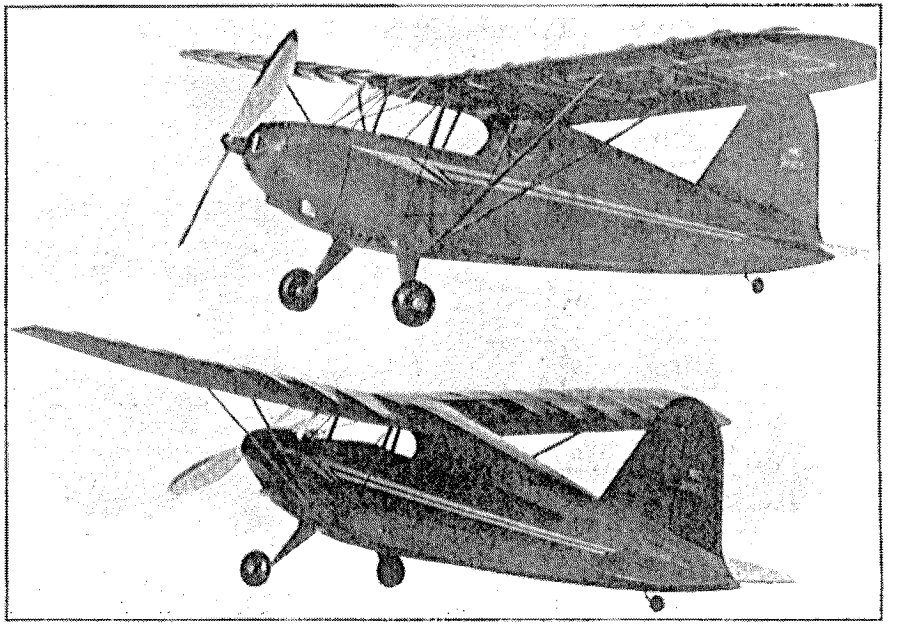
HOWARD DG-A8

Wing Span 50" Overall Length 35"

When a famous racing plane designer enters the commercial field, you can be sure of a sensational development. And our new model lives up to its famous prototype. This ship has been designed to provide excellent flying ability and is of very strong, yet light construction. The kit contains everything necessary to build an authentic scale model. TURNED NOSE Included.

Kit No. D8

$1.25



THE NEW STINSON "105"

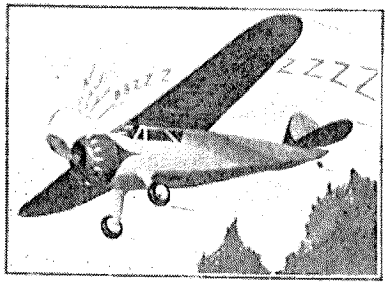
50" Wing Span

Above:—Front and rear views of Megow's superb model of this plane

"Stinson,"—a great name in aviation, has introduced the new "105"! Megow's now introduce it to you in model form!

The engine, and general design gives this plane such a neat appearance, that you will simply, just want to build it! Our kit is complete in the usual Megow way. This is an excellent and authentic flying scale model.

KIT No. D10 **$1.50**



MODEL AIRPLANES

That Look, Fly and Sound—
LIKE REAL AIRPLANES!

FREE!

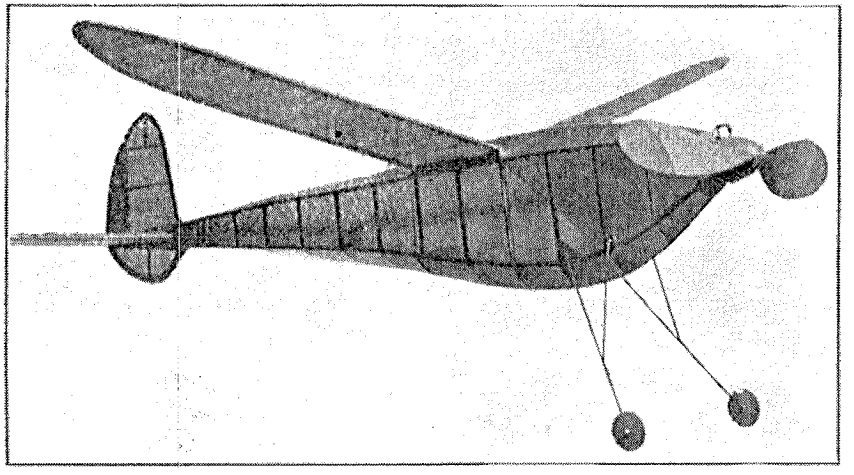
Special Motor Hum Device Included in Each Kit!

An Innovation! Our Flying Models Are No Longer Silent! A device comes with each kit to reproduce the sound of a motor.

Yes, it's true, all our flying models now can be made to sound like real airplanes. The "Motor Hum Device" is complete with instructions for installation. This was developed after considerable experimentation and is included **FREE** in the Giant Flying, 30 in. Flying Models, and the 25¢ Flying Line.

Build this *Classy (Class C)*

Contest Endurance Model



Meet the sensation in the model field. Here is a ship you will be proud to exhibit at the next contest. This model is the result of 8 years' work in competitive flying by its two collaborating designers, and has been a consistent winner. The design is not only theoretically correct, but proven through amazing flights under adverse weather conditions.

Everything has been done to increase the glide. The wing is streamlined into the fuselage; triangular top and bottom construction for simplicity; folding propeller; (a free wheeling propeller may be used by the novice); thin wheels; all wire landing gear (landing gear may be folded back to pack in a smaller box for transportation); and streamlined tail section, are a few of the features.

Model meets all N. A. A. specifications and may be used in any official meet.

This kit is absolutely complete in every detail, including a free wheeling or folding propeller, with a rubber tensioner.

All wood sizes are exact and of grade "A" balsa. Wood for these kits has been specially graded as to weight.

More than enough banana oil, cement, and tissue are included, as well as all metal parts.

Special tension steel wire is used for the landing gear, prop, shaft, rear hook, and "s" hooks.

A ball bearing washer and other bearings cut from heavy sheet brass insure a full measure of power without friction.

Plan is full sized, 28" x 42", with all parts completely drawn out, and shows framework and completed model photographs. Complete step by step instructions are on this plan, which tells how to fly as well as how to build this model.

The bills of materials for this plane were compiled by the model designers and builders themselves, to insure an absolutely complete kit. Therefore you will need absolutely no additional material if the model is built as specified.

We wish to state that due to rapid deterioration of rubber, we do not include this in the kit.

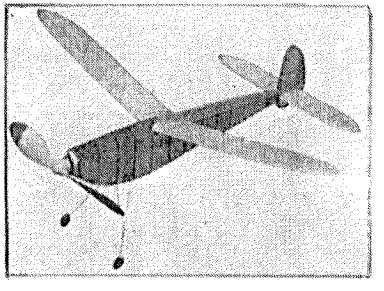
SPECIFICATIONS

Wing Span .....41"	Wing Chord .....3⅞"
Wing Area ...147 sq. in.	Effective Area .140 sq. in.
Aspect Ratio 12	Airfoil Top ....Clark Y
Fuselage Cross Section ....0.28 sq. in. (Required)..8.27 sq. in.	Bot. .....R.A.F. 32
	Total Weight....4.23 oz. (Required) ....4.20 oz.

Kit No. Z1

Retracto! $1.00

Complete As Advertised



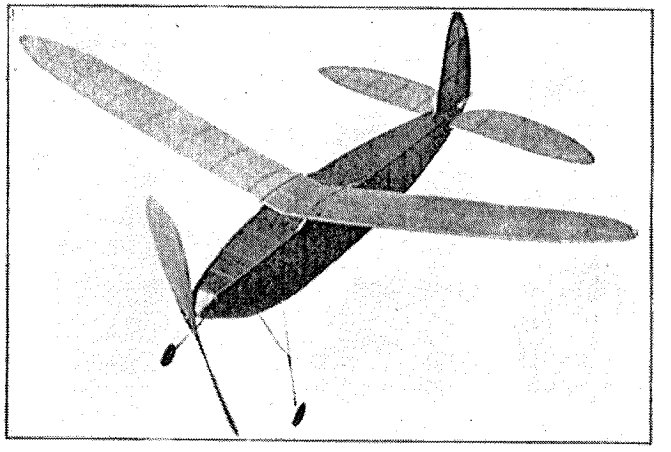
Designed by W. Sharp—C. Selight
Topnotch Phila. Fliers

SPECIAL! How to Make a New Type Folding "Prop"

Featuring the newest development in Folding Props! This idea alone is worth the full price of the kit. There is absolutely no parasitic resistance!

This newly developed folding prop fits snugly against the sides of the fuselage when stopped by the rubber tensioner. This prop, unlike other folding props, is just as strong as the stiff blade free wheeling props. A wide, full blade width hinge insures a constant pitch, easy folding, and a minimum of vibration.

When "prop" is folded, drag is cut to a minimum, increasing the glide to that of a sailplane. Detailed instructions are given on the plan for each part.



"TOPPER"

Advanced Model for Beginners

Wing Span .....30" Length .....22"

Here is just the model for you advanced beginners. Thrilling, long endurance flights at a minimum of expense and work. This plane is an ideal size and extremely rugged despite its light weight (1.02 oz.).

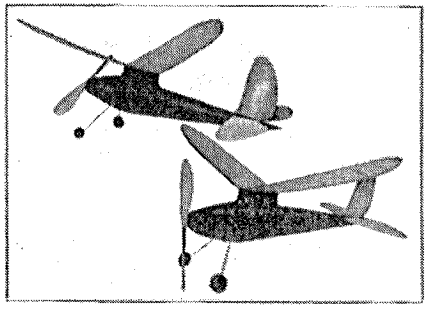
This plane is an excellent transition model for those who later wish to fly larger endurance ships.

Kit contains all materials necessary to build and fly this model; including liquids, free wheeling propeller, and sufficient amounts of special pep rubber.

Plans are clear and complete, with step by step instructions for building and flying.

KIT No. J13

Complete Kit . . . 50¢



"SWIFT"

Elementary Duration Model for Beginners

Wing Span .....21½" Length .....14"

A Model for the Beginners.—A complete flying model that can be built in one evening. This model features a new simplified streamlined monocoque fuselage, the type used on many gas models. Fuselage sides and tail sections are cut from balsa, nothing to do but sand lightly.

Kit is complete in every detail, having all materials necessary to produce an excellent flying model.

KIT No. C24

Build this model in 1 Evening!

Compete Kit 25¢

Fellows! Tell Us What You Want!

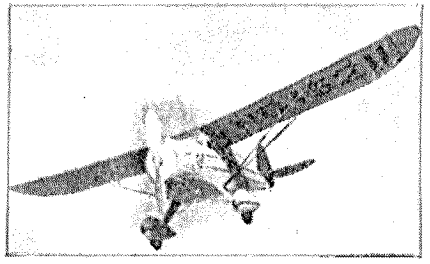
Write to us—Today!

Fellows, we have a smart young department of expert model designers continuously working on new designs, new ideas, FOR YOU!

Perhaps you would like us to produce some new model? or a new idea? Then write us at once, do not delay, if you have anything in mind there are doubtless many others who want the same thing! Write your letter to **New Ideas Division, Megow's Research Dept., Howard & Oxford Sts., Phila., Pa.**

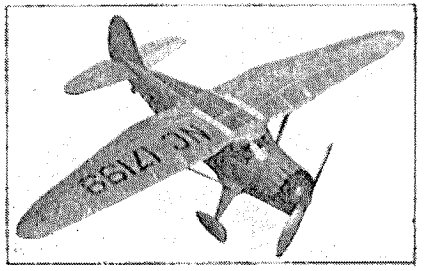
50¢ FLYING MODELS

30" WING SPAN



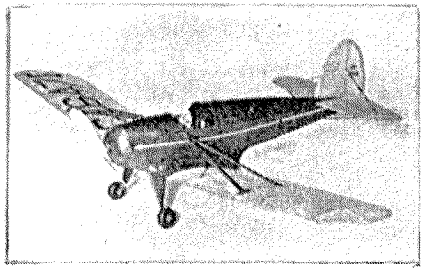
MONOCOUPE

The Monocoupe has always proved popular with model builders. We picked it as the first model in our new series for this reason. The kit, complete as all Megow Kits are, contains all necessary material for a good, accurate flying model. Special Feature! A turned nose is included!.....Kit J1



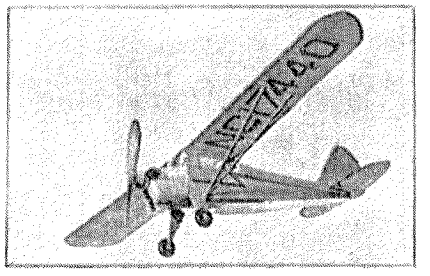
STINSON RELIANT SR7A

This model has become very popular in our other lines of kits. All external details are described on the plan so that in reality this is a "flying exhibition" model. Complete materials are included in each kit, including a specially turned nose!.Kit J2



ARROW SPORT

Any airplane powered with an automobile engine, always attracts attention. The new "Arrow Sport" powered with a Ford V-8 motor has aroused more than ordinary interest. As pictured above, our kit builds itself into a very life-like model. Here too, we include a specially turned nose!.....Kit J3



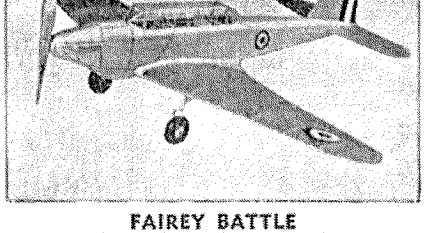
AERONCA K

This new Aeronca is a development of the well-known C3. Based on the past popularity of the Aeroncas, we feel certain that this model will be heartily welcomed. Although a turned nose is not included, due to the odd shape, the model is easy to build .....Kit J4



WATERMAN ARROWBILE

Here is the ship that you have been hearing so much about! Powered with a 6-cylinder Studebaker motor and featured as the sky auto. Our model was thoroughly tested and flies unusually well. Kit J5



FAIREY BATTLE

An excellently designed flying model of England's latest and most formidable battle plane. Our kit is complete with all necessary material, including a turned nose!.....Kit J6

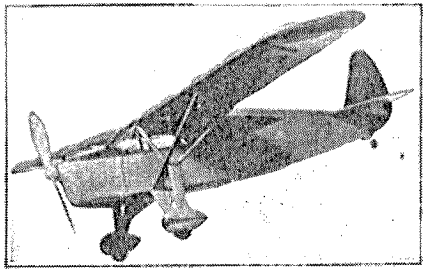
"Motor Hum Device" Included with Each Kit!

Kits 50¢ each

MEGOW'S

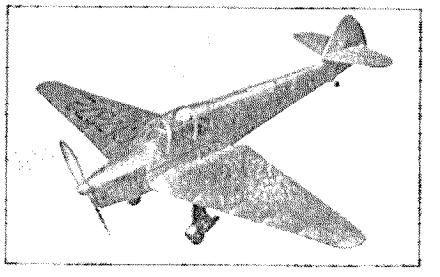
50¢ FLYING MODELS

30" WING SPAN



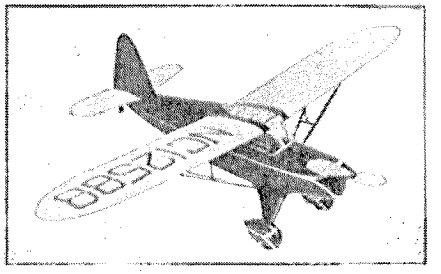
FAIRCHILD RANGER

Here is a model with plenty of detail that will delight the most exacting scale model builder. Of light, yet very strong construction this model flies exceptionally well and its slow flying speed makes it ideally suited for scale model endurance contests .....Kit No. J7



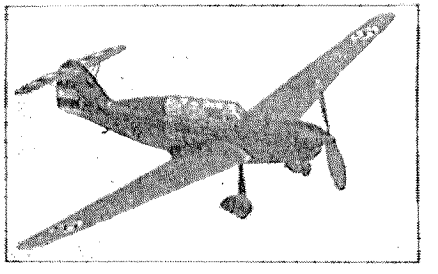
RYAN SC

This new cabin plane developed by the Ryan Aeronautical Co. (builders of the Spirit of St. Louis), is a worthy companion of their famous "SE." Your model, with its beautiful lines and appearance will draw admiring glances from everyone. The completed ship is very light and flies exceptionally well ..... Kit. No. J8



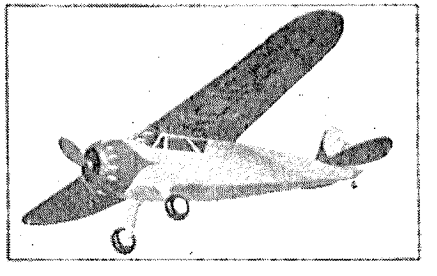
REARWIN SPEEDSTER

The plane that is taking America by storm! The appearance of this ship speaks for itself, and is a worthy addition to your collection. Careful design insures fast, stable flights. Kit is complete, with all details included .....Kit No. J9



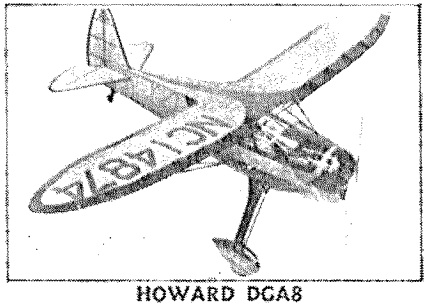
MESSERSCHMITT M-29

The photographic ship of the new German Air Force! Of low wing design with efficient streamline and plenty of dihedral angle to insure stable flights. The kit is amazingly complete, including instructions to construct a miniature aerial camera for your model! .....Kit No. J10



CESSNA C-34

Acclaimed the most efficient plane, this custom built airplane has been tops for many years among private owners. Its deluxe appearance makes for a model of unusual beauty. Among many other features, this kit contains a turned balsa nose and provides for making streamlined, "hub-less" wheels .....Kit No. J11



HOWARD DGA8

Ben Howard's latest! This fast cabin plane, developed for private owners makes a beautiful flying scale model. High landing gear permits use of a large propeller, which will greatly increase the duration, making it ideal for contests. Kit is complete to the last detail. A turned balsa nose is included .....Kit No. J12

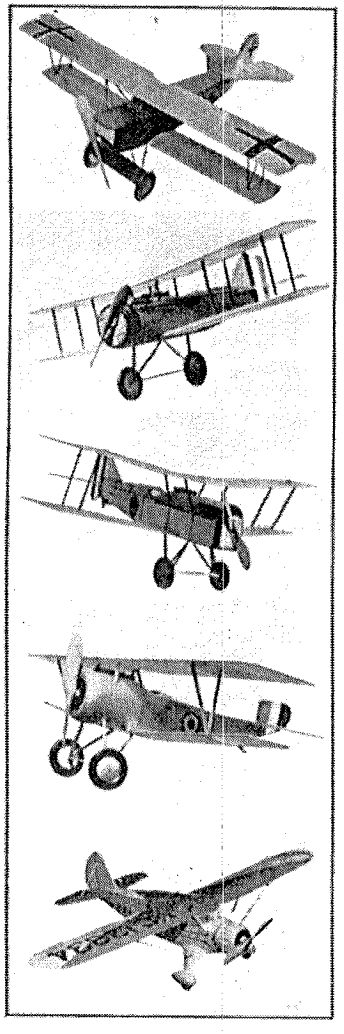
TWENTY FIVE CENT

Megow's famous twenty-four inch flying models are the biggest values ever offered for the price. Simple construction and sound design characterize these ships, resulting in very fine flying models. They are purposely designed with light and sturdy construction, a quality which makes for greater duration. Nevertheless, all the details of the real ships have been faithfully carried out.

The models pictured here are all built from our kits and go to show how authentic the models really are. As the majority of model builders are familiar with this line of models, a description of each is not necessary. We list them according to number for your ease in ordering.

24 INCH WING SPAN!

All models have 24" wing span excepting C11 which has 18" and C17 which has 16".

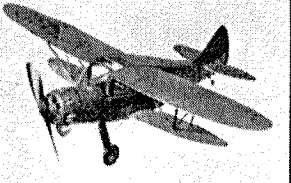


C1
FOKKER DVII
World War Plane



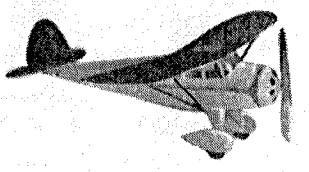
* C6
CORBEN ACE
Sport Plane

C2
SPAD
World War Plane



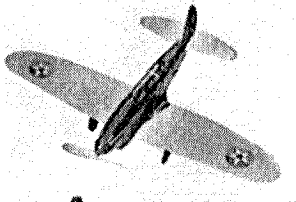
* C7
WACO
Cabin Biplane

C3
SE5
Sopwith War Plane



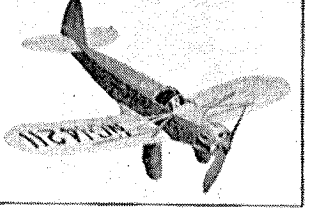
* C8
MONOCOUPE
Sport Plane

C4
NIEUPORT
World War Plane



* C9
CONSOLIDATED
U. S. Army

C5 *
STINSON
Cabin Monoplane



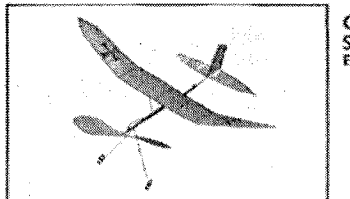
* C10
KINNER
Sportster

FREE! "Motor Hum Device."

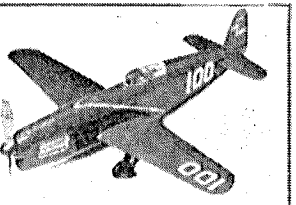
MEGOW MODELS ARE

FLYING MODELS

*** Turned Balsa Cowls Included with These Kits!**



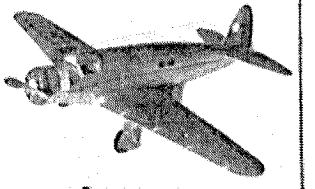
C11
SENIOR R.O.G.
Endurance Model



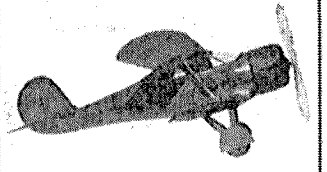
C17
CAUDRON
French Racer



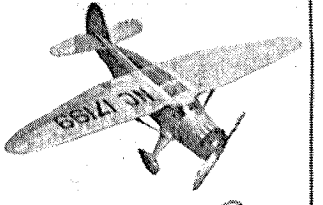
C12 *
FAIRCHILD 22
Parasol Sport



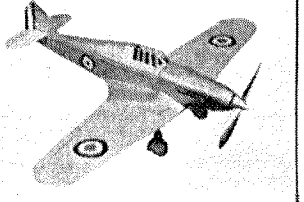
* C18
VULTEE
Transport Plane



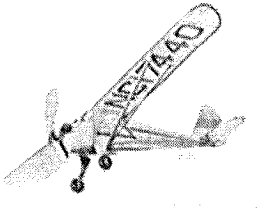
C13 *
BEECHCRAFT
Sport Biplane



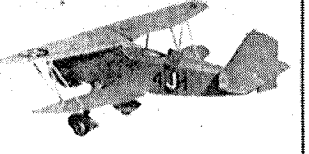
* C20
STINSON
Gullwing Monoplane



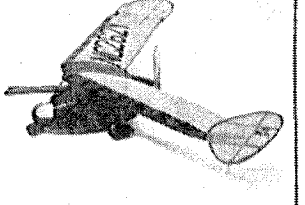
C14 *
HAWKER
British Fighter



C21
AERONCA
Sport Plane



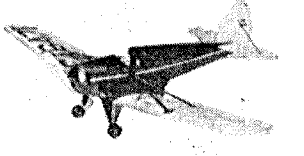
C15
CURTISS HAWK
Biplane Fighter



C22
WATERMAN
Arrowbile



C16
TAYLOR CUB
Sport Plane



* C23
ARROW
SPORT

Included With Each Kit!

FAMOUS THE WORLD OVER

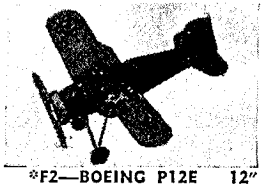
15" FLYING MODELS 10¢

Kits contain turned balsa cowls

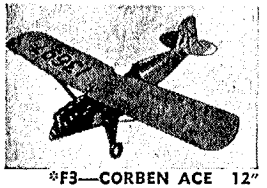
There Are Fifteen Models Having a 15" Wing Spread. The Remaining Models Have a 12" Wing Span. See Lower Right Hand Corner of Photo for Correct Size.



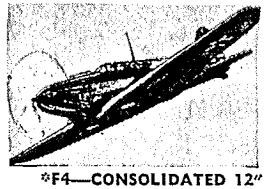
F1—AERONCA 12"



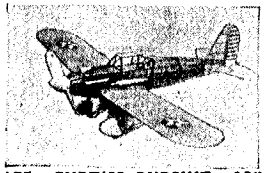
*F2—BOEING P12E 12"



*F3—CORBEN ACE 12"



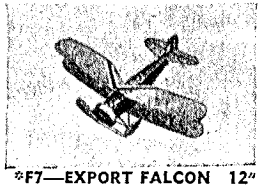
*F4—CONSOLIDATED 12"



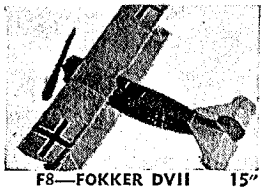
*F5—CURTISS PURSUIT 12"



*F6—DOUGLAS OBSERV. 12"



*F7—EXPORT FALCON 12"



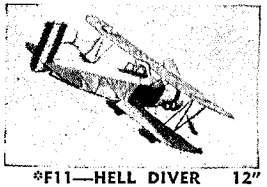
F8—FOKKER DVII 15"



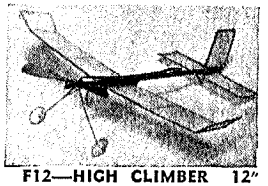
*F9—FOKKER TRIPLANE 12"



F10—FOKKER DVIII 12"



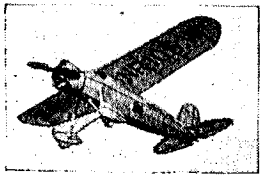
*F11—HELL DIVER 12"



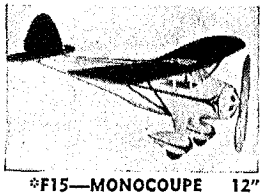
F12—HIGH CLIMBER 12"



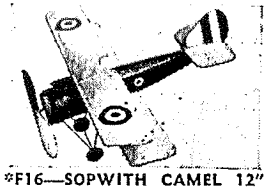
*F13—KINNER SPO[illegible] 15"



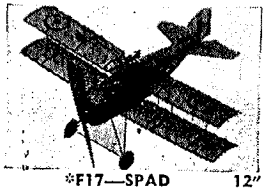
F14—LOCKHEED VEGA 15"



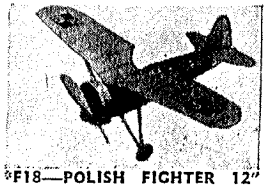
*F15—MONOCOUPE 12"



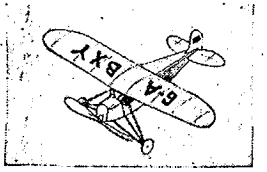
*F16—SOPWITH CAMEL 12"



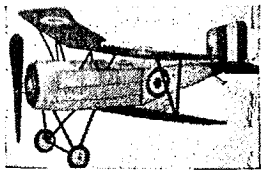
*F17—SPAD 12"



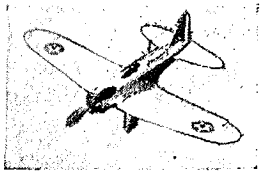
*F18—POLISH FIGHTER 12"



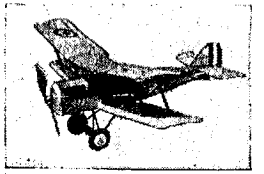
F19—PUSS MOTH 12"



*F20—NIEUPORT 15"



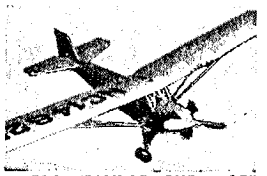
*F21—NORTHROP 15"



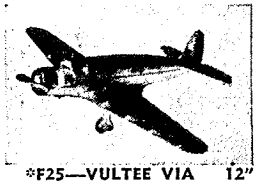
F22—S. E. 5 12"



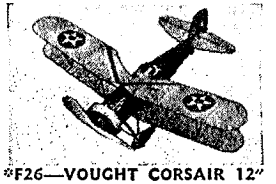
*F23—STINSON RELIANT 15"



F24—TAYLOR CUB 15"



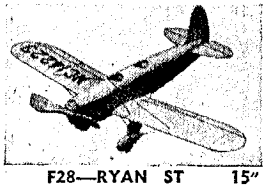
*F25—VULTEE VIA 12"



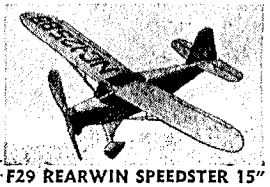
*F26—VOUGHT CORSAIR 12"



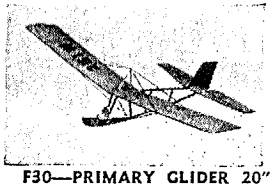
F27—WACO BIPLANE 12"



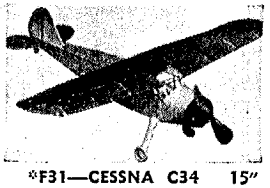
F28—RYAN ST 15"



F29 REARWIN SPEEDSTER 15"



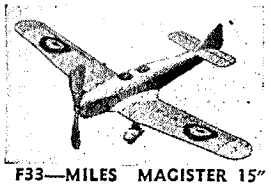
F30—PRIMARY GLIDER 20"



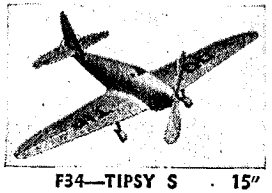
*F31—CESSNA C34 15"



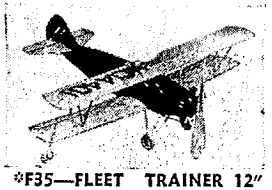
F32—DeH. HORNET MOTH 12"



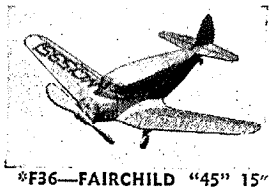
F33—MILES MAGISTER 15"



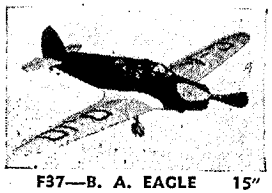
F34—TIPSY S 15"



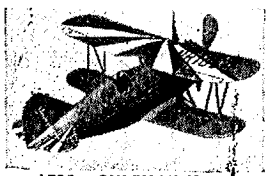
*F35—FLEET TRAINER 12"



*F36—FAIRCHILD "45" 15"



F37—B. A. EAGLE 15"



*F38—GULFHAWK 12"



F39—MESSERSCHMITT 15"

RUBBER LUBRICANT

Developed by M.R.L. this well known rubber lubricant is used by everyone. A few drops spread along your rubber motor will enable you to "pack" hundreds of extra turns into your motor, which will greatly increase the performance and endurance of your model.

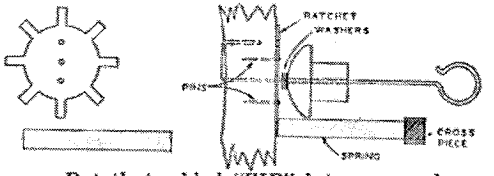
1 oz. Bottle ..... 12¢
2 oz. Bottle ..... 20¢

MICROFILM SOLUTION

This transparent, super light covering for indoor models, developed by M.R.L., will add minutes to your indoor time. Do as thousands do and you, too, can be a consistent winner.

1 oz. Bottle ..... 12¢
2 oz. Bottle ..... 20¢

MEGOW'S "MOTOR HUM" DEVICE



Put that added "ZIP" into your rubber powered models—equip them with this featherweight device. Easily installed, produces a humming sound similar to a plane aloft. Device is enclosed in a glassine envelope with instructions for installation printed thereon.

Price ..... 10¢

The Thrills of **MECHANICAL FLIGHT** *are yours—— with this* ***SCIENTIFICALLY DESIGNED***

Captive Model AUTOGIRO



The Captive Autogiro Model F is a scientific model embodying and perfectly illustrating the principles of Autogiro flight. All the necessary parts of an Autogiro are arranged in their correct relation to each other so that they function exactly as in the full-sized machines.

Like its big bothers, the Model F is capable of very slow flight, thus it can be flown on a tow string. When there is no wind the model will fly when towed at the rate of a brisk walk. If there is more than five miles per hour of breeze, it floats on up as the tow string is let out, lifted by the action of the wind on the auto-rotating rotor.

The model F consists of a balsa wood fuselage cut to a silhouette cabin shape with horizontal and vertical fin area on the tail. Extending out on each side of the nose is an outrigger supporting upturned fins which are used for lateral stability.

A pylon extends above the fuselage and supports the two-bladed rotor and its ball-bearing hub. The blades are hinged to the hub which allows them to "cone" and "flap" as they auto-rotate.

This model, finished in bright colors, comes complete and can be assembled in a few minutes. Its rotor is 3 ft. in diameter, the span of its side fins is 42 in.

Developed by C. B. Chupp and James C. Ray Autogiro Company of America

KIT No. M4
READY TO FLY
ONLY $1.95

Distributed Exclusively by MEGOW'S

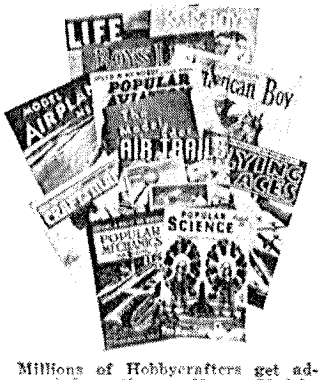


SAY FELLAS

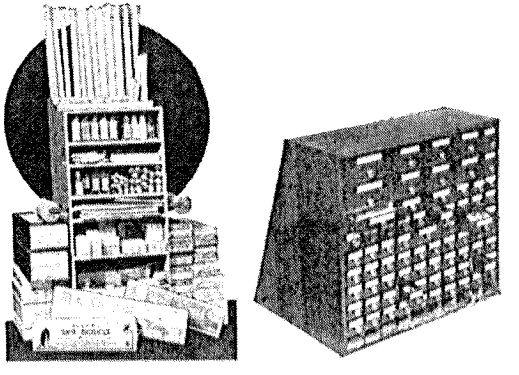
"I'VE GOT SOMETHIN' TO TELL YA"

You bet he's got somethin' to tell ya! He wants to tell you all about the latest Megow News in the magazine he just bought, and about the New Megow Models that are featured in Megow Store Windows everywhere!

Megow Models are Nationally advertised in all the principal publications!



Millions of Hobbycrafters get advance information on Megow Models, by reading: Model Airplane News, Air Trails, Flying Aces, Life, Boys' Life, American Boy, Open Road for Boys, Popular Science, Popular Mechanics, Model Craftsman, Popular Aviation, Model Builder, Model Railroader, Popular Homecraft, Mechanics Illustrated, and others.

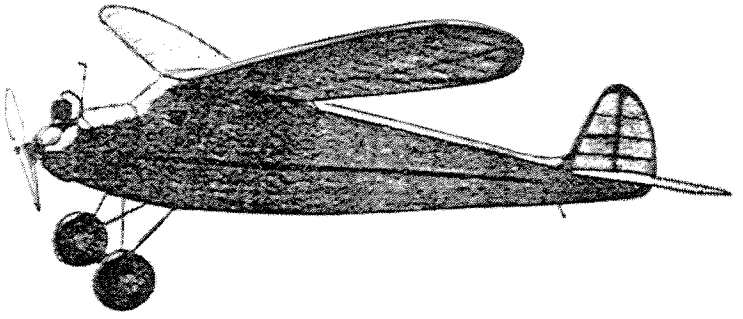


Thousands of boys go to their Megow Dealers for supplies! Dealers find above Green Cabinet and Metal Parts Cabinet indispensable in selling their stock.

Retail Price List

JULY 1, 1940

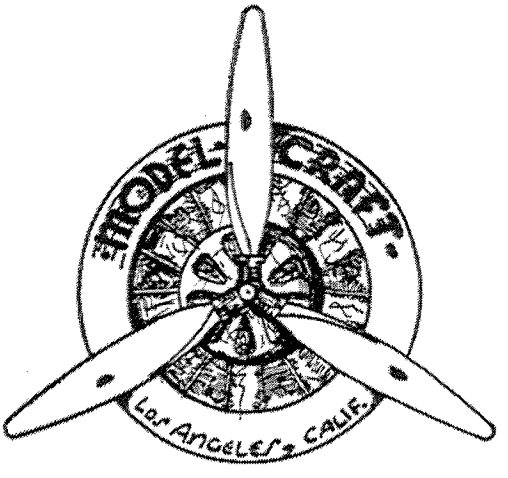
THIS PRICE LIST SUPERCEDES ALL PREVIOUS PRICE LISTS



NEW ITEMS

AND PRICE CHANGES

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

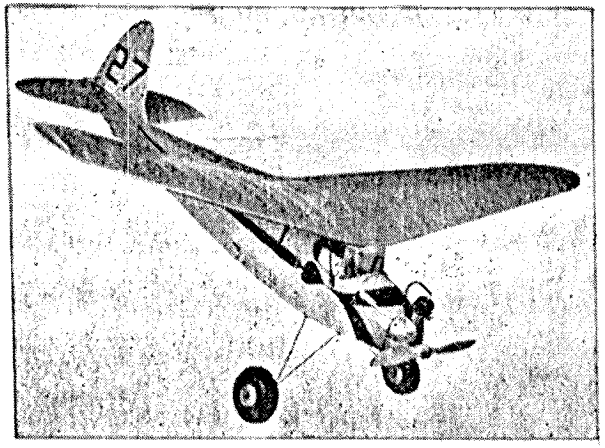


MODELCRAFT

THE LEADING MODEL SUPPLY HOUSE OF THE WEST

PLeasant 6397

7306 South Vermont Avenue Los Angeles, Calif.



$4.75 THE 1939 PACIFIC ACE GAS MODEL $8.50

New through out, latest improvements in design and construction.

Tested for two months before the first kit was put out.

55 minutes on 30 second engine run.

Climbs like a pursuit ship.

Glides like a soaring glider.

Has a high thrust line and upright engine.

Flying weight 3 pounds 4 ounces.

Can be powered with Ohlsson, Brown, Dennymite, or other engines of same power.

Wing span 66 inches, tapered from 12 to 5½ inches.

The wing is removable, held on with rubber bands. Rudder adjustable with positive lock. Plans are full sized. Ribs die cut.

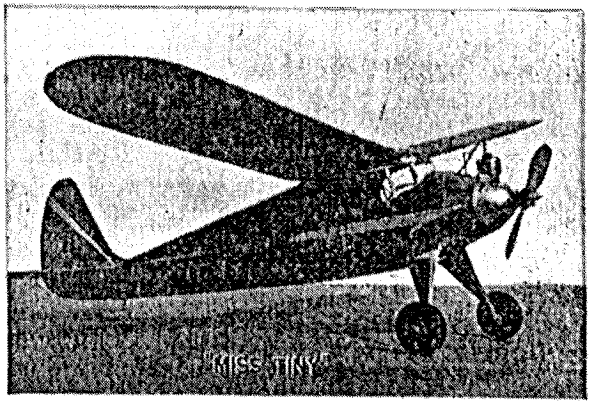
Landing gear formed, formed aluminum (Orwick) cowl. Inflateable air wheels, hook up wire, 1 pt. cement, 1 qt. dope, silk for covering, bolts, nuts, washers, etc. Kit.....$8.50

Standard Kit: Bamboo paper instead of silk; 3½" wheels instead of 4½"; a pint of dope instead of a quart. Price.....$6.25

Plans sold separately. Each.....$ .50

Dry Kit same as above without cement, dope, silk or wheels $4.75

PRICES SUBJECT TO CHANGE WITHOUT NOTICE



$1.95 MISS TINY $3.95

A 46" constant cord edition of the Pacific Ace. The first little ship that flies like a big one. No tricks, nothing but good steady flying. Any one can fly it. Has the same warp proof tail group as the Ace, same beautiful appearance, and same super performance. The correctly engineered fuselage of 5/32 sq. gives great strength without excess weight; latest design landing gear gives perfect landing without the use of complicated or silly shock units. MISS TINY climbs like a homesick angel, and glides like a Seagull riding an up-current.

After setting an exceptional record as a class B model, this ship may now be powered with Madewell Mite, Ohlsson 19, Bantam, and other such class A engines.

Miss Tiny with a good class A engine is practically unbeatable if the flyer knows his models.

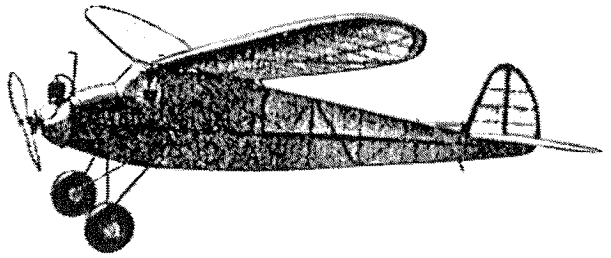
Designed for Ohlsson 23, Hi Speed, Trojan, Brat, and similar motors of about 1/7 H.P. Flying weight with 2 oz. Burgess battery and Ohlsson 23, 21 ounces. This ship has done 24½ minutes on 45 second engine run.

Kit contains 2½" inflatable, heavy duty air wheels, silk, cement, dope, bent landing gear, printed ribs, hook up wire, aluminum and dural for fittings, spun aluminum cowl, plenty of first grade balsa, both radial and beam type engine mounts, and full sized black and white plans with 3 photographs of the ship. Price.....$3.95

Standard Kit: Contains bamboo paper instead of silk and non-inflatable air wheels. Price.....$2.95

Dry Kit: Same as above but contains no cement, dope, wheels or covering. Price $1.95

Plans sold separately, each .....$ .25



THE SKY BABY — KIT $3.85

Wing Span 54"

Designed to fly with an Ohlsson 23 or HiSpeed Torpedo wide open. Other 5/8" to 3/4" engines ranging in size up to the Cyclone or Bunch engines.

A new wing section gives the ship a fast climb and a very good glide. Modelcraft has been designing ships on the theory that there are up currents if you can reach the altitude where they are strong enough to sustain a ship in soaring flight.

The Sky Baby is a superior design incorporating all the latest features which enable it to climb faster and higher with any given horse power, and maintain or increase its altitude at the end of the engine run.

Wing span 54 inches, chord 7 inches, flying weight with Ohlsson 23 only 27 ounces.

Kit contains formed landing gear, air wheels, cement, dope, spun aluminum cowl, printed ribs and other printed parts, colored bamboo paper, select gas model balsa, motor mounts for both beam and radial mount motors, large full sized plans, etc. Price $3.85.

Plans sold separately 25c

AUSTIN NEEDLE VALVES
Universal . . fits every motor except Baby Cyclone and Hi Speed Engines.
Each ..... $ .60

DECAL TRANSFERS
For your ship. Numbers and letters.
3" high. Each..... $ .05
Black with Gold Border

VOIT RACE MASTERS
3¾" Wheels $6.00
4" Wheels 6.00
Deluxe, either 3" or 4"..... 8.00

SPEEDWAY RACE CAR WHEELS
3⅝" White Sidewalls $3.75
(4 Wheels)

PLASTICELL PROPELLERS
Flexible blades, will break but not easily. Will outlast many wood props. For 1/5 H. P. motors.
Each ..... .50

VALVOLINE OIL, SAE 70
2 oz. Bottle..... $0.10
Pint Can ..... .35

AUSTIN FUEL CANS
Each ..... $ .65

AUTO KNIP TIMER
Runs 1 minute..... $1.75

GENERAL BATTERIES
All 3 Volt
2¾ oz., Each..... $0.25
3¼ oz., Each..... .50
5 oz., Each..... .75

WASHERS, GAS MODEL
9/64" hole, dozen..... $0.05

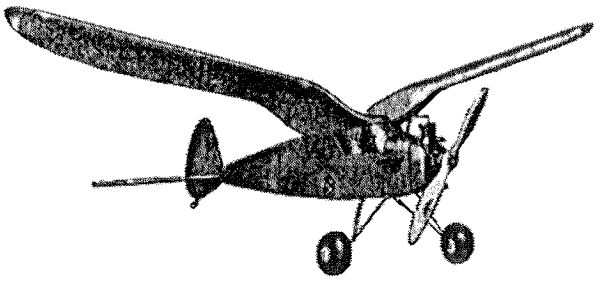
ENGINE BOLTS
1½", 4/40 and nut, dozen..... $0.10

Gas Line for Cyclone, Ohlsson, Husky
Per Inch..... $0.03

BLUE CROWN SPARK PLUGS
⅜" - Each..... $0.50

CONDENSORS
Paper covered - Each..... $0.15
Alum case - Each..... .25
Large Alum case - Each..... .45

Add State Sales Tax to all orders from California.



THE SPOOK 48

Class A or B . . . Gas Kit $1.50

As A class model the Ohlsson 19, Bantam, Madewell Mite (or other engines of same power), may be used. As a class B ship use Ohlsson 23, Brownie, HiSpeed Bullet, or other engines of comparative power and weight.

Here is a class A model with all the zip, flash, climb, and all around performance of class B. The climb equals anything obtainable with more powerful ships. The glide, well you will think you put your engine in a high performance sail plane instead of a gas model. The gull wing gives exceptional stability both in climb and glide. The wing is easily removable to get to battery, and is so mounted as to fly off in case of a rough landing.

Designed to give maximum performance under 1940 rules, the model has a wing loading of 8 oz. per sq. ft. ready to fly. Strength was not sacrificed to get this weight, the test model was undamaged after making well over a hundred flights.

Wing span 48", chord 7", weight with Ohlsson 19, 18 oz.

Kit contains cement dope, covering (special light weight tissue), streamlined wheels, all ribs and tips printed on first grade balsa, formed landing gear, select gas model balsa, large full-sized plan, etc.

This is a gas model and is so designed, not a gas-powered rubber model.

Kit . . . $1.50 Plans . . . 25c

D.G. GAS MODEL PROPELLERS



(Darn Good Props)

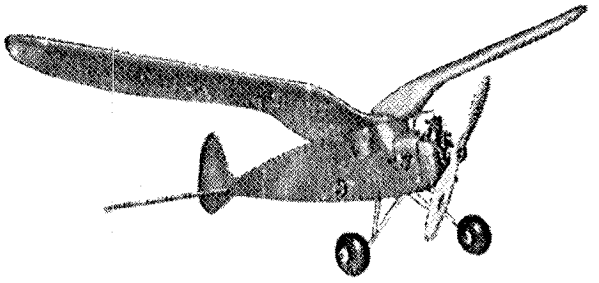
Machine made from select straight grain hard wood.

In all tests this prop has out-performed every other propeller tested by 20% to 35%. This includes tests we never heard about until they were completed.

The most convincing test is to put one on your own model and watch it climb faster than it ever did before. Remember this, there is less turning action (left turn), from our props than from most.

When ordering state make of motor so that we may send the propeller we have found will work best, it will also be wise to state age of motor.

Sizes 8", 9", 10", 11", 12", 13½", 14". Each **15c**



SPOOK "72" Class "C" . . . Kit $3.95

Designed to meet the latest N.A.A. Rules. This ship is one of the very few in the country that can be flown with the Ohlsson "60" at full throttle. Its gull wing gives it a stability factor far greater than has ever been obtained in any other design. With the weight of only three pounds, its glide is phenomenal. The climb is even faster than the best of Class B Ships.

Construction is simple and easy, yet has a strength factor of a five-pound airplane. Long graceful soaring flights and smooth easy landings are the rule rather than the exception. This model is so far in advance of its day that you will be able to turn in the finest flights of anybody on the field. Get a Spook and get in the first place money.

Flying weight, three pounds; wing span, 72 inches; uses any 1/5 or 1/4 horse power engine. The kit is complete with cement, dope, covering and wheels. Price only **$3.95.**



THE CHAMP

Wing area, 191 sq. in.

Very easy to build, and as sweet a flier as you have ever seen. The kit is complete; has rubber lube, cement, dope, wire, free wheeling unit, plenty of rubber, balsa, etc. Nothing extra to buy.

Kit - **$1.00** - plus **10c** postage.

MODELCRAFT GAS PROPELLERS

8", 9", 10", 11", 12", 13", 13½", 14"
Hardwood, Unvarnished Each **15c**



SEVERSKY P 35 — $1.00

Still on the "hush hush" list we had plenty of trouble getting enough information to put out this kit. However, we are glad to say it is nearer correct than anything offered to date. This ship is said to do over 300 M.P.H. Kit has turned cowl, hard wood prop, cement dope, trim color, and easy to follow plans. You will like this ship. Price $1.00 plus 10c postage. Wing span 24 inches.



NORTHROP A 17
$1.00

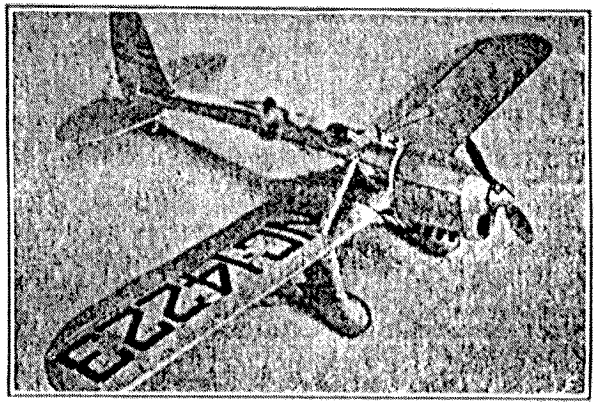
24 inch Wing Span
This high speed attack plane is known to all interested in planes. We are pleased to offer this 24" accurate model. Detailed, yet easy to understand plans, make building easy. Kit has turned cowl, cement dope, trim color, hard wood prop, and an abundance of good balsa.

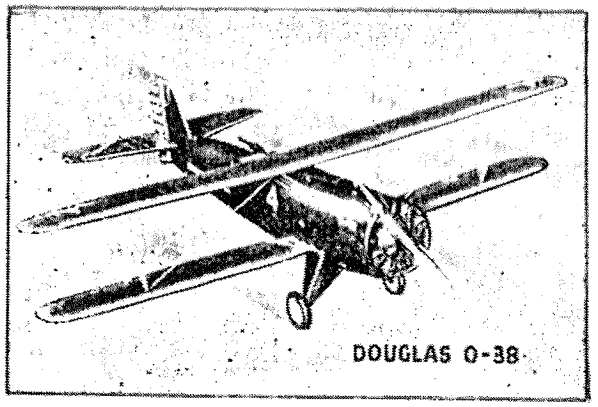
$1.00, plus 10c postage

RYAN S. T. M.

¾" Scale Model of the military version of Ryan's Sport Plane. You will enjoy building this popular joy building this accurate, detailed model of this popular ship. Kit complete with cement, dope, and trim color.

$1.00 plus postage.



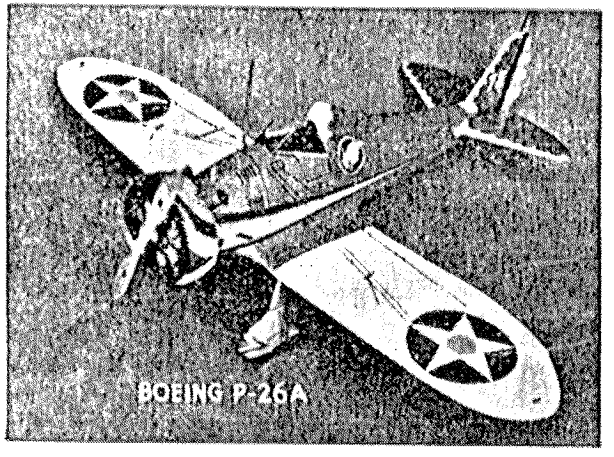


DOUGLAS O 38

An accurate scale model of the California National Guard plane.

This Observation Ship is used by most national guard units in the country. The plans for this one were drawn from the California ships and are correct in every detail even to lettering and fire extinguisher. Wing span 20 inches. Kit has hard wood prop, cement dope and trim color.

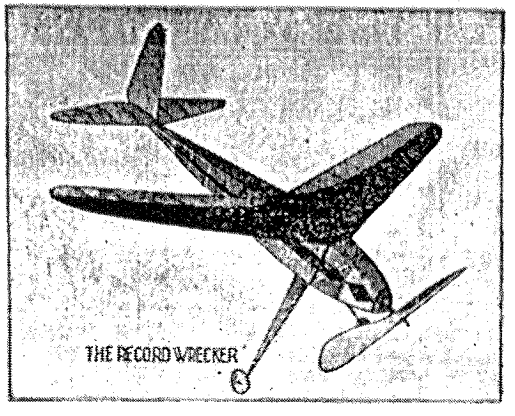
50c, plus 10c postage.



BOEING P 26 A

This Wasp powered pursuit ship is known to all model builders. Add it to your line of scale models. Kit has hard wood prop, cement dope and trim color. Wing span 18 inches.

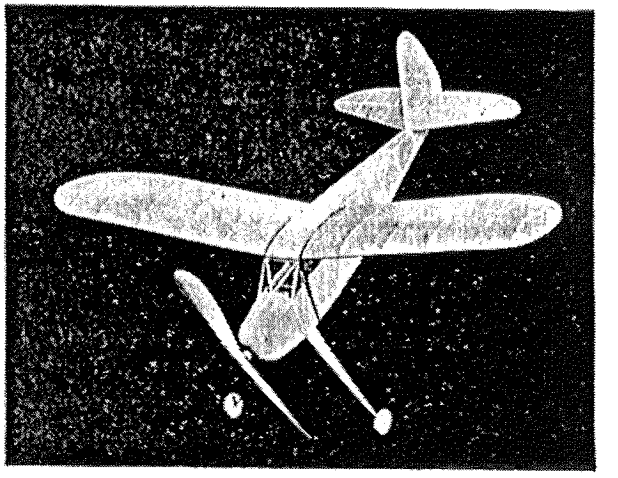
50c, plus 10c postage.



THE RECORD WRECKER

A really super flying model. One did 46 and 54 minutes, in consecutive flights. Has everything: dope, cement, rubber lube, contest rubber, free wheeling unit, plenty of good balsa and clear, easy to understand plans. Wing span 26 inches.

50c, plus 10c postage.



CLOUD HAUNTER 40" Model of the Pacific Ace. Flights of over 2 hours have been reported on this model.

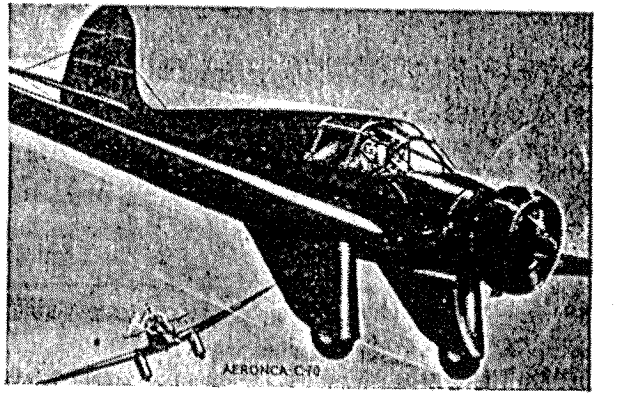
Kit 50c . . . Plus 10c Postage

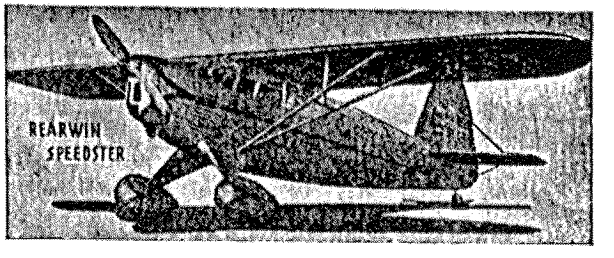
AERONCA C 70

A 40-inch model of this well-known sport plane.

Another of our big models. Kit put up same as the Rearwin.

Price 50c, plus 10c postage.





REARWIN SPEEDSTER — 50c

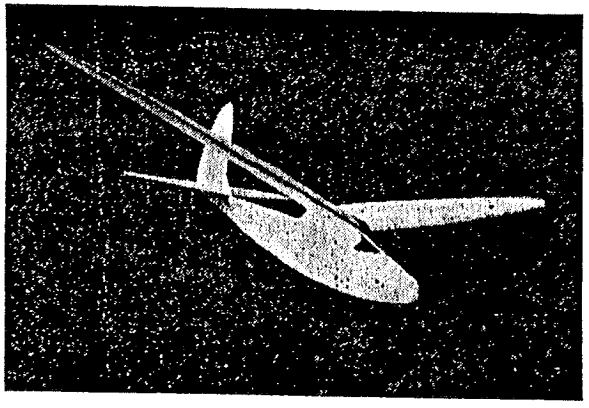
40-inch wing span. Where else can you get a giant plane like this for only 50c? A good flyer, easy to build. Kit has machine-cut prop, cement, and large clear plans. Add 10c for postage.

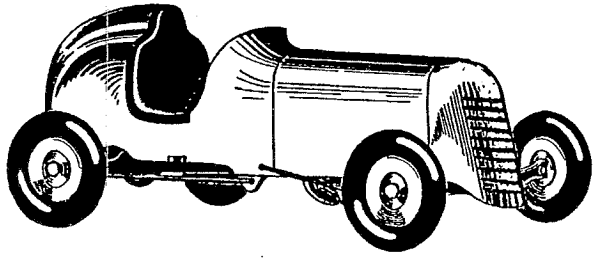
THE ALBATROSS

45-inch wing span
Tow line soaring glider

An exceptionally beautiful high performance glider from which you may expect many long thrilling flights. Very easy to build.

Kit 50c plus 10c postage.





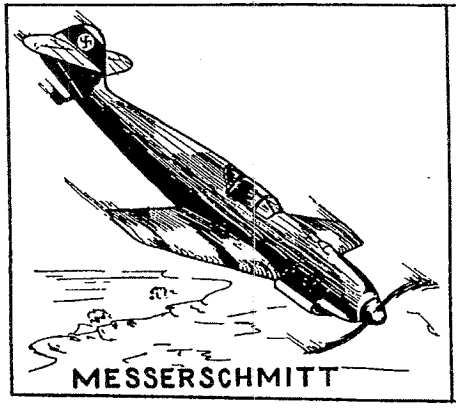
THE SPEED KING

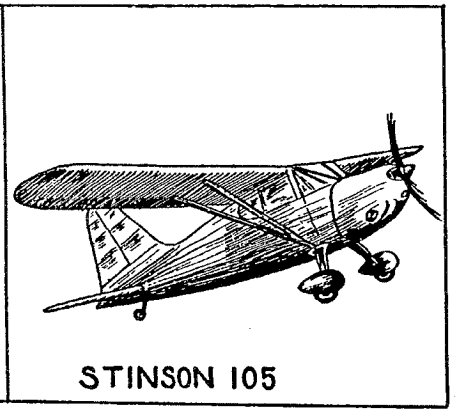
A new low priced car kit using any class B engine (1/5 H.P.). Has cast aluminum frame, cast shell, assembled rear end with case-hardened gears, cast front axle, special solid rubber tires on cast hubs, cone clutch, kit complete with fly wheel **$15.00**

Modelcraft Car Kit - 10c Postage 5c

25c KITS

30 Inch Flying Models

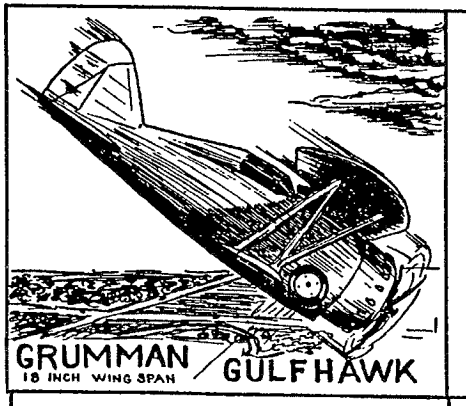


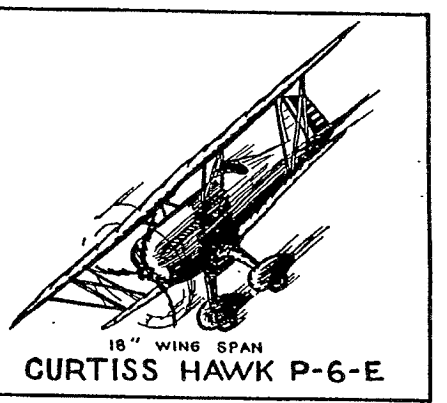


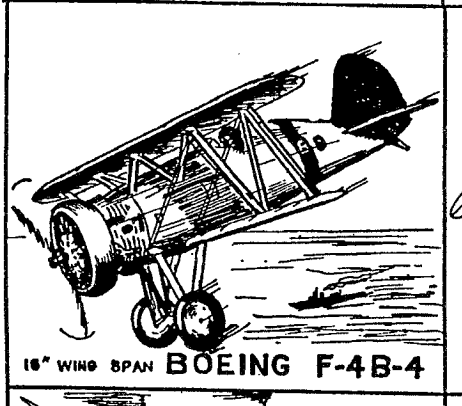
Modelcraft 25c Kits

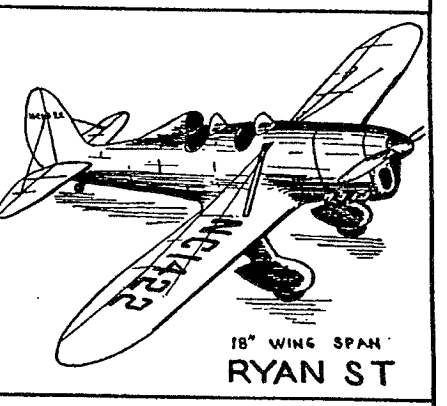
Add 10c for Postage

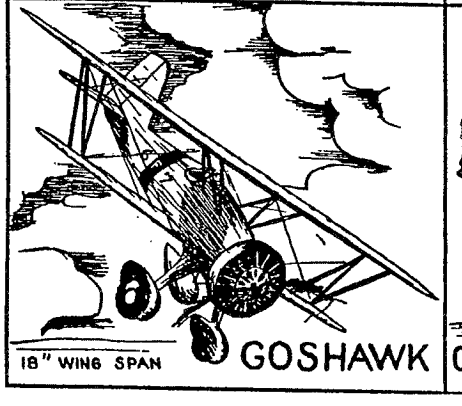
18-INCH FLYING SCALE MODELS
30-INCH SUPER FLYING MODELS

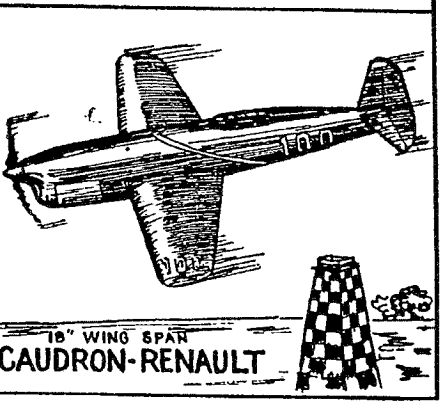




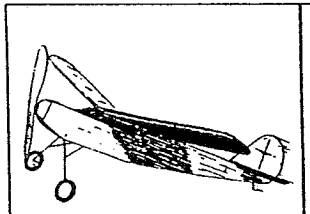


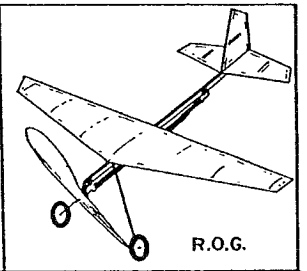






15-Inch FLYING MODELS

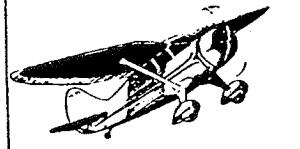

ACE Jr

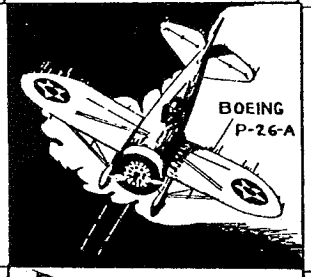

R.O.G.

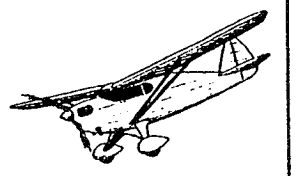
15 IN. WING SPAN

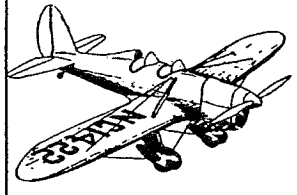
10c

ADD 5c FOR POSTAGE


STINSON RELIANT




TAYLOR CUB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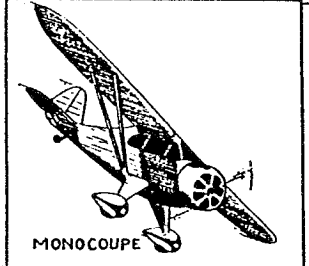
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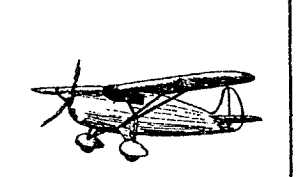
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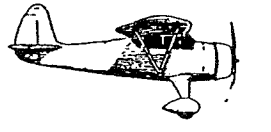
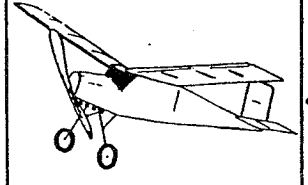
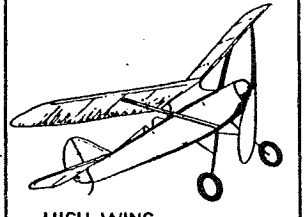
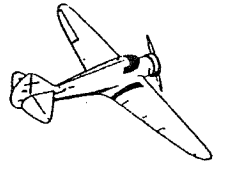
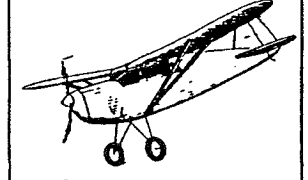
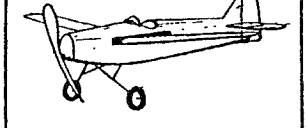

HOWARD DGA-8

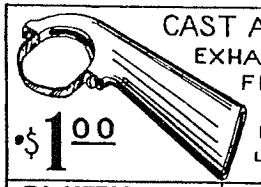

REDBIRD

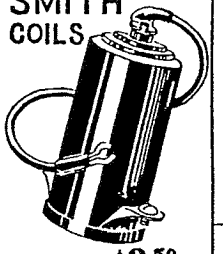

HIGH-WING

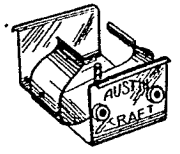

AERONCA C-70


REARWIN SPEEDSTER


SPEED PLANE


CAST ALUMINUM EXHAUST STACK
FITS ALL
BROWNS AND MIGHTY MIDGETS
Lite Weight Length 3½"
$1.00


SMITH COILS
$2.50

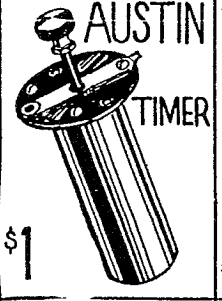


BATTERY BOXES
PENLITE
MEDIUM
LARGE
35c

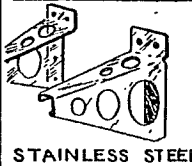

VALVOLINE OIL
SAE 70
10c



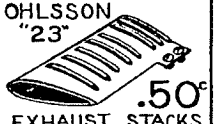
25c



$1


STAINLESS STEEL MOTOR MOUNTS
LENGTH 3⅜ $1.00 Pr.


EA. 25c
SMITH CONDENSERS
ALL METAL CASE

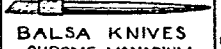

OHLSSON "23"
.50c
EXHAUST STACKS

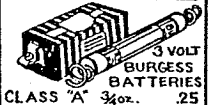


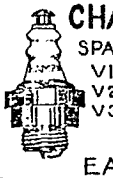
2½" Non-Inflatable 1.00
2½" Inflatable 1.25
3½" " 1.50
4½" " 1.75
1⅜" TAIL WHEEL .15


Free-Wheeling Sets
EA. 10c (2 SIZES)

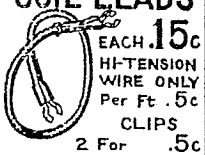

$1.00
STEEL CONNECTING RODS FOR BROWNS


BALSA KNIVES
CHROME VANADIUM STEEL BLADES
EA. 10c


3 VOLT BURGESS BATTERIES
CLASS "A" ¾oz. .25
CLASS "B" 2 oz. .50
CLASS "C" 4 oz. .70

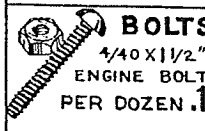

CHAMPION
SPARK PLUGS
V1 3/8" SAE
V2 1/4" SAE
V3 3/16" SAE
EA. 65c


CELLULOID MOTORS
FIT COWLINGS SHOWN BELOW

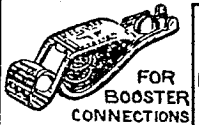

COIL LEADS
EACH .15c
HI-TENSION WIRE ONLY
Per Ft. .5c
CLIPS
2 For .5c

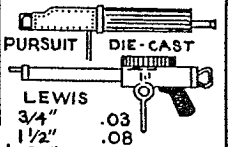
1½" .08c
2" .10c
2½" .15c
3" .15c


ALUMINUN COWLS AND DRAG RINGS
¾" .10c
1" .10c
1½" .10c
2" .15c
2½" .16c
3" .20c
4" .50c

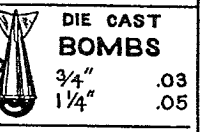

BOLTS
4/40 X 1½"
ENGINE BOLTS
PER DOZEN .10c

PEE WEE CLIPS

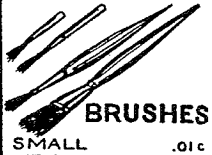

FOR BOOSTER CONNECTIONS
EACH 5c

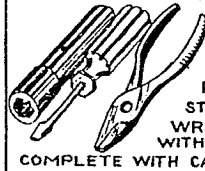

MACHINE GUNS
PURSUIT DIE-CAST
LEWIS
¾" .03
1½" .08
1¾" .10


SWITCHES
EACH .20c


DIE CAST BOMBS
¾" .03
1¼" .05


$7.00
STOP WATCH

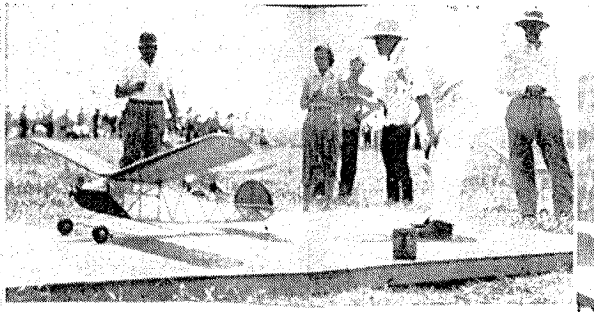

BRUSHES
SMALL .01c
MEDIUM .02c
LARGE .05c
LARGE ½" FLAT .10c


TOOL KITS
THREE PIECE SET CONSISTING OF STEEL PLIERS, TEMPERED STEEL DOUBLE END PLUG WRENCH AND SCREWDRIVER WITH INSULATED HANDLE.
COMPLETE WITH CASE EACH $1.00

WE CARRY A COMPLETE STOCK OF PARTS FOR BROWN JR. AND OHLSSON MOTORS

Highlights OF THE 1940 NATIONALS

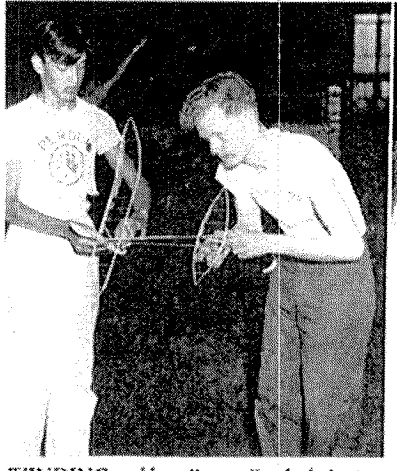
CHICAGO TIMES PHOTOS



TYPICAL scene of activity along one of the runways built especially for convenience of participants in 1940 TIMES-Chicago Park District sponsored National Model Air Meet shows H. C. Warner of Beloit, Wis., releasing his gas-powered model in flight competition.



MEASURING contestants' planes to see tha they conform to contest class specifications is Raoul Hoffman (above, center) designer of speed planes flown by Col. Roscoe Turner Harry Lerman (below), of Boston, Mass. flies ultra-light rubber-powered model at in-door contest staged in International Amphi-theatre.

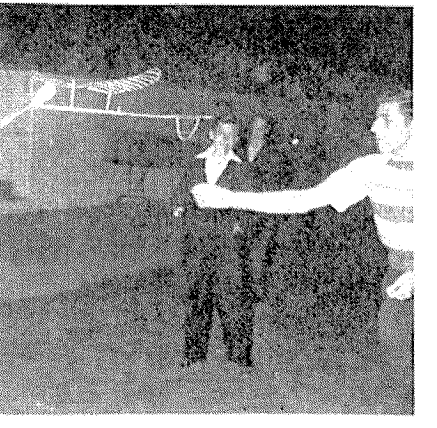


WINDING rubber "motor" of their in-door entry (above) are Hank Velkoff and Bob Hawkins of Fort Wayne, Ind. Repairing damage suffered in flight by their models (below) are Raymond Ball of Piqua, Ia., Lawrence Iversen and Otto Curth of Chicago.





RADIO played prominent part in 1940 national meet. Above, Cecil Winck of Deal, N. J., and Charles Mills of Reading, Pa., examine radio-controlled, gas-powered "pusher" model. Below, Walter and Bill Good of Kalamazoo, Mich., are shown at ground radio station from which model-controlling signals are transmitted.



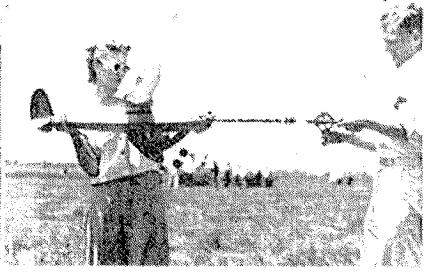


Champ George Sass of Detroit receives trophy and watch from Newman Thurston of National Exchange Club. Maurice Roddy, TIMES Aviation Editor and Air Cadet Commander, looks on.





GIRLS, too, participated in 1940 meet. Evelyn Lockwood (left) of Chicago tests plane's "lift," while Jane Mees (below) of Columbus, Ohio, holds plane as Fred Mees winds rubber "motor" before sending the ship aloft.





One out of ten. This long line of gas models waiting to be checked was but one of ten such lines. The contestant-owners loll around in the broiling sun waiting for their turn.



Once checked, the wait begins again, this time for flight timers. Oh, well, who cares? We've got our sun helmet!

1940 NATIONALS

Contest-time impressions of the recent Big Meet in Chicago, plus results and notes on ships.

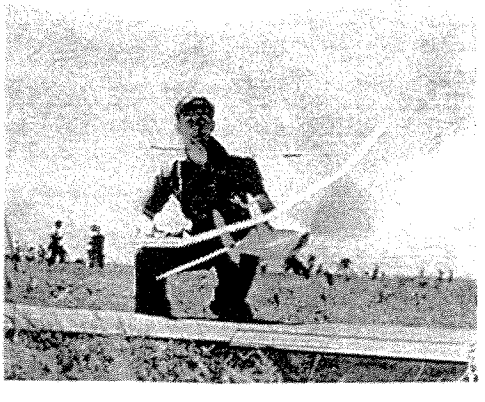
TEN timing tables and ten plywood platforms were the operating bases for 1,100 contestants who set nineteen new national records. Hot weather and low cumulus clouds provided the background for this record festival. As many as thirteen models—gas and rubber—were sucked into the clouds at one time. Chicago's Joe Konefes bagged the best thermal with his Class C gas model and cruised back and forth over the field for 49 minutes. W. Gibson's Class A gas model rode a thermal for 46 minutes. Chester Lanzo kept the magic sign on his Mulvihill tractor while it ran up a flight of 30 minutes. But the magic sign misfired in the case of Maurice Schoenbrun. His super-Rocketeer did 65 minutes on a 14-second motor run *(unofficially)*, and his second job did 35 minutes *(unofficially)*. He shared a crying towel with Herbert Palmer, who also had lost his two gas jobs on unofficial flights.

War did not entirely eliminate the international



The Winnahl—and 1940 champion, George R. Sass of Detroit.

Heads up! Wally Simmons, of Chicago, turns his Jabberwock loose right into the lens of the Air Trails camera.



Air Trails Trophy winner! John Drobshoff, San Francisco, won it in Class A open gas.



Chester Lanzo, Cleveland, winner of the Air Trails Jardur aviation chronograph.



aspects of the Moffett Trophy contest. Roy Nelder of Toronto, Ontario, showed he could do it again, just as capably as he did in 1938. Frank Zaic did a repair job on Bob Copeland's 1939 Wakefield entry and flew it away after twenty-one minutes on the first flight—only ten minutes of which was official. The showing of the local boys was certainly below par, and for the third time in its history the Moffett has left the country.

George Sass, Jr., of Detroit, won the national championship title, doing good work in practically every event.

Choice for national champion is the self-sacrificing retriever who followed Leon Schulman's Class B gas job. This unsung hero sprinted across fields, ghosted between freight cars when a train barred his way, hitched a couple of rides, and ended his four-and-one-half-mile safari doing the hurdles over back yard fences with dogs snapping at his heels. (He brought back the model!)

Great numbers of contestants make the running of a meet a headache that grows worse every year. But this year there were specialists on the job—Maurice Roddy, Frank Nekimken, Raoul Hoffman and many others. These boys carried the ball most of the time with the Chicago *Daily Times* and the Parks District as interference. The effective job they did is best indicated by the comments of the entrants who are convinced that Chicago is the place capable of handling the mob of modelers that make up a national meet. Long-range planning and careful attention to details paid dividends in a smooth-running contest. Timers were actually asking contestants to make flights—which shows what progress the Chicago group has made.

The mechanical calculators of Raoul Hoffman took the drudgery out of processing. Large slide rules with special scales indicated areas and loadings with a single setting. Cross-section areas were checked by weighing a template cut from special cardboard supplied in the contestant's kit. The scales were calibrated to read cross-section area directly in square inches.

Retrieving the lost models was carried out nicely by cars equipped with short-wave radio. Cruising around the edges of the field, they spotted roving airplanes and took up the chase. In one instance a boy on a motorcycle made off with one of the models. But the contestant noted the license number and reported it to the cruising radio car. They in turn reported it to the police, and when the unhappy motorcyclist arrived home they were waiting for him.

The radio-control event attracts more entries every year, but they don't seem able to close the gap between their technique and that of the Good Brothers—Bill and Walter. On the last day of the meet they turned in a flight that really put the crowd on its toes. At about 500-feet altitude the motor cut during the climb. The ship stalled, then recovered and did a series of S turns and slips and came in for a near-perfect landing within fifty feet of the transmitter. There wasn't a sound until the ship stopped rolling—then a wave of applause swept the crowd. Other contestants demonstrated impressive flights. But in too many instances the human element—crossed controls and poor judgment—proved the undoing of the model.

Flying scale models scored spectacular gains. Ed Naudzius of Detroit showed that this type of job is capable of performance not far short of actual contest types. His Rearwin averages two minutes, and during one flight was actually holding its own against the Mulvihill entries in the air at the same time.

Gas-model design continued its development along several distinct lines of thought. One of the most popular models was the New Ruler designed by Henry Struck and featured in Air Trails. A rough count of noses revealed more than two dozen of these ships.

Zippers continued to play a leading part. Many builders have reworked some features of the original design to suit their own fancies. Sailplanes are just coming into circulation. Their retractable-landing-wheel mechanism is an interesting feature and seemed to function quite satisfactorily. The Buzzard Gas Model Club of Chicago has developed an attractive model with all the necessary contest requirements. Buzzard members brought about fifteen of this design to the field. They practically stole the show. Not only did they bag some of the high places, but they put on mass flights that resembled a wave of bombers. During these mass flights many of the models were towing "Buzzard" signs and proved particularly impressive.

The Guff design by Walt Good has gained considerable favor among the boys and they gave a good account of themselves in the meet.

Indoor events were held in the International Amphitheater—which proved to be a nice indoor site. A surprising number of spectators turned out for this event. An interesting variation from the usual run of indoor entries was the new ornithopter of Ed Lidgard which officially flew more than three minutes.

The contest management went out of the ordinary in providing a workroom. It was better than anyone would have hoped for. It was soundproofed to save wear and tear on the other hotel guests. Nevertheless the boys still insisted on running motors in their rooms at all hours. This noise plus the indiscriminate use of firecrackers kept things active roughly twenty-four hours a day.

The mezzanine of the Hotel Sherman was occupied by model company exhibits. Many of the leading manufacturers in both material and motors were represented. Undoubtedly the hobby reached many new people through this exhibition, which also proved to be a clearing house for information and material among members of the hobby.

Important to all manufacturers, dealers, jobbers was the formation of the Model Industry Association at a meeting of representative groups during the contest. The idea behind the organization is the promotion of the interests of all persons engaged in buying, selling or manufacturing of model and craft accessories. The organization makes fair provision for all concerns, big or little.

Entertainment designed to keep the entrants amused and happy during the trying week included colored movies of last year's national contest, a trip to Riverview Amusement Park, and several professional entertainers at the wind-up banquet, Saturday night.

While all the contest activities centered around headquarters in the Hotel Sherman, many of the more hardy souls turned thumbs down on city life and pitched their tents near the flying field. Tent City, as it was called, came through the week in better shape than at previous Nationals. The weather was fair and there were no storms. Bill Berry and his Philadelphia crowd gave up the tenting idea after last year's experience. Those Detroit thunderstorms were really terrors.

Each year the average age of the contestant moves upward. More and more the national meet assumes the aspect of an adult gathering instead of a youth carnival. More and more wives accompany their husbands. Husband-wife-and-son teams are no longer rare. More and more girls are evidencing an interest in modeling.

Most modelers reluctantly turned Chicago over to the Democratic National Convention which moved in following the model contest. This had been the first Middle Western trip for many Easterners. Too bad the boys who did the work can't hear all the nice things that were said about the meet. Director Frank Nekimken, and Chicago *Times* Aviation Editor Maurice Roddy should certainly be given a chance to carry on next year. The hobby is indebted to them as well as to the Chicago *Times* for its financial support, the Parks District for its manpower, and the Chicago model manufacturers for their generous help. The banquet the last night of the contest was typical of the way Chicago handled the entire contest. The food was excellent, there was more than enough for everyone, and it was provided free to all contestants and members of their parties.

Don't forget—next month we'll give you a more detailed account of the contest, along with the numerous and amazing results achieved by our staff photographer. Wait till you see!

CONTEST RESULTS

RADIO CONTROL

1.	Walter Good	65 points
2.	C. H. Siegfried	49 "
3.	Joe Raspante	34 "
4.	James Custin	23 "
5.	Ben Shereshaw	19 "

MOFFETT FINALS

1.	R. Nelder, Canada	289.6
2.	Alexander, New Zealand	231.33
3.	F. Prokop, U. S. A.	224.9
4.	R. Copeland, England	206.66
5.	T. Just, U. S. A.	189.33
6.	C. Fairfield, Canada	141.7
7.	Righton, New Zealand	134.6
8.	R. Kirk, U. S. A.	106.73
9.	J. Boyle, U. S. A.	94.0
10.	Benoni, South Africa	86.03

MOFFETT ELIMINATIONS (Junior)

1.	H. Molenhauer, San Antonio, Tex.	727.3
2.	J. Kahremanis, Romulas, Mich.	572.3
3.	Walter Savikas, Chicago, Ill.	495.2
4.	Charles Jackson, Chicago, Ill.	493.9
5.	R. Hartley, Chicago, Ill.	437.9

(Senior)

1.	C. Johnson, Hampton, Va. (Stout Trophy Winner)	1302.1
2.	Ronald Kirk, St. Paul, Minn.	1042.6
3.	F. Prokop, Detroit, Mich.	724.2
4.	T. Just, Johnstown, Pa.	681.3
5.	W. Bobier, Detroit, Mich.	667.7

MOFFETT ELIMINATIONS (Open)

1.	Robert Reich, Cleveland, O.	834.1
2.	J. Boyle, Coraopolis, Pa.	688.9
3.	A. Zimmerman, Cedar Rapids, Iowa	558.9
4.	G. Sanderson, Chicago, Ill.	551.5
5.	M. Saroka, Cleveland, O.	532.1

MULVIHILL (Open)

1.	C. Lanza Cleveland, O.	2667.5
2.	Wallace Simmers, Chicago, Ill.	1201.1
3.	H. Struck, New York City	1179.5

OUTDOOR FLYING SCALE (Junior)

1.	A. DeBuschere, Detroit	55 points

OUTDOOR FLYING SCALE (Senior)

1.	R. Hill, Akron, O.	67.0 points
2.	W. Eggert, Philadelphia, Pa.	65.5 "
3.	R. Baumont, Philadelphia, Pa.	58.36 "

OUTDOOR FLYING SCALE (Open)

1.	E. Naudzius, Detroit, Mich.	87.5 points
2.	H. Struck, New York City	74.64 "
3.	C. Lanzo, Cleveland, O.	61.51 "

GAS—CLASS A (Junior)

1.	R. Lieber, Philadelphia, Pa.	383.8
2.	M. Bristol, Oak Park, Ill.	261.8
3.	W. Levedahl, Aurora, Ill.	216.3
4.	J. Brofman, Brooklyn, N. Y.	188.7
5.	S. Calloway, Miami, Fla.	186.5

GAS—CLASS A (Senior)

1.	L. Schulman, Newark, N. J.	1196.3
2.	P. Fruchtman, Brooklyn, N. Y.	1142.0
3.	R. Hartman, Norwood, O.	878.1
4.	C. Johnson, Hampton, Va.	581.8
5.	J. Stoloff, New York City	489.9

GAS—CLASS A (Open)

1.	W. Gibson, Middleton, O.	2852.
2.	F. Drobshoff, San Francisco, Calif.	1975.2
3.	J. Conway, Evanston, Ill.	932.6
4.	R. Gable, Reading, Pa.	820.9
5.	R. Mitchell, Cleveland, O.	761.0

GAS—CLASS B (Junior)

1.	L. Maze, Jr., St. Louis, Mo.	902.2
2.	R. Lyons, Jr., Libertyville, Ill.	551.8
3.	J. Chapman, Minneapolis, Minn.	410.4
4.	B. Miller, Holt, Mich.	408.8
5.	J. Bock, Chicago, Ill.	370.8

GAS—CLASS B (Senior)

1.	W. Redecker, Cincinnati, O.	1680.8
2.	D. Wright, Topeka, Kans.	1194.1
3.	L. Schulman, Newark, N. J.	1150.4
4.	D. Drishick, Chicago, Ill.	1088.6
5.	J. Drake, Franklin, Mich.	1017.6

GAS—CLASS B (Open)

1.	W. Englehardt, Chicago, Ill.	1220.5
2.	W. Schwab, Cleveland, O.	818.6
3.	C. Keeling, Louisville, Ky.	724.5
4.	S. Fedora, Granite City, Ill.	709.6
5.	H. Benson, Rock Island, Ill.	704.0

GAS—CLASS C (Junior)

1.	J. Bashore, Wyandotte, Mich.	1468.
2.	B. Henshaw, Topeka, Kansas	1158.
3.	C. Boughter, Jr., Geneva, N. Y.	969.6
4.	J. Chapman, Minneapolis, Minn.	655.2
5.	J. Carlen, Madison, Wis.	532.0

GAS—CLASS C (Senior)

1.	J. Leiendecker, Fort Wayne, Ind.	1825.0
2.	J. Carrett, Chicago, Ill.	1351.3
3.	R. Abreach, Milwaukee, Wis.	1329.0
4.	J. Loufek, Davenport, Iowa	1278.1
5.	W. Blair, Pittsburgh, Pa.	1161.2

GAS—CLASS C (Open)

1.	J. Konefes, Chicago, Ill.	3475.6
2.	S. Hackenberg, Kansas City, Mo.	2106.6
3.	J. Trefny, Jr., Villa Park, Ill.	1721.3
4.	W. Addams, Riverside, Ill.	1411.6
5.	W. Lackey, Maywood, Ill.	1325.3

BERRYLOID FINISH AND APPEARANCE

Best Gas Model

Henry Heyman, Jr., New Orleans, La.

Best Flying Scale

James Noonan, Milwaukee, Wis.

MEGOW TROPHY

	Detroit Jr. N. A. A.	120 points
	Kresge Aero Club	85 "
	Jordan Traveler	
	Junior Aviation League	64 "

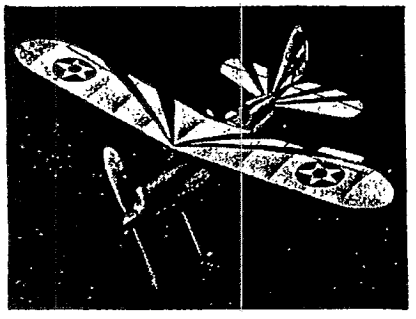
NATIONAL CHAMPION

1.	George Sass, Jr., Detroit, Mich.	200
2.	Gordon Cain, Hyde Park, Mass.	175
2.	Milton Huguelet, Chicago, Ill.	175
2.	Henry Struck, New York City	175

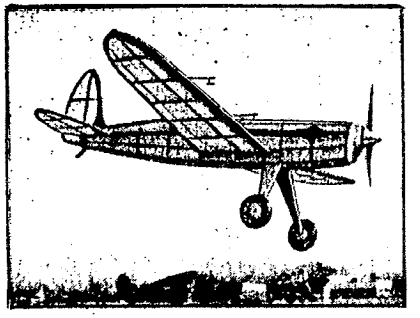

COMET
COMET
MODEL AIRPLANE KITS
5c
AIRPLANES • BOATS • RAILROADS
Sold by

FLYING SENSATIONS

Designed for flying, these models are streamlined and snappy in appearance. Besides being easy to build, the kits are very complete—nothing extra necessary.



50c EACH



No. M1 Senior Dipper 24 in.

A high wing model that is fully adjustable for perfect stability. Plane is strikingly colorful and graceful..50c

No. M2 Senior Dart 24 in.

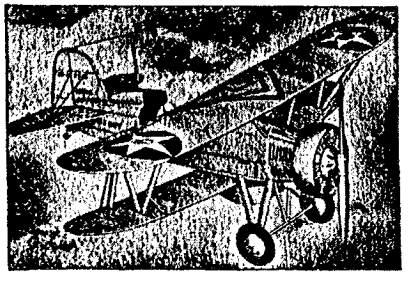
With a wing that is movable fore and aft, in order to properly locate center of gravity, this low-wing model is easy to adjust and fly.....50c

SCALE MODELS

These detailed scale models are faithful flying reproductions of famous ships. Easy to build, because of the Comet "backbone" construction. Details such as gun troughs, exhausts, flying wires, insignia, etc., give these models a realistic touch.



50c EACH



No. O1 Curtiss Hawk P6-E 15½ in.

One of the most popular Army planes ever built, the Curtiss Hawk will long be remembered because of its clean design.

No. O2 Boeing F4B-4 15 in.

Built for the Navy, the Boeing F4B-4 can be found in large numbers stationed aboard aircraft carriers.

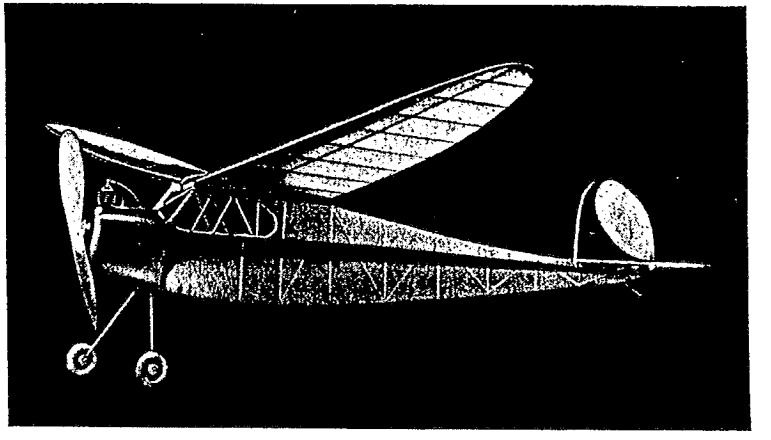
COMET MODELS ARE EASY TO BUILD

CLIPPER JR.

A GAS TYPE MODEL . . .

POWERED BY RUBBER MOTOR

This is a half size model of the famous Comet Clipper gas model designed by Carl Goldberg.



CLIPPER JR. 36" WINGSPAN KIT NO. P5

FEATURES

- Motor Roar Device
- Pop-off Wing
- Carved Prop
- Formed Parts
- Plenty of Rubber

Get the thrill of gas model flying with the Clipper Jr., a rubber powered gas-type job that matches the Comet Clipper Gas Model in appearance and performance. A motor roar device makes the Clipper Jr. sound like a gas model. What a climb this plane has! It goes "upstairs" like a flash, then straightens out into a flat, graceful glide.

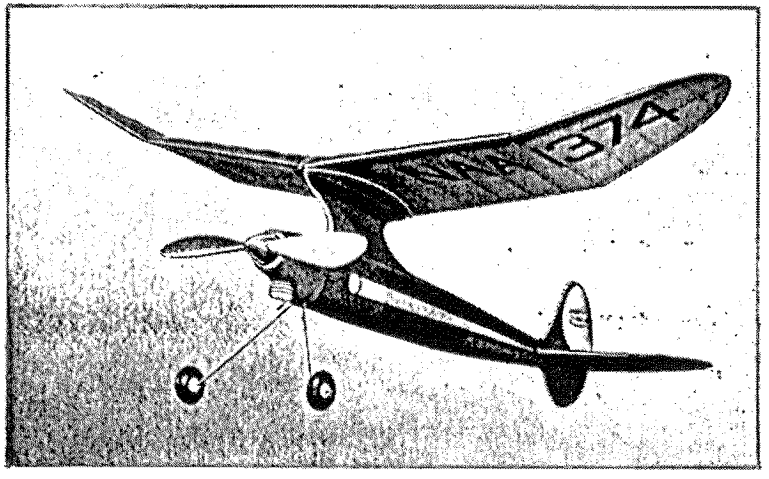
Big 36" elliptical wing detaches in event of collision, metal cylinder flanges, formed spring wire landing gear, carved prop, bent prop shaft, and plenty of rubber..... **$1.00**

COMET MODELS ARE THE MOST FAMOUS

ZIPPER JR.

A RUBBER-POWERED SCALE
MODEL OF THE REAL ZIPPER

Looks, Sounds and Flies Like a
REAL GAS MODEL!!



ZIPPER JR. 32" WINGSPAN KIT NO. P8

The Zipper Jr., a real flyer with an excellent climb and floating glide, is a scaled down rubber powered model of the world famous Zipper Gas Model—winner of more prizes than any other gas model known. Model has detachable wing same as the original.

This easy to assemble kit contains many finished wood parts, bent wire landing gear, turned motor pieces, motor roar device that produces a realistic sound, and plenty of fresh rubber. Rubber motor is enclosed in a removable built-up tube, permitting easy motor changes if necessary

- TURNED MOTOR CYLINDER
- MOTOR ROAR DEVICE
- POLYHEDRAL WING
- MANY FINISHED PARTS

$1.00

COMET DESIGNS ARE FLIGHT TESTED

177

FLYING SCALE MODELS

54" AERONCA "K"

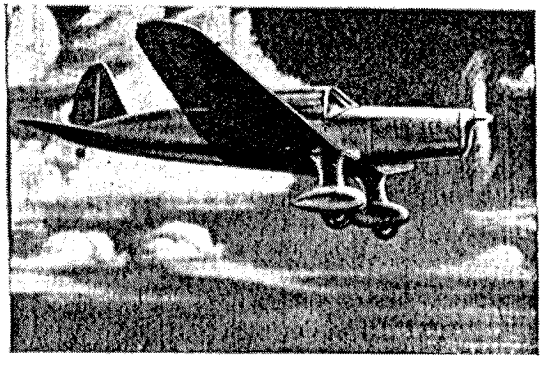


Exact scale
1½" = 1' - 0"
54" Wingspan
Kit No. P2 .....

$1.00

Details galore! This Comet kit looks just like the real thing with shock-proof landing gear, movable controls, seats and hinged cabin door. Decal sheet with correct markings is furnished. Detachable wing, motor roar device, and automatic wing jig are a few other features. Kit has carved propeller and plenty of rubber.

40" AERONEER



KIT NO. P6 40 IN. WINGSPAN

Trim and sleek in design, this low wing sport plane has movable controls, shock-absorbing wheels, and motor hum device. Interior details consist of 2 seats, control sticks, and pedals.

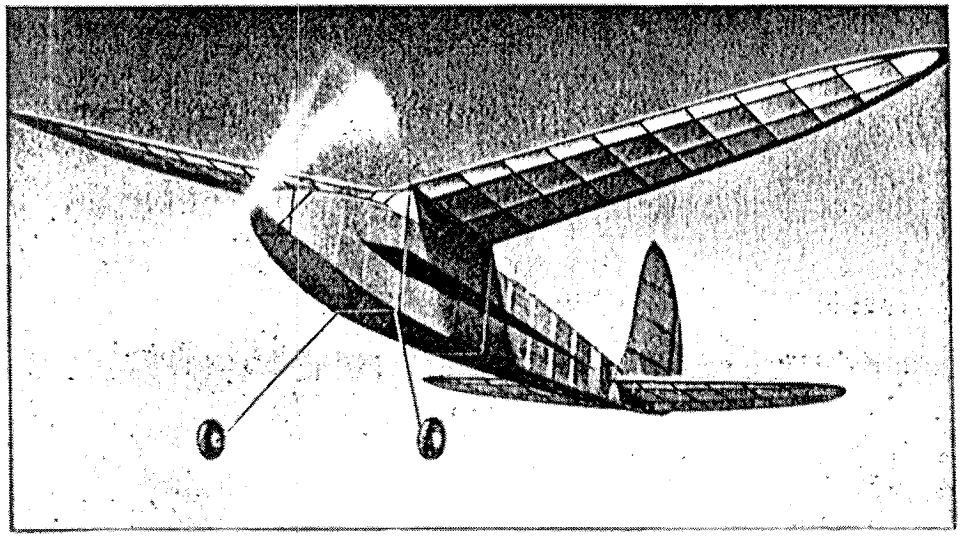
Performance plus beauty makes this model an outstanding value.

Exact scale 1¼" = 1' - 0"

$1.00

COMETS BIG MODELS ARE BIG VALUES

REAL CONTEST FLYERS



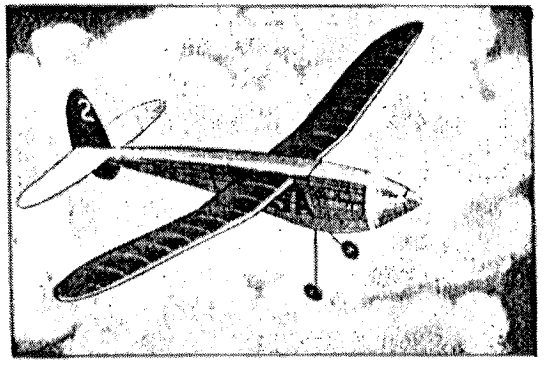
CARL GOLDBERG'S "GULL"

A big 42" Wingspan model designed for contest type performance. Simple to build with a new, easy construction. The "Gull" has excellent flying qualities, ideal for contest work. Kit contains a formed wire landing gear, dressy decals, carved prop, big wire shaft, and plenty of fresh rubber, the kind that gives your ship extra power. KIT No. P9..... **$1.00**

Tom C. Hammond, Jr., San Diego, Calif., wrote to tell of an exciting 2-hr. flight made with the "Gull", his first really successful plane.

Jim Cahill's Clodhopper II

Presenting a Champion! This 47½" wingspan model won 3 major events—the Moffett Trophy, the American Trials and the Wakefield Trophy. The plane is an exact replica of the one Jim Cahill used both in America and France. The kit contains everything to complete the model, except the rubber. KIT No. P7..... **$1.00**



Jim Cahill checked and OK'd the plans to make certain Comet's kit was like his own model.

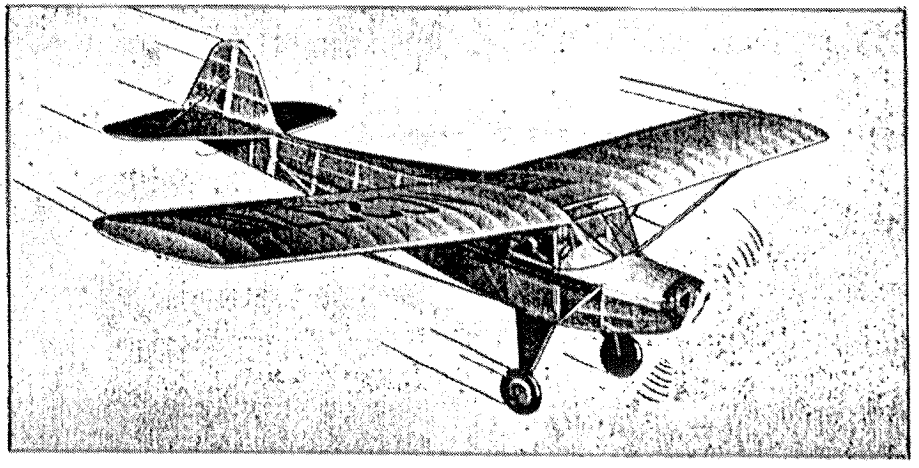
COMET MODELS ARE DESIGNED BY CHAMPIONS

178

TAYLORCRAFT

A BIG FLYING SCALE MODEL

Comet brings you the most popular light plane in the country in scaled down form. Exact scale 1¼" = 1' - 0".



TAYLORCRAFT 54" WINGSPAN KIT NO. P18

EXACTLY TO SCALE—

Every detail of the original ship has been carefully reproduced with the help of the Taylorcraft factory. The exterior and interior of the plane have been remarkably duplicated.

A REAL FLYER—

Flyability and stability are built right into the Taylorcraft. Fresh, peppy rubber supplies the power for every exciting flight.

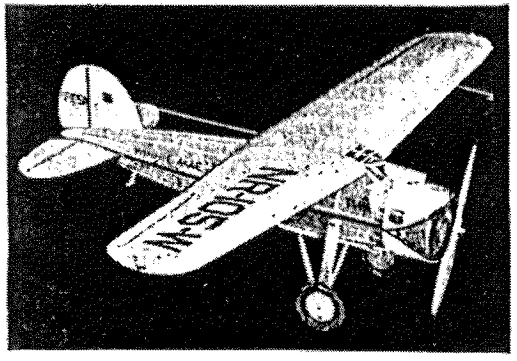
A COMET VALUE—

Giant in size—and featuring a shock-proof landing gear, cabin doors and interiors, movable controls, detachable wings, and automatic wing jig. The Taylorcraft kit is very complete—more than enough balsa, carved propeller and plenty of fresh rubber..... **$1.00**

COMET $1.00 MODELS ARE RICH IN DETAIL

FLYING SCALE MODELS

36" WINNIE MAE



An accurate scale model of the ship rebuilt for Wiley Post's stratosphere flying. Kit contains all special details; supercharger intake, belly skid (for landing after wheels are dropped off), built up motor and other realistic fittings. Slide-off transfers give the plane authentic markings and dress up the appearance.

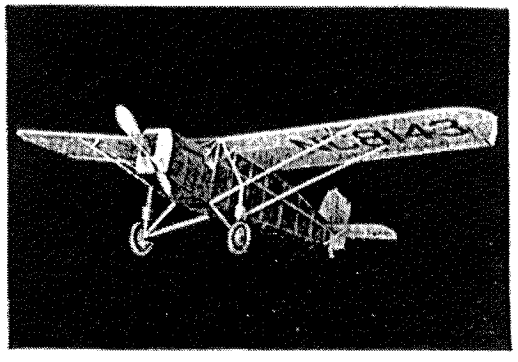
WINNIE MAE 36" WINGSPAN KIT NO. P3

Many gas model enthusiasts have stressed this model for a small gas engine installation and have had satisfactory results..... **$1.00**

179

48" CURTISS ROBIN

Stable and consistent in flight this popular Curtiss Robin is simple to build. It is one of the most easily flown scale models ever built. A few easy changes in construction, by the model builder, and you have a swell gas model for those small engines. Only advanced builders should attempt this.

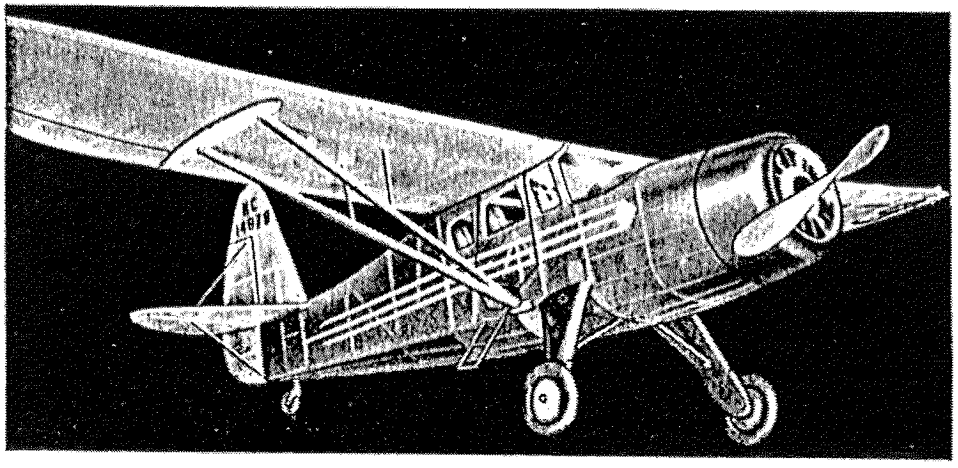


CURTISS ROBIN 48" WINGSPAN KIT NO. P4

Completeness is another feature of this kit. Large, carved balsa prop, plenty of rubber, balsa, tissue, etc..... **$1.00**

THEY'RE EASY TO BUILD — THE COMET WAY

2 GREAT SPECIALS

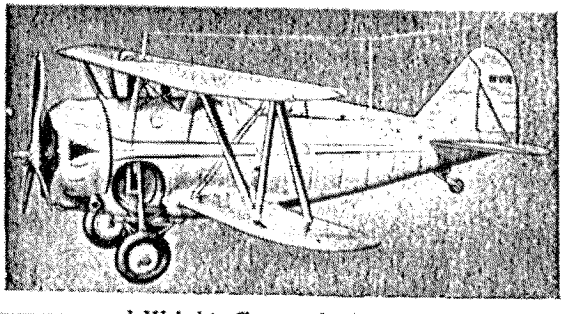


HOWARD DGA-9

A giant 47½" Wingspan model engineered to exact scale. It is an authentic reproduction of the famous Benny Howard design, patterned after his last racing ship "Mr. Mulligan". Kit is remarkably complete — with details galore.
KIT No. T1..... **$1.50**

FEATURES
- Shock-proof landing gear
- Movable controls
- Cabin Doors and interiors
- Detachable wings
- Motor roar device
- Automatic Wing jig

GRUMMAN GULFHAWK



Absolutely one of the finest scale models ever produced in kit form. The wingspan is 28½", scaled down from the original, which has a wingspan of 28½ feet.

With the cooperation of Al. Williams (for whom the Grumman Gulfhawk was built to order) and blueprints and data supplied by Grumman and Wright, Comet designed a model that had correct rib spacing in wings and tail surfaces—simple balsa covered fuselage (built with jig)—rivets and seams exactly as on original ship—built up motor—elevator, rudder, ailerons, and landing light controlled from cockpit—sliding cockpit hood—shock absorbing tail wheel swivels and retracts—landing gear retracts.

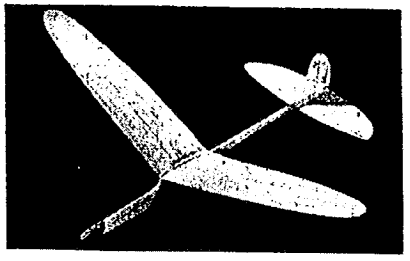
Many parts furnished complete or semi-complete: shaped struts, completed gas tank, shaped tail block, leading edges, wheels, also a decal that adds beauty and realism to the finished model. Generous quantity of dope. All materials carefully chosen. Just the thing for non-flying scale model contests. EXACT SCALE 1" = 1'0". KIT No. T5..... **$3.95**

COMET DESIGNS ARE THE MOST AUTHENTIC

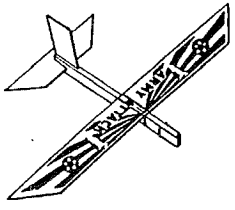
GLIDERS

"STREAKY" Contest Glider

Designed for contest flying, this Class B glider meets the requirements of the expert—yet easy enough for the beginner to build and get record flights. Matched wing halves—tapered—so very little cutting and sanding is necessary to obtain correct airfoil. Easy-to-make balsa fillets strengthen wing at base. Kit includes clay for balancing. Kit No. 65..... **25c**



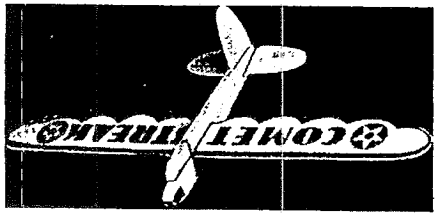
PENNY GLIDERS



These gliders can really zip around—do all sorts of stunts. Wingspan—8½". Complete—ready to assemble, each **1c**

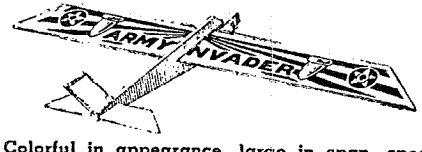
(No. 25—Packed 1 gross in carton)

COMET STREAK



Sensational in performance—sturdy in construction. Easily assembled — Wing and tail parts fit into grooves and slots. A real value for..... **5c**

ARMY INVADER



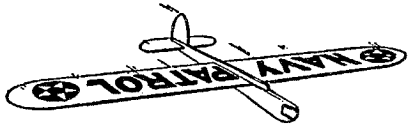
Colorful in appearance, large in span, spectacular in performance, this 18½" glider is a real value. No. 15..... **5c**

DAWN PATROL



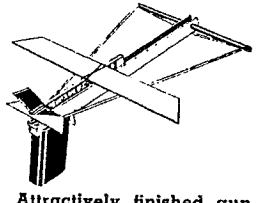
Imagine! A whole fleet of performing gliders for a nickel. Ready to put together and fly. Colorful insignia printed on wings. No. 55..... **5 for 5c**

NAVY PATROL



This big 24" wingspan glider is a thrilling performer. It can loop—soar—dive—and stunt. Strong construction throughout assures consistent high performance. No. 35 ..... **10c**

CATAPULT GUN



An amazing new way to launch gliders. Gun catapults glider up into the air when trigger is pulled.

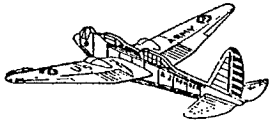
Attractively finished gun with two high performance gliders — all for **10c**

FLY COMET GLIDERS FOR REAL FUN

AMERICAN JUNIOR

GLIDERS

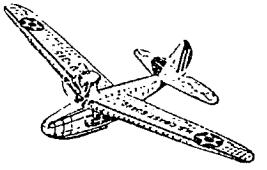
A J BOMBER



Patterned after the famous Martin Bomber—12¼" WINGSPAN—wing and tail parts fit into grooves and slots. Can be made to glide straight—loop the loop—soar, dive and stunt.....ea. **5c**

(Packed 4 doz. in box for dealer.)

A J COAST GUARD

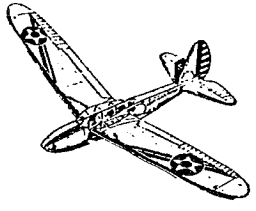


Has metal dummy engine and revolving propeller — 15" WINGSPAN — Colored Coast Guard markings and New Flight Control. All balsa construction—cambered wings .....ea. **10c**

(Packed 1 doz. in box for dealers.)

A J INTERCEPTOR

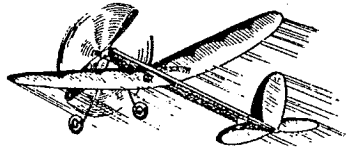
The latest sensation! An amazing fast climbing glider—rises vertically—snaps into action and cruises around more than one-half mile. 19½" Wingspan.



Wings fold against body for altitude launching then snaps out into a graceful glide. Launching stick and strong rubber provided—a big value.. **25c**

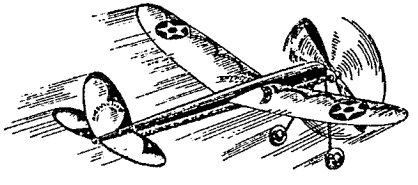
READY-TO-FLY MODELS

A J HORNET



A fast-flying, high-climbing plane that "takes off" under its own power. Polished hardwood crash-proof propeller. Heavy-duty rubber motor. Plane is colored red, white and blue. This 18" wingspan ready-to-fly airplane is an exceptional value at **25c**

A J PURSUIT



The champion A J ready-to-fly airplane has self-aligning, shaftless, 3-ply propeller that runs on real ball bearings. Runs absolutely true and without effort. Makes it possible to obtain flights of one thousand feet or more. Only..... **50c**

AMERICAN JUNIOR MODELS ARE PROVEN FLYERS

COMET SUPPLIES

SCOTCH CELLULOSE TAPE



No wetting—no fuss—merely press into place. Many uses for this new type adhesive tape. Seals instantly with slight pressure—no water required. Will not dry out, crack or curl. Remains flexible.

¾" x 100" Transparent, per roll 10c

Display box contains 24 rolls.

SCOTCH TAPE
WITH UTILITY DISPENSER



For mending torn book pages, records, etc. The 25c roll shown above is furnished with New Type Utility Dispenser. Easy to use. No fuss. No wetting. ¾" x 300" transparent roll in Utility Dispenser.

Per roll 25c

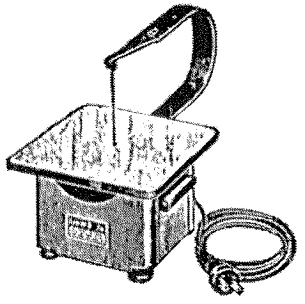
12 rolls in display carton.

RAZOR PLANE



Made of cast aluminum—very easy to use this handy little tool. Razor blade is easily changed if dulled. Complete with blade ..... 25c ea.

SYNCRO JR. SAW



A perfect jig saw that comes ready to run, no motor to buy or hook up. Just plug it in any 110 volt outlet and cut through thick wood like butter. Saw has an 8" swing. Excellent for all scroll work. Especially Gas Model parts and thick balsa which cannot be cut with knife or razor blade.

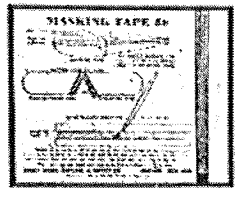
Complete with cord $5.95

Extra blades ..... 5c each, 6 for 25c

SYNCRO SR. SAW

A larger jig saw for heavy-duty work. Has a bigger, stronger power unit $10.95

MASKING TAPE

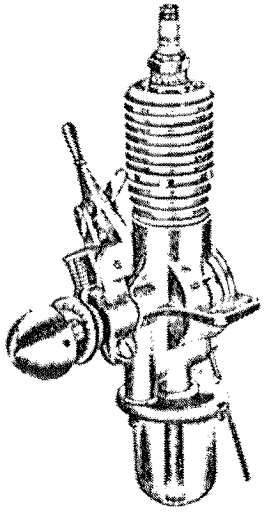


Stick this tape in place when painting color separations. Makes a clean smooth line. Can be used over and over again. Excellent for striping fuselage or painting scallops on wings.

Per Card 5c

COMET RUBBER GIVES LONGER FLIGHTS

GAS MODEL MOTORS



ATOM

CLASS "A" . .097 CU. IN. DISP.

Here's the Lightest and Mightiest production engine ever made. Weighs but a scant 1⅞ oz., including spark plug and tank.

The super Atom will outspeed, outpull, outclimb any motor of equal displacement! Each engine precision fitted, literally custom made. Molybdenum Chrome Steel Cylinder and Piston. Many exclusive engineering features incorporated in this compact, super power plant.

Bore ½" - Stroke ½". Develops highest power to weight ratio of any engine 1/10 - ⅛ H.P. The Atom is complete with coil and condenser. Ready to run. $15.50

Use 8 in. Comet "Airspeed" Propeller.

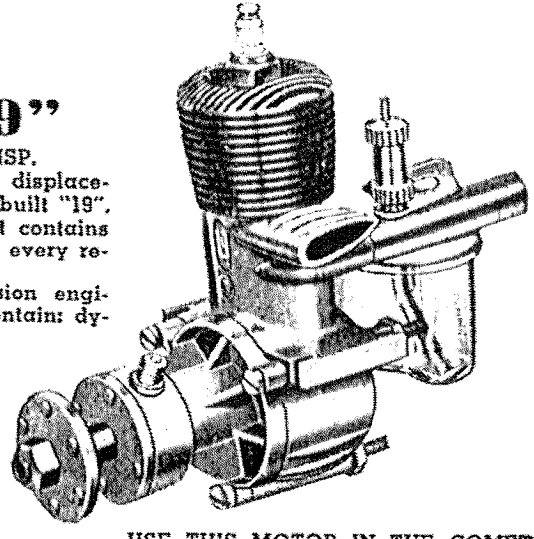
AN EXCELLENT MOTOR FOR THE COMET ZIPPER "A"

OHLSSON "19"

CLASS "A" .199 CU. IN. DISP.

Built to the very limit of Class "A" displacement rule—the dependable, precision built "19", is a champion in the smallest field. It contains all the features of a "23"—identical in every respect except the displacement.

Finest materials used — all precision engineered. The Ohlsson "19" and "23" contain: dynamically balanced piston, crankshaft, and connecting rod, ball thrust bearings, fully enclosed timer, Jiffy-fill gas cap, etc. Ohlsson "19"—Bore and Stroke—11/16" x 17/32" H.P. 1/7. Bare motor weight 4¾ oz. Use 10" Comet "Airspeed" propeller with this motor. Complete with coil, condenser and transparent fuel tank $14.50



USE THIS MOTOR IN THE COMET MERCURY FOR CLASS "A" FLYING

OHLSSON "23"

CLASS "B" .23 CU. IN. DISP.

Made exactly as the "19"—but having larger displacement — the "23" has same microsealed engineering. All parts completely interchangeable makes replacement easy and economical.

Championship performance — proven power and dependability. Bare weight only 5¼ oz. Mounting—combination radial or lug. Bore and Stroke 11/16" x ⅝" —H.P. 1/6. Use 11" Comet "Airspeed" propeller. With coil and condenser $16.50

THE OHLSSON "23" CAN BE SUCCESSFULLY USED IN THE MERCURY OR ZIPPER

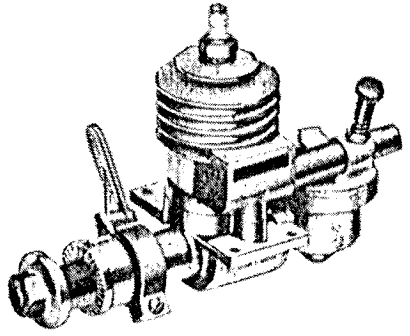
GAS MODEL MOTORS

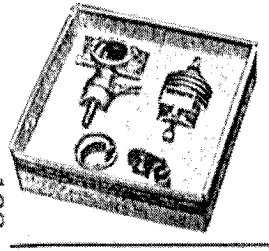
SYNCRO B-30

CLASS "B" .30 CU. IN. DISP.

Outstanding in performance and value—equipped with many late engineering features.

Timer not affected by oil and dirt—no points to file or adjust—Gas adjustment with positive control—Cylinder moulded integral with manifolds from special aluminum alloy—dissipates heat quickly—3 piston rings. Motor is easy starting, has power, speed—light in weight. Bore 11". Stroke 1/2". H.P. 1/7 - 1/6. Bare weight 5 3/4 oz. Use 11" Comet "Airspeed" propeller. Complete with coil and condenser **$7.95**





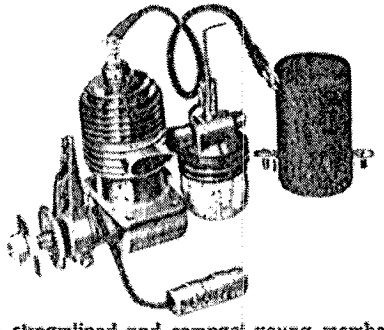
SYNCRO PC-2

CLASS "B" .30 CU. IN. DISP.

Knocked down—ready to assemble. Designed for maximum performance. Engine has lapped piston and cylinder—counter balanced crank shaft—commutator type timer—entire motor made of aluminum alloy for lightness and strength. Without coil and condenser..... **$4.95**

BROWNIE

CLASS "B" .29 CU. IN. DISP.

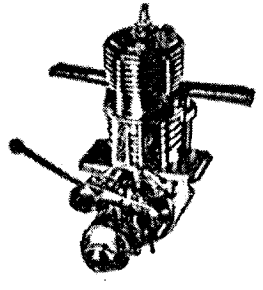


A streamlined and compact young member of the record-breaking family of Brown Jr. motors!

The Brownie is truly a fine little engine with many outstanding features. It has a multiple spring aviation timer—cam made of tough steel and hardened—machined steel cylinder. Entire motor is made of highest quality materials. Bore .770. Stroke 5/8". H.P. 1/7. Bare weight 6 3/4 oz.. Use 11" Comet "Airspeed" propeller with motor. Complete as illustrated **$10.00**

O. K. "49"

CLASS "C" .49 CU. IN. DISP.



"O.K." engines start easily, run consistently! Are dependable—give thrilling performance.

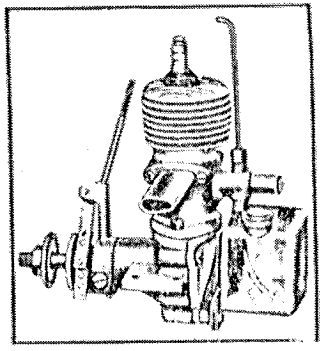
Built to highest engineering standards incorporating such features as one piece steel cylinder, ground and lapped—piston individually fitted to cylinder, and wrist pin hollow drilled. Translucent, bakelite gas tank. "O.K." motors are block-tested. Bore .9. Stroke .775. H.P. 1/5. Bare weight 10 oz. Use 13" Comet "Airspeed" propeller. Motor with coil, condenser and exhaust stack **$15.50**

THE COMET ZIPPER IS THE BEST MODEL TO USE WITH MOTORS ON THIS PAGE

GAS MODEL MOTORS

DENNYMITE

CLASS "C" .572 CU. IN. DISP.



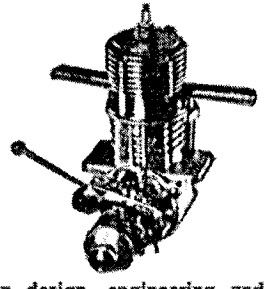
Dennymite engines are packed with extra power and will outperform many engines of greater displacement.

Streamlined cylinder with matched piston of molybdenum iron micro-lapped. Largest bearing surface in its class. Special aluminum alloy crankcase. Transparent gas tank. Lock nut needle setting. Motor weight—11 1/2 oz. 1/4 H.P. Bore .9 in. Stroke .9 in. Complete with coil condenser, short exhaust stack..... **$17.85**

AIRSTREAM UNIT, same as above less coil and condenser $15.85

O. K. SPECIAL

CLASS "C" .604 CU. IN. DISP.

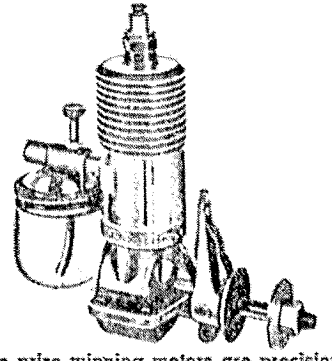


Precision design, engineering and assembly has made "O.K." one of the most reliable engines in the field today.

Features patented cylinder and crankcase construction with integral manifolding. Piston individually fitted, hardened crankshaft, connecting rod, piston and wrist pin. Translucent gas tank—shakeproof micrometer needle valve. H.P. —1/2 plus. Bore .9 in. Stroke .95 in. Bare weight 10 1/2 oz. Motor with coil and condenser **$15.50**

BROWN JR.

CLASS "C" .60 CU. IN. DISP.



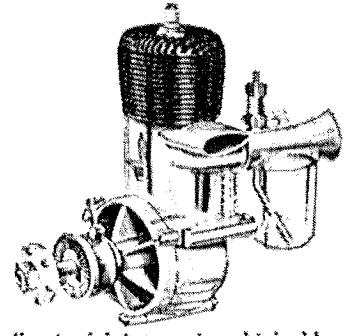
These prize winning motors are precision built of some of the finest materials.

MODEL "D"—New, improved timer — chrome molybdenum crankshaft — micrometer needle valve—transparent tank. Bore 7/8". Stroke 1". H.P.—1/5. Weight 8 1/2 oz. Same specifications for all models. Complete with coil and condenser **$12.50**

MODEL "B"—Ranks high in precision built engines. Special steel piston and cylinder. Cadmium plated. Mounted on skids, ready to run $16.50

OHLSSON "60"

CLASS "C" .60 CU. IN. DISP.



The finest miniature motor obtainable at any price. Unequaled in design, workmanship, and power performance.

Engineering plus — Venturi carburetor principle, tool steel crankshaft, friction free roller bearings and ball thrust bearings, hi-compression head piston, jiffyfill gas cap, etc. Motor weight—10 oz. Bore—15/16". Stroke —7/8". H.P.—1/4. Upright or inverted ... **$21.50**

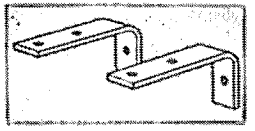
Use the Comet Clipper or Sailplane with the motors shown here.

14" Comet Airspeed Props fit these motors.

GAS MODEL ACCESSORIES

ATOM MOTOR MOUNTS

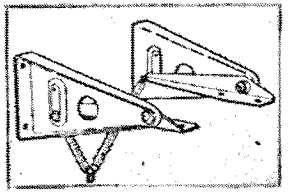
Made of tough aluminum but weigh less than 1/8 oz. per pair. Holes correctly spaced for the Atom motor.



Pair 10c

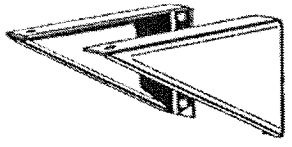
SWIVELING MOTOR MOUNTS

Patented



Eliminate broken propellers and prevent bent crankshafts with these new dural swiveling motor mounts. Excellent for models with retractable landing gear because entire motor unit swivels if propeller hits an obstruction. Weight is scant 1½ oz. Kit includes assembly instructions and all necessary hardware 50c

DURAL MOTOR MOUNTS



Ready to bolt to firewall. Made of tough heat-treated DURAL. Improved closed corner. Light weight, ½ oz. per pair. Fits all motors. Can also be used to break in motors. Screw to block of wood and clamp in vise.

Pair 25c

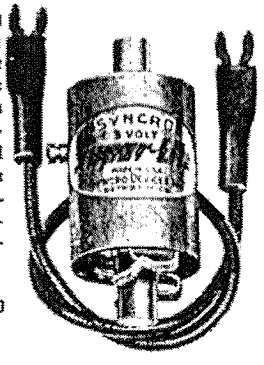
ALUMINUM ANGLE

Ideal for motor mounts. Light in weight yet strong. Will "give" in a severe crash to protect motor. Walls are 1/16" thick.

Per 12" Length		Per 12" Length
½" x ½" 15c	¾" x ¾"	20c

SYNCRO SUPERLITE COIL

A newly developed 3 volt coil that weighs but 2 oz. Compact and well built it is equipped with gas and oil proof, unbreakable molded case—fahnstock clips for primary leads—with clip on high tension lead. Coil complete with lead.



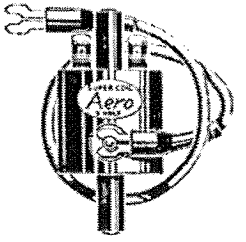
Price $1.50

AERO SPARK COILS

By laboratory and field tests the Aero Spark coils will develop a greater heat-spark than any other coil in its class. These are the finest coils available today. Use them and get lasting satisfaction.

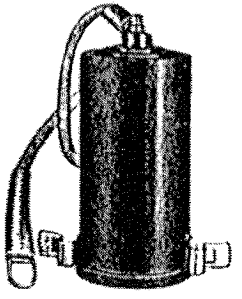
Regular two battery (3 volt) Aero Super coil—2¼ oz. Ea. $2.25

Featherweight Aero Super coil (3 volt)—1½ oz. Each $2.25



NOTE: Above coils are furnished complete with high tension lead and installation instructions.

SMITH IGNITION COIL



New light weight (only 2½ oz.) moulded extra strength bakelite enclosed coil. New improved screw type terminals (not shown). Detachable high tension lead. Coil is only 1" dia. and 2" high. Will outlast many higher priced units. Coil including high tension lead.

Each $2.50

SMITH COMPETITOR COIL

Especially designed for the smaller engines, this new 3 volt coil is the latest addition to the Smith Ignition coils—light in weight—it delivers a hot spark with less battery drain. Weighs 1½ oz. complete with high tension lead. Each $1.75

SMITH HIGH TENSION LEAD

Can be used for all engines. Multiple-stranded wire, heavily insulated. Both ends fitted with clips for fastening to plug and coil. Best made. A real necessity. Each 15c

IGNITION WIRE

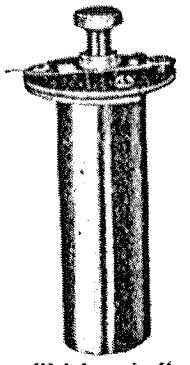
Multiple strand genuine copper wire. (Far superior to ordinary copper coated iron wire.) Oil and waterproof insulation. Exceedingly light in weight and especially suited for gas motor hook-up.

5 ft. coil 10c

COMET SUPPLIES ALWAYS SATISFY

GAS MODEL ACCESSORIES

AUSTIN TIMER



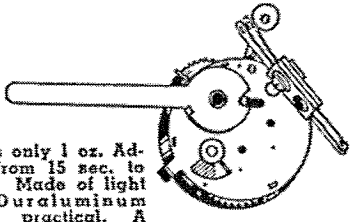
Most inexpensive and lightest timer made. Accurate and reliable. Will not jam or wear out. Not affected by engine vibration. Adjustable for any duration.

- Easier adjustment. New design makes possible quicker, more accurate setting.
- Stronger contact spring. Gives positive contact even under severe motor vibration.
- Stop watch accuracy. New Needle Valve Adjustment from 1 second to 10 minutes.
- Weighs only ⅘ of an ounce.
- Completely enclosed for protection from dust and dirt, oil and gasoline.
- Special instruction sheet with installation and wiring diagram given free with each timer.
- Complete $1.00

MIDGET AUSTIN TIMER

Ideal for Class "A" models. Midget is identical to the standard type with exception of a shorter case—1½" in length. Weighs only ⅔ of an ounce. Price $1.00

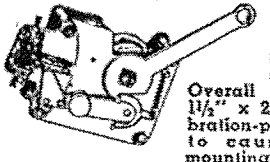
NEW DURAL TIMER



Weights only 1 oz. Adjustable from 15 sec. to 1 minute. Made of light weight Duraluminum wherever practical. A precision built unit—will last a lifetime.

Price $2.00

LIGHT WEIGHT TIMER



Light weight timer. 1½ oz. Adjustable from 15 to 53 sec. Silver contact on-off snap action switch. Overall dimensions: ¾" x 1½" x 2¼". Absolutely vibration-proof, no hair spring to cause trouble. Three mounting screws (furnished) screw into frame eliminating bracket weight.

Each $1.95

LOW-PRICE TIMER

Exactly as above but brass is used instead of Duraluminum. Very sturdy construction.

Each $1.50

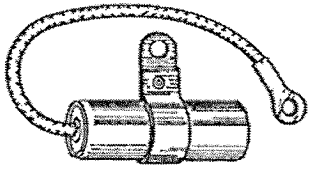
DELAYED ACTION TIMER KIT



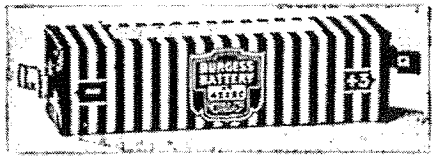
Excellent for all types of delayed action such as retractable landing gears, parachute drops, smoke screens, bomb releases, pick-a-back models, etc. Time is adjustable. Not an ignition timer. Weighs ¼ of an ounce. Kit contains assembly instructions and finished parts 25c

CONDENSER

Can be used for any motor on market. Insulated multiple strand lead with lug attached. Completely inclosed in light weight metal shell to prevent entrance of dirt, oil, moisture, etc. Mounting bracket attached. Each 25c

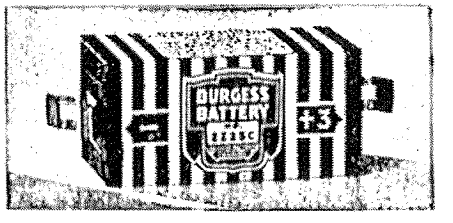


REGULAR BURGESS BATTERY



Its light weight, only 4½ oz., and its small size, 5¼" overall length by 1⅛" square, allows it to be placed easily in most fuselages. The construction is moisture-proof and leak-proof. Excellent service will be obtained from this battery when used with clean, well-conditioned ignition systems. Price 70c

SMALL BURGESS BATTERY



A Midget 3-volt ignition battery, even smaller and lighter than the REGULAR SIZE. Designed for those desiring the utmost in small size and light weight. Overall length is only 3¼", and its weight only 2¾ oz. Price 50c

COMET SUPPLIES ARE THE BEST

GAS MODEL ACCESSORIES

BRIGHT STAR BATTERIES



BRIGHT STAR FULLY INSULATED metal top cells are very dependable, long lasting and economical.

Regular Cell—1⅜" x 2⅜", 1½ v.....ea. 10c

Baby Cell — 1" x 1⅞", 1½ v.....ea. 10c

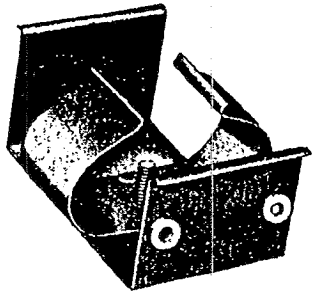
Penlight Cell—½" x 1⅞", 1½ v.....ea. 5c



BRIGHT STAR BOOSTER BATTERY

Preserve your flying batteries by using these high grade Bright Star "Boosters". When motor starts, simply switch over to the flying batteries in model. 2½ x 6"—1½ v. Each.....40c

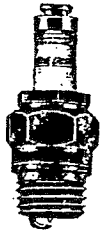
AUSTIN BATTERY BOX



Most practical way of mounting batteries. Cells are held securely, yet permit instant changing at the field. Very light in weight. Made in three sizes.

Penlight Size 35c
1" dia. size.....35c
1⅜" dia. size.....35c

BLUE CROWN PLUGS



Blue Crown spark plugs are scientifically designed for model motors. Special materials used to make a more efficient plug.

Type A1—⅜" x 24.....65c
Type A2—¼" x 32.....65c



CHAMPION SPARK PLUGS

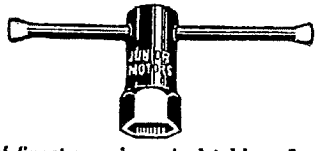


These little plugs are especially built for model airplane motors. Designed for easy starting and smooth operation.

V —⅜" x 24.....50c
V2—¼" x 32.....50c
V3—¼" x 32.....50c



SPARK PLUG WRENCHES



Made of finest seamless steel tubing. Accurately shaped to insure a snug fit. Prevents broken and damaged plugs and motor fins. Comes in these sizes:

1/2" For Champion V Plug
7/16" For Prop. Nuts and Brown, Hurleman, Blue Crown A1 Plugs
3/8" For Champion V-2 and Blue Crown A2 Plugs
5/16" For Champion V-3 Plugs

Finest gas model wrenches made.
Each 20c

EXHAUST MANIFOLD



Fits Brown model B and D engines.
Bright nickel finish.

Easily attached .....Each 50c

FUNNEL



Small funnel with wire mesh filter for putting fuel mixture in tank. Made of brass. Cadmium plated. Long thin attached tube permits access to tanks in close quarters.

Each 35c

EYE DROPPER



Very handy to keep for filling fuel tanks, etc.
Each 5c

COMET SUPPLIES ARE USED BY CHAMPS

GAS MODEL ACCESSORIES



BALSA FOR GAS MODELS

Comet gas model balsa is the finest obtainable. It comes in straight grained, 60" lengths and is precision cut from select balsa of just the right grain and texture.

1/8" x 1/8"	2c	1/4" x 1/4"	4c
1/8" x 1/4"	2c	1/4" x 3/8"	6c
1/8" x 3/8"	4c	1/4" x 1/2"	6c
1/8" x 1/2"	6c	1/4" x 3/4"	8c
1/8" x 2"	14c	1/4" x 2"	20c
3/16" x 1/4"	2c	3/8" x 3/8"	8c
3/16" x 1/2"	5c	1/2" x 1/2"	10c
3/16" x 2"	15c	1/2" x 3/4"	12c

PLYWOOD

Genuine three-ply wood of select poplar and birch. Just RIGHT for firewalls, gussets, etc.

	4"x12"	8"x12"
1/16"	15c	25c
1/8"	15c	25c
3/16"	15c	25c

ALUMINUM SHEET

The perfect material for cowlings. Gives your model a professional "dressy" appearance.

Thickness	6"x12"	12"x12"
.006"	15c	25c
.010"	17c	30c

CELLULOID SHEET

8" x 10".....12c ea.

PROPELLER NUTS

Keep a few handy to replace the ones you'll lose in the grass when changing props.

No. 1—Fits all large engine, 1/4".....2 in pkg. 5c
No. 2—Fits all small engines, 3/16".....2 in pkg. 5c

GAS MODEL PROPELLERS

DEVELOPED BY CARL GOLDBERG

Here's the newest in gas model props. Carefully designed for utmost efficiency, tested with scientific instruments for maximum thrust, precision manufactured on exclusive special automatic equipment and super-finished to smooth perfection. They all carry Carl Goldberg's stamp of approval.

AIRSPEED 35

Absolutely the finest, most efficient gas propeller made! Machine carved for uniformity, accurately sanded, carefully lacquered and then hand rubbed to a super-smooth finish.

8", 9", 10", 11", 12", 13", 14" .....each 35c

AIRSPEED 25

Scientifically designed propeller that will give excellent results. Every prop is carefully finished and lacquered. Will outpull most other propellers.

8", 9", 10", 11", 12", 13", 14" .....each 25c

AIRSPEED 15

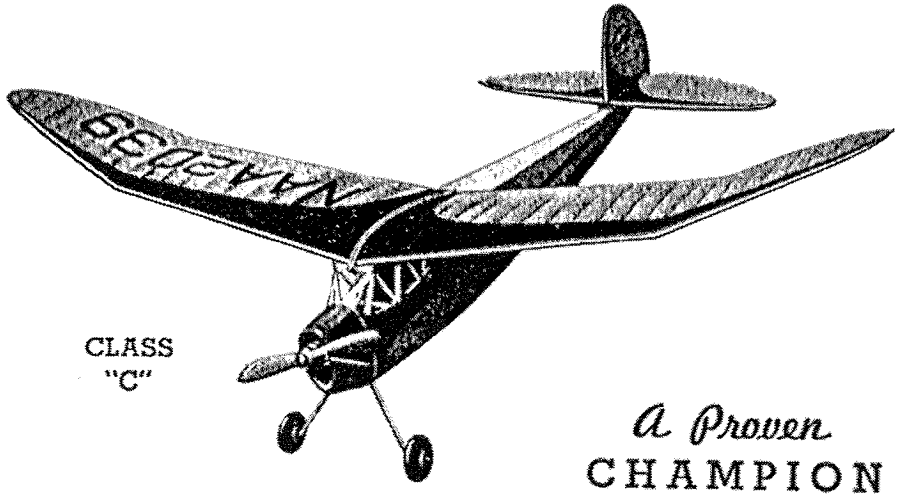
For the model builders who prefer to finish their own propellers. Partly finished and unlacquered, but of same careful design and workmanship.

8", 9", 10", 11", 12", 13", 14" .....each 15c

SEE THE HANDY KEEN-EDGE KNIFE ON PAGE 47

The World Renowned

COMET CLIPPER



CLASS "C"

a Proven CHAMPION

The Clipper is one of the most beautiful cabin-type gas models ever produced.

Modelers find it easy to build and fly this model. Outstanding in performance, the Clipper held Class "C" endurance records at several times.

Carl Goldberg—designer of the Clipper—incorporated into it all the latest approved ideas in gas model construction.

SPECIFICATIONS

Wingspan	6 ft.
Length of model	49½ in.
Projected wing area	654 sq. in.
Total weight (with motor)	2 lbs. 10 oz.
Wing loading	9¼ oz. per sq. ft.
Power	⅛ - ¼ H.P.

FEATURES

- Polyhedral wing
- Removable, compact motor and ignition unit
- Detachable wing and tail
- Many finished parts

Much of the unnecessary work in gas model building has been eliminated in this kit. Finished ribs—simplify wing construction—airfoil sections developed by Carl Goldberg.

Two unique locks hold detachable engine unit firmly to model. Unit may be instantly removed for inspection by simply releasing locks. Adjustable ignition unit flexibly attached to firewall with special fittings. Easy-to-make cowling streamlines fuselage front. Kit contents include: bent wire landing gear —lightweight, streamlined balsa wheels — finished plywood firewall and ring—tapered wing and tail spars—bamboo paper—two full-size layout plans—sufficient glue and dope, etc.

$4.95

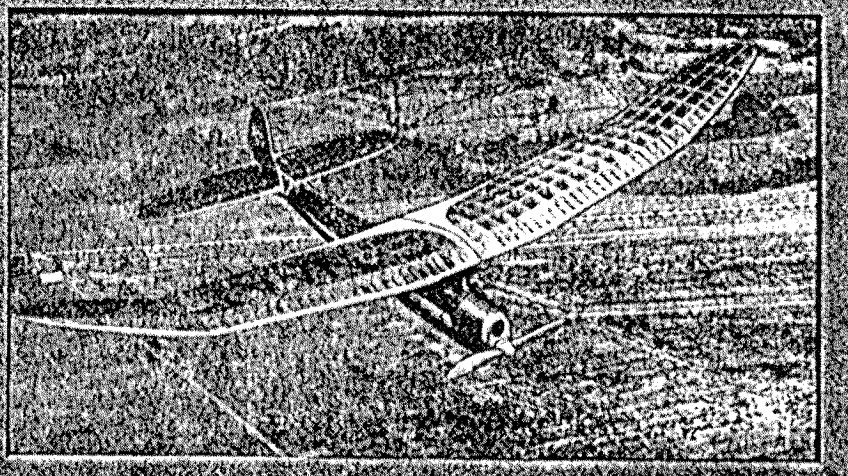
KIT No. T7. Exceptional value at .....

See motor pages for correct motor for the CLIPPER.

A folder, "How To Adjust and Fly Gas Models" by Carl Goldberg, free with each kit.

COMET MODELS WIN MOST PRIZES

THE FINEST — BAR NONE!



COMET *Sailplane* GAS MODEL

DESIGNED AND DEVELOPED BY *Carl Goldberg!*

SPECIFICATIONS

Wingspan	78 in.
Overall length	52 in.
Wing Area	6 sq. ft.
Wt. (with motor)	3 lbs.
Wing loading	8 oz. per sq. ft.
Wing airfoil	Goldberg G-6
Climb, 1600 ft. per min.	

A FEW SAILPLANE VICTORIES!

Dean Fredericks wins at Galesburg, Ill., with 64 minutes total for three flights.

Lowell Southam sets new state of Utah record on a windy day.

Carl Goldberg wins Jr. Aviator Nationals with total official time over 43 minutes.

Easily the most advanced high-performance gas model, the Comet Sailplane roars swiftly up, up, until the motor cuts—and then glides majestically along. It seems as though it's just NEVER going to come down! A supership for class C motors of about .60 cubic inch displacement.



Carl Goldberg

Three Big New EXCLUSIVE Developments

- PROPELLER-SAVING MOTOR MOUNTS (Patent Pending)—Entire motor unit swivels when prop hits an obstruction. Saves prop and motor.
- RETRACTABLE LANDING GEAR—Increases climb and glide; ship makes smooth landings on portion of wheel left protruding below fuselage.
- IGNITION-IN-POCKET—Makes ignition inspection as simple as raising the hood of a car.

FINISHED PARTS

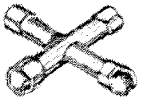
Dural swiveling motor mounts ● Landing gear timer parts ● Plywood firewall ● Wing and elevator ribs ● Tapered trailing edges ● All spars tapered where necessary ● All retractable landing gear parts ● Cement, dope, hardware, large full-size plans, gas model tissue. Positively the finest gas model kit ever produced. KIT No. T13.....

$5.95

FREE—With each kit . . . a folder on flying gas models by Carl Goldberg.

STOP SEARCHING

For "Hard-To-Get" Items **POLK'S** HAS THEM!

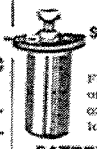


4 WAY WRENCH 45¢

RADIO CONTROL HDQRS.

Circuits, Systems, Apparatus, Special booklet 35c.

NEW MIDGET AUSTIN



SUPER LITE TIMER

For Class 'A' or 'B'. ¼ oz., 1½" long. **$1**

BATTERY BOX

For pen cell, intmd. and large **35¢**



ZIPROPS REDUCED

Fast high climb **15c**

CHARGER (Varnished Gumwood) 25c
SUPERCHARGER, deluxe super finished prop..... **35c**

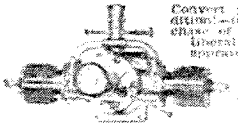


"19" or "23"

EXHAUST STACKS 35c

TRADE IN YOUR OLD ENGINES

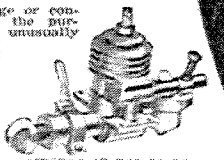
TOP CASH ALLOWANCE AT POLK'S



"OK" TWIN—for radio control and heaviest flying models. $35.00.

Convert your old engine—regardless of age or condition—into top cash allowance towards the purchase of a new one! You'll find Polk's unusually liberal. Bring or mail your engine for appraisal! You have an unlimited choice for selection!

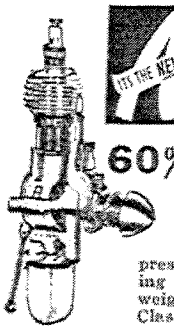
OHLSSON "60"	$21.50
FORSTER "29"	15.50
TIGER AERO	18.50
BANTAM "19"	16.50
DENNYMITE	15.85
"OK" New 49	12.50
BROWNIE	7.50
SKY CHIEF	6.95



SYNCRO 'B-30' $6.95

CRASH

New "41" Atom



BORE ½" STROKE ½" DISP. .097

LET THE NEW Super Atom

$12.50 POST PAID

With Plug, Matched Coil and Cond.

60% More Power!

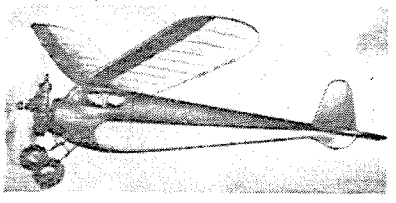
Cylinder porting increased almost 60%. Develops greatest 'power-to-weight' ratio ever achieved! Improved high compression cylinder. Super ATOM including plug, coil, condenser and tank weighs less than next comparable Class 'A' engine bare!

IMMEDIATE DELIVERY

Your Super ATOM will be shipped on day order reaches us. No waiting. Satisfaction guaranteed, each carefully block tested before shipping. Send check or money order and we send prepaid or C.O.D. for $2 deposit, balance (plus delivery) on arrival.

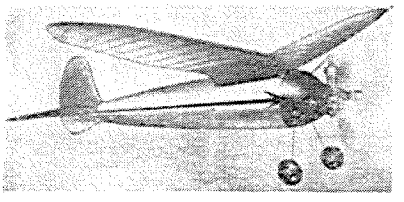
Super KITS

Acclaimed for superb performance, construction economy and building simplicity. Detailed 'step-by-step' plans in each kit!



BUCKAROO $1.00

37" wingspan. 186 sq. in., 3 ozs. Most popular 'buck' gas model today. Especially adapted for beginners. Simplified instructions included.

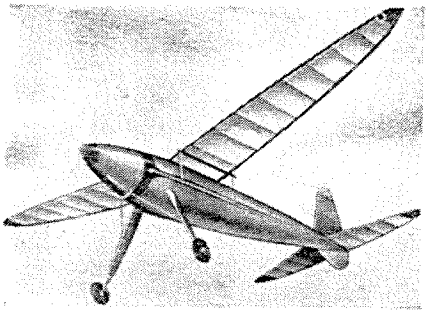


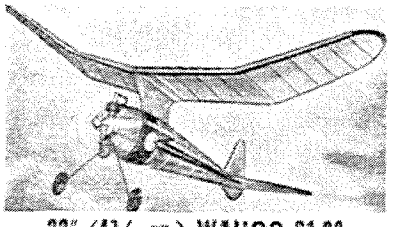
HAYMAKER $1.50

A knockout in Class 'A' field. Simplified, monocoque construction with removable nose unit. Sleek, graceful gas job combines appearance and performance. 33" span. 165 sq. in., 4 ozs. Slickest Garami design.

Pioneer 40" Wingspan $1.50

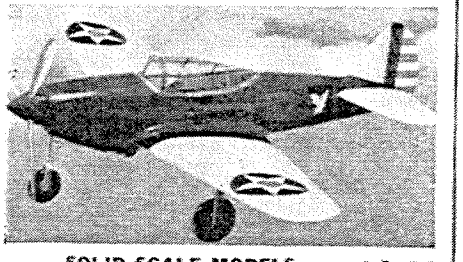
Features new type, easy-to-build technique. Super streamlined monocoque all sheet balsa fuselage is entirely rugged, ideal contest, duration model. A Double-your-money value.





33" (4½ oz.) WAHOO $1.00

The supreme in small, high wing mount Class 'A' contest designs. Zippy flight plus great strength. 180 sq. in., removable nose for timer, battery, coil.



BUILD YOUR OWN SYNCRO B-30

New PC-2 FACTORY ... D IT ... WITH A SCREW ... 'IFFY!

$3.95 WITH SPARK PLUG



Absolutely complete, factory built-up Kit. All parts machined—ready to assemble with a screw driver! Every part included—just exactly as if factory built. Detailed assembly and wiring diagrams included. Complete with Champion Spark Plug. Non-Old. gas, prop or coil condenser not included.

kit opens a new, low-price engine ... Be the first in your territory to serve ... group. Write for unusual dealer set-up

SOLID SCALE MODELS

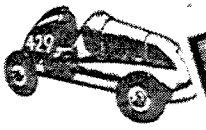
Choice: AIRCOBRA (Illustrated), HAWKER HURRICANE, MESSERSCHMITT, GRUMMAN F4F2, CURTISS HAWK 75A". Wingspans to 20". Kit contains cut to outline shapes, tail surfaces, insignias, metal paper, full size plans, alum. cowls

$1.00

POLK'S factory distributors for American, Jr., Aurora-craft, Aircraft, Bay Ridge, Bouchet, Burkhard, Capital, Cleveland, Comet, Continental, Hawk, Ideal, Jasco, Marine Models, MCHP Kits, Megow, scientific, Silkspan, Strombecker—Becker—and others!

POLK'S PIT PATTER

As in all hobbies—Polk's has pioneered in racing. Fans will find this the center for parts, accessories, supplies and help by practical experts. Whether in person, or by mail—you're certain of super ... us!



Speed Chief $12.50
Whirlwind $19.50
Indianapolis $49.50
Silver King $15.00

RACE CAR WHEELS

Dremer $4... per. Small ... 2 lgs., 2 sm. ... track set ... 2½" dia. ... $2.75. Spec... $3.75. Vented... luxe $8.00 ... pump, 1½ pt. cap. 60c; Dummy ... haust stacks from 85c).

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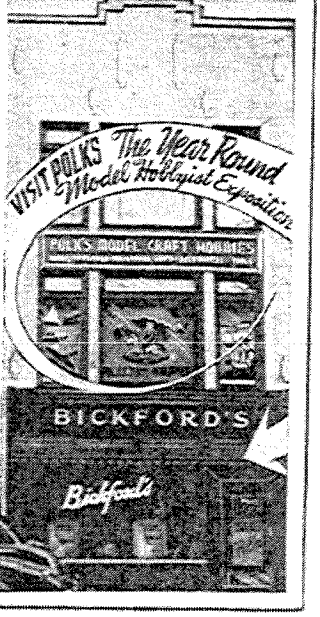
You're invited ... Give yourself a treat—today. ... catalog 6c; Boat-book 10c.

DEALERS!

We are prepared to serve you—COMPLETELY—in any hobby. Adequate stock of all standard lines, many exclusive specials! Consolidate orders, save freight, assure uninterrupted supply. Best factory discounts.



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429 7th Ave., (DEPT. M-12) NEW YORK, N. Y.

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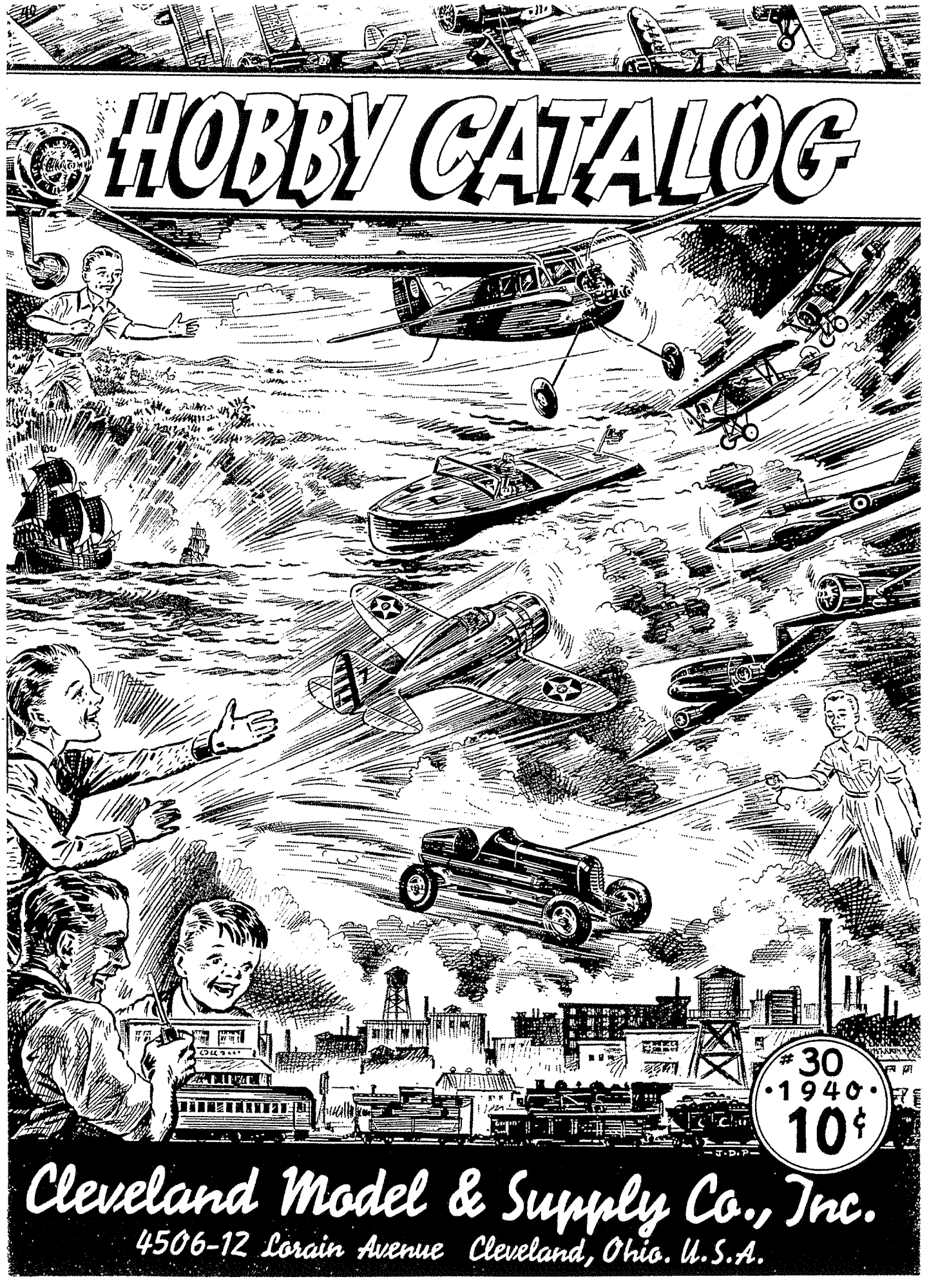
Diagonally opposite Penn R.R. Station. Modellers say this is the largest most complete hobby center in East. Come in—see for yourself!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Cleveland Model & Supply Co., Inc.
4506-12 Lorain Avenue Cleveland, Ohio. U.S.A.

DICK KORDA'S "CHAMPION"



SPAN 48" LTH. 32 1-2"
WT. 23 oz. 995 sq. in.
(CAN BE MADE 20 oz.)

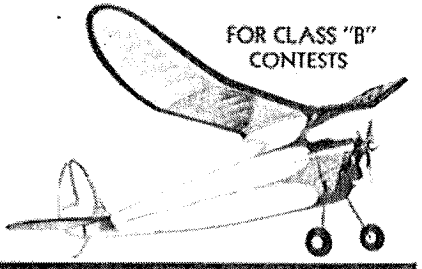
AN ADVANCED BUILDERS GAS POWERED MODEL

Designed and flown by Dick Korda, America's No. 1 Model Builder, it took first places in three consecutive contests, (this alone should speak well enough for this model) also a winner at the Detroit Nationals. This ship is bound to be a consistent winner in all contests it is entered in because of its tremendous rate of climb with power and its stable flat glide. The construction is such that in a bad landing the wing is never damaged because of its shearing wing mount. It also has an easy to remove wing cradle for easy accessibilty to coil, condenser, timer and batteries. The fuselage is covered with 1/16" soft balsa which when finished makes a smooth streamlined job. Colored all yellow with a very good looking red trim. No owner of a gas motor should miss a chance of trying it in the 'Champion' for real thrills. It will set many new records.

COMPLETE KIT (EXCEPT POWER UNIT) GP-5005 Only **$2.95**

HERE'S WHAT YOU GET:

- Full Size Drawing
- Printed Out Wood Parts
- Plywood For Fire Wall
- Cut To Size Wood Strips
- Soft Balsa For Covering
- Colored Tissue
- Wood & Tissue Cements
- Dural Motor Mount
- Formed Landing Gear
- Streamlined Wheels
- Celluloid, Nuts, Bolts And Everything Else Needed Except Power Unit

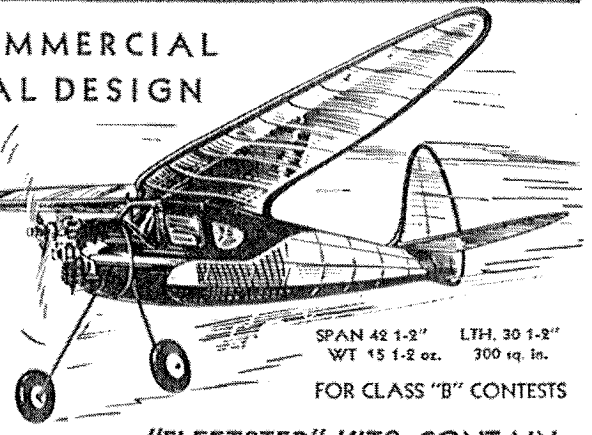


FOR CLASS "B" CONTESTS

"FLEETSTER" A NEW GAS MODEL

A BEAUTIFUL "COMMERCIAL TYPE" OF UNUSUAL DESIGN

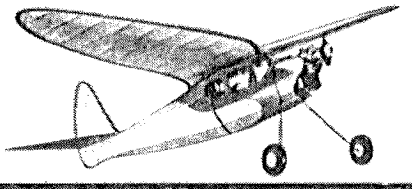
One of the most beautiful free-lance commercial type gas models ever produced. You'll see lots of "Fleetsters" in future Class B competition. It is one of the lighest models ever designed for Class B, weighing only 15½ oz. including a "23" motor, two pen cells, timer, etc. ready for flight. While some might class this as an advanced type model, it is only an intermediate type neither too hard for a beginner nor below the dignity of an experienced gas modeler. Capable of some beautiful flights that will make any builder look on with pride. Colored yellow and blue.



SPAN 42 1-2" LTH. 30 1-2"
WT 15 1-2 oz. 300 sq. in.

FOR CLASS "B" CONTESTS

COMPLETE KIT (EXCEPT POWER UNIT) GP-5007 Only **$2.50**



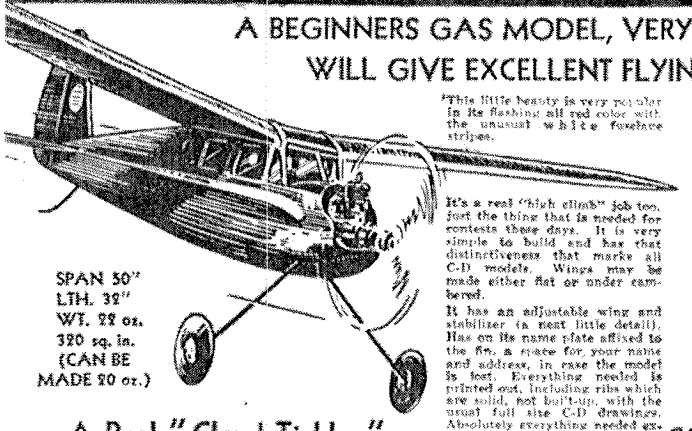
"FLEETSTER" KITS CONTAIN:

- Full Size Drawing
- Printed Out Wood Parts
- Plywood For Fire Wall
- Cut To Size Wood Strips
- Colored Tissue
- Wood & Tissue Cements
- Dural Motor Mount
- Formed Landing Gear
- Streamlined Wheels
- Celluloid Nuts, Bolts & Everything Else Needed Except Power Unit.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

CLEVELAND CLOUDSTER MODEL

A BEGINNERS GAS MODEL, VERY EASY TO BUILD— WILL GIVE EXCELLENT FLYING PERFORMANCE



SPAN 50"
LTH. 32"
WT. 22 oz.
320 sq. in.
(CAN BE MADE 20 oz.)

"This little beauty is very popular in its flashing all red color with the unusual white fuselage stripes.

It's a real "high climb" job too, just the thing that is needed for contests these days. It is very simple to build and has that distinctiveness that marks all C-D models. Wings may be made either flat or under cambered.

It has an adjustable wing and stabilizer (a neat little detail). Has on its name plate affixed to the fin, a space for your name and address, in case the model is lost. Everything needed is printed out, including ribs which are solid, not built-up, with the usual full size C-D drawings. Absolutely everything needed except the power unit which at this remarkable low price everyone can now afford to build a gas model. Don't delay ordering your Cloudster today.

KIT CONSISTS OF:

- Full Size Drawing
- Printed Out Wood Parts
- Shaped Leading Edge
- Plywood For Fire Wall
- Balsa Block For Nose
- Cut To Size Wood Strips
- Colored Tissue
- Wood & Tissue Cements
- Dural Motor Mount
- Formed Landing Gear
- Streamlined Wheels
- Celluloid, Nuts, Bolts And Everything Else Needed Except Power Unit.

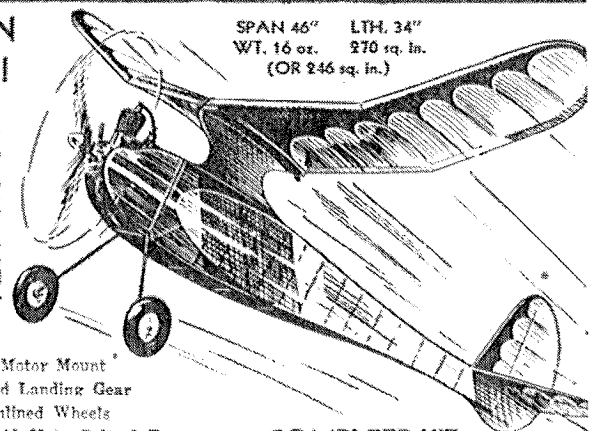
A Real "Cloud Tickler" FOR CLASS "B" CONTESTS

COMPLETE KIT (EXCEPT POWER UNIT) GP-5004 Only **$2.50**

THE "PLAYBOY JUNIOR" MODEL

A MODEL ANYONE CAN EASILY BUILD AND FLY!

A perfect class "B" model and, although it's designed to come under the new ruling of Class A models, with a maximum of 250 square inches, by cutting the wing span 4", this model will still be a first place contender in all future contests whether it is built by advanced or beginning gas modelers. It is a design no harder to make than a Wakefield type model, yet it allows the builder a better than average chance of winning. It is a perfect step-up design from "rubber" models to more serious gas model work. Span 46", Colored yellow and black.



SPAN 46" LTH. 34"
WT. 16 oz. 270 sq. in.
(OR 246 sq. in.)

KITS CONSISTS OF:

- Full Size Drawing
- Printed Out Wood Parts
- Plywood For Fire Wall
- Cut To Size Wood Strips
- Colored Tissue
- Wood & Tissue Cements
- Dural Motor Mount
- Formed Landing Gear
- Streamlined Wheels
- Celluloid, Nuts, Bolts & Everything Else Needed Except The Power Unit.

COMPLETE KIT (EXCEPT POWER UNIT) GP-5006 Only **$2.50**

CLEVELAND MODEL & SUPPLY COMPANY Inc. Modelmaking and Hobby Supplies
★ 4506-18 Lorain Avenue ★ ★ ★ Cleveland Ohio U. S. A. ★

IMPORTANT! READ SHIPPING INSTRUCTIONS ON INSIDE BACK COVER BEFORE ORDERING!
★ Always Give Page Number and Use Only One Line For Each Item Ordered To Avoid Errors — PLEASE. ★

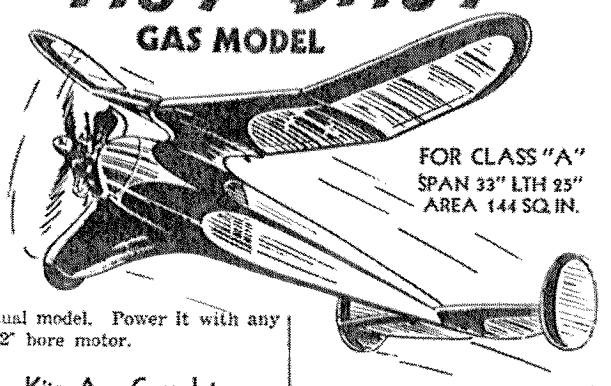
THREE BRAND NEW CLEVELAND-

A MOST UNUSUAL HIGH CLIMBING GAS MODEL

This Neat Little Highly Streamlined Job Has A Terrific Climb And A Relatively Flat Glide

"ITSY-BITSY"

GAS MODEL



FOR CLASS "A"
SPAN 33" LTH 25"
AREA 144 SQ. IN.

Being a radical departure from the orthodox aircraft design with its parasol arrangement of polyhedral wing, we have gone one step further by making the tiny (hence "Itsy-Bitsy") design into a mono-wheel job. We believe this will be the fore-runner of many such models for both pleasure and contest flying. It has an eliptical fuselage, and, while it may be color-striped in any manner, we illustrate an original combination, for this most unusual model. Power it with any 1/2" bore motor.

Kits Are Complete

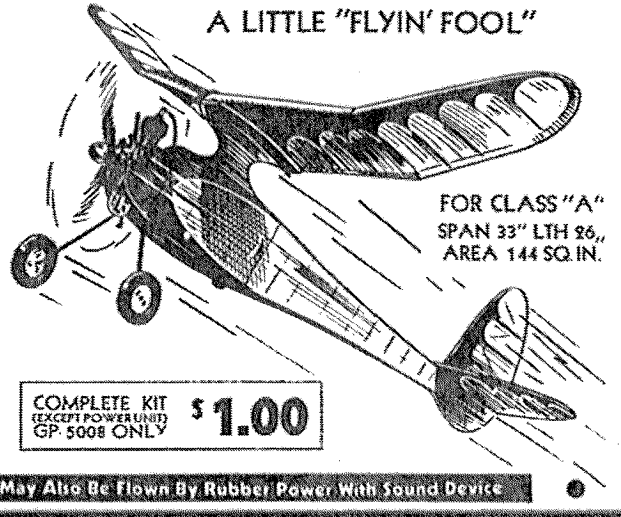
Everything is included within the kit needed to build the model except power unit. The same as in all our standard gas model jobs it has full size drawings very well detailed, printed out wood parts, cut to size wood strips, colored tissue, wood and tissue cement, landing gear wire, streamlined wheels, nuts, bolts, etc.

COMPLETE KIT (EXCEPT POWER UNIT) GP-5016 ONLY **$1.00**

May Also Be Flown By Rubber Power With Sound Device

"BABY PLAYBOY"

A LITTLE "FLYIN' FOOL"



FOR CLASS "A"
SPAN 33" LTH 26"
AREA 144 SQ. IN.

COMPLETE KIT (EXCEPT POWER UNIT) GP-5008 ONLY **$1.00**

May Also Be Flown By Rubber Power With Sound Device

A Perfect Step-Up Design For Larger Gas Model Work

No one could possibly hope for a more simple to build type gas model than this Baby Playboy to be flown with 1/2" bore motors. Wakefield models are known for their extreme ease of building and the Baby Playboy comes right within that same easy to build class. It'll give such a fast, furious climb so characteristic of these parasol winged climbers, you'll get a never to be forgotten kick out of its thrilling flights.

The Kits "Have Everything"

Within the kit is everything necessary to build the model except power unit. The same as with all our standard gas models jobs, it has full size drawings very well detailed, printed out wood parts, cut to size wood strips, colored tissue, wood and tissue cement, landing gear wire, streamlined wheels, nuts, bolts, etc.

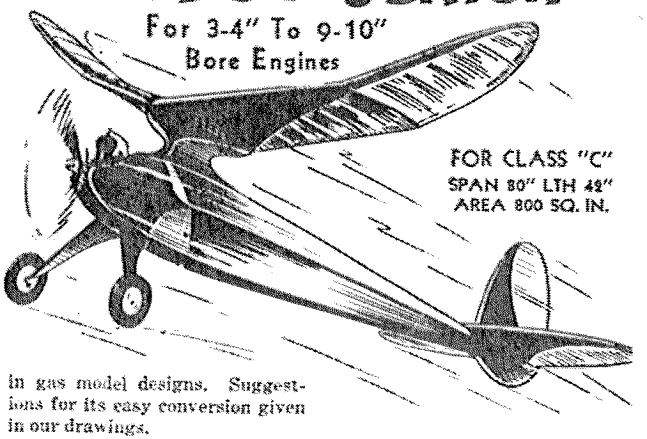
DESIGNED GAS POWERED MODELS!

A Clean-Cut Easy-To-Build Job

That Will Give You Great Pleasure To Make And Fly

"PLAYBOY SENIOR"

For 3-4" To 9-10" Bore Engines



FOR CLASS "C"
SPAN 80" LTH 49"
AREA 800 SQ. IN.

Designed primarily to fit into the new N. A. A. ruling for class "C" gas models for we believe this is the first model so designed, this big wing span model, generally follows the design of our famous Playboy Jr. with slight modifications necessary with the increase in size. A different color combination is employed and the landing gear wires are faired with balsa strips to take away that ungain'y look of large models with a single wire leg landing gear.

The design may also be converted into a very neat cabin job for these who do not particularly care for the present high wing vogue in gas model designs. Suggestions for its easy conversion given in our drawings.

What The Kit Contains

The kit, except for the power unit is absolutely complete (except the power unit of course), with everything necessary including full size drawing, printed out wood parts, plywood for fire wall, cut to size wood strips, colored tissue, wood and tissue cements, dural motor mount, formed landing gear and streamlined wheels, celluloid, nuts, bolts, shaped leading edge, etc.

COMPLETE KIT (EXCEPT POWER UNIT) GP-5017 ONLY **$3.95**

AMERICA'S GREATEST CONTEST LINE

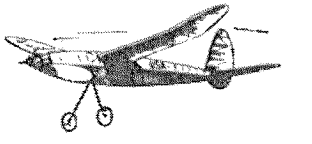
CLEVELAND Outranks the Field for the Greatest Number of Money, Prize and Honor Winners!

CLEVELAND DART
Class "A" indoor model. Complete kit K-5009 **25c**

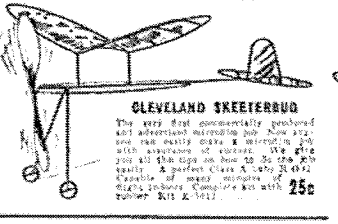
CLEVELAND ARROW
A Class "B" indoor model. Span 18" Complete kit K-5010 **25c**

CLEVELAND JAVELIN
A beautiful high performance Class "B" outdoor model. Span 29". Kit K-5011 complete **25c**

Now Ready! CLEVELAND ENDURANCE CONTEST TYPE MODELS
Flashing new line of free lance models introduced in response to popular demand. Be first in your town to build and fly them!

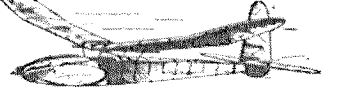


World's First Microfilm Production!



CLEVELAND SKEETERBUG
The very first commercially produced and advertised microfilm job. Now available to all. Nearly ready to fly with assurance of success. We give you all the tips on how to fly this job easily. A perfect Class A. Span 31-1/2. Capable of many minutes of flight indoors. Complete kit with rubber. Kit K-5012 **25c**

CLEVELAND WAKEFIELD GULL
Span 45", length 39", weight 8 oz. (can be made lighter where certain contests require). A polyhedral design with a terrific climb and a voluptuous glide. Keep your eye on this model in future Wakefield contests. It is also eligible in any N. A. A. Rubber contests such as the Mulvihill, Stout, etc. Kit complete except rubber (stripped so that you may always put in the freshest possible rubber for winning prizes), colored all set. Kit K-5013 **$1**



CLEVELAND THERMALIER
A perfect Class C stick model with a polyhedral wing. Span 28", length 28", weight 6½ oz. It also has a modest climb and a smooth fat voluptuous glide. Kit complete except for rubber (stripped so that you always put in the freshest possible rubber for winning prizes), colored all set. Kit K-5014 **50c**

Build and Fly These Cleveland Super-Values

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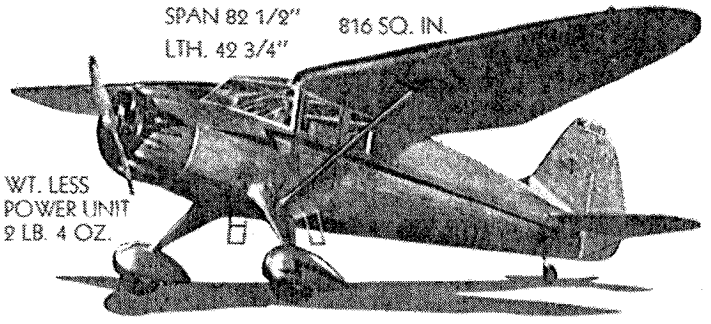
EVER POPULAR STINSON RELIANT

For Those Who Like Large Scale Jobs — America's Most Popular Radio Controlled Design

SPAN 82 1/2" 816 SQ. IN.
LTH. 42 3/4"



WT. LESS POWER UNIT 2 LB. 4 OZ.

This kit makes a fine looking gas model of the Stinson Taper Wing which is seen at almost every airport. The fuselage has a spacious interior for experimental equipment such as radio receiver, etc. The large wing ribs, as in full size practice, are built up of ⅛" sq. Wing panels are removable for transporting. Shock absorbing landing is fitted with pneumatic wheels and balsa shoes supplied partly finished. Designed for motors of ⅞" to 1⅛" bore. Don't miss building this model or the fun of its interesting "scale" flights.

HERE'S THE STINSON KIT CONTENTS

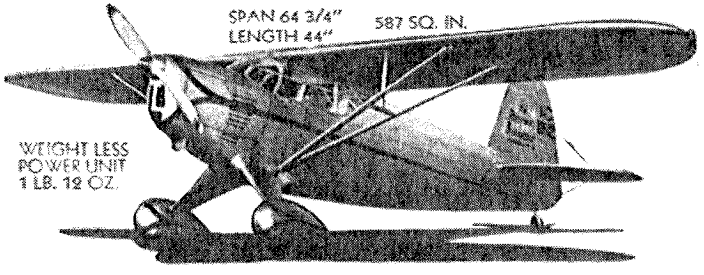
- FULL SIZE DRAWING
- PRINTED WOOD
- CUT WOOD STRIPS
- BAMBOO TISSUE
- PLYWOOD
- LARGE SIZE WIRE
- CELLULOID
- ALUMINUM & BRASS
- TURNED COWL FRONT
- TURNED FIRE WALL
- PNEUMATIC WHEELS
- WHEEL SHOES
- WOOD & TISSUE CEMENTS
- NUTS, BOLTS, WASHERS, SCREWS, ETC.

COMPLETE KIT (EXCEPT POWER UNIT) GP66 ONLY **$10.95**

REARWIN SPEEDSTER GAS MODEL

C-D's Popularly Known Scale Gas Model

SPAN 64 3/4" 587 SQ. IN.
LENGTH 44"



WEIGHT LESS POWER UNIT 1 LB. 12 OZ.

Modeled after the famous Rearwin Speedster. Thousands of these models have been built in the U. S. and all parts of the world. Wing panels and struts are removable, ribs are built-up of balsa as in full size practice. Rudder, elevators and ailerons are adjustable for flight. Shock absorbing landing gear is equipped with pneumatic wheels and wheel shoes. Motor and nose block may be made removable if desired. The Rearwin was designed for motors ⅝" to ⅞" bore. Many interesting enjoyable hours will be derived from building and flying this model.

THE REARWIN KIT CONTAINS THESE ITEMS:

- FULL SIZE DRAWING
- PRINTED WOOD
- CUT WOOD STRIPS
- SHAPED LEADING EDGE
- BAMBOO TISSUE
- PLYWOOD
- LARGE SIZE WIRE
- CELLULOID
- ALUMINUM & BRASS
- NOSE BLOCK
- PNEUMATIC WHEELS
- WHEEL SHOES
- WOOD & TISSUE CEMENTS
- NUTS, BOLTS, WASHERS, SCREWS, ETC.

COMPLETE KIT (EXCEPT POWER UNIT) GP69 ONLY **$7.50**

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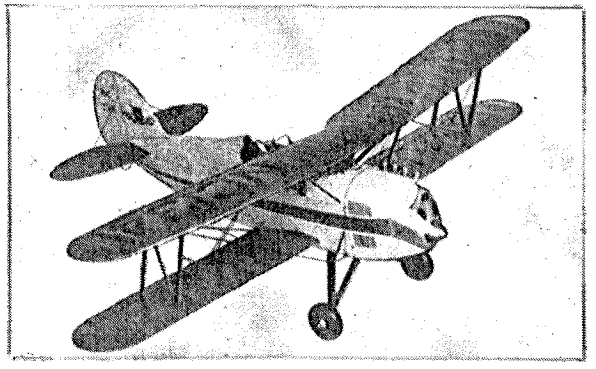
TALK ABOUT MODELS!

JUST TAKE A LOOK AT THESE—

7 PAGES OF THE FINEST AUTHENTIC DESIGNS AVAILABLE ANYWHERE

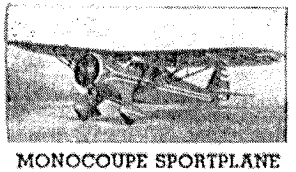


GREAT LAKES SPORT TRAINER

Truly, the "Trainer" is a virtue seldom passed up by any serious modelbuilder for it's the beautiful flagship of the C-D fleet, capable of fine performances. Cream fuselage and rudder, stripe and balance orange. Span 20". Order Kit SF-1, only **$1.50**

All Cleveland-Designed Scale Flying SF Series Kits Contain:

- Full Size Authentically Engineered Drawing and Instruction
- All Ribs, Bulkheads, Etc., Clearly Printed On Balsa Wood
- Strip Wood All Cut To Size
- Authentic Size Wood Wheels
- Wire For Fittings
- Tissue For Covering
- Propeller Hub and Blades
- Rubber For Motive Power
- Nose Bearing and Washers
- Celluloid and Thread
- Wheel Shoes When Needed
- Wood and Tissue Cements
- Colored Dopes
- Insignia, Etc., When Needed
- Drilled Nose Block or Turned Cowl Fronts To Suit The Design



MONOCOUPE SPORTPLANE

Two place monocoupe also used for pylon, cross country racing and stunting. Very popular and to be found at nearly every airport. Easy to build, a good flier and very attractive. A "first prize" winner everywhere. Span 24". Suggested coloring cream and orange. Dry Kit SF-28, only **$1.50**

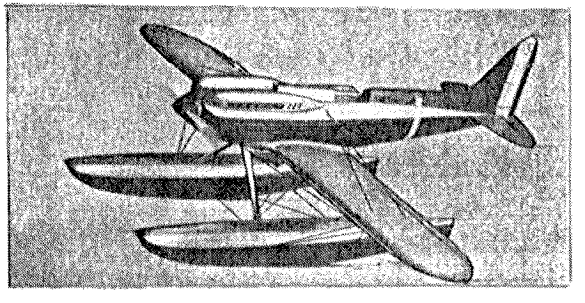


Howard Racer "Ike" (or "Mike")

These popular twins are known to all air race fans, having won many first place prizes. Our kit from which you may build either one, is easy to assemble into a beautiful decorative home ornament yet capable of interesting fast flights. Span 19 5/8", Color white. Kit SF-42 ... 95c

★ ★

ALL MADE TO SCALE OF ¾ INCH EQUALS ONE FOOT



SUPERMARINE S.6.B. SEAPLANE RACER

This airplane won for England the permanent possession of the Schneider Trophy, flying at 379.05 MPH. But the day following the races it flew approximately 415.2 MPH. The model pictured here duplicates the machine more authentically than any other flying model produced. It will make beautiful ROW flights at a high speed. All possible details are duplicated, including the proper windshield, motor louvers, dynamic balances, accurate coloring and most important of all, the fuselage radiators. It should have an honored place in every model maker's collection. It has a span of 22" length overall 21¾" Colored silver and blue. Complete Kit SF-19 ..... **$1.75**

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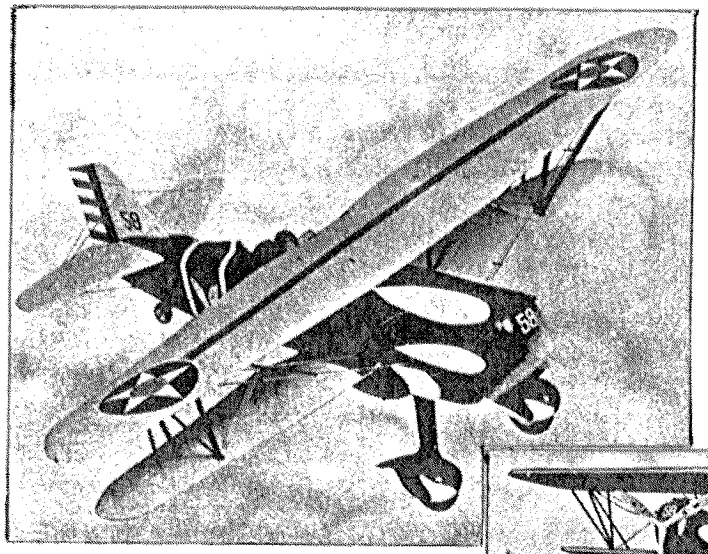
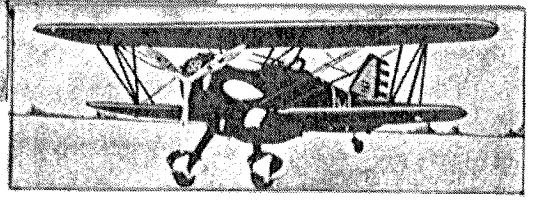
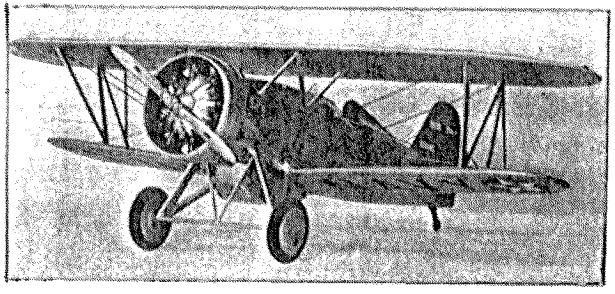


CURTISS HAWK P6E

This model is one of the most outstanding in the fine C-D fleet as it is one of the most advanced types to be found anywhere with its many fine authentic details and color. Army blue, yellow, red, black and white. Being similar to our SF-49 design, absolutely every tiny exterior detail that could possibly be copied is incorporated.

Span 23⅝". Complete Kit SF-21, only **$2.25**

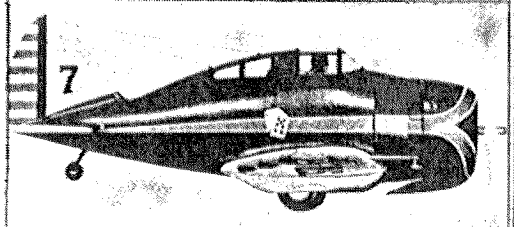


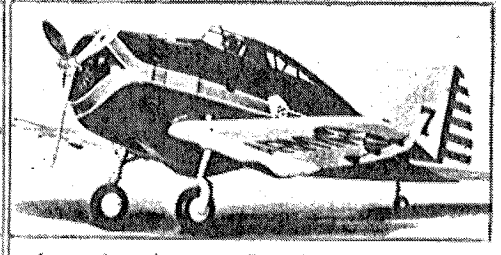


BOEING F4B4

Representative of Navy's high performance shipboard fighters, this Wasp powered biplane was built in great numbers. Noted for its speed, maneuverability, fast climb and long power dives. Model well detailed, flies fast and far. Span 22½". Colored silver, yellow and red. Complete Kit SF-29, only **$1.50**

THE ARMY'S FAMOUS SEVERSKY P35 FIGHTER





This is a regular wonder in appearance and performance, reputed to pack something more than 325 m.p.h. under its cowl, which isn't exactly standing still. Once you start building the C-D model of this really fine looking design you'll get the feel of a high powered performer from the start. Span 24". Blue fuselage, yellow wings and tail with a beautiful red stripe trimming, white outlined. Landing gear is retractable, for display. Complete Kit SF-61, postfree, only **$2.25**

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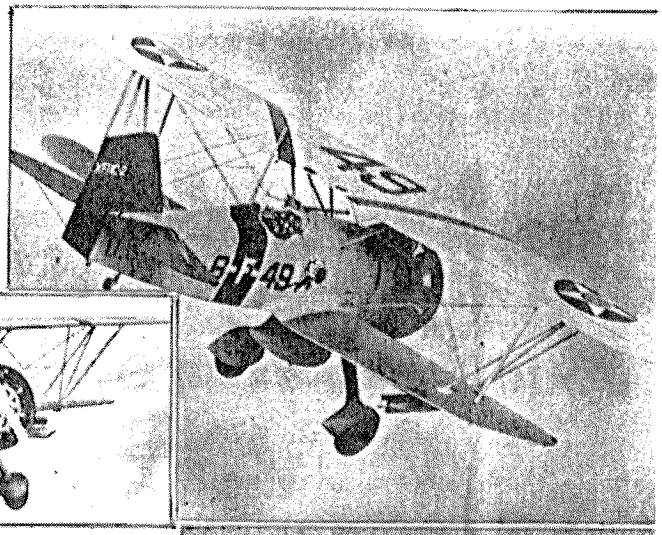
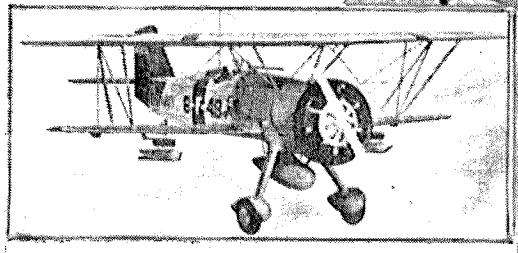
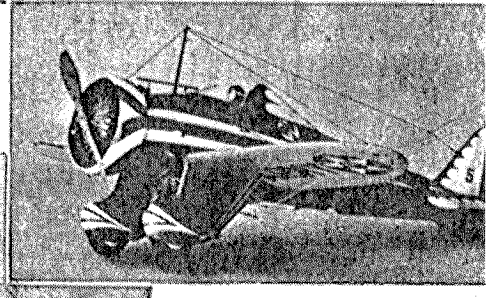
CURTISS GOSHAWK

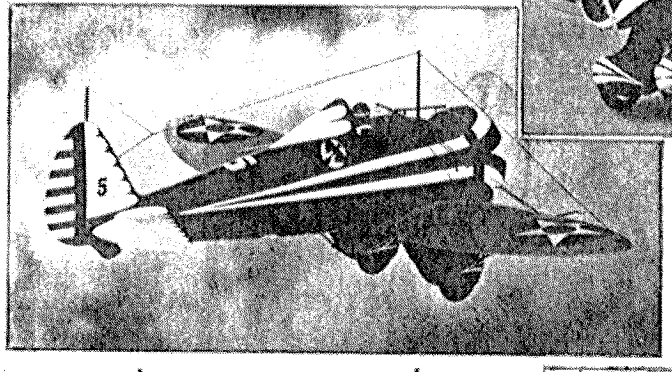
High speed U. S. Navy shipboard fighter P-17C-2. Designed for modelbuilders who want a thoroughly detailed scale model and one which, when completed, represents the acme of perfection in model building. Literally "walks away" with contests. Span 23⅝". Colored silver, yellow, gray and red. Complete Kit SF-49, only **$2.50**







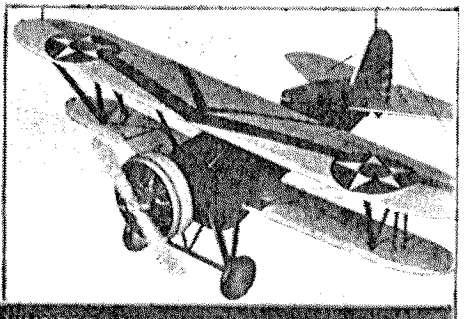
BOEING P26A



This U. S. Army beauty has a really dazzling appearance—now the most colorful of all C-D's. The photographs of it just could not do it justice. Model will make high speed flights for good distances. Colored yellow wings, blue fuselage and landing gear with a dazzling white and red scalloping. Span 21". Complete Kit SF-60, only **$2.25**

BOEING P12-E FIGHTER

Many employed in U. S. Army pursuit squadrons. Maneuverability, speed, fast climb and ability to dive vertically make them fierce defensive weapons. Model gayly colored like many real P12-E's with red trimmings, yellow wings, tail and strips. Army blue fuselage also color striped. Span 22½". Complete Kit SF-8, only **$1.50**



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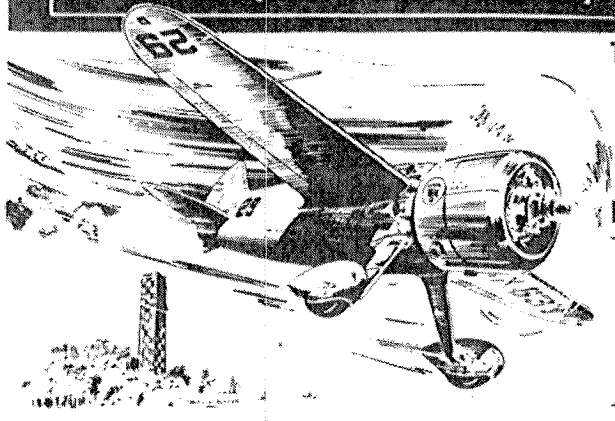
THOMPSON TROPHY WINNERS

Here is the Complete lineup of ALL WINNERS Since the Race was inaugurated
It's the most Famous lineup of Airdom and ALL ARE C-D MODELS!
Being extremely accurate models of these famous racers, much may be expected of them in authenticity — flash — and flights



This is the Famous
THOMPSON
TROPHY
Race Pilots
Prize So Highly

THE RACE HAS COME TO BE REGARDED AS THE WORLD'S PREMIER LANDPLANE SPEED CLASSIC



'39 Roscoe Turner's Own Turner-Laird

This famous all silver beauty is the one with which Col. Roscoe Turner terminated his illustrious racing career. It's a big husky full fledged race plane that more or less rebukes the idea of the necessity of race planes being small, long and slim. Although it is a "big" ship it looks very trim and neat. This kit still bears the design number SF-72 so whether you order the '38 or '39 number you will receive the same kit with information for either of both years sponsors trade marks which are supplied in every kit. Model is capable of some really fast flights. Span 18¾". Complete ¾" scale kit SF-72 only **$1.75**

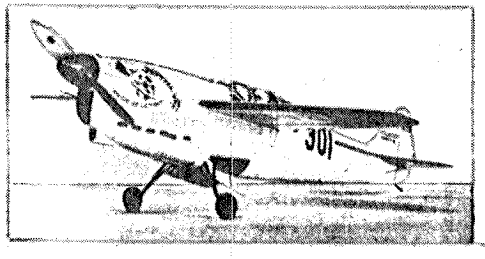


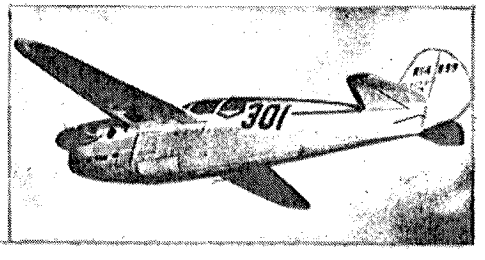
'38 Turner's "Pesco Special"
The same plane Turner used in 1939. Span 18¾". Color all silver. This kit will also build the 1939 model with the information supplied. Complete Kit SF-52 only **$1.75**

'37 Rudy Kling's Folkerts' Special Racer Is A Beaut'

This pretty cream and red 1937 Thompson Trophy winner has proven exceptionally popular with its torpedo like "longer than wide" design proportion. The model is made with an ingenious little landing gear which tucks away when in flight as the photographs show. The picture at the lower left shows it with flaps open and the "legs" down. When correctly lettered and stripped with its red, black and brown details it is a most unusual model and brings very favorable comments from everyone. Its span is 12" and is 16-7/8" long. Complete kit SF-71 **$1.50**







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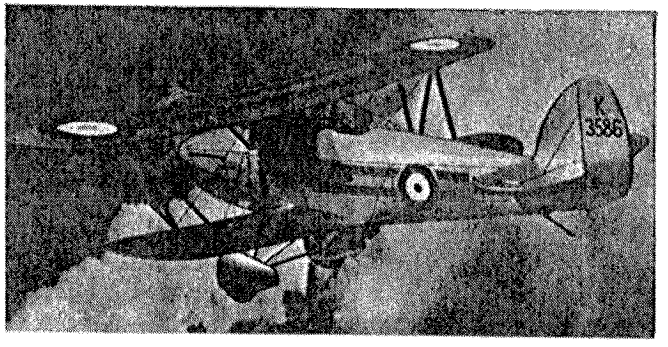


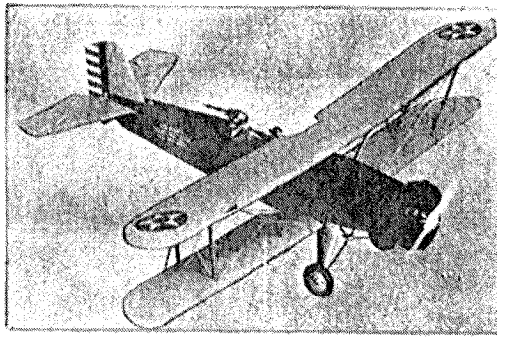
HAWKER "FURY"

The R. A. F. and other European air forces have larger numbers of this Hi-speed "Fury" single seater fighter than any other. This model is well designed and will give excellent flight performance. Span 22¼". Colored all silver with blue stripping. Complete Kit SF-20 ..... **$1.75**

DOUGLAS O-38

This model is a beautiful job, well designed, an excellent performer and is thoroughly detailed. It is colored in the usual yellow wings and tail surfaces, balance army blue except for the black details. We have adopted the lettering and numbering of the California group of the National Guard, but you may easily adopt your own favorite. Span is 30". Complete Kit SF-47 ..... **$2.50**





BISHOP'S NIEUPORT

This fighter was made famous by the Canadian ace, Col. W. A. Bishop. It was fast and maneuverable. Model drawn up from data furnished personally by Col. Bishop. It is capable of nice flights. Span 19¾". Authentically colored silver and blue. Complete Kit SF-12 ..... **$1.50**





FOKKER D-VII FIGHTER
Used by German aces. It earned the reputation of most efficient fighter of the world war in actual service, being fast, maneuverable and could make long dives without shedding its wings. Redesigned model is 100% authentic, and beautifully colored, orange, green and white. Great flights. Kit SF-15 ..... **$1.95**

RICKENBACKER'S SPAD XIII

This beauty is the most complete and authentic kit of the Spad XIII ever designed. Its span is 19", length 15⅝". Colored yellow wings, tail surfaces and lower portion of nose and landing gear, balance green except small details which are black. Complete Kit SF-13, only **$1.50**



British Sopwith Camel Fighter
Designed during war as high performance single seater fighter. Known for extreme maneuverability. The characteristic for identifying this plane in flight was a straight top wing with a decided dihedral of the lower wing. Span 20-7/8". Cream with flashy checkered brown trimming. Kit SF-19 ..... **$1.25**



NIEUPORT 28 FIGHTER
Flown by many wartime French and American aces. High regard is still held for the performance of this beautifully designed thin-winged plane. The model is 150% authentic and fully detailed. Easy to build and a graceful high flier. Span 20-3/4". Color all silver. Kit SF-30 ..... **$1.50**



Polish P-6 Fighter "Ponstwowe"
Famous gull wing fighting plane acknowledged one of the finest fighting designs today. Large quantities of this design form the backbone of Poland's military strength. Kit a pleasure to build up into a fast long distance flying model with "duration." Span 25-1/8", color all silver. Kit SF-6 ..... **$1.95**

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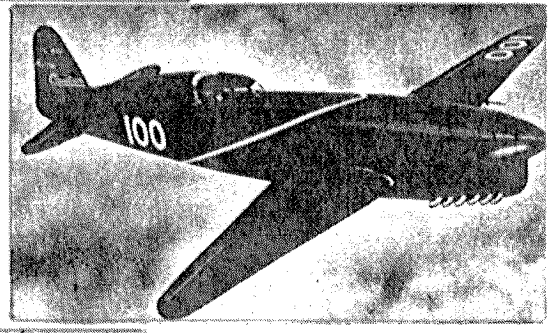
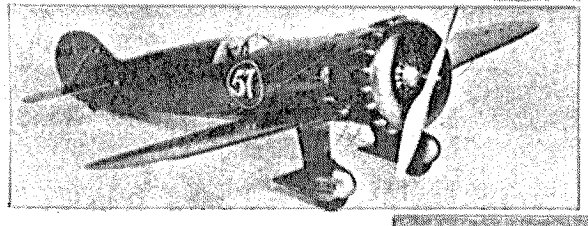
'31 BAYLES' GEE-BEE

This stubby little "flying milk bottle", as it was nicknamed, won the '31 Thompson Trophy Race piloted by Lowell Bayles, flying 236.23 m.p.h. Has a very short fuselage which made it very maneuverable flying the pylons. The model, while tricky, flies well and is the most authentic and accurate of its type on the market. Wing span 17⅛". Colored yellow with black scalloping. Complete Kit SF-17 ..... **$1.50**

'36 FRENCH CAUDRON



Piloted by Michel Detroyat, it won the 1936 Thompson Trophy Race at 264.26 m.p.h. A speedy flying little beauty, all blue. Has many interesting details, retractable landing gear, a neat "pin stripe" red, white and blue fuselage marking, etc., etc. Span 16⅝", length 17⅝". Complete Kit SF-63, only **$1.50**

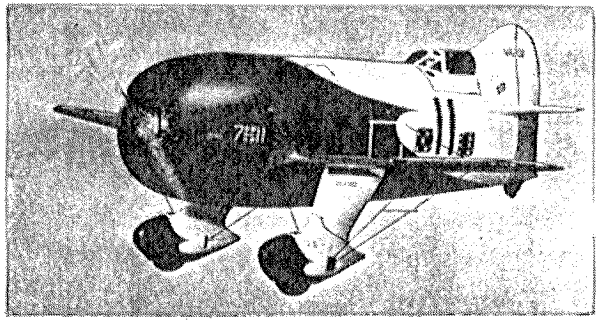


'34 WEDELL-WMS.

Col. Roscoe Turner won the 1934 Thompson race with this "homemade" Wedell-Williams ship at 249.12 m.p.h. in the 100 mile race—12 laps in a treacherous 8⅓ mile triangular course. Model is beautifully detailed with built up motor and cowl and flies excellently. Colored all gold. Span 19½". Complete Kit SF-48, only **$1.75**

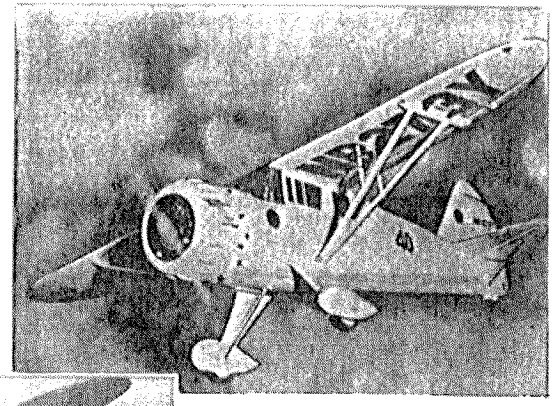
'32 GEE-BEE

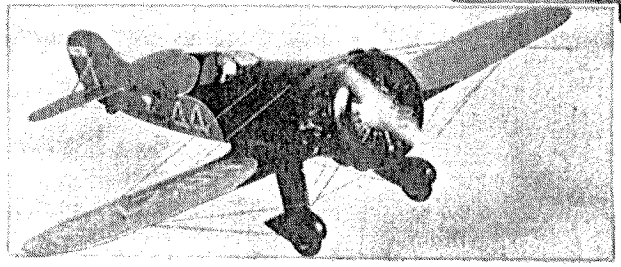
The daring, stubby, "bumble-bee" design that took first place in Thompson Trophy Race of 1932. "Jimmy" Doolittle flying the 100 mile course at an average of 252.68 m.p.h. which was the Thompson "high" record until the Caudron record of 1936. Make this most unusual flying model that **really** flies. Span 18⅝". White with red scalloping. Complete Kit SF-27 ..... **$1.50**



'35 "MISTER MULLIGAN"

A beautiful and authentic miniature, perfect in every detail. This plane, flown by Harold Neumann, won the Thompson speed classic by flying 220.19 m.p.h., winning the coveted trophy for 1935. Model exterior as detailed as the prototype and all white with gold lettering and black trim. You may make authentic motor and cowl or use the turned cowl front we also supply to make up a dummy front. Model is 23⅝" in span. No other Mulligan could ever take its place for your Thompson lineup. Complete Kit SF-52, only **$1.75**





'33 WEDELL-WMS.

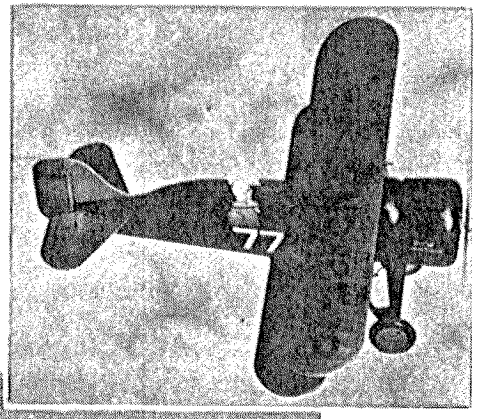
Jimmy Wedell's own "homemade" racer. He won the Thompson Trophy Race with it in 1933 flying at 237.95 m.p.h. In 1934, Doug Davis won the Bendix Trophy with this same ship. Model is very accurate and excites interest and favorable comment everywhere. Span 19½". Colored red and black. Complete Kit SF-47, only **$1.75**

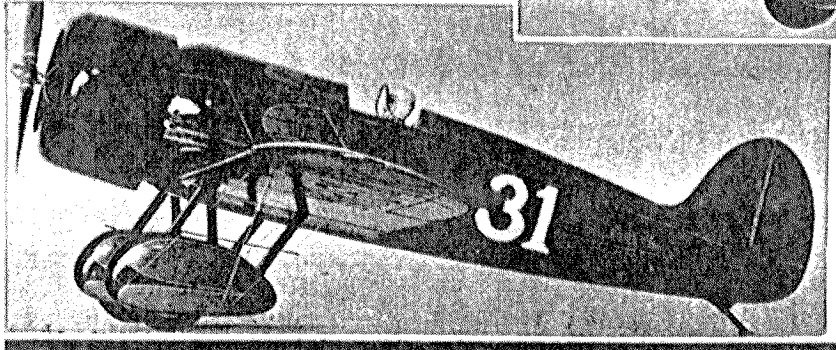
'30 "SOLUTION"

Charles Speed" Holman won the Thompson Trophy Race of 1930 in this biplane at a speed of 201.90 m.p.h. V model employs the best type of biplane construction. Recommended for those who want an attractive fast flying model, it makes a beautiful display. Span 15⅞". Colored gold and black. Complete Kit SF-46 ..... **$1.50**

'29 MYSTERY SHIP

This beautiful ship in 1929 started a new era in landplane racer design. Flown by Douglas Davis it won the race with a speed of 194.93 m.p.h. Head your Thompson Trophy lineup with this model. If neatly made, it will be hard to beat for beauty of lines and finish. Highly recommended for exhibition contests. Span 21¾". Red with black scalloping, green trim. Complete Kit SF-2, only **$1.75**





PLANS FOR MOTORIZED PYLON TO DISPLAY YOUR MODEL IN EVERY SF SERIES KIT FOR BUILDING THOMPSON TROPHY WINNERS!

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CLEVELAND'S DWARF KITS ARE WORLD'S ★ ★ ★ BIGGEST LOW PRICED KIT VALUES ★ ★ ★

TO 1-2 in. = 1 ft. SCALE

These are the finest kits that could possibly be produced for anywhere near the price and are far greater values than could be offered by any other manufacturer. We took advantage of our "SF" experience so have been able to produce these models at these extremely low prices. The kits build up such accurate and authentic models, they are rapidly replacing solid scale model work, 1/2" scale and larger and in many cases the smaller fields too, although they are not intended for this purpose. They are all flying models. The kits contain absolutely everything necessary to build complete the model, just as our fine SF line of models do, except for liquids, meaning wood cement, paper cement and the major items for which suggestions are given for all designs below. They truly are the world's biggest small size kit values, and really must be seen, built and flown to be fully appreciated. Hundreds of thousands already built throughout the United States and 62 foreign countries.

Complete But No Liquids



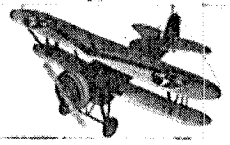
GREAT LAKES SPORT TRAINER
This orange and cream airplane is the flagship of the C-D fleet. Span 15¾".
Complete Dry Kit D-1 ..... $.50



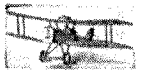
Travel Air Mystery Ship
Span 14½". Suggested coloring: red, black outlining, green trim.
Kit D-2, only $.50



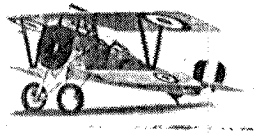
DE HAVILLAND 4
Famous U. S. Fighter. Span 21¼". Sug. col.: olive drab, red and white.
Kit D-3, only... $.85



ARMY BOEING P12-E
This popular fighter has a span of 12" usually colored yellow and olive drab for blue instead of olive drab.
Complete Dry Kit D-5 ..... $.60



GENUINELY REALISTIC SCOUTING SE-5
Excellent flyer. Span 13¼". Sug. col.: Natural cream color.
Kit D-9, only..... .40



COL. BISHOPS NIEUPORT
This beautiful little ship has Col. Bishops own number C-5 on the side. Is authentically colored silver with blue nose and details.
Span 13½". Complete Dry Kit D-12 $.50



as sturdy as trainer route and that's mighty fast. are always to be expec Span 28". Will also R.C are quickly dropped. W uids. Kit R-X5001, only



'31 LOWELL BAYLE'S GEE-BEE
A real beauty. This Thompson Trophy design is some times referred to as the "Flying Milk Bottle". Span 11¾". Authentic coloring yellow, black scalloping.
Dry Kit D-37..... $.50



VON RICHTHOFEN'S FOKKER TRIPLANE
Span 11¾", length 9¾". Sug. col.: all red.
Kit D-14, only... .50



HOWARD'S RACER "PETE"
This trim little racer has long been a favorite with model builders everywhere. Very attractive, all white. Span 10"
Dry Kit D-18..... $.25



SUPERMARINE S6-B RACER
This beautiful R.O.W. model is a replica of the design which won for England the permanent possession of the coveted Schneider Trophy. Span 14½". Silver and Blue.
Dry Kit D-13..... $.65



HAWKER FURY
England's Interceptor Fighter. Span 12". Sug. col.: all silver
Kit D-20, only... $.70



ARMY CURTISS HAWK P6-E
One of the most beautiful looking airplanes ever designed and owl color striped as we recommend with black and white it is unsurpassed for contest work. Olive drab fuselage, sur faces yellow. Span 13½". Dry Kit D-21 $.85



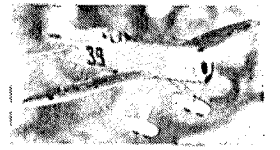
Jimmy Doolittle's Famous Gee-Bee
This supersonicster Gee-Bee is often referred to as the "Bumble Bee" as the illustration suggests. White beautifully scalloped with brilliant red.
Span 12½". Dry Kit D-17 $.50



MONOCOUPE SPORT PLANE
We believe this particular model kit has won more trophies than any other scale model airplane ever designed. Beautiful detail.
Cream & orange. 16". Dry Kit D-25 $.50



NAVY BOEING F4B-3 FIGHTER
This beautiful little all silver number with yellow wings and green tail surfaces may be displayed either with or without the belly gas tanks. A consistent winner. Span 15"
Dry Kit D-29..... $.60



HOWARD'S WHITE RACER "IKE"
While generally speaking this is not a beginners model many have started to build C-D's with this design and have quickly learned things which took older builders years to find out. Span 10½".
Dry Kit D-12 ..... $.25



DOUGLAS 0-38 OBSERVATION
This beautiful snappy looking flying national guard trainer is another consistent winner everywhere. Colored yellow and blue for olive drab).
Span 20"
Dry Kit D-13..... $.85



LAIRD SOLUTION RACER
Very pretty appearance. Span 10½". Sug. col.: gold and black
Kit D-46, only $.50



'33 Wedell's Own Wedell-Williams
This model is highly detailed and attractive when properly colored red trimmed in black. A necessary addition to any Thompson line-up. Span 18".
Dry Kit D-37..... $.50



'34 TURNER'S WEDELL-WILLIAMS
With the beloved Roscoe Turner's popularity this ship still takes first place in the hearts of many Thompson Trophy enthusiasts. Span is 18". Authentic coloring is all Wedell Williams gold
Dry Kit D-45..... $.50

BEAUTIFUL NEW C-D DWARFS 1-2" SCALE DRY KITS

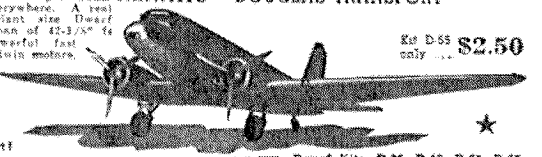
DWARF KITS UNDER $1.00 are dry kits which means they do not contain dopes

WET DWARF KITS
You can make wet (absolutely complete) kits of any of these Dwarf model kits by the simple addition of one ounce each of tissue and balsa cement and one ounce of the main colors at 10c per bottle added to the prices shown here.



FOKKER D-8 FIGHTER
Finest world war type Span 12¾". Sug. col.: cream and blue.
Kit D-34, only... .45

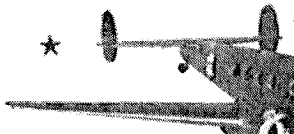
GIANT OF THE AIRWAYS — DOUGLAS TRANSPORT
Well known everywhere. A real beauty, this giant size Dwarf which has a span of 42-3/8" is capable of powerful fast flights with its twin motors. A complete, authentic C-D kit with liquids "in everything. Colors all silver. You will never regret building it!



Kit D-55 only ... $2.50

NOTE: Dwarf Kits, D-35, D-48, D-58, D-65 are absolutely complete with balsa, tissue, cement and colored dopes.

THE LOCKHEED ELECTRA
One of the Great Silver Fleet. The dry kit as all C-D's contains everything necessary to build it, which of course, means all the highest quality of strip wood, all the necessary curved parts printed ready to cut out, wheels, covering tissue cements and colors, etc., etc., and last, but most important, a full size Terze C.T. drawing and instructions. A really beautiful model that makes an imposing sight in flight, colored all silver. Kit D-65, complete. $1.95



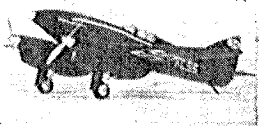


Pride of Pilots and Modelbuilders
BOEING 247 TRANSPORT
The ship we all read so much about in daily papers. Model span 37". Wizard for flights. Powerful. High speed. All curved wood printed out, lifted in; fuselage, balanced controls, etc. Grey colored. Large 17"x44" drawings and data. Kit D-35, only..... $1.95

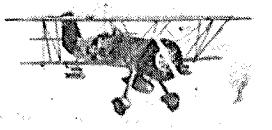
TWO VERY POPULAR LARGE SIZE DWARFS



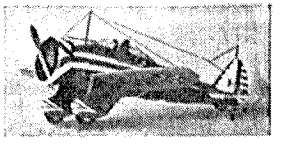
Army Model Builders are Strong for U. S. ARMY MARTIN BOMBER
Fastest service Bomber in the world. Span 35 5/8". Colored U. S. Army yellow, olive drab, black details. Marvelous landing gear (not retractable). Turned balsa invisible hub wheels. Printed out wood. A masterpiece of detail and beauty. Kit D-45, only..... $1.95



The Talk of the British Empire
DE HAVILLAND "COMET"
High speed flyer, pulled by 2 powerful little motors. Extraordinarily beautiful. Span 22". Kit absolutely complete (but NO LIQUIDS).
Kit D-51, position only ..... $.95



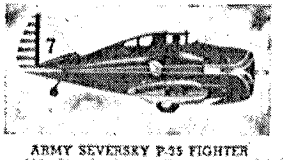
NAVY CURTISS F11C-2 "GOSHAWK"
This is one of the most beautiful detailed models ever produced anywhere and is a contest favorable walks away with first prize if all is neatly done. Span 13¾". Gray, silver, yellow, red, green tail. Dry Kit D-19 $.85



ARMY BOEING P26-A FIGHTER
Really dazzling. Has yellow wings, blue fuselage and gorgeous red and white scallops and stripes. Span 14". Dry kit D-60 $.85



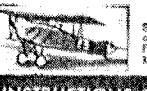
THE BEECHCRAFT
This beautiful all white design trimmed in red is one of the finest C-D commercial planes with its folding landing gear detail, radio antenna, opening door, etc. Span 15⅞".
Dry Kit D-44 ..... $.85



ARMY SEVERSKY P-35 FIGHTER
Span 16". Blue fuselage, yellow wings and tail nicely trimmed with red stripe, and white outline. Landing gear retractable. Dry Kit D-61 $.85



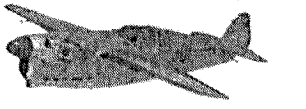
WARTIME BRISTOL FIGHTER F2-B
Span 19-1/2". Cream wings and tail, green fuselage, silver nose, red and white trim.
Complete dry kit D-68 ..... .75



FOKKER D-7 FIGHTER
Span 14½". Sug. col.: orange green & white
Fine flights.
Kit D-15 only $.60



ROSCOE TURNER'S TURNER-LAIRD
This is the beauty with which Colonel Roscoe Turner won both the 1934 and 1935 Thompson Trophy races. The only difference between the two years being the ship in 1934 was named "Miss Peace" with "Peace Special" name on the fuselage side. The 1935 winner bore the Champion Spark Plug trademark on the fuselage side. Colored all silver. Span is 12⅞". Information is supplied for both years design. Kit D-52 only ..... $.50



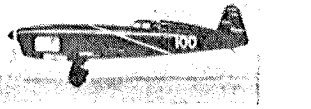
'37 FOLKERT'S SPECIAL RACER
This striped wing cream and red racer took first place in the 1937 Thompson Trophy Races by Rudy Hilpe. Even though the model has a span of 8" its length is 11¼" making it a very unusual design in the Thompson race line-up. Dry Kit D-71 ..... $.50



HOWARD '35 "MR. MULLIGAN"
Another all white beauty well liked by model builders everywhere. Has olive detail.
Span is 13⅝". Dry Kit D-32..... $.50



CUSTOM WACO C-8 CABIN PLANE
Has wing panel, stabilizer, rudder light yellow, fuselage white, striped with red. Black lettering Span 17-1/4". Dry Kit D-62 ... $.85



'36 FRENCH CAUDRON RACER
This all blue, 1936 Thompson Trophy Winner was entered by France. An attractive, speedy, design. Span 11½".
Dry Kit D-63 ..... $.50

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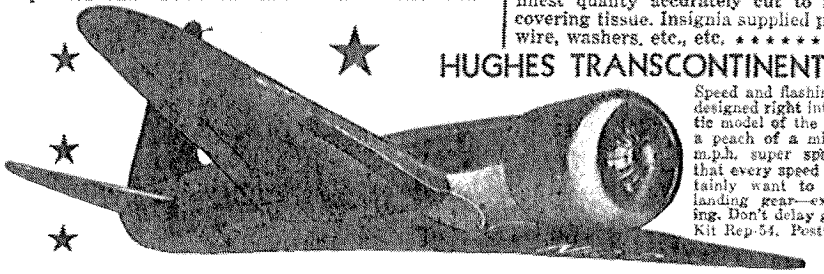
THE EVER POPULAR C-D "REP" KITS

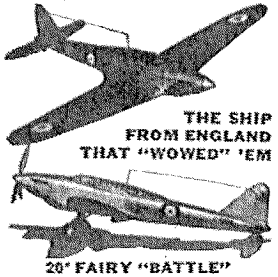
ALL REP KITS CONTAIN THE FOLLOWING:
A full size, detailed mechanical drawing. All wood printed out. Finished scale wood wheels. Fine turned cowl front or drilled nose supplied. Small bearing button. Balsa prop. Airplane rubber. Real celluloid for windshields. All strip wood of the finest quality accurately cut to size. Japanese covering tissue. Insignia supplied printed out. Glue, wire, washers, etc., etc. ★★★★★★★★★★★★★★★★★



HUGHES TRANSCONTINENTAL RACER

Speed and flashing performance are designed right into this clever realistic model of the Hughes Racer. It's a peach of a miniature of the 350 m.p.h. super speed flyer—and one that every speed enthusiast will certainly want to build. Retractable landing gear—excellent stream-lining. Don't delay getting it. Kit Rep-54. Postfree, only **50¢**

England's Best!



THE SHIP FROM ENGLAND THAT "WOWED" 'EM

20" FAIRY "BATTLE"

Trim, sleek, swift—being a design that plane designers throughout the world are keenly watching. 1000 of these are being built for England's Fighting and Bombing Fleet. "Rep" Model is careful reproduction of prototype—flies fast, long and with exceptional grace. Order complete Kit REP-57..... **25¢**

ANOTHER OF ENGLAND'S WONDERFUL FIGHTERS



HAWKER "HURRICANE" FIGHTER

Landing gear may be fully retracted as on the prototype. Insignia supplied. A 'peach' for flights. Order complete Kit REP-58, only..... **25¢**

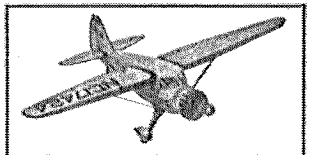
BUILD THESE ENGLISH BATTLEPLANES

The Two "Scrappers" At Left Are Making Western Front History Daily In The European War.



They're All Raving About This RYAN SPORTSTER ST

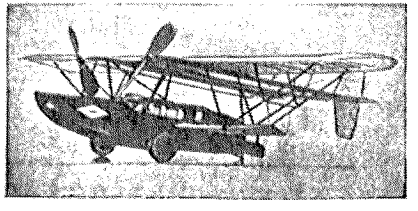
This beautiful little two place job is well known to modelbuilders everywhere and our model looks as pretty as does the prototype. Now used for Army training. Span of course 20". Model stable and fast. Order complete kit REP-56 only..... **25¢**



20" STINSON RELIANT CABIN PLANE

Beautiful taper wing, "Rep" design "looks like a million bucks" when finished. Its the most popular commercial plane in the U. S. Very graceful model in flight—unusually stable. Kit REP-48, complete only..... **25¢**







A Great Contest Winner
CONSOLIDATED A-11 ATTACK

(Formerly P-30). A "wow" for flights. Loads of detail. Movable machine gun, scale prop, radio mast, etc., etc. Many flying contests have been won with this model. Order this low priced model. This is one of the very latest U. S. Army designs. Order complete Kit REP-55, only..... **25¢**

CLEVELAND (SIKORSKY) AMPHIBION

This graceful ship modeled along the lines of the Sikorsky S-38, is a really successful R O G and R O W twin motor model which will give long flights. It will easily fly several hundred feet when launched off water—for which the wheels are retractable instantly. The R O G flight will be just as great. As the beautiful flights of this model are Well known in practically every model circle, little more need be said about its flying capabilities. It has a span of 27" and length 16½" (to approximately 3/8" scale) weight 1.2 ozs. Order complete Kit REP-5001 only..... **25¢**



GRUMMAN F2F-1 FIGHTER

Latest Navy fighting ship, used on aircraft carriers. Big wing area makes model splendid flyer. Drawings cover both retracted or extended landing gear. Order complete Kit REP-53, only..... **25¢**

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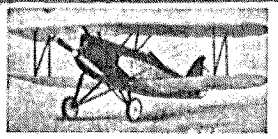
NOW ONLY 25c AND 50c



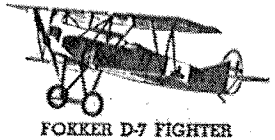
GREAT LAKES TRAINER

This famous design, formerly the flagship of the world-famous C-D fleet, has set the pace for rubber driven scale flying model aircraft. Features never before found in model airplanes were introduced in this design for the first time. It is still one of the most popular models after many years, being a persistant good performer.
Being a real good looking job with flight performance plus, makes it a top ranking ship with all who build it. One of these designs flew 3,603 feet shortly after it was first introduced. It is a ¾" scale model, the span being exactly 20". Suggested color orange and black—simple to build. Order complete kit REP-57 only..... **25¢**



CURTISS HAWK P6-E FIGHTER

A beautiful detailed model, span 20", the ever popular U. S. Army fighter used at almost every Army Base. Good stable speedy flights can be obtained from this model. With its suggested coloring of yellow, olive drab and black it is one of the most beautifully detailed ships ever designed. Complete kit REP-51 only..... **25¢**



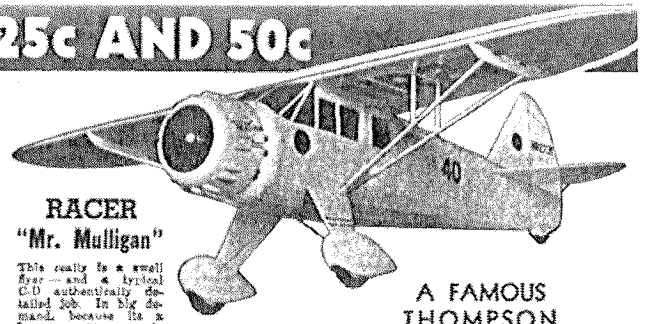
FOKKER D-7 FIGHTER

About the most famous World War fighter is the Fokker D-7. It has seen plenty of scraps and was well liked by all pilots who saw it. The kit builds up as beautiful a looking job as any kit could and the completed model turns in good flight performance, too. Suggested coloring orange, green and white. Complete kit REP-15 only..... **25¢**



SPECIAL GRUMMAN "GULFHAWK"
Maj. AL Williams Famous Ship

This famous orange beauty trimmed in blue is piloted exclusively by our own famous Maj Alford J. Williams to whom we are indebted for assisting us in securing design data). It is beautifully detailed and exceptionally attractive. Model flies very well having plenty of wing area. Both stationary and retractable landing gear (for exhibition and for first pylon contest winning). Span 20". Order Kit REP-10 only..... **50¢**



RACER "Mr. Mulligan"

This really is a swell flyer — and a typical C-D authentically detailed job. In big demand, because its a beauty, still easy to make. Better hurry your order. Order Complete Kit REP-52 only **25¢**

A FAMOUS THOMPSON TROPHY WINNER



IMPORTANT! READ SHIPPING INSTRUCTIONS ON INSIDE BACK COVER BEFORE ORDERING!
★ Always Give Page Number and Use Only One Line For Each Item Ordered To Avoid Errors — PLEASE. ★

BALSA, WHITE PINE, PLYWOOD, PROPELLERS, ETC.

WOOD FOR MODEL MAKERS

The sheets and strips of balsa wood and white pine listed or this page are cut only from the finest lumber available.

Cut balsa wood usually obtainable is cut at random, that is, without any selection from plank balsa on hand. In our factory at Cleveland where large quantities are used, being cut into many millions of pieces annually, the wood is sorted by texture for the size to be cut. For example, very hard is employed for spars and small sizes, then hard, medium hard, and soft for various sizes according to the strength required. It is not the soft, spongy material, quickly and cheaply cut without regard for the purpose which it is to be put. All pieces are cut smooth to close limits.

Every piece is guaranteed to be accurate as to cross-sectional dimension.

While we may not list all sizes a modelmaker might need at certain times they can easily splice 36" lengths for instance, to make a 72" length. Or in the case of blocks, two 1 x 3 x 18" for instance can be glued side by side to make a block 1 x 6 x 18". Other sizes can be glued up accordingly using regular balsa wood cement. Short lengths or Prop blocks also can be cut off from 18" or 36" lengths.

We list the best grade of white pine now stocked for ship, aircraft and railroad model builders. This wood is also strongly recommended where highly stressed thin parts on model aircraft are used. We reserve the right to substitute Basswood for white pine especially on sizes 3/16" square and smaller.

BALSA WOOD STRIPS

Size	18"	36"
1/32" sq.	4-.01	.....
1/32x1/16"	4-.01	.....
1/32x3/32"	3-.01	.....
3/64" sq.	4-.01	.....
3/64x3/32"	3-.01	.....
3/64x1/8"	3-.01	.....
1/16" sq.	4-.01	2-.01
1/16x1/8"	3-.01	3-.02
1/16x3/16"	2-.01	.01
1/16x1/4"	2-.01	.01
3/32" sq.	3-.01	3-.02
3/32x3/16"	2-.01	.01
3/32x1/4"	2-.01	.01
1/8" sq.	3-.01	3-.02
1/8x3/16"	2-.01	.01
1/8x1/4"	2-.01	.01
1/8x5/16"	.01	.02
1/8x3/8"	.01	.02
1/8x1/2"	2-.03	.03
3/16" sq.	3-.02	3-.04
3/16x1/4"	3-.02	3-.04
3/16x5/16"	.01	.02
3/16x3/8"	2-.03	.03
3/16x1/2"	2-.03	.03
3/16x3/4"	.....	.04
3/16x1"	.....	.05
1/4" sq.	.01	.02
1/4x5/16"	2-.03	.03
1/4x3/8"	2-.03	.03
1/4x1/2"	.02	.04
1/4x3/4"	.....	.05
1/4x1"	.....	.06
5/16" sq.	2-.03	.03
3/8" sq.	.02	.04
3/8x1/2"	.03	.06
3/8x3/4"	.....	.05
3/8x1"	.....	.06
1/2" sq.	.03	.06
1/2x3/4"	.04	.08
1/2x1"	.05	.10
5/8x1"	.06	.12
3/4" sq.	.06	.12
3/4x1"	.07	.14
1" sq.	.08	.16
1x1-1/2"	.12	.24
1-1/2" sq.	.15	.30
1-1/2x2"	.20	.40
1-1/2x3"	.30	.60
1-1/2x6"	.50	.95
2" sq.	.20	.40
2x3"	.30	.60
2x4"	.38	.75
2x6"	.65	1.25
3" sq.	.55	1.10

THREAD FOR BRACING

Gray colored thread to represent wires on scale models. Use a needle to sew thru struts etc. 50 ft. Spool **$ .05**

WHITE PINE STRIPS

Size	18"	36"
1/32" sq.	3-.01	.....
1/32x1/16"	3-.01	.....
1/32x3/32"	2-.01	.....
3/64" sq.	3-.01	.....
3/64x3/32"	2-.01	.....
3/64x1/8"	2-.01	.....
1/16" sq.	3-.01	3-.02
1/16x1/8"	2-.01	.01
1/16x3/16"	2-.03	.03
1/16x1/4"	2-.03	.03
3/32" sq.	3-.02	3-.04
3/32x3/16"	.01	.02
3/32x1/4"	.01	.02
1/8" sq.	3-.02	3-.04
1/8x3/16"	.01	.02
1/8x1/4"	.01	.02
1/8x3/8"	.02	.04
1/8x1/2"	.02	.04
3/16" sq.	.01	.02
3/16x1/4"	2-.03	.03
3/16x3/8"	.03	.06
3/16x1/2"	.03	.06
1/4" sq.	2-.03	.03
1/4x5/16"	.02	.04
1/4x3/8"	.03	.06
1/4x1/2"	.03	.06
5/16" sq.	.02	.04
3/8" sq.	.03	.06
3/8x1/2"	.04	.08
1/2" sq.	.04	.08
1/2x3/4"	.05	.10
5/8" sq.	.06	.12
3/4" sq.	.09	.18

BIRCH PLYWOOD

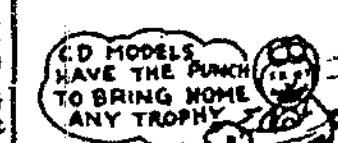
Very strong, 3 ply, used mostly on gas model airplanes for fire walls, landing gear support, bulkheads, gussets, etc. All thicknesses supplied. 6" by 6" and 6" by 12" sizes.

Thickness	6x6"	6x12"
1/16"	.18	.36
1/8"	.12	.24
3/16"	.18	.36

BAMBOO

Fine Bamboo strips for model airplane builders. Will split straight and scrapes very easily. Strips are approx. 1/32 x 1/4" x 8" long.

Per Dozen Pieces .... $ .08





SHEET BALSA WOOD

Size	2x18"	2x36"	3x18"	3x36"
1/64"	.03	.....	.....	.....
1/32"	.02	.04	.04	.08
3/64"	2—.05	.05	.05	.10
1/16"	2—.05	.05	.05	.10
3/32"	.03	.06	.06	.12
1/8"	2—.07	.07	.07	.14
3/16"	.04	.08	.08	.16
1/4"	.05	.10	.09	.18
3/8"	.07	.14	.13	.26
1/2"	.09	.18	.15	.30
3/4"	.11	.22	.18	.36
1"	.13	.26	.20	.40



SHEET WHITE PINE

Size	1¾x18"	1¾x36"	2¾x18"	2¾x36"
1/32"	.03	.06	.06	.12
3/64"	2—.07	.07	.07	.14
1/16"	2—.07	.07	.07	.14
3/32"	.04	.08	.08	.16
1/8"	.05	.10	.10	.20
3/16"	.06	.12	.11	.22
1/4"	.07	.14	.12	.24

HARDWOOD DOWELS



High quality white birch dowels, smooth and straight. Used for many purposes.

1/16" dia. x 12"	doz.	$ .10
3/32" dia. x 12"	doz.	.10
1/8" dia. x 12"	doz.	.10
3/16" dia. x 12"	6 for	.10
1/4" dia. x 12"	6 for	.10
1/8" dia. x 36"	each	.03
3/16" dia. x 36"	each	.03
1/4" dia. x 36"	each	.04

SAWN BALSA PROPELLERS



All props cut right hand from good quality balsa wood and are used on all type of light flying models especially endurance and contest models.

Dia.	Price	Dia.	Price
4"	.03	10"	.06
4½"	.03	11"	.07
5"	.04	12"	.08
6"	.04	13"	.10
7"	.04	14"	.12
8"	.05	15"	.15
9"	.05	16"	.18

"RITE-PITCH" GAS PROPS



Propellers are scientifically designed to produce maximum thrust horsepower; they are light enought to break, yet heavy enough to get finest performance from your motor. These propellers are the correct weight for your motor, and perfectly balanced, lacquer finish. You will have better results and a smoother running motor with "Rite-Pitch" propellers.

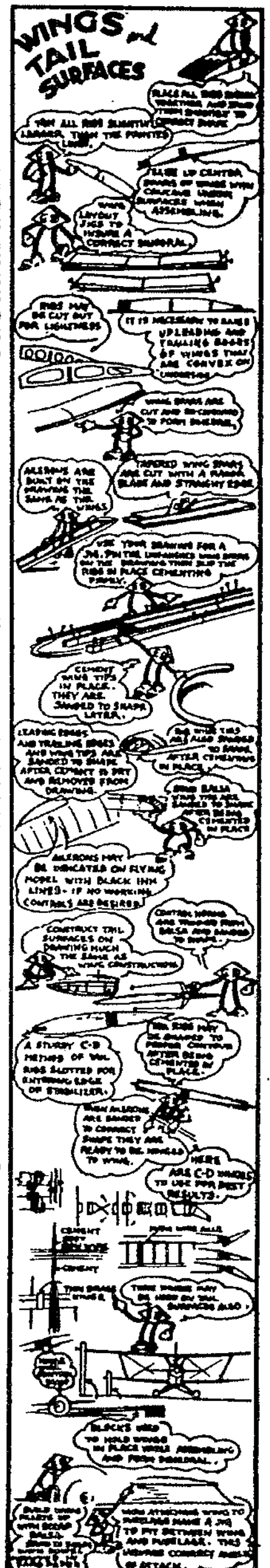
9" and 10" dia. only .... $ .40
11" and 12" dia. only .... .45
13" and 14" dia. only .... .50

RITZ GAS MODEL PROPS



One of the most efficient gas props on the market. With these props, your engine will produce more thrust to increase your plane's performance. Used by all good model builders for contest work. Each propeller is accurately machined to insure uniformity and is perfectly balanced. Lacquered in a beautiful natural finish.

9", 10" and 11" dia. only .... $ .40
12", 13" and 14" dia. only .... .50



CLEVELAND MODEL & SUPPLY COMPANY Inc. Modelmaking and Hobby Supplies
★ 4506-12 Lorain Avenue ★ ★ ★ Cleveland Ohio U. S. A. ★

C-D QUALITY CEMENT, DOPES, LAQUERS, ETC.



CLEVELAND ENAMEL-DOPES

This dope prepared especially for model airplane use to be applied on the common light jap tissue used for covering. It is not heavy, thinned-out "large" aircraft dope. Cleveland Enamel-Dopes do not contain a brittle gum to make it shine. This gum is used in most "model" dopes being sold today and when this gum type dope is thoroughly dried it has a tendency to crack, peal off and thus ruin a model. Enamel-Dope will give leather toughness to the tissue on a model. To obtain a higher gloss than the regular Enamel-Dope gives use Clear-Gloss over the dope coating.

Enamel-Dopes come in the following colors:

Clear	Silver
Glistening White	Inter. Orange
Diana Cream	Grass Green
Dark Gray	Fire Chief Red
Military Yellow	Havana Brown
Army Light Blue	Glossy Black

1 oz. ....$ .10 ½-Pt. (8 oz.) $ .45
2 oz. ....$ .15 1-Pt. (16 oz.) $ .85

CLEVELAND WATERPROOF BALSA CEMENT

This waterproof colorless cement is used for all model airplanes and boats as well as other work in general, where a quick drying glue is needed. Sets in 20 minutes but takes longer if a thick clot is used. Being colorless, it is excellent for light automobile top, canoe, pottery and furniture repairing, etc. Good also for quick drying woodwork joints. ½-oz. ....$ .05

1 oz. ....$ .10 ½-Pt. (8 oz.) $ .45
2 oz. ....$ .15 1-Pt. (16 oz.) $ .85

NEW CLEVELAND "STEEL-GRIP" CEMENT

So called, because it has, literally speaking a steel grip on any two objects cemented together. We can almost guarantee this cement to hold anything together except rubber and plastic materials.

1 oz. ....$ .12 ½-Pt. (8 oz.) $ .65
2 oz. ....$ .20 1-Pt. (16 oz.) $1.25

CLEVELAND PAPER CEMENT

C-D paper cement (also called "banana oil") is of the right consistency to stick the Japanese tissues to model framework. It is often used as a fine varnish or filler for general small work-cowls, wheels, etc., although for this purpose our wood filler is best suited. When so coated and sanded, then colored it will make a fine glossy finish. It is also an excellent waterproof dope for pontoons and floats and recommended in place of varnish for boat work in some cases as it acts differently from spar varnish, filling pores and cracks easily.

½-oz. ....$ .05
1 oz. ....$ .10 ½-Pt. (8 oz.) $ .45
2 oz. ....$ .15 1-Pt. (16 oz.) $ .85

ANTI-BLUSH THINNER

This Anti-Blush Thinner may be used in Cleveland enamel and model dopes to allow more even flowing, to reduce the stretching qualities and to eliminate "blushing" when necessary. In humid or damp weather it will hardly be necessary to add more than 10 per cent Anti-Blush to the dope. Less may be used in drier weather. It may be used as a thinner for Cleveland Waterproof Cement and Paper Cement also, but will slow up drying time slightly as this liquid does not allow extremely rapid evaporation. Brushed with cotton, undiluted over "blushed" portions it allows the unmarred color to show up again.

1 oz. ....$ .10 ½-Pt. (8 oz.) $ .45
2 oz. ....$ .15 1-Pt. (16 oz.) $ .85

CLEVELAND CLEAR-GLOSS

This is a newly developed high-gloss dope to give a protective coat and high glossy finish to a model. It should be applied with a soft haired brush working rapidly.

1 oz. ....$ .10 ½-Pt. (8 oz.) $ .45
2 oz. ....$ .15 1-Pt. (16 oz.) $ .85

C-D FINE BRONZE POWDER

For making Bronze Dope, Varnish and Shellac, we now carry three kinds of bronze powders in small envelopes. This powder when mixed with our clear dope makes a very fine pigmented dope and should be used within three days after mixing. Each envelope contains enough powder for 1 oz. of dope, varnish or shellac, etc.

LAIRD GOLD (Light)
WEDELL-WILLIAMS GOLD (Reddish)

Per Envelope..$ .05

S. A. E. 70 OIL

High grade oil, used on all small gas motors. When mixing with gas use the proportions the motor manufacturer recommends.

HALF PINT CAN S. A. E. 70 OIL Only $ .25

LIQUIDS for MODEL RAILROADERS

METAL PRIMER

METAL PRIMER FOR ZINC BASE DIE CASTINGS—To use, just paint on with a small brush but be careful not to coat bearing surfaces; when dry it will give the castings a dark gray color and a very, very fine sandpaper-like surface. Almost any kind of paint or lacquer will adhere to this surface without peeling off. Just try it once and you'll be well pleased. ½ oz. bottle (more than enough for a loco.) .10

SPECIALLY PREPARED MODEL RAILROAD LACQUER—The lacquers listed below are suitable for use with the present C-D model railroad material. In 4 colors—R. R. Black, Battleship Gray, Smokebox Silver, R. R. Tuscon Red, Bright Orange.

1 oz. .... .10 2 oz. .... .18

TRANSPARENT BALLAST GLUE (not waterproof) for gluing ties and ballast to roadbed. Also used to glue red and green sand to boards, etc. One pint will glue ties and ballast to approx. 50 ft. of single track. Per pint (shipping weight, 1 3/4 lbs.) .... .40
Per quart. Shipping weight, 3 1/½ lbs. .75

FINE FLAT OXHAIR BRUSHES

These brushes will suit the needs of the most exacting modelbuilders and are available in seven different sizes for the very finest jobs.

1/8" wide tip ea.	$ .20	5/8" wide tip ea.	$ .40
1/4" wide tip ea.	.25	3/4" wide tip ea.	.45
3/8" wide tip ea.	.30	1" wide tip ea.	.55
1/2" wide tip ea.	.35		

FINE CAMEL'S HAIR BRUSHES

5/8" wide for some of the finer model lacquering or enameling. This is also a very excellent, soft brush for cleaning mdoels. One motion makes a nice even stripe 5/8" wide.

Worth twice the Price
EACH .... $ .10

ROUND STRIPING BRUSHES

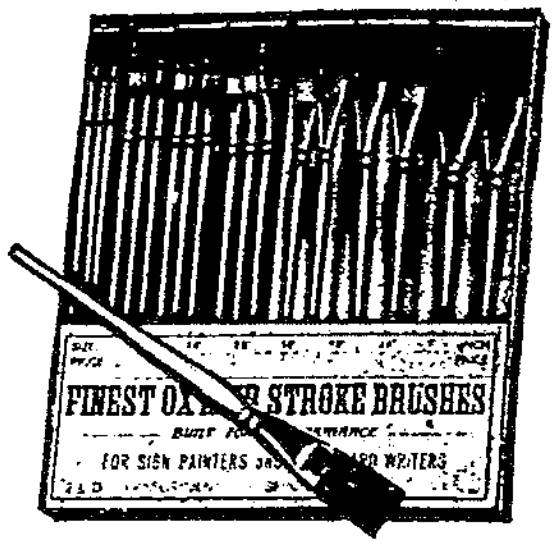
Used universally by modelmakers. When moistened, brushes come into a nice point. These brushes are for those to select whatever size they need for their particular fine striping jobs, etc. To give you an idea of how wide a strip each will paint we have employed the average width of strips along each number. No. 1, 3/32"; No. 2, ⅛"; No. 3, 5/32"; No. 4, 3/16"; No. 5, 7/32"; No. 6, 1/4".

Selection of Any Size
EACH .... $ .05

WARWICK CAMEL HAIR BRUSHES

Excellent for doping gas models, sign painting, etc. A good quality low price brush.

⅜" wide tip ea.	$ .10	¾" wide tip ea.	$ .18
½" wide tip ea.	.12	⅞" wide tip ea.	.20
⅝" wide tip ea.	.15	1" wide tip ea.	.25



C-D STRIPING TAPE

Indispensable for use in rapidly painting or fine striping your model airplanes, boats or other work. May be used over many times. Just press on the line, curves and all, to which you are to paint. Then paint and remove tape. Very sharp curves, angles, points, etc. may be cut into tape by scissors or razor blade before applying.

Supplied On Cards With Instructions

¼" wide by 30" long.................... $ .05
¼" wide by 10 ft. long.................... .15
½" wide by 6 ft. long.................... .15



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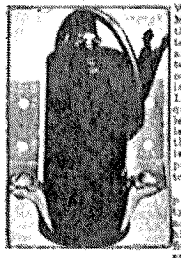
These Quality Gas Model Parts and Accessories Assure Successful Performance

SMITH FIRECRACKER IGNITION COIL



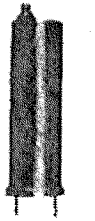
Weight—2¼ ounces. Moulded extra strength bakelite case. Clip terminals on primary and renewable high-tension lead in case of injury or oil-soaking into insulation. Liberal length of lacquered high-tension lead furnished which is specially made for this model trade and is finely stranded to prevent breaking due to excessive vibration. Equipped with approved automotive type miniature snap action clips on the high-tension lead that fit all of the standard spark - plugs on the market today.

Operates on 2 standard size flashlight cells and no booster is needed if the batteries, points, and plug are in good shape. Absolutely oil and water proof. Suitable for use in model airplanes, boats, toys, etc.

Excellent internal insulation, and a particularly efficient primary winding and magnetic circuit, combine to make this coil superior to any that the market affords at a price low enough for the smallest job and high quality to fit in the best of models.

FIRE CRACKER COIL **$2.50**
POSTPAID .....

SMITH LITEWEIGHT COIL

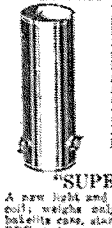


This coil weighs 1⅜ ounces. A further savings in weight is accomplished by the fact that this coil operates WITHOUT ANY IGNITION CONDENSER. This is due to a radical development in construction.

Also the coil is intended to operate on two pen-cells connected in parallel, however many of the users are running their engines with only one pen-cell. One dry cell is used for the booster and the users of small engines are enabled to reduce the weight of their ships so that they weigh less than 16 ounces complete.

PRICE POSTPAID ... $3.00

SMITH BIG SHOT COIL



This unit is intended for use in high-compression engines, both Aviation & Marine types. It is capable of operation up to 20000 RPM without diminished spark which makes it possible to reach new peaks of performance with miniature engines. It weighs 3½ ounces with the high-tension lead and is intended to operate on 3 to 4½ volts primary supply.

PRICE **$3.50**

"SUPER LITE" COIL

A new light and highly efficient 3 volt ignition coil, weighs only 1⅞ ozs., solder terminals, bakelite case, standard equipment on the Syneray BEE engine.

Each only **$1.95**

TUNGSTEN POINTS



Supplied as illustrated with solder lug and fibre insulation. These points fit most engines and will pep up the performance considerably. Screw is 2-48 by ⅜" overall with a head diameter of ⅛" and sells for 25c while the rivet is ⅜" and sells for 10c.

Complete Set **PRICE** ... **45c**

HIGH TENSION LEADS



Made with clips to fit the ignition coil and the spark-plug. They add considerably to the life of the plug and the coil because of the ease of connection. 3 inches long. Made with red lacquered high quality wire.

PRICE **15c**

IGNITION CONDENSER



Designed for rugged aviation use. It is of the high voltage type and has a tubular shape 1¼mm case to protect it from gas and oil and mechanical abuse. The wires are stranded and firmly anchored so that vibration will not damage the unit.

PRICE **35c**

LOW PRICE CONDENSER

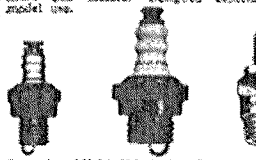


This condenser may be used on any small gas motor. Paper shell impregnated with wax. The wire leads are solid copper approximately 2½" long.

Each Only ..... **$ .15**

SPARK PLUGS

These three plugs are used on almost all miniature gas motors. Designed especially for model use.



Champion "V-2" 14"-32 thread..... each **$ .65**
Champion "V" ⅝"-24 thread..... each **.65**
Brown Jr. ⅝"-24 thread, come apart plug, each only ..... **.65**

SPARK PLUG GASKETS

All metal spark plug gaskets to fit between plug and cyclinder head. For ¼" and ⅜" plugs. Either size **5** for ..... **$ .05**

SPARK PLUG WRENCHES



This steel socket wrench comes in three sizes to fit any size plug. Large for ⅝" Champion plugs. Medium for Brown plugs. Small size fits the new small V-2½" Champion plugs.

Large, medium or small ..... **Each $ .25**

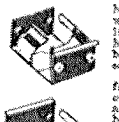
IGNITION BATTERIES



Designed especially for use on model airplanes, boats, race cars, etc. These batteries are all 3 volt units, will give a good hot spark, have extra-normally long life and lightweight. The 4A2 and the 5A2 are for the ignition alone, while the 2L3 is a booster battery which is just the right size to fit into a pocket. Each battery is supplied with a two conductor lead wire which makes changing or replacing of batteries a very simple and quick job.

4A2 1-1/16" x 1-1/16" x 2½" High 4-oz. ea. 15c
6A2 2" x 1-1/16" x 2½" High 6-oz. ea. 75c

BATTERY BOXES



These new dural battery holders are the most practical way of mounting the batteries in your ship. The cells are held securely in place, yet may be quickly replaced without soldering any connections. The holders may be shifted for balance adjustment from outside the ship by means of an attachment screw. They hold two cells in series.

They now come in all three sizes and weigh only ⅝, ¾, and 1 oz.

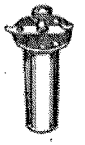
Penlite and 1" dia. Battery Size ..... **EACH 45c**
Large, for 1¼" dia. Batteries **EACH** **50c**

BOOSTER PLUG-IN CONNECTION



Just what you've been waiting for! a light, inexpensive, practical connection for booster batteries. Any standard lamp cord plug may be used with it. Don't take chances of shorting out your boosters with bare, uninsulated clips. Booster plug socket, **Each only $ .35**

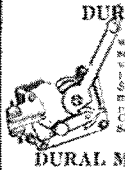
AUSTIN FLIGHT TIMER



This is the only timer of its kind exclusively for gas models. It watches only 5/8-oz and is accurate enough for contest use. The duration may be adjusted for any length of time up to 2 min. Built-in contact points and drilled holes for mounting make it easy to install. All moving parts are completely enclosed for protection from dust and dirt, ensuring trouble-free service. Fully guaranteed to give satisfaction.

Timer and Full Directions **$1.25**

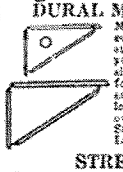
DURAL TIMER



For all timing purposes within its capacity, 5 to 55 seconds. It is of the clock-works type, weighs approx. 1¼ ozs. and is easily mounted. Size ⅞" x 1¾" x 2¼", well made, accurate and vibration proof.

Complete with mounting Screws **$1.50**

DURAL MOTOR MOUNTS



Made of .040 dural and flanged on all three sides for extra rigidity. Makes mounting of your motor a pleasure. Small size 2 1/2" long, 1 5/8" high for motor 5/8" bore and smaller. Large size 3 1/2" long 2 1/2" high for motors over 5/8" bore.

Small size per pair ..... **$ .25**
Large size per pair ..... **.50**

STREAMLINED PROPELLOR SPINNER NUT



Dress up your model with one of these good-looking nickel dural spinners. ¼" dia., ¾" long. They replace the regular nut and washer and weight only ½ oz. Fits any motor with a ⅛" dia. shaft. Comes complete with special wrench. **Only** ..... **$ .35**

BRASS WASHERS FOR GAS MODELS

O.D.	Hole	Thickness	Per Doz
¼"	5/32 (.03)	.020	.20
5/16"	1/8 (.125)	.032	.05
7/16"	5/16 (.312)	.032	.05
9/16"	1/4 (.250)	.062	.12

EXHAUST MANIFOLD



Will fit all Brown Jr. motors and also the Mighty Midget. Clips over the exhaust ports and conducts exhaust away from the cowling. Excellent and cost appearing for jobs with cowls. Streamlined 5" Steel Exhaust Manifold **$1.00**
Cadmium Plated ..... Only



RUBBER TUBING

Used for gas lines etc. made of Neoprene rubber especially to withstand gas and oil. ¼ 3/32" diameter with 1/16" hole 5" long. Only .. **$ .10**

NOTE: FOR OTHER ELECTRICAL PARTS SEE ELECTICAL ACCESSORIES PAGE. FOR WIRE, ALUMINUM ANGLE, SCREWS, ETC., ETC. SEE HARDWARE PAGE.

S. A. E. 70 OIL

High grade oil, used on all small gas motors. When mixing with gas use the proportions the motor manufacturers recommends.

HALF PINT CAN S. A. E. 70 OIL Only $ .25

FUEL PUMP CANS



First else gas can with pump. Very handy for filling tanks. Has extra long spout for reaching hard to get at tanks. Keep an extra one handy with straight gas for washing dirt off engines. **EACH ONLY** ..... **$ .60**

GAS FUNNEL

Just the thing for filling gas tanks in hard-to-get at places. It is 2" in diameter, has a strainer to keep gas clean and a spout which is 3½" long. **EACH** ..... **$ .35**

HOOK UP WIRE



Best quality stranded copper wire with a tough gas, oil and water proof insulation. Choice of red or green color for displaying positive and negative leads easily.

5 foot Rolls, Each **25c**

SOLDERING LUGS



Made of Copper and tinned to facilitate soldering. Center hole is ⅛" diameter and will fit screws up to 6-32 size. Made in two styles ½" long. Type A or B. **Pkg. of 6** ..... **$ .05**

WIRE LANDING GEAR

Formed of .093" dia. spring steel wire. This is the most popular type of landing gear in use today, mounts right onto the fire wall of your model.

EACH ONLY ..... **$ .10**

Aluminum Strips for making small fittings for holding landing gear wire securely in place **$ .05**

SPRING STEEL WIRE

Used for landing gears on gas models etc. Low enough in price so you can afford to keep a length of each in stock for experimental work.
5/32" dia. in Straight 3 ft. Lengths..... **$ .15**
1/8" dia. in Straight 3 ft. Lengths..... **.12**

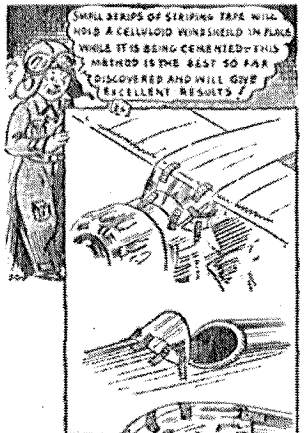
BRASS COLLARS



Being hard to get, we now manufacture brass collars 9/32" wide, 7/8" diameter with a bore of 1/4", 5/32", 3/16" and 7/32" with fillister head set screws

Each ..... **$ .07**

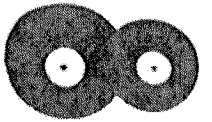
Note: The ¼" size is good on our model airplanes for holding on wheels, when axles are ¼" or smaller.



TREXLER BALLOON WHEELS

The patented tubeless, tube and valve permits Trexler wheels to be inflated and deflated at will. No extra valve to bother with. No separate pieces to lose.

After inflating, the tube is simply given a few twists to prevent the escape of air; and tucked between the tire and hub. It is simply and sure.



Made of Finest Latex!

Trexler Wheels can be inflated with the breath, or with the handy pump illustrated

WHEELS FOR RUBBER POWERED MODELS

No. 1	Inflates 1-1/4" to 1-3/8"	PAIR	45c
No. 2	Inflates 1-1/2" to 1-5/8"	PAIR	45c
No. 3	Inflates 1-3/4" to 1-7/8"	PAIR	50c
No. 4	Inflates 2" to 2-1/8"	PAIR	50c
No. 5	Inflates 2-1/4" to 2-3/8"	PAIR	50c
No. 6	Inflates 2-1/2" to 2-3/8"	PAIR	60c

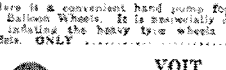
All the above wheels weigh less than ½ozs. pair.

WHEELS FOR GAS POWERED MODELS

No. S-G	3½"	PER PAIR	$1.00
No. S-G	4"	PER PAIR	1.25
No. 10-G	5½"	PER PAIR	1.50
No. 12-G	6"	PER PAIR	1.75

The gas model wheels weigh from 1 to 3 ozs. per pair and will carry from 6 - 12 lbs. per pair.

HANDY INFLATING PUMP FOR BALLOON WHEELS



Here is a convenient hand pump for inflating Balloon Wheels. It is economically desirable for inflating the heavy type wheels for gas models. **ONLY** **20c**

VOIT GAS MODEL WHEELS



Heavy Duty Rubber Streamlined Wheels with special ball bearing valve. Each pair supplied with inflating tool.

These wheels are well-known to gas model builders.

2-½" Dia.	Per Pair $1.25
3-½" Dia.	Per Pair 1.50
4-½" Dia.	Per Pair 1.75

BALSA WOOD WHEELS

Turned Both Sides Diameter	Thickness	Size of Axle Holes	Per Pair
1-½	5/16	3/32	$ .12
2 streamlined	7/16	7/32	.20
2-½	7/8	7/16	.35
3	15/16	1/16	.45
3-½ gas model	1-1/16	1/8	.65

The last 3 sizes have two bronze bearings in each wheel. The streamlined wheels are used for small gas models and are supplied with brass bearings.

C-D HARD WOOD WHEELS

Turned one side and drilled to take up to No. 14 (1/.83) machine wire axle.

Dia.	Thick ness	Pr.	Dia.	Thick- ness	Pr.
1	3/8	.03	1-1/4	1/4	.04
1-3/16	9/16	.04	1-1/4	5/8	.05
12/16	1/4	.04	1-1/2	1/2	.06
13/16	5/16	.04	1-1/2	1/4	.05
	3/8	.04	1-1/2	5/16	.06
	5/16	.05	1-1/2	3/8	.07
1-1/8	1/4	.05	1-3/4	1/4	.06
1-1/8	3/16	.05	1-3/4	3/8	.07

TAIL WHEEL



Sponge rubber 1½" dia. with wooden hub approx. ¼ozs. ea.

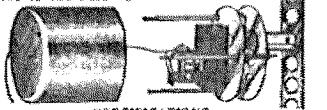
Per Wheel, Not Pair **15c**

WHEEL SHOES

Two left and 2 right halves to make from 2" to 3½" wheels for gas models. Routed out and hand sawed to outline shape from balsa wood. **Complete Set of 4 Pieces** ..... **$ .05**

Geared Electric Motor

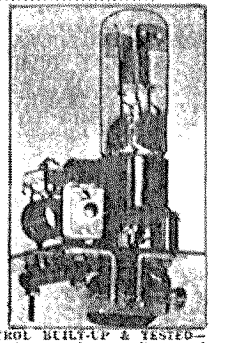
For Use on Radio Controlled Gas Powered Model Planes. Weight, complete—1¼ oz. Speed, no load—6 R.P.M. Power Required—one to two flash light cells.



SPECIFICATIONS

WEIGHT—Motor complete with gears and lever arm ready to run, less battery, 3½ ounces.
POWER OUTPUT—Thirty six ounces stalled torque.
SIZE—Two inches in diameter, two inches long, completely enclosed.
POWER INPUT—Two 1½ volt flashlight cells or three volt ignition battery.
GEAR REDUCTION—Six hundred to one ratio spur gearing terminating in 3/16" shaft with 3½" perforated arm for attachment to controls. Speed, one and about one rev. per minute.
MOTOR FIELD—Permanent magnet type, allowing easy reversing by interchanging the two connecting wires to battery.
MOTOR ARMATURE—Laminated, with machine wound double insulated coils, molded bakelite commutator, and operating in oilless bearings.
MOUNTING—Three studs extend at either end of case for readily fastening to frame.
PRICE COMPLETE **$1.00**
POSTPAID .....

RADIO Control To fit the Ship you now have



RADIO CONTROL BUILT-UP & TESTED—This is the basic unit of any radio control system and the relay is used to operate whatever controls are desired. For operation in the 26 MC band including relay but less tubes and batteries and control operating mechanism. The weight including the tube as shown in cut is 2½ ounces. Using special 2 ounce battery and 2 ounce electric motor to control surfaces the total weight of the lightest radio control unit need not exceed 10 ounces. This unit can also be used to control boats, automobiles, garage doors, etc.

PRICE **$9.00**
WITHOUT TUBE .....

RADIO CONTROL RELAY—This relay weighs only 2 ounces as shown and is supersensitive because of the Tyrrell ohm coil it contains. The armature is statically balanced against vibration and it moves with rapid action due to its small size. Equipped with silver contacts and all adjustments easily made. Every radio control circuit requires one or more of these specially developed relays and there is nothing available as low-priced or light weigh, or as sensitive as this one.

PRICE **$4.00**
EACH .....

MISCELLANEOUS EQUIPMENT

RADIO CONTROL BOOKLET gives diagrams, parts lists, descriptions of various systems, etc.
PRICE ..... **$ .25**
1 - 4½ gas fitted Radio Control Thyratron Type Tube. .....
PRICE **$3.50**

No Patent Liability is assumed with respect to the commercial use of the circuits and tube information contained in this or any other articles published by us.

CLEVELAND MODEL & SUPPLY COMPANY Inc. Modelmaking and Hobby Supplies
4306-12 Lorain Avenue ★ ★ ★ Cleveland Ohio U. S. A. ★

IMPORTANT! READ SHIPPING INSTRUCTIONS ON INSIDE BACK COVER BEFORE ORDERING!
★ Always Give Page Number and Use Only One Line For Each Item Ordered To Avoid Errors — PLEASE. ★

Gas & Rubber Motive Power Items, Tissue, Wire

BAMBOO PAPER

Used on all gas models and large rubber powered models. Makes a tough covering that has a good smooth finish when doped. Sheet comes 24 x 36" in white and four colors.
WHITE, PER SHEET ONLY .... $ .08
RED, YELLOW, GREEN, BLUE, Sheet .10

JAPANESE COVERING TISSUE

No. 2 Tissue size 21x31" much finer than No. 1 tissue, used on most of C-D models. Has a fairly smooth finish and is used on fine scale flying models up to 30" span. Also on stick models. Very light cream color. A light "Bamboo" paper.
Per sheet .... $ .05

No. 3 Tissue size 20-1/2x24-1/2" may be used the same as No. 2 tissue but comes in the following colors:

White	Red	Black	Cobalt Blue
Yellow	Green	Orange	Khaki

Any color listed above .... $ .04
Silver .... .05

FINE QUALITY WHITE SILK

We stock two grades of silk for models. The A grade which is very light in weight as sold by others and the AA grade is a heavier and stronger grade than the A grade and has a much finer texture. The AA grade should be used where a really fine covering job is desired.

If an extra strong covering is desired on gas models we recommend covering models with bamboo tissue first then covering this over again with AA silk. Both grades come 36" wide.

A Grade Silk .... 1/2 yard $ .30 1 yard $ .50
AA Grade Silk .... 1/2 yard .45 1 yard .80

FRESH MODEL AIRPLANE RUBBER "C-D GRAY WHIRLWIND"

1/32x3/32" FLAT
7-1/2 ft. .... $ .04 50 ft. .... $ .22
25 ft. .... .12 210 ft. skein .... .65

1/32x1/8" FLAT
7-1/2 ft. .... $ .05 50 ft. .... $ .26
25 ft. .... .15 210 ft. skein .... .85

1/32x3/16" FLAT
7-1/2 ft. .... $ .08 50 ft. .... $ .38
25 ft. .... .20 210 ft. skein 1.25

SPECIAL R.O.G. THRUST BEARING

To slip on 3/16x1/4" motor stick and hold R.O.G. landing gear in place without gluing. Made of duralumin .... $ .04

DURAL THRUST BEARINGS

Sizes are distance from motor stick to shaft.
Small (1/4) .... $ .02 Large (5/16) .... $ .04

BALL BEARING WASHER SETS

Made to fit shafts up to .050" dia. You can use up to 12 strands of 1/8" flat rubber. Weight .01 ounce. Set includes finished ball bearing unit. Prop shaft and cup washer. Set each .... $ .10

ENVELOPES OF BRASS WASHERS

35 washers, 1/8" dia. hole to fit up to .025 dia. music wire .... $ .05
24 washers, 3/16" dia. hole to fit up to .032 dia. music wire .... .05
18 washers, 1/4" dia. hole to fit up to .040 dia. music wire .... .05

BRASS TURNBUCKLES FOR SHIPS AND GAS MODELS

Fork End Turnbuckles have one eye and one fork end with tiny bolt for fastening to metal brackets.

Body Length	Take Up	Two Eye	Fork End
11/16"	1/2"	$ .20	$ .25
15/16"	3/4"	.25	.30

CLEAR TRANSPARENT CELLULOID

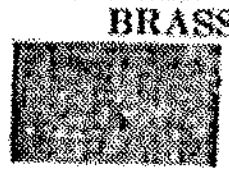
This is the very best grade of celluloid and should not be confused with cellophane or other cheaper celluloid which turns yellow in a short time.

Thickness	5x5	3x10	10x10	10x20
.005	$ .04	$ .07	$ .12	$ .24
.010	.06	.11	.18	.36
.020	.10	.17	.30	.60

HARDWOOD BEARING BUTTONS

Thin Bearing Button, size 13/16" dia. x 1/8", 7/16" dia. shank with new bronze bearing .... $ .05
Thick Bearing Button, size 13/16" dia. x 1/4", 7/16" dia. shank with new bronze bearing .... .05
Thick Bearing Button, size 13/16" dia. x 1/4", 7/16" dia. shank without bronze bearing .... .03
Bearing Button without bronze bearing for 1/2" scale models, 9/16" dia. .... .02
Bearing 1/4" dia. bronze, 1/8" shoulder, .040 hole, same as used in Bearing Buttons. May also be used in other Nose Blocks .... .03

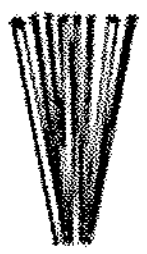
BRASS WIRE CLOTH



Can be used for dummy radiators, small strainers, etc. 60 holes to the inch.
3x4" .... $ .15
5x8" .... .35

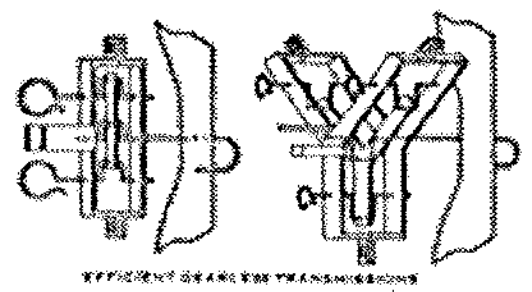
FINEST QUALITY MUSIC WIRE

This music wire is tinned to prevent rusting and facilitate soldering. It is also straightened. Used for hooks, guy wires, controls, and landing gears for model airplanes. Also used for making all types of special springs, etc.



No.	Dia.	1 Ft.	3 Ft.
6	.016 (1/64)	$ .01	$ .02
8	.020	.01	.02
10	.024	.01	.02
12	.031 (1/32)	.01	.02
14	.037	.02	.03
16	.045 (3/64)	...	.04
18	.063 (1/16)	.02	.06
20	.078 (5/64)	...	.09
22	.094 (3/32)	...	.12
3/16"	.125 (1/8)	...	.16
		...	.25

TRANSMISSIONS



EFFICIENT GEARLESS TRANSMISSIONS

GEARLESS TRANSMISSIONS FOR RUBBER POWERED AIRPLANES

These transmissions are constructed of piano wire and duraluminum and are carefully inspected and tested. They will increase the performance of your models just as the radial motors have increased the performance of man-carrying planes. The principle of having two or more thin separate strands of rubber instead of one thick strand is the same principle employed in an actual airplane engine, where instead of using one big cylinder, two or more small cylinders are used. By using a transmission each rubber strand is wound separately and therefore the possible number of turns is doubled because the separate strands will stand a greater number of turns. In other words, it gives the power of a direct drive with twice the endurance. The transmission comes assembled ready to glue to the motor stick, or to the fuselage if no motor stick is used. Directions supplied with each one.

MIDGET A-2 may be used with advantage in all small fuselage models. Just the thing for your midget scale models. It is easily installed in small cowlings or dummy radial motors. The price of the Midget A-2 is only .... $ .35

STANDARD A-2 is made for two separate strands of rubber. As many as four strands of 1/8" flat rubber may be used on each hook. Its weight is only 1/40 ounce, making it practical for very light models also. The retail price of this model is 45c.

HEAVY A-2 model is similar to the standard A-2 but is built heavier to hold as many as eight strands of 1/8" flat rubber on each one of the two hooks. It may be used in place of the Model A-6. Price .... $ .50

THE A-3 is designed for all types of indoor and outdoor flying models. The weight of this model is 1/25 ounce, making it practical for light models. Four strands of 1/8" flat rubber may be used on each one of the three hooks, which are arranged radially. Price .... $ .75

GEARLESS TRANSMISSIONS FOR MULTI-MOTORED MODELS

Now you may successfully build FLYING models of the Boeing Transport or any other multi-motored plane without protruding motor sticks. The two separate strands of rubber enclosed in the fuselage turn the drive shafts enclosed in the fuselage and wings, and run the two props at the same speed.

ADJUSTABLE TO ANY SIZE MODEL — up to 4 foot wingspread.

Drive shafts are 24 inches long and may be cut to any length. Weighs only 1-5 ounce. Good distribution of weight makes model easy to balance. Rubber motors are wound at the same time by turning either one of the props. No twisting of fuselage. Runs quietly with no vibration. Price .... $ .50

RUBBER WINDER ATTACHMENT

This attachment will wind two or three separate strands of rubber at one time. It enables you to stretch the rubber while winding. It can be attached to any egg beater winder or speed drill in a few seconds. Price .... $ .50

HARDWOOD SPINNERS

All drilled to take up to No. 14 Music Wire. All Flying Spinners have 1/32" slots to hold our standard fibre blades. Scale Spinners have 1/8" holes drilled to receive balsa or pine scale blades. For:

SF-36, 3/4" dia. x 9/16" flying two blade RH $ .10
SF-39, SF-44, 15/16" dia. x 5/8" flying three blade RH .... .12
SF-39, 15/16" dia. x 5/8" scale three bl. R.H. .... .10
SF-18B, 15/16" dia. x 3/4" flying two blade RH .... .10
SF-18B, 15/16" dia. x 3/4" scale two blade .... .10
SF-6, SF-18, SF-20, 1-1/4" dia. x 1-1/8" flying two blade RH or LH .... .10
SF-16, SF-25, 1-1/2" dia. x 3/4" flying two blade RH .... .10

HARDWOOD PROPELLER HUBS

NOTE: Right hand hubs and spinners are standard for single motored models.

Right hand Hubs slotted and drilled for No. 8 MW, size 1/4x3/4" .... $ .02
Left hand Hubs slotted and drilled for No. 8 MW, size 1/4x3/4" .... .02
Right hand Hubs slotted and drilled for No. 14 MW, new style, size 5/16x15/16" .... .03
Left hand Hubs slotted and drilled for No. 14 MW, new style, size 5/16x15/16" .... .03

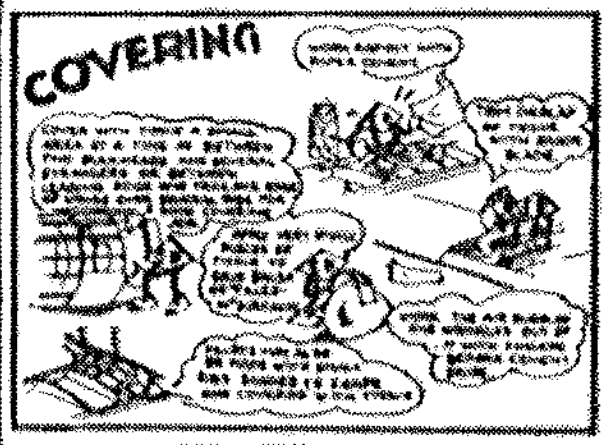
FIBRE PROPELLER BLADES

Per Pair
Blades for 6-1/2" dia. x 1-1/8" propeller .... $ .05
Blades for 7" dia. x 1-1/4" propeller .... .05
Blades for 8" dia. x 1-1/2" propeller .... .05

All blades have tabs which are to be folded and the surrounding portions deeply scratched when cementing into hub. This tab is cut off when the blades are to be used in Spinners.

GRAY HARD FIBRE

Fibre for propeller blades, etc.
Size .025x3x9" .... $ .08



FLYWHEELS

These flywheels enable small gas motors to be used for Marine, Speedway and other applications. For small crankshafts a bushing may be used, for larger crankshafts the hole can easily be re-drilled but be careful not to get it off center or out of balance.

"ACE" FLYWHEEL



Scientifically engineered, individually cast and machined, accurately balanced, groved and slotted for starting rope. Used for Marine or race cars. Fits all 1/5 H. P. gasoline engines with 1/4" shaft. 2¼" dia., ⅝" wide, weight 8 ozs.
Each $1.50

MIGHTY MARINE FLYWHEEL



For those who want a smaller diameter flywheel, 1⅝" diameter, total length 1¼" for ¼" shafts. Mighty Marine Flywheel weight 8½ ozs.
Each $1.00

SPEEDWAY FLYWHEELS



Designed for Race Car use. 1⅝" diameter, ¾" wide for ¼" shafts. Speedway Flywheel weight 7 ozs.
Each $1.00

BROWN JR. FLYWHEEL

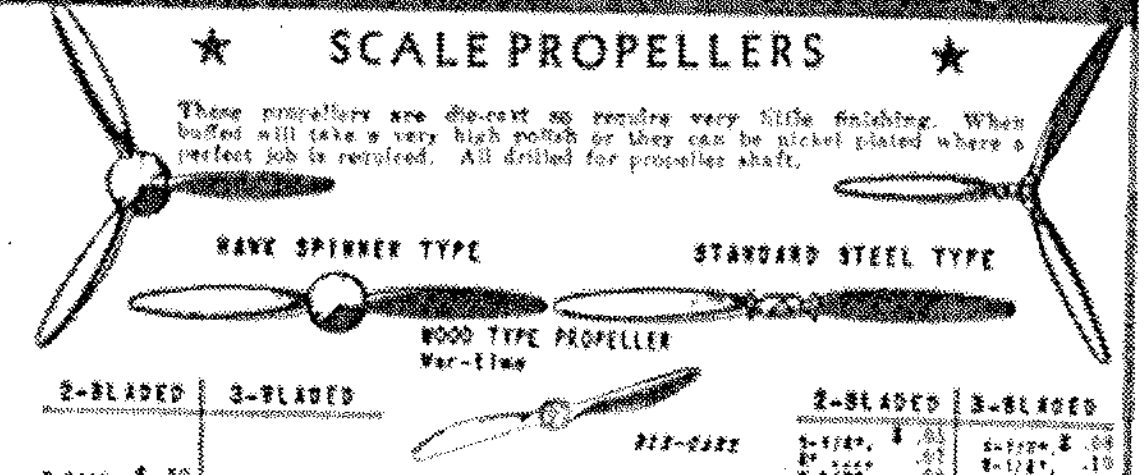


Turned of steel smooth finish cadmium plated. 2¼" diameter rim is 9/16" wide for ¼" shafts. This flywheel does not have any groove for starting rope. Brown Jr. flywheels wt. 6½ ozs.
Each $1.50

AIRPLANE FITTINGS

★ SCALE PROPELLERS ★

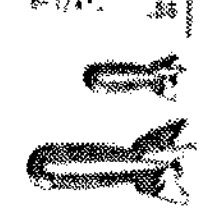
These propellers are die-cast so require very little finishing. When buffed will take a very high polish or they can be nickel plated where a perfect job is required. All drilled for propeller shaft.



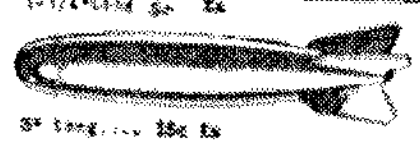
HAWK SPINNER TYPE — STANDARD STEEL TYPE — WOOD TYPE PROPELLER War-time

2-BLADED | 3-BLADED

Bombs and Torpedoes



Torpedo



Anti-Aircraft Gun



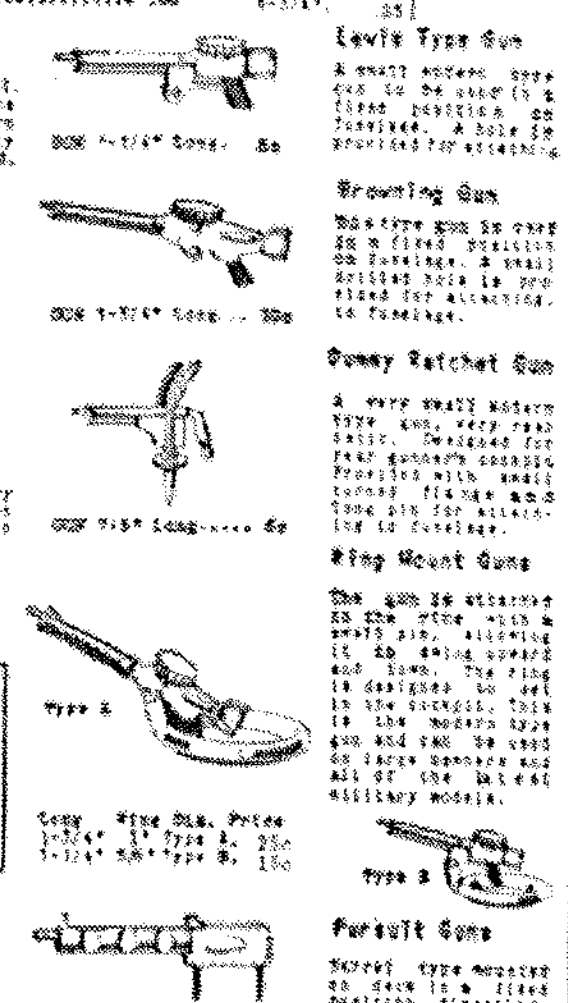
Lewis Type Gun

Browning Gun

Dummy Ratchet Gun

Wing Mount Guns

Pursuit Guns



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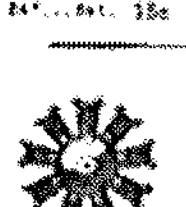

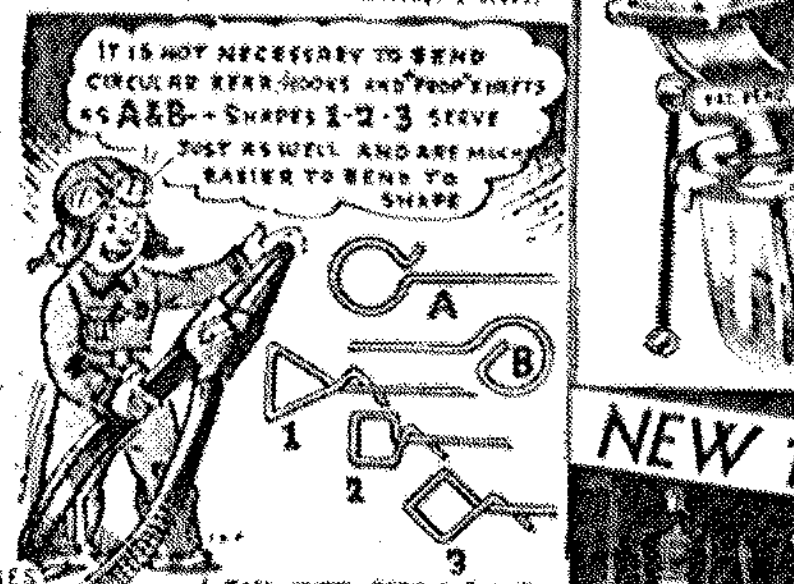

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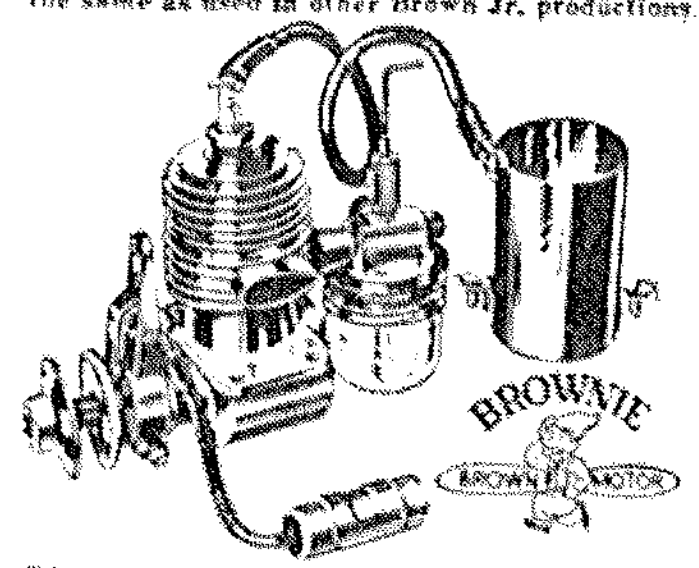

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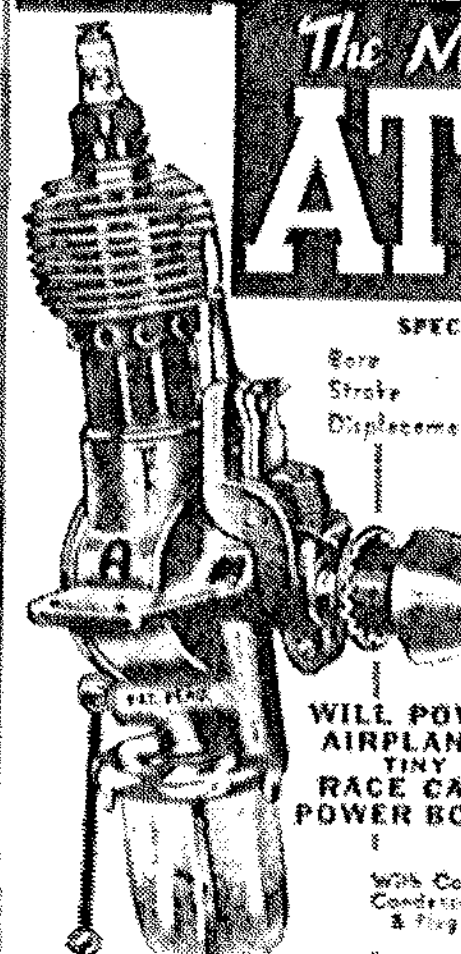

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★ C-D's MODELMAKING NEWS ★

Issues No. 1, 2, 4, 7 each $ .19. Issue No. 3 drawings only $ .19. Complete set of all seven issues only while they last $1.19 (originally $1.90.) Remit $ .15 extra for packing and postage for each order whether ordering only one or an entire set.

Issue No. 1

The first issue contained authentic ¼" scale drawings for Doolittle's history-making Gee Bee Supersportster of 1932, which will give a good flying performance and the well-known Heath Parasol. From the larger drawings, and then going down to those somewhat smaller drawings for the little primary glider for beginners especially, as they are given to the ¼" scale, I know personally if the company would sell drawings separately, not one would be sold for authentic ¼" scale models for less than $1.00, especially not such models as the Gee Bee, which would sell for no less than $1.50; therefore, you can say for the two larger models the value is $2.50, and for the glider drawings you can say perhaps 25c, the total so far, $2.75. Among many of the articles contained within the Editorial pages, there will be found numerous ¼" scale projects, including a single beam flat car, railway crossing, warning signals, telegraph posts, motor boat, a section of track, outline drawings of the primary training glider (all these ¼" scale), Heath Parasol, Howard "Pete," Gee-Bee Supersportster, Laird "Solution," and to finish this off, a 1/32" scale Columbus "Santa Maria" ship by a man whom many consider an authority on just this particular design, regardless of how shipmodelers the world over consider him a ship authority on other boat topics—Captain E. A. McCann.

Issue No. 2

This issue, in addition to many other interesting Editorial comments within its pages, contained full size, completely detailed drawings of the 1933 Monocoupe and the Boeing F4B-3, or P4B-4 of the Navy, both of which are beautiful and outstanding models in the C-D line, as thousands of you already know; both are ¼" scale and then, too, you will find a ¼" scale Advanced Soaring Glider. These plans would sell for, if Cleveland went into the Engineering business alone—the Monocoupe, $1.50, the Navy Boeing Fighter, $2.00, the Glider drawing, 19 c, there you have a value of $3.75 so far—to this list you can add a beautiful line-up of ¼" scale models which consist of a 23-ft. boat, the Auxiliary center-board ketch, a 32-ft. shoal draft sloop, also a 1/32" model of the schooner "William Abbott" of 1884, and a 36-ft. Runabout. As for the airplanes, you will find the Curtiss A-3 Attack, Weddell Williams of 1932, Monocoupe, Boeing P4B-3, and Polish Fighter P2L-6, and the wartime Sopwith Camel, as well as an ¼" scale glider. The railway projects consist of the Pennsylvania all-steel Box Car, and the Missouri Pacific Coal Gondola—all full-size drawings.

Issue No. 3

No. 3 bears out this statement. Needless to say this was one of the most sought after issues and as a consequence, was snapped up except for a few remaining for a complete set (except the center inserts consisting of 5 projects, complete full-size drawings of which are available at 25c per set). Well, to begin with, in the ¼" scale projects, "Cleveland" gave the beginners a break in the ¼" scale model by designing th Boeing 95 Mail Plane which, as thousands who have already built this beautiful flying model know, is a radical departure from the very highly authentic C-D—but no question of its authenticity — it is authentic, but it was designed more for flying than it was for appearance and it looks its part 100 per cent—leave it to the C-D engineers. Also, you will find the ¼" scale drawings of the Springfield Bull-dog, that Bob Hall flew in the 1932 races, which, even though it didn't win a race, certainly deserved an authentic model to commemorate the design, as it was so radical yet conventional in appearance compared with regular airplanes. The Nieuport 28, of war time fame, was also authentically designed after many requested it—by the way, all these projects were being requested right along, the biggest number of votes got those drawings in that particular issue. It was modeled even with the rotary engine which works with the propeller, and I leave it to you to try and estimate the price of these drawings, which I myself estimate at $1.00 for the Boeing 95, and no less than $1.25 each for the drawings of the Hall and Nieuport, making a total of $3.50 so far. The beautiful ¼" scale model Cruiser Pastime drawings could not be obtained separately for less than 50c as the cheapest, then among many things contained within the Editorial portion of the magazine (or perhaps I should say Textbook) will be found a 1/32" scale Clipper Ship drawing of the "Flying Cloud," and for the ¼" scale drawings a Gotha Bomber, Boeing 95 Mail Plane, Northrop Gamma, 1931 Aeronca, Curtiss Wright Jr., Nieuport 28, Stout Sky Car, Bird Biplane, Beechcraft Cabin Biplane, and the Hall Racer.

Issue No. 4

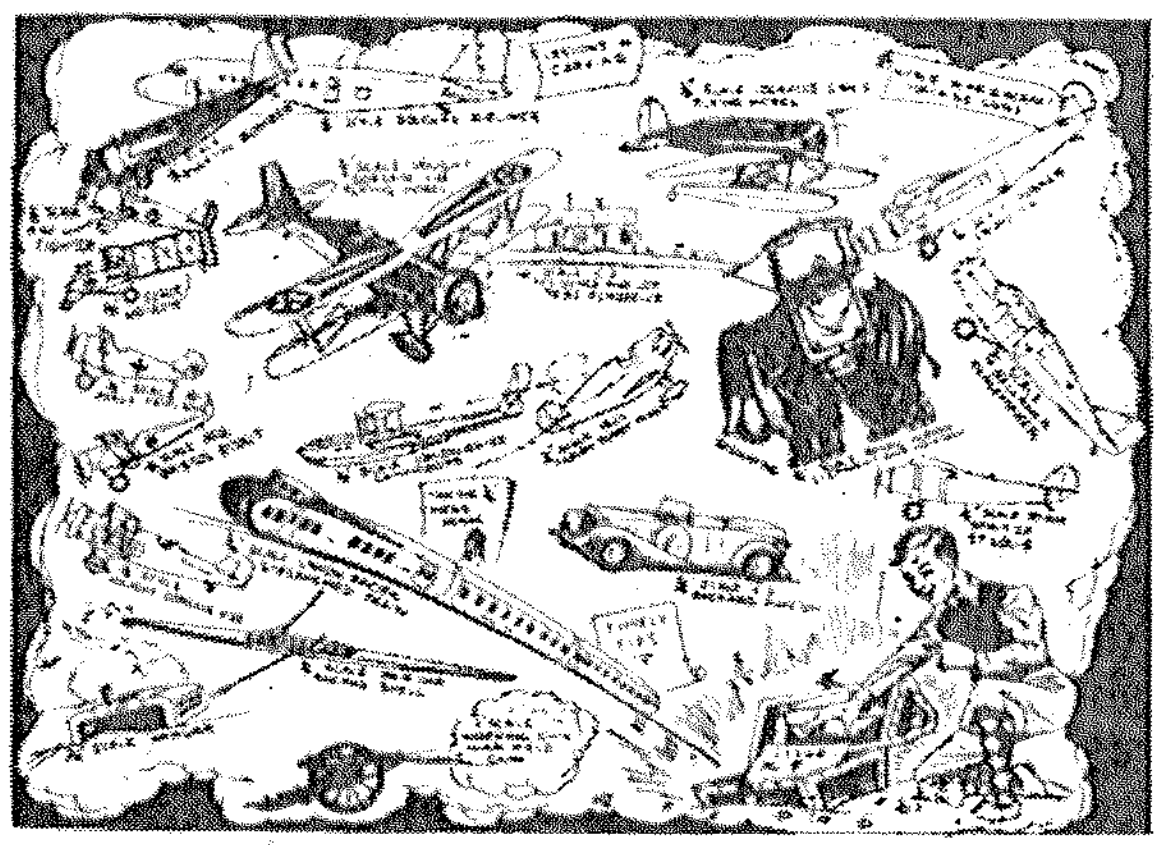
This issue, in accordance with many requests received from modelbuilders in other lands, had as the feature model the beautiful little Comper Swift design, which I believe is authentic enough to even fool its maker incidentally, this design is closely compared to our Heath Bullet. This model is, of course, featured on the center spread of the issue, and on its reverse side will be found an authentic model of the world famous NC4 of 1919, in which they were assisting in gathering information by Captain H. C. Richardson, the Company's Vice-President, who piloted the NC3 to within 150 miles of the Azores and then a mishap occurred which caused him to pilot the ship for 150 miles in heavy seas battering the plane, especially the lower wing very severely, nevertheless the entire crew reached port safely. This ¼" scale model has a span of almost 18" and the plan alone would sell for no less than 25c but most likely 50c for the information and the model built, you can see that it is practical and that it took a great deal of time. These two projects are worth almost $2.00 alone. Then consider the Editorial content which has many interesting new features (especially one) contained drawings for an ¼" scale Timber Highway Bridge, the Focke-Wulf "Ente," Bellanca Air Bus, the old Douglas Mail biplane, Berliner-Joyce YIP-16 and Comper Swift. How much would these drawings be worth to you—surely no less than 10c each for such authentic information, which you know takes long to collect and compile accurately as any ¼" scale model outline

Issue No. 5

By the time this issue came out, they were flooded with requests for another good Wartime plane, and indications generally led to the Fokker D-8, which as yet was not in the line-up of C-D's. I learned that this model was designed and made up the same as the standard C-D kit drawings of the latest series, with a great amount of instructions for building it on the reverse side, and instructions for carving "Fritz" the pilot. This drawing alone would sell for no less than $1.50 after all these years of trouble gone through collecting information on this so that it could at a later date be modeled authentically—then the big chance came—Issue No. 5. The Editorial contents of the magazine itself consisted of two of the world's most outstanding airplane drawings—the Wright Biplane of 1903, and the 1933 Boeing 247 Transport, which was making passenger-carrying history. For the ¼" scale models there were the Curtiss XP 23A, Pitcairn Autogiro of 1931, Buhl Bull-Pup, Travelair Mystery R. (the granddaddy of all present day speed planes), Fokker D-3, Fokker Ambulance plane, Bristol Bull Dog, Boeing P26, and of course, the Amphibian S41, and in the 1/32" ship model lineup would be found "Nina" of the Columbus fleet of 1492.

Issue No. 6

By the time this issue was published, the Aeronca C-3 design was being called for quite heavily and what we prepared for that issue was the Aeronca design, which design was made up the same as the Fokker D-8 as a standard kit drawing, plenty of instructions, large photographs and instructions for building pilots' heads. This drawing would sell for no less than $1.00 alone. On top of all this, C-D engineers started giving authentic modern ships of other countries, and the one plate contains the drawing of the Handley Page H. P. 50, England's latest giant bomber. The next plate drawings for the Fokker D-17, Fleet Primary Training Plane, Davis D-1, Aeronca C-3, Fiat D-12, Savoia-Marchetti S 55X, an oceanic giant on another plate (Italy's airplane) and the Stinson "Reliant" on the last plate with the Letov S.32 airplane of Czechoslovakia—and how's that for an ¼" scale historic line-up? Then, in addition to many very interesting photographs and other details, a series of guns is started by a contributor, which he states is authentic to the ¼" scale—the first one is a German Spandau, and another reader shows a still easier way to cut out pilots' heads—the Sportsman pilot and the uniformed Transport pilot instructions are given in this issue. Still another contributor gives directions for building a balsa stripper in this issue. To top this all, for ¼" scale enthusiasts who wanted a Hangar, Cleveland Model engineers gave the suggested ¼" scale Hangar drawn half-size.



The issue No. 7 needs no explanation for the sketch reproduced here shows its contents pictorially. It has a colored cover of Charles Hubbell's oil painting of Vought V-65. Contents 92 surface pages of drawings "crammed" on (about 126 pages of the usual "meaty" magazine pages). Easily worth $2.00 in drawings alone. While they last—19c.

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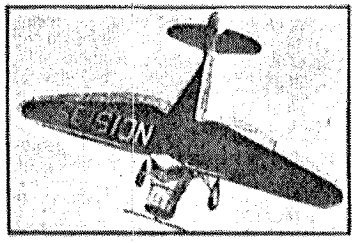

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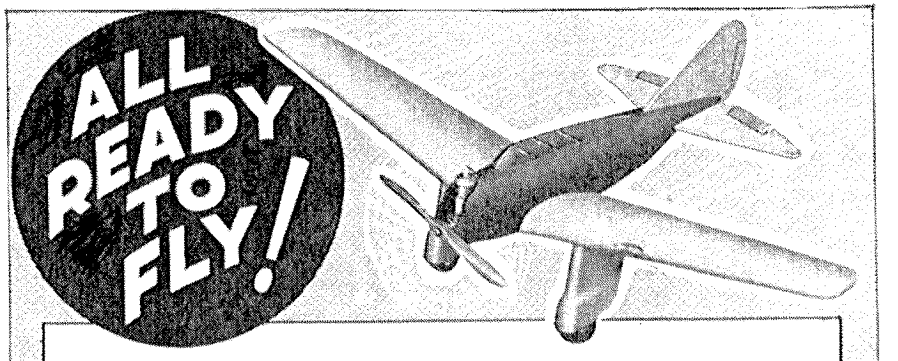

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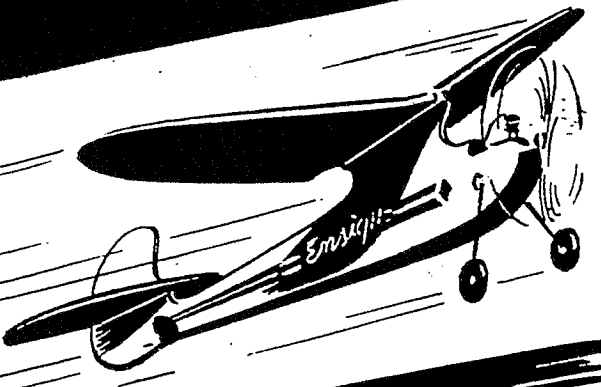

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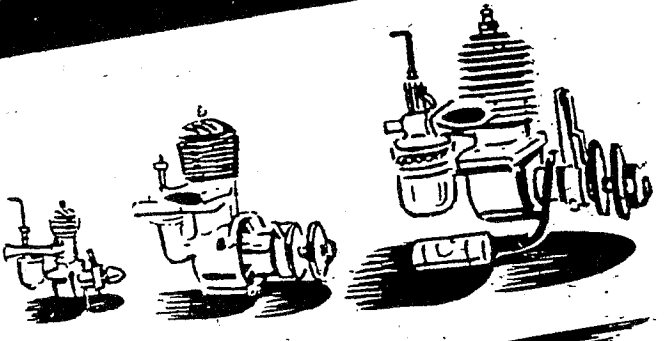
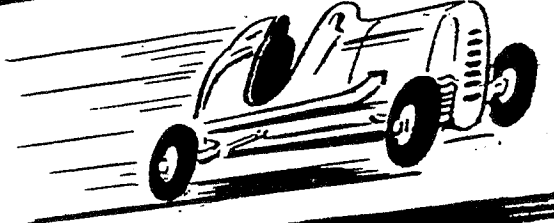


GAS ENGINES



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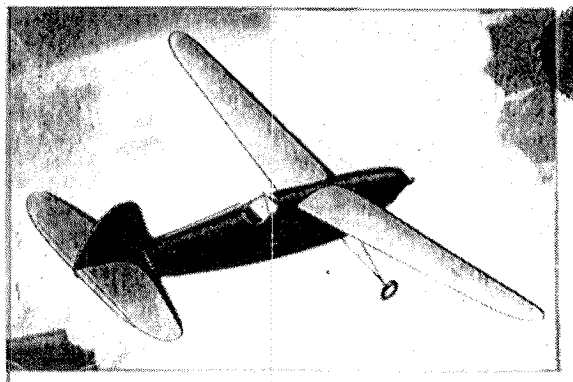
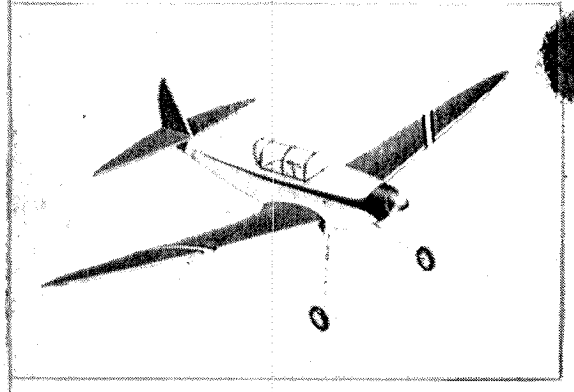


Clarion

Length 23¾"—*Wingspan* 30"

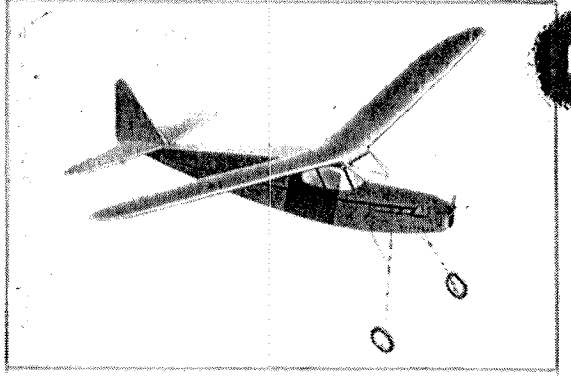
The Clarion is a scale type model, designed primarily for flying. Wing is stationary and faired into the fuselage. (Has a slick lookin' cockpit, too.) Tail surfaces are designed with movable tabs insuring easy directional control. Her color combination of yellow wings, blue and black stabilizer, blue fuselage and rudder, gives her that classy custom built appearance. Kit is complete, including finished wheels, 10" propeller, tissue (3 colors), full size plans and simplified instructions. **50c**



Bullet

Length 23"—*Wingspan* 30"

The fastest thing on wings! If you want a model with class, zip, and yet easy to build, get one of these new Scientific Bullets. A pursuit type plane with a low, streamlined, tapered wing; movable tabs on tail surfaces; single strut landing gear; easily constructed enclosed cabin (including instrument panel). The kit is 100% complete and contains all high quality parts. Included are; machine cut propeller, turned wheels, tissue (3 colors), and full size plans with instructions. Priced to fit the pocketbook of all model builders. **50c**

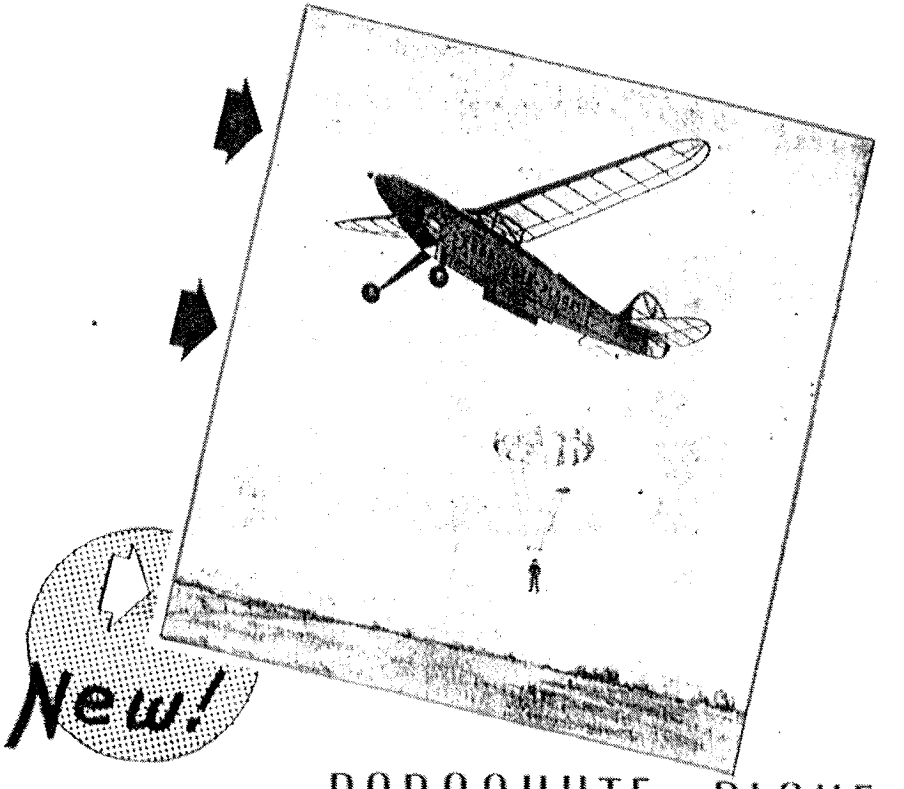


Yellowbird

Length 25¼"—*Wingspan* 30"

Yellowbird is a contest type model, designed for consistent endurance flights. Employs the under chamber swept back wing—movable and detachable. The fuselage is extremely easy to construct.

Here's a model that will make your fellow contestants take notice at the next contest you enter. Kit contains everything necessary to build this prize-winning model. Don't be the last fellow on your block to fly the Yellowbird. Get yours today! **50c**



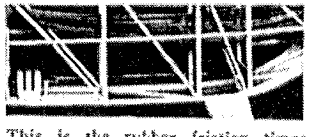
New!

40" Wingspan PARACHUTE PLANE

. . . with automatic trap door release!



Automatic trap door. Parachute and pilot are placed in chamber beneath airplane and trap door closed. Before releasing model, trap door friction timer is set by pushing forward the handle, protruding through bottom of fuselage. After approximately 40 seconds, trap door automatically opens and the pilot and parachute slowly drift earthward.



This is the rubber friction timer, easily constructed with materials included in the kit, that makes the trap door open automatically.

Fellows! Here's Scientific's new "Parachute Plane," packed full of new thrills. After climbing three hundred feet, or more, out comes a pilot with his parachute! Imagine—and it's all done automatically! But that's not all. Besides this novel parachute feature, you have a trim endurance model that will easily make flights of a mile or more. Look at the long graceful wing; elevated and adjustable too; that classy open cockpit in a slim streamlined fuselage measuring 28 inches in length. It will be the envy of every fellow in the neighborhood. With all these new features incorporated in this new model airplane thrill, one would imagine it would be difficult to build; but such is not the case. The construction is so simple that anyone with little or no experience can easily build it.

Kit contains all necessary materials, including a machine cut propeller, ball bearing washer, tissue (2 colors), formed wire parts, all parts required for constructing parachute and automatic trap door release, ready-made pilot, and a full size, easily understood, plan. It is reasonably priced and there is nothing else to spend—*except the many happy hours of fun building and flying this novel parachute plane!* **$1.50**

25" wingspan

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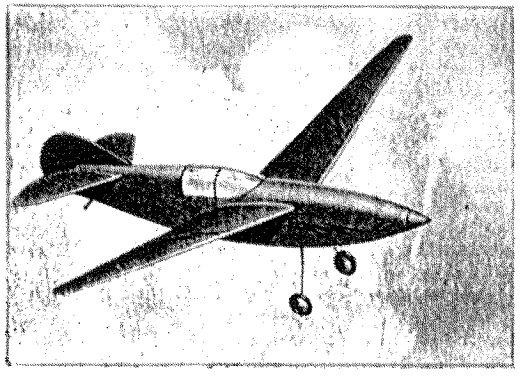
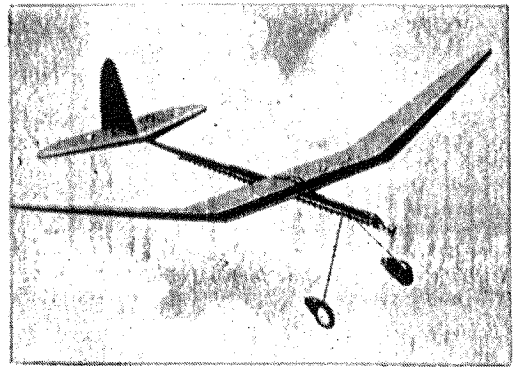


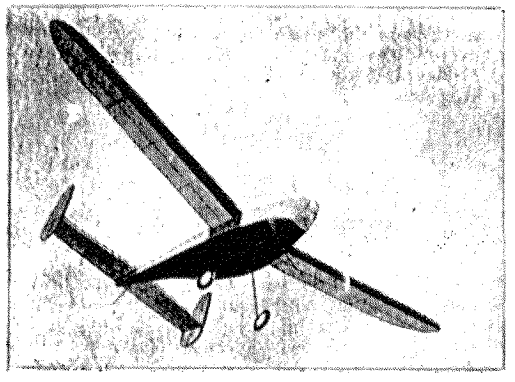
☆ Lightning

Everything the name implies. The Lightning is one of the Fastest flying models ever designed—yet she's easy to build, too. Adding to her streamlined beauty are the red lightning flashes on her yellow wings and fuselage. Kit comes complete with ribs and bulkheads printed on sheet balsa, a 6 inch prop, formed wire parts, rubber, cement, plans, etc. Here's real value, multiplying itself in real building and flying thrills. 25c



☆ Scientific R.O.G.

An advanced type R. O. G., with built up wing and tail surfaces, easily constructed in a short time—to give thrilling flights for a *long* time! Look at that polyhedral wing, the wheel pants. And what a color combination: wing and stabilizer all yellow, trimmed with blue, rudder and stick blue. Kit is complete, including a machine cut 6 inch prop, wheels, tissue, and a set of those explicit Scientific plans. 25c

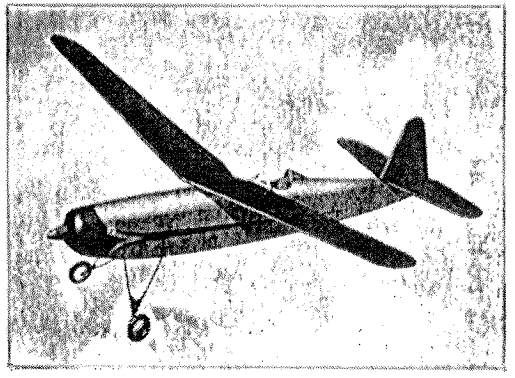


☆ Sky-Scraper

Why was she called a skyscraper? In her trial flights this model consistently made altitude flights of over 500 feet. Her color design makes her a classy looker too—Fuselage, brown and white, wings and tail surfaces all white with brown trim. The twin rudders assure greater spiral stability. The complete kit, with everything necessary to build this new contest winning model sells for only 25c

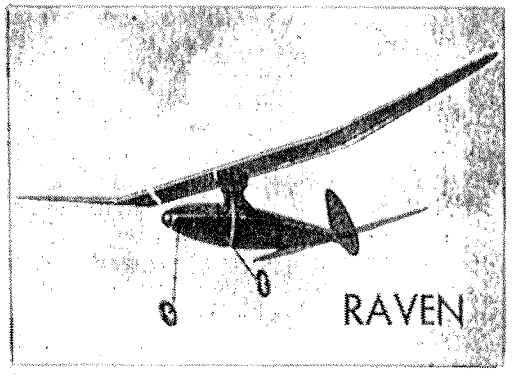
Speedster ☆

A speedy, graceful model that is a consistent and steady performer. Takes off from the ground within three feet. Parasol wing type, with open cockpit. Red wing and tail surfaces, fuselage white with red trim. Kit contains full sized detailed drawing with complete instructions, many finished parts, plus hours of flying thrills—*priced at the rate of only 1 cent an inch!* 25c



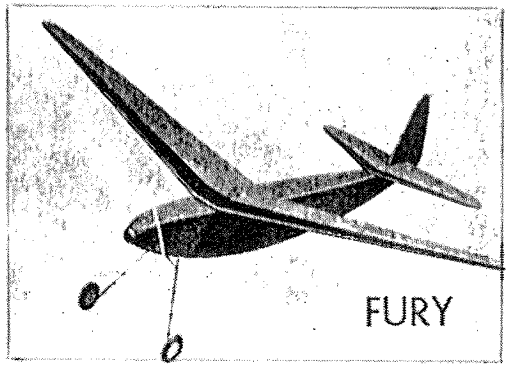
Fury ☆

A really beautiful model that gives much pleasure building, and hours of enjoyment in the air. The Fury is easy to build and a real flyer too. Wing and stabilizer light blue with red trim. Body and rudder all red. This complete easy to build kit includes drilled balsa block, printed sheets, 6" machine cut prop, tissue, cement, rubber, and a set of full size plans. Order one today—only 25c



Raven ☆

Here's a contest model that's so easy to construct that a beginner will experience little or no trouble building her. Her diamond shaped fuselage and elevated polyhedral wing assures contest winning flights. Fuselage and rudder covered with light blue tissue, wings and stabilizer yellow. Kit complete including many finished parts and a set of full size plans with easy to understand directions 25c

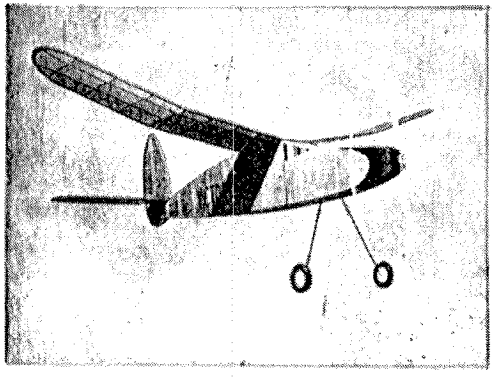


2 New 1940 Sensations

by WORLD'S CHAMPION Dick Korda



Designed to fly, by the young man that won both the Wakefield and Moffet trophies—the two highest awards offered in model competition!

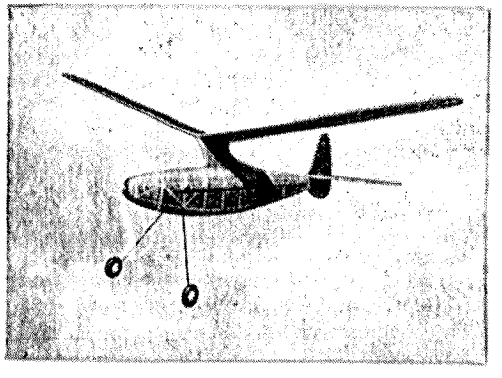


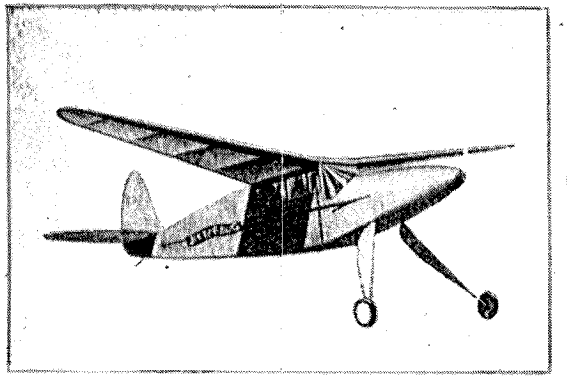
Victory

Here's a model that's easy to build and a superb flyer. A copy of the sensational Wakefield winner, it allows the beginner an opportunity to build a proven champion. It is especially recommended because of its ease of construction. Our clear easy to understand full size plans, with detail photos and lengthy instructions, take care of this! And you know that it will fly! *Wingspan* 32"—*Length* 23". **50c**

Gold Star

This is Dick's favorite—and no wonder! It's the type of plane any of us would be proud of! You can't beat it for beauty—or performance. Add to this Scientific's *complete* kit, with our high quality materials and simple instructions—and you've got something! (Note: Any similarity to your dream ship is entirely unintentional and purely coincidental!) *Wingspan* 32"—*Length* 22½". **50c**





Jitterbug

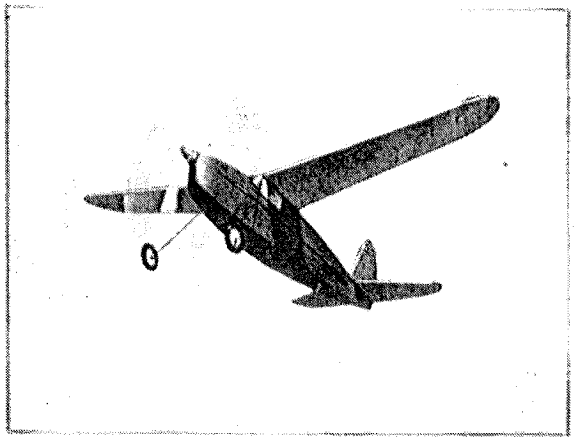
Another of Scientific's famous flying models designed to give you the utmost in model airplane values. Its slick lines will cause you to be the envy of every boy in the neighborhood! Notice the shapely wing (detachable, too!), classy cabin, streamlined nose, thoroughbred appearance. And it's so simple to build that, although you may have little experience, you won't encounter any difficulties. Kit is 100% complete, containing everything needed to build this eye-opener. *Wingspan* 25"—*Length* 20½" **50c**

3 Popular Favorites That Are Easy To Build:

Flying Yankee

Wingspan 20" *Length* 13"

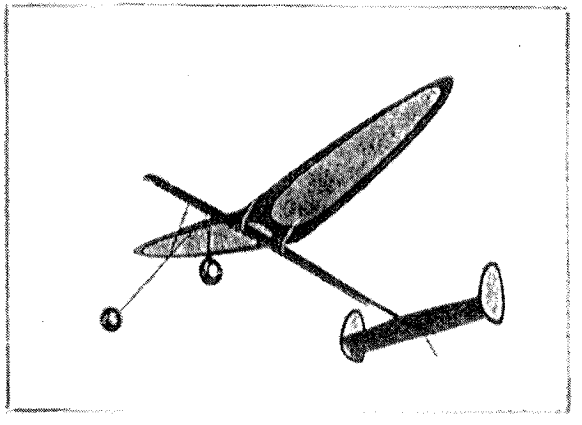
One of the finest model airplanes ever produced. Its clean-cut lines and simplicity make this one of the easiest jobs to build. It comes through with beautiful flights of 200 feet and inspiring 3-point landings that look like the real thing. Although it sells for only 25c the kit is the usual Scientific *complete* kit, includes a finished balsa propeller, balsa wheels, formed wire parts, drilled nose block, easily understood full size plan, etc. If you're looking for a model that you can build with a minimum of effort—yet still have a good-looking plane and a consistent flyer — get a "Flying Yankee! today! **25c**



Fleetwing

Wingspan 30" *Length* 23½"

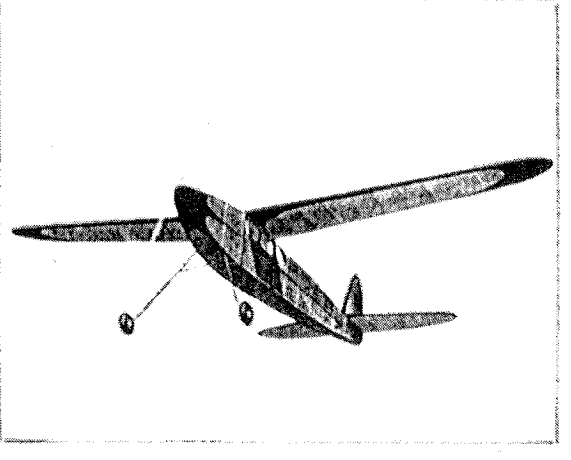
A record breaker that is easily constructed in a short time. The built-up wing and tail surfaces lift this out of the ordinary R.O.G. class and make for a super-flyer that will positively amaze you with its performance. After a short take-off run of 3 feet it climbs upward at the rate of 600 feet per minute, then, at a height of 250 feet, the model levels off and cruises from 4 to 5 thousand feet. Its flying ability can't be beat! The kit comes 100% complete with finished balsa propeller, all ribs and bulkheads clearly printed on sheet balsa, tissue, formed wire parts, full size plan, etc. NOW **35c**



Oriole

Wingspan 30" *Length* 34"

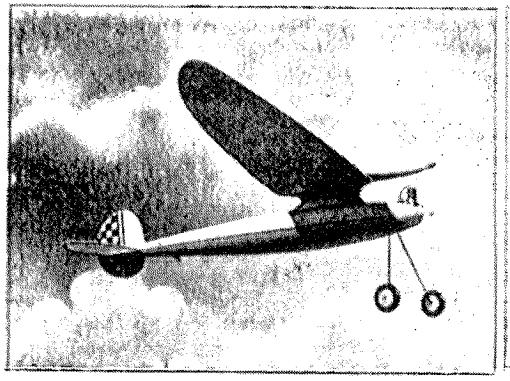
Designed for flying! This is primarily a contest endurance model, conforming to N.A.A. contest requirements, and so simple to build that you can easily complete it in a day. We have received letters from coast-to-coast telling us of the Oriole's consistent winning performance and record-breaking flights. And—unlike other endurance models this doesn't look like a flying boxcar! No sir! We didn't sacrifice beauty! Here, again, we give you all three qualities that you want in a model: Appearance, Performance, and Ease of Construction. This is the most dollars worth of flying you'll ever buy! Kit is 100% complete. (Includes ball bearing washer, too!) **$1.00**



They look, fly, and sound like gas models

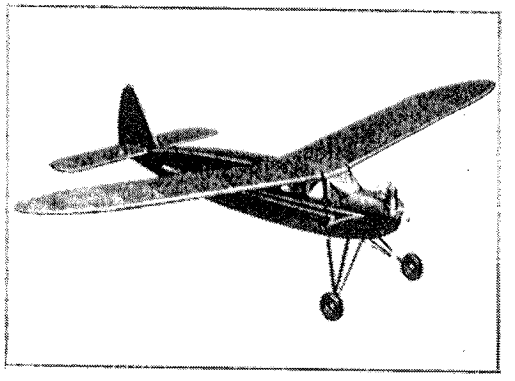
All the thrills of gas model flight!

Easy to build, Entertaining, Instructive



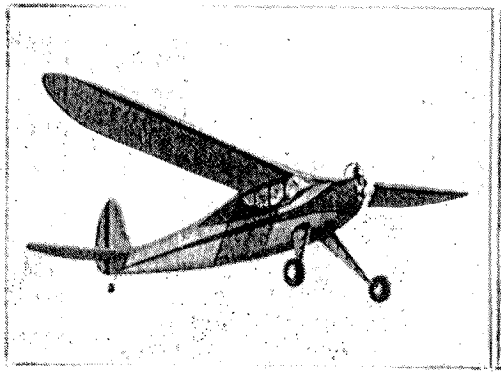
Valkyrie

Designed by indoor expert CARL GOLDBERG as a miniature of his prize winning gas model. Its super-streamlining and construction are so far advanced that this model may be used as a forecast of tomorrow's trend in model aviation design. Another feature of the Valkyrie is the sensational dummy gas motor that makes a noise like the real thing! Sturdily built with continuous one-piece wing root built into fuselage and securely attached to under side of wing. Beautifully colored; yellow fuselage and tail, black arrow on body, colored squares on rudder, and yellow wing with black and red flashes. *This is the same model that originally sold for $1 but, due to a new twist in manufacturing methods, is now sold for half that amount.* Wingspan 24" — *Length* 15". **50c**



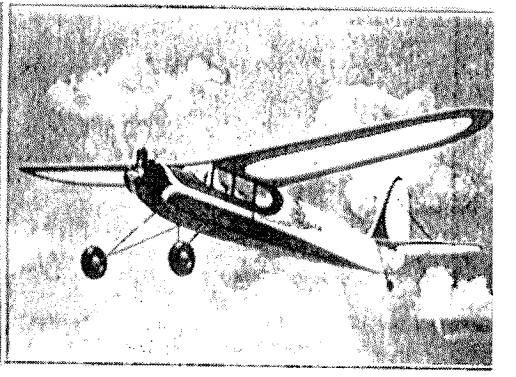
Miss America

This is an exact replica of the full size Miss America gas model, with all of its features, brought to you in the popular gas-type form. When Scientific introduced the gas-type model it was immediately accepted as a noteworthy innovation. This was further proven by the wave of imitations that began coming out, but, though proud to be imitated, we set such a high standard that our models couldn't be duplicated. Miss America is famous for its clean design and flying qualities and makes an excellent contest model that will beat anything in its class. You will find it surprisingly easy to build, too! Kit comes 100% complete with everything necessary to build this beauty. Also included are M & M pneumatic wheels, liquids, machine cut balsa propeller, and brown contest rubber. *Wingspan* 40" — *Length* 27½". **$1.95**



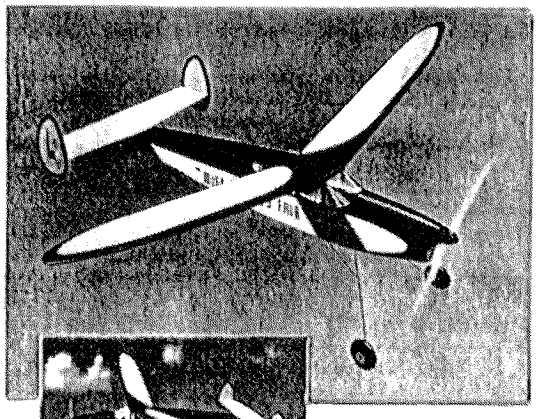
Firefly

The immediate success of the Flea brought in hundreds of letters requesting us to produce an advanced design in the gas-type field. The Firefly was our answer—and a very welcomed one! We instructed our designer to give us a plane that no one could compete with. A plane generous in beauty, easy to build; and a good flyer. The beautiful model that you see here is the result—"custom-made" for you! If you want to build a model that will be the next best thing to a genuine gas model—the Firefly is unsurpassed. In flight it looks and sounds exactly like a real gas job! Kit is complete and contains M & M Pneumatic wheels, true pitch balsa propeller, cement, banana oil, also a complete set of easy-to-understand full size plans. A real buy! *Wingspan* 36"—*Length* 28". **$1.95**



Flea

The Flea is the "father" of the gas-type models. Originated by Scientific, for intermediate model builders, it received nation-wide recognition as a worthy development. If you intend to build a gas model in the near future, but don't feel quite ready for it, the Flea will offer excellent preliminary experience that you will need. Designed to require a minimum of construction effort, you will find it easy to build, too. Among the many features are: movable tabs on tail surfaces (for better flight control), shock proof gas model type landing gear, and adjustable wing clips. The kit is absolutely complete and includes a pair of M & M pneumatic wheels, machine-cut balsa propeller, new type ball bearing washer, set of full size, easy-to-understand plans. *Wingspan* 36" *Length* 28". **$1.95**





This is the sensational model which, upon release last year, was immediately accepted as number 1 favorite of the nation. This is the model that outstandingly illustrates Scientific's "all three" theory: A model, in order to be considered complete, must incorporate (1) Appearance, (2) Performance, and (3) Ease of Construction. No one quality, alone, is worth consideration unless supported by the other two. All three should essentially be combined as one unit. And "Miss World's Fair" does just that!

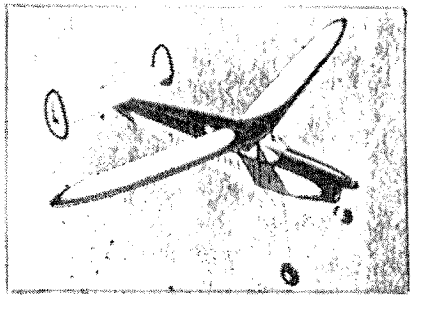
Here's the sensational miniature of the larger model, equal in every respect, which we were forced to produce to supply the demand of modelers preferring a smaller plane. Kit is 100% complete. Wingspan 39"—Length 20" **50c**

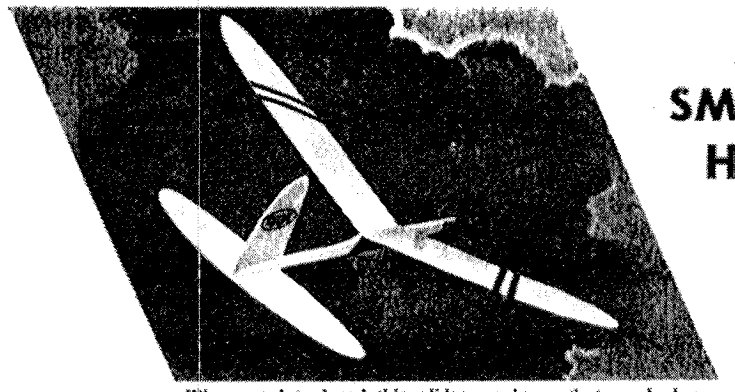
The original "Miss World's Fair" which broke all records and established a new standard in model airplane values. Fly one in the next contest you enter but don't hold us responsible if you're chased off the field for showing up the other boys! The kit, as usual, comes 100% complete. 50" *Wingspan—Length* 35½" **1.50**

THE MODEL THAT'S MAKING HISTORY!

. . . and now available in 3 popular sizes!

Just Out! Once again, Scientific makes model plane history! Stepping in line with the trend of the day we join the new 1940 World's Fair in their effort to produce a cheaper, widely available spectacle for *everyone*, by, in this same respect, releasing this beautiful miniature (cutest little thing on two wheels!), identical to the original, at the amazingly low price of 25c! This kit, too, (in spite of the low price), comes complete with all materials, including finished parts and full size plan. It's easy to build, easy to fly, and easy on the eyes! (What a nice World's Fair souvenir, too!) 24" *Wingspan -Length* 17" **25c**



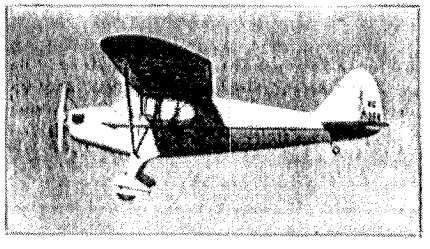


A SMASH HIT!

When we introduced this glider we knew that we had something that modellers would like. We knew that it would get a welcome reception. But we DIDN'T know that it was going to be such a sensation that they would sell as fast as we could produce them, to this very day! Ordinarily, the popularity of an item of this sort decreases after a few months but, in this case, its popularity has been increasing continuously, still selling as it just introduced! The reason for this is obvious: You get a glider that is easy to construct. (Wood for wings is machine tapered.) When completed you have a glider that is the most beautiful on the market. When you fly it—Boy!—no use talkin'! Words weren't made for flights like this! And only a quarter! How's that for value? With all these features is it any wonder that it's so popular? Build one today (if you haven't already done so) and join the others in this new thrill!

25¢

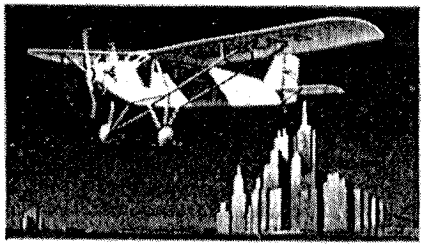
Wingspan 20⅝"
Length 18"



New "Cub" Coupe

25" Wingspan—Length 19"

For a general all around good flying model the "Cub" is highly recommended. Based on past popularity, we feel certain that this model will give you many hours of enjoyment. The model is a true replica of the big ship. It is a dandy flier, able to take off from the ground within a few feet and climbs at an amazingly high rate. Leveling off at a hundred feet it flies in circles of about 50 feet. The kit contains many finished parts including wheels; true pitch balsa propeller; wire hooks; nose plug; ribs, bulkheads, fairings, etc., clearly printed on sheet balsa; cement; washers; wire; rubber; tissue; and many other parts, including a full size detailed drawing and instructions. **50c**



CURTISS ROBIN

"Wrong Way Plane"

25" Wingspan—Length 19"

Of course you wanted to build this famous plane and now with Scientific's complete kit of parts and authentic detailed plans, you can easily do so—and in a very short time.

Although of 1929 design, this Curtiss Robin is still considered highly popular among model builders. You won't make any mistake in building this model, as your efforts will be rewarded with a model that will give you long distance endurance flights.

It is complete with all flu parts, ribs, bulkheads, etc., clearly printed on sheet balsa; tissue; formed wire parts; cement; washers; nose plugs; rubber; wheels; and a full size detailed drawing and instructions. **50c**

SCIENCE-CRAFT

FLYING SCALE MODELS

For those that want their flying models to be replicas of actual ships. This interesting series offers hours of enjoyment. Kits are 100% complete. 20" Wingspan. **50c**



H-1 Waco Custom Cabin



H-3 Waco F-5



H-12 Boeing Fighter



H-7 Mr. Mulligan



H-4 Curtiss Helldiver



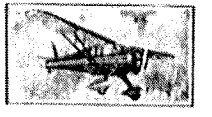
Northrop Gamma



H 22 Waco Y.K.C.



H-2 Monocoupe 90 A



Monocoupe Model 145



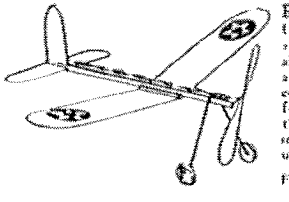
H-18 Army Douglas



H-10 Fokker D-7



Vought Sinclair "V 80"



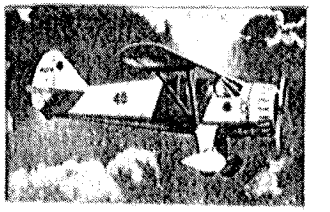
R. O. G. MODEL

Used in boys' camps and Y. M. C. A.'s all over the country as a beginners project. All parts come formed and cut and the model can be assembled in a few minutes.

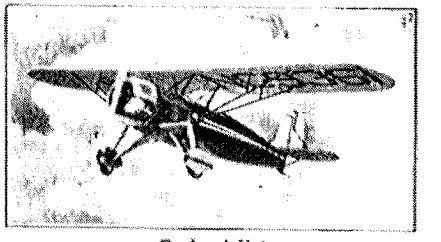
Flies 100 feet. **25c**

Ben Howard's "Mr. Mulligan"

25" WINGSPAN **$1.50**



A true-to-life model of the famous plane that won both the Bendix and Thompson Trophies at the Trophies at the Air Races in the same year. A sensational record, and the model is a winner too!



Fairchild

WARNER POWERED MODEL "22"

50" WINGSPAN, LENGTH 35", WEIGHT 8-OZ.

Takes off from the ground within 10 feet. A steady consistent flyer. Will rise in most cases to about 75 feet altitude and fly from 500 to 750 feet.

Kit contains giant full-sized detailed drawing with instructions; 12" balsa propeller; completely finished N.A.C.A. aluminum cowling; wheels; all ribs, bulkheads, etc., printed on sheet balsa; strip balsa, liquids; etc., etc.

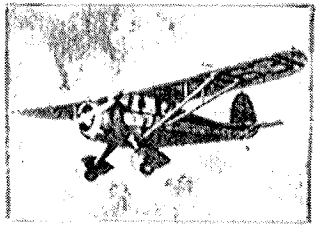
$3.50

Monocoupe Model 90-A

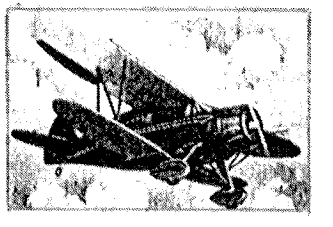
50" WINGSPAN
WEIGHT 10 OZ.

Here's a real flyer. Some modelers desiring gas powered scale models are stressing and making changes to convert this into a small gas model.

$7.50



Waco Custom Cabin



60" WINGSPAN
LENGTH 43½"

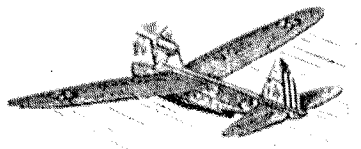
Scientific's Cabin Waco Model's distinctive sleek lines are detail for detail the same as the real plane's. The Kit is complete in every respect.

$8.50

American Junior

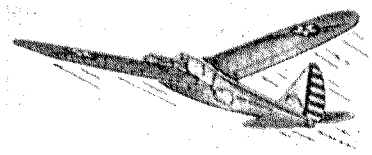
Ready-to-Fly Model Airplanes

These models come completely finished, ready-to-fly. Just slip the wing and tail surfaces into the slots, wind the prop—and you're all set for real flying action!



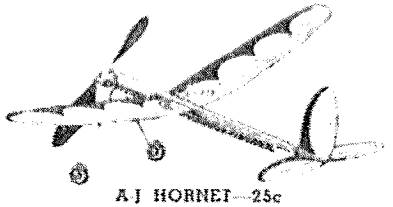
A-J COAST GUARD PATROL—10c

Includes dummy engine and new flight control.

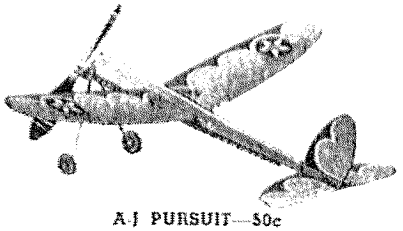


A-J INTERCEPTOR—25c

The sensational new catapult glider! Released with wings folded back—then, in the air, they snap into gliding position. (Launching stick included.)



A-J HORNET—25c



A-J PURSUIT—50c

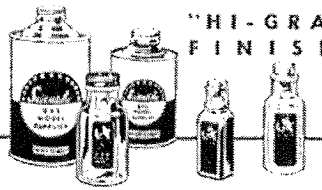


A-J GLIDER—5c

(Dealers Note: Gliders packed 48 in display box.)

SCIENTIFIC

"HI-GRADE" FINISHES



The finest finish is one that has good coverage, will brush or spray easily, dry quickly, and remain free from streaks or blushing regardless of weather conditions. All these liquids were prepared especially for Rubber Powered Model Airplanes and Gas Powered Model Airplanes, and we are sure that once you have tried them you'll find them far superior. The finish on a gas model does a great deal in making a successful model. Don't take chances with inferior, low priced materials.

Colored Dope

Comes in bright shades of red, yellow, blue, green, orange, silver, gold, brown, white, and black. For rubber powered and gas models.

½ oz.	$ .05
1 oz. bottle	.10
2 oz. bottle	.15
3 oz. bottle	.25
½ pt. can	.35
1 pt. can	.65
1 qt. can	1.25

Clear Dope

For rubber powered and gas models.

½ oz.	$ .05
1 oz. bottle	.10
2 oz. bottle	.15
3 oz. bottle	.25
½ pt. can	.35
1 pt. can	.65
1 qt. can	1.25

Varnish

For use where an extremely high gloss is required.

2 oz. bottle	$ .20
3 oz. bottle	.30
½ pt. can	.65

Acetone (Thinner)

This is used for reducing clear and colored dopes, and for thinning cement, paper cement and banana oil.

½ oz.	$ .05
1 oz. bottle	.10
2 oz. bottle	.15
3 oz. bottle	.25
½ pt. can	.35
1 pt. can	.65
1 qt. can	1.25

Banana Oil

½ oz.	$ .05
1 oz. bottle	.10
2 oz. bottle	.15
3 oz. bottle	.25
½ pt. can	.35
1 pt. can	.65
1 qt. can	1.25

Microfilm Solution

½ oz.	$ .10
1 oz. bottle	.15
2 oz. bottle	.25
3 oz. bottle	.35

Bamboo Paper Cement

Here's a new preparation for attaching bamboo paper or silk to the frame work of gas models.

3 oz. bottle	$ .25
½ pt. can	.35
1 pt. can	.60
1 qt. can	1.15

Scientific Cement

This is the nationally known SCIENTIFIC cement that has been used for years by America's leading model builders. It glues all joints solidly, is quick drying, waterproof, and absolutely colorless. The finest made for model airplane and boat use. Specify SCIENTIFIC when buying cement—you'll agree with thousands of other model builders it's the BEST!

½ oz.	$ .10
1 oz. bottle	.10
2 oz. bottle	.15
3 oz. bottle	.25
½ pt. can	.35
1 pt. can	.60
1 qt. can	1.15



Cement in Tubes

Large—10c
Small—5c

Scientific Heavy Cement

A new cement developed by Scientific especially for gas models. It is excellent for use on hard or soft grades of balsa. We strongly recommend this cement for your gas model requirements.

3 oz. bottle	$ .25
½ pt. can	.35
1 pt. can	.60
1 qt. can	1.15

COVERING MATERIALS

Fine Colored Tissue

Colors: Red, yellow, dark blue, light blue, green, orange, brown, silver, black.

20" x 29"	per Sheet $ .03	per Dozen	$ .30
White Tissue	per Sheet .03	per Dozen	.30
Silver Tissue	per Sheet .05	per Dozen	.50

Superfine Silk Tissue

Excellent for endurance models.

Per Sheet	$ .08	Doz.	$ .75

Wood Veneer Paper

15" x 20" sheet	$ .10	Doz.	$ 1.00
20" x 30" sheet	.15	Doz.	1.50

Bamboo Paper

Scientific has been fortunate in securing an extremely light weight grade of bamboo paper that has all the strength needed and a smooth surface. Use it on your next job and you will be surprised at the added efficiency.

Per sheet	$ .05
3 sheets	.20

Colored Bamboo Paper

This is genuine bamboo paper (not colored wrapping paper) same quality and texture as paper described above.

Red, Yellow, Blue

24" x 36", per sheet	$ .10
3 sheets	.25

"Zephyr Silk"

"Zephyr" silk is guaranteed by us to be the best fabric obtainable for use on gas models. Strong, light and will withstand severe wear. Get only the best when you buy gas model fabric — buy "Zephyr" silk.

Sold in widths of 36" and any number of yards long.

Per yard	$ .50
Heavy Grade	.75

Heavy Sheet Celluloid

.010 Thickness

5" x 7"	$ .10
8" x 10"	.15
10" x 12"	.20

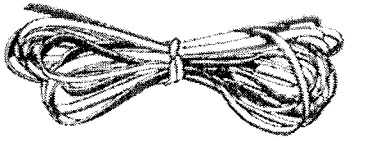
.005" Sheet Celluloid

3" x 10"	$ .03
6" x 10"	.05
10" x 10"	.10

Fibre Paper

Excellent for gas model coatings.

22½" x 28"	35c



Scientific Brown Rubber

Scientific Brown Rubber is all pure Para rubber of finest quality. We have been supplying national champions with this same quality rubber for use on their record breaking model airplanes.

		SKEIN (3.25 ft.)
1/32"	flat	3 ft. 1c	$ .05
1/16"	flat	3 ft. 1c	.60
3/32"	flat	2 ft. 1c	.75
1/8"	flat	3 ft. 2c	.90

Rubber on Spools



Size	Feet (approx.)	Price
1/8"	600 ft.	$2.50
1/4"	300 ft.	2.50

Rubber Tubing

1/32"	dia. per foot	$ .08
1/16"	dia. per foot	.10

Rubber Lubricant

½ oz.	$ .10
1 oz. bottle	.15
2 oz. bottle	.25
3 oz. bottle	.35



American Beauty Winder

Complete, with counter . . . $3.95
Same Type, less counter . . . 1.95



Gearless Transmissions

The advantage of using gearless transmissions is that the rubber strands are divided, each strand being wound individually rather than all in one bunch. This allows approximately 3 times as many winds to be put in the rubber motor.

A-2 Lightweight	for 2 strands $ .25
A-2 Heavy Duty	for 2 strands .50
A-3 Standard	for 3 strands .75
A-6 Standard	for 6 strands 1.00

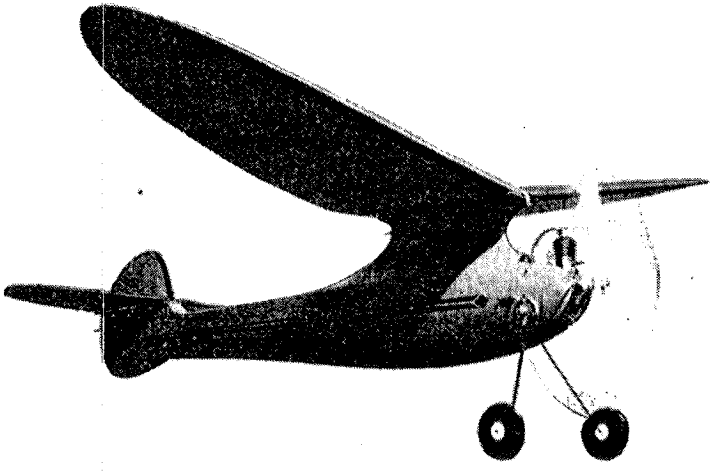


Freewheeling Unit

By far the most practical freewheeling device yet made. May be used on endurance type models as well as flying scale model airplanes.

25c

Nationally Acclaimed Champions !



* * * **Starling, Class "A"** The newest member of the Scientific gas model family which met with the instant approval of gas modellers all over the country. This is the model that you hear the boys talking about when they speak of the "classiest of the class A's." While the Starling was designed for perfect performance with the Atom motor, it is an all around model for other class "A" motors, too. The lines and beauty of the Starling are exceeded only by its ability to perform. The wing ribs, tail parts, fuselage sides, and bulkheads are all die cut, assuring you exactness of fit and ease of construction. The fuselage is all balsa and constructed on an entirely new principle, making it many times stronger. The entire motor hook-up and landing gear are attached as one unit with a movable battery case for balance adjustment. Other features include: ready-made clamp for attaching the landing gear, a finished propeller, streamlined balsa wheels, and many other items. Kit is 100% complete and includes the usual clear, detailed, full size set of plans. *The price is not a typographical error! It's a typical Scientific scoop!* **$1.95**

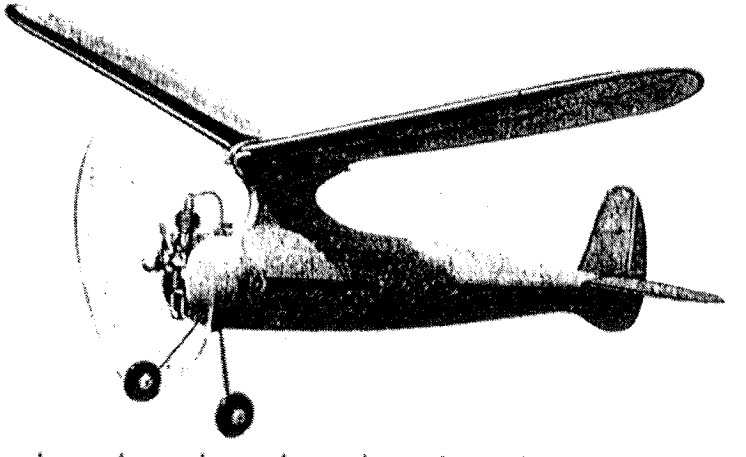
Wingspan—40" Length—27¼" Wing Area—210 sq in.

Ensign

Ensign, Class "B" The Ensign is the result of nearly a year of intensive effort in redesigning and rebuilding in an endeavor to bring to the model builders a gas model which would more than hold its own in any competition. On test flights, which were made under all types of weather conditions, the Ensign proved to be one of the finest and most stable gas models in existence. The super-streamlining has been simplified to a degree where a model builder with little or no experience can build the model easily. The kit is complete with large simplified plans and all necessary materials including pair of 2½" streamlined balsa wheels, finished prop, all hardware, ignition wires, cement, bamboo paper, etc. Features include: Motor mount especially constructed to allow for easy mounting and unmounting of power unit, movable battery box; for weight and balance adjustment, finished landing gear, finished landing gear clamp; a new Scientific feature. *If you want the best in the "B" class — here it is! You can't buy a better model airplane.* **$2.95**

Wingspan—30" Length—34½" Wing Area—372 sq. in.

Starling



The Eaglet

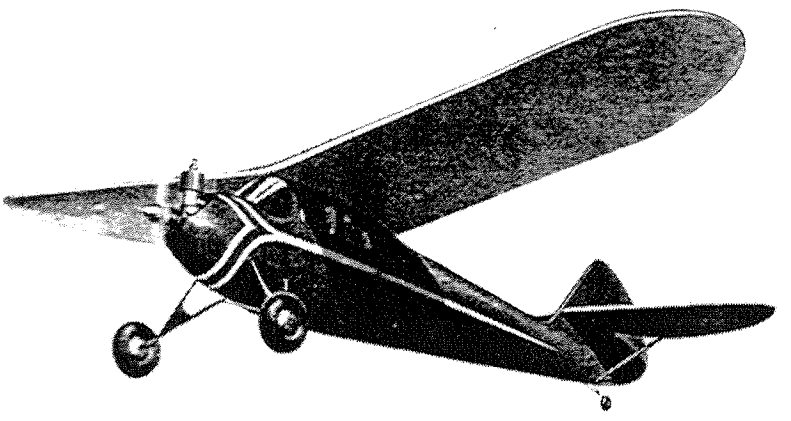
Wingspan 44" — Length 32".

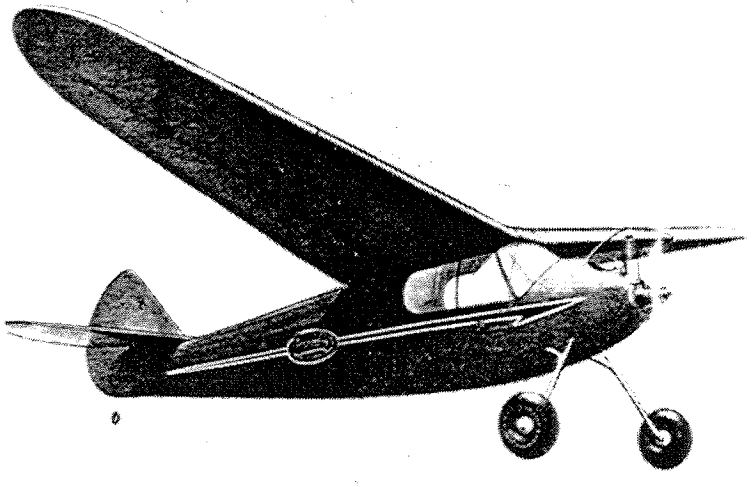
For use as a class "A" or "B" depending on your motor selection. Designed by Ben Shereshaw, one of the foremost authorities on gas models today and accredited as outstanding designer of super-streamlined planes. Here you get this designers wealth of experience and knowledge in one outstanding example — designed for your pleasure! The beautiful streamlining evident in the Eaglet is not as hard to build as you may believe. Construction has been carefully planned and simplified so that the average builder with little experience will not encounter any difficulties. During outdoor test flights, (held at Newark Airport) it performed so beautifully that the airline pilots, among the interested spectators, were astonished at its breath-taking flights. They all commented on the amazing resemblance to the real thing! And who should know better?

The kit is 100% complete and represents one of the outstanding values in the industry.

De Luxe Kit, with M & M pneumatic wheels $3.95

Standard Kit, same, but with 2⅝" streamlined balsa wheels in place of M & M wheels $3.50





The Commodore

Wingspan 6 feet — Length 50 inches — Wing Area 5.2 sq. in.

The success of the Eaglet brought in many requests for a larger gas model similar in design and performance. Mr. Shereshaw complied by producing the Commodore, which is considered the finest gas model obtainable. Some of the outstanding features include: Mono strut landing gear; designed to insure against nose-overs in the roughest of fields. Stressing to withstand loads twelve times in excess of that occuring in the severest crackups. Efficient aerodynamic design, resulting in a very flat glide ratio and low sinking speed. Trim flaps for finer adjustments. Semi-monocoupe wing stressed to resist all torsion and bending imposed in flights and landings. *A proven class "C" champion, you couldn't build a better gas job.* Kit is 100% complete.

Standard Kit $6.50

De Luxe Kit (addition of red and yellow Scientific dope and a pair of 3½" pneumatic rubber wheels, in place of balsa wheels) $7.95

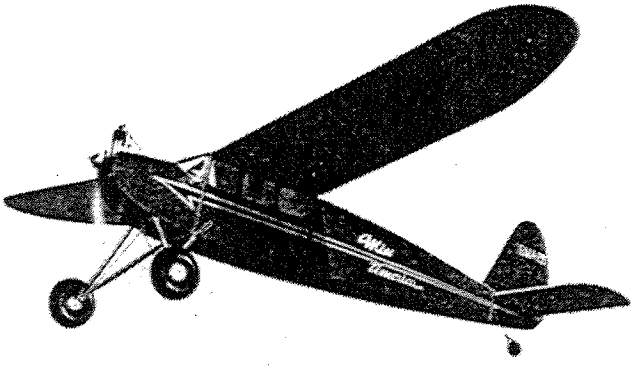
Miss America

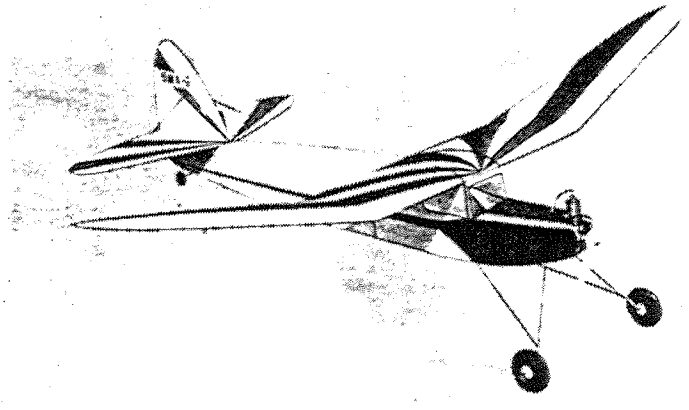
Class "C" gas model. Wingspan 7 feet — Length 54".

Still one of the nations favorites. Ever since this model came out it has been winning more contests than we have been able to keep track of. Primarily designed as the "perfect" gas model it incorporates the finest aerodynamical and structural qualities, embodying the same features of design and construction as full scale airplanes. In design, accuracy, detail, and completeness, it represents everything a gas model should be. It's a real flyer and, at the price, a real value! Kit is the usual Scientific *complete* kit and includes a 14" finished propellier, all required hardware, ignition wire, and a set of complete, clear, full-size plans.

De Luxe Kit (includes 3½" Pneumatic wheels and Scientific Red and Blue dope) $7.50

Standard Kit (less dope and with balsa wheels in place of pneumatic wheels) $5.95





Red Zephyr

Class "C" gas model. Wingspan 6 feet — Length 56".

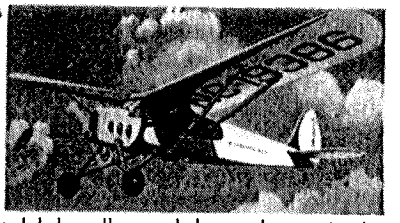
The wonderful reputation earned by the Red Zephyr was not accidental or "just luck." As one of the finest medium priced models in the country it has upheld its popularity because of its continued championship performance and record-breaking flights. Among the many features to be found are: Full shock-absorbing landing gear with easily attached brackets, vibration absorbing motor mount, re-enforced nose and hood to protect motor. Our accurate, fully detailed, full-size drawings and complete instructions assure you of a perfect model, easily and quickly constructed. The kit is 100% complete and includes everything required to build this outstanding performer.

De Luxe Kit (with 3½" pneumatic wheels) $5.95

Standard Kit (with balsa wheels in place of pneumatic wheels) $4.95

These Four - - - All Proven Champions!

THE STREAMLINER

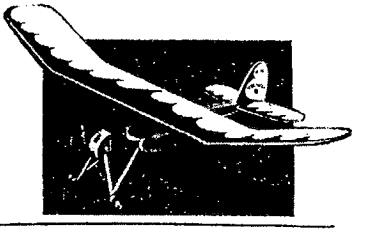


Class "C" gas model. Wingspan 6 feet—Length 43"

This type gas model is similar to the big plane scale yet still retains contest model performance. Has detachable wing, adjustable rudder control and stamped nose cowling which completely hides engine. Hinged hatch allows easy access to motor. Kit is complete with streamline balsa wheels, finished 14" propeller, ready-made ribs with notches for spars, strip balsa, printed balsa, all nuts, bolts, washers and other hardware parts, ignition wire, spring steel wire, cement, bamboo paper, colored tissue, etc.

Standard Kit **$4.95**
De Luxe Kit (with pneumatic wheels in place of balsa wheels) **$5.95**

Miss Philadelphia



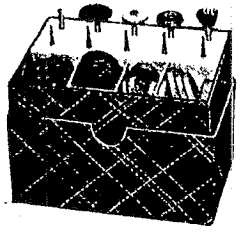
Class "C" gas model Wingspan 8 feet—Length 57"

This Maxwell Bassett sensation in one of the most famous gas models ever produced. It won every conceivable honor and still stands out with the best. Has flexible wing supports, detachable wing, adjustable rudder control, aluminum cowl hatch for easy access to motor. The generous proportions enable excellent adaptability for radio control.

Complete Kit **$9.95**



Speedway Hand Grinder
Operates at 20,000 R.P.M.
Price **$5.95**
Speedway Hand Drill
Operates at 1,000 R.P.M.
Price **$7.95**
Complete Kit
Including both drill and grinder with 5 accessories, in steel carrying case.
Price **$14.95**

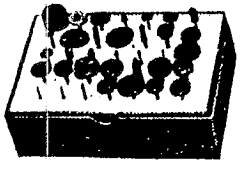


Accessory Kits for all grinders
Only 75c

The biggest value yet, a real $1.50 set — includes burs, brushes, buff sanding discs, abrasive disc, etc., with replacements.

A most complete set. Includes saws, drills, sanding drums, mounted and unmounted stones, steel, brass, and bristle brushes, 6 steel burs, sanding discs, abrasive discs.
$5.50

De Luxe Accessory Kit



Syncro Jr. Saw



Just the thing for the model builder who builds airplanes, race cars, boats, etc. Will cut balsa wood and hard wood. Complete unit ready for use, just plug into light socket. Saw has 8" throat and makes 7200 strokes per minute, giving a smooth cut.

$5.95

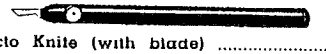
Syncro Sr. Saw.....$10.95 Blades.....5c ea.



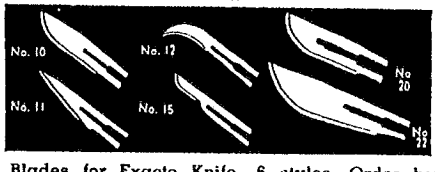
Carving Knife

One of the finest obtainable. The steel is tempered accurately in unvarying uniformity. Handles are securely riveted and polished and molded in to insure a firm grip. Blade 2⅝" long.

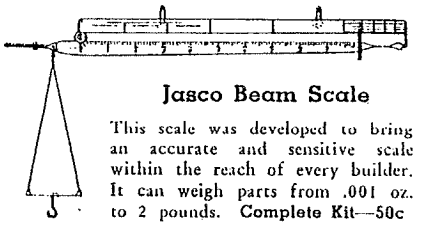
Now Only 35c



Exacto Knife (with blade) **20c**
Metal Handle and 1 blade (#1 or #2) **50c**
Metal Handle and set of 6 blades (#1 or #2 ..... **$1.00**
Knife Set. Both #1 and #2 and 12 blades 2.00

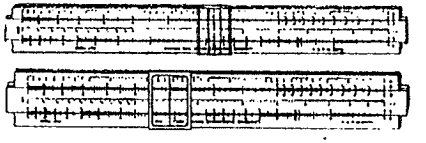


Blades for Exacto Knife—6 styles. Order by number ..... **Each blade 10c**



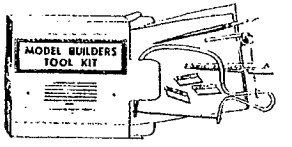
Jasco Beam Scale

This scale was developed to bring an accurate and sensitive scale within the reach of every builder. It can weigh parts from .001 oz. to 2 pounds. **Complete Kit—50c**



Lawrence Slide Rules

Composition, with white face—20c
De Luxe, with magnifier—35c



Model Builders Tool Kit

50c

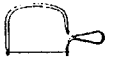
Anyone can build their own model airplanes, boats, race cars, or railroads with this tool kit. Contains the necessary model knife with 3 extra blades, sandpaper, round steel coping saw, camel hair brush, and a miniature sprayer for water doping.



Knife and one exchangeable blade—15c

Blades for Model Knife

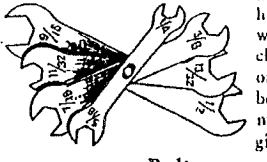
Package of 2—10c **Package of 20—89c**



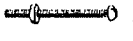
Coping Saw—10c

Sandpaper, fine or coarse—3c per sheet

Wrenches



Made of fine quality hardened steel. Four wrenches, which include eight sizes—one for any nut and bolt used on any miniature gas engine. **Per Set—25c**

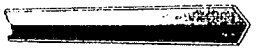


Bolts (complete with nuts)

3/32" diameter. Come ¼", 1" 1¼" long. State length desired.
4 sets for 5c



Soldering Iron—25c



Aluminum Angle Beam

Supplied in 1, 2, or 3 foot lengths

¼" x ¼"	per foot	5c
½" x ½"	per foot	15c
¾" x ¾"	per foot	25c

Dural Angle Beam

Slightly heavier than aluminum but much stronger.
Supplied in 1, 2, or 3 foot lengths

½" x ½"	per foot	20c
¾" x ¾"	per foot	25c

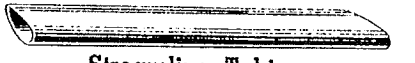
Aluminum Rivets

Size		Dozen
1/16" x 3/32"		5c
1/16" x ⅛"		5c
1/16" x 3/16"		5c

Brass Tubing

Supplied in 1, 2 or 3 foot lengths

1/16" outside dia.	per foot	10c
3/32" outside dia.	per foot	10c
⅛" outside dia.	per foot	10c
5/32" outside dia.	per foot	10c
3/16" outside dia.	per foot	10c
7/32" outside dia.	per foot	10c
¼" outside dia.	per foot	15c
5/16" outside dia.	per foot	15c
⅜" outside dia.	per foot	20c



Streamline Tubing

This streamline tubing has a great many uses on any gas job. The brass is easily soldered.

SIZE	ALUMINUM	BRASS
¼ wide	$ .20	$ .23
3/16 wide	.25	.26
⅜ wide	.25	.28
7/16 wide	.30	.33
9/16 wide	.30	.35

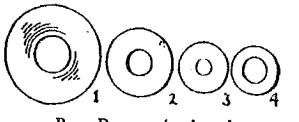
Prices are for one foot lengths—for two foot lengths double the price.

Wood Screws

Length	Dozen
¼"	5c
½"	5c
¾"	6c

Lock Washers

1/16" hole	per dozen	5c
3/32" hole	per dozen	5c
⅛" hole	per dozen	5c



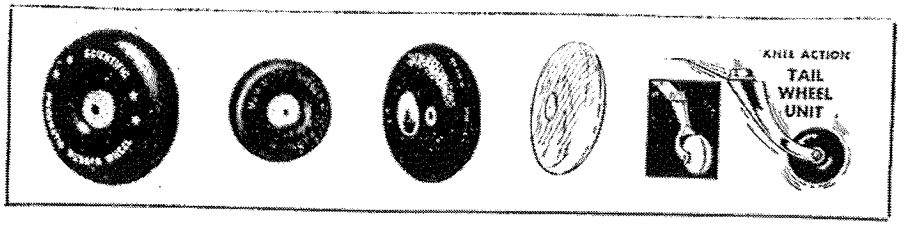
Washers

For Gas Models (Shown here actual size)

Per Dozen (order by number)—5c

Hinges—5c each





Scientific Pneumatic Rubber Wheels

Lightweight—Puncture Proof

For use on gas models of 5 to 8 foot wingspan. Weight 4 oz. per pair. Each wheel is tested to remain inflated for a period of 6 months or more. Guaranteed, made of finest quality rubber.

Per Pair (3½")	$1.50

M. & M. Gas Model Wheels

Complete with tool for inflating.

Size	Wt. Per Pr.	Price
2½"	1 oz.	$ .90
3"	1½ oz.	1.50
3½"	2¼ oz.	2.75
4½"	5 oz.	2.95
6 "	8 oz.	4.50

Voit Wheels

2½" dia.	per pair $1.25
3½" dia.	per pair 1.50
4½" dia.	per pair 1.75

Gas Model Balsa Wheels

2¾" (with hardwood bushing with ¼" hole for axle) ..... per pair 30c

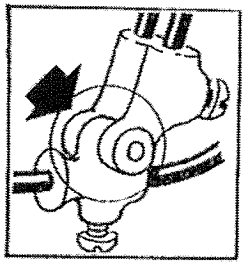
3½" (with hardwood bushing with ⅜" hole) per pair 35c



Landing Gear Brackets

These brackets eliminate all soldering, brazing, welding or bending of landing gear. Just insert wires in holes of brackets and tighten the set screws. Can be adjusted for any position or angle.

Complete set of 2 brackets with 6 set screws $ .50



Landing Gear Bracket

With Knee Action

Similar to the brackets shown above, except that these have knee action built into them making them more effective in absorbing rough landings.

Per Pair—75c



Grommets

Per Pair—15c



Dural Prop Spinner

For Gas Models

Reduced to 15c

This is an exceptionally neat accessory for your gas model. Threads to front of crankshaft over prop nut. Has two small holes into which you may insert nail for tightening. Will add a considerable amount of beauty to any gas model.



Prop Shaft Nut—5c Each



Stamped Aluminum Nose Spinner

Just the thing for small gas models and rubber powered models.

Only 15c

Knee Action Tail Wheel Unit. This is the tail wheel unit that embodies a novel spring steel attachment which absorbs the shocks of the roughest landings. Install one on your gas model now, it will add 100% to its appearance. Made of highest quality aluminum with donut rubber wheel. For use on all gas models. 75c

Formed Landing Gear



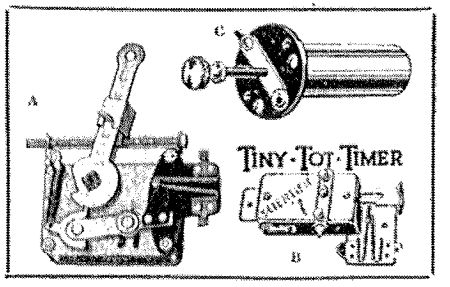
Made of one-eighth inch spring steel. Per set of 3 pieces 25c



Featherweight Brackets

Made of strong stamped metal. Complete set of 4 stampings with 4 screws and nuts.

Only 25c



Robot Timer (a) The only timer that is completely automatic. Small size—only 1½ oz. Setting of a small knob gives the desired time. Special catch keeps timer in readiness at any fraction of a minute you may set it for. All you do is pull a small lever before sending your model off. The Robot does the rest, allowing the motor to run until it reaches the time it has been set for, then, like magic, it shuts off the motor. No other timer on the market has these completely automatic features. Equip your model with the best obtainable. Can be used on all gas models. $2.50
Without automatic attachment $1.95

Tiny Tot Timer (b) This timer is small in size measuring ¾" x 1½". Has built on silver contact pointed switch. $2.75

Austin Timer (c) This popular timer now reduced to $1.00

NOMOGRAPH

FOR SELECTING SCIENTIFIC TRU PITCH PROPELLERS

Scientific now takes all the guesswork out of selecting the proper propeller for your gas model. The pitch-diameter ratio selected on the Nomograph is designed to afford the maximum thrust horsepower that your engine is prepared to deliver at maximum efficiency.

Make of Engine	Wt. of Model in Lbs.	Prop. Dia.	Pitch Selection
Atom	10 oz. to 13 oz.	8	A
Bantam	1.00 to 1.20	10	B
All	3.50 to 4.00	14	B
Brown	4.00 to 4.50	14	C
Motors	4.50 to 6.00	15	A
	6.00 to 7.00	15	B
Brownie	1.50 to 1.75	11	A
	1.75 to 2.25	11	B
All	3.00 to 3.50	13	B
Bunch	3.50 to 4.25	13	C
Motors	4.25 to 6.00	14	B
Danny-mite	3.00 to 4.00	13	C
	4.00 to 4.75	14	A
	4.75 to 6.25	14	B
Forster	4.00 to 5.00	16	A
	5.00 to 6.00	16	B
	6.00 to 8.00	18	A
	8.00 to 9.00	18	B
Made-well	.8 to 1.00	9	A
Ohlsson "60"	3.00 to 4.00	14	B
	4.00 to 6.00	15	A
Ohlsson "23"	.18 to 1.05	10	B
	1.05 to 1.75	11	A
Ohlsson "19"	1 to 1.02	10	B
"O K"	4.00 to 4.75	14	C
	4.75 to 6.00	15	A
	6.00 to 7.00	15	B
Sky-Chief	3.00 to 4.00	13	B
	4.00 to 4.05	14	A
Syncro B-30	1.50 to 1.75	11	A
	1.75 to 2.25	11	B
Syncro "Boo"	.55 to .75	9	A
	.75 to .95	9	B
Syncro Ace & Special	3.50 to 4.00	13	C
	4.00 to 5.00	14	A
	5.00 to 6.25	14	B

Gas Propeller Blanks

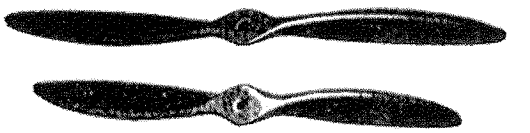
10", 11", 12", 13", 14", 15", 16" 10c Each

MODELCRAFT Gas Model Propellers

9", 10", 11", 12", 13", 14" 25c Each

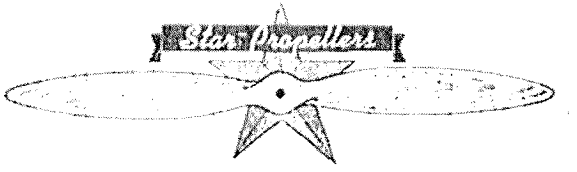
Scientific Tru-Pitch

Gas Model Propellers



TRU-PITCH propellers are carved by hand in the U. S. with sensible combination of aerodynamic and structural characteristics. Selected hardwood and precision jigs insure absolute uniformity of pitch on every propeller. Tru-Pitch propellers are specifically designed for the engine on which they are to be used. Consult the Nomograph when ordering.

	Natural	Varnished
9" Prop.	40c	65c
10" Prop.	40c	65c
11" Prop.	45c	70c
12" Prop.	45c	70c
13" Prop.	50c	75c
14" Prop.	50c	75c
15" Prop.	60c	85c
16" Prop.	75c	1.00
18" Prop.	1.00	1.25



An outstanding value. These propellers are excellent for use on gas models for trial flights and during the model's adjustment period. Be sure to ask for STAR propellers.

9", 10", 11", 12", 13", 14"			25c
15"	35c	16"	40c



Laminated Gas Model Propellers

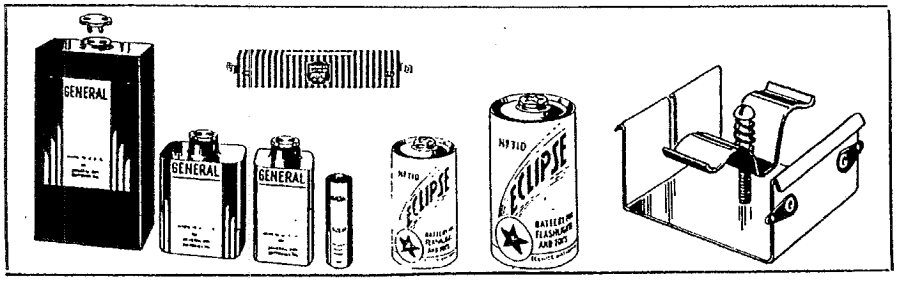
These are the most beautiful gas model propellers on the market. Laminated sheets of clear spruce and mahogany of finest quality are used in their construction. Their efficiency and durability are vastly superior.

9"	$ .60	14"	1.00
10"	.75	15"	1.25
11"	.75	16"	1.35
12"	1.00	18"	1.85
13"	1.20	20"	2.25

Natural Laminated Propellers

Exceedingly attractive propellers built up with laminated sheets of Pine, Walnut, Red Gum, Honduras Mahogany, and Red Cedar. If you're one of those modellers longing for a laminated propeller, but held back by the higher cost, these are for YOU. The prices are the lowest for this type propeller and set a new standard in value.

8 "	$ .40	13 "	.65
9 "	.45	13½"	.65
10 "	.50	14 "	.70
11 "	.55	15 "	.75
12 "	.60	16 "	.80
17 "	.85		
18 "	.90		
19 "	.95		
20 "	1.00		



General Batteries These are high quality dependable batteries for use in all gas model airplanes boats, race cars, etc. All batteries contain a socket connector.

No. 1 Booster battery. Weight, 22 ounces 60c
No. 2 Flight Battery. Weight, 6 ounces size 2" x $1\frac{5}{16}$" x $2\frac{1}{8}$" 75c
No. 3 Flight Battery. Weight, 4 ounces size $1\frac{5}{16}$" x $1\frac{5}{16}$" x $2\frac{1}{8}$" 50c
No. 4 Flight Battery. (Penlite) ½ ounce size ½" x $1\frac{7}{8}$" 5c

Eclipse Batteries These are economical gas model batteries and feature the all metal top. intermediate or regular. ..... 10c each

Burgess Batteries Moisture proof and leak proof. Spring clip terminals simplify installation.

Small size $1\frac{1}{8}$" x $1\frac{1}{8}$" x $2\frac{3}{8}$" 50c
Large size $1\frac{1}{8}$" x $1\frac{1}{8}$" x $4\frac{1}{4}$" 70c

Smith Coil *"World's finest ignition coil for miniature gasoline engines."* All the modern engine builders who are anxious to escape the penalties of faulty ignition are using this coil and it is standard equipment on most gasoline engines today. Clip-on high-tension lead fits all motors. Absolutely oil and water-proof. Suitable for use in model airplanes, race cars, boats, etc. Save weight and eliminate your coil troubles by using a Smith Coil. Includes high tension lead wire. $2.50

Smith "Competitor" Coil Of radically new design to fill a need for an easy mounting, rugged coil with superior electrical characteristics. The spark is hotter the battery drain is less, *and the weight has been reduced to* 1½ *ounces*. Complete, with new type high-tension clip to fit the smaller plugs, ... $1.75

Aero Coil Designed to work perfectly on one standard battery or pen-lite cells. Complete with snap-on high-tension cable.

2 ounce, 1½ volt coil $2.50
2¼ ounce, 3 volt coil $2.25

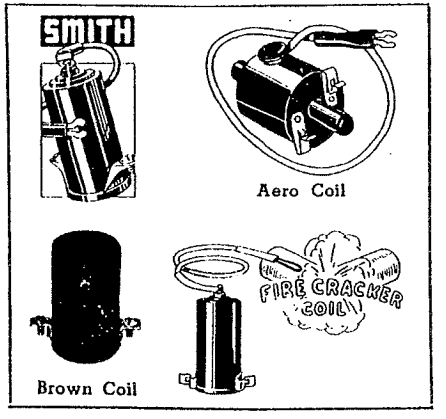
Firecracker Coil ... **Reduced to $1.25**
Includes High-tension lead wire.

Brown Coil This coil is designed for 3 volts, the maximum current to be used with your model motor. Each coil is designed to withstand seepage of gasoline and oil into the windings and to dissipate all heat. Complete $1.75

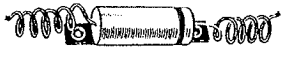
Coil Straps ..... **per pair, 10c**

Aluminum Battery Case The finest most practical battery case available. They may be mounted on a strip of balsa on bottom of fuselage and adjusted to any position for proper balance of model. Simply loosen small winged nut extending outside bottom of fuselage and move backward or forward in slot of balsa track until proper balance has been secured. When satisfactory adjustment is made merely tighten winged nut and your model is ready. The batteries are held securely and may be replaced without soldering. Supplied in 3 sizes for penlite, intermediate and regular size batteries.

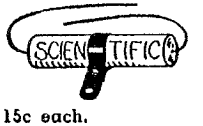
Penlite size, ¼ oz. 30c
Intermediate size, ⅜ oz. 30c
Regular size, ½ oz. 30c



Sprague Condenser 20c each

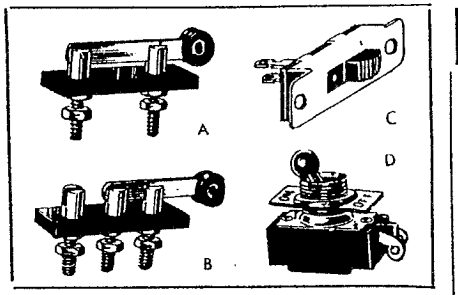


Scientific Condenser
Our own make for use on all engines. With mounting bracket. Only 15c each.



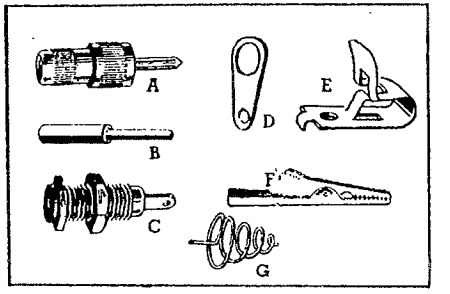
Metal Condenser
High voltage type, has aluminum case to protect it from oil and abuse. Has mounting bracket. ..... 20c each



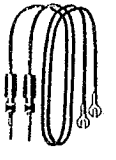


Miniature Knife Switches The most practical switch for gas models. Perfectly designed, constructed of light weight metal with black bakelite base and insulated handles. Firm contact assured.

2 pole switch (a) 25c
3 pole switch (b) 30c
Switch (c) Lightweight—For gas models 15c
Toggle Switch (d) With on-off switch. Ball type joint facilitates easy toggle movement. Small and light in weight 25c



Solderless Plugs (a) Can quickly be attached to booster wires without soldering 10c
Regular Plugs (b) Can be used in the same manner as our solderless plugs except that the wires must be soldered 5c
Midget Tip Jacks (c) Mounted in model with small portion protruding from fuselage. Once motor is started the plugs are unhooked in a jiffy and motor continues to run on small batteries from fuselage. 2 jacks required. Each 10c
Lugs (d) ..... 6 for 5c
Terminals (e) Made of light weight material and small in size, these clips are economical and easy to install ..... 3 for 5c
Alligator Clips (f) Each 10c
Compression Spring (g) For use in battery boxes ..... 2 for 5c



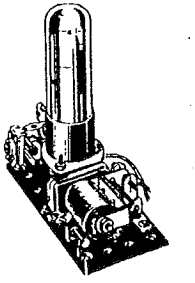
Booster Battery Lead Wires
This is a desirable method of connection between booster batteries and gas models. Has two "U" clips for connection to batteries with two plugs for inserting into jacks on gas model. Pair 30c



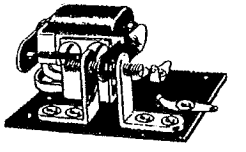
Scientific High-Tension Lead Wire (with Clips)—15c

Radio Control Supplies

Smith Radio Control Kit

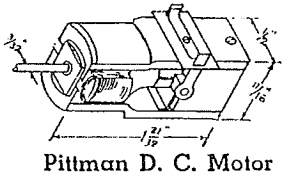


Illustrated is a receiver designed especially for use in gas model airplanes. Unit completely assembled and tested. Does not include tube, batteries, or escapement motor. Total weight. including tube as shown—5½ ounces.
This is the basic unit of any radio control system. For operation in the MC band. Using a special 2 ounce battery and 1½ ounce electric motor to control surfaces, the total weight of the lightest radio control unit need not exceed 10 ounces, which most gas models can easily lift. This unit can also be used to control boats, race cars, garage doors, etc. $9.00



Smith Radio Control Relay

This relay weighs only two ounces as shown and is supersensitive because of the 10,000 ohm coil it contains. The armature is statically balanced against vibration and the relay will operate in any position with rapid action due to its small size. Every radio control circuit requires one or more of these specially developed relays and there is nothing available as low priced or light weight, or as sensitive as this one. All parts carefully heat treated to insure high efficiency. $4.00



Pittman D. C. Motor

D. C. Motor for operating control surfaces, permafield, reversible. Weight 1½ ounces. Size $1\frac{3}{8}$" long, ¾" high, ½" wide over frame, ¼" over brushes. Power requirement: 4 to 6 volts D. C., 0.4 to 1.5 amperes $2.50

Radio Control Booklet

Compiled especially for the radio control gas model fan. gives diagrams, parts lists, descriptions, systems, etc. 25c
Dealers note: Prices on R. C. booklet and Pittman D. C. Motor are net.

No patent liability is assumed with respect to the commercial use of the circuits and tube information contained in this or any other articles published by us.



Hook-Up Wire

Finest Quality Obtainable

Most motor trouble is caused by the ignition system. Often the gasoline and oil from a motor will dissolve the covering of the wire and make a short circuit. Oil, gas and water proof. Has 15 coats of special acetate lacquer which gives great flexibility so that wire may be bent without cracking.

In boxes of 5 feet ..... **$ .15**

Special—Large 20 foot roll ..... **.50**

Rubber Fuel Line

For use on Cyclone, Hi-Speed and others.

Per Foot **10c**



EXHAUST MANIFOLD

Is your gas model becoming saturated with oil and gasoline? If it is—you need one of these exhaust manifolds. Keeps model clean by conducting exhaust and excess oil away from fuselage and maintains that neat appearance. May be attached to any Brown Jr. or Mighty Midget engine. Clamps over exhaust ports and is excellent for cowling. Now only 50c



Valvoline Motor Oil

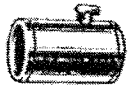
This is the Oil Your Engine Needs

Ordinary motor oils can't stand the high speed of miniature motors and will ruin your engine in one or two minutes running. The special refining process of this Valvoline motor oil removes sluggy elements and as a result you get better power and speed. This oil comes in SAE 70 grade and is for use in all miniature gas engines. Buy the best—Valvoline. Per bottle, with instructions 15c

Austin Fuel Pump Can

For refueling gas models, boats, and race cars. Keeps fuel free of dirt and makes refueling easy. Depress plunger—and your gas tank is filled in a jiffy. Makes an excellent oil can. Capacity ¼ pint 60c

Glass Droppers



Gas Tank Kit

This is a low price kit from which you can build your own gas tank. Complete kit 39c

Funnel

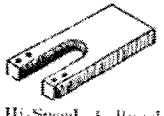
(Contains Filter Screen)



Assures clean fuel in motor tank by use of a filter screen which is built into the funnel. This is an important piece of equipment that every gas model fan will want. 30c

Test Blocks

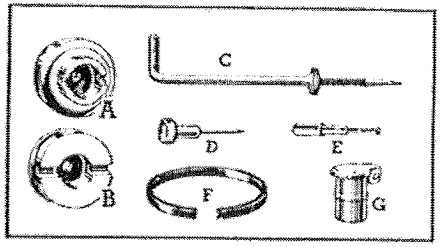
For Gas Engines



It is highly desirable to run your motor on a test block for proper breaking in, before installing in gas model.

1. Brown Jr., 2. Dennymite, 3. Hi-Speed, 4. Bunch, 5. Ohlsson "21," 6. Ohlsson Gold Seal, and O.K. Motor, 8. Syncro Bee, 9. Syncro Ace.

Each (order by number) 15c



Flywheels (a-b). May be used on all types of 1/5 h.p. engines. Either type, A or B, each ...$1.00

(Type A for use in race cars, Type B for use in boats.)

Needle Valve (c). This is a hardened needle valve for use on Baby Cyclone and Dennymite engines. Each, 30c. Remote control needle valve $1.00

Needle Valve (d) Carburetor (e)

Engine:	(d)	(e)
Brown Jr. (All models)	50	50
Forster	45	85
Mighty Midget (All Bunch motors)	40	40
Ohlsson	50	50
O.K. (All models)	35	40

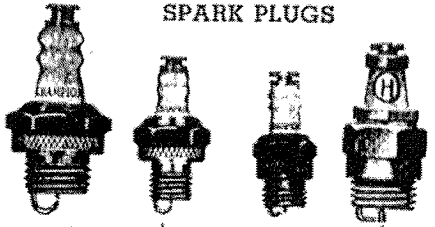
Piston Rings (f). For all engines. Please specify engine when ordering 25c

Spring Top Gas Cap (g) 10c

Replacement Parts For All Gas Engines

We stock genuine replacement parts and accessories for all the popular makes of engines. When ordering, please give description as complete as possible, such as make of engine, model, year, and the number of the part, if possible, with the price. This will eliminate errors and delays.

SPARK PLUGS



(Shown here actual size)

(a) Champion V ⅜"—24 Thread 65c

(b) Champion V2 ¼"—32 Thread 65c

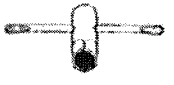
(c) Champion V3 ¼"—32 Thread 65c

(d) Hurleman ½"—24 Thread 75c

Gaskets. In two sizes, for ¾" and ⅜" spark plugs. Each 5c

Spark Plug Wrenches

¾" for Champion V 30c
⅜" for Champion V2 .... 20c
⅝" for Champion V3 .... 20c
½" for Brown & Hurleman ..20c

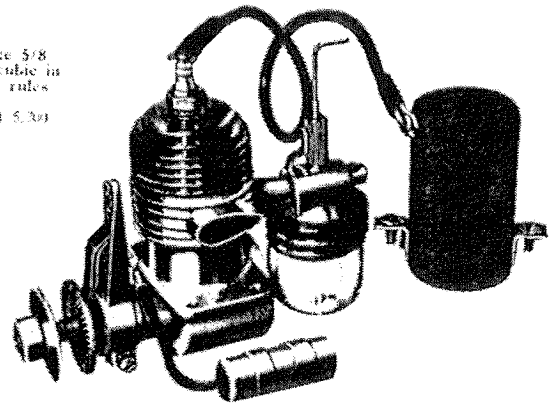


Motor Cover

Cover your motor when not in use to keep out dust and grime. .....Each, 10c



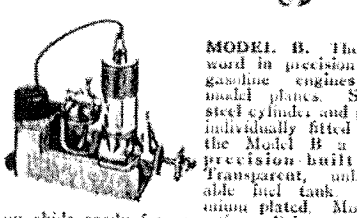
Bore .770 Stroke 5/8
Displacement .29 cubic in
Class "B" N.A.A. rules
R.P.M. 8000 10,000
Horsepower 1/7 at 6,500



Here is the greatest motor of the low price class. The motor that outpulls, outclimbs, and outflies all others in its price range—and does it with a minimum of ease and effort! Designed, after long and careful research, to meet the increasing demand for a guaranteed motor of top quality in the "B" class—with a cubic inch displacement of .29 out of a possible .30 as specified in the NAA rules for class "B" competition. May be inverted. Equipped with the champion V2 plug $7.50

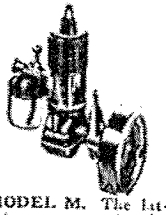
Model D Here's the class "C" motor that offers you the most value for your money! Precision-made in the world's largest and most completely-equipped plant devoted to the manufacture of miniature gas motors. The 1940 Model D includes the sound engineering advances used in other Brown Junior motors. There is a new and improved timer, new chrome molybdenum crankshaft, new micrometer needle-valve, new transparent gas tank. In every way, it lines up with the famous Brown motors that have won first places and flight records everywhere ***$12.50***

Bore, ¾" Stroke, 1" Weight (bare) 6½ oz. All motors include spark plug, coil, and condenser. Block-tested before shipping and guaranteed against defective workmanship or materials.

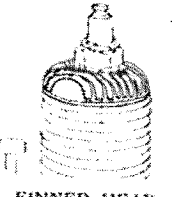


MODEL B. The last word in precision-made gasoline engines for model planes. Special steel cylinder and piston individually fitted make the Model B a truly precision-built job. Transparent, unbreakable fuel tank. Cadmium plated. Mounted on skids ready for operation. Price complete, ready to run $21.50

MODEL C. Combines power, durability, and light weight at a medium price. Identical in every respect to the Model B except for Aluminum piston and special rings. The new timer in this and other Brown Motors gives positive contact at the points, and may be rotated from 180° to 360° to get it in any position. Price complete $18.50



MODEL M. The latest power unit for model cars and marine use. Includes Aluminum piston and special rings, combination flywheel and cam washer for high speeds on open type high speed hulls; new timer, new micrometer needle-valve; new transparent unbreakable gas tank. Price complete $18.50



FINNED HEAD ATTACHMENT

Dress up your Brown Jr. motor with this beautiful finned head. Not only will it add to the appearance, but it will provide additional cooling area. Easily attached, it is held in position by the spark plug. This is an exclusive item, originated by Scientific ..... Only 35c

STRATO-STREAK

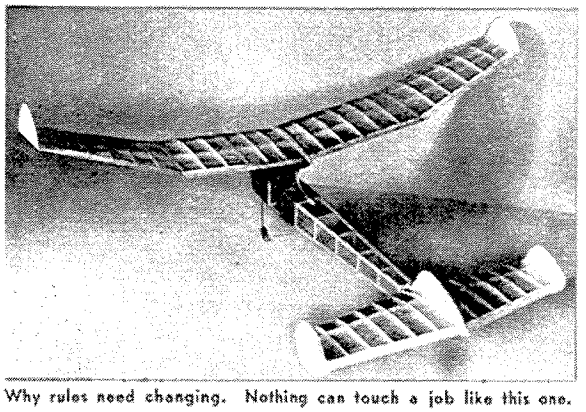
BY LOUIS GARAMI



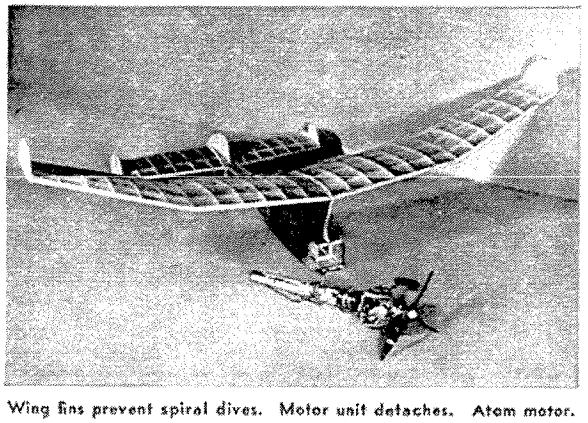
You don't know climb until you've built one of these flying bullets. Good soarer, too.



You'll smile, too, when you see how your Strato-Streak can climb.



Why rules need changing. Nothing can touch a job like this one.



Wing fins prevent spiral dives. Motor unit detaches. Atom motor.

THE Strato-Streak was created to prove beyond all doubt that the vest-pocket gas model can compete almost on an equal basis with larger-sized contest gas models. In creating the design, full consideration was given to all existing proven features of successful gas models. The acceptable features were embodied in addition to a number of new ideas.

This ship was designed for performance without any particular stress on appearance. Only the features vital to high-grade performance were incorporated. The gas-model competition rules being what they are, a fast climb is of primary importance. The model was made directionally stable so that it could point its nose to the sky and keep climbing on its tail until the motor cut. It was streamlined to the nth degree, all resistance being cut down to a minimum, so that a fast climb would be possible. To assist in this, a thin airfoil was used. When the motor cuts, the proportionately large wingspan, coupled with a short moment arm, permits tight gliding circles which are vital for taking advantage of rising currents.

Construction is simplicity itself. The fuselage, composed of four longerons, is square. The wings have a straight taper, eliminating the possibility of warp. The tail is the same. The wing fins and rudder are sheet balsa, which makes for the easiest construction. The ignition unit, the source of greatest trouble with small models, is so simply arranged, that it presents no problems, even for beginners.

The simplicity of this high-performance model proves conclusively the practicability of vest-pocket gas models, which can be rapidly constructed and which will give performance equal to, if not better than, models of twice or three times its size—and the larger ships require many days of tedious labor and are costly to repair when damaged. This entire model can be built for less than a dollar. If it is properly constructed without warp, we urge extreme caution in flying it with motor runs over ten seconds. The model will consistently fly out of sight when a full twenty-second motor run is allowed.

CONSTRUCTION

Make the two fuselage sides one on top of the other. Note that the longerons go past the first cross brace to act as allocating stubs for the firewall. Assemble the square body. Fill in the two sides and bottom between the first and second cross brace with $^3/_{32}$" sheet balsa and cover the next side station with celluloid on whichever side is more practical for you. Through this

window you can watch the timer and thereby vary the motor run to your liking. Cut the plywood bulkhead carefully so that the four longeron stubs fit snugly. Give it a coat of glue. Screw on the motor mounts temporarily and then locate the landing-gear wire. If you use the built-in gas tank, put it on the side which is handier for you. Make the V-shaped ignition channel and glue it in the back of the firewall. In its correct position it is lying on one side on the bottom of the body. Wire up the ignition unit and try it. Open the ports of the engine and press the breaker points together for a split second. If the ignition is healthy, a loud click is heard in the cylinder. In case this click is heard only once in a while, the cause may be worn or dirty points, weak batteries, or fouled plugs, providing the wiring is O. K. and the coil and condenser are in good shape. Do not proceed with the rest of the plane unless your motor is running smoothly. Decide just this once that the ignition is not the last thing in the model—but the first.

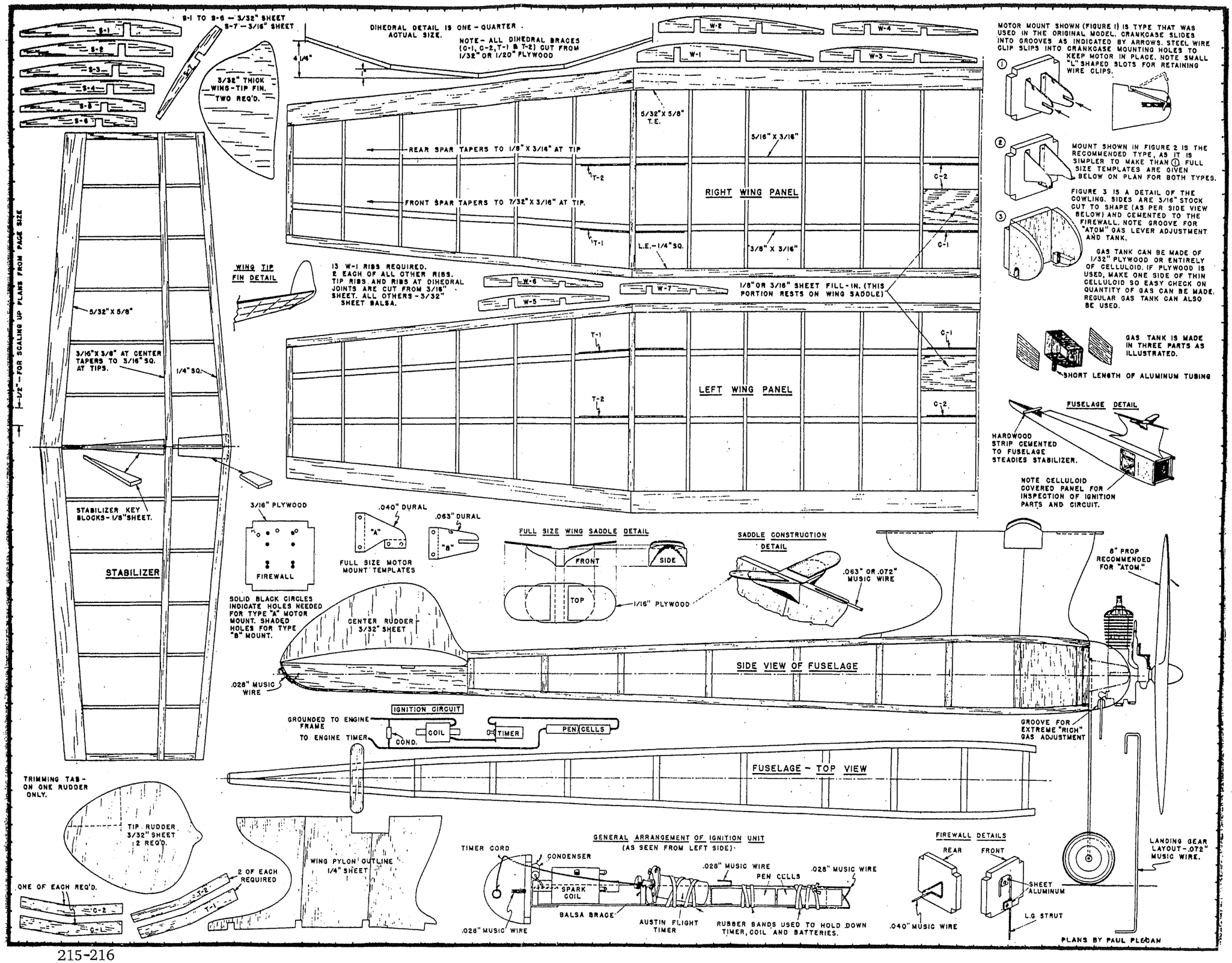
Make the wing in four sections. Cover with light Silkspan. On the tip sections, cover with the grain running parallel to the ribs. This reduces the possibility of warp and makes a smoother airfoil. The elevator is made the same way. Cover all the rudders with Silkspan.

FLYING

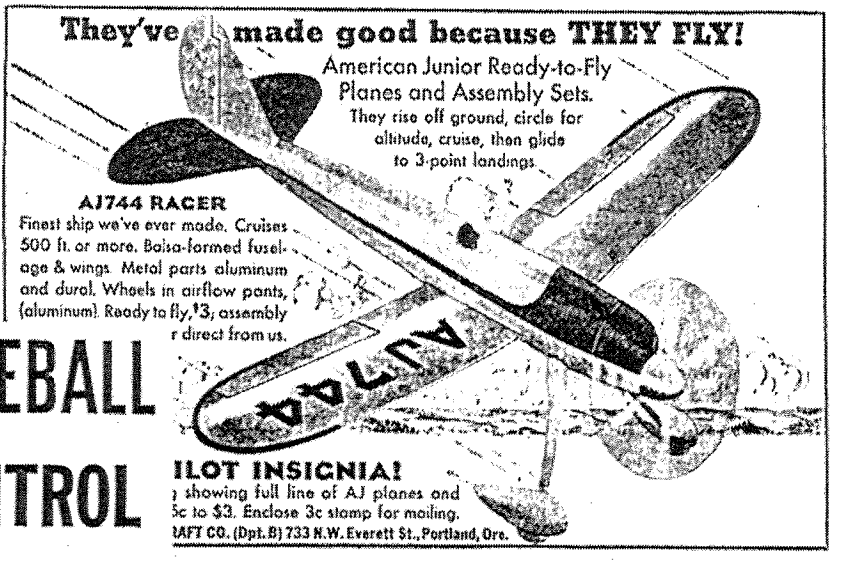
If the wing is not warped, the model should hand-glide beautifully. Correct the incidence on the elevator in case it is necessary. Use a six-second motor run on the first flight, with the spark advanced halfway. (About ten-o'clock position on the Atom.) The model should go to the right under power and glide to the left. The final adjustment on my models boils down to $^1/_{16}$" right thrust under the firewall and ¼" left on the tip of the rudder tab. Adjusted properly and with a hot motor, the Strato-Streak will reach an unbelievable altitude in twenty seconds and will glide with the best of them.

BILL OF MATERIALS

6 36 x $^3/_{16}$" sq. hard
4 sheets $^3/_{32}$ x 3 x 36" soft quarter-grained
1 sheet $^5/_{32}$ x 2 x 36" medium
1 sheet $^3/_{16}$ x 2 x 36" medium
1 sheet ¼ x 2 x 18" medium
1 block 2½ x ¾ x 1¼"
2 36 x ¼ x ¼" hard
1 $^3/_{16}$ plywood 2¼ x 2¼"
1 $^1/_{32}$ plywood 2 x 9"
1 piano wire .072 10" long, also a length of .040 and .028 wire, wheel, bolts, nuts, hook-up wire, et cetera.

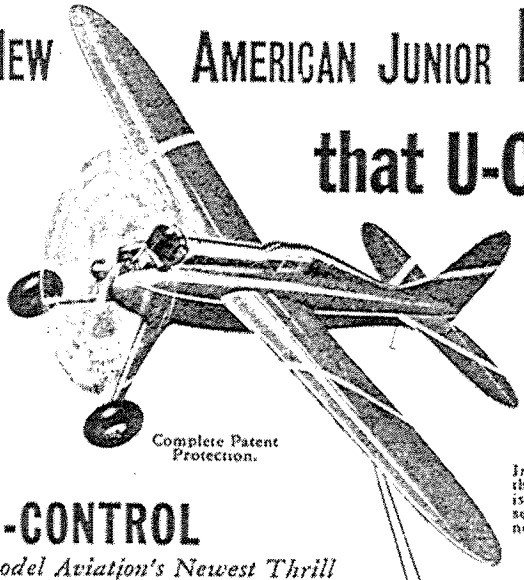


1941 - U - Control
Jim Walker's 'Fireball' Changed Our Hobby Forever



American Junior Aircraft Model In Mid - '30's
Company Started In '20's as Junior American
Aircraft Co. and Later Became American Junior

NEW AMERICAN JUNIOR FIREBALL that U-CONTROL from the GROUND



U-CONTROL
Model Aviation's Newest Thrill

Tune up the motor—and take off for the most thrilling flight of your life! A slight turn of your wrist—up go the elevators *and your ship* in a beautiful climb. Now a power dive—then level off. Pull the motor control to slow down—a slight pull brings plane to a 3-point landing with motor idling—release motor control and it zooms from the ground under full power! When you are ready, cut the motor and in she comes to a perfect landing.

Fly Anywhere . . . Anytime

Think what this means! Now you can fly right at home in your yard or a vacant lot. You can fly in the daytime or after dusk, in windy weather or calm because you are the pilot—U-CONTROL your plane every second!

RACING . . . A New Power Model Sport

U-CONTROL makes it possible to hold real speed races—an entirely new sport for gas models. MPH can be recorded and computed down to fractions of 1/100th! Complete tables and instructions for speed computations are included.

STUNTS . . . Loops

You can loop the A-J Fireball with ease—you can make it power dive (wings engineered to 9 G's)—you can ground strafe or make perfect landings and takeoffs at will. These are but a few of the thrills you can have with the A-J Fireball that U-CONTROL!

Now available for immediate delivery

In response to popular demand, this sleek gas powered A-J Fireball is now available in an assembly set—complete with the marvelous new U-CONTROL!

Ready to Fly in 6

Designed for "B" motor[s] Fireball is sturdily construc[ted] withstand terrific punishment. *parts come ready-cut to shape. A[ll] balsa fuselage is completely carved* and specially designed in two halves for added strength and easy access to motor and batteries (which nest in a special compartment). Hardwood mounts for metal parts are built into fuselage. Wing span 36 inches. Wing is built of sheet balsa over high speed ribs. No silk or paper. No doping required.

Due to semi-finished form, plane can be made ready for flight in less than 6 hours. All-balsa surfaces can be beautifully finished in glossy enamel. All materials complete except for liquids.

LOOPS and POWER DIVES

Complete Assembly Set
LESS MOTOR
$7.50



JIM WALKER 1904 - 1958
(Nevilles E. 'Jim' Walker)

Changed our hobby forever by touring down the west coast where in Los Angeles the Fireball became an instant hit ..... even Polk's Hobbycraft in New York had jumped on his bandwagon.

U-Control in later years became a 'brand new' form of flying which lent itself perfectly to competition ..... and that's another story.

One of Jim Walker's First Ads For U-Control in 1941

AMERICAN JUNIOR AIRCRAFT CO.
1166 N. E. 31st AVE. PORTLAND, OREGON

NOTES

Much of the catalog reproductions you will see in this book would not have been possible if it were not for Walt loaning us the originals for copying. We have been pushing Walt Grigg to produce his own book as an adjunct to his various model airplane kit manufacturer articles (the most recent being in Model Aviation) since he has a tremendous wealth of material stored ... plus his own personal contacts with greats such as Joe Ott, Fred Megow et al.. He's agreed to do the book ! Hopefully Soon !!

EASY BUILT

Some years ago Cleveland stopped making kits but still advertised their plans for sale ... Comet has not been producing kits for a long time but is apparently still able to sell plans and a few kits ... all the others are gone, except 'Easybuilt Models' from Canada, sometimes known as Easybuilt 'Micro Balsa', established in 1932 and has never dropped a kit from production since 1932 !... now numbering some 167 Kits !! ... including a few newer kits as well. Its' original owner Bert Kunkle bought Modelcraft (Canada) along the way, incorporating these kits into the line. Ron and Don Wilson now still living in Grimsby, Ontario (about 50 miles west of Toronto) bought the nearly defunct company, many years ago, resurrected it, and turned it once again back into a very creditable small kit manufacturing company ... capable of providing 3,000 - 4,000 kits and more for a single order ! Literally thousands of Wright Flyer kits have been produced for the Smithsonian .... now located at 210 Walnut St., Lockport, N.Y. ... you are welcome to stop by and visit with my good friend, the genial Ron Wilson and his spirited brother Don.

easy built models

for more information, contact:
Easy Built Models
Box 425, Lockport, N.Y. 14095
Phone (716) 438 - 0545
FAX (716) 438 - 0546

MANY THANKS TO:

Vicki, my wife, for her patience
John Schneider, ex Air Trails Photographer
Walt Grigg, 'THE' Kit and Catalog Collector
John Worth, AMA Celebration of Eagles '96
Leon Shulman, the 'Forever Young Modeler'
Dave Thornburg, "Do You Speak Model Airplane" (book)
Charles Mackey, "Pioneers of Control Line Flying" (book)
Stu Richmond, made us 'Keep the Faith'
David Baker, SAM 1066 and his enthusiasm
Frank Zaic, who led the way

My Dad, Herb Anderson, who took me on one of his business trips in mid 1941, where we visited Joe's (Dallaire) Hobby Shop on Wyoming, in Detroit. We picked up my first roll of real 'Jap tissue', and this 9 year old kid became a hero back in Toronto, because it hadn't been available for some time; Canada was already into World War II ! Dad also followed this up by driving me out to our 'Armour Heights' flying field, regularly, and using up his precious gas 'ration' coupons.

Last but not least, Harry S. Truman, who said "a page of History is worth a volume of logic" ..... and with Carl Goldbergs' '38 - '39 development of the successful Zipper, this page of History had literally put most of Charles Grants' theories into the waste bin for ever.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