

HISTORY

The *Northrop F-5A* was developed from the very successful T-38 Talon jet trainer. The U.S. Air Force funded the initial *F-5A* aircraft in an effort to make available to friendly foreign governments a lightweight multi-mission aircraft capable of speeds in the area of Mach 1.4.

The *F-5A* proved itself capable in flight tests over Edwards Air Force Base in 1959 and 1960. Soon after, orders for the airplane came from a long list of diverse nations including Canada, Ethiopia, Greece, Iran, South Korea, Libya, Morocco, Netherlands, Norway, Philippines, Spain, Taiwan, Thailand, Turkey, and South Vietnam.

By the late 1960's the *F-5A* was serving around the world in the dayfighter defense role. A basically simple aircraft, the *F-5A* proved to be the ideal machine to bring the supersonic military aircraft experience to less advanced nations. In this capacity it worked out well and remained, through the 1980's, the standard fighter of many countries as more advanced aircraft such as the F-5E and F-16 came into production.

SPECIFICATIONS

Engine	2 G.E. J85-GE-13 (4,080 lbs thrust each)
Weight	20,677 lbs (fully loaded)
Wingspan	25 ft 3 in
Length	47 ft 2 in
Height	13 ft 2 in
Max. Speed	925 mph
Max. Ceiling	50,500 ft

REFERENCES

F-5 in Action; (Squadron/Signal Publications)
Jane's Pocket Book of Major Combat Aircraft;
(Collier Books)
Northrop F-5/F-20, Modern Combat Aircraft 25;
Jerry Scutts; (Ian Allan LTD.)

BEFORE STARTING

1. Study the illustrations and sequence of assembly before beginning.
2. Decide how much detail you wish to add to your model and whether or not you intend to modify or "convert" the basic model in any way. Study carefully all available reference material before beginning to ensure an authentic model.
3. Due to the amount of parts in this kit, do not detach the parts from the runner of the parts tree until you need them. This helps avoid confusion and lost parts.
4. When cementing the parts together, check the way one part fits together with another. This assures a neat job with no surprises.
5. Always remember when working with plastic model cement and paint to keep your work area well ventilated. The fumes from plastic modeling products can be harmful if inhaled.

PREPARATION OF PARTS

1. Never tear parts off the runner (parts tree). Use a Testor Hobby Knife, fingernail clippers, or a small wire cutters to remove the parts from the tree.
2. It is possible some parts may require a little attention with a file or sandpaper to ensure a proper fit and neat appearance. Hobby files and Testor Hobby Sandpaper appropriate for model building are available in most good hobby shops.

PAINTING

You can obtain an excellent finish on your model using Testor products and paints. Detailed descriptions of paint types and color are included on the pages that follow.

Good brushes are essential for proper detailing. Testor brushes are recommended, included in this kit, and are available at good hobby stores. Be sure you have the entire selection for all your modeling needs. Always clean them in Testor thinner, wash in soap and water, and store with bristles upward when not in use.

Wash plastic parts before detaching them from the parts tree. Warm water and liquid dishwashing detergent will remove the oils left from the manufacturing process. Let the parts dry and avoid excessive handling. Immediately before painting, wipe the parts with a "tac rag" (available at auto parts stores) to remove dust and lint.

Most small parts are best painted while still attached to the parts tree. You can also detach them and hold with tweezers or "magic" tape while painting. Paint in one direction only. If your paint is the correct thickness brush strokes will disappear as the color dries. If the paint seems too thick, thin with Testor Paint Thinner. Wheels may be detached from the parts tree and fit onto toothpicks or matchsticks for painting. Just hold the paintbrush against the edge of the wheel and rotate the stick and wheel to obtain a neat finish.

Let the paint dry completely before handling. When the parts are dry, assemble the model, following the directions closely. Remember cement will not hold strongly to painted surfaces. Use your Testor Hobby Knife to carefully remove paint from all surfaces to be cemented. After you have assembled the model you can touchup areas where cement might have marred the finish.

Tweezers will be useful in assembling the many small parts in this kit. The type used by postage stamp collectors is recommended.

Liquid cement, Testor #3502, is recommended for construction since it can produce the neatest, quickest, and strongest glue joints. Apply small amounts of cement, using the tip of a Testor *Model Master* No. 2 brush, to the surfaces to be joined while holding the parts in place. **Do not** use large amounts of cement.

The Testor *Model Master* paint system is specially designed to be used on military models. The **Preliminary Painting** instructions on this sheet indicate which *Model Master* colors to use as indicated by name and Federal Standard (FS) number. These colors are called out by **bold italic type**. Wherever *Model Master* colors are not applicable the required Testor color will be called out by number and name in **regular bold type**.

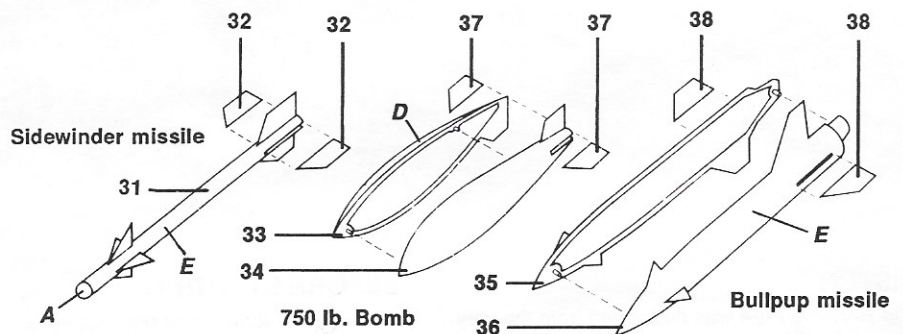
1 ARMAMENT

Preliminary Painting

Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on pg. 3.

Assembly

1. Cement fins **32** to Sidewinder missile body **31**.
2. Cement bomb halves **33** and **34** together, then glue bomb fins **37** into place as shown.
3. Glue Bullpup missile halves **35** and **36** together, then cement fins **38** to missile.



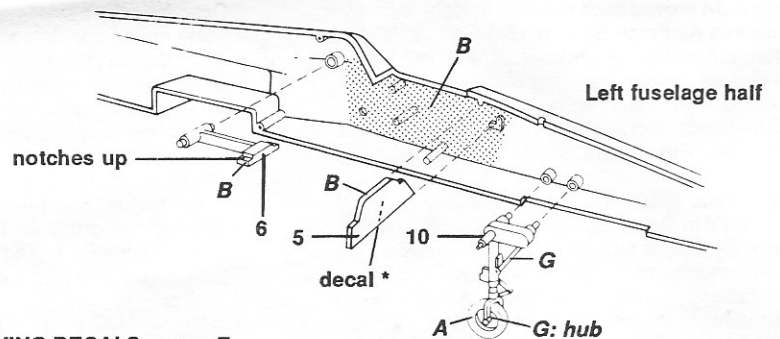
2 COCKPIT

Preliminary Painting

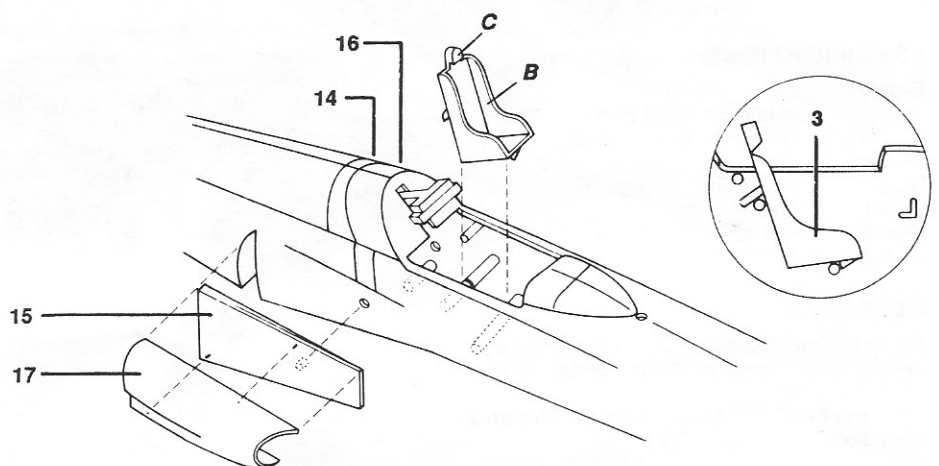
Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on pg. 3.

Assembly

1. Apply **instrument decal** to instrument panel **5**, then cement panel to left fuselage half.
2. Glue nose gear strut **10** into place as shown.
3. Place, *do not cement*, canopy hinge **6** into boss in left fuselage half just as shown. Note that the notches face *upwards*.
4. Cement fuselage halves together making sure that instrument panel, hinge and gear strut all fit into place in right fuselage half. Glue seat **3** into place in cockpit as shown.
5. Cement inner duct walls **14** (left) and **15** (right) to locating holes on each side of fuselage as shown. Cement outer duct walls **16** (left) and **17** (right) to sides of fuselage over inner walls as shown.



* see APPLYING DECALS on pg. 7



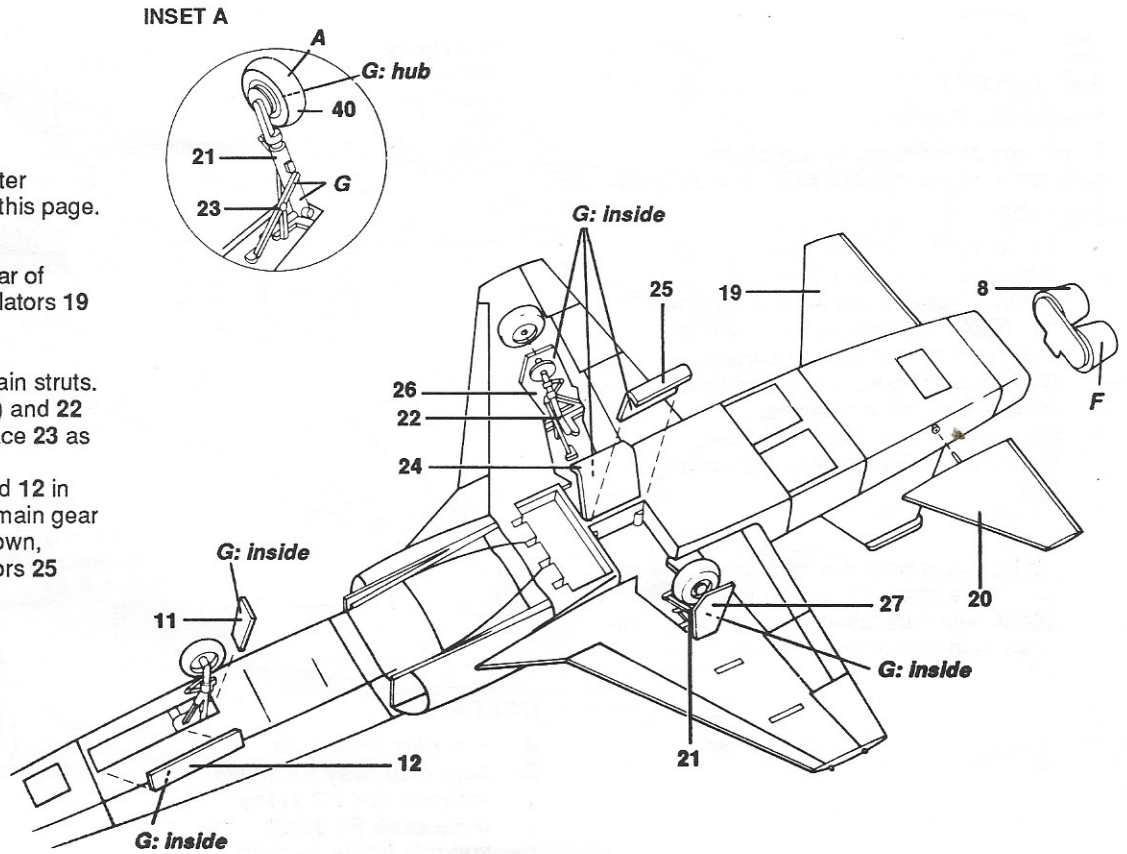
3 LANDING GEAR

Preliminary Painting

Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on this page.

Assembly

1. Cement exhaust nozzle 8 to rear of fuselage as shown. Glue stabilators 19 (left) and 20 (right) to fuselage.
2. Cement wing to fuselage.
3. **Inset A:** Cement tires 40 to main struts. Glue main gear struts 21 (right) and 22 (left), followed by retraction brace 23 as shown.
4. Cement front gear doors 11 and 12 in place as in drawing. Glue left main gear doors 24 and 26 to wing as shown, followed by right main gear doors 25 and 27.



COLOR KEY

- A Flat Black FS37038
- B Dark Gull Gray FS 36231
- C Insignia Red FS 31136
- D Olive Drab FS 34087
- E Insignia White Fs 17875
- F Steel
- G Aluminum
- H Tan
- J Gloss Red
- K Gloss Green

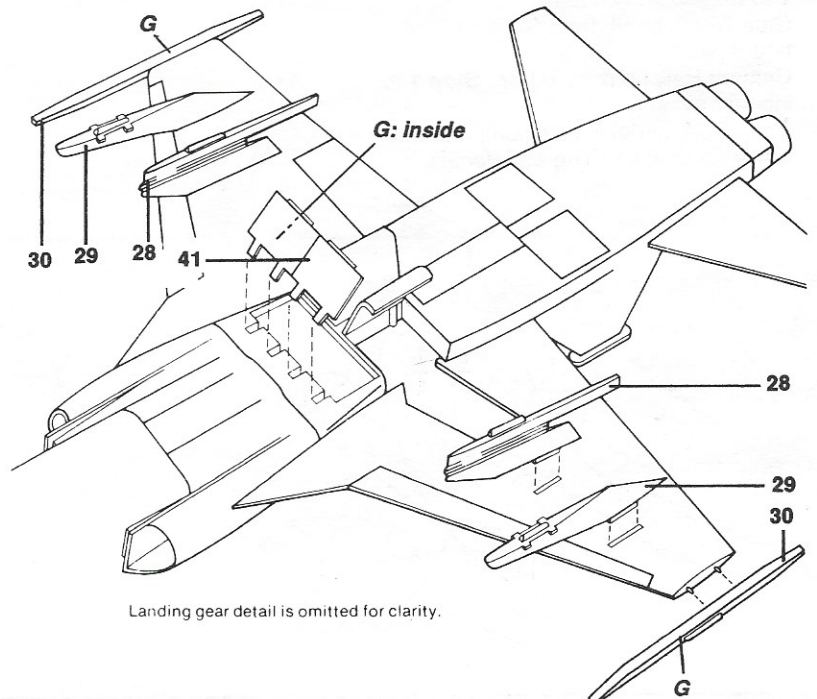
4 UNDERWING DETAILS

Preliminary Painting

Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on this page.

Assembly

1. Cement wingtip launcher rails 30 into place on each wing.
2. Glue underwing load pylons 28 (inner) and 29 (outer) to wing as shown.
3. Cement speed brake 41 to fuselage.



Landing gear detail is omitted for clarity.

5 CANOPY

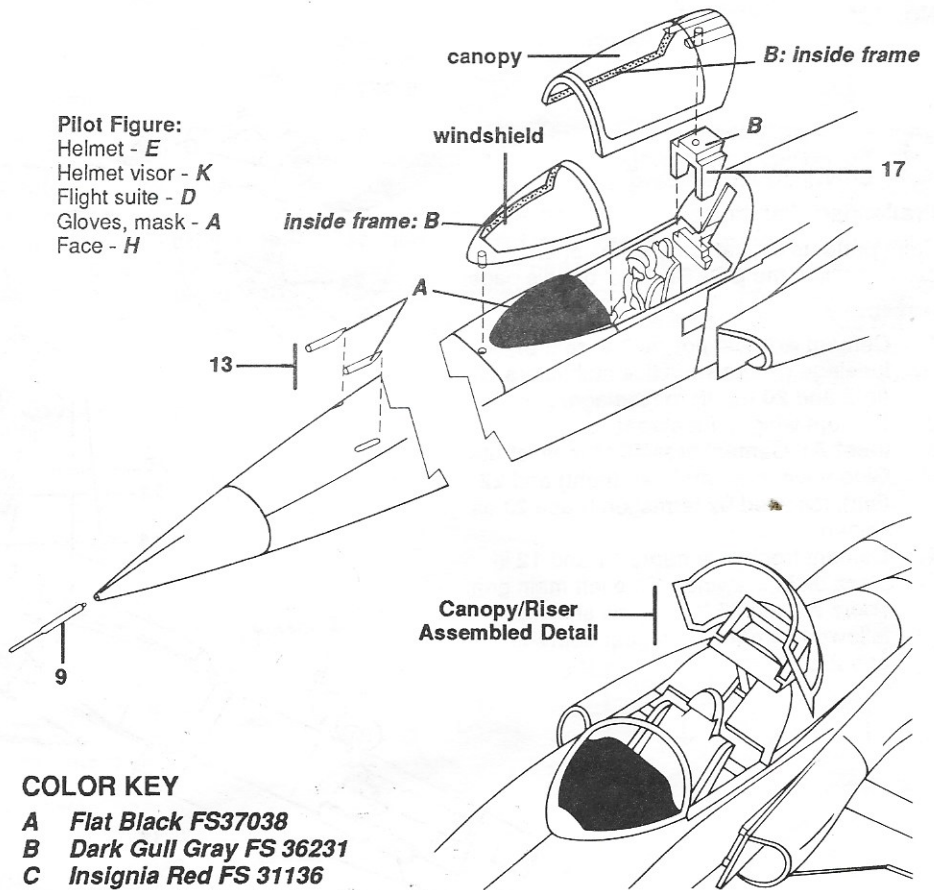
Preliminary Painting

Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on this page.

Assembly

1. Cement pitot tube **9** to tip of fuselage, then glue gun barrels **13** to fuselage as shown. **Note:** If you are building the first *F-5A* as shown on the front of the box, *do not* install the gun barrels.
2. Cement pilot figure to seat (**optional**).
3. Glue windshield to fuselage.
4. Glue canopy riser block **17** to canopy, then cement riser block to canopy hinge arm.

Note: Clear parts are best glued in place with white glue. White glue will not mar the plastic and thus results in a better appearance than conventional model cement.



Pilot Figure:
 Helmet - *E*
 Helmet visor - *K*
 Flight suite - *D*
 Gloves, mask - *A*
 Face - *H*

COLOR KEY

- A* Flat Black FS37038
- B* Dark Gull Gray FS 36231
- C* Insignia Red FS 31136
- D* Olive Drab FS 34087
- E* Insignia White Fs 17875
- F* Steel
- G* Aluminum
- H* Tan
- J* Gloss Red
- K* Gloss Green

6 FINAL ASSEMBLY

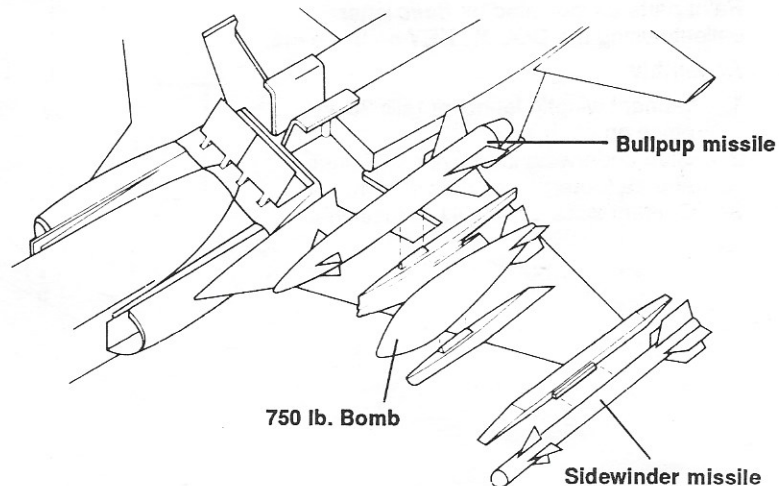
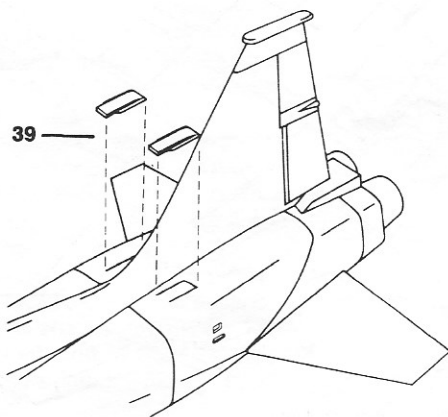
Preliminary Painting

Paint parts as indicated by *italic* letter callouts using the **COLOR KEY** on this page.

Assembly

1. Cement oil cooler air inlets **39** to top of fuselage. **Note:** If building the first *F-5A*, *do not* install air inlets.
2. Cement Sidewinder missiles from **Step 1** to wingtip launch rails.
3. Glue 750 lb bomb from **Step 1** to out-board pylon.
4. Cement Bullpup missile from **Step 1** to inboard pylon.
5. Your *F-5A* model is now complete and ready for final finishing and decals.

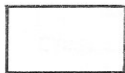
Note: It may be easier to paint and decal your model if underwing stores and/or armament are left off until model is completely finished.



Northrop F-5A Freedom Fighter

First Prototype F-5A
Edwards AFB, CA 1959

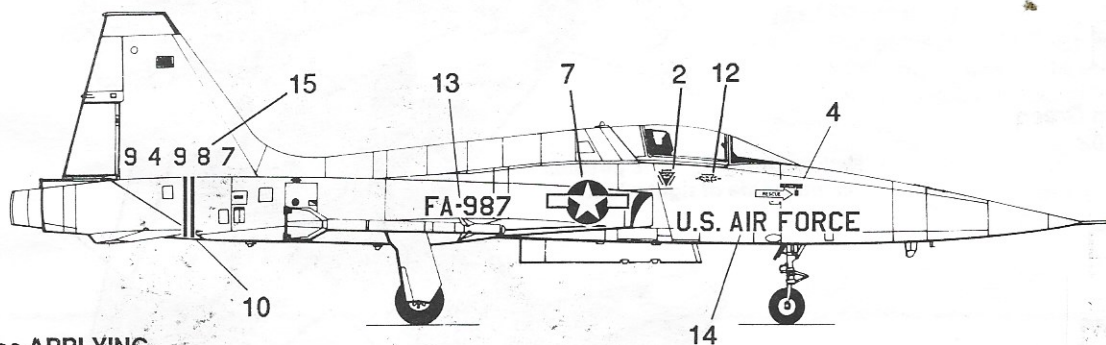
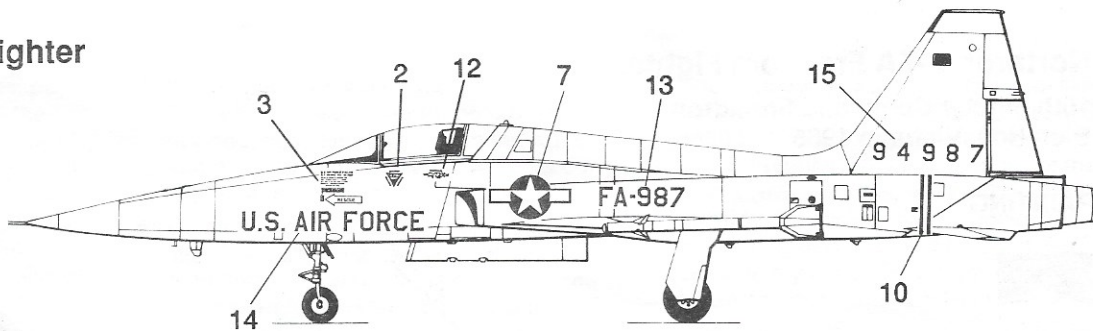
PAINTING



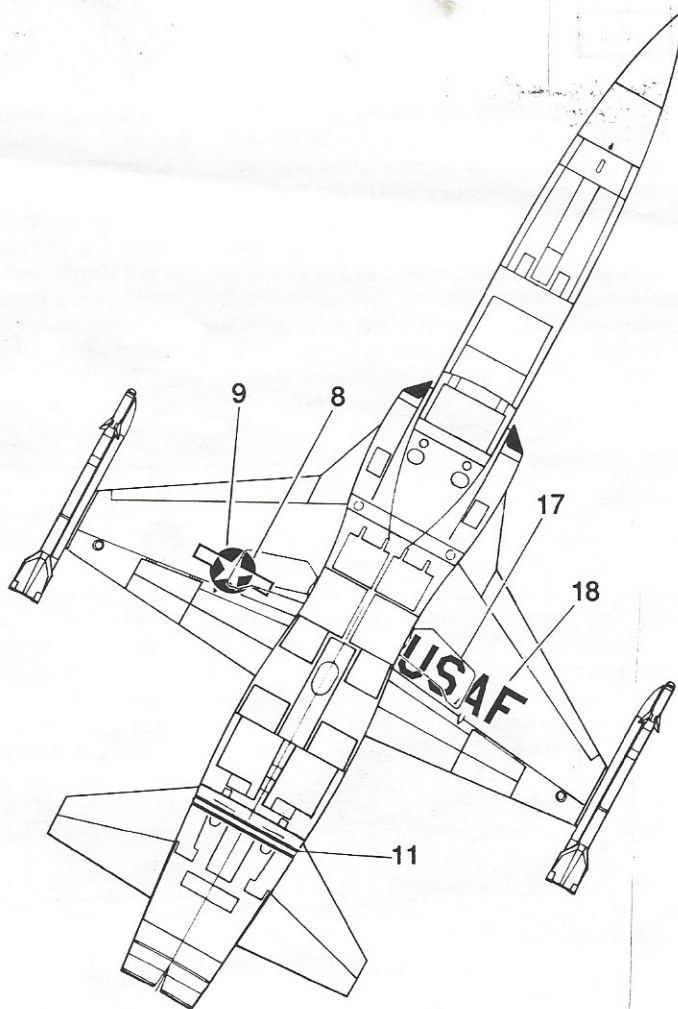
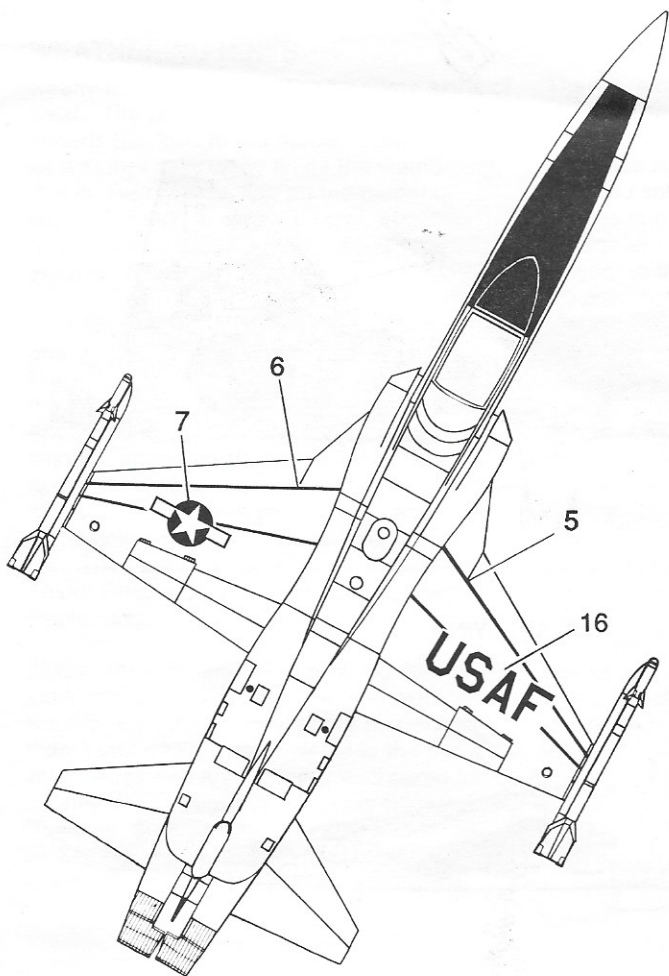
Silver



Flat Black
FS 37038



Numbers indicate decals. See **APPLYING DECALS** on pg. 7.



Northrop F-5A Freedom Fighter

10th Fighter Command Squadron

Bien Hoa, Vietnam 1965

PAINTING



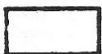
Dark Green
FS 34079



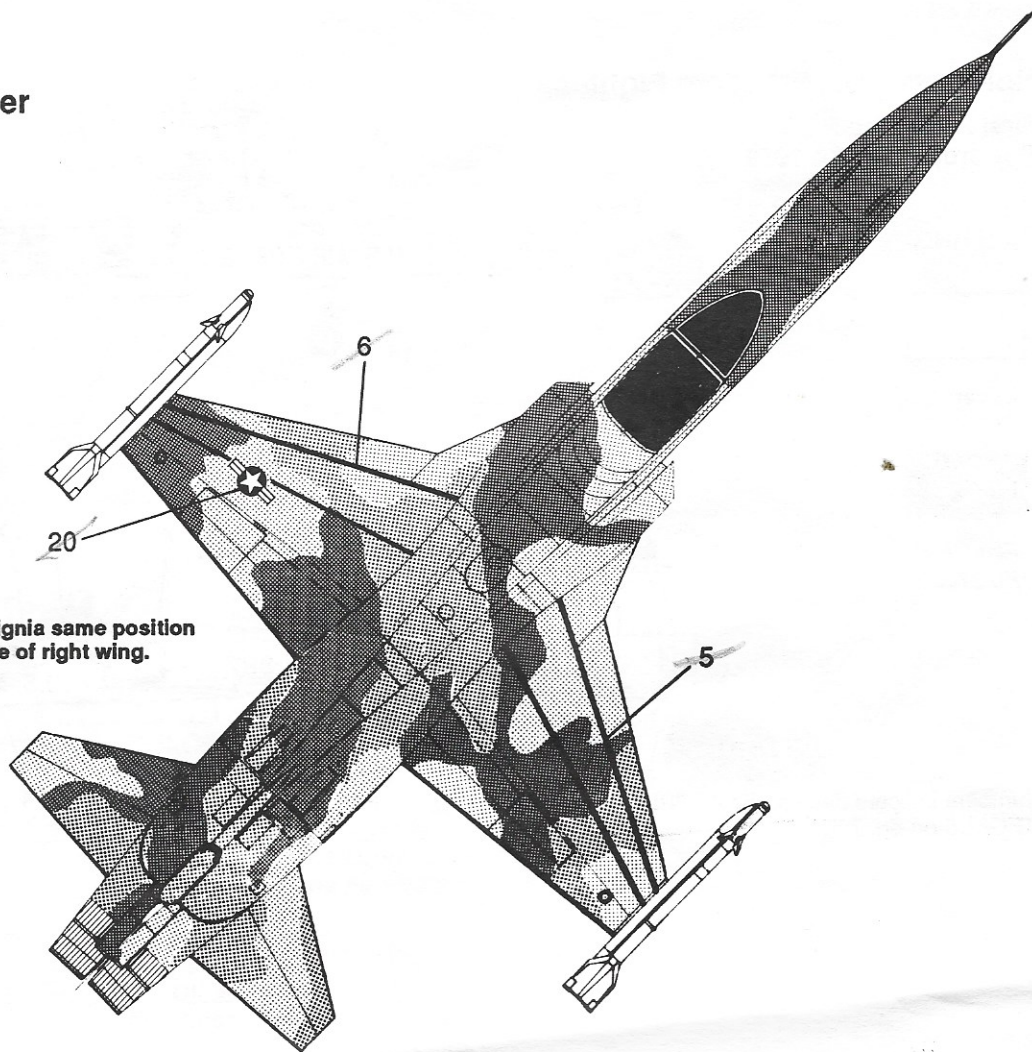
Medium Green
FS 34102



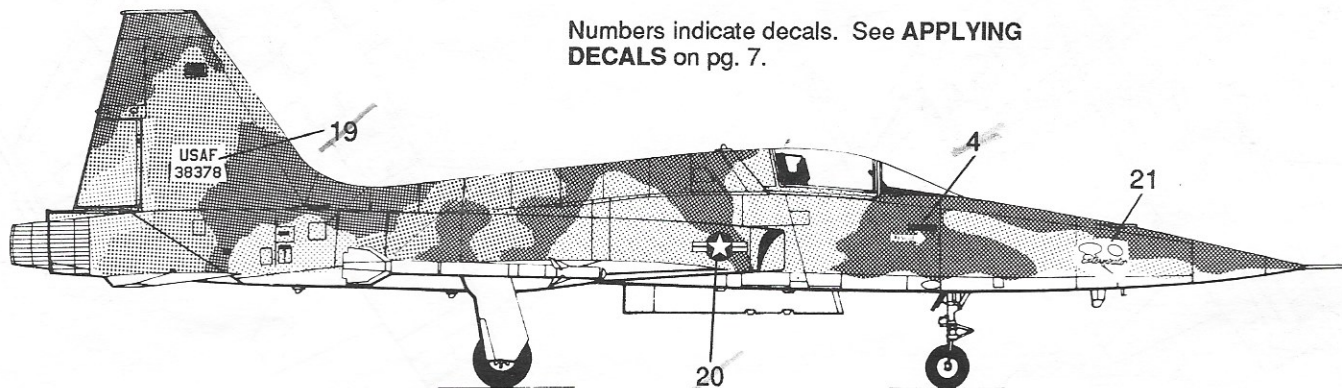
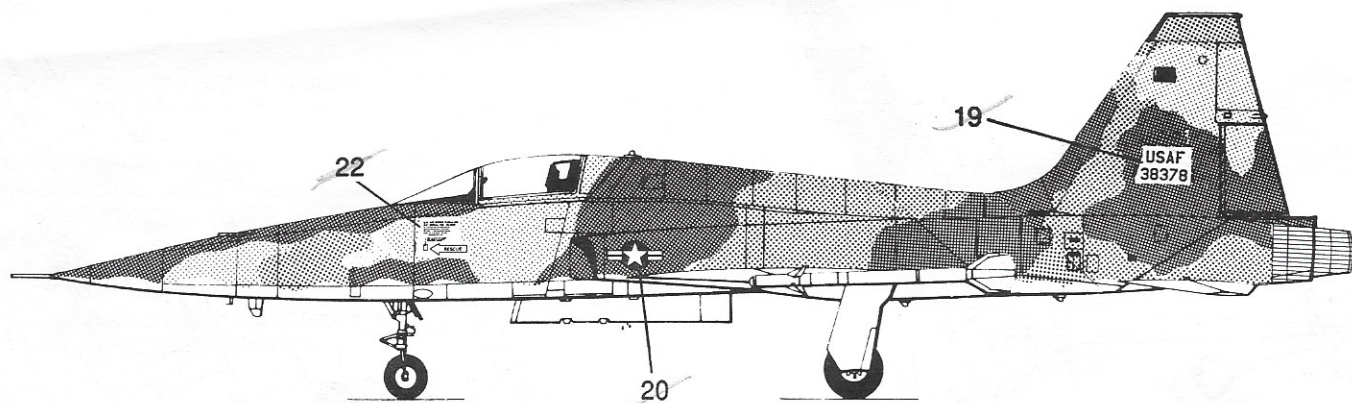
Dark Tan
FS 30219



Camouflage Gray
FS 36622



National insignia same position on underside of right wing.



Numbers indicate decals. See **APPLYING DECALS** on pg. 7.

APPLYING DECALS

1. After carefully masking clear areas, paint the model in the scheme and with the paints called out in the *Instruction Steps*. When that is dry spray the entire model with Testor *Model Master Gloss Clear Lacquer No. 1961*. Decals adhere best to a smooth surface and the shinier the finish the smoother it is. Allow the *Gloss Clear Lacquer* to dry thoroughly before going further.
2. Select the decals you plan to use and cut them from the decal sheet with scissors or a Testor Hobby Knife.
3. Working with only one decal at a time, dip the decal in clear water for no more than five seconds. Remove it from the water and place on a dry paper towel for about one minute.
4. When the decal slides easily on the backing paper, slide it to the edge of, and onto, the surface of the model with a soft Testor *Model Master* paint brush or tweezers. Remember: the decals are very thin and can be easily ripped if care is not taken. Work slowly and carefully.
5. Once the decal is in the desired position apply a small amount of Testor *Decal Set #8804*. This will help the decal conform to any irregularities in the surface of the model (rivets, curves, etc.). Allow the decal to dry undisturbed. Should you desire to purposely move it before it has dried, apply a little *Decal Set* to a soft brush and push the decal slowly into the desired position.
6. When the decals are completely dry (usually overnight), apply a coat of Testor *Model Master Flat Clear Lacquer No. 1960*, to the entire model. This will give it an authentic, dull finish and protect the surface of the model. Now you can carefully remove the masking from the clear parts.

WEATHERING HINTS

Nearly all military aircraft show some signs of wear. The process by which the modeler imparts this look to the model is referred to as **weathering**. Many times the weathering, that is, the representing on the model of soot, oil stains, or chipped paint, etc., can really make a model stand out and give it amazing authenticity.

After you have painted your model the proper colors, you can add the decals. If you first paint your model with Testor Glosscote, the decal carrier film will seem to disappear. Apply one or two coats of Glosscote for a smooth, glossy finish. Then, after this dries, apply the decals. This gives them a "painted on" look. If you want your model to have a matte finish, wait 24 hours for the decals to dry. Then spray on one or two coats of Testor Dullcote. When dry, you can begin weathering.

Always try to be logical in applying weathering techniques. For instance, you wouldn't want to put exhaust stains on a model and then apply a bright clean decal to the sooty area. Airplanes are normally well cared for, so they don't usually appear very battered. However, soot stains do tend to collect behind exhaust stacks and sometimes oil leaks onto the outside of the plane.

There are two methods of showing exhaust stains. The first is with an airbrush. This is a rather expensive item and requires practice to get the right effect. The second method is by using soft artist pastels or charcoal in shades of gray or black. Begin by grinding this material into a fine powder. Apply the powder to the model by rubbing it on with an old paint brush. Apply the color thicker and blacker near the exhaust outlet, and feather it out as it gets further away from the outlet. You should practice this on an old model or on a scrap of paper before trying it on your model. This technique is not very permanent, so it is a good idea to give your model a coat or two of Testor Dullcote to avoid rubbing off the stains.

Oil stains should be done very subtly. Oil really has very little color, so it only leaves light stains. Tint a small amount of thinner lightly with black paint. Add a small drop to the area you want to appear oily. Now with a strong breath, blow the "oil" back along the plane. Keep in mind the direction in which the planes flies, making sure you are blowing the "oil" from front to back. It is very easy to overdo this - one or two places are enough.

Paint chips are the simplest technique, but like the others, are easily overdone. An average military plane wouldn't have very many chips. They usually appear on the cutting edges of the propeller blades, the leading edges of wings and flying surfaces, and any areas where crew members or mechanics walk across the plane (i.e. wing roots). Use *No. 1731 Aluminum* for paint chips, applying with a fine pointed brush. With a very small amount of paint on the brush, apply the chips in small dots, the smaller the better. Large chips will look too obtrusive. Be wary of fabric covered control surfaces though; they don't chip.

Serious modelers collect books and photographs to use as reference when they finish their models. Your local hobby shop can help. Last, but certainly not least, your own observation will prove helpful. Visit museums and local airports, look at buildings and vehicles around you. Notice how rust streaks a metal roof. See the oil and dirt on a piece of road grading equipment. Study railroad boxcars and locomotives to see what the weather has done to them. Your own observation can be the best aid of all.

Remember: try not to overdo weathering - and *keep practicing*. Be patient, it takes time to discover and master all the tricks of this fascinating hobby.

TURN PLASTIC INTO STEEL...

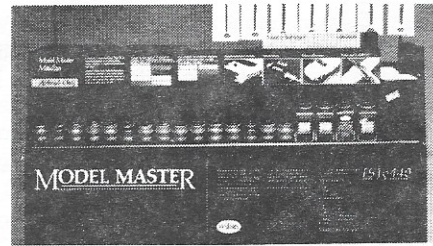
...or magnesium or titanium or even burnt iron. New Model Master Metalizer™ paints allow you to authentically duplicate almost any natural metal "plate" finish.



Premixed for airbrushing in 1/2 oz. bottles, Metalizer™ includes a wide range of buffing and non-buffing metallic colors. Spray Metalizer™ with your airbrush (internal or external mix) on clean, unpainted plastic model parts, let dry for about ten minutes, and then buff to the desired sheen with facial tissue or a soft cloth.

Subtle variances in color – that truly distinguish your model – are obtained by refining your buffing technique. Buff vigorously for one kind of effect, softly and easily for another. If you're painting an aircraft wing, for example, reflectance and tone can be precisely defined from

panel to panel. An automobile engine, with all of its metal parts, also is a perfect application for Metalizer™. Add decals to a surface painted with Metalizer™ in the usual way.



Look for the Metalizer™ merchandiser and informative instruction booklets on top of the Testor Model Master paint racks in your favorite hobby store.

The Testor Corporation
620 Buckbee Street
Rockford, Illinois 61104



Model by: Mike Fritz

*Manufactured under license from Metalizer Products