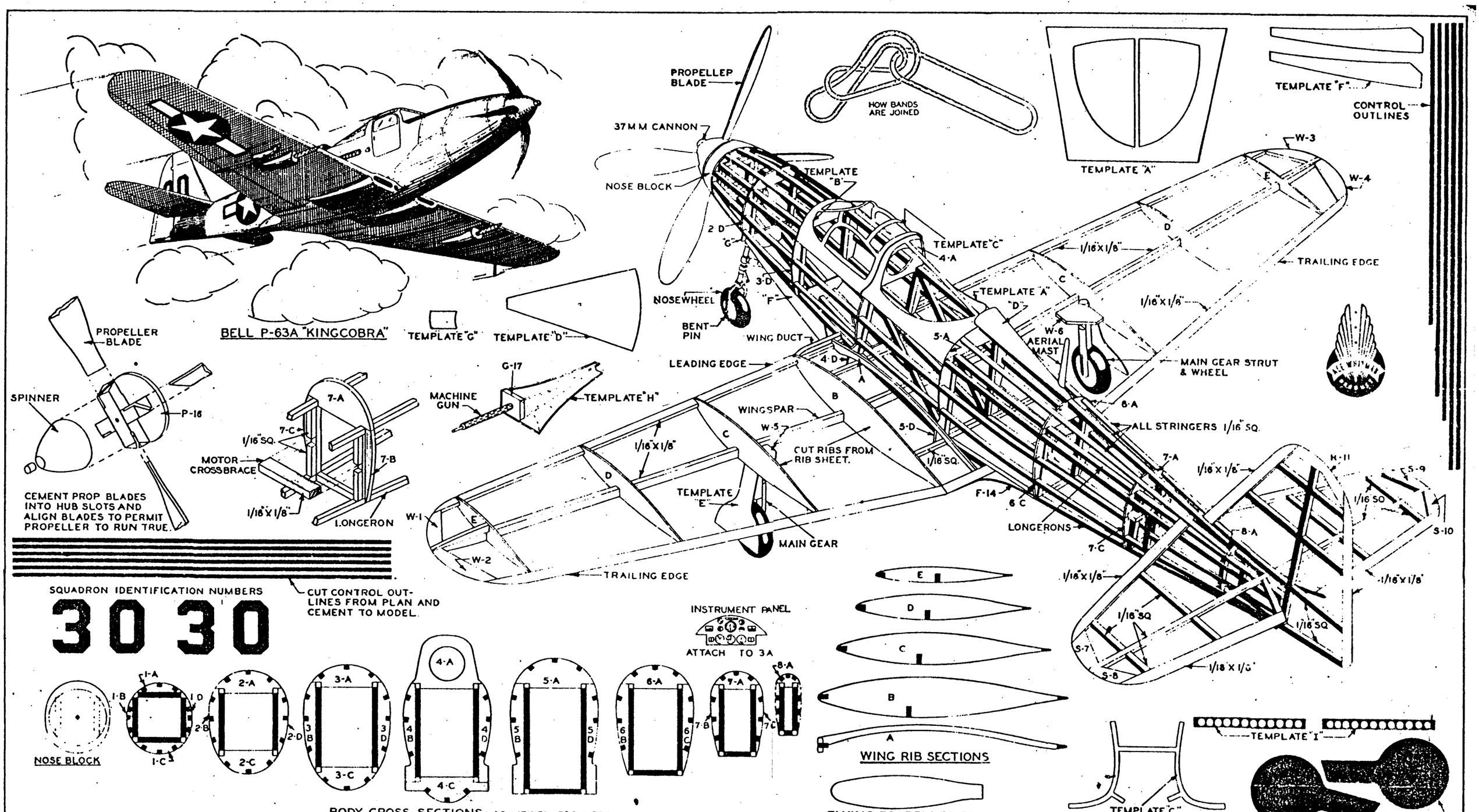

DETAILED INSTRUCTIONS

(Read every word before starting to build model)

Study parts, sketches and instructions carefully before attempting model construction. As each part of the plan will be used, a few minutes' extra time in planning can be saved over a [illegible] detailed reference and help direct the process of assembly. The following tools and materials other than those supplied are necessary to build this model: A razor blade, a small drawing board, fifty small thin pins, a pair of pliers to bending sheet, some small pieces of sandpaper, a piece of waxed paper 16" x 28" and [illegible] cement.

Some model builders find it better to cut out carefully and slightly sand all contained parts of the printed balsa rib sheet after which they are preserved in a little box until ready to be assembled into the skeleton framework of model. Likewise they carefully separate all strips from strip sheet, sand them lightly and keep them protected until ready for use.

STEP 1—REENFORCED PRINTED SHEETS • Printed balsa rib sheets are supplied. For when stronger models are required, plain sheets of white writing paper can be pasted to backs of rib sheets. Apply library paste to paper and attach to back of each rib sheet. Paper reenforcements eliminate possibility of cracking balsa along the grain. While drying place pasted parts between two flat surfaces and apply weights [illegible] to prevent warping. Do not remove paper reenforcements from various pieces after they have been [illegible].

STEP 2—SANDPAPERING • Obtain a small piece of wood and fold sandpaper tightly around it. Rub sandpaper covered block with an outward motion LIGHTLY and SQUARELY on all balsa strips. Avoid rounding edges of square longitudinal pieces.

STEP 3—SPARS, ETC. • Select the correct strips as required on the plan for leading edge, spar and trailing edge. Do this before any notches are cut in ribs so fit will be very close and tight. A close or tight fit requires less cement. Consequently less weight will be added to the model.

STEP 4—WING, RIBS, WING TIPS • Cut out printed ribs and wing tips from printed balsa sheets. Begin assembly by working over wing in the top view. Place waxed paper over plan to prevent wood parts from adhering to and tearing or soiling plan when assembled wing is removed. Hold down main spars with small thin pins. Fit ribs on to spars at correct positions and cement securely. Next cement leading edge into position. When cement is thoroughly dry remove pins, separate left and right panels by cutting at middle line and slide wing tips back and forward so "trailing edges" can be pinned down to board. Now cement trailing edge and wing tips into position and pin them down until cement is dry. [illegible] on board until it is certain cement is dry.

STEP 5—ELEVATORS AND STABILIZER • The tail is assembled in one [illegible] Sandpaper all strips as required. Stop No. 2 before cutting to required lengths. Use waxed paper and pins in [illegible] cross members [illegible] to proper sizes and cut curved tips from balsa sheet. Place cross members [illegible] in position. Pin down firmly. Apply small amount of cement to cross members and curved pieces before inserting [illegible] in position.

STEP 6—FIN AND RUDDER • Cut parts from printed rib sheets. Assemble in [illegible] Work over top view. Rudder is assembled in the same manner as stabilizer. Allow [illegible] before removing from plan.

STEP 7—BODY SIDES • Cover side view on plan with waxed paper. Assemble [illegible] side view. Pin down longerons. Put in upright members. Start at front [illegible] Cut strights to [illegible] Apply cement to one side before dropping into position. Put in diagonal braces. When dry remove body side from plan. As two sides are required, replace waxed paper over plan and make another body side.

STEP 8—BODY SQUARE AND FORMERS • The second body step is the assembly of the two sides into the complete [illegible]. Work over top view. Start by cutting [illegible] cross braces. Start at rear and work toward front. Check and bend longitudinals where necessary. Cement all parts carefully. After all cross braces are in place check [illegible] Check [illegible] to see that they are at right angles and [illegible] the former [illegible] has a little smaller than the part [illegible]

STEP 9—BODY STRINGERS • The same kind of stick material is used for both longerons and stringers. Smooth with sandpaper, cut to required lengths and cement in positions indicated BY NOTCHES IN FORMERS. Stringers are purposely not shown on front of plan but are clearly indicated in [illegible] perspective of framework on back of plan.

STEP 10—MOTOR COWL OR NOSE BLOCK • Trace any such required parts from drawings on front of plan onto balsa block and cut around traced lines to make block conform to proper shape and size. Drill small hole for shaft and finish entire part with sandpaper. Piece is now ready for cementing to front of body.

STEP 11—PROPELLER • Semi scale propeller blades are [illegible] to form special die cut sheets of firm wood; spinner or hub block from balsa. Remove [illegible] from sheet, sand lightly, prepare spinner or hub as shown on plan and [illegible] cement blades into positions as indicated. Four blade propeller hubs are made by [illegible] the 1/4" x 1/2" hub block in two and nothing or tail-fastened to permit pieces to be [illegible] as shown after which ends are angle notched to receive blades. Allow cement to dry thoroughly before spinning propeller. Three blade propeller hubs are made from solid block which is carved to shape, slotted and sanded in accordance with description on plan, usually cemented to propeller hub after shaft has been installed.

STEP 12—LANDING GEAR, TAIL OR NOSE WHEEL. • Landing gear struts in most cases are made by cementing together two pieces [illegible] balsa after which they can be sanded to shape and cut to required lengths. Common straight pins bent to required shapes after being pushed through center of wheels, form satisfactory axles. Pins are usually bound to struts with a serving of thread after which a liberal application of cement is recommended. A satisfactory method is shown on plan. Have landing gear as complete as possible before attaching to model framework.

Wheels having large center holes should be plugged with match stick before being pierced by axle pin.

Tail or nose wheel is made from several separate discs or pieces which must be cut from printed rib sheet. Cement pieces together "cross grained" for extra strength. Round to a tire shape with sandpaper. Again, pins can be used for axles but tail wheels may as well be cemented firmly in position (without using a pin). Tail wheel can be affixed after model is covered if desired.

STEP 14—ASSEMBLING • When all individual units are complete they are ready for final assembly. Cement elevator and rudder in positions as shown and allow cemented joints to dry thoroughly. Cement landing gear units on wings and then cement wings into position shown in side view. Block up wing tips to produce proper dihedral and allow cemented joints to dry. Be sure everything is aligned properly before cement sets.

Trace required templates from plan to letter paper, cut out and cement into proper positions as indicated on plan.

Model should now appear like illustration of skeleton framework perspective.

STEP 15—COVERING • If carefully used the tissue supplied is sufficient to cover body and ladder completely and wings and stabilizers on upper surfaces only. If desired, lower surfaces can be covered with scrap pieces of tissue or [illegible] tissue. Cover wings and elevator on top side only and [illegible] sides. Sandpaper all rough edges and make [illegible] Fit tissue paper in section at a time, then apply cement and [illegible] Apply as much tissue paper [illegible] as possible with [illegible]

Models which are completely covered can be improved by [illegible] spraying them on all sides with water from a fine atomizer or insect gun after which they should be allowed to dry thoroughly. When covering is dry after being sprayed it will be [illegible] and therefore much smoother.

STEP 16—DECORATIONS, "CONTROLS," ETC. • Control outlines, [illegible] pilots and instrument panel are printed on plan. Pilots [illegible] and then inserted in cockpit. After [illegible] instrument panel and [illegible] positions.

STEP 17—RUBBER MOTOR (not supplied) • [illegible] strands of [illegible] 8" long or its equivalent is sufficient. [illegible] can usually be obtained from stores, toy stores and model [illegible] tissue covering is required as soon as ship for inserting motor is [illegible]

STEP 18—FLYING • When model has been completely assembled it must be checked for center of gravity balance BEFORE a trial flight is attempted. Place [illegible] at the midpoint of the wing tips and lift model to see whether [illegible] can be inserted into front or rear of model to produce proper balance. When plane rests horizontal, while suspended on finger tips it can be considered balanced. A few test glides should be made AFTER the model has been properly balanced. To be certain that model is correctly balanced, hold it, unwound, in position for launching and if the glide after leaving the hand is steady and [illegible] 15 to 25 feet ship can be considered as making a normal glide.

Model is now ready for its trial flight. Launch it with the nose pointed slightly downward which permits gravity to take effect. Before trying a powered flight it is advisable to test motor by winding propeller with right forefinger. Point tail of motor to unwind completely. At this time check direction of propeller rotation. While turning propeller and thus winding rubber motor hold model firmly by its nose block. The proper number of turns for rubber motor is determined when its coils or twists are fairly small, or tight.

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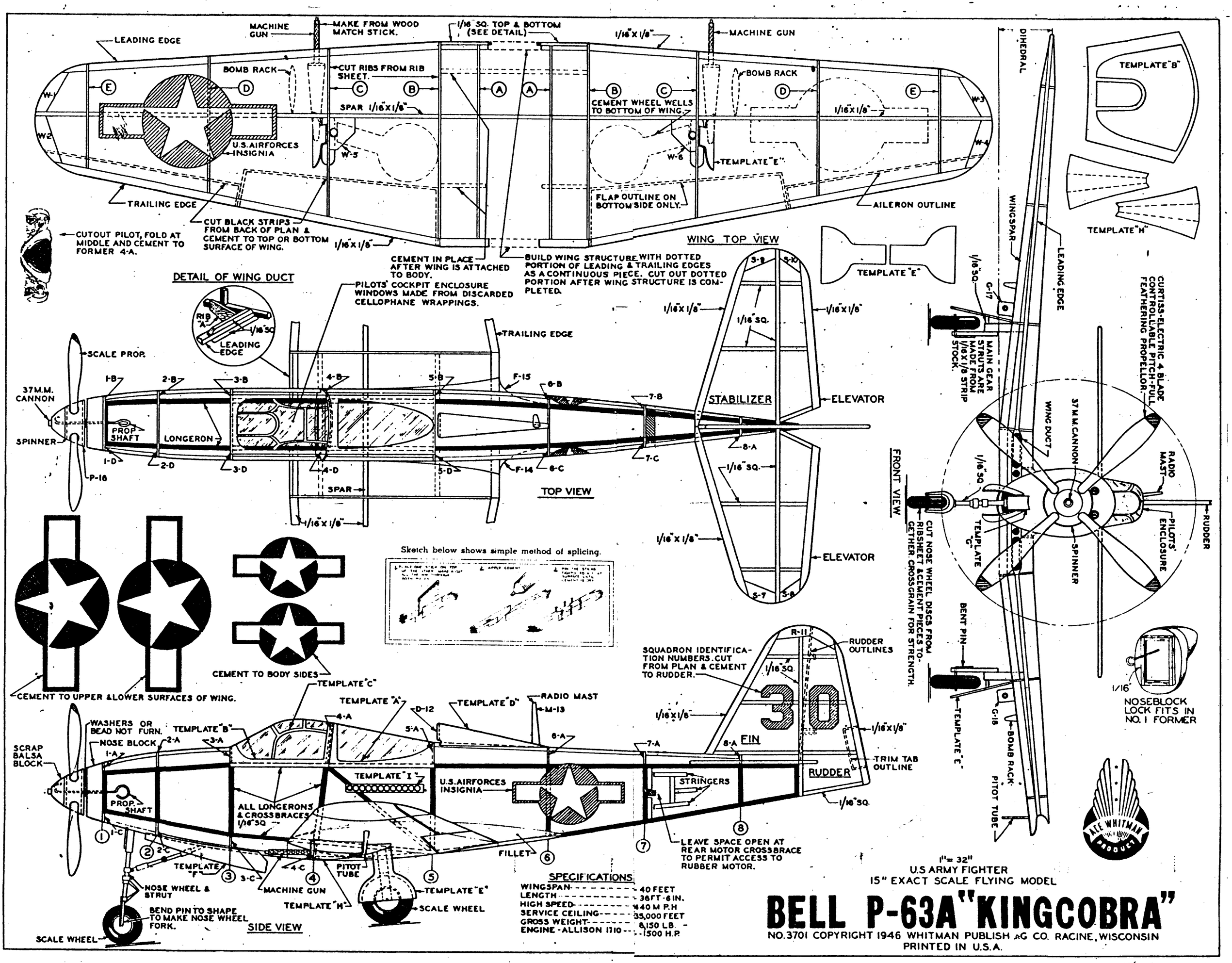

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