BLACK WIDOW P-61

1/48 SCALE

KIT NO. 7546

The Northrop P-61, was shrouded in secrecy from its inception. Known as the "BLACK WIDOW", it was the first U.S. aircraft designed exclusively as a night fighter. The P-61 was the heaviest aircraft to ever bear the designation "P" for pursuit, with its initial weight of over 27,400 pounds. Specifications of the WIDOW were those of a medium bomber, with a wing span of 66 feet and an overall length of 48 feet 11 inches. Two Pratt and Whitney R-2800 engines powered the P-61A developing initially 1600 horsepower each. The P-61B had two R2800-65 engines, with an increased horsepower of 2200 each. Top speed of this aircraft was over 370 miles per hour.

The P-61 was the most advanced night fighter of its day, possessing incredible capabilities of destruction. Four .50 calibre machine guns were mounted in a dorsal turret and four 20 millimeter cannons in the ventral location on the fuselage pod. The four .50 calibre machine guns were designed initially as defensive weapons and could be controlled by any one of the three crew members, pilot, rear gunner, or radar operator who sat in the extreme rear of the fuselage pod. The dorsal gun turret could be rotated 360° and elevated to a 90° angle.

The first thirty-six P-61A's carried the dorsal turret. The remainder of the A production of 200 had the dorsal turret deleted due to a buffeting problem caused when the turret was rotated.

The P-61B was approximately 8 inches longer than the "A" model, its overall length being 49 feet 7 inches. Of the four hundred-fifty "B's" produced, only the second two hundred had the dorsal turret which was re-introduced. The buffeting problem had been lessened by redesign of the structure. The P-61B also incorporated many improvements requested by pilots who had used the P-61A in combat.

The P-61B was painted an overall gloss black as were many P-61A's, although initially the P-61A was painted in the conventional olive drab over neutral gray. The P-61B, when painted a glossy black, was almost invisible in the night skies.

The premier ace of World War II night fighter fame was Major Carroll C. Smith of the 418th Night Fighter Squadron stationed in the Pacific. On December 29th, 1944, Major Smith and his radar operator, Lt. Phillip Porter, accomplished a feat unheard of in night fighter history as they intercepted and destroyed four Japanese aircraft in a single night with their P-61, "Times A Wastin' ". With these four Japanese aircraft, destroyed off the coast of Mindoro in the Philippines, Major Smith became the highest scoring U.S. Night Fighter Ace with a total of seven kills.

This accurately detailed model was designed from authentic drawings and photos taken of the P-61 at Wright Patterson Air Force Base. Also much technical information was furnished by Ronald C. Harrison and Garry R. Pape. They are coauthors of a soon to be released book, "Black Widow — Queen of the Midnight Skies." This is the story of the design and development of the P-61 and the American night fighter squadrons of World War II.

MONOGRAM MODELS, INC.
Morton Grove, Ill. Made in U.S.A.

7546-0203

PLEASE READ CAREFULLY BEFORE YOU BEGIN

Read the instruction and study the assembly drawings to become familiar with all the parts. Refer to the PAINTING and DECAL directions under step 18 before assembly.

Each illustration in the assembly procedure indicates color to be used and where the paint should be applied.

As your P-61 may be built to any one of three versions, you must decide on which version you want before you begin.

Refer to airplane drawings after Step 18 for "A" and "B" Versions and for painting schemes.

The assembly procedure is written for all three versions. The assembly of a specific version is helped by the LARGE titles in the steps. Where NO title is used, the assembly is identical for all three versions.

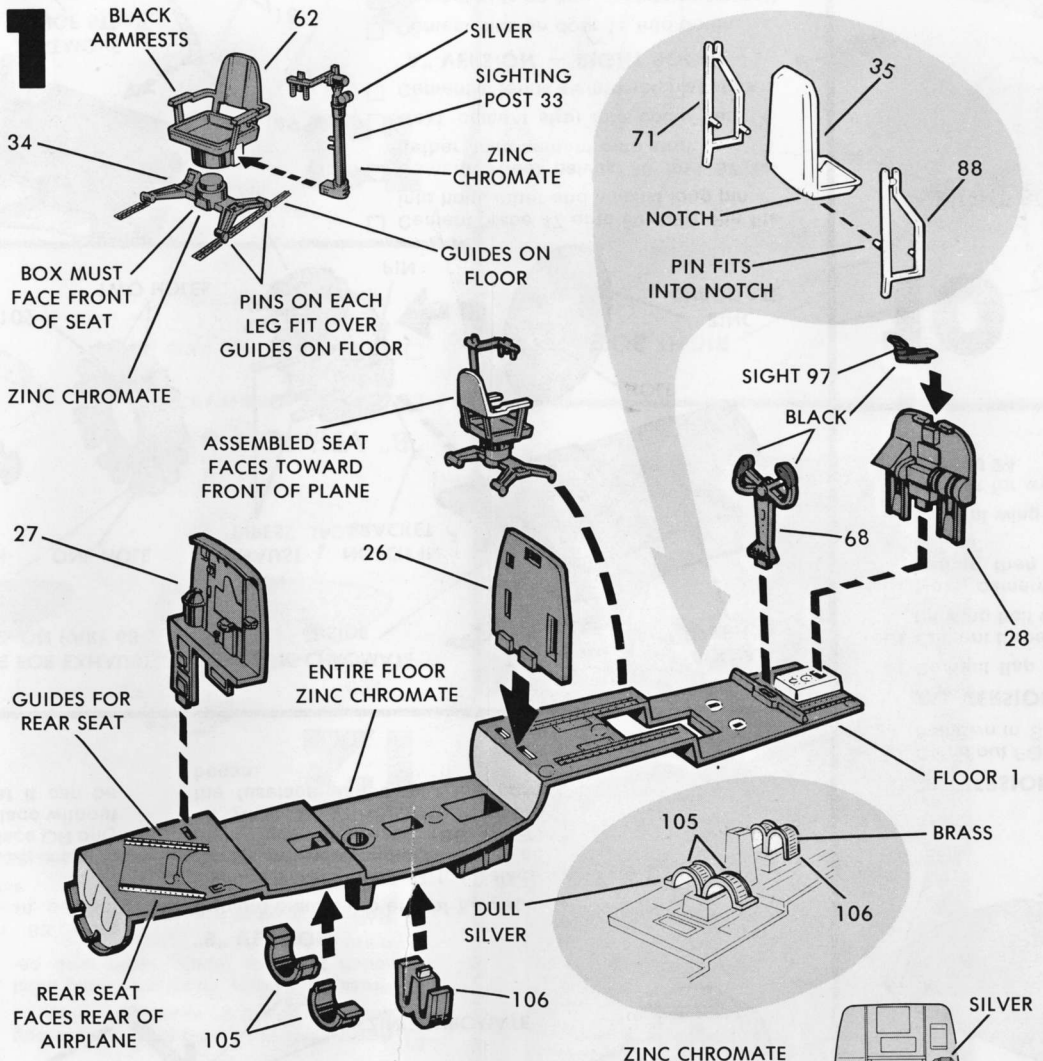
Each "tree" of plastic parts is molded with identifying numbers, appearing on the part or on a tab next to the corresponding part. In the assembly instructions, identifying numbers are indicated. This method makes it easy for you to locate parts during the assembly.

Do not detach parts from the trees until you are ready to use them. After cutting or breaking off the required parts, trim away any excess bits of plastic. Use a small sharp knife, such as a modeling knife, available at your hobby counter. Check the fit of each part before you cement it in place.

Keep in mind the importance of not rushing the assembly of your model and avoid the use of excessive amounts of cement. All plastic cements contain solvents that dissolve plastic in order to form a weld between the cemented parts. Too much cement can soften and distort the plastic, spoiling your model's appearance. When applying cement to small or confined areas, use cement on the end of a toothpick instead of the tube nozzle to better regulate the amount of cement being applied.

For better paint and decal adhesion, it is advisable to wash the plastic parts trees in a mild detergent solution. Rinse and let dry. After washing, handle the parts carefully to avoid skin-oil which may affect the adhesion.

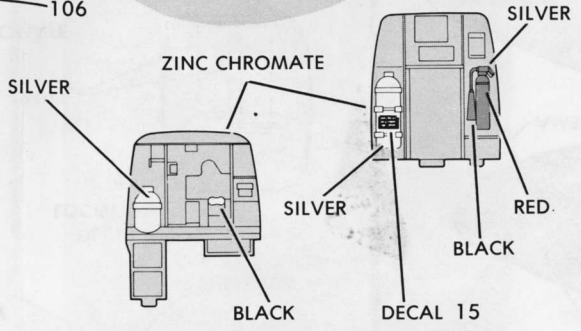
1



- ☐ Cement pieces 26, 27 and 68 into floor.
- ☐ Cement sight 97 into instrument panel 28, then panel into floor.
- ☐ Cement pilot's seat together using pieces 35, 71 and 88. Then cement seat into floor.

FOR ALL VERSIONS EXCEPT "A" (BLACK) NO TOP TURRET

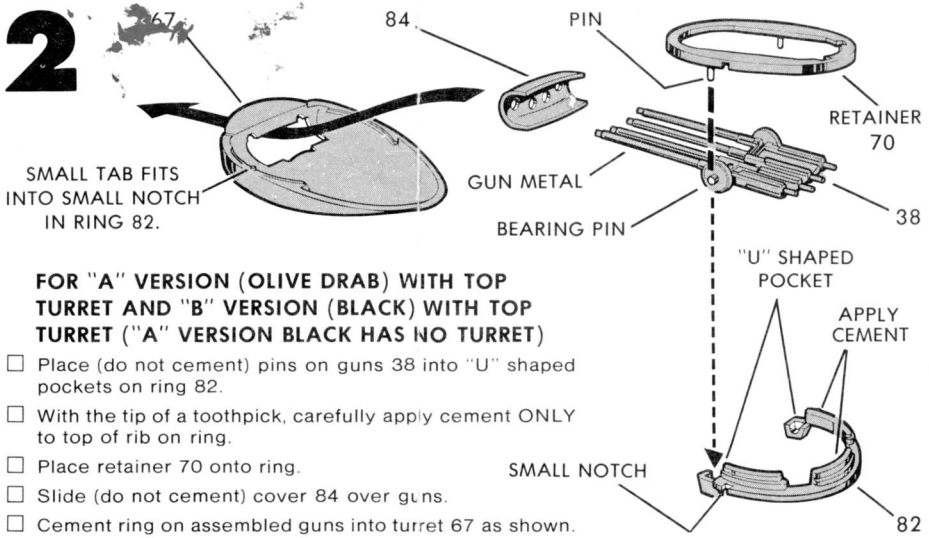
- ☐ Cement seat parts 34 and 62 together.
- ☐ Cement sighting post 33 to arm and side of seat.
- ☐ Repeat for other seat.
- ☐ Cement seats onto guides on floor—one seat must face rear of airplane—the other must face front as shown.
- ☐ Cement two feed chute parts 105 into notch in floor as shown.
- ☐ Cement chute part 106 into other notch.



FOR "A" VERSION (BLACK) NO TOP TURRET

- ☐ DO NOT cement sighting posts 33 onto seats.
- ☐ Cement two feed chute parts 105 into notch in floor as shown.
- ☐ Cement chute part 106 into other notch.

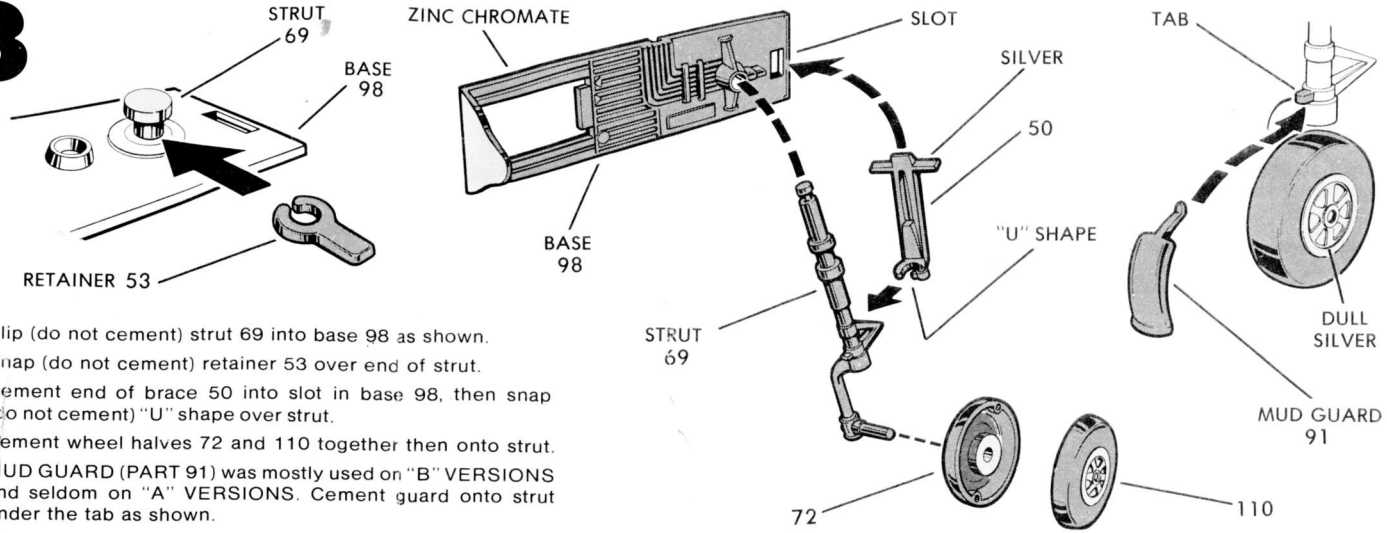
2



FOR "A" VERSION (OLIVE DRAB) WITH TOP TURRET AND "B" VERSION (BLACK) WITH TOP TURRET ("A" VERSION BLACK HAS NO TURRET)

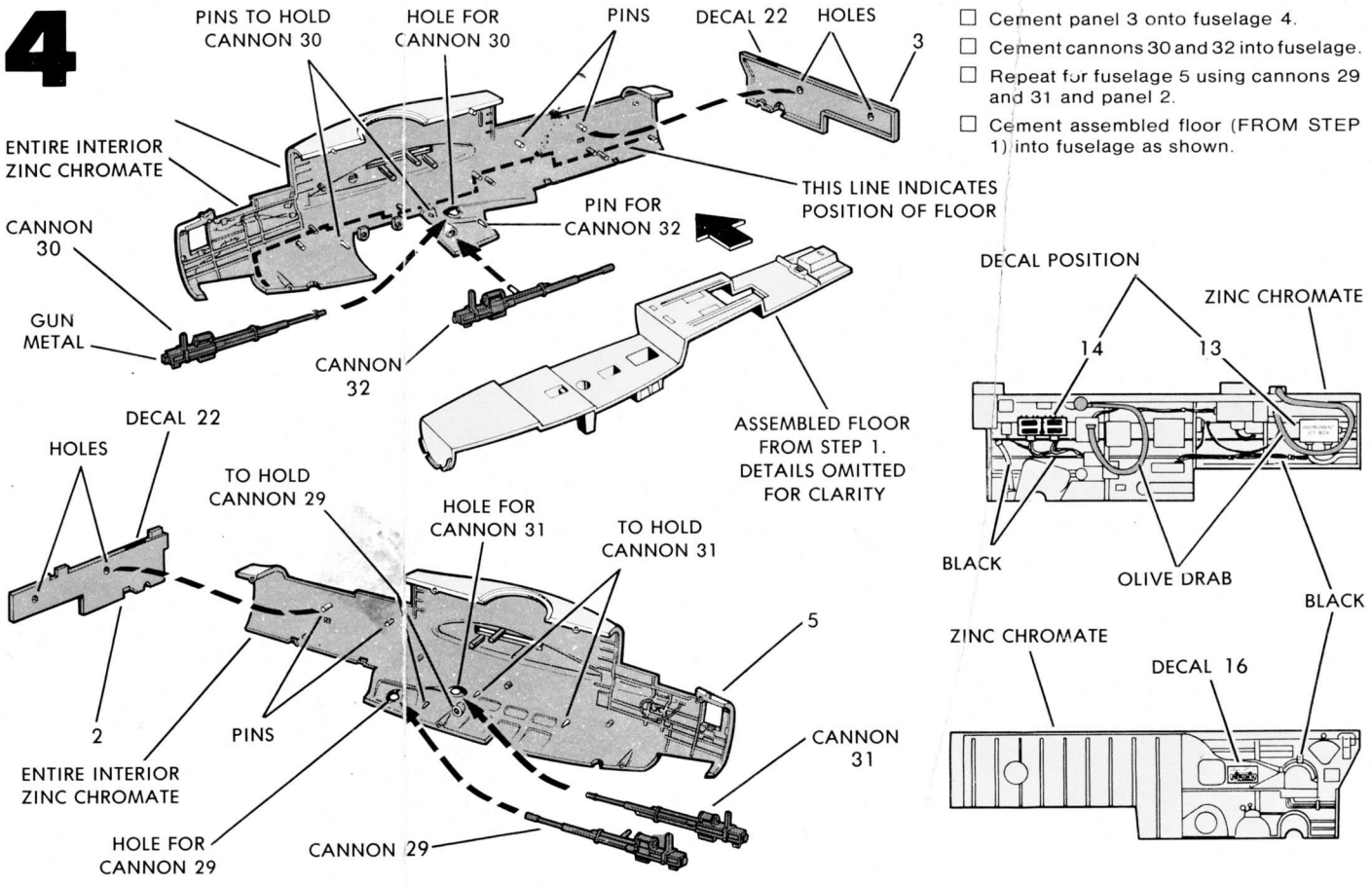
- ☐ Place (do not cement) pins on guns 38 into "U" shaped pockets on ring 82.
- ☐ With the tip of a toothpick, carefully apply cement ONLY to top of rib on ring.
- ☐ Place retainer 70 onto ring.
- ☐ Slide (do not cement) cover 84 over guns.
- ☐ Cement ring on assembled guns into turret 67 as shown.

3



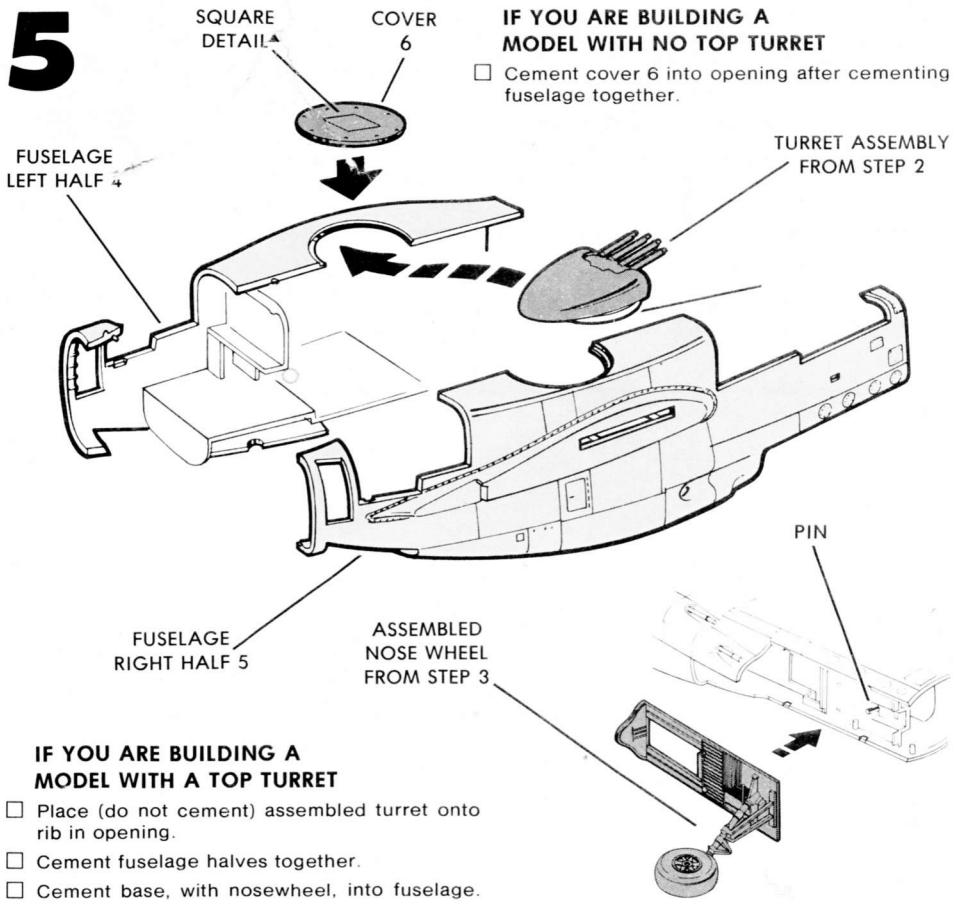
- ☐ Slip (do not cement) strut 69 into base 98 as shown.
- ☐ Snap (do not cement) retainer 53 over end of strut.
- ☐ Cement end of brace 50 into slot in base 98, then snap (do not cement) "U" shape over strut.
- ☐ Cement wheel halves 72 and 110 together then onto strut.
- ☐ MUD GUARD (PART 91) was mostly used on "B" VERSIONS and seldom on "A" VERSIONS. Cement guard onto strut under the tab as shown.

4



- ☐ Cement panel 3 onto fuselage 4.
- ☐ Cement cannons 30 and 32 into fuselage.
- ☐ Repeat for fuselage 5 using cannons 29 and 31 and panel 2.
- ☐ Cement assembled floor (FROM STEP 1) into fuselage as shown.

5

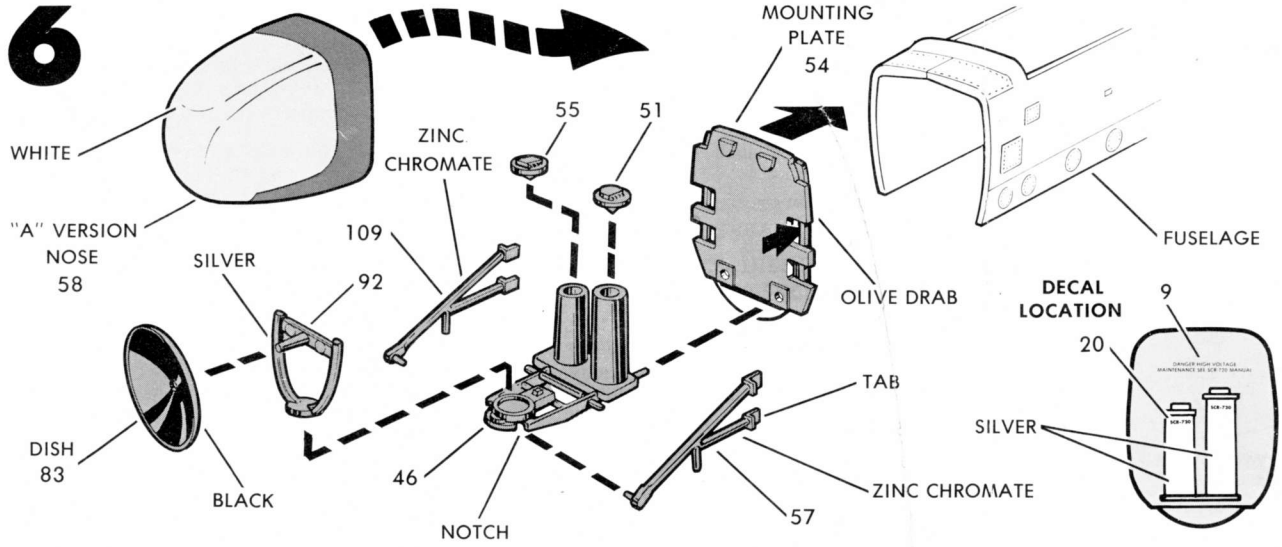


IF YOU ARE BUILDING A MODEL WITH NO TOP TURRET

- ☐ Cement cover 6 into opening after cementing fuselage together.

IF YOU ARE BUILDING A MODEL WITH A TOP TURRET

- ☐ Place (do not cement) assembled turret onto rib in opening.
- ☐ Cement fuselage halves together.
- ☐ Cement base, with nosewheel, into fuselage.



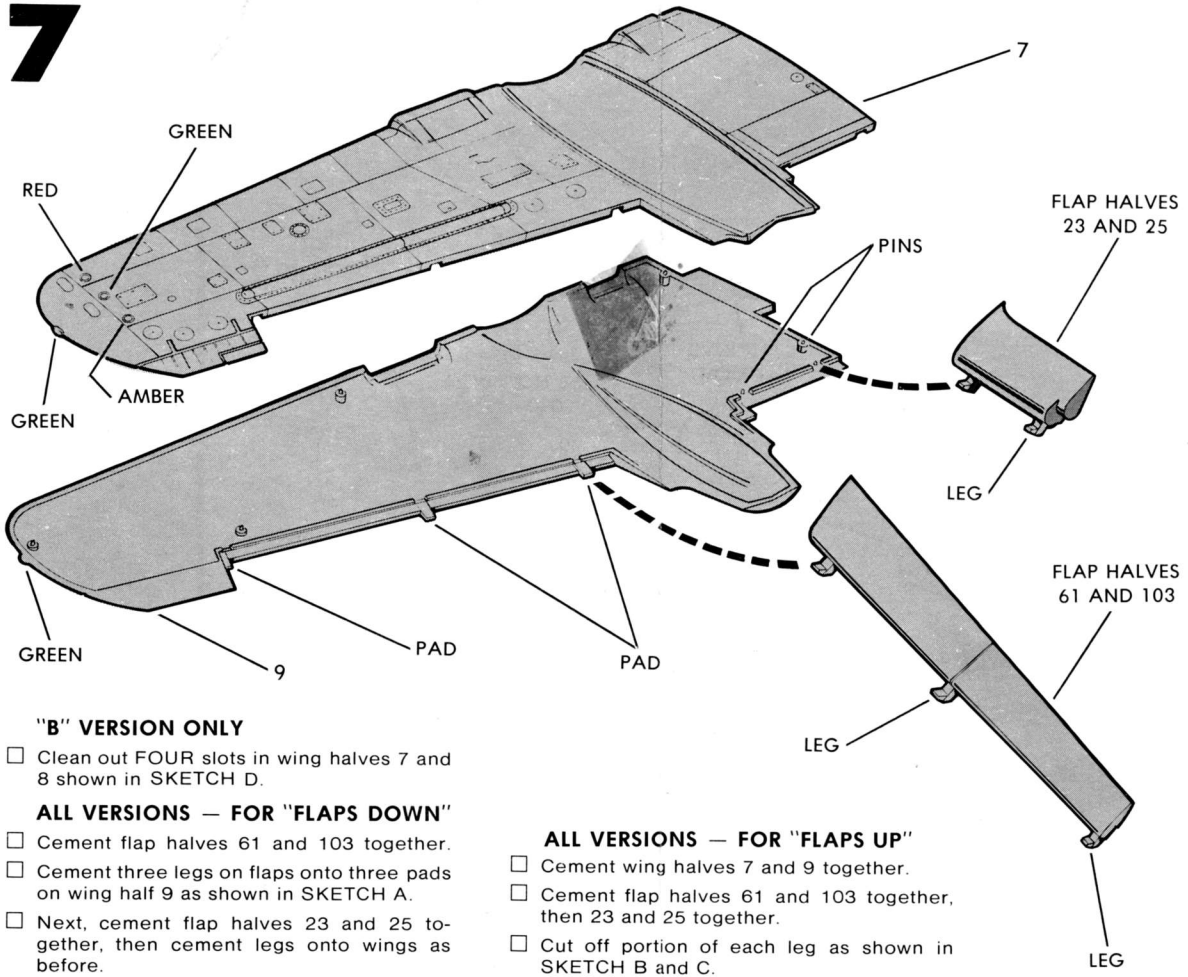
"A" VERSION

- ☐ Cement plate 54 to end of fuselage.
- ☐ Cement caps 51 and 55 onto unit 46, then cement unit onto plate.
- ☐ Next, cement braces 57 and 109 onto unit and plate.
- ☐ Cement dish 83 onto bracket 92, then cement bracket into unit.
- ☐ NOSE (PART 58) may be cemented in place OR only pressed into place without cement so that it can be removed.

"B" VERSION

- ☐ Cement plate 54 to end of fuselage.
- ☐ Cement NOSE (PART 42) to fuselage. On the actual aircraft, there was an eight inch difference (BETWEEN "A" AND "B" VERSIONS) in where the fuselage ended and the nose began.

7



"B" VERSION ONLY

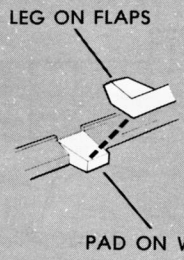
- ☐ Clean out FOUR slots in wing halves 7 and 8 shown in SKETCH D.

ALL VERSIONS — FOR "FLAPS DOWN"

- ☐ Cement flap halves 61 and 103 together.
- ☐ Cement three legs on flaps onto three pads on wing half 9 as shown in SKETCH A.
- ☐ Next, cement flap halves 23 and 25 together, then cement legs onto wings as before.
- ☐ Cement wing half 7 onto wing half 9.
- ☐ Repeat for wings 8 and 10, flaps 85, 104, 22, and 24.

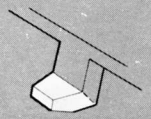
ALL VERSIONS — FOR "FLAPS UP"

- ☐ Cement wing halves 7 and 9 together.
- ☐ Cement flap halves 61 and 103 together, then 23 and 25 together.
- ☐ Cut off portion of each leg as shown in SKETCH B and C.
- ☐ Cement flap flush with wings.
- ☐ Repeat for wing halves 8 and 10, flaps 85 and 104, flaps 22 and 24.



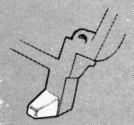
SKETCH A

CUT OFF PORTION AS SHOWN BY WHITE AREA



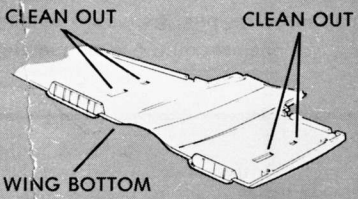
SKETCH B

SKETCH C

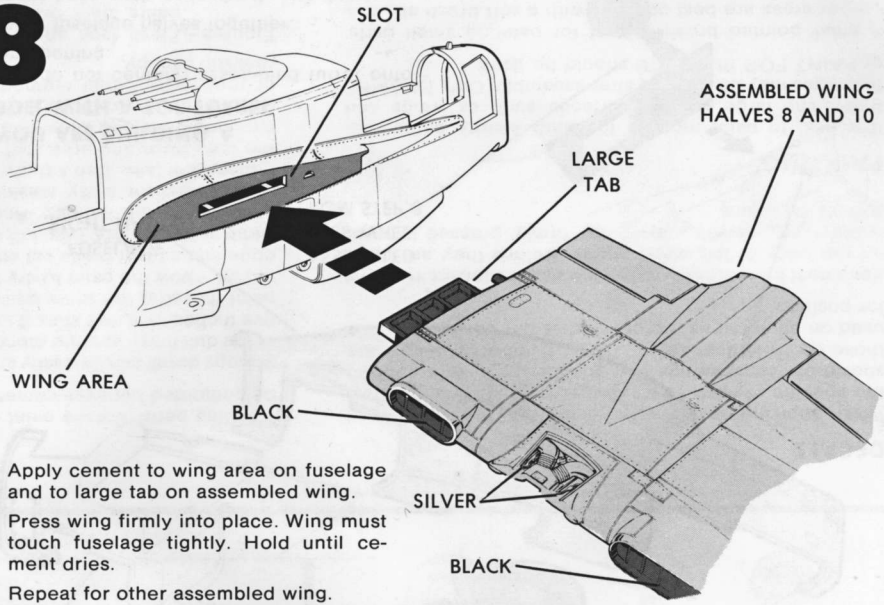


CUT OFF PORTION AS SHOWN BY WHITE AREA

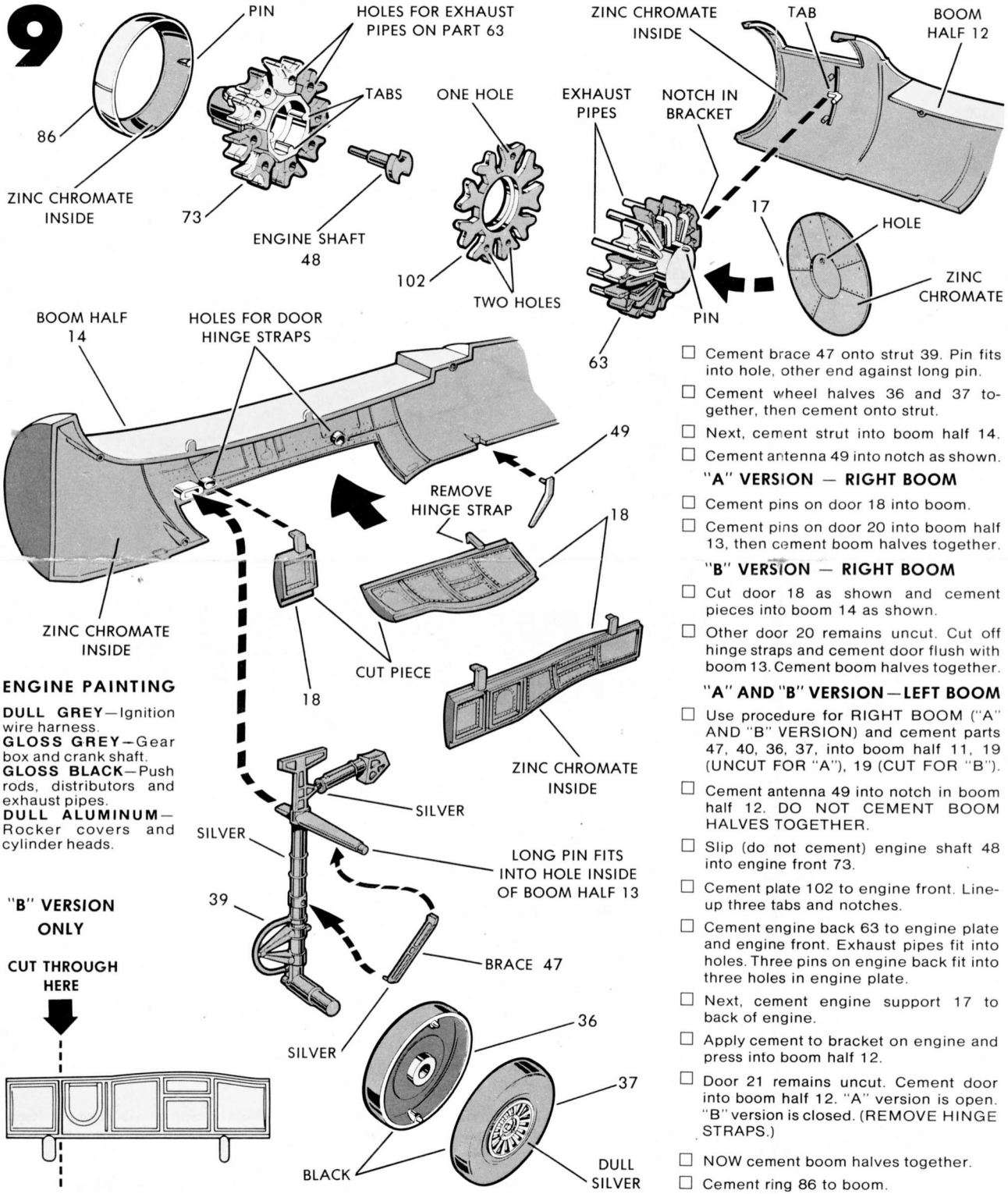
SKETCH D



8



- ☐ Apply cement to wing area on fuselage and to large tab on assembled wing.
- ☐ Press wing firmly into place. Wing must touch fuselage tightly. Hold until cement dries.
- ☐ Repeat for other assembled wing.



ENGINE PAINTING

DULL GREY—Ignition wire harness.
GLOSS GREY—Gear box and crank shaft.
GLOSS BLACK—Push rods, distributors and exhaust pipes.
DULL ALUMINUM—Rocker covers and cylinder heads.

- ☐ Cement brace 47 onto strut 39. Pin fits into hole, other end against long pin.
- ☐ Cement wheel halves 36 and 37 together, then cement onto strut.
- ☐ Next, cement strut into boom half 14.
- ☐ Cement antenna 49 into notch as shown.

"A" VERSION — RIGHT BOOM

- ☐ Cement pins on door 18 into boom.
- ☐ Cement pins on door 20 into boom half 13, then cement boom halves together.

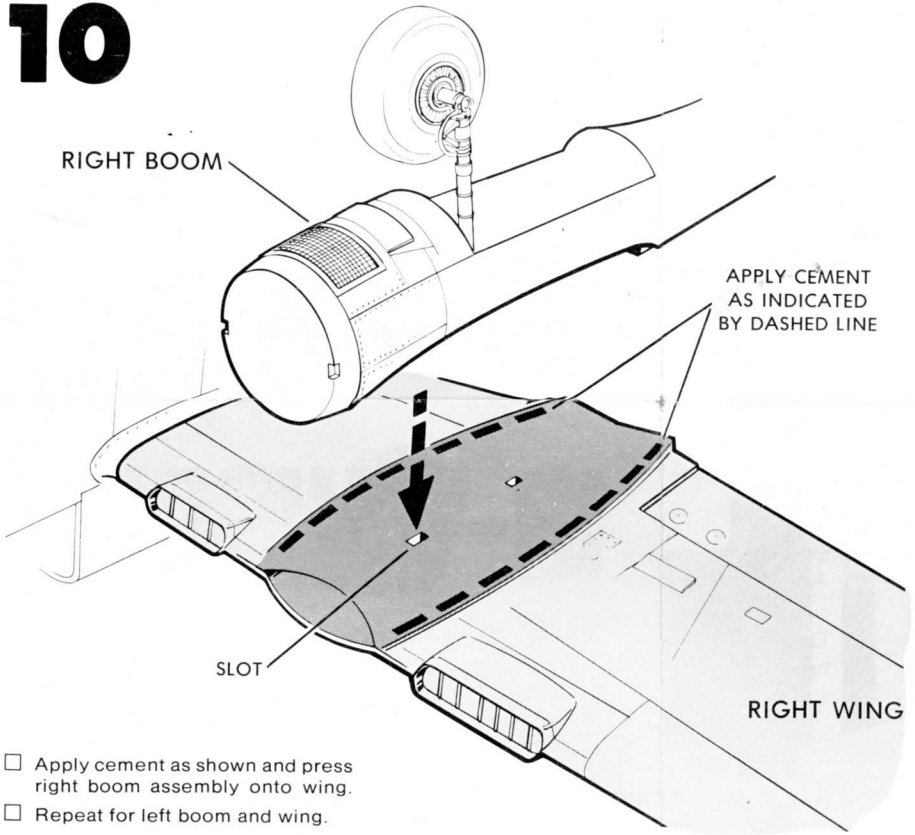
"B" VERSION — RIGHT BOOM

- ☐ Cut door 18 as shown and cement pieces into boom 14 as shown.
- ☐ Other door 20 remains uncut. Cut off hinge straps and cement door flush with boom 13. Cement boom halves together.

"A" AND "B" VERSION—LEFT BOOM

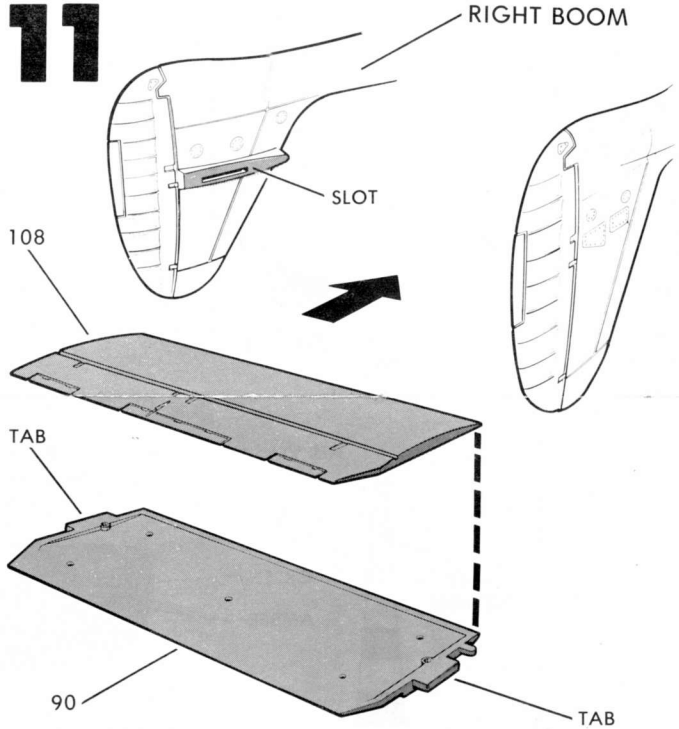
- ☐ Use procedure for RIGHT BOOM ("A" AND "B" VERSION) and cement parts 47, 40, 36, 37, into boom half 11, 19 (UNCUT FOR "A"), 19 (CUT FOR "B").
- ☐ Cement antenna 49 into notch in boom half 12. DO NOT CEMENT BOOM HALVES TOGETHER.
- ☐ Slip (do not cement) engine shaft 48 into engine front 73.
- ☐ Cement plate 102 to engine front. Line-up three tabs and notches.
- ☐ Cement engine back 63 to engine plate and engine front. Exhaust pipes fit into holes. Three pins on engine back fit into three holes in engine plate.
- ☐ Next, cement engine support 17 to back of engine.
- ☐ Apply cement to bracket on engine and press into boom half 12.
- ☐ Door 21 remains uncut. Cement door into boom half 12. "A" version is open. "B" version is closed. (REMOVE HINGE STRAPS.)
- ☐ NOW cement boom halves together.
- ☐ Cement ring 86 to boom.

10



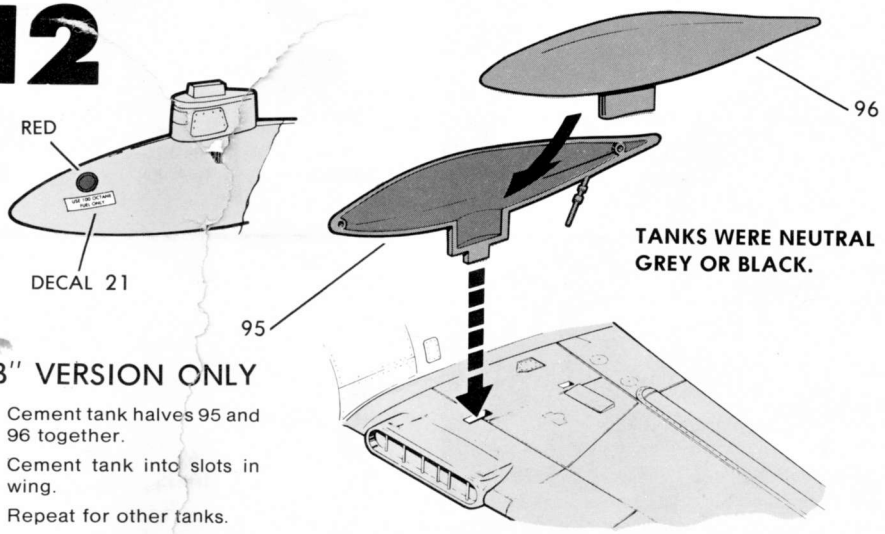
- ☐ Apply cement as shown and press right boom assembly onto wing.
- ☐ Repeat for left boom and wing.

11



- ☐ Cement stabilizer halves 90 and 108 together.
- ☐ Cement stabilizer into slots in rudders as shown.

12

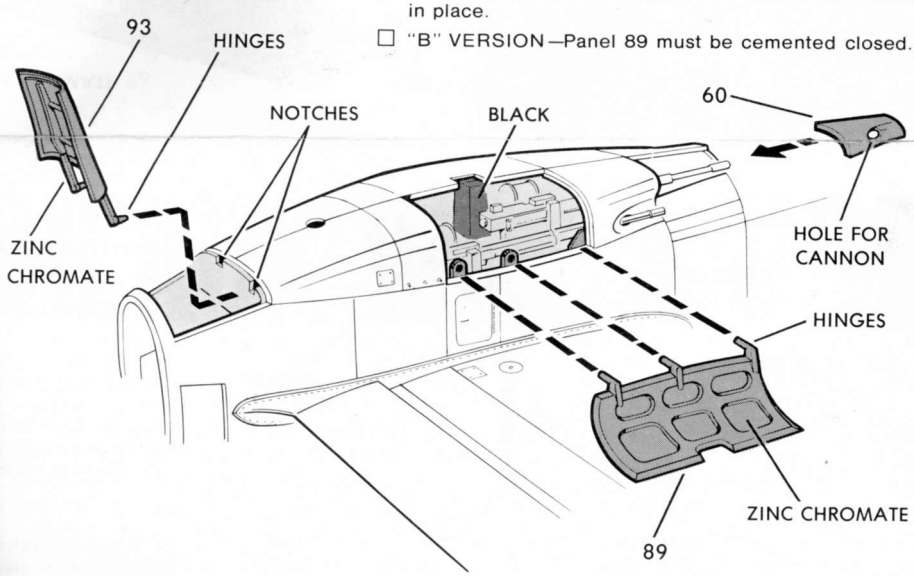


"B" VERSION ONLY

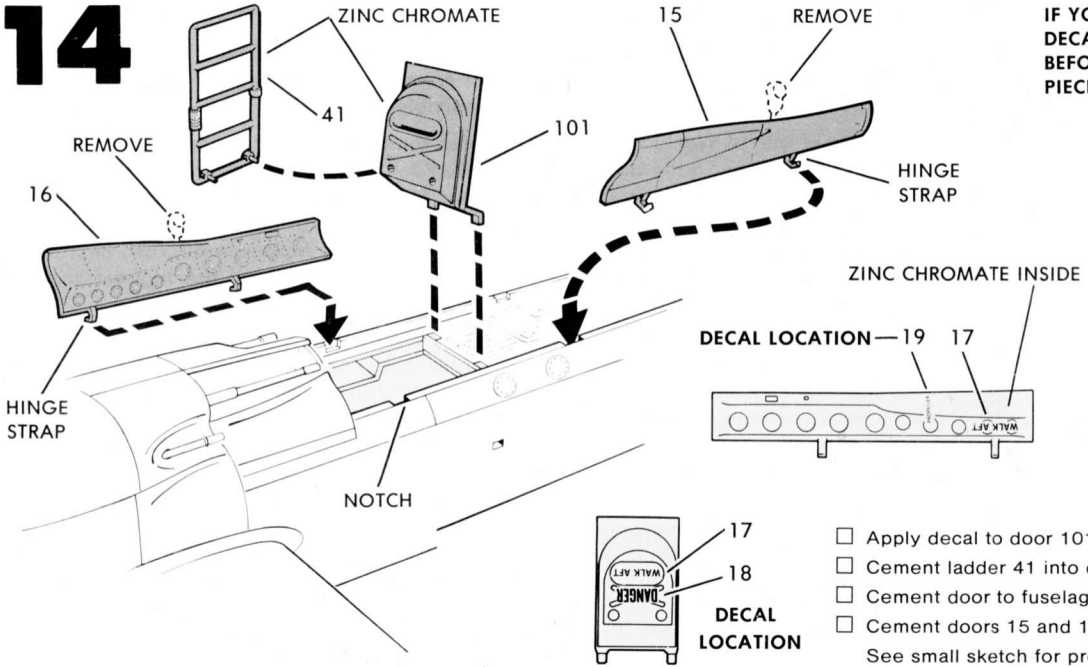
- ☐ Cement tank halves 95 and 96 together.
- ☐ Cement tank into slots in wing.
- ☐ Repeat for other tanks.

13

- ☐ Two panels 89 and 93 may be cemented in an OPEN or CLOSED position. REMOVE HINGES FOR CLOSED PANELS.
- ☐ Inspection panel 60 may be left off or cemented in place.
- ☐ "B" VERSION—Panel 89 must be cemented closed.

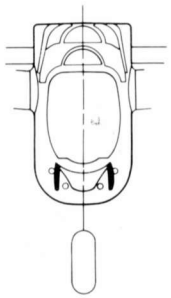


14



DECAL LOCATION

IF YOU ARE APPLYING DECALS, POSITION THEM BEFORE CEMENTING THE PIECES IN PLACE.

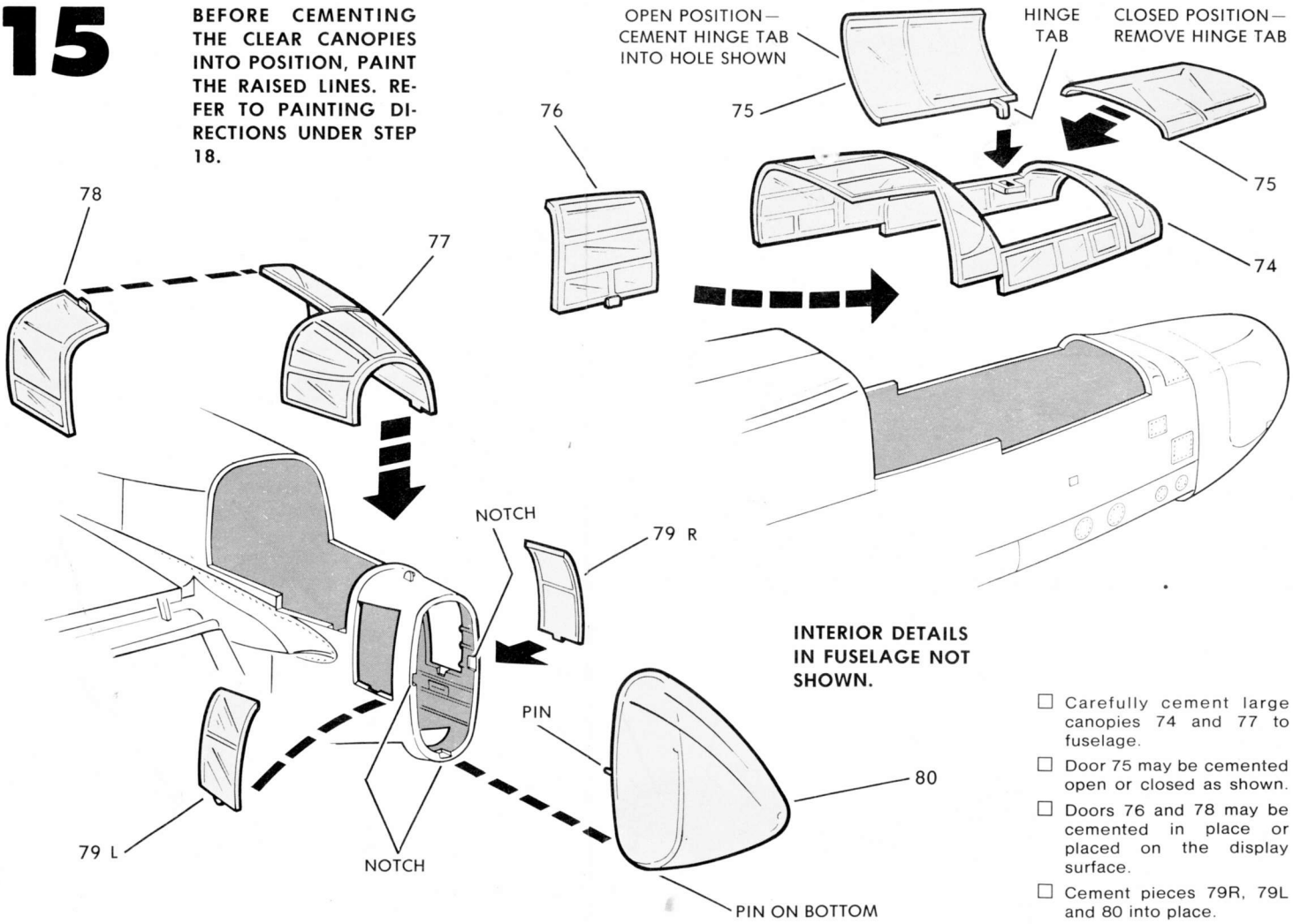


SMALL SKETCH ANGLE OF DOORS

- ☐ Apply decal to door 101.
- ☐ Cement ladder 41 into door 101.
- ☐ Cement door to fuselage.
- ☐ Cement doors 15 and 16 to fuselage. See small sketch for proper angle of doors.

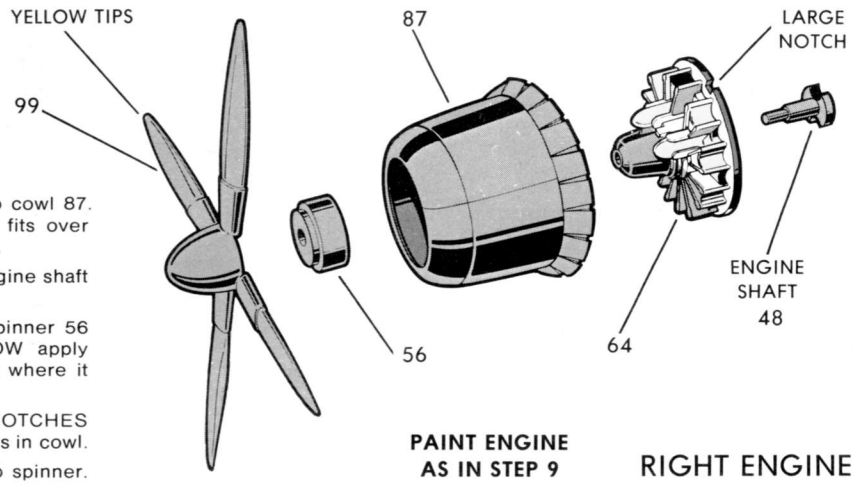
15

BEFORE CEMENTING THE CLEAR CANOPIES INTO POSITION, PAINT THE RAISED LINES. REFER TO PAINTING DIRECTIONS UNDER STEP 18.



- ☐ Carefully cement large canopies 74 and 77 to fuselage.
- ☐ Door 75 may be cemented open or closed as shown.
- ☐ Doors 76 and 78 may be cemented in place or placed on the display surface.
- ☐ Cement pieces 79R, 79L and 80 into place.

16



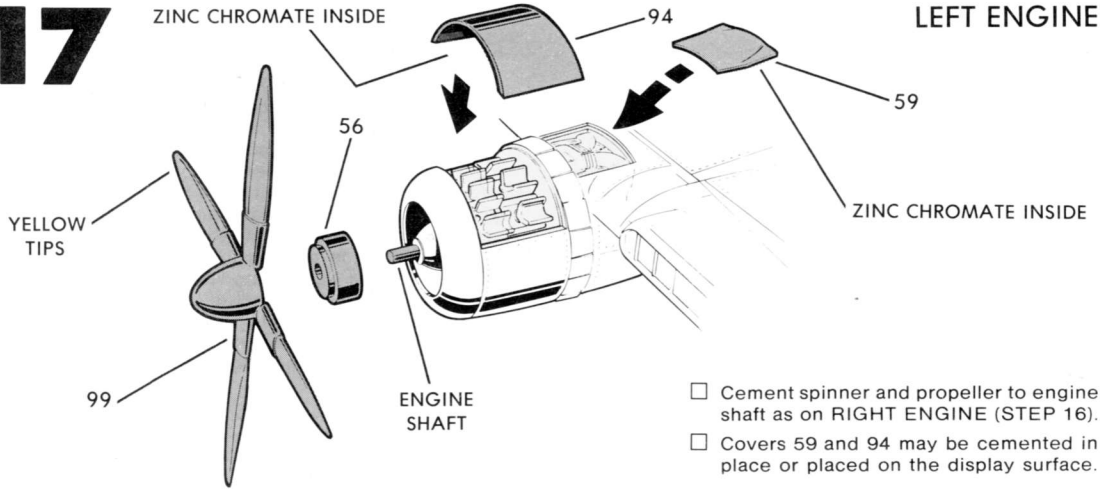
- ☐ Cement engine 64 into cowl 87. Large notch in engine fits over large tab inside of cowl.
- ☐ Slip (do not cement) engine shaft 48 into hole in engine.
- ☐ Slip (do not cement) spinner 56 over engine shaft. NOW apply cement to end of shaft where it touches the spinner.
- ☐ Cement cowl to boom. NOTCHES in boom line up with tabs in cowl.
- ☐ Cement propeller 99 to spinner.

PAINT ENGINE AS IN STEP 9

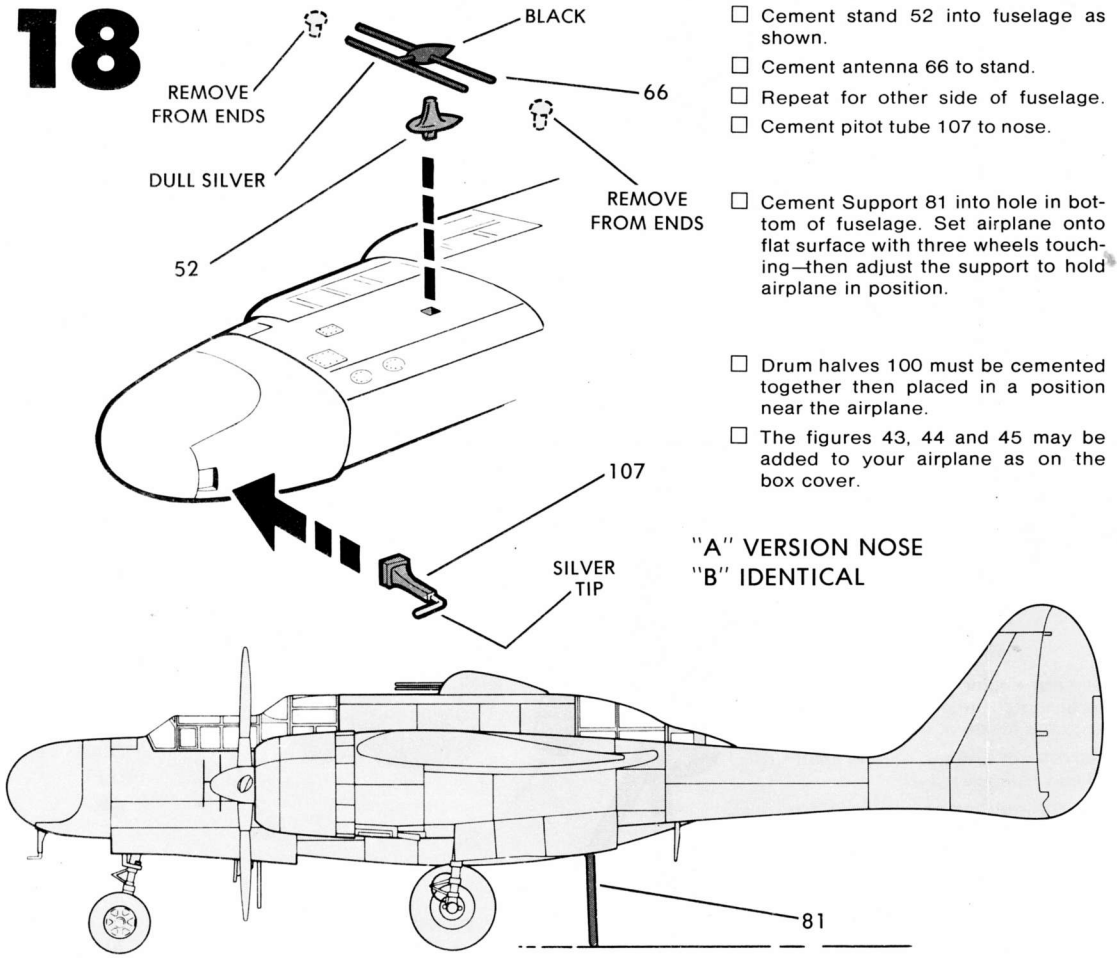
RIGHT ENGINE

17

LEFT ENGINE



- ☐ Cement spinner and propeller to engine shaft as on RIGHT ENGINE (STEP 16).
- ☐ Covers 59 and 94 may be cemented in place or placed on the display surface.



- ☐ Cement stand 52 into fuselage as shown.
- ☐ Cement antenna 66 to stand.
- ☐ Repeat for other side of fuselage.
- ☐ Cement pitot tube 107 to nose.

- ☐ Cement Support 81 into hole in bottom of fuselage. Set airplane onto flat surface with three wheels touching—then adjust the support to hold airplane in position.

- ☐ Drum halves 100 must be cemented together then placed in a position near the airplane.
- ☐ The figures 43, 44 and 45 may be added to your airplane as on the box cover.

DECALS

When applying decals, refer to the drawing or photo of the specific version you have assembled. The numbers shown on the drawings and photos are in reference to those on the decal sheet. These numbered decals are used on all versions. Larger decals are easily identified for position.

For a neat job, carefully follow the application instructions on the back of the decal sheet. Before they are completely dry, decals should be firmly pressed against surface contours.

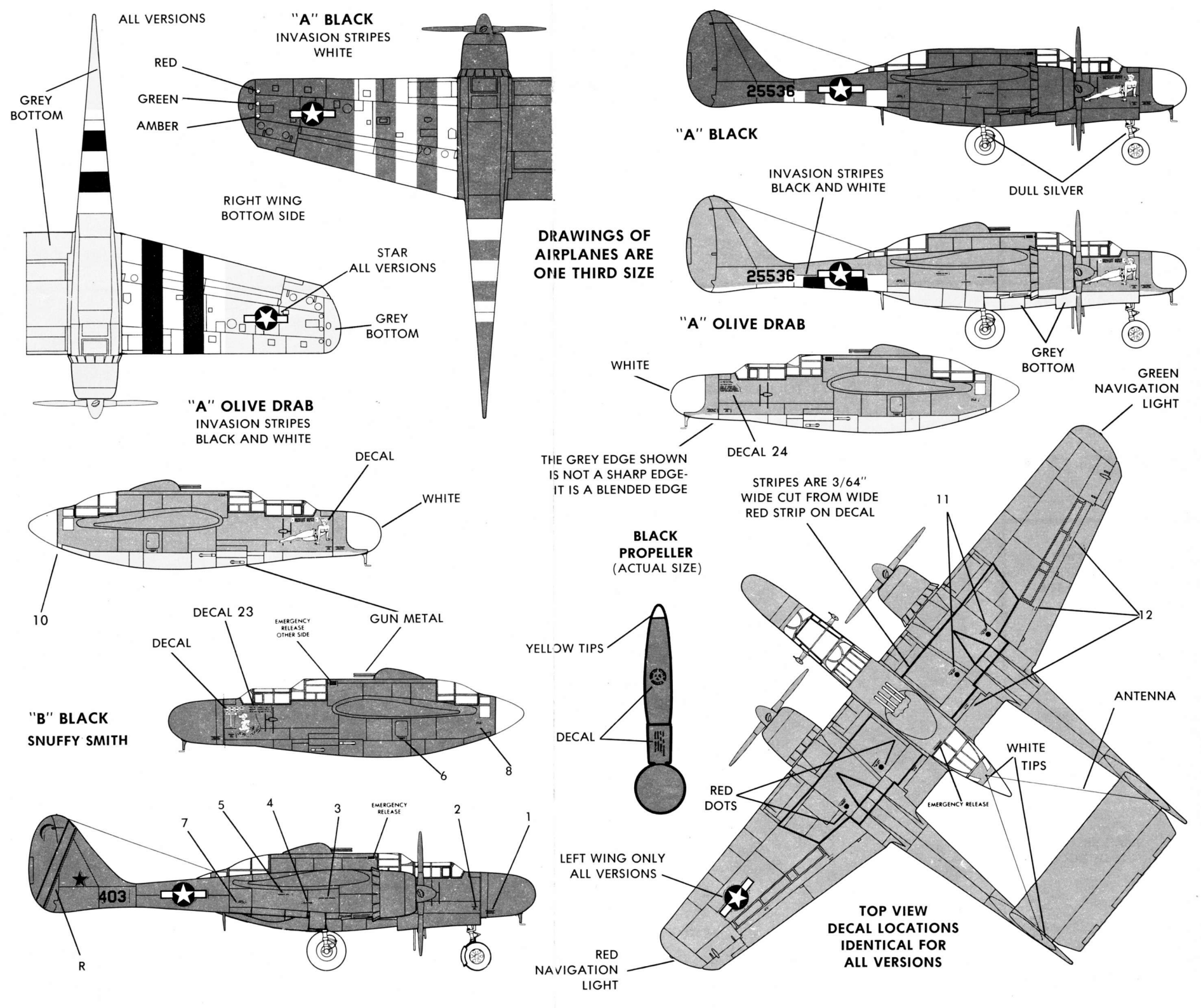
PAINTING

It is best to paint most of the parts before cementing them. The large outside surfaces such as wings and fuselages may be painted after assembly. Only ENAMEL or PAINT FOR PLASTICS should be used.

A small pointed brush is best for painting small parts. Larger areas are best covered with a soft brush about ¼ inch wide. Allow time for paint to dry thoroughly before handling parts. Scrape paint away from areas which will be cemented because cement will not hold to paint.

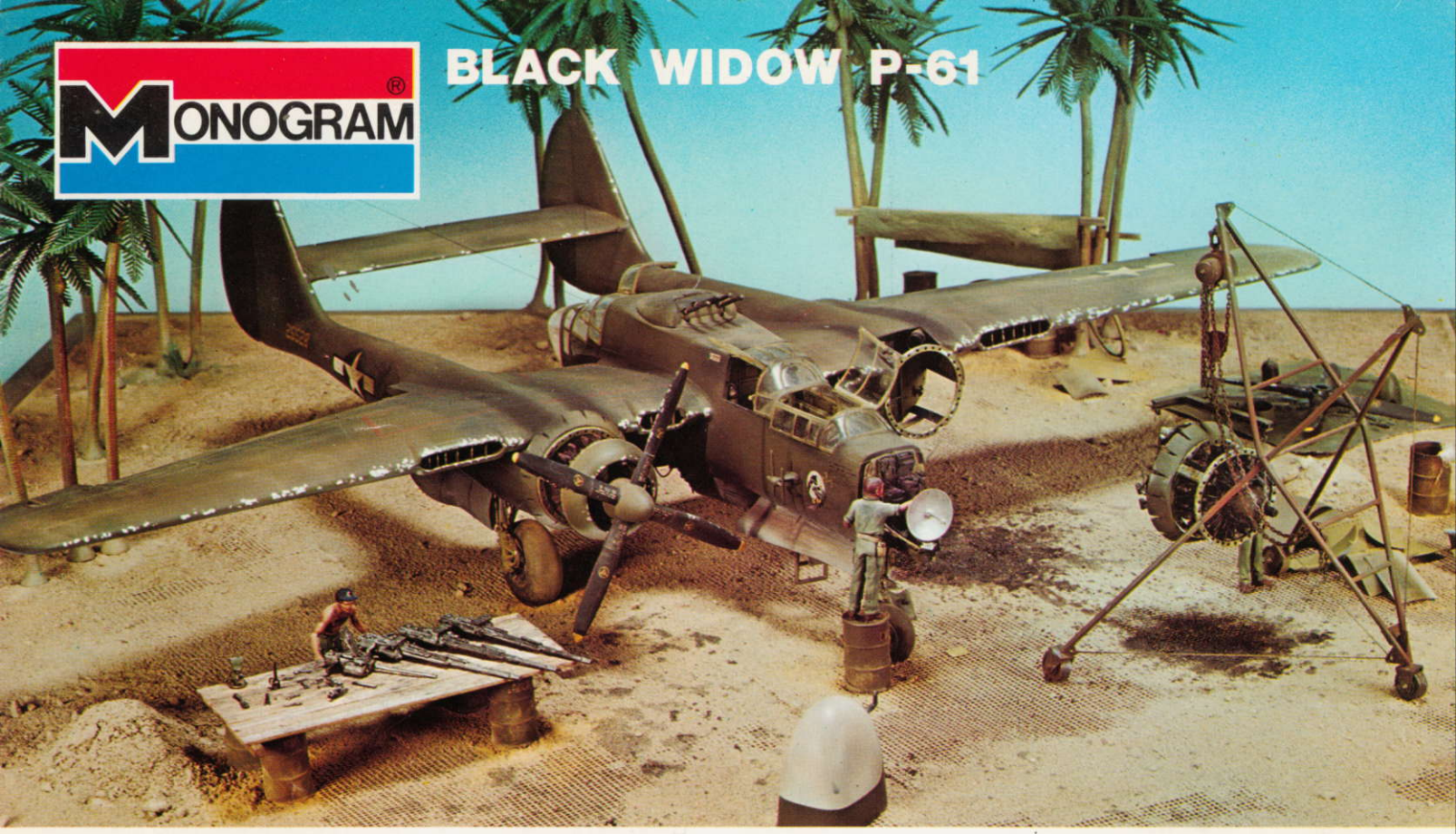
Canopy detail can be easily and neatly done by using one of the dull finish acetate mending tapes. Cut a strip about five inches long and stick it to a piece of glass or plastic, paint this strip the same color as the upper part of your model. Allow the paint to dry thoroughly. Using a straight edge and a razor blade cut strips from the tape the same width as the canopy ribs. Lift up the strips and apply over each rib on the canopy. Another method of achieving canopy realism is by masking the entire canopy with transparent tape. Use a sharp knife and very carefully cut the tape from any area that is to be painted. Paint the exposed parts and allow to dry thoroughly. Remove the remaining tape from the canopy by lifting it with the tip of your knife. Either method will result in an extremely realistic canopy.

Figures—Flesh face and hands, light brown shirt and pants, dark brown belt, black shoes, light or dark brown cap.


ALL VERSIONS
"A" BLACK
INVASION STRIPES
WHITE
RED
GREEN
AMBER
GREY
BOTTOM
RIGHT WING
BOTTOM SIDE
STAR
ALL VERSIONS
GREY
BOTTOM
"A" OLIVE DRAB
INVASION STRIPES
BLACK AND WHITE
DRAWINGS OF
AIRPLANES ARE
ONE THIRD SIZE
25536
"A" BLACK
DULL SILVER
INVASION STRIPES
BLACK AND WHITE
25536
"A" OLIVE DRAB
GREY
BOTTOM
WHITE
DECAL 24
THE GREY EDGE SHOWN
IS NOT A SHARP EDGE-
IT IS A BLENDED EDGE
GREEN
NAVIGATION
LIGHT
DECAL
WHITE
10
GUN METAL
DECAL 23
EMERGENCY
RELEASE
OTHER SIDE
DECAL
"B" BLACK
SNUFFY SMITH
6
8
STRIPES ARE 3/64"
WIDE CUT FROM WIDE
RED STRIP ON DECAL
11
12
BLACK
PROPELLER
(ACTUAL SIZE)
YELLOW TIPS
DECAL
ANTENNA
WHITE
TIPS
RED
DOTS
EMERGENCY RELEASE
LEFT WING ONLY
ALL VERSIONS
TOP VIEW
DECAL LOCATIONS
IDENTICAL FOR
ALL VERSIONS
RED
NAVIGATION
LIGHT
7
5
4
3
EMERGENCY
RELEASE
2
1
403
R

MONOGRAM®

BLACK WIDOW P-61



Diorama created by Sheperd Paine

TIPS ON BUILDING DIORAMAS

Building a diorama is an interesting and realistic way of displaying a favorite model. A scale model aircraft placed in an authentic setting will receive more attention and comments than the usual static model display. All it requires is average model building skills, some imagination and materials usually found in or around the home. Other materials can readily be purchased. Here's how it's done.

PLANNING

Before you begin the assembly of the model, you should have a good idea of what you want to show in your diorama. You may want to duplicate the scene shown here, or you may wish to develop one of your own. Of help in this area are numerous aircraft magazines and books which have photos showing various types of activity involving aircraft. The photos don't necessarily have to include the specific airplane you are modeling, but they may provide an interesting setting for your model. Of special interest are crashed airplanes and ground maintenance shots showing technicians at work, with related ground vehicles and equipment.

Imagination is the key ingredient in any diorama. A good imaginative idea does not necessarily need a slick and professional looking execution to be successful; even the average modeler can easily pull it off. On the other hand, don't try anything too elaborate, especially at first. Find out what your limitations are, then work within them.

ABOVE: Our diorama represents an olive drab and gray P-61 of the 6th Night Fighter Squadron operating off Saipan in October 1944. Numerous "super-detail" modifications were made to the model and give an idea as to what can be done in this line. Aircraft is heavily weathered, as was common in the Pacific. In addition to the ravages of sea air, heat and humidity, the prop blast during takeoff stirred up the coral sand and literally sand blasted the paint off the leading edges of the wings.

BELOW: This view shows the overall arrangement of the entire diorama. Fairly large base is 1/2" x 20" x 21" plywood with a 5/8" border. It was made as described in the text as was the ground which is raised 3/32" at the outer edges. Strips of wood were used to provide a sharp edge.

MONOGRAM MODELS, INC.
Morton Grove, Ill. 7546-0211

BUILDING DIORAMAS

After you've decided what you want to do, the next step is take the plane, figures and any equipment you've made or collected and plan what space you will need. As much of the model as possible should be put together as will be convenient for painting.

Torn or bent parts of a damaged or crashed airplane, as well as shell or bullet holes should be made before the pieces are assembled. Any parts which would be impossible to reach with a paint brush, such as those in the cockpit, should be painted and fitted into place first. Others should be fitted or tacked in place for easy removal prior to actual painting and final assembly. You want a fairly complete model so you can fit the terrain to it. Additional accessories such as bundles of camouflage netting, tarpaulins, ammo boxes etc. can be made, painted, and attached in the final stages of assembly.

A plywood base at least ½" thick is ideal for the average size diorama. It can be cut to the exact size and shape you want. To obtain the dimensions for the base, place the airplane, figures and other components on a sheet of paper, spaced as they will be in the diorama. Using a straightedge, pencil an outline that looks right. Allow room for a border of about ¾" or less all the way around it. The border and sides of the base can be finished by gluing thin hardwood veneer to the plywood. Remember that the base is the frame for your "picture," and that while a sloppy base can make a good diorama look bad, a really classy-looking base can make a not-so-good job look pretty sharp. Varnish or shellac your base to keep it from warping when applying groundwork, and to give it a nice appearance. Even plywood, nicely sanded and varnished can look quite attractive.

Concrete runways can be posterboard or cardboard with a rough texture. You can paint the runway and allow it to dry. Next add oil spills and dirty wear areas for a natural look. Panel separation lines are then penciled lightly and tar caulking is applied. Liquitex acrylic paint (tube type) works well for this. Use a gray color because black is too intense. Put some of the paint in a glue syringe and apply, using a straightedge as a guide. The caulking should not be of uniform width. Strive for the appearance seen on actual runways. This is accomplished by increasing and reducing the pressure on the plunger of the glue syringe as you move it along the straightedge. Above all, don't make the caulk lines too wide.

You may wish to show a dirt runway or groundwork adjacent to the edge of a concrete runway. A material called Celluclay is ideal for this and is available at art supply stores. Mix with water as per directions on the package, then add white glue in a ratio of one part glue to four or five of the ground material for added durability. You can use masking tape to keep the border of the base clean and give a crisp edge. Provide undercuts by scoring the base with a sharp knife to give the ground material something to stick to.

While the ground material is still wet, sprinkle it with fine sand and tiny pebbles. The kind found in the street is best. Next make footprints and tire tracks. Unravelled hemp rope makes excellent grass, and should be stuck into the ground while it is still wet. As it is difficult to paint the ground in the middle of a clump of grass, you might want to dye the ground material before applying it, using food coloring. Sawdust can also be used for short grass. Paint your ground after it has dried thoroughly. For best appearance keep the ground distinctly yellowish but slightly green and your grass slightly brown.

EXTRA EQUIPMENT – MINOR CONVERSIONS

Extra equipment used in aircraft maintenance adds immensely to the interest of a diorama. Open or removed inspection panels and engine cowlings are very effective, but remember that internal equipment thus exposed must be produced and involves research and the ability to scrounge up or make the parts. Also effective are service vehicles, maintenance stands and hoists. Less difficult to include are wheels, ammo boxes, crates, fuel drums, bomb carts and bombs, ladders, tools, fire extinguishers, etc. Some of these parts can be found in various kits, others have to be constructed. Tarpaulins can be made by folding moist facial tissue. Place moist tissue over a stack of boxes in a natural drape for a canvas cover. Work in some wrinkles and then apply a thinned solution of white glue to stiffen it. Paint when dry. Rolled camouflage nets can be made using cheesecloth. Ammo boxes and crates can be made with small blocks of wood. You can also use thin sheet balsa wood, index card or sheet plastic, available in many hobby shops. The thin sheets are good for open boxes, cases and lids. Assemble these like real boxes. Other convenient materials to use for scratchbuilding the equipment are metal or plastic tubing, soft wire, and fine wire screen.

Ground maintenance men near equipment shown in reference photos, help in scaling the units to size. Sketch these on paper, using the figures supplied to get the approximate heights and proportions. This makes it easier to build the parts.

WEATHERING

Assembling the model is only the beginning. You should spend at least as long painting it as you do putting it together. Oil base paints or paints for styrene plastic should be used. Painting instructions accompanying your model kit will indicate whether flat or glossy paint was used on a particular airplane.

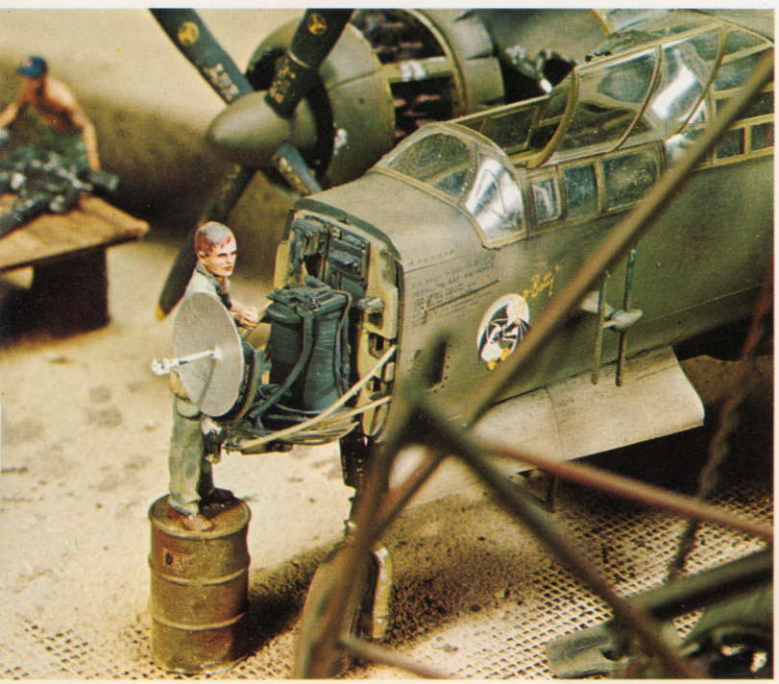
Combat aircraft were maintained in flying condition but did show signs of the beating they took. Dents and patches were sometimes apparent. A diorama of a crashed plane would of course show extreme damage. Propellers would be bent and fuselage and wing might be broken, with jagged edges at the breaks.

To bend propeller blades, heat the plastic over the flame of a candle very carefully. Be patient and hold the plastic high above the flame. You want to soften the plastic, not melt it. Remember that the thinner places are liable to melt before the thicker ones are soft. Test the plastic occasionally with a blunt instrument to make the desired bends. Scrape smooth any sharp edges which have been rounded by the heat. You want them to look bent, not melted. Practice this technique a few times with some plastic scraps before trying it on the model. Plastic melts very suddenly and you don't want to ruin it.

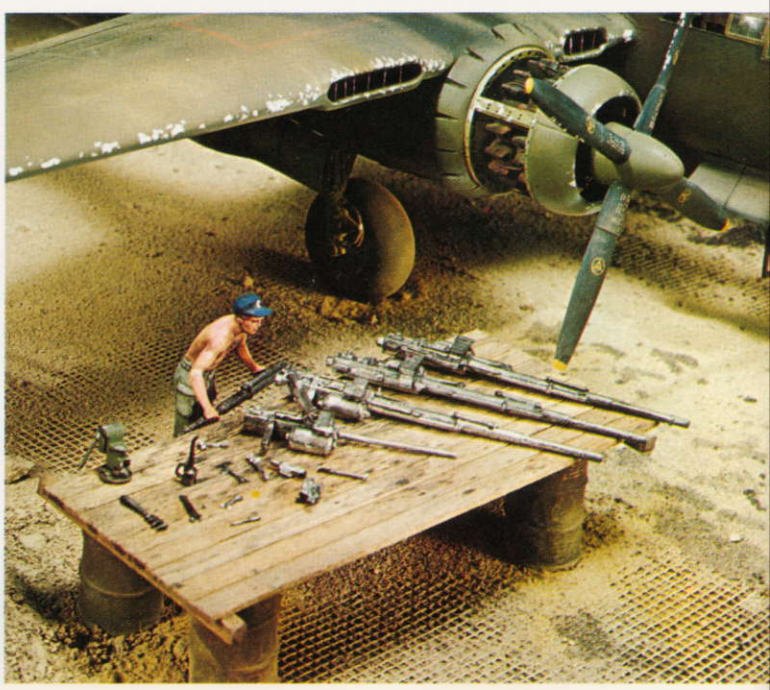
To simulate torn jagged edges of a broken wing, sand the plastic from the inside of the piece until it is thin. A small powered hand grinder is very handy for this. Next cut through with a knife to create the jagged break. Bullet and shell holes can be made with the point of a hot knife.

It is wise to refer to photos showing this type of damage so that a realistic effect can be duplicated. Some of the internal details such as spars, ribs and bracing will also need to be reproduced using thin sheet plastic.

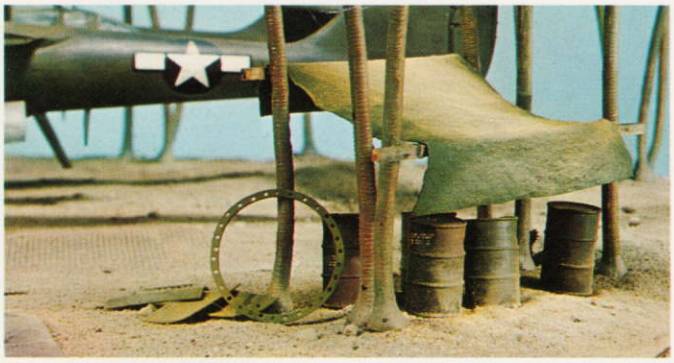
The radar gear in the nose was embellished the same as the engines, primarily with wire. Other added detail were the small antenna on left side of nose, and the actual vanes installed in the wing ducts. Although the perforated steel type of landing surface was far more common, the mesh type (large quantities of surplus have been used to reinforce concrete in peacetime) is easier to model. In this case Nylon window screening was used; note the use of overlapping sections visible in some photos.



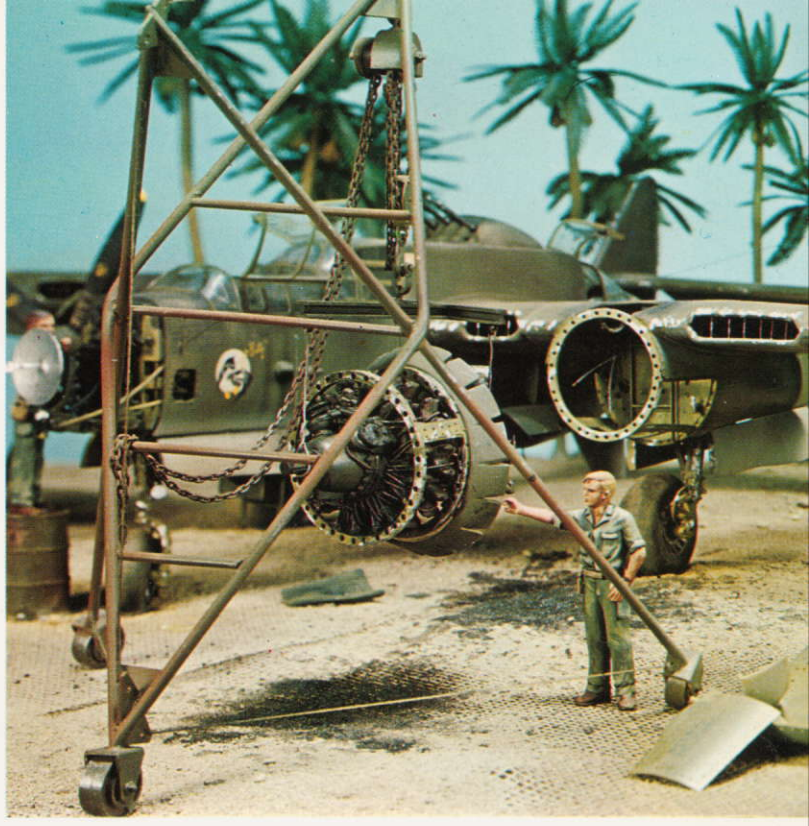
The guns were modified by adding railroad parts to the ones in the kit (ones in kit look fine installed in the fuselage, but are a bit bare stretched out on a table). One was "stripped", cutting off the barrel, and using RR parts for the disassembled pieces. Note the hinged feed cover. Wrenches and vise are HO scale RR items. The armorer has tatoos on his chest and is wearing a Chicago Cubs baseball cap.



The stripped propellor was made by installing the blades of the P-61 on the hub from a Corsair. Note spinner among loose parts. Wrenches are HO scale RR items. Canvas under parts is a piece of facial tissue.



Date Palm trees are Britains. These have a small peg at the bottom fitted into drilled holes in the base. Oil drums from kit were supplemented with 0 scale RR drums. Protective tarp is moist tissue draped over two strips of balsa wood. Aircraft panels were made with thin sheet plastic curved slightly.



The port nacelle was cut off and extra interior detail was added. Edges were thinned to accomodate a new firewall made of sheet plastic. Frame hoops were cut from flat plastic and holes drilled (really should be two rows of holes, but it looks good as is). See the last page for information regarding the detailing of the radial engine.

In painting the model, weathering accomplishes several things — it indicates aging and wear, and it highlights detail, thereby making the model more realistic. Weathering of small scale aircraft requires somewhat different and more subtle techniques than those used for armored vehicles. Tanks get filthy, airplanes merely dirty.

An operational plane flown for long periods will exhibit noticeable signs of service. Exposure to the sun and other elements, plus age, will alter its original color to a lighter shade. This change would occur mostly on the upper surfaces, so painting the model an authentic factory fresh olive drab for instance will not be suitable for a weathered plane. Other service signs are oil and exhaust stains, and some chipped paint exposing the metal in heavy wear areas. You don't want to overdo the aging process to the point where it loses realism. It is best to refer to photos to check stain patterns which would occur on the specific plane you are weathering.

The drybrush technique so effective for armor is usually too heavy-handed for use with aircraft, except in small areas. There are two techniques which seem to work best for aircraft — pastels and the "wash."

Pastels are colored artist's chalk, which is powdered by rubbing on a piece of sandpaper and applied with a soft brush. Some dazzling and very subtle effects can be achieved with this method. It's chief disadvantage is that it is not very permanent, being only a powder. If you do not expect your model to last for centuries, and plan to keep it covered and protected from dust and greasy fingerprints, this is a shortcoming you can easily live with. Pastels may be made more permanent by overspraying with a matte varnish or fixative, but since this will greatly alter their tone and appearance, experiments should be done on different colored sample pieces before proceeding to the actual model.

The "wash" technique is more permanent, but requires the use of two different kinds of paint. Paint the model with one type of paint, and weather it with the other. The two types should have no possibility of mixing or dissolving the coat of paint underneath. Usually the best way to proceed is to paint the model with an oil-base paint, and weather it with a water-base paint, such as Polly-S or even simple poster colors. To apply oil streaks, for example, place a small dot or dots of brownish black to the point at which the oil spill is supposed to originate. Take a tissue lightly moistened with water and wipe across the dots (still wet) from front to rear. This should give a gradual fading effect, and ensure that the streaks run parallel, as they would if they were caused by the flow of air across the surface. If you don't achieve the effect you want the first time, use the tissue to wipe it clean and try again. The wash technique is also excellent to run black paint into the recesses of the ailerons, rudder and flaps to pop out the detail. A draftsman's ruling pen and india ink is also good for this. There is no reason why you can't use the "wash" and pastel methods together, in fact, this is probably the best method.

CONVERTING AND PAINTING FIGURES

A frequent problem facing the modeler is how to indicate in a small scale the size and proportion of the original. Some sort of yardstick is required, and the most easily read yardstick is the height of a man. For this reason, it is always a good idea to include at least one figure with your model, preferably standing next to it.

Most Monogram aircraft kits include a pilot figure. Some have two or three figures. Other 1/48 scale figures can be obtained by shopping around. These may not be molded in the exact action poses to suit your diorama but all is not lost. The pose of figures can be converted quite easily with a bit of practice. Using a fine razor saw, such as the X-ACTO No. 35 razor saw, the figures can be cut apart at the waist and "swapped." The same can be done with arms, legs and heads.

Heads, torsos, arms and legs can also be turned, and resultant gaps filled with plastic body putty and sanded smooth if necessary. If you find it too difficult to cut and fit figures in this manner, you should attempt to create a scene which will look good using available figures.

The appearance of the figures will be greatly improved if you paint in additional highlights and shadows, following the sculpted clothing folds already on the figures. The same technique can also do a great deal for the face. For good faces remember two things — servicemen are out in the sun a lot and their faces should literally be a shade of tan or light brown, rather than pink or off-white.

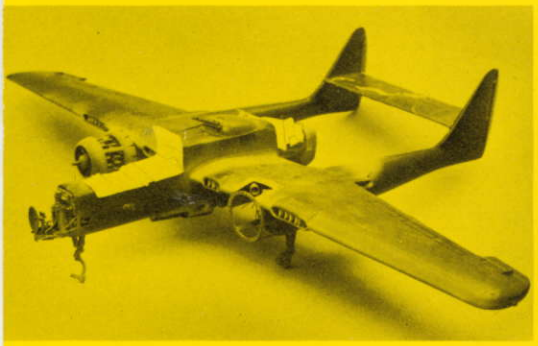
For variety, don't paint any two articles of clothing the same shade. Color depends on how often the item was washed and a variety of colors can add life and give a weatherbeaten appearance to the figures.

When adding highlights and shadows to the figure, don't be timid. If you are too subtle in your color changes, they won't be noticeable at all and all your effort will be wasted. Even dramatic changes from highlight to shadow can be made to look quite subtle by carefully blending the edge between the two colors with a brush moistened with turpentine, if oil base paints are used. For other paints, use the solvent specified.

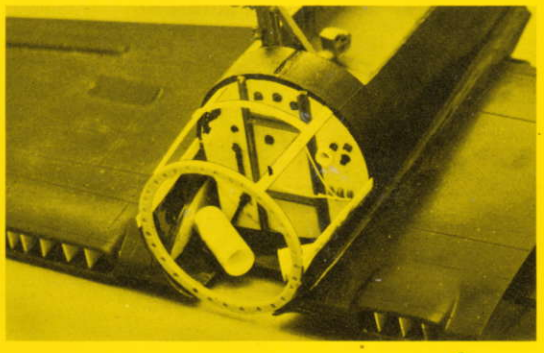
FINAL ASSEMBLY

Use epoxy or white glue for attachment of the plane, figures and any remaining accessories. Tires should be flattened a little where they come in contact with the ground. Use the point of a razor knife to make undercuts in rubber or plastic so the glue will hold well. After the glue has dried, touch up areas which require paint or build-up of terrain. Pay close attention to little details. Clever little touches can do much to enhance the fascination of your diorama.

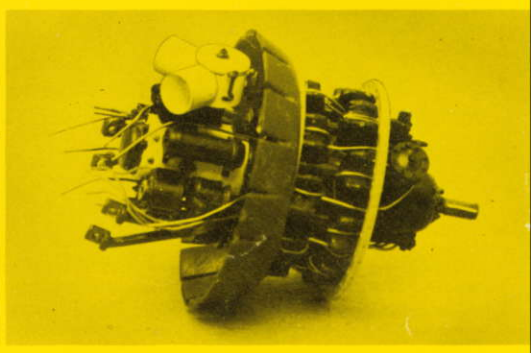
Imagination, not skill, is the key ingredient. Imagination, in painting, in "pirating" parts from other kits for super-detailing, in scratch building or in designing your diorama, can put you on par with the best model builders in the world.



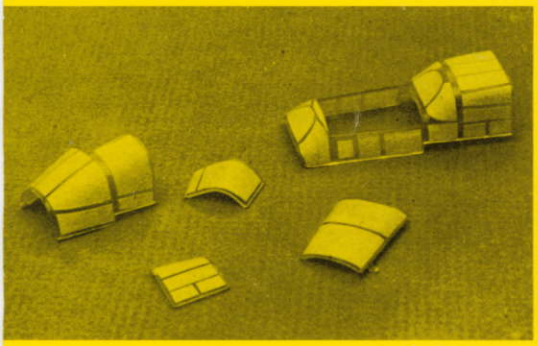
1.



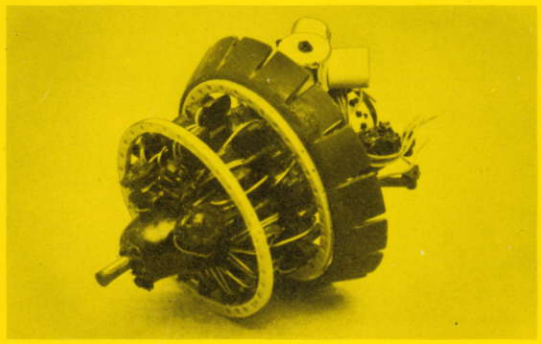
3.



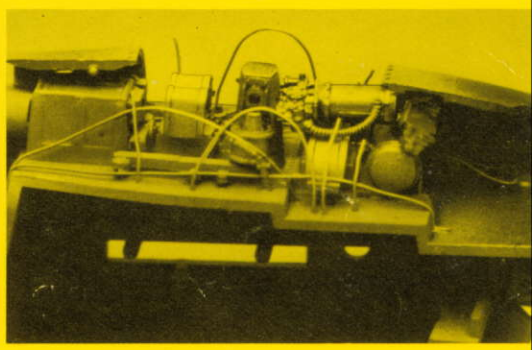
5.



2.



4.



6.

The engine hoist was built from photos of a standard model. It was a simple but effective folding type. This one was made with 1/16" D. brass wire and glued together with epoxy. The chain hoist was made up with spare railroad parts and the top of an ammo can from a halftrack. Chain is ship modeler's chain. T-frame for engine is Plastruct I beam. Wheels are return rollers from a Pz IV kit mounted with sheet plastic.

1. *The interior of the cockpits was painted first. Masking tape was used to cover these areas and prevent paint overspray from reaching inside when painting the exterior.*

2. *Clear canopies masked off with tape prior to painting the framework. Press the edges of the tape down tightly to get sharp crisp edges and to prevent paint from creeping underneath.*

3. *The port nacelle was removed and the additions shown were made using plastic sheet. The plastic tubing used to create the air ducts is plainly visible.*

4. *This closeup of the front of the radial engine with the additional wiring and plastic detail parts shows how realistic it can be made.*

5. *Side view reveals how the rear of the engine was detailed. It may not be authentic in every respect, but it certainly looks great.*

6. *Close-up of the gun bay in the fuselage during construction. As can be seen, a good deal of work was done to this area.*

CONSTRUCTION NOTES

The removed port engine on the hoist is a pretty advanced job for a beginner, but with a little planning ahead and careful fitting, it is not as difficult as it appears. It is a good example of "creative gizmology." This is the art of using plastic bits and pieces and adding them on to give the impression of a complex bit of machinery. The secret is in obtaining enough information on the original to duplicate the various shapes.

The engine was a "quick attach" type that was removed intact by removing four bolts and disconnecting the electrical and hydraulic lines. The best source for the plastic bits and pieces mentioned is the railroad section of the hobby shop. You can find many tiny pieces for super detailing. They are used on railroad cars and include hydraulic pumps, tanks, bolt heads, etc. A very complicated piece of equipment can be assembled in a short period of time using detailed portions.

The gear box at the rear of the engine was built from Plastruct tubing encrusted with railroad parts. Much wiring was added, using fine wire inserted into drilled holes. The engine on the right side was made the same way as the first, but with much less extra detailing. The cowl mid-section was removed and plastic frames were made to support the cowl front. This is quite simple to do, and is an ideal alternative for those who feel an entire engine removal to be beyond their capabilities.

The frame hoops for the left engine were drawn with a pencil compass on flat plastic sheet and cut out. Detail visible on the firewall — cables, fuel line fittings, fire extinguisher nozzle and bracing were added using wire, plastic sheet and small plastic parts. The air ducts from the wings to the engine are plastic tubing.

Since the guns are removed from the gun bays, details which would normally be hidden by the guns themselves were added. Little information for this area was available as to how it would look, except to confirm that it was there. We put in loose electrical lines, solenoids, firing mechanisms, ammunition feed, etc. using the technique outlined for the engine.

Some additional gadgets and hydraulic lines were added to the landing struts. No additional detail was put into the cockpits. The rudders were cut apart and turned a little. The elevator was also cut and dropped. Figures are straight from the kit, except for the one standing near the engine hoist, which has the left arm repositioned. The armorers' work bench was made with 1/16" thick sheet balsa, scribed to represent a series of planks nailed together.