

ONE of the most unusual Army Air Forces research projects to be revealed to the public by the Air Technical Service Command is the Curtiss XP-55 *Ascender*, a tail-first, pusher fighter. Canards, as this type craft are known, are not new for it will be remembered that the Wright Brothers made their first flight in a tail-first biplane. During the early days of World War I, however, the familiar tractor planes gained favor and until this day have reigned supreme. Nevertheless, numerous advantages are claimed for military planes of this pattern and Curtiss' experiments along these lines were welcomed by the Army Air Forces.

Paralleling the trend in real aircraft, canard pusher models were once popular but gave way to conventional types with propeller in the nose and vertical and horizontal stabilizers at the tail. Spiral and directional stability are major problems in this design craft but because of its generally good overall setup, the XP-55 affords a remarkable subject for experimentation in tail-first models. The only major change from scale is the suggested enlarged front elevator which has dihedral added to achieve maximum stability.

Little difficulty will be experienced in building a model *Ascender*. Balsa wood is used and the little ship is fabricated in the conventional way. Exercise care in following details and you will soon be the owner of an attractive flying model of most unusual design.

FUSELAGE—Easiest and most accurate means of constructing the fuselage is by the use of bulkheads and keels. Meas-

Canard design for model flight research

by EARL STAHL

ure the size of parts from the plan and cut bulkheads and keels from sheet balsa; note that only half bulkheads are shown so make two of each. Pin top and bottom keels over the side view of the plan and attach half the bulkheads and one side keel. Now remove this structure from the jig and add the remaining bulkheads and keel. Stringers are firm square stock and they should be placed in pairs, one on each side in respectively similar positions to keep from pulling the body out of line.

Where the wing fits in, curved $3/32$ " sheet pieces are fitted to the fuselage sides to conform to the wing surface curvature; place these accurately because they aid in aligning the wing correctly. The front elevator mount is $1/16$ " balsa and is carefully fitted at the exact positive angle of incidence shown. The elevator halves are later butted against these.

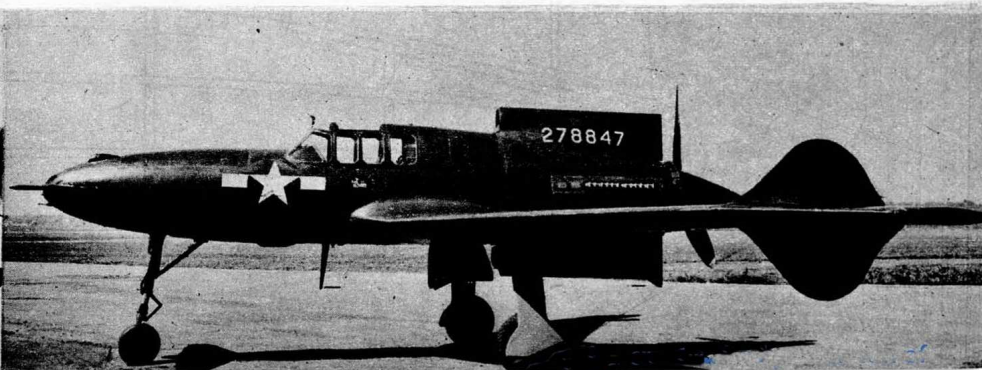
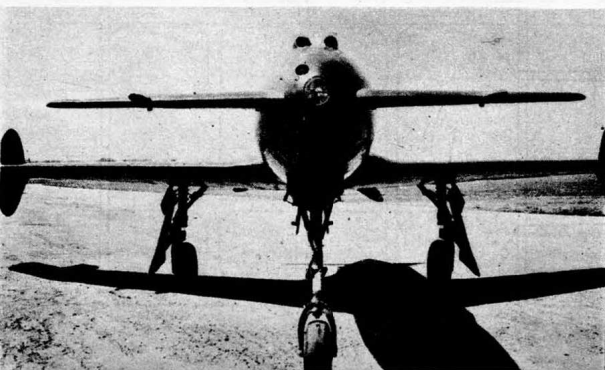
At front and rear of the fuselage, laminated pieces of balsa are shaped so as to fit to bulkheads A and I. The nose plug has a .035 diam. music wire hook in it to hold the rubber motor. The nose is removable, as is the tail plug which is removable from the laminated tail block. A $1/32$ " disc of plywood is used for the

face of the plug and the rest is laminated squares of balsa. Drill a tiny hole through the plug for the propeller shaft and then cement washers to either side.

WING—Front elevator and wing are constructed in a like manner. Ribs are cut from sheets of the thickness indicated for each on the plan; make two of each. Leading edges and spars are likewise cut from sheet balsa. To determine the taper, measure the depth at the center and tip ribs as well as the overall length and cut them out accordingly. Remember to build right and left panels of each surface. Join the wing halves by raising the tips to the proper dihedral and cementing rib No. 1 firmly into position. When assembling the elevator, incline the inner rib E-1 so that when it is butted against the fuselage mount the dihedral will be as indicated on the side view.

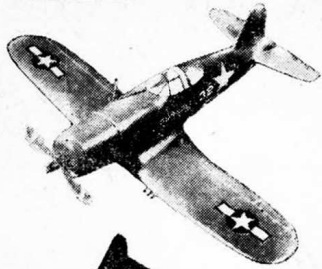
CONTROL SURFACES—Fuselage fins and wing tip rudders are made next. For a flying model it is suggested the fuselage fins be made flat to obtain the fullest stabilizing action from them. Scale builders will note that cross-section shapes are given to enable them to duplicate the real plane more exactly and in this case the structure should be altered accordingly. Build the two fins, top and bottom, as well as the wing tip rudders from $1/16$ " thick stock of the width indicated. Cement joints firmly so they will not warp.

LANDING GEAR—Any flying scale model must have a strong landing gear and the wire struts suggested are very strong and practical. The front fork is made from two pieces of wire of about



Build ALL These Famous MODELS

**VOUGHT
CORSAIR
\$1⁰⁰**



These finished models were made from
PLASTA PLANE accurately scaled
SOLIDS



**P-61
Black Widow \$2⁰⁰**

The Original

PLASTA PLANE

COPYRIGHT 1944

FULLY MOLDED MODELS
ready to sand and finish!

Any model maker can be a master craftsman with these new PLASTA PLANE solids to work on. Made of a new combination of plastics—molded to accurate shape—not carved. No cutting or shaping for you to do—just sand, finish, add accessories, and watch your friends envy your ability! PLASTA PLANES take a beautiful finish without filler, are soft enough to etch ailerons and other detail. All popular models plus exciting P-T Boat. Order direct from manufacturer. Send for your first PLASTA PLANE today—right now!

PLASTA MODEL CO. (formerly of Los Angeles) FLAGSTAFF, ARIZONA



LOW PRICES

Considering the quality and size of PLASTA PLANE solids these models are priced very low. Models range in size 10" to 18" wing spread. Make all the plane types you're so keen about!

18 Thrilling Models

- | | | |
|---|---|---|
| <input type="checkbox"/> Super-Fortress B-29 . \$2.00 | <input type="checkbox"/> Grumman Hellcat \$1.25 | <input type="checkbox"/> Warhawk . . \$1.00 |
| <input type="checkbox"/> North American P-51E 1.00 | <input type="checkbox"/> Grumman Avenger 1.25 | <input type="checkbox"/> Vought Corsair 1.00 |
| <input type="checkbox"/> North American B-25 1.50 | <input type="checkbox"/> Flying Fortress . . 2.00 | <input type="checkbox"/> Typhoon . . . 1.00 |
| <input type="checkbox"/> Coronado Flying Boat 1.50 | <input type="checkbox"/> Lockheed P-38 . . 2.00 | <input type="checkbox"/> Spitfire . . . 1.25 |
| <input type="checkbox"/> Messerschmitt Me-115 1.25 | <input type="checkbox"/> Thunderbolt . . . 1.00 | <input type="checkbox"/> Liberator . . . 2.00 |
| <input type="checkbox"/> Northrop P-61, THE BLACK WIDOW, \$2.00 | <input type="checkbox"/> Stand for mounting models . . .35c | <input type="checkbox"/> Jap Zero . . . 1.00 |

Plus 25c packing for each model. Add 10c if remitting by personal check.

All models shipped prepaid via Railway Express • No C.O.D. orders accepted.

PLASTA MODEL CO., Box 481
Flagstaff, Arizona

Please rush the models checked. I enclose \$_____ (add 25c packing for each model, 10c for personal check).

Name _____
Address _____
City _____ State _____
(ZONE)

Now for EVERY WORK SHOP! NEW Invention Electroplates by BRUSH

Easy to Plate CHROMIUM
GOLD, SILVER, NICKEL, COPPER
... For Pleasure and Profit!

If you have a workshop—at home or in business—you need this new Warner Electroplater. At the stroke of an electrified brush, you can electroplate models and projects—you can replat worn articles, faucets, tools, fixtures, silverware, etc with a durable, sparkling coat of metal... Gold, Silver, Chromium, Nickel, Copper or Cadmium. Method is easy, simple, quick. Everything furnished—equipment complete, ready for use. *By doing a bit of work for others, your machine can pay for itself within a week.* So make your shop complete by getting a Warner Electroplater right away. Send today for FREE SAMPLE and illustrated literature. ACT AT ONCE!

WARNER ELECTRIC CO., DEPT. C-107
663 N. Wells St., Chicago 10, Illinois

FREE Details & Sample!

WARNER ELECTRIC CO., 663 N. Wells St., Chicago 10, Dept. C-107
Gentlemen: Send Free Sample and Details to:

Name _____
Address _____
City _____ State _____

Let's Finish the Fight! BUY MORE WAR BONDS!

FUELS

POWER MIST SPITFIRE BLUE BLAZER

THE ORIGINAL MINIATURE ENGINE
FUELS "PROVEN SUPERIOR"
58 OFFICIAL WORLD SPEED RECORDS
OUR SIMPLEST FORMULA CONTAINS
6 INGREDIENTS, CASTOR OIL LUBRICATED
"NO GAS AND PETROLEUM OIL
MIXES."

Supercharged & Fortified Castor Oil

FUEL FACTS AND FORMULAS
How to determine the correct fuel. Full information and literature—at your dealer or send stamped addressed envelope.

FRANCISCO LABORATORIES
3787 Griffith View Drive, Los Angeles 26, California

Build this Flying Scale Model

.035 diam. soldered together. With needle and thread sew the front strut to bulkhead B. Rear legs are of similar wire and the struts are bent to join rib No. 4 and the spar and leading edge. Be sure to make a right and left one and then lash them in place with thread. Coat the areas adjacent to landing gear attachments with cement to strengthen the structure. Scale effects for making the gear look more realistic are left until later.

COVERING—Sand all of the frames with fine grade paper before beginning to cover. Colored tissue is both attractive and light and it is recommended; attach it with banana oil or light dope. When covering the fuselage, use numerous small sections of tissue to avoid unsightly wrinkles; these must be neatly lapped, however. Tail surfaces and wings are covered using a separate piece of tissue for each side of each part. The covering may be tightened by lightly spraying with water,

RADIO CONTROL

Your model plane, boat, train or car will
do exactly as you want it to do

AND THERE ARE NO STRINGS (OR WIRES) ATTACHED

Your model plane is standing on the field, its motor idling. You are standing 300 feet away, a small control box in your hand. You are 300 feet away but YOU ARE AT THE CONTROLS OF YOUR MODEL PLANE! Suddenly the motor spurts—your plane taxis forward—turns onto the runway—and faces into the wind. The motor roars and your plane soars into the air. It circles the field—does a figure eight—then a loop—circles the field again—then faces into the wind. The motor cuts and it gracefully glides in for a perfect landing on exactly the same spot from which it took off.

**DURING ITS ENTIRE FLIGHT YOUR
MODEL PLANE HAS BEEN
SKILLFULLY GUIDED BY YOUR OWN HAND**

Ask your dealer or send twenty-five cents for illustrated Radio Control Instruction Manual. Stamps will not be accepted. You also will receive information about 7 new manuals.

RADIO CONTROL HEADQUARTERS

P. O. Box 214

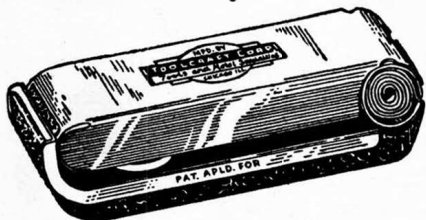
Deal, New Jersey

21 A-B-C GAS JOBS by TOP DESIGNERS!

Get your copy of "AIR AGE GAS MODELS"! Complete plans, photos and instructions; also helpful hints for all gas modelers.

Only \$2.00 at your model or book shop, or direct from Air Age Inc. 551 - 5th Avenue, New York 17

The Handy Sander



CHECK THESE FEATURES—

1. Many times superior to Sandpaper—Refittable with Abrasive Cloth Rolls.
2. No waste—50-100% savings of Abrasive over ordinary hand sanding devices.
3. Sponge Rubber Cushioned—for even pressure on flat or irregular shapes. Strong-made of Steel but light weight.

Handy Sander (Abrasive included)65c
Refills (Asst'd Grits)8 for \$1.00

Add 10c for Postage & Packing
Models & Supplies Price Lists: for 3c stamp

THE HOBBY BUREAU

2136 So. Pulaski, Chicago 23, Ill.

LEADING SUPPLY HOUSE

1/16x1/16...30, 5c	1/8" Balsa	1/4" Thrust	Washers—Doz.
1/16x1/8...15, 5c	1/16x1/8...15, 5c	BEARINGS, Dz.	1/4—2c 3/4—5c
1/16x1/4...8, 5c	3/32x3/32...15, 5c	Sm. 10c; lge. 15c	Free wheel.....10c
1/8x1/8...10, 5c	1/8x1/4...10, 5c	IGN. WIRE	Ball Bearing 10c
1/8x1/4...6, 5c	1/4x1/4...4, 5c	(Hi tens.) ft. 5c	Bushings 5c doz.
3/16x3/16...5, 5c	1/2x1/2...2, 7c	Hookup wire ft. 3c	Prop Hinge...15c
1/2x1/2...2, 7c	1/32x2...4, 10c	PURSUIT GUNS	NOSE PLUGS
1/32x2...4, 10c	1/16x2...4, 10c	Bombs 3/4 ea. 5c	1/2" 6 for 5c
3/32x2...3, 10c	3/32x2...3, 10c	Bombs 1" 25c	Sponge Rubber
1/2x2...2, 10c	1/2x2...2, 10c	Bombs 3" 12c	Wheels
1/2x2...2, 10c	1/2x2...2, 10c	Lewis gun 1 1/4" 50c	2" 45c; 2 1/2" 50c
1/2x2...2, 10c	1/2x2...2, 10c	10c: 2" 12c	CEMENT
1/2x2...2, 10c	1/2x2...2, 10c	WHEELS per pr.	THINNERS
1/2x2...2, 10c	1/2x2...2, 10c	Broh	CLEAR DOPE
1/2x2...2, 10c	1/2x2...2, 10c	3/4 .02	1 oz.5c
1/2x2...2, 10c	1/2x2...2, 10c	1 .03	Large bot.8c
1/2x2...2, 10c	1/2x2...2, 10c	1 1/2 .04 .10	1/2 pt.50c
1/2x2...2, 10c	1/2x2...2, 10c	2 .05 .15	DOPE ALL COL.
1/2x2...2, 10c	1/2x2...2, 10c	3 .07 .20	ORS 6c; 10c; 50c
1/2x2...2, 10c	1/2x2...2, 10c	3 .15 .30	DOWELS
1/2x2...2, 10c	1/2x2...2, 10c	4 .25 .50	1/16x6 .5c doz.
1/2x2...2, 10c	1/2x2...2, 10c	5 .50 1.00	1/8x18 .2 for 5c
1/2x2...2, 10c	1/2x2...2, 10c	6 1.00 2.00	PLASTICBALSA
1/2x2...2, 10c	1/2x2...2, 10c	7 2.00 4.00	Large can...15c
1/2x2...2, 10c	1/2x2...2, 10c	8 4.00 8.00	PROP SHAFTS
1/2x2...2, 10c	1/2x2...2, 10c	9 8.00 16.00	REAR HOOKS
1/2x2...2, 10c	1/2x2...2, 10c	10 16.00 32.00	12 for15c
1/2x2...2, 10c	1/2x2...2, 10c	11 32.00 64.00	CELLULOID
1/2x2...2, 10c	1/2x2...2, 10c	12 64.00 128.00	Sheetea. 5c
1/2x2...2, 10c	1/2x2...2, 10c	13 128.00 256.00	Bamboo Paper
1/2x2...2, 10c	1/2x2...2, 10c	14 256.00 512.00	1/2 pt. 24x36
1/2x2...2, 10c	1/2x2...2, 10c	15 512.00 1024.00	ea.6c
1/2x2...2, 10c	1/2x2...2, 10c	16 1024.00 2048.00	
1/2x2...2, 10c	1/2x2...2, 10c	17 2048.00 4096.00	
1/2x2...2, 10c	1/2x2...2, 10c	18 4096.00 8192.00	
1/2x2...2, 10c	1/2x2...2, 10c	19 8192.00 16384.00	
1/2x2...2, 10c	1/2x2...2, 10c	20 16384.00 32768.00	
1/2x2...2, 10c	1/2x2...2, 10c	21 32768.00 65536.00	
1/2x2...2, 10c	1/2x2...2, 10c	22 65536.00 131072.00	
1/2x2...2, 10c	1/2x2...2, 10c	23 131072.00 262144.00	
1/2x2...2, 10c	1/2x2...2, 10c	24 262144.00 524288.00	
1/2x2...2, 10c	1/2x2...2, 10c	25 524288.00 1048576.00	
1/2x2...2, 10c	1/2x2...2, 10c	26 1048576.00 2097152.00	
1/2x2...2, 10c	1/2x2...2, 10c	27 2097152.00 4194304.00	
1/2x2...2, 10c	1/2x2...2, 10c	28 4194304.00 8388608.00	
1/2x2...2, 10c	1/2x2...2, 10c	29 8388608.00 16777216.00	
1/2x2...2, 10c	1/2x2...2, 10c	30 16777216.00 33554432.00	
1/2x2...2, 10c	1/2x2...2, 10c	31 33554432.00 67108864.00	
1/2x2...2, 10c	1/2x2...2, 10c	32 67108864.00 134217728.00	
1/2x2...2, 10c	1/2x2...2, 10c	33 134217728.00 268435456.00	
1/2x2...2, 10c	1/2x2...2, 10c	34 268435456.00 536870912.00	
1/2x2...2, 10c	1/2x2...2, 10c	35 536870912.00 1073741824.00	
1/2x2...2, 10c	1/2x2...2, 10c	36 1073741824.00 2147483648.00	
1/2x2...2, 10c	1/2x2...2, 10c	37 2147483648.00 4294967296.00	
1/2x2...2, 10c	1/2x2...2, 10c	38 4294967296.00 8589934592.00	
1/2x2...2, 10c	1/2x2...2, 10c	39 8589934592.00 17179869184.00	
1/2x2...2, 10c	1/2x2...2, 10c	40 17179869184.00 34359738368.00	
1/2x2...2, 10c	1/2x2...2, 10c	41 34359738368.00 68719476736.00	
1/2x2...2, 10c	1/2x2...2, 10c	42 68719476736.00 137438953472.00	
1/2x2...2, 10c	1/2x2...2, 10c	43 137438953472.00 274877906944.00	
1/2x2...2, 10c	1/2x2...2, 10c	44 274877906944.00 549755813888.00	
1/2x2...2, 10c	1/2x2...2, 10c	45 549755813888.00 1099511627776.00	
1/2x2...2, 10c	1/2x2...2, 10c	46 1099511627776.00 2199023255552.00	
1/2x2...2, 10c	1/2x2...2, 10c	47 2199023255552.00 4398046511104.00	
1/2x2...2, 10c	1/2x2...2, 10c	48 4398046511104.00 8796093022208.00	
1/2x2...2, 10c	1/2x2...2, 10c	49 8796093022208.00 17592186044416.00	
1/2x2...2, 10c	1/2x2...2, 10c	50 17592186044416.00 35184372088832.00	
1/2x2...2, 10c	1/2x2...2, 10c	51 35184372088832.00 70368744177664.00	
1/2x2...2, 10c	1/2x2...2, 10c	52 70368744177664.00 140737488355328.00	
1/2x2...2, 10c	1/2x2...2, 10c	53 140737488355328.00 281474976710656.00	
1/2x2...2, 10c	1/2x2...2, 10c	54 281474976710656.00 562949953421312.00	
1/2x2...2, 10c	1/2x2...2, 10c	55 562949953421312.00 1125899906842624.00	
1/2x2...2, 10c	1/2x2...2, 10c	56 1125899906842624.00 2251799813685248.00	
1/2x2...2, 10c	1/2x2...2, 10c	57 2251799813685248.00 4503599627370496.00	
1/2x2...2, 10c	1/2x2...2, 10c	58 4503599627370496.00 9007199254740992.00	
1/2x2...2, 10c	1/2x2...2, 10c	59 9007199254740992.00 18014398509481984.00	
1/2x2...2, 10c	1/2x2...2, 10c	60 18014398509481984.00 36028797018963968.00	
1/2x2...2, 10c	1/2x2...2, 10c	61 36028797018963968.00 72057594037927936.00	
1/2x2...2, 10c	1/2x2...2, 10c	62 72057594037927936.00 144115188075855872.00	
1/2x2...2, 10c	1/2x2...2, 10c	63 144115188075855872.00 288230376151711744.00	
1/2x2...2, 10c	1/2x2...2, 10c	64 288230376151711744.00 576460752303423488.00	
1/2x2...2, 10c	1/2x2...2, 10c	65 576460752303423488.00 1152921504606846976.00	
1/2x2...2, 10c	1/2x2...2, 10c	66 1152921504606846976.00 2305843009213693952.00	
1/2x2...2, 10c	1/2x2...2, 10c	67 2305843009213693952.00 4611686018427387904.00	
1/2x2...2, 10c	1/2x2...2, 10c	68 4611686018427387904.00 9223372036854775808.00	
1/2x2...2, 10c	1/2x2...2, 10c	69 9223372036854775808.00 18446744073709551616.00	
1/2x2...2, 10c	1/2x2...2, 10c	70 18446744073709551616.00 36893488147419103232.00	
1/2x2...2, 10c	1/2x2...2, 10c	71 36893488147419103232.00 73786976294838206464.00	
1/2x2...2, 10c	1/2x2...2, 10c	72 73786976294838206464.00 147573952589676412928.00	
1/2x2...2, 10c	1/2x2...2, 10c	73 147573952589676412928.00 295147905179352825856.00	
1/2x2...2, 10c	1/2x2...2, 10c	74 295147905179352825856.00 590295810358705651712.00	
1/2x2...2, 10c	1/2x2...2, 10c	75 590295810358705651712.00 1180591620717411303424.00	
1/2x2...2, 10c	1/2x2...2, 10c	76 1180591620717411303424.00 2361183241434822606848.00	
1/2x2...2, 10c	1/2x2...2, 10c	77 2361183241434822606848.00 4722366482869645213696.00	
1/2x2...2, 10c	1/2x2...2, 10c	78 4722366482869645213696.00 9444732965739290427392.00	
1/2x2...2, 10c	1/2x2...2, 10c	79 9444732965739290427392.00 18889465931478580854784.00	
1/2x2...2, 10c	1/2x2...2, 10c	80 18889465931478580854784.00 37778931862957161709568.00	
1/2x2...2, 10c	1/2x2...2, 10c	81 37778931862957161709568.00 75557863725914323419136.00	
1/2x2...2, 10c	1/2x2...2, 10c	82 75557863725914323419136.00 151115727451828646838272.00	
1/2x2...2, 10c	1/2x2...2, 10c	83 151115727451828646838272.00 302231454903657293676544.00	
1/2x2...2, 10c	1/2x2...2, 10c	84 302231454903657293676544.00 604462909807314587353088.00	
1/2x2...2, 10c	1/2x2...2, 10c	85 604462909807314587353088.00 1208925819614629174706176.00	
1/2x2...2, 10c	1/2x2...2, 10c	86 1208925819614629174706176.00 2417851639229258349412352.00	
1/2x2...2, 10c	1/2x2...2, 10c	87 2417851639229258349412352.00 4835703278458516698824704.00	
1/2x2...2, 10c	1/2x2...2, 10c	88 4835703278458516698824704.00 9671406556917033397649408.00	
1/2x2...2, 10c	1/2x2...2, 10c	89 9671406556917033397649408.00 19342813113834066795298816.00	
1/2x2...2, 10c	1/2x2...2, 10c	90 19342813113834066795298816.00 38685626227668133590597632.00	
1/2x2...2, 10c	1/2x2...2, 10c	91 38685626227668133590597632.00 77371252455336267181195264.00	
1/2x2...2, 10c	1/2x2...2, 10c	92 77371252455336267181195264.00 154742504910672534362390528.00	
1/2x2...2, 10c	1/2x2...2, 10c	93 154742504910672534362390528.00 309485009821345068724781056.00	
1/2x2...2, 10c	1/2x2...2, 10c	94 309485009821345068724781056.00 618970019642690137449562112.00	
1/2x2...2, 10c	1/2x2...2, 10c	95 618970019642690137449562112.00 1237940039285380274899124224.00	
1/2x2...2, 10c	1/2x2...2, 10c	96 1237940039285380274899124224.00 2475880078570760549798248448.00	
1/2x2...2, 10c	1/2x2...2, 10c	97 2475880078570760549798248448.00 4951760157141521099596496896.00	
1/2x2...2, 10c	1/2x2...2, 10c	98 4951760157141521099596496896.00 9903520314283042199192993792.00	
1/2x2...2, 10c	1/2x2...2, 10c	99 9903520314283042199192993792.00 19807040628566084398385987584.00	
1/2x2...2, 10c	1/2x2...2, 10c	100 19807040628566084398385987584.00 39614081257132168796771975168.00	

Shipping instructions: Orders under \$1.00 add 15c packing charge; orders over \$1.00 add 15%. List—Kits 3c stamp, no o.o.d., no stamps. IMPERIAL MODEL SUPPLY CO. 349 MAIN ST., DEPT. M7, HACKENSACK, N. J.

but apply no dope until all the ship has been assembled.

ASSEMBLY—To assemble the parts follow this outline: First fit the wing into the recess in the fuselage and cement it firmly; if the parts have been made accurately, alignment and incidence will automatically be correct. Next butt the elevators against the fuselage mounts at the dihedral and incidence angles noted; cement them firmly. Now the fuselage fins may be installed directly over the vertical centerline. Wing tip rudders are cemented fast and they are exactly parallel to the centerline.

DETAILS—Scale effects are the features that "make" a model; however they must be skillfully executed to achieve maximum appearance value. Make the cockpit enclosure from two pieces of thin celluloid (cleaned celluloid obtained by boiling photo film in water to remove the emulsion); structural details are represented by contrasting strips of dark tissue doped to the canopy. For greater realism rubber tubing of the correct diameter is slipped on the landing gear struts. Tiny auxiliary struts may be made from thin slivers of bamboo, and the covers that close the wells when the gear is retracted are 1/32" balsa covered with tissue to match the covering. Gun blisters, exhausts and the like are fashioned from scraps of balsa. Control surfaces are represented by thin strips of black tissue doped to the covering. Numerals, star