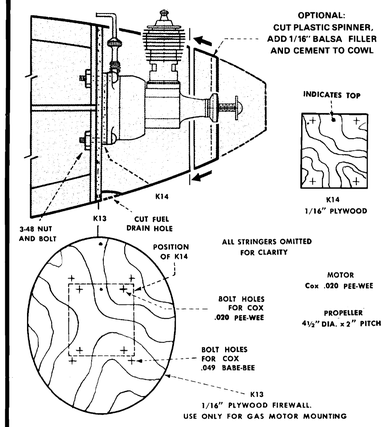
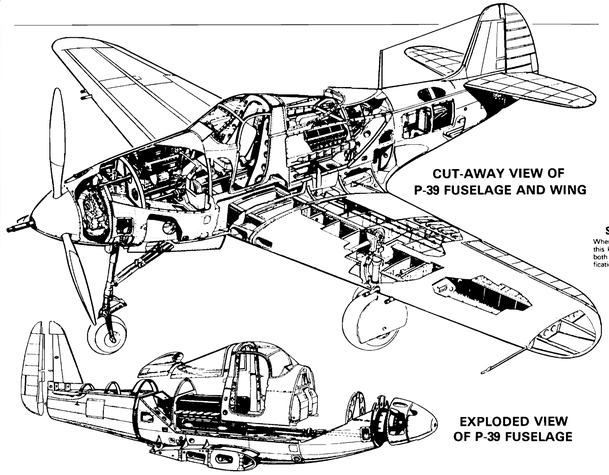


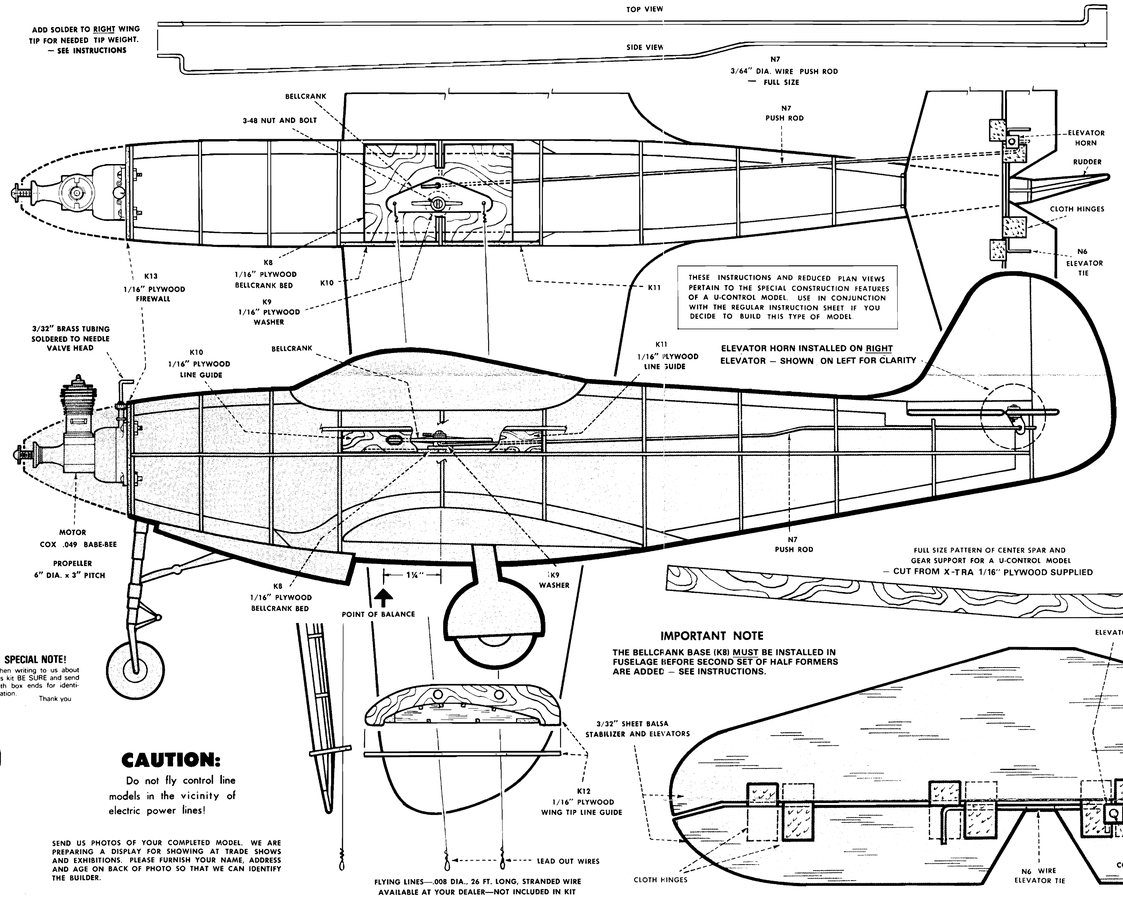
GAS FREE FLIGHT

OPTIONAL

1. Sand plywood fire wall smooth then drill the four bolt holes with a 3/32" drill.
2. Mount the motor to the firewall with 1/2" long No. 2 bolts and nuts. (Available at your hobby store.) Thoroughly cement the nuts to the firewall. When dry, remove the motor and cement firewall to front of model. The firewall area should be thoroughly doped before the motor is installed. If plastic cowl is used, make cutouts for motor cylinder propeller shaft and needle valve extension. Be sure and cut hole in bottom of cowl for oil drainage.
3. Balance model at point indicated on side view below adding clay weight to nose or tail as needed.
4. Test glide the model as explained in "Adjusting and Flying the Model Rubber Powered."
5. Using very short motor runs (10 seconds or less) launch the model gently into the wind. Correct any tendency to turn sharply to the left with small amounts of "right rudder" and correct any excessive climbing by small amounts of "down" elevator. If excessive climbing persists, add down thrust by placing small thin washers on the two TOP motor bolts between the motor and firewall.
6. After the initial test flights continue to adjust model until it flys under power with a gentle climb and a large circle to the left. When engine quits, the model should then glide in a circle to the right. At no time should you ever completely fill the fuel tank since a properly adjusted model with a full tank of fuel will inevitably fly away and be lost. A 10 to 20 second motor run is usually ample for thrilling sport flights.



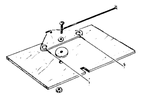
EXPLODED VIEW
OF P-39 FUSELAGE



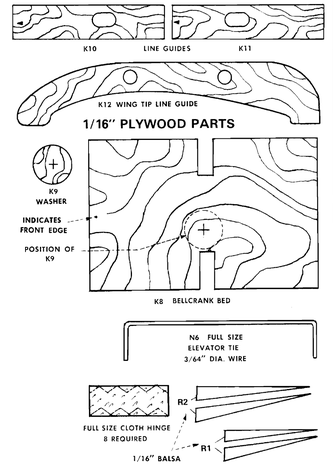
GAS U-CONTROL

— OPTIONAL

1. Cement plywood bellcrank bed and washer together then drill 3/32" hole for bellcrank bolt. Cut notches in formers if required — refer to former templates on opposite side of plan.
2. IMPORTANT! After assembling one set of half formers and side keel, cement bellcrank bed to top of side keel BEFORE joining other set of half formers — the bellcrank bed cannot be installed after former halves are joined. If required, cement plywood line guides in place on top of side keel and between formers — left side only.
3. Bend push rod to shape as shown on plan.
4. Either tie nylon string to the bellcrank to act as "lead-outs" or use .025 music wire (obtainable at your hobby store). Leave the "lead-outs" a few inches longer than needed at this time.
5. With the push rod in the bellcrank hole and the "lead-outs" on the bellcrank, slip the rod through all the formers towards the rear and out the fuselage side as shown on the drawing. Also slip the "lead-outs" out between the formers.
6. Proceed to finish the fuselage as you would for a rubber powered model.
7. Drill motor bolt holes in plywood firewall and bolt motor in place. (If motors other than the one shown are used drill the holes to fit.) Cement nuts at rear of firewall — when dry remove motor and cement firewall to nose of fuselage.
8. It is not necessary to re-inforce the fuselage and wing with balsa sheeting but it will make for a strcnger model. Using the 1/20"x2"x12" sheet balsa furnished, "sheet" the entire nose bay (between B1 and B2) cutting, fitting and cementing pieces between all stringers and side keels. Next "sheet" all bays back to the trailing edge of wing below the side keels. (Do not sheet bottom of fuselage where wing is attached!) After sheeting has dried sand smooth and proceed to finish and cover the fuselage in the usual manner.
9. Build the wing in the regular way sheeting the top and bottom of the center section if added strength is desired. Add 1/4 to 3/8 oz. of weight to the right wing tip frame before covering and finishing the structure. Finally cement the plywood wing tip line guide to top of wing.
10. Attach motor to firewall.
11. Make the stabilizer/elevator for the U Control model as shown on the full size drawing as follows: Using the material furnished, make up the elevator and wire tie piece. Cement the two elevators together with the wire tie piece and cement the horn into position. Hinge the elevator to the stabilizer as shown and then cover the stabilizer with tissue.
12. After the final doping, slip the push rod into the horn and cement the stabilizer to the fuselage.
13. Make and assemble the sheet balsa fin and rudder noting offset required for U/C flying — cement to fuselage. The model can now be painted and finished as desired.
14. Tie or bend loops on the end of the nylon or wire lead-outs with about 2" hanging over the tip of the wing. Add the gas engine propeller and plastic spinner (obtainable at your hobby store). Balance the model as shown with clay. Use the nylon lines and handle furnished in the kit making the lines about 25 feet long for best flying results.


EXPLODED VIEW OF BELLCRANK ASSEMBLY



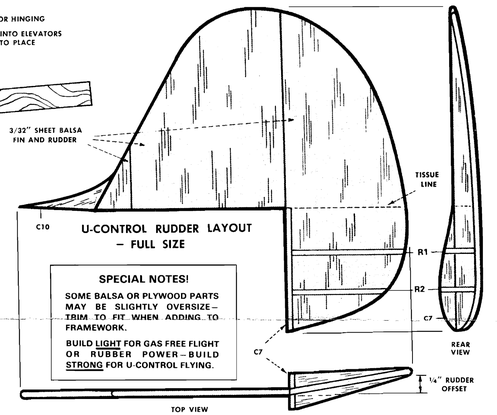


SPECIAL NOTE!
When writing to us about this kit BE SURE and send both box ends for identification.
Thank you

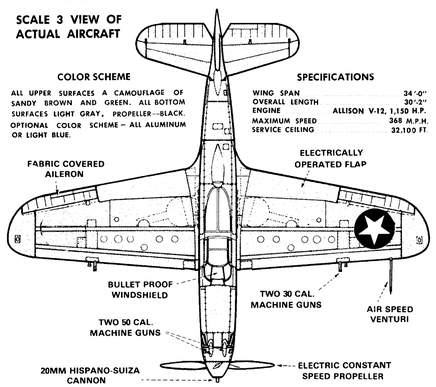
CAUTION:
Do not fly control line models in the vicinity of electric power lines!

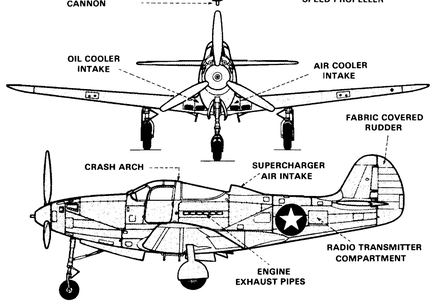
SEND US PHOTOS OF YOUR COMPLETED MODEL. WE ARE PREPARING A DISPLAY FOR SHOWING AT TRADE SHOWS AND EXHIBITIONS. PLEASE FURNISH YOUR NAME, ADDRESS AND AGE ON BACK OF PHOTO SO THAT WE CAN IDENTIFY THE BUILDER.

IMPORTANT NOTE
THE BELLCRANK BASE (K8) MUST BE INSTALLED IN FUSELAGE BEFORE SECOND SET OF HALF FORMERS ARE ADDED — SEE INSTRUCTIONS.



SCALE 3 VIEW OF ACTUAL AIRCRAFT





COLOR SCHEME

ALL UPPER SURFACES A CAMOUFLAGE OF SANDY BROWN AND GREEN. ALL BOTTOM SURFACES LIGHT GRAY. PROPELLER—BLACK. OPTIONAL COLOR SCHEME — ALL ALUMINUM OR LIGHT BLUE.

SPECIFICATIONS

WING SPAN	34'-0"
OVERALL LENGTH	30'-2"
ENGINE	ALLISON V-12, 1,150 H.P.
MAXIMUM SPEED	368 M.P.H.
SERVICE CEILING	32,100 FT.

PRINTED IN U.S.A.

MR. MODELBUILDER: PLEASE READ THIS IMPORTANT INFORMATION BEFORE YOU START CONSTRUCTION OF MODEL

This exclusive multi-purpose Guillow model has been designed to afford you a variety of building choices. Before start of actual construction, study the plans thoroughly. You can build your scale model for U-Control, gas engine free flight, rubber powered free flight, or static display. Determine which type of model you are going to build and follow the instructions carefully.

U-CONTROL: This model was designed for simple stunt flying. Note—inverted flight is not recommended for scale U-C models. Refer to the U-Control section of this plan.

FREE FLIGHT: Precision construction, balance and ease of flight adjustments coupled with a model built to be especially light weight are the essence of free flight. Refer to the Gas Engine or Rubber Powered Free Flight section of this plan.

DISPLAY: For the scale builder, optional features such as movable ailerons, etc. have been incorporated with the plans. Study the illustrations and information until you understand the construction technics and are able to complete them. The features are functional and enhancing for display models. Explanatory drawings and notes are included with the instructions.

Finally, although no instructions are furnished for R/C installation, this model is large enough and roomy enough for any single channel or single channel pulse equipment with an engine from .049 to .09. For instructions in installing and operating R/C equipment, we recommend that you refer to current model publications if not familiar with the subject.

SUGGESTIONS FOR MAKING A SUPER LIGHT RUBBER POWERED FLYING MODEL. 1. USING A SANDING BLOCK, SAND ALL DIE-CUT SHEETS ON NON-PRINTED SIDE BEFORE REMOVING DIE-CUT PARTS. 2. APPLY ONLY ONE COAT OF CLEAR DOPE OVER TISSUE - DO NOT USE COLORED DOPE. 3. OMIT ALL SCALE-OPERATING PARTS AND ARMAMENT GROUP THAT ADD EXTRA WEIGHT TO MODEL.

IF, DURING THE BUILDING OF THIS MODEL, YOU NEED SOME WORD OF EXPLANATION TO SOLVE A PARTICULAR CONSTRUCTION PROBLEM, JUST DROP US A LINE AND WE WILL ANSWER YOUR INQUIRY BY RETURN MAIL. WE WELCOME YOUR QUESTIONS OR SUGGESTIONS, SINCE IT IS OUR INTENT TO FURNISH YOU, THE MODEL BUILDER, WITH THE FINEST SCALE FLYING MODEL KITS AVAILABLE.

ALTHOUGH EVERY EFFORT HAS BEEN MADE TO AVOID ERROR IN THE DESIGN AND PRODUCTION OF THIS KIT, WE DO NOT CLAIM IT IS ERRORLESS. PLEASE NOTIFY US IF YOU DISCOVER ANYTHING THAT SHOULD BE CORRECTED SINCE IT IS OUR DESIRE TO RECTIFY IT IMMEDIATELY.

COPYRIGHT 1980 BY PAUL K. GUILLOW, INC.,

NOTE ON PAINTS AND ADHESIVES

USE REGULAR WOOD MODEL CEMENT FOR BONDING WOOD PARTS TOGETHER. SEE THE INSTRUCTIONS IN SMALL BROCHURE FOR CEMENTING AND PAINTING PLASTIC PARTS. CEMENT AND LIQUIDS NOT SUPPLIED WITH KIT.

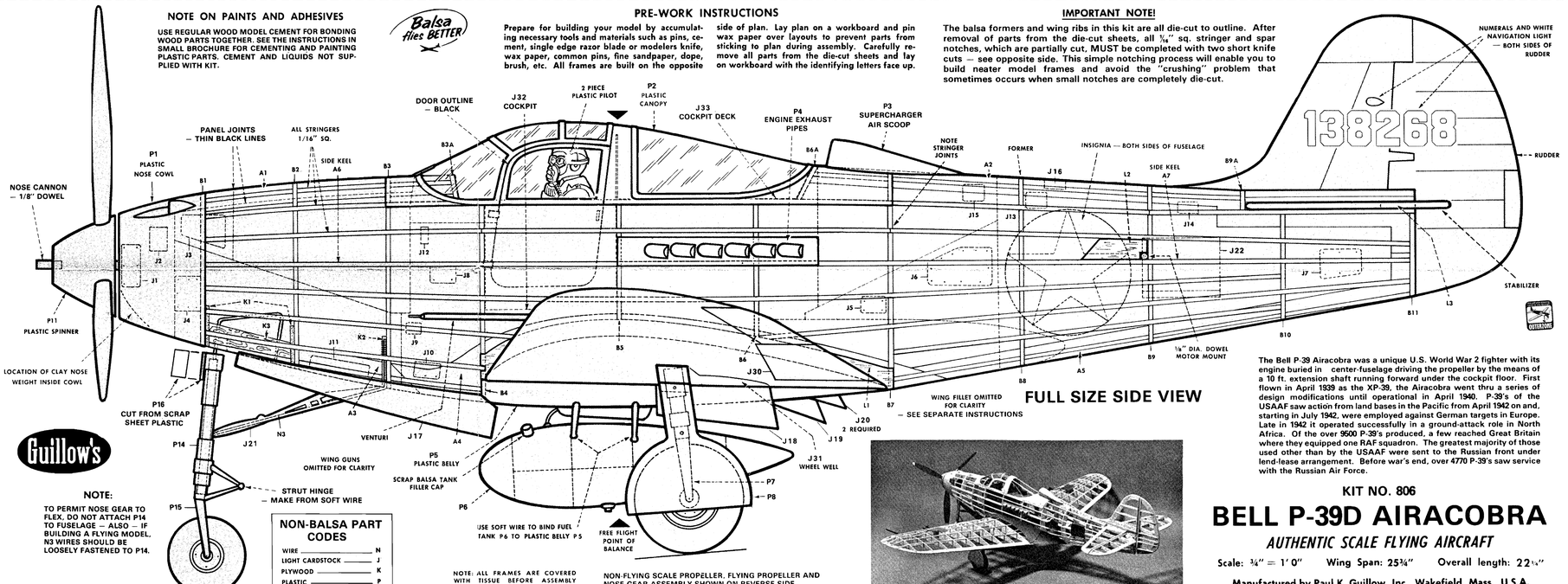
Balsa flies BETTER

PRE-WORK INSTRUCTIONS

Prepare for building your model by accumulating necessary tools and materials such as pins, cement, single edge razor blade or modelers knife, wax paper, common pins, fine sandpaper, dope, brush, etc. All frames are built on the opposite side of plan. Lay plan on a workboard and pin wax paper over layouts to prevent parts from sticking to plan during assembly. Carefully remove all parts from the die-cut sheets and lay on workboard with the identifying letters face up.

IMPORTANT NOTE!

The balsa formers and wing ribs in this kit are all die-cut to outline. After removal of parts from the die-cut sheets, all ⅛" sq. stringer and spar notches, which are partially cut, MUST be completed with two short knife cuts — see opposite side. This simple notching process will enable you to build neater model frames and avoid the "crushing" problem that sometimes occurs when small notches are completely die-cut.



FULL SIZE SIDE VIEW

Guillow's

NOTE:
TO PERMIT NOSE GEAR TO FLEX, DO NOT ATTACH P14 TO FUSELAGE — ALSO — IF BUILDING A FLYING MODEL, N3 WIRES SHOULD BE LOOSELY FASTENED TO P14.

NON-BALSA PART CODES

WIRE	N
LIGHT CARDSTOCK	J
PLYWOOD	K
PLASTIC	P

NOTE: ALL FRAMES ARE COVERED WITH TISSUE BEFORE ASSEMBLY

NON-FLYING SCALE PROPELLER, FLYING PROPELLER AND NOSE GEAR ASSEMBLY SHOWN ON REVERSE SIDE

The Bell P-39 Airacobra was a unique U.S. World War 2 fighter with its engine buried in center-fuselage driving the propeller by the means of a 10 ft. extension shaft running forward under the cockpit floor. First flown in April 1939 as the XP-39, the Airacobra went thru a series of design modifications until operational in April 1940. P-39's of the USAAF saw action from land bases in the Pacific from April 1942 on and, starting in July 1942, were employed against German targets in Europe. Late in 1942 it operated successfully in a ground-attack role in North Africa. Of the over 9500 P-39's produced, a few reached Great Britain where they equipped one RAF squadron. The greatest majority of those used other than by the USAAF were sent to the Russian front under lend-lease arrangement. Before war's end, over 4770 P-39's saw service with the Russian Air Force.

KIT NO. 806

BELL P-39D AIRACOBRA

AUTHENTIC SCALE FLYING AIRCRAFT

Scale: ¾" = 1' 0" Wing Span: 25¾" Overall length: 22⅛"

Manufactured by Paul K. Guillow, Inc., Wakefield, Mass., U.S.A.

LANDING GEAR WIRE ASSEMBLY

BEND WIRE GEAR TO SHAPE THEN BIND TO PLYWOOD WITH NYLON THREAD. COVER BINDING WITH CEMENT.

NYLON THREAD

N4

K4 1/16" PLYWOOD CENTER SPAR AND GEAR SUPPORT

L1 2 REQ.

F10

DUMMY HINGE — SCRAP WIRE

P7

P8 CUT TO LENGTH — NOTE OVERLAP AT TOP

CUT OFF AFTER CEMENTING IN PLACE

2 PIECE PLASTIC WHEEL

BORE AXLE HOLES TO TAKE 1/16" WIRE

CUTTING THE 1/4" SQ. FUSELAGE FORMER AND WING RIB NOTCHES

A. Pin half former over pattern.

B. Using printed guide lines, two cuts with the point of a modelers knife (or single edge razor blade) will free the wood from notches.

C. Notch wing ribs, or other parts requiring notching, in a similar manner.

FORMER (HALF)

PRINTED PATTERN

INSIDE EDGES OF NOTCHES ARE ON DIE CUT

PIN

GUIDE LINES

Bullfinch

"T" INDICATES TOP

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11

POSITION OF K1

POSITION OF K1

POSITION OF K2

CUT OFF AFTER SIDE KEELS ARE ADDED

STRINGERS BUTT AGAINST FORMER

IF BUILDING U-CONTROL MODEL, CUT OUT FOR PUSH ROD CLEARANCE — RIGHT SIDE ONLY

B3A B6A B9A

L2 2 REQ.

L3

3/32" STOCK

K3 K1 K2

FUSELAGE FORMERS

2 OF EACH REQUIRED (EXCEPT B3A AND B6A)

1/16" SHEET BALSA

CUT SQ. NOTCHES — PUNCH MARKS ON DIE CUT PARTS

1/16" PLYWOOD 2 OF EACH REQUIRED EXCEPT K2

ARROWHEADS INDICATE "FRONT EDGE"

A6 2 REQ.

SIDE KEEL 2 REQUIRED

A7 2 REQ.

A1

A2

POSITION OF FORMERS SHOWN BY DOTTED LINES

TOP AND BOTTOM KEEL PARTS

STABILIZER SLOT

A3

A4

A5

FUSELAGE LAYOUT

PLAN MAY BE SAFELY CUT APART ON THIS DOTTED LINE FOR EASE OF HANDLING

WING RIBS

2 OF EACH REQUIRED (EXCEPT F1A)

1/16" SHEET BALSA

F9 F8 F7 F6 F5 F4 F3 F2 F1 F1A

POSITION OF K5

POSITION OF K6

POSITION OF K7

CRACK RIB AT DOTTED LINE — ONE RIGHT AND ONE LEFT

MOVABLE SCALE FIN/RUDDER LAYOUT

DETAIL OF HINGE INSTALLATION (SCRAP PLASTIC)

C1 C2 C3 C5 C6 C7X C8 C9 C10

CUT C2 APART AFTER FRAME IS BUILT

1/16" SQ. CAP STRIPS

ASSEMBLING MOVABLE TAIL SURFACES

The fin/rudder and stabilizer/elevator are built exactly like the flying scale versions using the C and D die-cut parts and 1/16" x 3/32" strip stock for spars and cross braces. When basic frames are built, cut and cement 1/16" sq. strips over all spars and cross braces (both sides). When dry, sand or carve to streamline shapes as per top and end views.

MOVABLE SCALE STABILIZER/ ELEVATOR LAYOUT

DETAIL OF HINGE INSTALLATION

D8's ON TOP OF D7

1/16" SQS. ON BOTTOM OF D7

CUT TIPS D6 APART (HEAVY LINES) AFTER FRAME IS BUILT

D1 D3 D6 D7 D8 D9

1/16" SQ. CAP STRIPS

N5 WIRE TIE

N5

DETAIL OF ELEVATOR TIE

D8 2 REQ. 1/16" STOCK

2 OF EACH REQUIRED

3/32" STOCK

FULL SIZE WIRE PATTERNS

N4 1/16" DIA. WIRE 5½" LONG 1 RIGHT — 1 LEFT

N1 4" LONG 3/64" DIA. WIRE 1 EACH REQUIRED

N2 2¼" LONG

N6

N5 1/32" DIA. WIRE 3¾" LONG

N3 1/32" DIA. WIRE 4" LONG — 2 REQ.

CUT WIRES TO LENGTH THEN BEND TO SHAPE WITH 2 PAIR OF NEEDLE NOSE PLIERS

ASSEMBLING AND INSTALLING NOSE GEAR

1. & 2. Solder N1 and N2 to metal tube.
3. Bind and cement N1 to K3.
4. Cut out section of A3 between B1 and B2. Cement K1 parts in place.
5. Bind and cement N3 wires to K2.
6. Cement nose gear unit to K1's. Cement 2nd K3 to K1's — do not cement to N1. Cement K2 to A3 and B3 — Bind N3's to metal tube.

METAL TUBE

N1 N2 K1 K2 K3 N3

2 PIECE PLASTIC WHEEL

TOP VIEW OF NOSE GEAR INSTALLATION

FLYING PROPELLER ASSEMBLY - RUBBER POWER

1. CUT OUT P9 AND P10.
2. ASSEMBLE PROP UNIT
3. CEMENT PROP AND P10 TO P9.

P9 P10 P11 P12 P13 P1

NOSE COWL

FOUR L8's

DIE-CUT BALSA PROP BLADES — CARVE TO SHAPE

LIGHTLY CEMENT THRUST BEARING TO P1 NOSE COWL

CEMENT END OF N6 TO P12/P13

P12/P13. FOUR L8's

THRUST BEARING

PROPELLER SHAFT

PLASTIC PROP

L8 N6

NON-FLYING SCALE PROPELLER

1. CUT OUT PARTS P11, P12 & P13. 2. CEMENT THE FOUR L8 BALSA DISCS TOGETHER — CEMENT TO P12. CEMENT P13 TO P12 CAREFULLY LINING UP PROP BLADE SLOTS. ADD WIRE SHAFT N6 AND THRUST BEARING. 3. INSERT PROP BLADES THRU SLOTS IN P11 AND CEMENT INTO SLOTS IN P12/P13.

WING LAYOUT

VENTURI — 3/32" STRIP OR DOWEL

MAKE WING GUNS FROM 3/32" STRIP OR DOWEL

INSIGNIA — TOP OF WING

¼" SQ. LEADING EDGE

ALL SPARS 1/16" SQ.

DO NOT CEMENT SPARS AND LEADING EDGE TOGETHER WHERE JOINED AT CENTER SECTION UNTIL DIHEDRAL HAS BEEN ADDED

INSIGNIA — BOTTOM OF WING

SECTIONAL DETAIL OF LANDING GEAR RE-ENFORCEMENT BETWEEN RIBS F3 AND F4

K4 K5 K6 F4 N4

E1 E2 E3 E4 E5 E6 F1 F1A F2 F3 F4 F5 F6 F7 F8 F9 F10

J23 J24 J25 J26 J27 J28 J29 J30 J31 J36

SPAR LAP JOINT

POSITION OF K4

RIBS

RED NAVIGATION LIGHT

AILERON LINES — TOP AND BOTTOM OF WING

AILERON LINES, FLAP LINES, ETC. MAY BE INKED IN WITH A RULING PEN OR BY APPLYING THIN STRIPS OF BLACK PAPER SUCH AS BORDER ON THIS PLAN.

WHEEL WELL — BOTTOM OF WING

POSITION OF J19 AND J20's ON PLASTIC BELLY STRUCTURE

GREEN NAVIGATION LIGHT

ALL J PARTS, EXCEPT J30 AND J31 ARE CEMENTED TO TOP OF WING

K6 K7 K5

1/16" PLYWOOD 2 OF EACH REQUIRED

J30 WING FLAP — BOTTOM OF WING

TRAILING EDGE

POSITION OF L4 FILLET

NOTE LEADING EDGE TAPER TO WING TIP

POSITION OF K4 PLYWOOD GEAR SUPPORT SHOWN BY DOTTED LINES

CRACK TOP AND BOTTOM SPARS AT RIBS F10

WING DIHEDRAL

— 1-11/16" FOR SCALE AND FREE FLIGHT MODEL

— 1" FOR U-CONTROL MODEL

LEADING EDGE VIEW

TRAILING EDGE VIEW

RUDDER LAYOUT

These rudder and stabilizer layouts are for building a rubber or gas powered free flight model. The solid lines are "scale" — the dotted outer lines are for building slightly larger units with more surface area — build one style or the other — not both. Layouts for movable scale rudder and elevators are provided above.

C1 C1X C2 C2X C3 C3X C4 C5 C6 C7 C8 C9 C10

RUDDER AND FIN SEPARATION LINE (BLACK INK)

TRIM LINE (BLACK INK)

ALL SPARS 1/16" x 3/32"

DETAIL OF BUILD-UP AT BOTTOM OF RUDDER

ELEVATOR AND STABILIZER SEPARATION LINE (BLACK INK)

TRIM LINE (BLACK INK)

ALL SPARS 1/16" x 3/32"

D1 D1X D2 D2X D3 D3X D4 D5

STABILIZER LAYOUT

KIT NO. 806

BELL P-39 AIRACOBRA

INSTALLING MOVABLE WING AILERONS

If you wish to incorporate movable ailerons as part of the wing structure, the necessary drawings are provided on a separate sheet. The drawings are to be cut out and pasted over wing layout as shown in diagram at left. Note that some ribs and tip parts must first be modified to build moveable ailerons. Suggestion: If rubber cement is used instead of regular glue or paste, the drawings can be lifted off the layout if desired.

Cover all layouts with Saran Wrap or equivalent before starting frame construction. Wax paper may also be used. This covering will prevent balsa parts from sticking to plan when cementing the frames together.

All 1/16" sq. former and rib notches have been die-cut ONLY along the inner edges. See instructions above for completing the notches. A few small parts have been printed on the balsa sheets — these are to be cut out with a modelers knife or single edge razor blade.

TYPICAL WING SECTION AT RIB F2