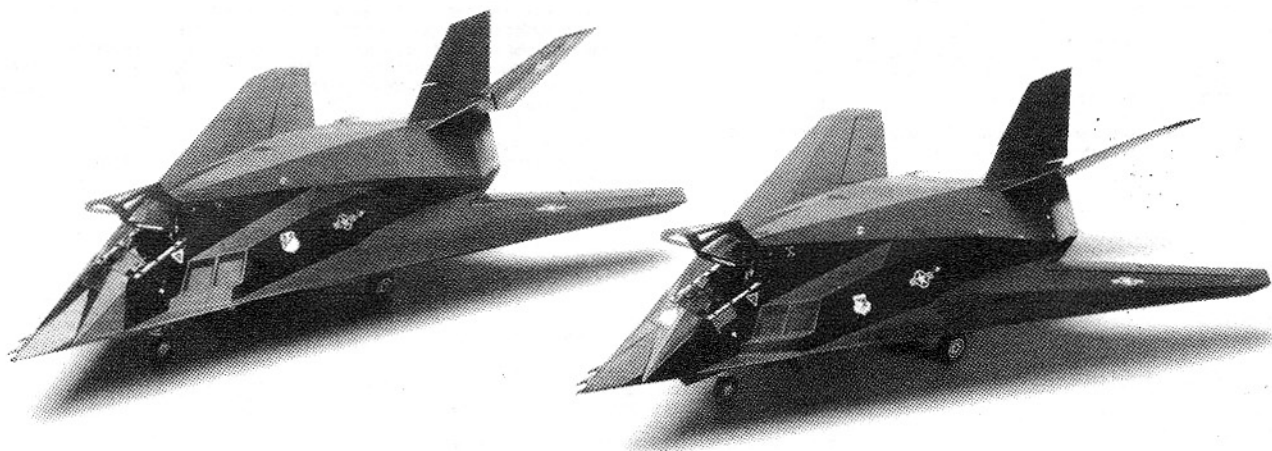


F-117A "NIGHT HAWK" STEALTH FIGHTER

1/48 SCALE MASSTAB 1:48 ESCALA 1/48 1/48 ECHELLE



In the dark, early morning hours of January 16, 1991, the skies over Baghdad lit up as thousands of rounds were fired by Iraqi air defense guns at unseen aircraft. Operation Desert Storm began as F-117A "Night Hawk" Stealth Fighters attacked high priority targets that were protected by some of the most extensive air defense systems in the world. That opening night, and for the remainder of the Gulf War, the "Black Jets" continued to fly into the teeth of Iraqi air defenses to deliver their laser-guided "smart bombs" against targets of vital importance. Throughout the entire war, the forty-two F-117As flew 1,271 sorties and accumulated over 6,900 hours of flying time without receiving a scratch from enemy defensive weapons. Over 2,000 tons of laser-guided bombs were dropped on high value targets during these missions, all of which were flown from Mushait Air Base in Saudi Arabia.

Although it flies at subsonic speeds and carries no defensive armament, the pilot of an F-117A has little to fear from enemy defenses. As its nickname implies, the "Night Hawk" flies only during the hours of darkness, and its black paint makes it very difficult to see visually. The unique design of its exhaust also reduces its visual and infrared signatures, making it hard to spot with IR trackers. But most important is its stealth design which makes the F-117A almost invisible to radars. The multi-faceted design, which deflects radar energy in many directions rather than back to the radar, and the composition of the aircraft's skin combine to "hide" the stealth fighter from both acquisition and tracking radars. Because they could not see the "Night Hawk" visually, detect it with infrared sensors, or locate it with their radars, the Iraqis dubbed the F-117A "The Ghost."

To help keep its radar cross section to a minimum, bombs are carried internally in a weapons bay, rather than under the fuselage or wings as they are on most fighters. This weapons bay can carry two Paveway II or Paveway III laser-guided bombs in the 2,000-pound

class. The bombs are carried on two racks or trapezes which can lower the weapons to a position outside of the bay. GBU-10 and GBU-24 Paveway II weapons and GBU-27 Paveway III bombs are among the types employed by the "Night Hawk." Conventional bombs, ranging in size up to the 2,000-pound Mk 84, can also be delivered by the stealth fighter.

Developed in the utmost secrecy, the F-117A was first flown in 1981, and early tests and evaluations were conducted at Groom Lake, Nevada. Even after the aircraft became operational with the 37th Tactical Fighter Wing, it was based at the remote Tonopah Test Range Air Base in the Nevada desert. Although the existence of a stealth aircraft was generally known, no details were released to the public until late 1988, over seven years after the first flight.

During Operation Desert Storm, the 415th and 416th Tactical Fighter Squadrons of the 37th Tactical Fighter Wing flew all of the F-117A missions. Shortly after the war, the "Black Jets" were transferred to the 7th, 8th, and 9th Fighter Squadrons of the 49th Fighter Wing which is based at Holloman Air Force Base, New Mexico. A few "Night Hawks" are also assigned to the 3247th Test Squadron of the 3246th Test Wing at Eglin Air Force Base, Florida, and to the 6512th Test Squadron of the 6510th Test Wing at Edwards Air Force Base, California. These aircraft are used for tests and evaluations.

Your Pro Modeler kit comes with markings for two different aircraft. One is F-117A, 86-0838, which was assigned to the 416th TFS during Operation Desert Storm. The 416th AMU marking on one of the vertical tails is for the Aircraft Maintenance Unit to which the aircraft was assigned. Nicknamed "Magic Hammer" this "Night Hawk" flew thirty-six missions during the Gulf War. The second aircraft is F-117A, 84-0827, and it is represented as it appeared in 1993 after being assigned to the 49th Fighter Wing at Holloman Air Force Base, New Mexico.

TIPS FOR BUILDING YOUR HIGH TECH AIRCRAFT MODEL.

- Follow the assembly instructions exactly and take your time. Patience will be rewarded with results.
- Use cement (glue) sparingly.
- Use small scissors or a hobby/craft knife to remove photoetched metal parts from the framework. Use extreme caution when cutting these parts. Work in a well lighted area as these parts are easily misplaced.
- Some etched parts may be removed from the framework by holding the part with tweezers and carefully bending back and forth a few times.
- To affix the etched metal parts you may use a number of different adhesives. White glue is recommended. Clear gloss paint may also be used. Experienced modelers may wish to use cyanoacrylate (instant) glue.
- A small ball of modeling clay or wax on the end of a toothpick works well to pick up small etched parts.
- Any rough areas or burrs on the etched parts can be removed with fine sandpaper.
- Some etched parts must be bent prior to assembly. It is recommended that tweezers or small hobby pliers be used for this.

TIPS ZUM BAU IHRES HIGH-TECH FLUGZEUG-MODELLS.

- Beachten Sie die Montageanleitung genau und lassen Sie sich Zeit. Geduld wird mit Ergebnissen belohnt.
- Benutzen Sie so wenig Klebstoff wie möglich.
- Nehmen Sie eine kleine Schere oder ein Bastelmesser, um die photogätzten Metallteilen vom Rahmen zu trennen. Lassen Sie beim Schneiden dieser Teile äußerste Vorsicht walten. Arbeiten Sie in einem gut beleuchteten Raum, da diese Teilchen sehr leicht verloren gehen.
- Einige geätzte Teile können von dem Rahmen abgetrennt werden, indem man das Teil mit einer Pinzette hält und vorsichtig einige Male hin- und herbiegt.
- Zum Befestigen der geätzten Teile können eine Anzahl verschiedener Klebstoffe benutzt werden. Weißer Kleber ist empfehlenswert. Ein klarer Lack kann ebenfalls benutzt werden. Erfahrene Modellbastler können sogar Zyanacrylatkleber (Kontaktkleber) verwenden.
- Ein kleines Kügelchen Knetmasse oder Wachs am Ende eines Zahnstochers eignet sich gut dazu, kleine geätzte Teile aufzunehmen.
- Rauhe Stellen oder Grate an geätzten Teilen können mit feinem Sandpapier entfernt werden.
- Einige der geätzten Teile müssen vor dem Zusammenbauen gebogen werden. Es wird empfohlen, eine Pinzette oder Bastelzange dazu zu verwenden.

SUGERENCIAS PARA CONSTRUIR SU MODELO DE ALTA TECNOLOGIA DE AERONAVE.

- Siga exactamente las instrucciones del armado y tómese su tiempo para ello. La paciencia

READ THIS BEFORE YOU BEGIN

- Study the assembly drawings
- Each plastic part is identified by a number.
- Check the fit of each piece before cementing in place.
- Do not use too much cement to join parts.
- Use only cement for polystyrene plastic.
- Model may be painted to match photos on box.
- Allow paint to dry thoroughly before handling parts.
- Scrape paint from areas to be cemented.
- For better paint and decal adhesion, wash the plastic parts in a mild detergent solution. Rinse and let air dry.

ALLGEMEINE HINWEISE

- Die Anordnung der Bauteile ist aus den Zeichnungen der Anleitung ersichtlich.
- Jedes Plastikteil ist durch eine Nummer gekennzeichnet.
- Die Teile vor dem Verkleben ungeleimt zusammenhalten, um ihren Passsitz zu prüfen.
- Klebstoff nicht zu dick auftragen.
- Nur Modellbaukleber für Polystyrol verwenden.
- Man kann das Modell nach den Fotos auf der Schachtel anstreichen.
- Bemalte Teile vor der Weiterverwendung gut trocknen lassen.
- Die Farbe muss von allen späteren Klebestellen abgeschabt werden.
- Damit die Farbe und die Abziehbilder besser kleben, sind die Plastikteile in einer milden Seifentauge zu waschen. Dann abspülen und an der Luft trocknen lassen.

LEA ESTO ANTES DE EMPEZAR

- Estudie los dibujos de ensamblaje

- Cada pieza de plástico se identifica por un número.
- Verifique que cada pieza encaje bien antes de pegar en posición.
- No use demasiado pegamento para unir las piezas.
- Use únicamente pegamento para plástico de poliestirina.
- El modelo puede pintarse de acuerdo con las fotografías de la caja.
- Permita que se seque la pintura completamente antes de tocar las piezas.
- Raspe la pintura de las superficies que serán pegadas.
- Para una mejor fijación de la pintura y de las calcomanías, lávese las piezas plásticas en una solución de detergente suave. Enjuáguese y déjense secar al aire.

LISEZ CE QUI SUIT AVANT DE COMMENCER LE MONTAGE

- Etudier les schémas d'assemblage.
- Chaque pièce plastique porte un numéro d'identification.
- Contrôler que chaque pièce soit bien conforme avant de la coller à sa place.
- N'utilisez pas trop de colle pour réunir les pièces.
- Utilisez uniquement une colle spéciale pour polystyrène.
- Le modèle peut être peint conformément aux photos sur la boîte.
- Laissez sécher la peinture complètement, avant de manipuler les pièces.
- Grattez la peinture sur les surfaces devant être collées.
- Pour assurer la meilleure adhésion possible de la peinture et des décalcomanies, lavez les pièces de plastique avec une légère solution savonneuse. Rincer et laisser sécher à l'air.

será premiada con resultados.

- Use el pegamento moderadamente.
- Use unas tijeras pequeñas o cuchilla de artesanía o pasatiempo para retirar las piezas fotográficas de metal de su marco. Tenga mucho cuidado al separar esas piezas. Trabaje en un área bien iluminada ya que estas piezas son fáciles de extraviar.
- Algunas piezas fotográficas pueden separarse de su marco sujetando la pieza con unas pinzas y doblando cuidadosamente unas cuantas veces hacia delante y detrás.
- Para fijar las piezas de metal fotográficas pueden usarse diferentes adhesivos. Se recomienda goma blanca. También se puede usar pintura mate transparente. Los modelistas con experiencia pudieran que desearan usar adhesivo de cianoacrilato (instantáneo).
- Una pequeña bola de cera o arcilla de modelar en el extremo de un paillón de dientes trabaja bien para recoger piezas pequeñas fotográficas.
- Cualquier área áspera o con rebabas en las partes fotográficas puede ser alisada con papel de lija fino.
- Algunas piezas fotográficas deben ser dobladas antes de armarse. Se recomienda que para esto se usen pinzas o alicates pequeños de aficionado.

CONSEILS POUR LA CONSTRUCTION DE VOTRE MODÈLE RÉDUIT D'AVION HAUTEMENT ELABORÉ.

- Suivez exactement la notice de montage et prenez votre temps. Votre patience sera récompensée par d'excellents résultats.
- Utilisez très peu de colle.
- Utilisez de petits ciseaux ou un couteau pour travaux manuels pour détacher les pièces métalliques photogravées du cadre. Faites très attention lors de la découpe des pièces. Travaillez dans un endroit bien éclairé car ces pièces se perdent très facilement.
- Il est possible de détacher certaines des pièces gravées du cadre en les tenant avec une pince brucelles et en les pliant d'avant en arrière avec précautions plusieurs fois.
- Pour maintenir les pièces métalliques gravées, vous pouvez utiliser différents types d'adhésifs. Nous conseillons la colle blanche. Il est possible d'utiliser du vernis brillant transparent. Les modelistes chevronnés peuvent vouloir utiliser de la colle au cyanoacrylate (instantanée).
- Une petite boule de pâte à modeler ou de cire au bout d'un cure-dents permet de ramasser facilement les petites pièces gravées.
- On peut enlever toute bavure ou poilir les parties métalliques à l'aide de papier verre très fin.
- Il faut plier certaines des pièces photogravées avant le montage. Il est conseillé d'utiliser une pince brucelles ou de petites pinces pour travaux manuels.



ALTERNATIVE ASSEMBLY
EINERLEGE ALTERNATIVE
EINE ANDERE MÖGLICHKEIT
ENSAMBLE ALTERNATIVO



OPTIONAL PARTS
BAUTEILE NACH WAHL
PIECES EN OPTION
PIEZAS OPCIONALES



REPEAT SEVERAL TIMES
À RÉPÉTER PLUSIEURS FOIS
ARBEITSANG MEHRMALS WIEDERHOLEN
REPTA VARIAS VECES



REMOVE AND THROW AWAY
A RETIRER ET JETER
ENTFERNEN (ABWALF)
QUITE Y TIRE



DECAL (DIP IN WATER)
DECALCOMANIE (À PLONGER DANS L'EAU)
ABZIEHBILD
DECALCOMANIA (MOJE CON AGUA)



MODELING TIPS



PAINTING TIPS

Monogram Model Kits has put forth every effort to create and manufacture the finest model kit available. If a part may be missing, please write to:

ProModeler Model Kits
Consumer Service Department
301 North Third Avenue
Des Plaines, Illinois 60016

Be sure to include the kit number, part number, description, and your return address.

If you have any problems building this model, call our modeling tips hotline at:

(800) 833-3570

FEDERAL STANDARD COLOR NUMBERS

The box top can be used as a guide to paint your model, or you may wish to use the painting information at the end of this instruction booklet to achieve a more accurate finish. The listed numbers refer to color samples printed in GSA SPECIFICATIONS. This publication is available from:

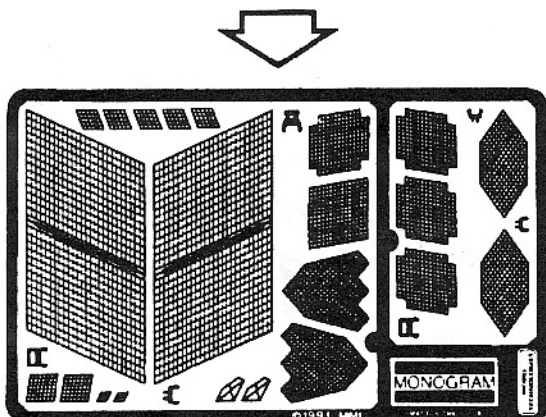
FEDERAL SUPPLY SERVICE BUREAU
GSA SPECIFICATIONS
470 East Lafant Plaza SW.
Suite 8100
Washington, D. C. 20407

Write to GSA for information regarding current price and availability.

5922M0200

- ETCHED METAL PARTS WILL BE INDICATED IN THE ASSEMBLY INSTRUCTIONS BY A DOT FOLLOWED BY A NUMBER, SUCH AS •1, •2, •3.
- GEATZE METALLTEILE SIND IN DER MONTAGENLEITUNG DURCH EINEN PUNKT MIT EINER NACHFOLGENDEN ZAL GEKENNZEICHNET, WIE Z.B. •1, •2, •3.
- GEËTSTE METALEN ONDERDELEN WORDEN IN DE BOUWINSTRUCTIES AANGEVENMET EN STIP GEVOLGD DOOR EEN NUMMER, ZOALS B.V. •1, •2, •3.
- LES PIÈCES MÉTALLIQUES GRAVÉES SONT REPÉRÉES SUR LE PLAN DE MONTAGE PAR UN POINT SUIVI D'UN NOMBRE, COMME PAR EXEMPLE •1, •2, •3.

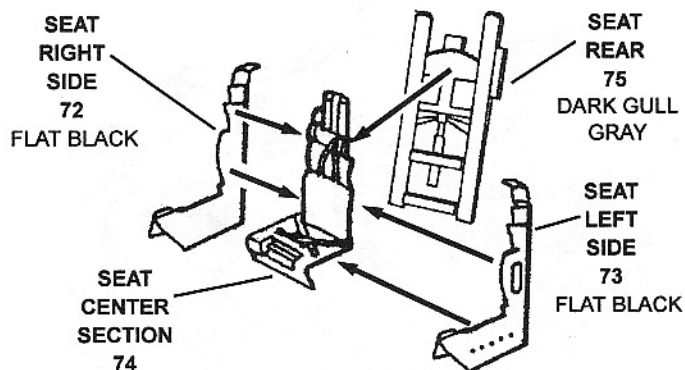
FLAT BLACK	NOIR TERNE	NEGRO APAGADO	GLÄNZLOSES SCHWARZ
COPPER	CUIVRE	COBRIZO	KUPFER
GLOSS BLACK	NOIR LUSTRE	NEGRO BRILLANTE	GLÄZENDES SCHWARZ
RED	ROUGE	ROJO	ROT
GREEN	VERT	VERDE	GRÜN
GLOSS WHITE	BLANC	BLANCO	WEISS
YELLOW	JAUNE	AMARILLO	GELB
DARK GRAY	GRIS	GRIS	GRAU
STEEL	METALLIC	METALICO	METALLIC
SILVER	ARGENT	PLATA	SILBERN
ALUMINUM	ALUMINIUM	ALUMINIO	ALUMINIUMFARBEN
OLIVE DRAB	VERT OLIVE	VERDE OLIVA	OLIVEGRÜN
BLUE	BLEU	AZUL	BLAU



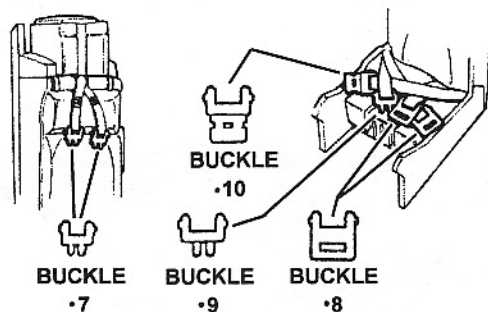
A COMPLETE GUIDE FOR PAINTING THIS AIRCRAFT APPEARS AT THE END OF THIS INSTRUCTION BOOKLET.

Many of the military paint colors shown in this instruction booklet can be found at your local hobby shop, or they can be obtained from mail order hobby suppliers.

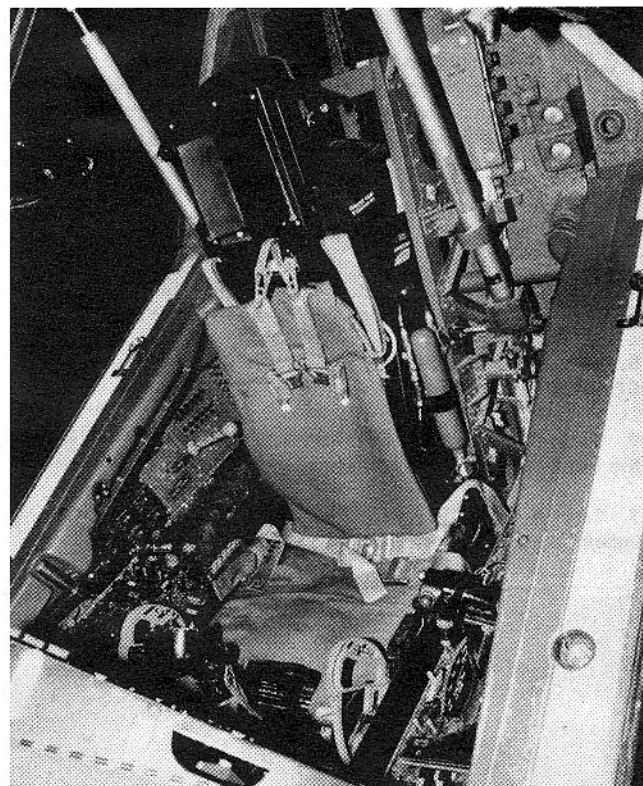
STEP 1, INITIAL COCKPIT ASSEMBLY



SEE ADDITIONAL PAINTING INSTRUCTIONS BELOW



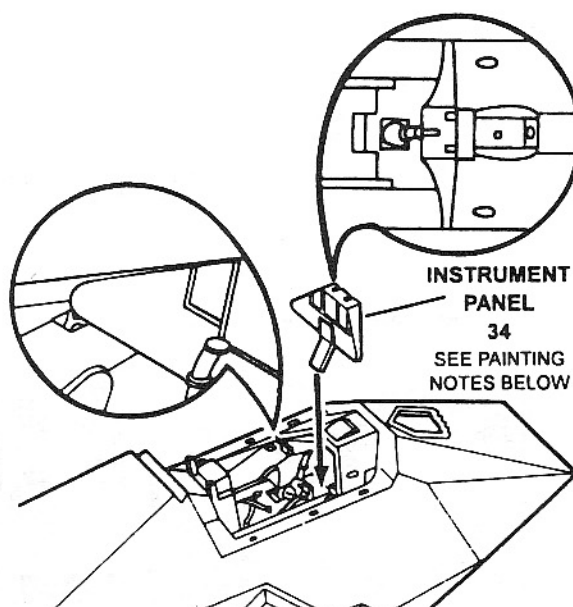
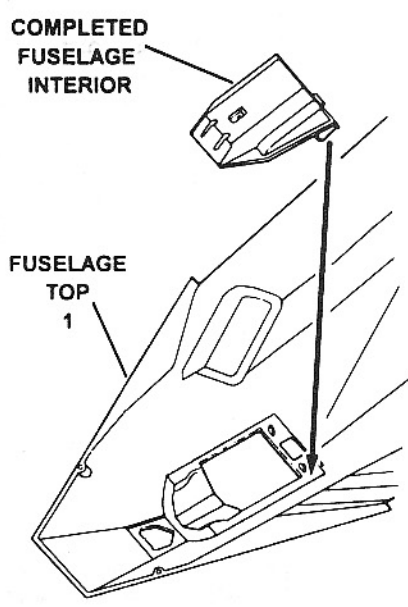
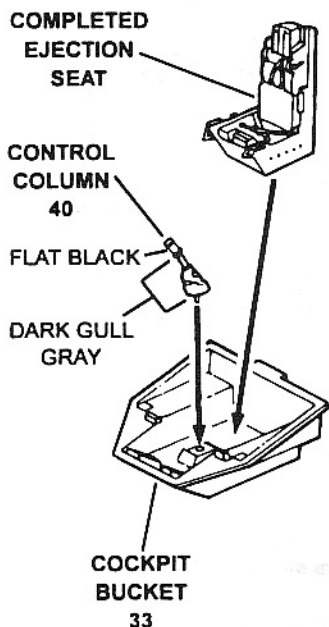
1. Cement SEAT RIGHT SIDE (72) and SEAT LEFT SIDE (73) to SEAT CENTER SECTION (74) as illustrated in the top drawing.
2. Glue SEAT REAR (75) to the back of the ejection seat.
3. Using a water-based white glue, attach the etched metal BUCKLES (•7, •8, •9, and •10) to the straps on the ejection seat as shown in the lower drawings.



This photograph shows an ACES II ejection seat installed in the cockpit of an F-117A. The oxygen bottle on the left side of the seat back is visible as are the ejection handles, the straps and buckles, and the black headrest. Also note the small handle on the right side of the lower seat. This handle is used to sever the straps connected to the survival pack in the event of an emergency ground egress. (Detail & Scale photo by Bert Kinzey)



SEAT PAINTING INSTRUCTIONS: The ACES II ejection seat is generally flat black. The ejection handles at the front of each side are gloss yellow as is the small handle on the right side of the lower seat. The oxygen bottle on the left side of the seat back is light green. The padding in the seat is a pale olive green, and the straps are a light silvery gray. The cables on the side of the seat are silver, and the tubing is a copper color.



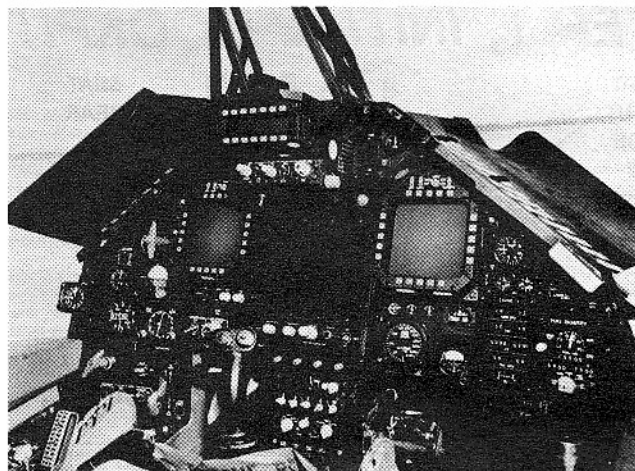
[STEP 1, INITIAL COCKPIT ASSEMBLY, CONTINUED]

PAINT ALL PARTS BEFORE ASSEMBLY.

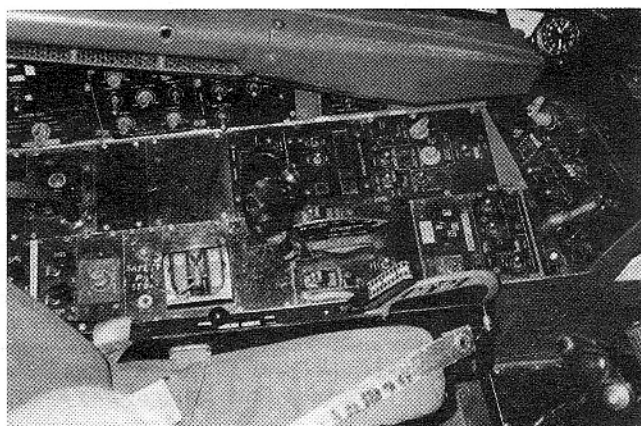


PAINTING TIP: An easy way to paint the smaller details on the instrument panel and consoles is to dry brush them. After the background color (flat black or Dark Gull Gray) has dried, select the appropriate color for the switches or knobs and place a small amount on a fine brush. Dab the brush on a piece of clean paper until the paint is almost gone, then lightly dry brush the raised details to highlight them on the panel and console.

4. Cement the CONTROL COLUMN (40) into place in the COCKPIT BUCKET (33) as shown in the drawing at left.
5. Glue the COMPLETED EJECTION SEAT into place in the COCKPIT BUCKET (33).
6. Cement the COMPLETED FUSELAGE INTERIOR into place in the FUSELAGE TOP (1) as illustrated in the middle drawing.
7. Carefully glue the INSTRUMENT PANEL (34) in place as indicated by the drawing at right.

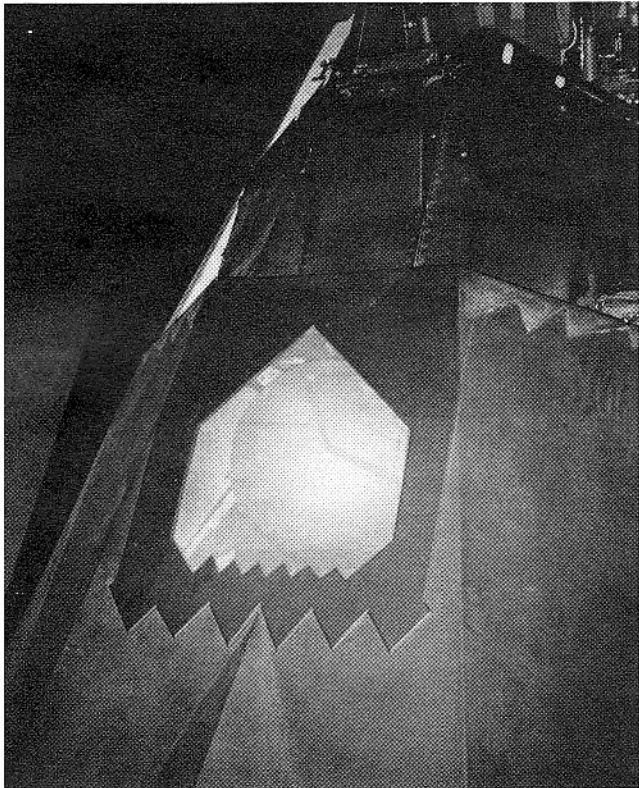


Details of the instrument panel in an F-117A can be seen here. The CRTs on each side of the panel are gloss dark gray when the power is not applied, while the one at the center of the panel is gloss black. Knobs and buttons are usually medium gray in color, while the numbers on the dials are white. (Lockheed photo)



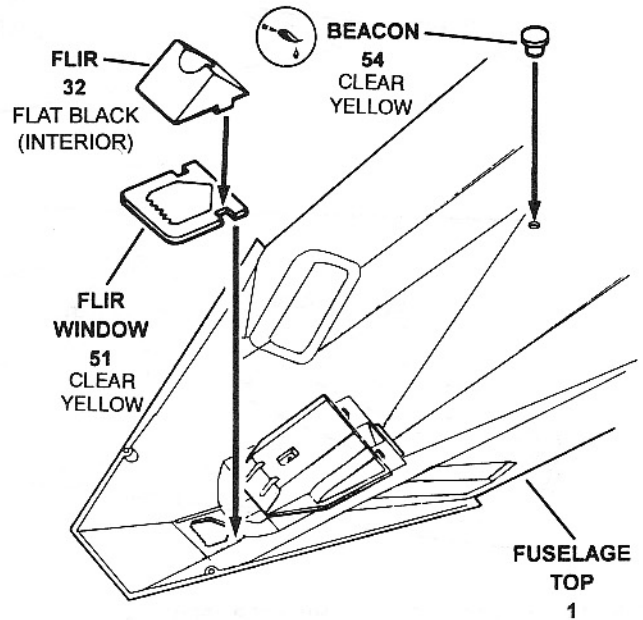
Left and right consoles are shown in these two photographs. The panels are flat black, and the background color is Dark Gull Gray (FS 36231). The control column is also visible in the photograph at right. Switches are silver, while most knobs are gray. Red protectors cover some of the switches, while other switches have no covers. (Detail & Scale photos by Bert Kinzey)

STEP 2, FUSELAGE DETAILS



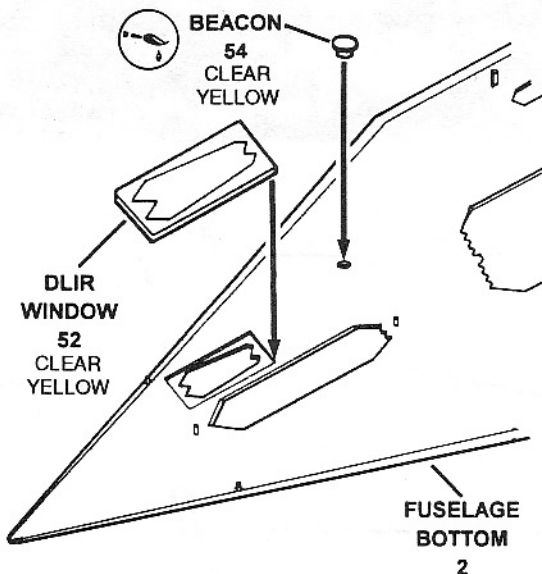
The Forward-Looking Infrared (FLIR) system is shown in this close-up photograph. The sphere housing the FLIR is usually flat black, and the window has a gold tint. The Downward-Looking Infrared (DLIR) system beneath the aircraft has a similar appearance. (Detail & Scale photo by Bert Kinzey)

SEE PAINTING TIP BELOW
BEFORE STARTING THIS STEP.

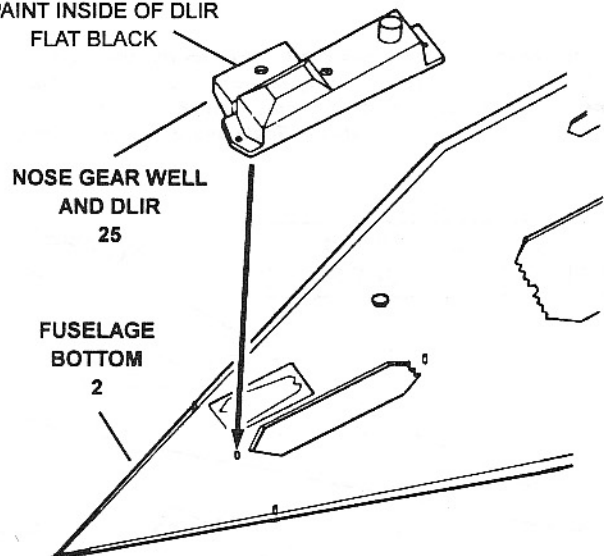


PAINT ALL PARTS BEFORE ASSEMBLY.

1. Using a water-based white glue, attach FLIR (32) to the FLIR WINDOW (51).
2. Again using the water-based white glue, attach the FLIR (32) and the FLIR WINDOW (51) to the FUSELAGE TOP (1).
3. Also using the white glue, attach the BEACON (54) to the FUSELAGE TOP (1).



PAINT INSIDE OF DLIR
FLAT BLACK

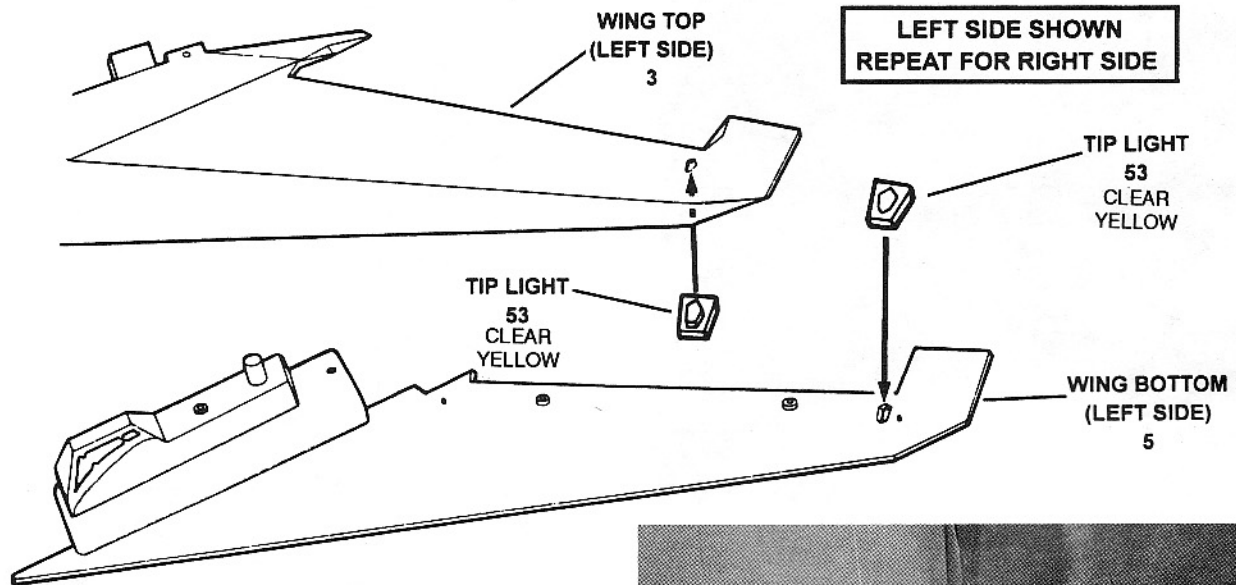


4. Still using the water-based white glue, attach the DLIR WINDOW (52) to the FUSELAGE BOTTOM (2).
5. Attach the BEACON (54) to the FUSELAGE BOTTOM (2) using the white glue.
6. Use regular modeling cement to glue the NOSE GEAR WELL AND DLIR (25) to the FUSELAGE BOTTOM (2).



PAINTING TIP: Before painting the two BEACONS (Parts 54) red, thin the paint with some paint thinner until it is about one-third paint and two-thirds thinner. Use this thinned paint to color the beacons red. This will result in a red lens effect rather than looking like solid red paint.

STEP 3, WING ASSEMBLY

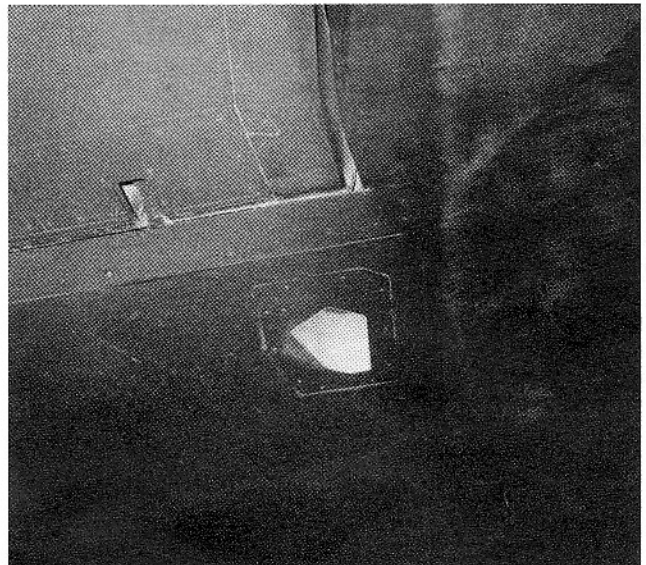


DO NOT PAINT ANY PARTS IN THIS STEP BEFORE ASSEMBLY.

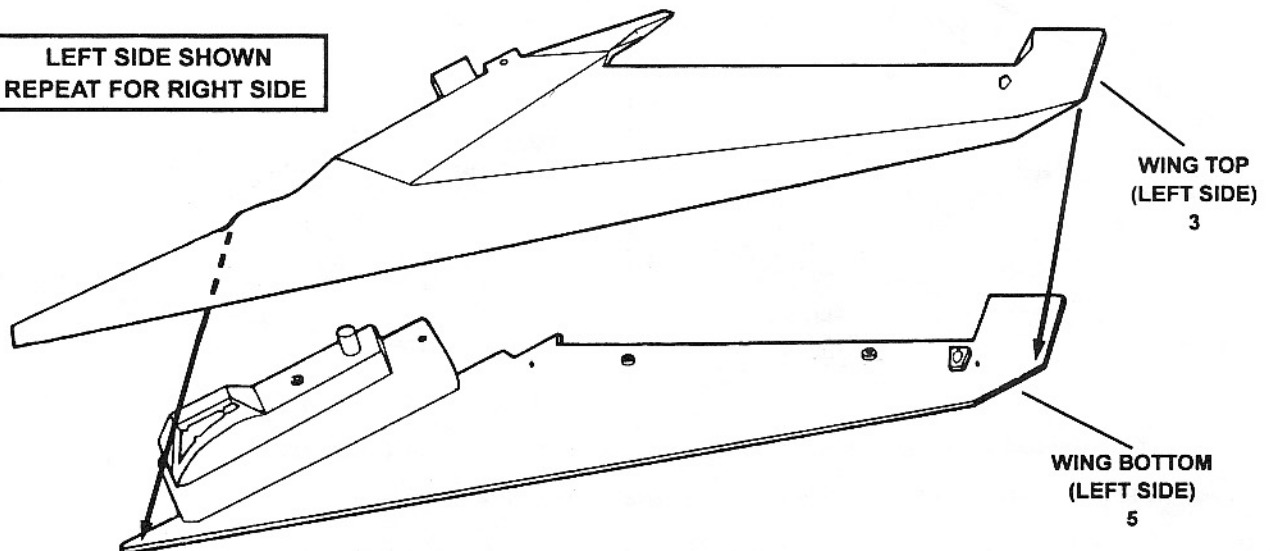
1. Using water-based white glue, attach TIP LIGHTS (53) to the WING TOP [LEFT SIDE] (3) and WING BOTTOM [LEFT SIDE] (5) as shown.
2. Repeat this procedure and glue TIP LIGHTS (53) to the WING TOP [RIGHT SIDE] (4) and WING BOTTOM [RIGHT SIDE] (6).

The photograph at right shows the tip light on the underside of the right wing. This view is looking forward and up at the light, and the elevon can be seen at the top of the photograph.

(Detail & Scale photo by Bert Kinzey)

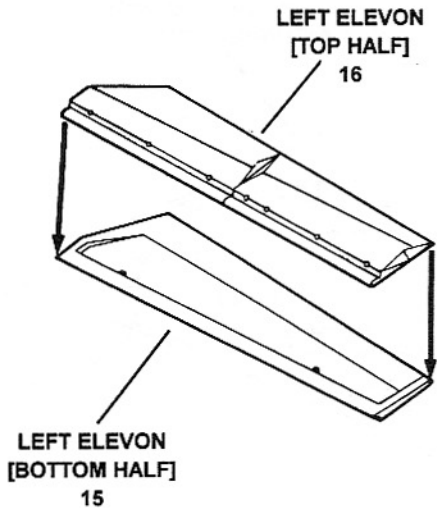


LEFT SIDE SHOWN REPEAT FOR RIGHT SIDE

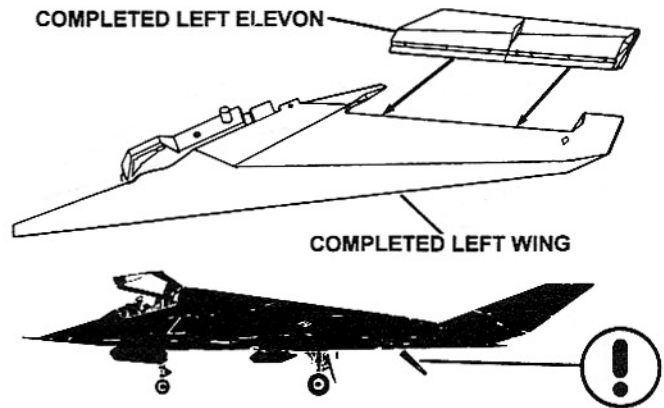


3. Using standard modeling cement, attach the WING TOP [LEFT SIDE] (3) to WING BOTTOM [LEFT SIDE] (5).
4. Following the same procedure, glue the WING TOP [RIGHT SIDE] (4) to the WING BOTTOM [RIGHT SIDE] (6).

**LEFT ELEVON SHOWN
REPEAT FOR RIGHT ELEVON.**



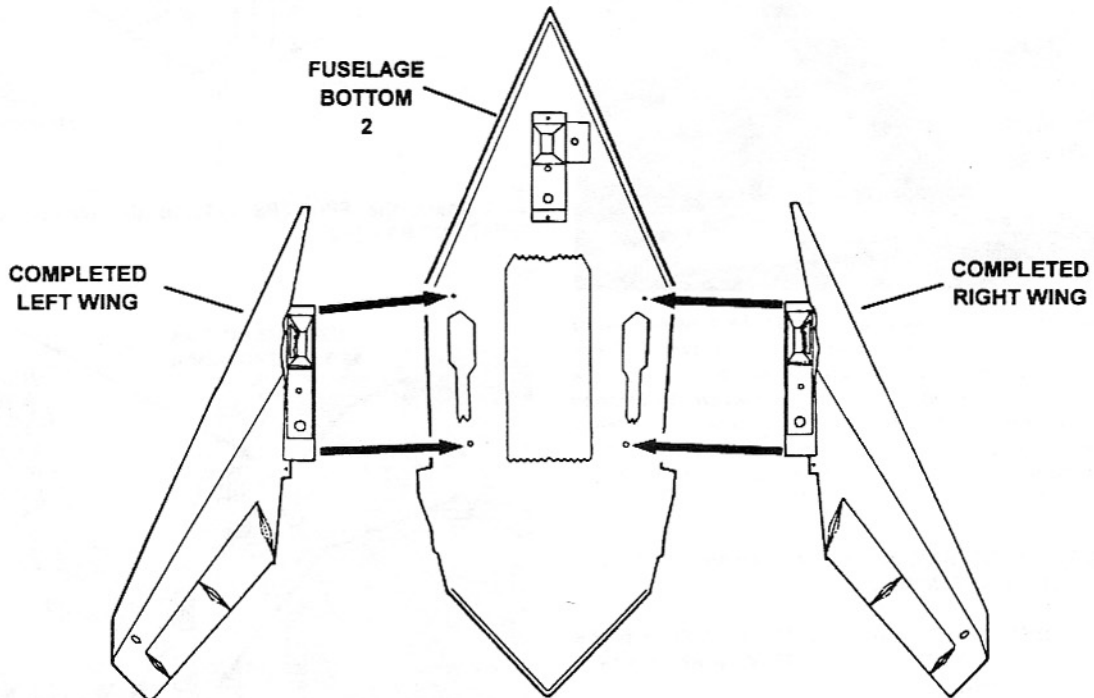
LEFT SIDE SHOWN, REPEAT FOR RIGHT SIDE.



POSITIONING NOTE: ELEVONS ARE USUALLY IN THE LOWERED POSITION ILLUSTRATED IN THIS DRAWING WHEN THE F-117A IS ON THE GROUND.

[STEP 3, WING ASSEMBLY, CONTINUED]

5. Cement LEFT ELEVON [TOP HALF] (16) to LEFT ELEVON [BOTTOM HALF] (15) as shown in the drawing at left.
6. Repeat this procedure using RIGHT ELEVON [TOP HALF] (60) and RIGHT ELEVON [BOTTOM HALF] (59).
7. Glue the COMPLETED LEFT ELEVON to the COMPLETED LEFT WING, and cement the COMPLETED RIGHT ELEVON to the COMPLETED RIGHT WING as illustrated in the drawing at right. The elevons may be attached in the "neutral" position, or they may be placed in the lowered position as seen in the silhouette drawing. The elevons are often in the lowered position when the aircraft is on the ground. Be sure the glue holding the elevons to the wings is set before attaching the wings to the fuselage as shown below.

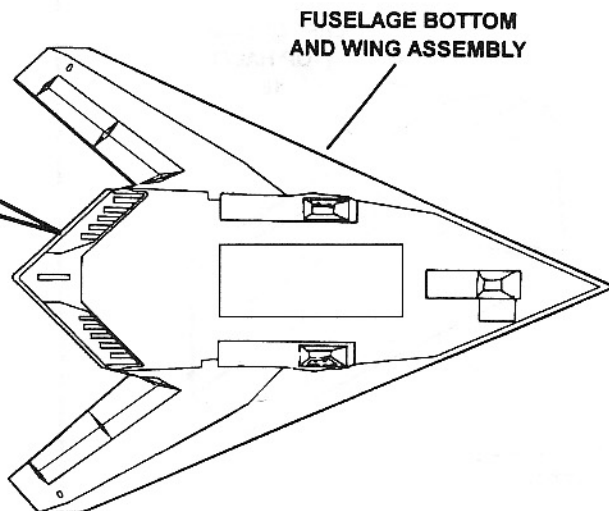
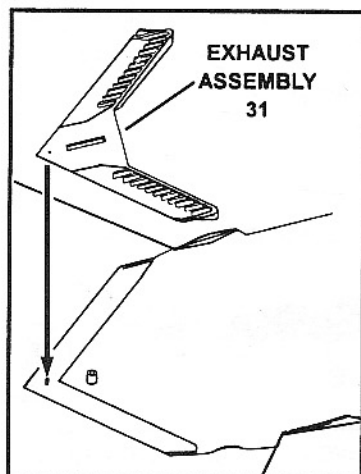


8. Carefully attach the COMPLETED LEFT WING and the COMPLETED RIGHT WING to the BOTTOM FUSELAGE (2) as shown. Take your time and make sure that the alignment is correct as you cement the wings in place.



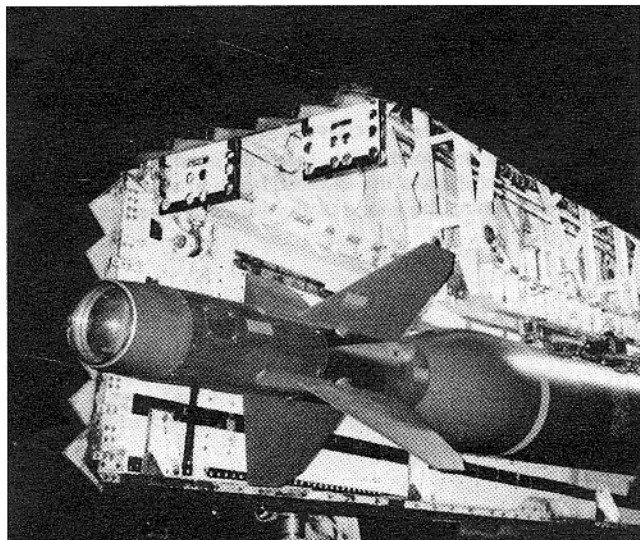
MODELING TIP: Use several spring-type clothespins to clamp the wings tightly to the fuselage while the glue sets. Be sure that the cement is completely dry before working with these parts any further.

STEP 4, MAJOR AIRFRAME ASSEMBLY

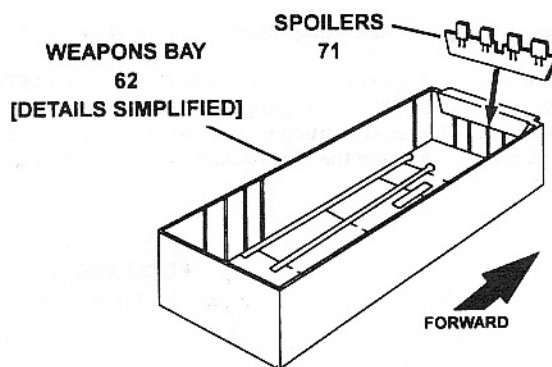


DO NOT PAINT THE PARTS IN THIS STEP BEFORE ASSEMBLY.

1. Glue the EXHAUST ASSEMBLY (31) to the aft end of the FUSELAGE BOTTOM (2).



There are two spoilers that extend down at the forward end of each side of the weapons bay when the bay is open. These spoilers disrupt the airflow in and around the bay to insure a better separation of the bomb from the aircraft when the weapon is released. The spoilers can be seen just above the guidance section of the bomb in this picture. Like the interior of the bay, they are painted white. (Detail & Scale photo by Bert Kinzey)



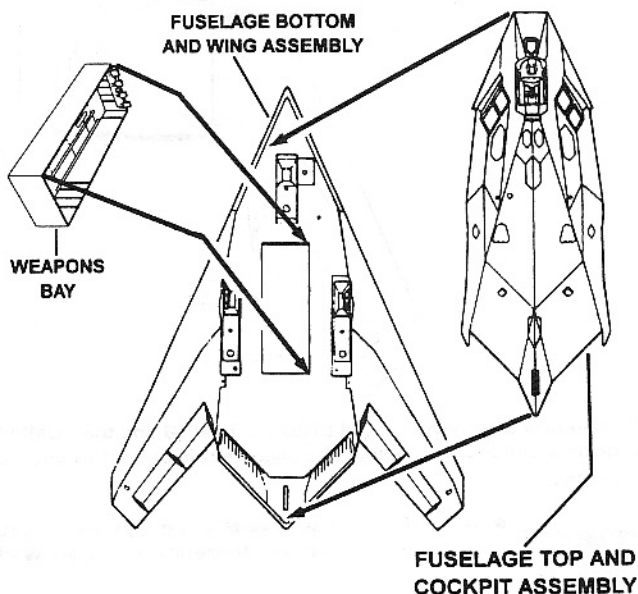
2. Cement the SPOILERS (71) to the forward end of the WEAPONS BAY (62).

3. Glue the WEAPONS BAY (62) in place on the FUSELAGE BOTTOM AND WING ASSEMBLY.

4. Attach the FUSELAGE TOP AND COCKPIT ASSEMBLY to the FUSELAGE BOTTOM AND WING ASSEMBLY, working slowly around the entire aircraft.

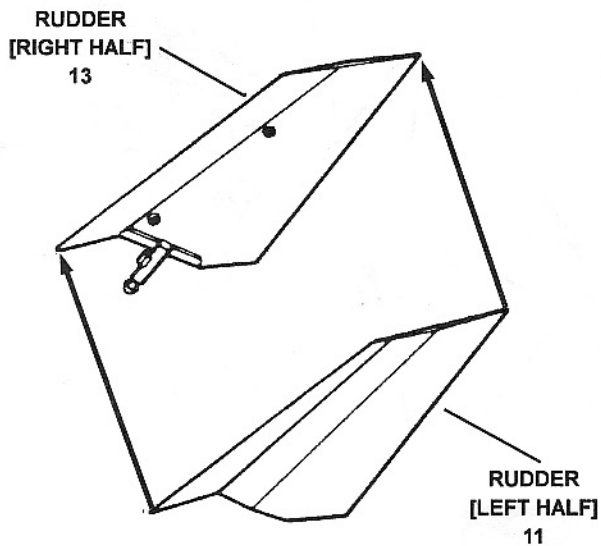


MODELING TIP: Check the alignment of the model carefully, then let the glue dry completely before proceeding further. Use rubber bands to hold the parts tightly together. Once the glue has set, fill any seams as necessary around the entire fuselage and wing assembly. After the filler has hardened, sand the filled seams smooth with fine wet/dry sandpaper.

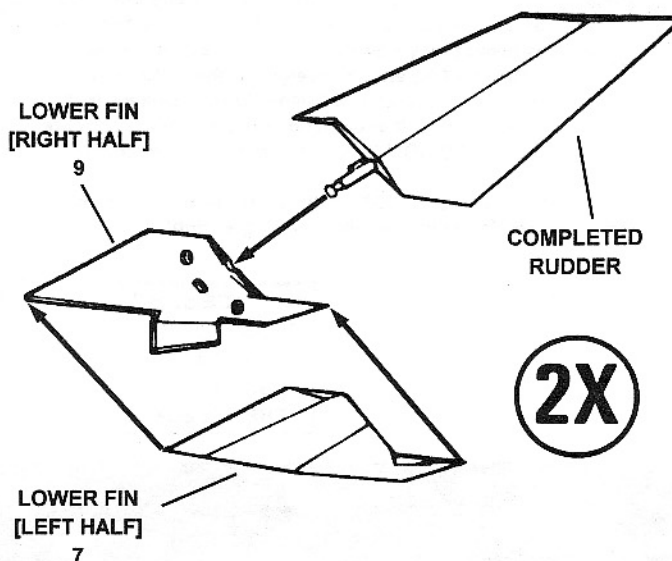


STEP 5, VERTICAL TAIL ASSEMBLY

RIGHT SIDE SHOWN, REPEAT FOR LEFT SIDE.



2X



2X

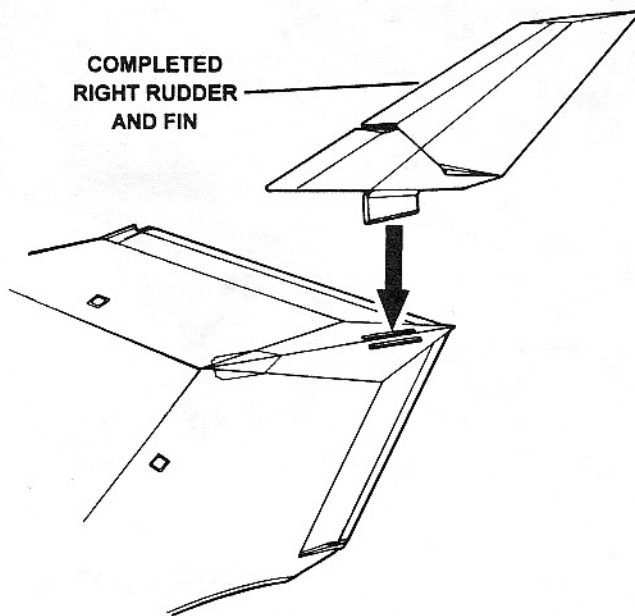
DO NOT PAINT THE PARTS IN THIS STEP BEFORE ASSEMBLY.

1. Begin the assembly of the right vertical tail by gluing RUDDER [RIGHT HALF] 13 to RUDDER [LEFT HALF] 11.

2. Cement LOWER FIN [RIGHT HALF] (9) to the LOWER FIN [LEFT HALF] (7) while trapping the COMPLETED RUDDER between the two LOWER FIN HALVES.

3. Repeat items 1 and 2 above for the left vertical tail using RUDDER [RIGHT HALF] (12), RUDDER [LEFT HALF] (14), LOWER FIN [RIGHT HALF] (8), and LOWER FIN [LEFT HALF] (10).

4. Glue the two completed rudders and fins to the top of the aft fuselage. Check the alignment carefully before the glue sets.

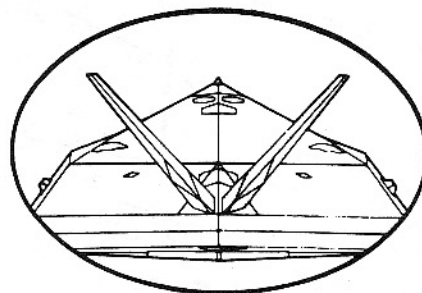


RIGHT RUDDER SHOWN
REPEAT FOR THE LEFT RUDDER.



This close-up photograph shows the unusual hinge line between the right rudder and lower fin on an F-117A.

(Detail & Scale photo by Bert Kinzey)



CHECK ALIGNMENT CAREFULLY!

STEP 6, FUSELAGE FINAL ASSEMBLY

DO NOT PAINT THE PARTS IN THIS STEP BEFORE ASSEMBLY.

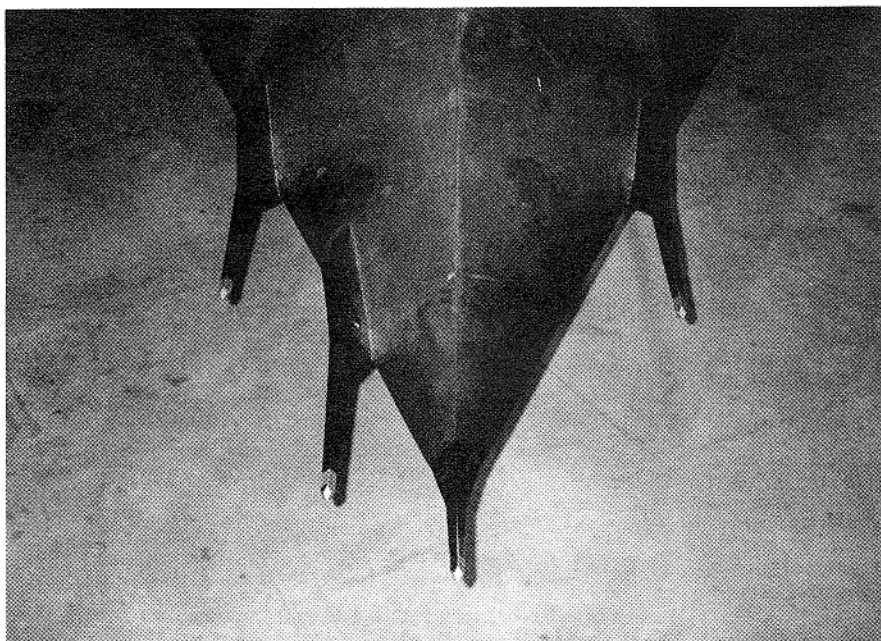
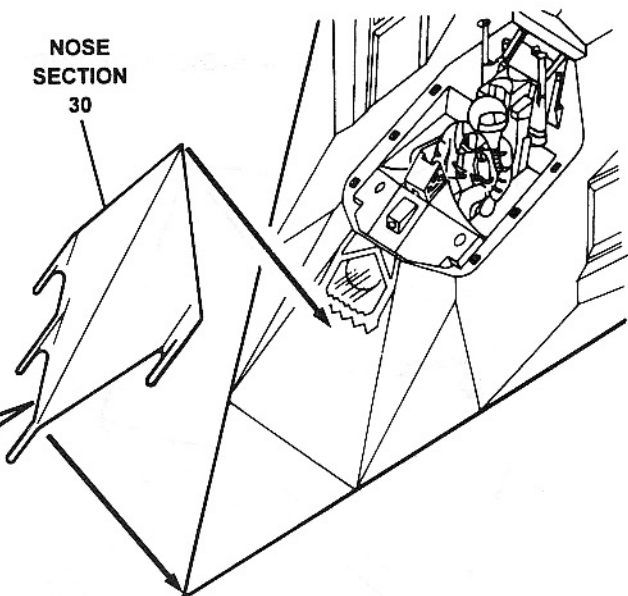


MODELING TIP: To be sure that the model sits properly on its landing gear when finished, it is necessary to place some weight inside the NOSE SECTION (30) before it is glued to the fuselage. Modeling clay can be used for this purpose, but to insure getting enough weight in the nose, it is best to place several small lead fishing sinkers in the clay to give it increased weight. Fill the entire NOSE SECTION (30) with clay and lead sinkers.

1. Cement the NOSE SECTION (30) to the forward end of the fuselage assembly as shown in the drawing at right.

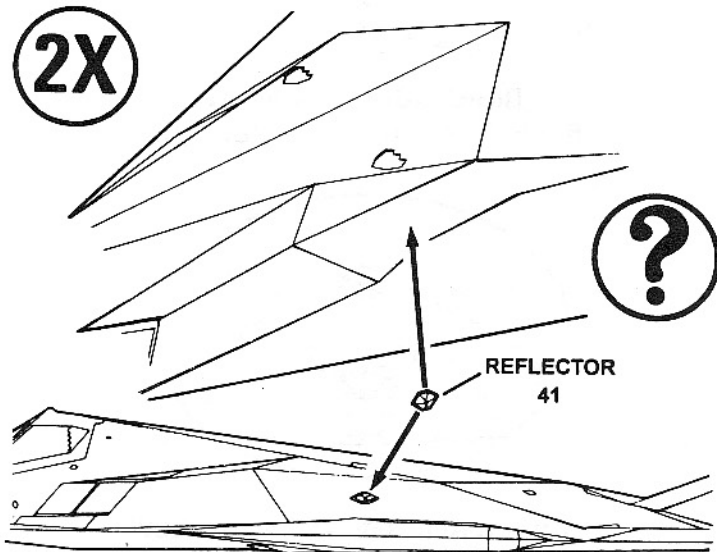
PLACE SOME WEIGHT INSIDE OF THE NOSE BEFORE GLUING IT TO THE FUSELAGE.

NOSE SECTION 30



The four probes on the nose of an F-117A are shown in this close-up that was taken from above. These air data sensors have tips that have the color of polished brass. (Detail & Scale photo by Bert Kinzey)

2X



LEFT SIDE SHOWN, REPEAT FOR RIGHT SIDE.

NOTE: Reflectors are sometimes placed on the fuselage sides of the F-117A during peacetime and while operating over friendly territory. These reflectors help make the "Night Hawk" visible to radars when its radar reflectivity is necessary for air traffic control safety. They are not present during the time of war or during most training exercises. The modeler should decide whether he wants these two reflectors displayed on his model.

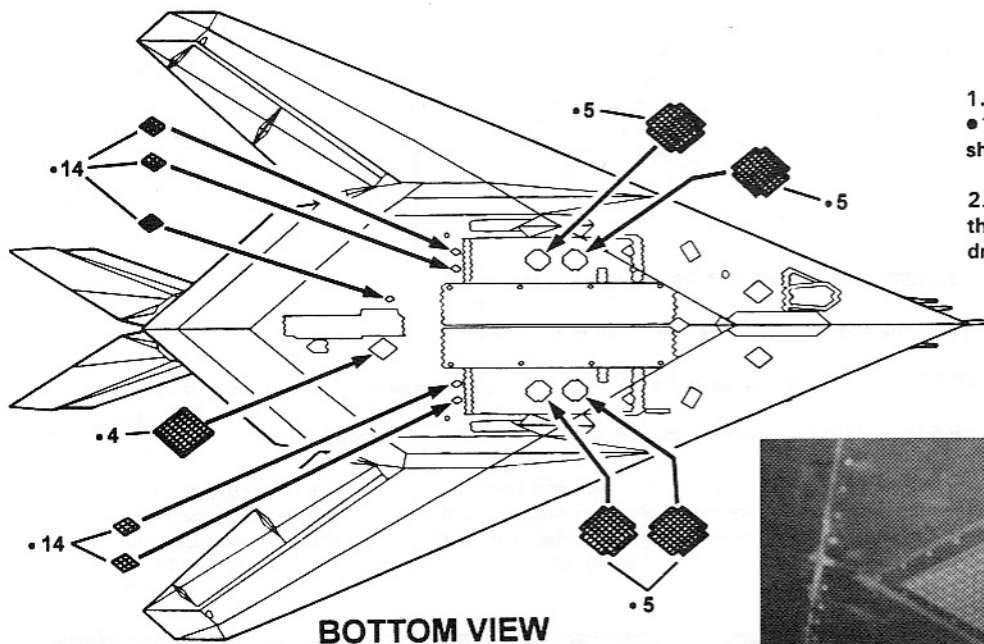
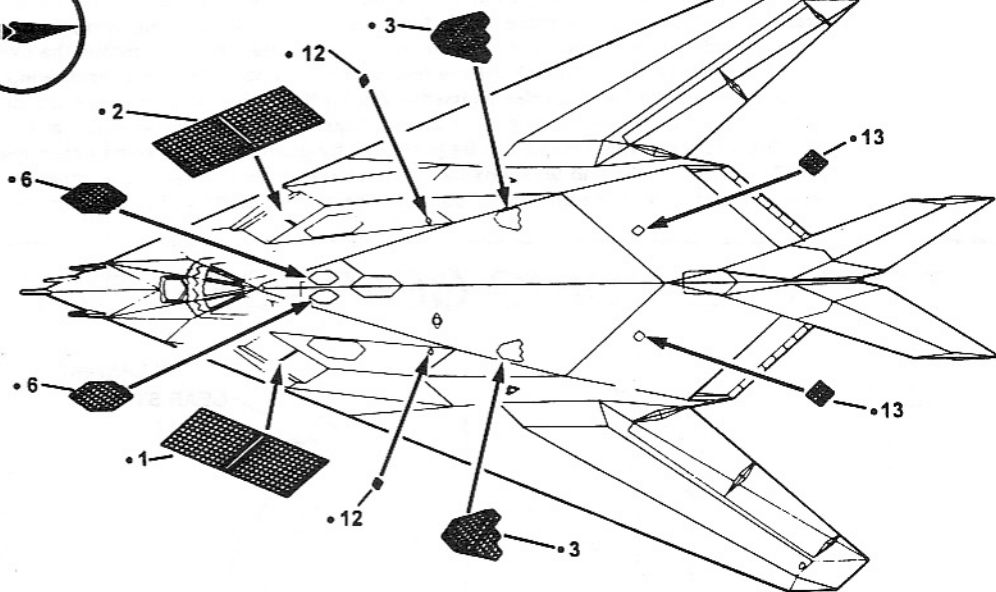
2. If the reflectors are to be included on your model, glue them in place on each side of the fuselage as shown in the drawing at left.

STEP 7, ETCHED METAL PARTS

MODELING TIP: The F-117A has grilles and screens of various sizes that cover its engine inlets and other intakes and exhausts on the skin of the aircraft. These are represented in this kit by etched metal parts. To remove these parts from their tree, place the tree on a hard surface and use a sharp knife to cut the parts loose at the point where they are joined to the tree. These metal parts should be attached to the model using a very small amount of water-based white glue. The glue should be applied with the tip of a toothpick, and the glue should be applied to the model rather than to the metal part. This will help prevent the glue from getting into the fine screen. If some glue does get into a screen, wash it out with water and start over.



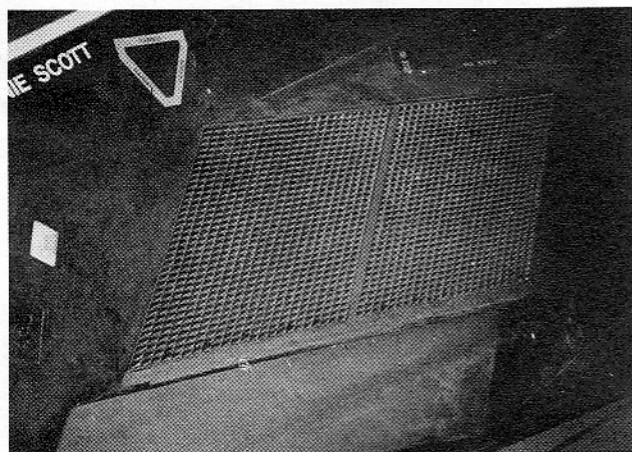
TOP VIEW



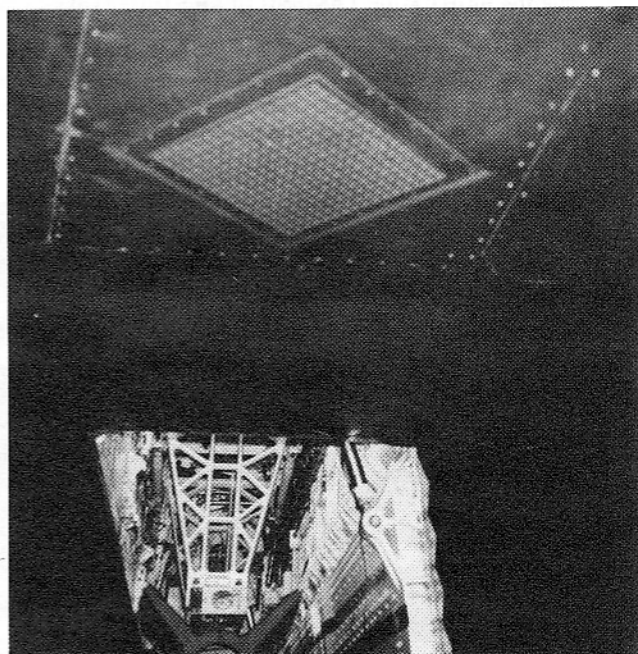
BOTTOM VIEW

1. Attach metal parts ●1, ●2, ●3, ●6, ●12, and ●13 to the top of the model as shown in the drawing above.

2. Attach metal parts ●4, ●5, and ●14 to the bottom of the model as indicated in the drawing at left.



The grille covering the left engine inlet can be seen in this close-up. The one on the right inlet is a mirror image of this one.
(Detail & Scale photo by Bert Kinzey)



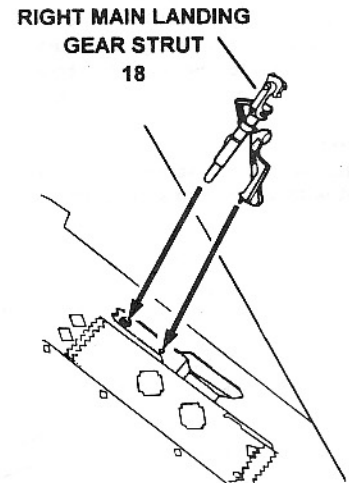
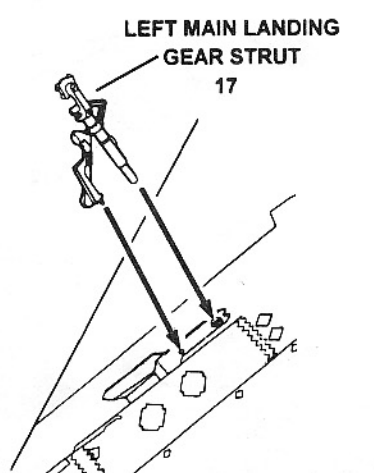
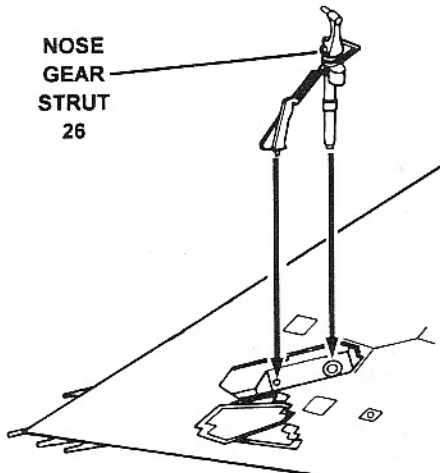
This is one of the screens that is located on the underside of the aircraft. This particular screen is just aft of the left side of the weapons bay. It is represented by part ●4 on the model.
(Detail & Scale photo by Bert Kinzey)



PAINTING TIPS:

1. The basic airframe of your F-117A model is now complete, and this is the best time to paint the model black. This is because the smaller parts, such as the landing gear, the canopy, and the trapezes in the weapons bay have not been attached, and therefore they will not need to be masked off. Painting the model black before these smaller parts are added will also eliminate the possibility of breaking them off later during the painting process.
2. Carefully mask off the FLIR and DLIR windows. The best tape to use for this purpose is a low-tack, removable, transparent tape. Place a piece of this tape over each window. Then, using the point of a razor knife, carefully trim the tape around each window. Once the trimming is complete, carefully remove the excess tape from around the windows. Use the same method to mask off the four small lights near the tips of each wing.
3. Small pieces of tape can also be used to mask off the two red beacons, but a better way to protect them from paint is to apply a liquid mask with a small brush. Liquid mask can be purchased at most hobby shops.
4. The interior of the cockpit can be protected by gently pressing some tissue paper into it.
5. The wheel wells and weapons bay do not need to be masked off or otherwise protected from paint at this point, however it is best if the amount of paint overspray that is allowed to get into these areas is kept to a minimum.

STEP 8, LANDING GEAR ASSEMBLY

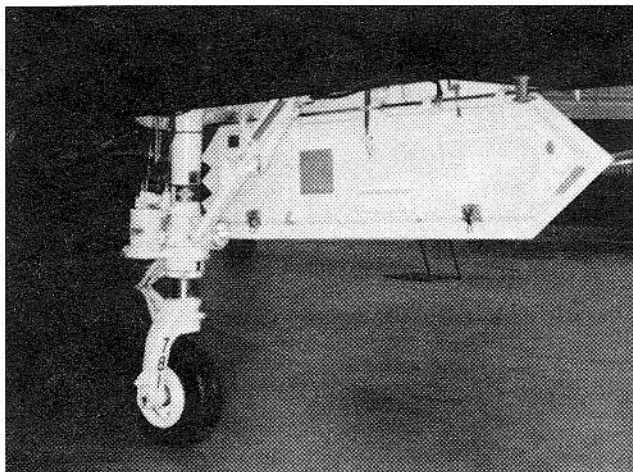


DO NOT PAINT THE PARTS IN ITEMS 1 THROUGH 3 IN THIS STEP BEFORE ASSEMBLY.

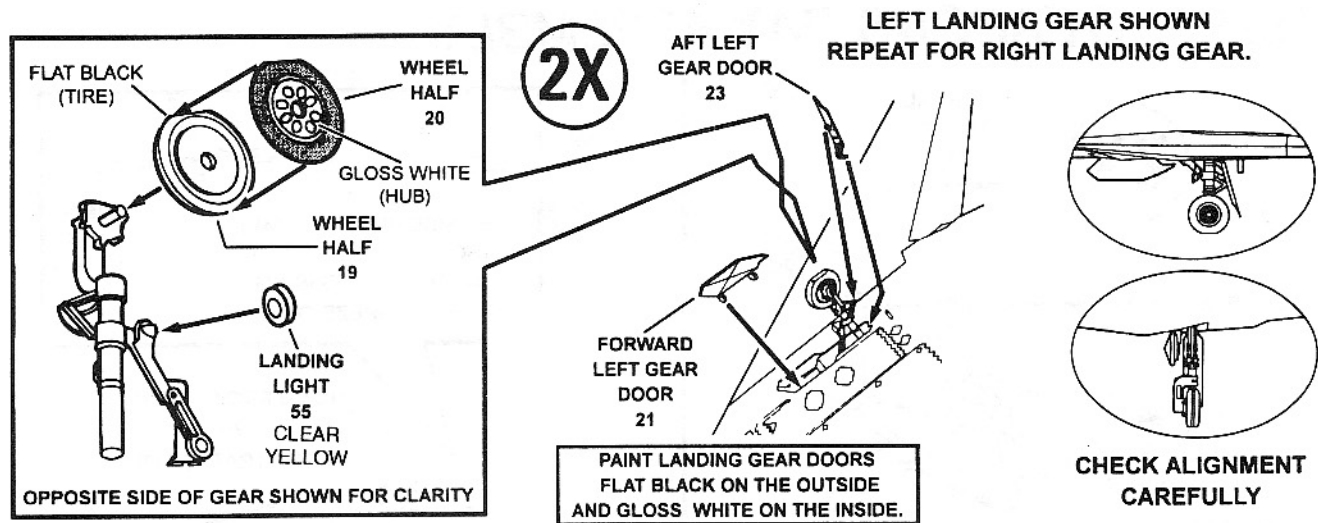
1. Cement the NOSE GEAR STRUT (26) into the nose gear well as illustrated in the drawing at left.
2. Attach the LEFT MAIN LANDING GEAR STRUT (17) to the holes in the left main landing gear well as shown in the middle drawing.
3. Glue the RIGHT MAIN LANDING GEAR STRUT (18) into the right main landing gear well as shown at right.



PAINTING TIP: Now is the best time to paint the landing gear wells and struts. Once the glue holding the three landing gear struts in place has set completely, carefully mask around each of the three landing gear wells with low-tack, removable, transparent tape. Cover several inches around each of the wells with tape so that no overspray will get on the model. Once the masking is complete, paint the wheel wells and the landing gear struts **GLOSS WHITE**.



Right and left side views of the nose gear are provided by these two photographs. The last three digits of the aircraft's serial number are on the fork, and the oleo portion of the gear is bright silver. The wheel is gloss white, and it has a silver hub on the left side. (Detail & Scale photos by Bert Kinzey)



[STEP 8 CONTINUED] PAINT ALL PARTS IN ITEMS 4 THROUGH 10 BEFORE ASSEMBLY.

4. Make two main landing gear wheels by cementing WHEEL HALF (19) to WHEEL HALF (20) two times.

NOTE: USE A WATER-BASED WHITE GLUE FOR THE REMAINING ITEMS IN THIS ASSEMBLY STEP. APPLY THE GLUE VERY SPARINGLY USING THE TIP OF A TOOTHPICK OR PIN.

5. Attach a LANDING LIGHT (55) to each of the main landing gear struts as shown in the detail drawing above left.

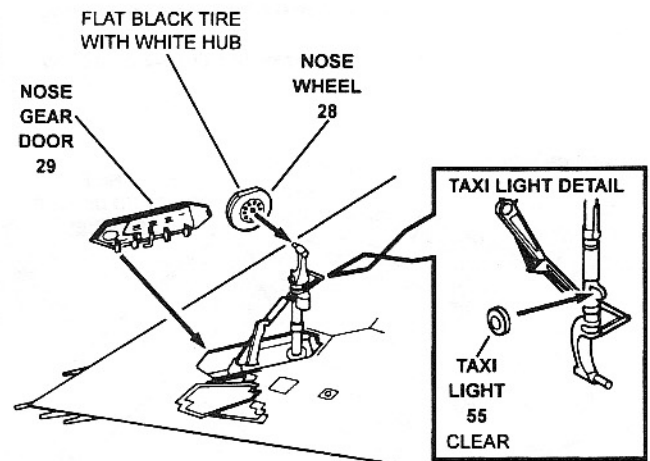
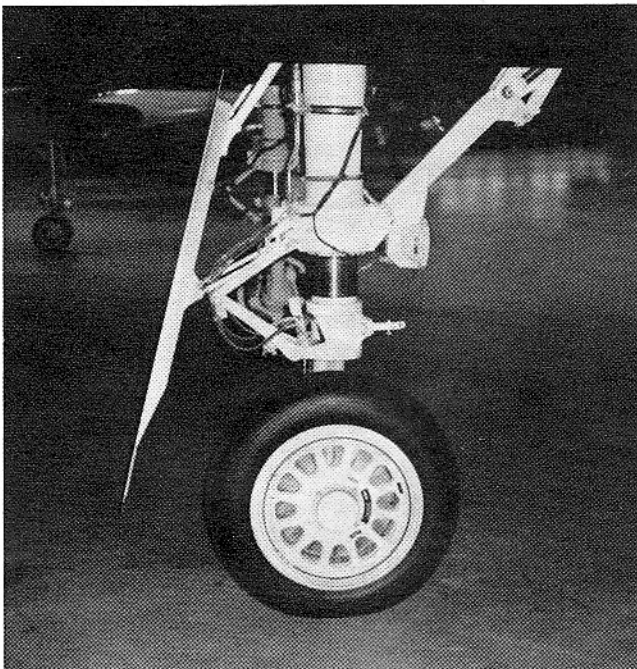
6. Glue the FORWARD LEFT GEAR DOOR (21) to its position on the inside edge of the left wheel well.

7. Attach the AFT LEFT GEAR DOOR (23) in position at the aft end of the wheel well. The center of the door should be glued to the landing gear strut as seen in the top right detail drawing and in the photograph below.

8. Repeat items 6 and 7 for the right main landing gear using FORWARD RIGHT GEAR DOOR (22) and AFT RIGHT GEAR DOOR (24).



MODELING TIP: Although the drawings show the placement of the landing gear wheels, it is best not to attach the wheels until the model is completely painted and all decals are applied. This tip pertains not only to the main gear wheels shown above, but also to the nose gear wheel illustrated below. When the wheels are attached, make sure that the flattened or weighted side of the tire is down and fits squarely on a flat surface.



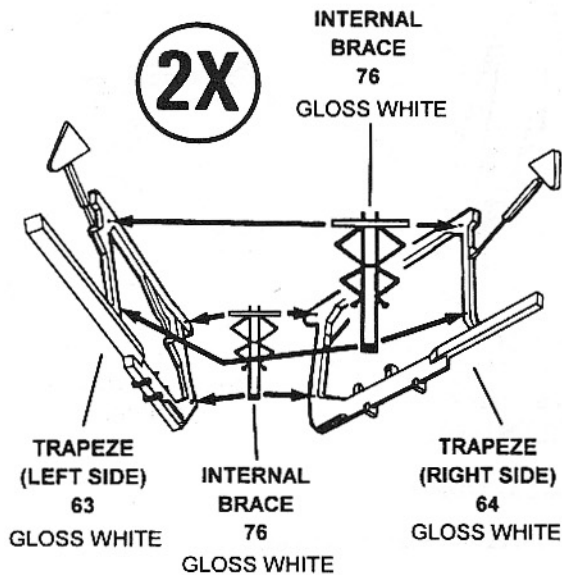
NOSE GEAR DOOR IS FLAT BLACK ON THE OUTSIDE AND GLOSS WHITE ON THE INSIDE.

Details of the right main landing gear can be seen here. Notice in particular how the aft door attaches to the aft end of the well and to the scissors part of the landing gear strut. The gear and wheel are gloss white except that the oleo portion of the strut is bright natural metal or silver. (Detail & Scale photo by Bert Kinzey)

9. Glue the TAXI LIGHT (55) to the NOSE GEAR STRUT (26) as shown in the detailed drawing.

10. Attach the NOSE GEAR DOOR (29) to its location on the left side of the nose gear well.

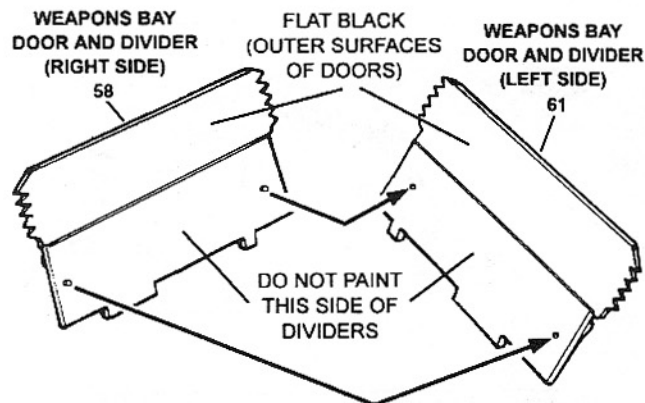
STEP 9, WEAPONS BAY ASSEMBLY



DO NOT PAINT THE PARTS IN THIS STEP BEFORE ASSEMBLY.

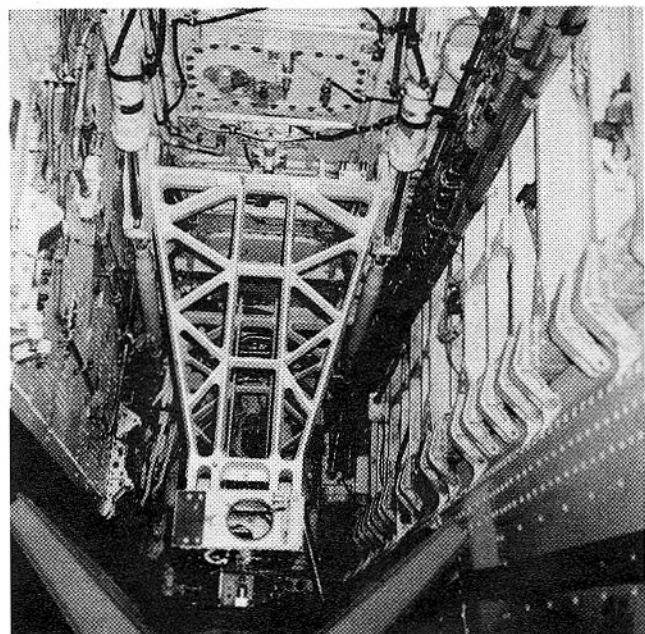
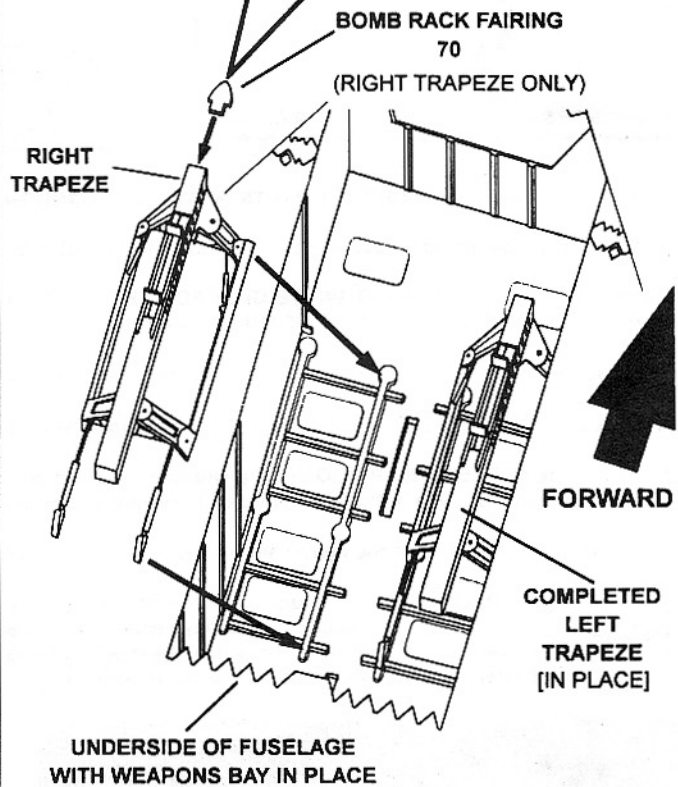
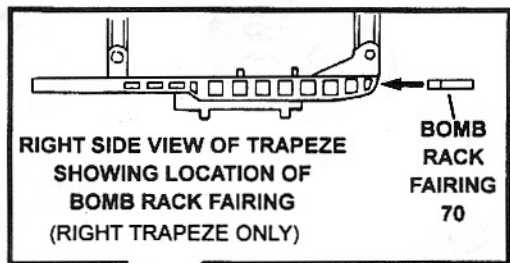
NOTE: The bomb racks in the F-117A are generally referred to as trapezes.

1. Glue two INTERNAL BRACES (76) to a TRAPEZE [LEFT SIDE] (63).
2. Carefully cement the TRAPEZE [RIGHT SIDE] (64) to the TRAPEZE [LEFT SIDE] (63) and to the two INTERNAL BRACES (76) to complete the construction of one bomb trapeze.
3. Repeat items 1 and 2 to make the second bomb trapeze.
4. Glue the BOMB RACK FAIRING (70) to the front end of the completed right trapeze only. Refer to the detail drawing as well as the general illustration for the correct location of the fairing.
5. Cement the two completed trapezes into the weapons bay.

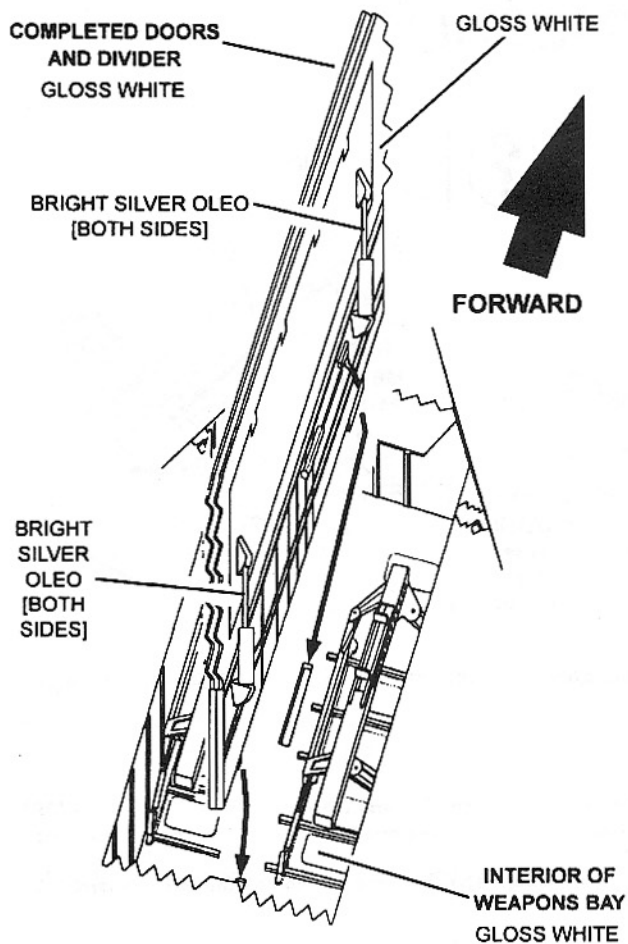


NOTE: Paint the outer surfaces of the weapons bay doors flat black before continuing with the next item. DO NOT PAINT the divider portion of the two pieces. (See the drawing above.)

6. Glue the WEAPONS BAY DOOR AND DIVIDER [RIGHT SIDE] (61) to the WEAPONS BAY DOOR AND DIVIDER [LEFT SIDE] (62).



This view looks forward in the left side of the weapons bay. The aft internal bracing for the trapeze is clearly visible as are other details inside the bay. (Detail & Scale photo by Bert Kinzey)



[STEP 9 CONTINUED]

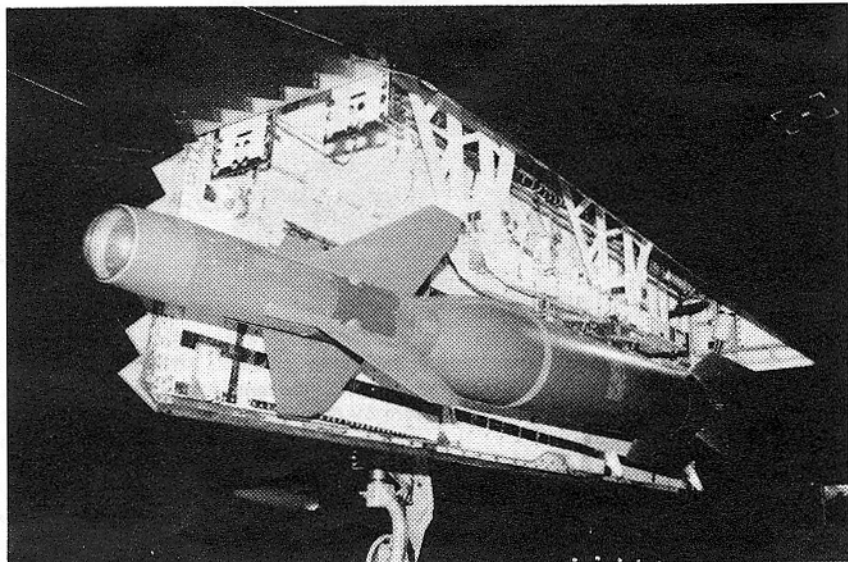
7. Cement the completed doors and divider into the weapons bay as illustrated in the drawing above.



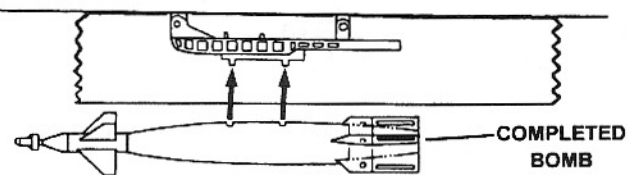
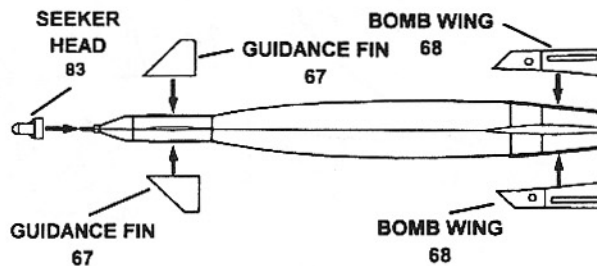
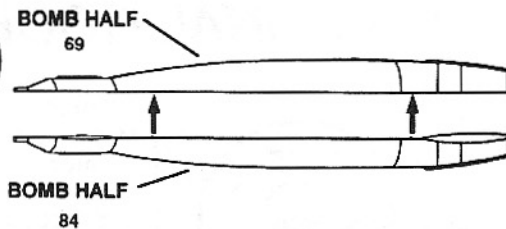
PAINTING TIP: Now is the best time to paint the completed weapons bay. Carefully mask off the entire bottom of the fuselage around the weapons bay, then paint the interior of the bay, both trapezes, the divider, and the interior of the doors gloss white. Once this paint has dried completely, paint the oleos on the door actuators bright silver.

A laser guided bomb can be seen attached to the left trapeze in this photograph. This is a GBU-27A Paveway III penetrator bomb, which is one of several laser guided bombs employed by the "Night Hawk." The bombs in your Pro-Modeler kit are GBU-10 Paveway II weapons. This is another type of "smart bomb" used by the F-117A.

(Detail & Scale photo by Bert Kinzey)



2X



8. Build one bomb body by gluing BOMB HALF (65) to BOMB HALF (66).
9. Make a second bomb body by cementing BOMB HALF (69) to BOMB HALF (84).
10. Glue two GUIDANCE FINES (67) to each bomb body.
11. Cement two BOMB WINGS (68) to each of the bomb bodies.
12. Complete the construction of the two GBU-10 laser guided bombs by attaching a SEEKER HEAD (83) to each bomb.



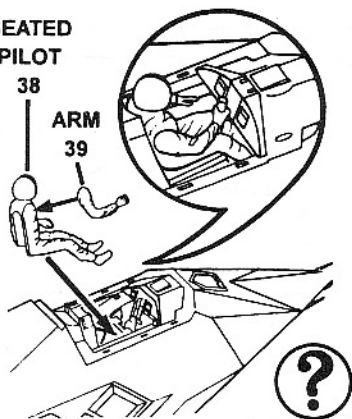
PAINTING NOTE: Paint the bombs and apply the decal stripe before gluing the bombs to the trapezes. Refer to the next to the last page of this instruction booklet for information on painting the bombs and decal application.

13. Attach one bomb to each trapeze. A water-based white glue will work best for this step.

STEP 10, FINAL COCKPIT ASSEMBLY

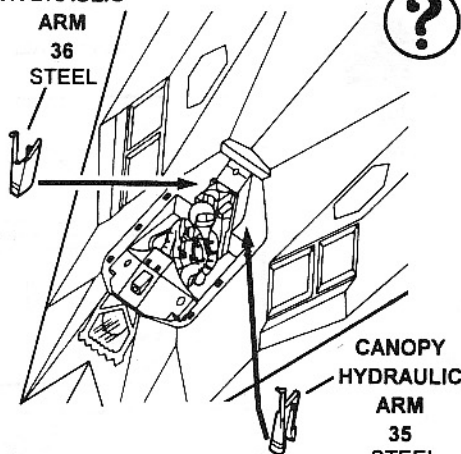
SEATED PILOT
38

ARM
39



NOTE: SEE STEP 12 FOR INSTRUCTIONS ON HOW TO PAINT THE PILOT FIGURE.

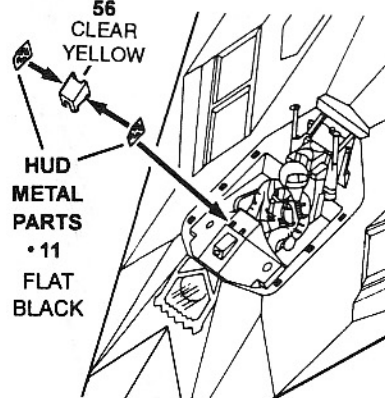
CANOPY HYDRAULIC ARM
36
STEEL



CANOPY HYDRAULIC ARM
35
STEEL

HUD
56
CLEAR
YELLOW

HUD METAL PARTS
•11
FLAT
BLACK



1. If desired, a pilot figure can be placed in the cockpit. If this is done, glue ARM (39) to SEATED PILOT (38), and paint the pilot figure as described in STEP 12.

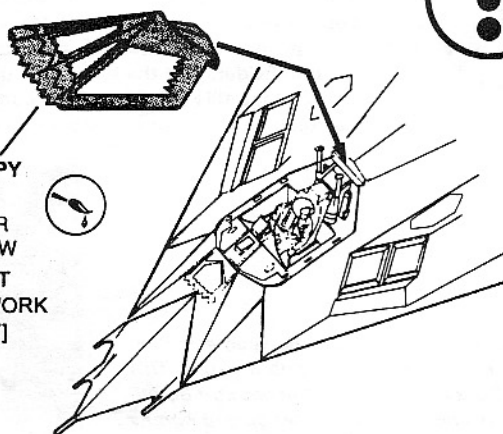
PAINT ALL REMAINING PARTS IN THIS STEP BEFORE ASSEMBLY

2. If the canopy is to be displayed in the open position, cement CANOPY HYDRAULIC ARM (35) and CANOPY HYDRAULIC ARM (36) in place as shown in the middle drawing above. If the canopy is to be displayed in the closed position, do not use these two parts.

3. Glue two HUD METAL PARTS (•11) to HUD (56) as shown in the right drawing. Then cement the completed HUD assembly in place in the cockpit.



Details of the interior of the canopy are illustrated in this photograph. Note that the inside of the framework is the same flat black as the outside. (Detail & Scale photo by Bert Kinzey)



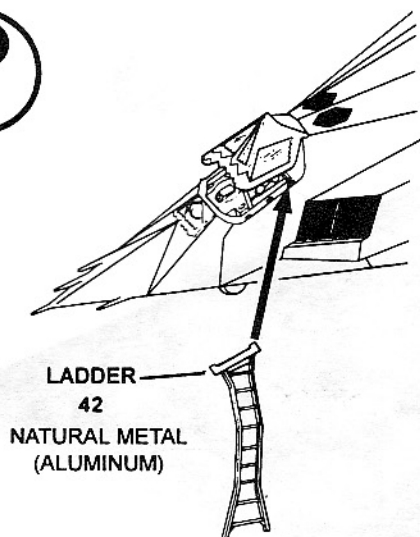
CANOPY
50
CLEAR
YELLOW
[PAINT
FRAMEWORK
ONLY]

4. Using a water-based white glue, carefully attach the canopy to the aircraft as shown. The silhouette drawing illustrates the correct angle for the canopy if it is to be displayed in the open position. The canopy may also be attached in the closed position.



PAINTING TIP: After the paint on the framework of the canopy has dried, any excess paint that may have gotten on the clear glass parts can be removed by gently rubbing the tip of a toothpick over it. Carefully rub the point of a toothpick along the edge of the framework to make the paint line perfectly straight.

STEP 11, LADDER & CHOCKS



WHEEL CHOCK
80
YELLOW



THREAD
TAN
[NOT INCLUDED]

WHEEL CHOCK
80
YELLOW

PAINT ALL PARTS BEFORE ASSEMBLY

A boarding ladder is provided with your F-117A model. These ladders are a natural metal (aluminum) color. If desired, the ladder can be attached to the aircraft on the left side of the cockpit as shown in the drawing above.

Make two pairs of wheel chocks using the following procedure:

1. Using some tan colored thread to represent rope, tie two knots in the thread about two inches apart. Cut the thread just outside of the knots so that there is a knot at each end of the remaining piece. In this manner, make two pieces of thread which are each two inches long with a knot at each end.
2. Using a water-based white glue, attach each end of the thread to a WHEEL CHOCK (80). The knot should go just inside the chock to provide strength, and the thread should pass through the small notch located at one end of each chock.
3. After making two pairs of chocks using two pieces of thread and four WHEEL CHOCKS (80), place one pair of chocks next to each main landing gear wheel. One chock should be in front of and one should be behind each wheel.

STEP 12, FIGURES



SEATED PILOT
[SEE STEP 10]



STANDING PILOT
81



MECHANIC
82

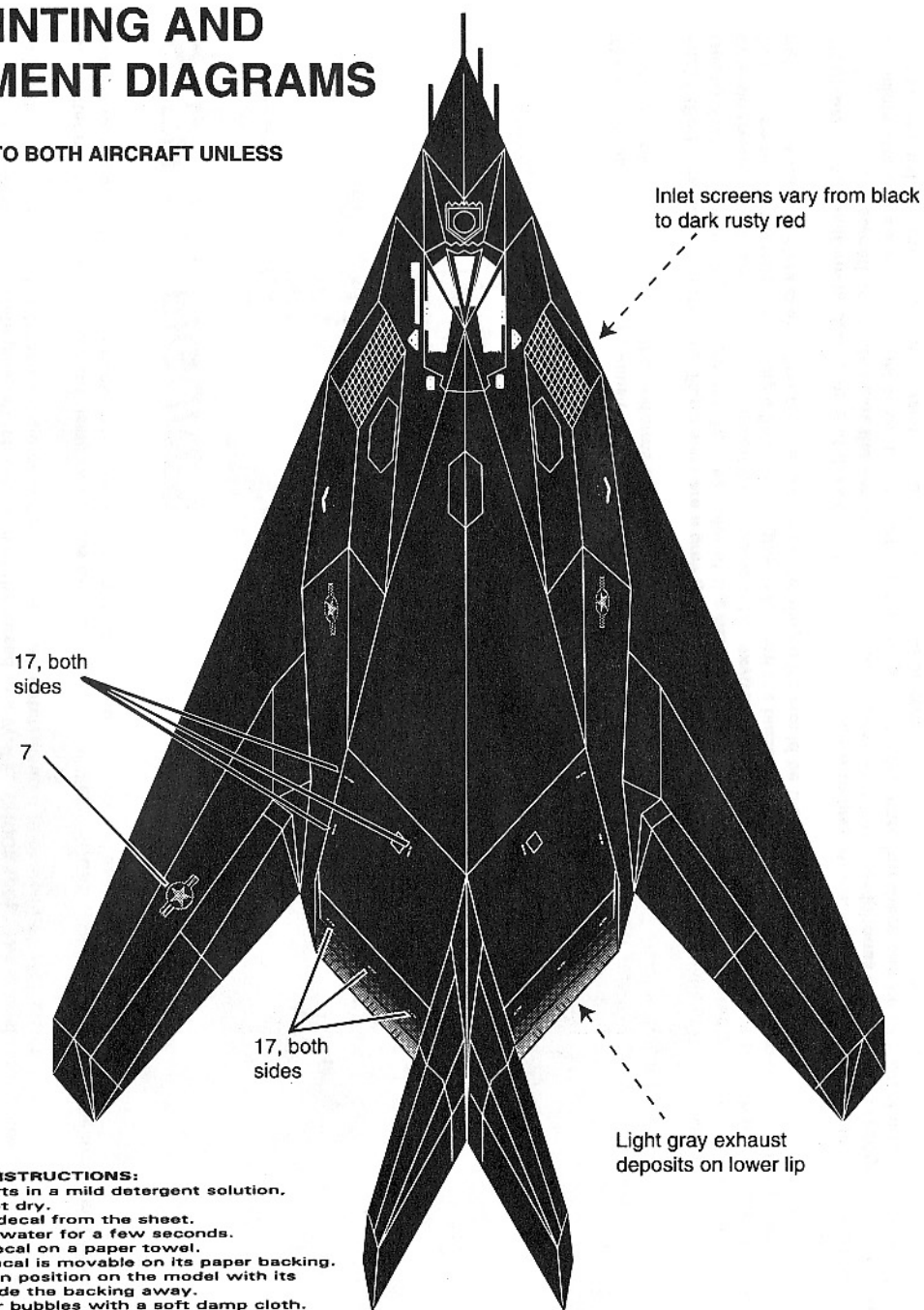
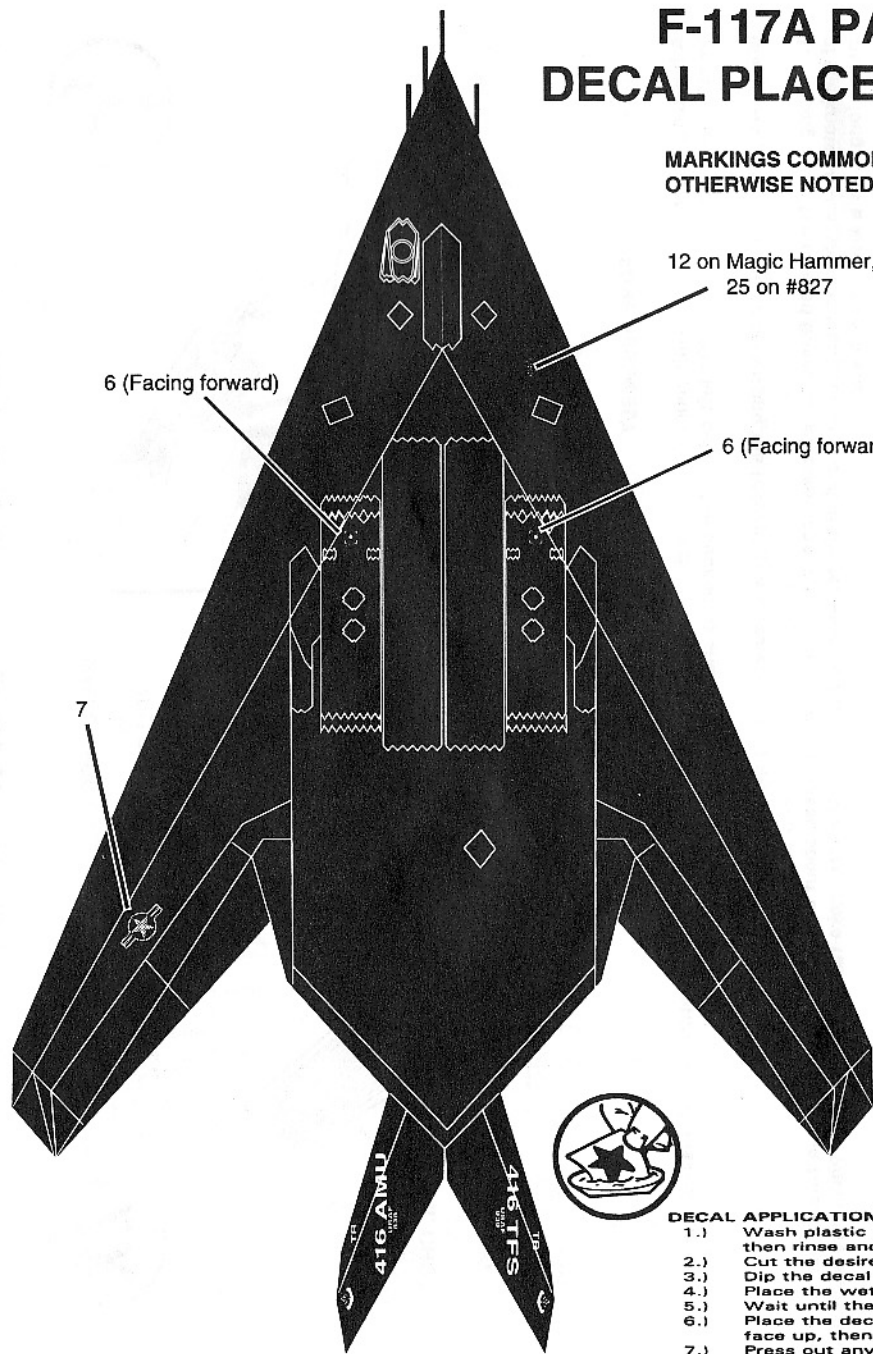
Three figures are included with your F-117A "Night Hawk" model, including a seated pilot, a standing pilot, and a mechanic. The following colors are typical for the uniforms worn by these personnel as well as for some of their equipment.

PILOT (Both seated and standing): Flight suits are a gray-green color as are gloves. Most photographs of F-117A pilots from Operation Desert Storm show dark gray helmets, but the color of the helmets can vary. The visor on the seated pilot's helmet is in the down position over his eyes, and it should be painted gloss black. His oxygen mask should be gray-green with a black hose. Boots are also black. The harness straps are usually a light silvery gray color, and the buckles are a dull silver. The helmet bag in the standing pilot's right hand would be olive drab. The cloth cap on the standing pilot would be blue.

MECHANIC: The uniform is olive drab, and the vest is high-visibility orange with gray straps. The headphones should be painted black or dark gray, but sometimes units paint the ear covers a different color so that their headphones can easily be recognized. As with the pilots, the boots are black. Tool boxes are usually black, dark gray, or olive drab, but these can be painted almost any color. The tool kit and belt on the mechanic's waist can be olive drab, tan, or gray.

F-117A PAINTING AND DECAL PLACEMENT DIAGRAMS

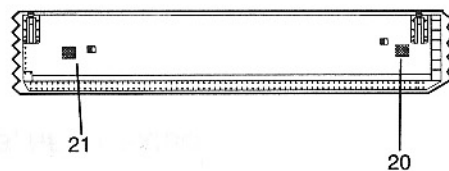
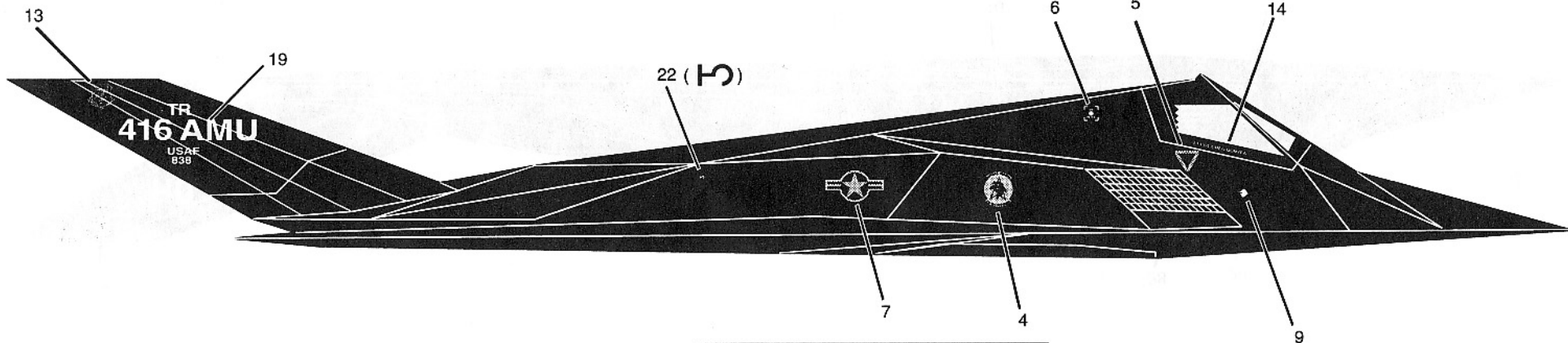
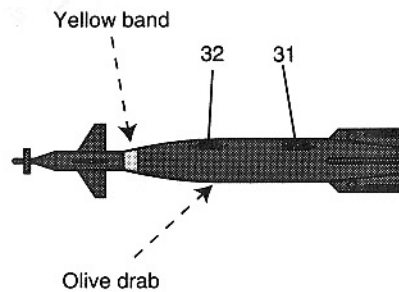
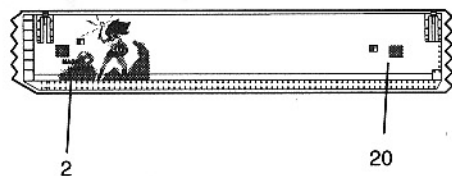
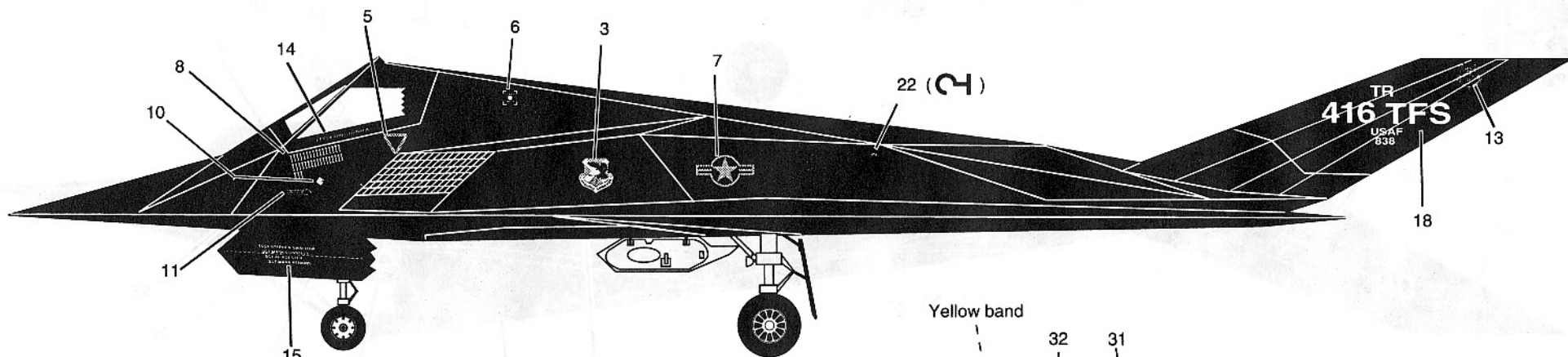
MARKINGS COMMON TO BOTH AIRCRAFT UNLESS
OTHERWISE NOTED

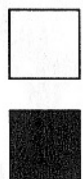
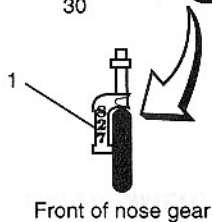
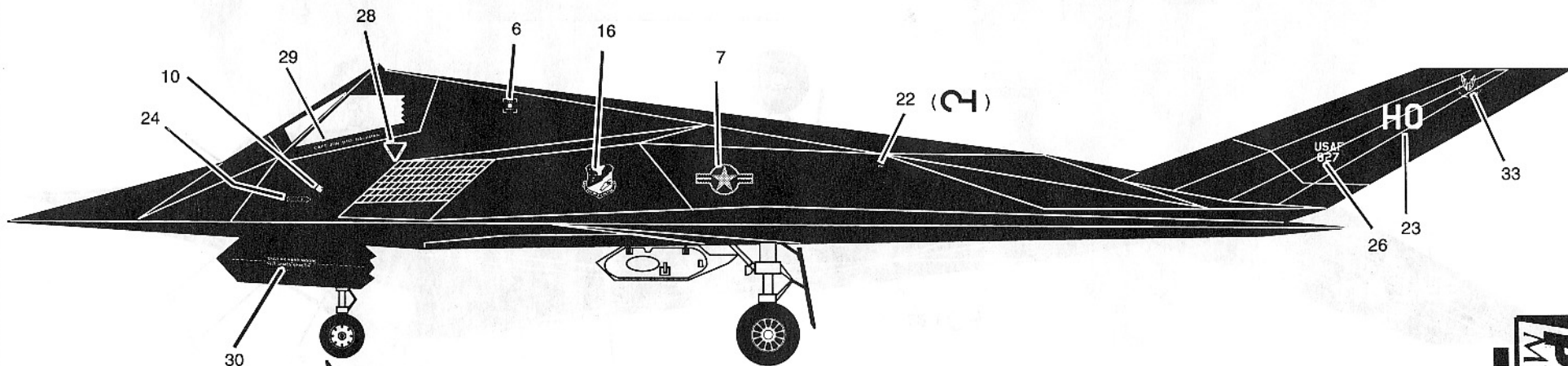
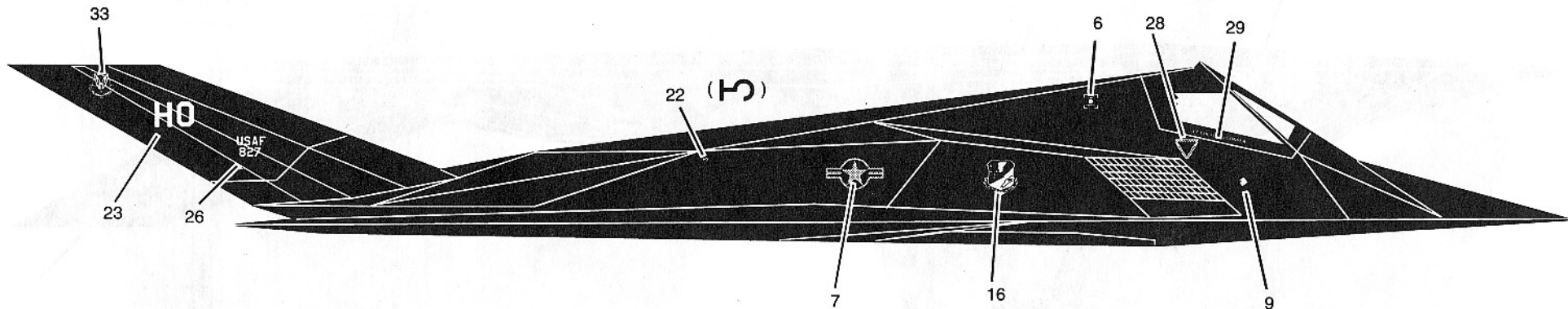


DECAL APPLICATION INSTRUCTIONS:

- 1.) Wash plastic parts in a mild detergent solution, then rinse and let dry.
- 2.) Cut the desired decal from the sheet.
- 3.) Dip the decal in water for a few seconds.
- 4.) Place the wet decal on a paper towel.
- 5.) Wait until the decal is movable on its paper backing.
- 6.) Place the decal in position on the model with its face up, then slide the backing away.
- 7.) Press out any air bubbles with a soft damp cloth. The milkiness that may appear is for better decal adhesion, but it will dry clear.
- 8.) Wipe away any excess adhesive.
- 9.) Do not touch the decal until it is completely dry.

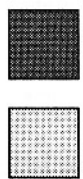
MAGIC HAMMER, F-117A Desert Storm, #838, 416 TFS, 37th TFW "Ghost Riders"





Glossy White

Flat Black



Olive Drab FS34079

Yellow FS13538

