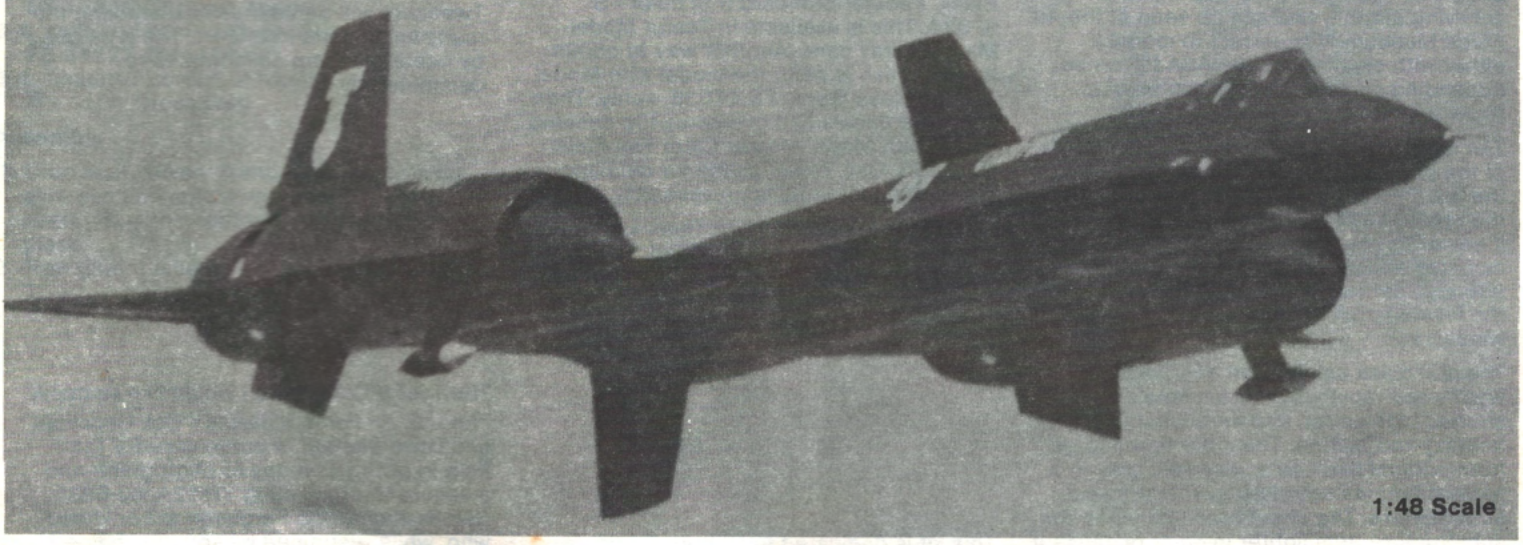
Lockheed

YF-12A Interceptor

No. 588

TESTORS



1:48 Scale

HISTORY

The Lockheed YF-12A was a direct descendent of the Central Intelligence Agency-Funded A-12 reconnaissance aircraft program. Not only was the design a sibling of the A-12 but it was manufactured at the same time as the original aircraft in a walled-off corner of the famous "Skunk Works" manufacturing facility in Burbank, California.

Flying for the first time on 7 August 1963 from the super secret CIA flight test and training facility at Groom Lake, Nevada – a complex deep within the U.S. Nuclear Test Range north of Las Vegas – the YF-12A began a program of flight testing which continued until 7 November 1979. In that time span the YF-12A went on to establish numerous speed and altitude records including absolute sustained altitude of 80,258 feet and 15/25 km closed circuit speed of 2,070.1 mph.

The interceptor mission of the YF-12A was for an aircraft able to reach and destroy potential attackers at considerable distance from U.S. shores. The high speed and range of the YF-12A coupled with Hughes AN/ASG-18 radar and AIM-47A nuclear tipped missiles made mission success possible. Changes in Air Force needs in following years brought an end to the long range interceptor requirement. The YF-12A was then used by NASA at the Dryden Test Center at Edwards AFB. The YF-12A's high sustainable airspeed allowed the aircraft to extensively probe speed, altitude and temperature regimes once limited to only a few seconds in other test aircraft.

The sole remaining YF-12A – only 3 were built – is on display at the Air Force Museum at Wright-Patterson AFB near Dayton, Ohio. The aircraft arrived there on 7 November 1979 ending the magnificent career of a fantastically advanced trio of aircraft.

SPECIFICATIONS

Power	2 Pratt & Whitney J58 (JT11D-20B)
Weight	140,000 pounds
Span	55′ 7″
Length	101′ 8″
Height	18′ 6″
Max. Speed	Mach 3.35
Altitude	92,500′
Crew	2

Reference Sources

AeroFax Minigraph 1 Lockheed SR-71, (A-12/YF-12A/D-21); Miller (AeroFax Inc.)
Mach 3+; Goodall (AeroFax Inc.)
Lockheed Horizons – Winter 1981/82; Johnson/Brown (Lockheed Aircraft Corporation)

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. Always remember, when working with plastic model cement and paint, make sure your work is well-ventilated. The fumes from plastic modeling products can be harmful if inhaled.

PREPARATION OF PARTS

1. Never tear parts off the runners (sprue). Use a Testor Hobby Knife, nail clippers, or small wire cutters.
2. If you desire, you may fill any seams (where parts go together) or imperfections with Testor Contour Putty for Plastic Models which is also available at good hobby shops.

PAINTING

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

Good brushes are essential for proper detailing. ***Testor Model Master*** brushes are recommended and available at good hobby stores. Be sure you have the entire selection for all your modeling needs. Always keep your brushes clean and soft by cleaning in Testor thinner, washing in soap and water, and storing flat or with bristles up when not in use.

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

Most small parts are best painted while still attached to the sprue or they may be detached and held with tweezers or "magic" type transparent tape. Paint in one direction only. If your paint is the correct consistency, brush strokes will disappear as the color dries. If the paint seems too thick, thin it with Testor Paint Thinner. Wheels may be detached from the sprue and fit onto toothpicks or matchsticks for painting. Then just hold the paintbrush against the edge of the wheel and rotate the wheel to obtain a neat clean finish.

Let the paint dry completely before handling. When the parts are dry, assemble the model, following the directions closely. Remember cement will not stick to painted surfaces. Using your Testor Hobby Knife, carefully remove paint from all surfaces to be cemented. After you have assembled your model you may touch up areas where cement has marred the finish.

Some Helpful Words

This plastic model of the YF-12A can produce 3 distinctly different appearing versions of the YF-12A. On page 9 the aircraft shown is the early version in mostly natural titanium metal finish with black edge trim. This is the craft as first flown at Groom Lake, Nevada. All 3 YF-12A's carried this scheme. Of the paint schemes used on YF-12's this is considered the best looking.

Page 10 shows the airplane in its more typical all-flat black scheme. Aircraft 60-6935 was the 2nd YF-12A, is the sole surviving aircraft, and can be seen at the Air Force Museum. It is correct to model it either with or without the NASA tail stripe depending on when in time you elect to show the model.

The white cross-like marking on the bottom of the plane, see page 11, was painted on the 3rd YF-12A, 60-6936. This aircraft was the record setter and the white cross made it easier to see and track with ground-based cameras and speed checking optical gear. 936 also carries the 3 YF-12 silhouettes on the fuselage left side forward of the windscreen.

The dull black paint of the YF-12A is weathered rapidly by the airplane's sustained high speed and aerodynamic heating and buffing. The color tends to go from original black to a very dark gray in a pattern that is controlled by the airframe's substructure. The sheet metal between the substructure gets lighter in color because it gets hotter than the metal attached to the frame. The engraved lines on the model match the substructure, and more substructure is revealed after a "hot flight" with its skin toning. This look can be duplicated by a patient modeller. Be sure to gather research material on the plane. Testor produces all the finishing materials you will want to do the job.

Titanium metal, in its natural state, has a slight orange hue. The original YF-12A markings, shown on page 9, carries an explanation paragraph on the proper mix to obtain a near-natural looking titanium tone.

The Decal Use Chart will help you place the proper markings on the aircraft of your choice. Work slowly and carefully.

We recommend the use of Testor paints for finishing. Aside from the earliest days of flight test, the YF-12A is finished in Flat Black, Federal Standard (FS) color FS 37038. This is available in Testor Model Master spray cans. Another way to obtain the flat finish is paint the model with Model Master Gloss Black, FS 17038, spray. Then apply the decals and overspray the decaled model with Model Master Clear Flat Finish, No. 1960. Use Testor paints for detailing. Follow the instructions on assembly.

You will find Historical and Technical notes on various steps as you proceed. These are for the purpose of informing you about significant aspects of the advanced technology incorporated in the YF-12A.

This kit is dedicated to U.S. Air Force Col. Robert L. (Fox) Stephens. Col. Stephens was the pilot of the 3rd YF-12A, 60-6936, when it took two absolute speed records away from the Russians. "Fox" Stephens was also the first U.S. Air Force pilot to fly any of the A-12/YF-12A/SR-71 "Blackbird" aircraft. Col. Stephens, at age 61, died of a heart attack on 21 May 1984 – 18 years after his record achievements.

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*** #2 brush, to the surfaces to be joined while holding the parts in place. Do not use large amounts of cement.

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

The Testor Corporation would like to thank:
The U.S. Air Force Museum – Col. Uppstrom and Dave Menard in particular – for their help in giving us a day to photograph and measure the remaining YF-12A, 60-6935; Ben Rich and Bob Ferguson at Lockheed who, while restrained by security, helped where they could; Jay Miller of AeroFax publications for support and a special frame of mind only Blackbird researchers can understand; and to Jim Goodall, whose book, Mach 3+, should prove to be the most comprehensive – and enlightening – work on the triple-sonic Blackbirds. And thanks to you, the users of Testor products . . . without you there wouldn't be an "us."

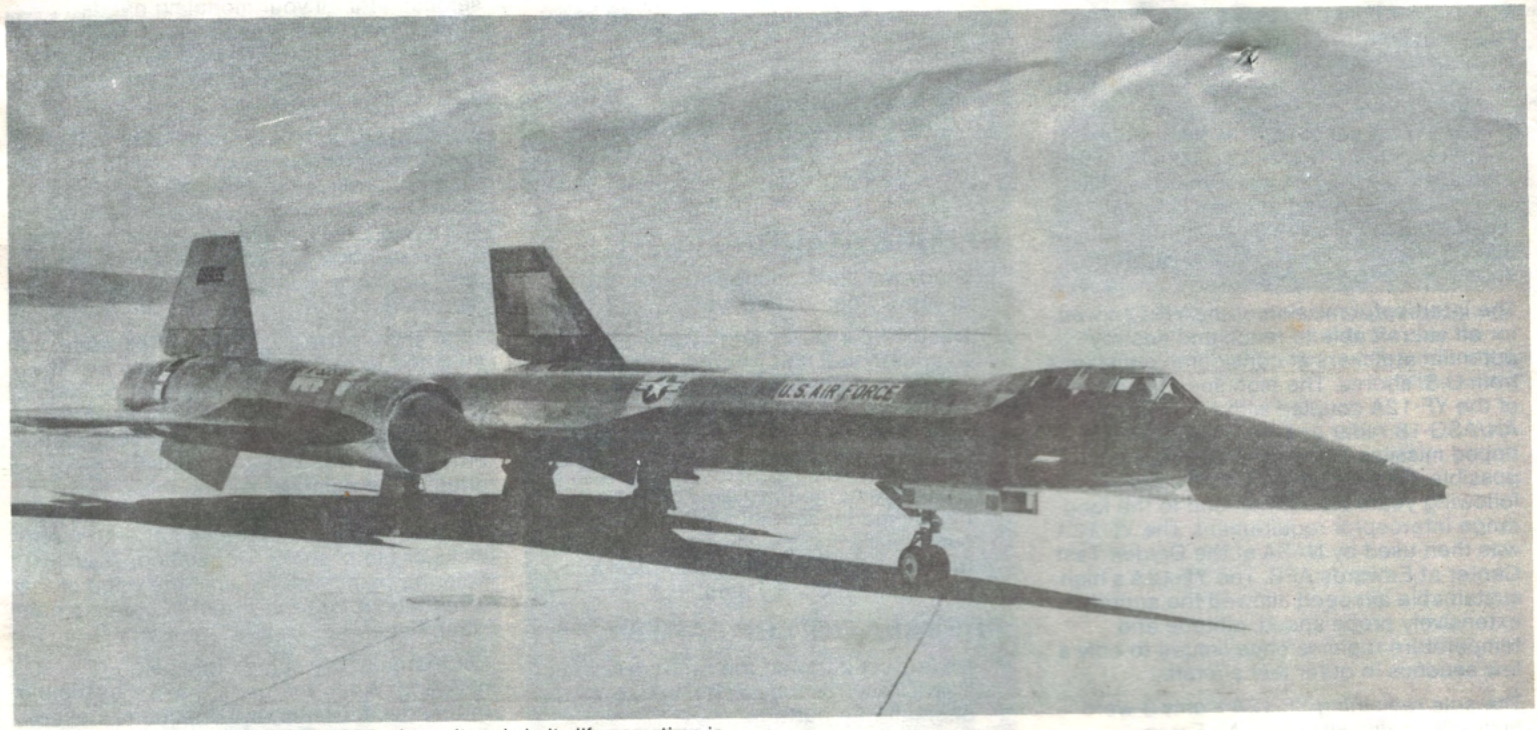


Photo of 2nd YF-12A, 60-6935, shows it early in its life sometime in 1963-64 time period. Photo shows the craft in natural titanium and flat black finish on composite skinned surfaces. Airplane is at the super-secret Central Intelligence Agency Test Facility at Groom Lake, Nevada, located inside the national nuclear test ground. This facility still exists and is used for stealth aircraft testing and the test and evaluation of acquired foreign aircraft and equipment.

1 Parts 1,2,3,4,5

Preliminary Painting

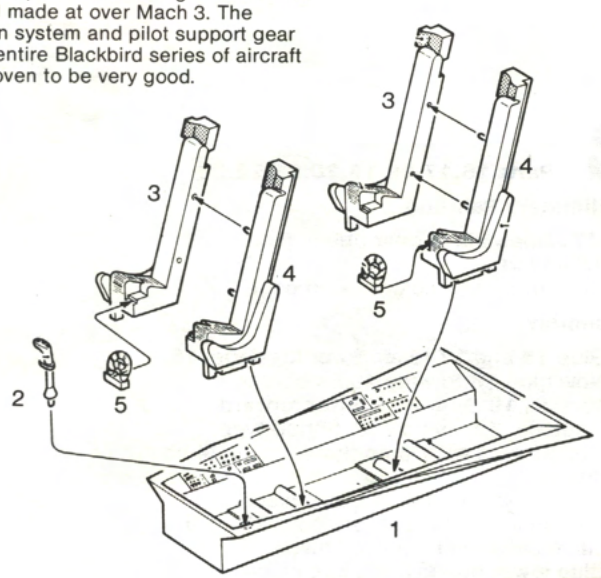
1, sides and back of **3** and **4:**
FS 36231 Dark Gull Gray
2, 5:
FS 37038 Flat Black
5, stripes:
FS 13538 Chrome Yellow
3,4, seat and back cushions:
FS 34227 Pale Green
3,4, headrest portion at top:
No. 1104 **Gloss Red**

Assembly

1. Glue seat halves, **3** and **4**, together. Now glue ejection actuating rings, **5**, to the seats. Glue the control stick, **2**, into place.
2. Now glue the seats into the cockpit box, **1**.

HISTORICAL NOTE

Many emergency ejections have been made at speeds exceeding Mach 2 and several made at over Mach 3. The ejection system and pilot support gear of the entire Blackbird series of aircraft has proven to be very good.



TECHNICAL NOTE

Even though the cockpit is air-conditioned, cockpit heat is still high enough at normal cruise airspeeds to heat surfaces - sidewalls, switches, etc. - to temperatures hot enough to burn an ungloved hand.

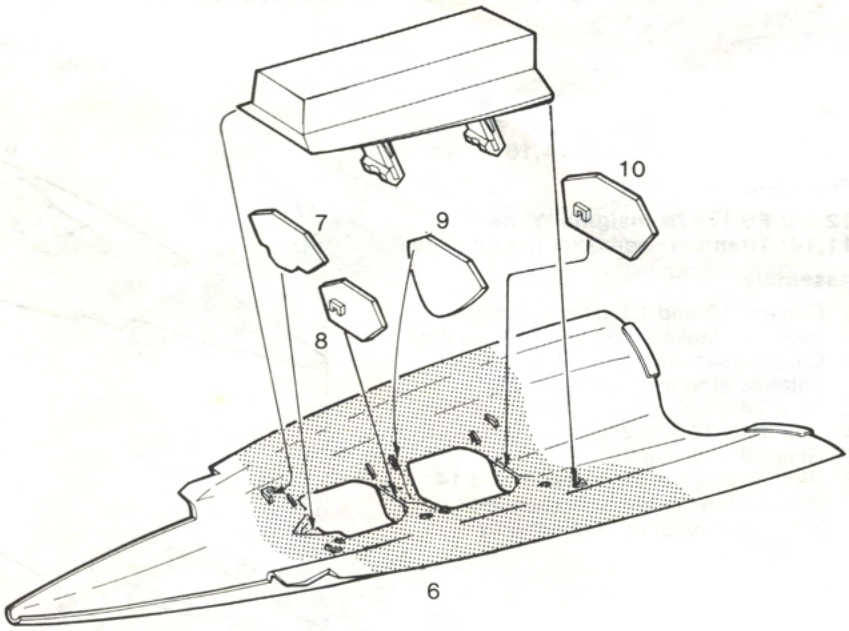
2 Parts 6,7,8,9,10

Preliminary Painting

7,8,9,10, marked area of **6:**
FS 36231 Dark Gull Gray

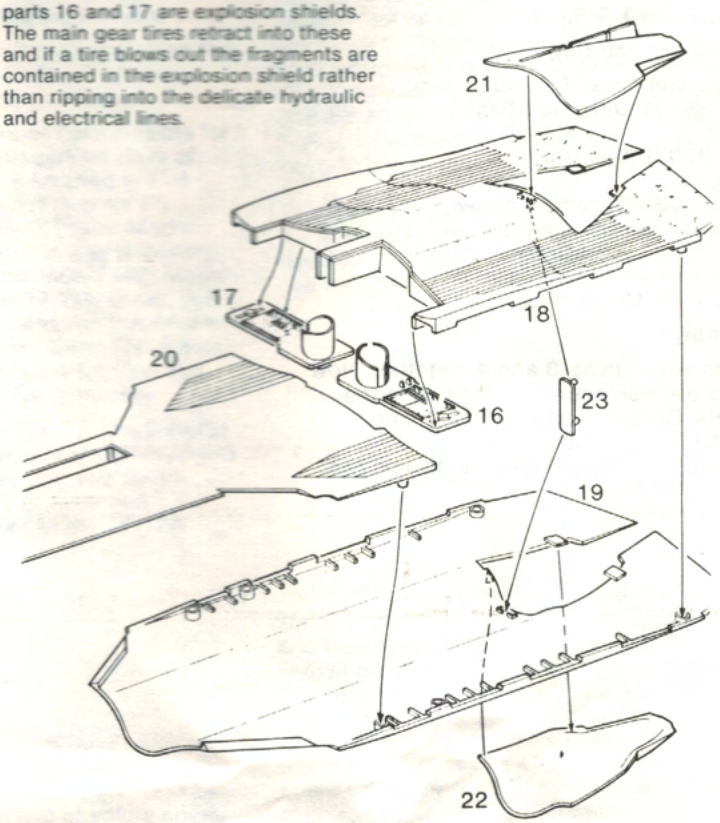
Assembly

1. Glue **8** and **9** to **6.**
2. Glue **7** and **10** to **6.**
3. Glue cockpit box to **6** as shown.
4. Set aside to dry.



TECHNICAL NOTE

The vertical barrel-like structures on parts 16 and 17 are explosion shields. The main gear tires retract into these and if a tire blows out the fragments are contained in the explosion shield rather than ripping into the delicate hydraulic and electrical lines.



3 Parts 16,17,18,19,20,21,22,23

Preliminary Painting

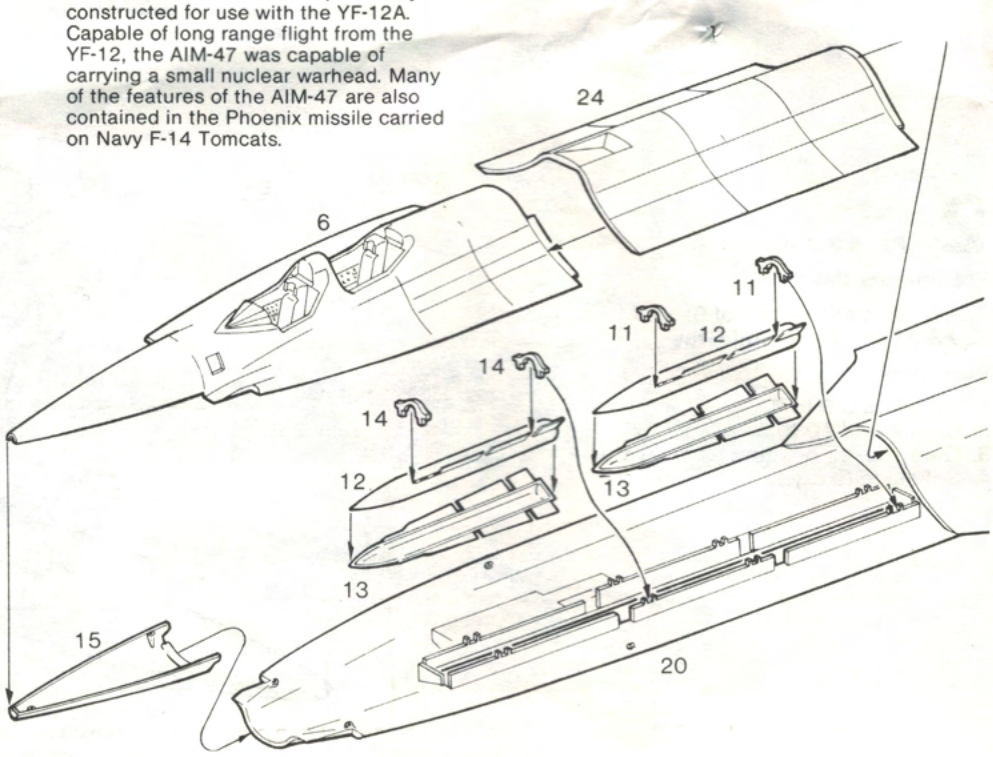
16,17, sidewalls of gear opening on parts **18** and **20:**
Titanium - see color mix on page 9.

Assembly

1. Glue **16** and **17** to aft lower fuselage, **18**.
2. Now glue **18** to wing upper center section, **19**. Now glue lower forward fuselage, **20**, into place. Spring type clothes pins will clamp the edges until dry.
3. Glue upper boattail, **22**, into place.
4. Glue fuselage internal support, **23**, into place between fuselage halves.
5. Glue lower boattail, **21**, into place.

HISTORICAL NOTE

The AIM-47 missiles were specifically constructed for use with the YF-12A. Capable of long range flight from the YF-12, the AIM-47 was capable of carrying a small nuclear warhead. Many of the features of the AIM-47 are also contained in the Phoenix missile carried on Navy F-14 Tomcats.



4 Parts 6,11,12,13,14,15,20,24

Preliminary Painting

12,13: FS 17875 Insignia White
11,14: Titanium - see color mix on page 9

Assembly

1. Cement **12** and **13**, missile halves together. Make 2 and set aside to dry.
2. Glue missile supports, **11** and **14**, to notches atop missile bay of **20**.
3. Glue **24** to **20**.
4. Glue **6** to **20** and **24**
5. Glue **15** to **6** and **20**
6. Glue missiles to supports **11** and **14** from bottom. Graphic sequence in illustration is for orientation only.

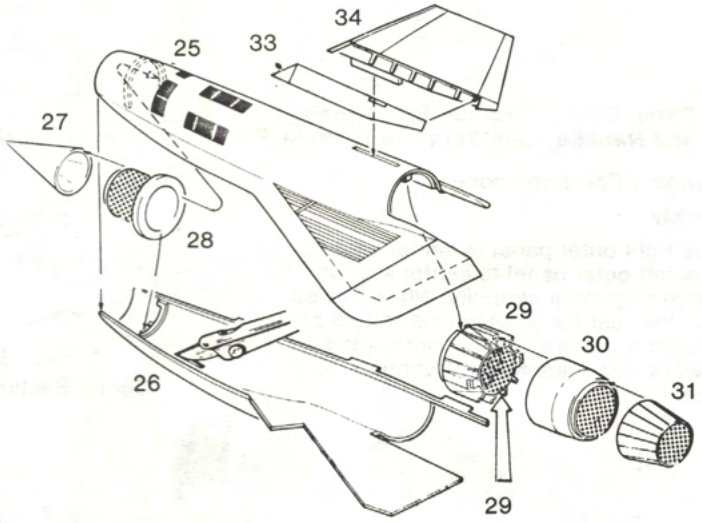
5 Parts 25,26,27,28,29,30,31, 33,34,38

Preliminary Painting

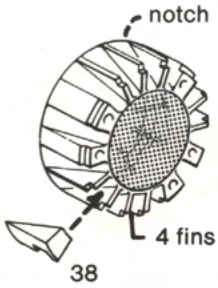
28: Titanium - see mix page 9.
29,30,31 inside surface:
FS 36495 Light Gray with **FS 37038 Flat Black** streaking

Assembly

1. Glue upper and lower left nacelle halves, **25** and **26** together.
2. Glue fin outer surface, **33**, to rudder and fin, **34**, and glue to nacelle top.
3. Glue filler block, **38**, into place on burner annular section, **29**, exactly as shown.
4. Glue **29** to back of nacelle - note position of notch at top of **29**.
5. Glue **30** to **31**. Now glue unit to **29** already in nacelle.
6. Glue inlet spike forebody, **27**, to inlet spike bleed, **28**. Now glue unit into nacelle front butting against wall inside nacelle.



TECHNICAL NOTE
Engine fuel is used as hydraulic fluid in the afterburner exit flaps (part 31 on model) before it is burnt in the engine.



TECHNICAL NOTE
The inlet spikes, shown on the model as parts 27 and 28, are actuated hydraulically to move in and out of the inlet. Up to 31,000 pounds of operating force is required under extreme conditions!

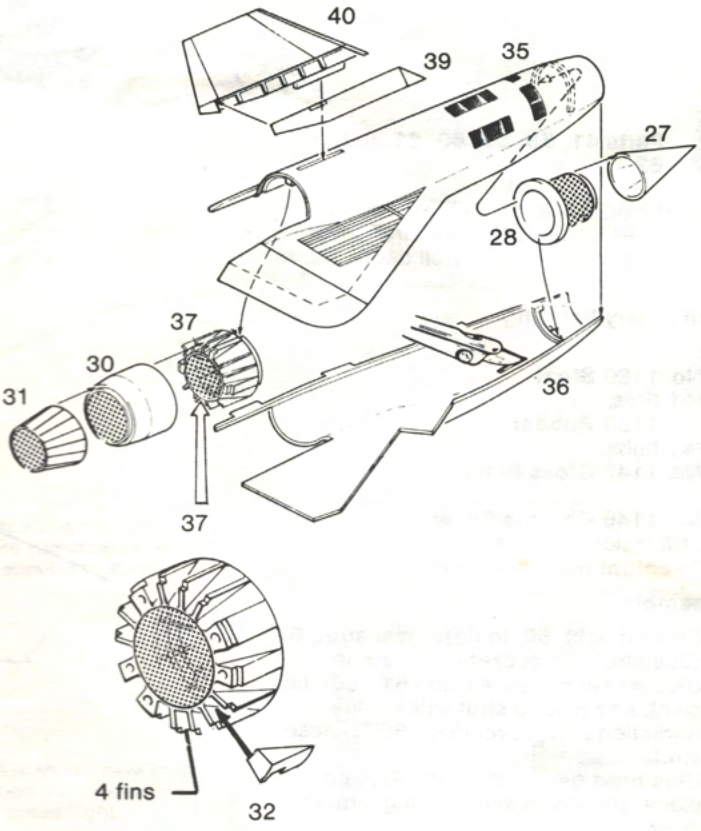
6 Parts 27,28,30,31,32,35,36,37, 39,40

Preliminary Painting

28 outer surface:
Titanium - see mix page 9
30,31,37 inside surface:
FS 36495 Light Gray with **FS 37038 Flat Black** streaking

Assembly

1. Use filler block, **32**, and glue to right burner annular section, **37**, exactly as shown.
2. Now proceed with assembly following illustration and sequence as already done in Step 5.



TECHNICAL NOTE

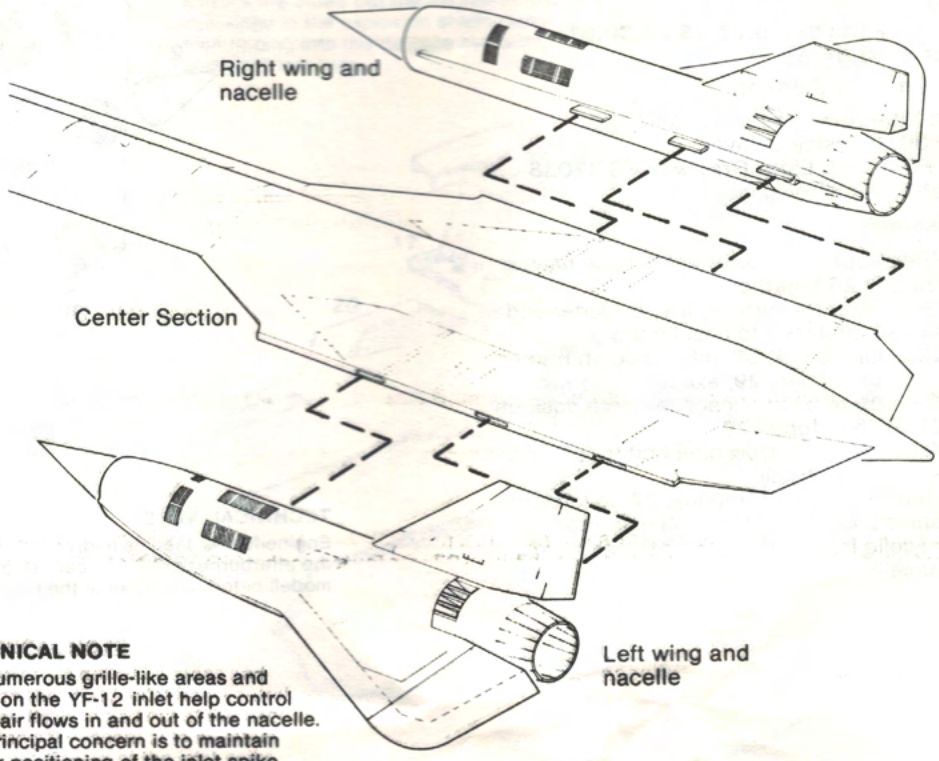
Corrugations are placed in the YF-12A wing sheet metal to prevent it from curling at high speed and heat in order to prevent popping the fasteners. Wing surfaces have a temperature exceeding 525°F at cruise airspeed.

7 Parts; Center Section, Right Wing and Nacelle, Left Wing and Nacelle

Preliminary Painting - none

Assembly

1. Glue right outer panel to center section.
2. Glue left outer panel to center section.
3. Watch alignment carefully. When viewed from the rear the wing panels should be straight out - no drooping, not angled upward. Set aside to dry. Overnight is wise.



TECHNICAL NOTE

The numerous grille-like areas and doors on the YF-12 inlet help control bleed air flows in and out of the nacelle. The principal concern is to maintain proper positioning of the inlet spike shockwave so that airflow in the duct is not choked off.

8 Parts 41, 58, 59, 60, 61 and 62

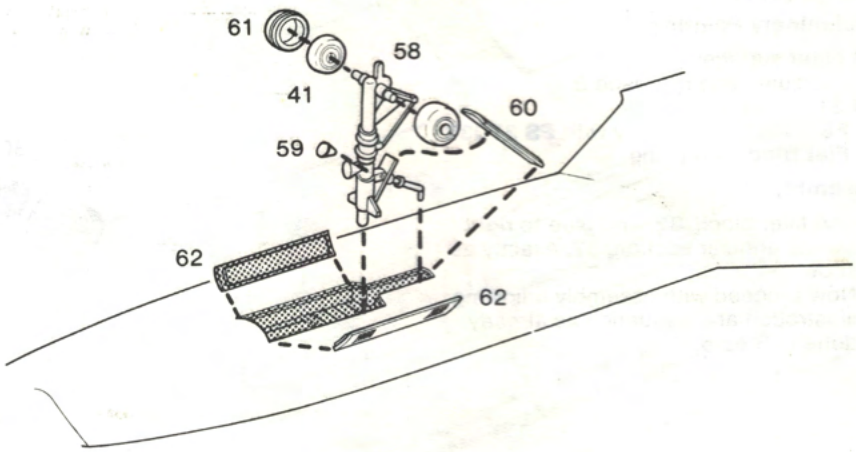
Note: If model is to be built with doors closed, glue retraction strut cover door, **60**, and nosewheel well doors, **62**, to fuselage.

Preliminary Painting

58:
No. 1180 **Steel**
61/41 tires:
No. 1183 **Rubber**
61/41 hubs:
No. 1147 **Gloss Black**
59:
No. 1146 **Chrome Silver**
60, 62 inside of doors:
Titanium mix - see page 9

Assembly

1. Cement light, **59**, to nose gear strut, **58**. Glue strut into sockets in fuselage.
2. Glue wheel halves, **41** and **61**, together, paint, and glue to strut axles. Glue retraction strut cover door, **60**, to nose strut.
3. Glue nose gear well doors, **62**, into place. The doors should hang straight down.



HISTORICAL NOTE

The wheel hubs have carried a number of colors: silver, white and black. Black was the last of the hub colors.

9 Parts 41 through 57

Note: If model is to be built with doors closed, glue main gear cover door units 47/49 and 54/56 over well without cutting apart.

Preliminary Painting

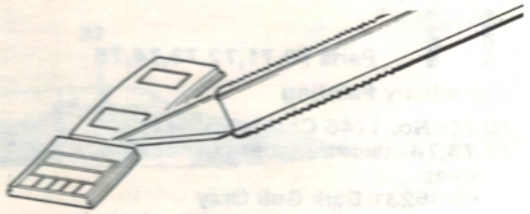
43, 44, 52, 53:
No. 1180 **Steel**
46:
No. 1146 **Chrome Silver**
48, 55 insides of **47, 49, 50, 51, 54, 56:**
Titanium mix - see page 9
41/42, 41/45 hubs:
No. 1185 **Rust**
tires:
mix of No. 1146 **Chrome Silver** and No. 1138 **Gray.**

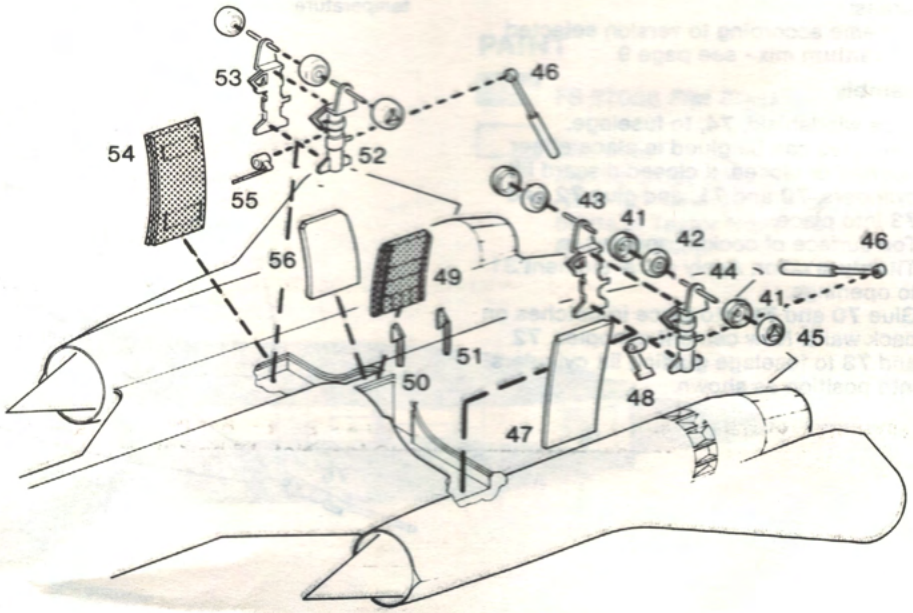
Assembly

1. Glue wheel halves, **41** and **42**, together. Now glue main gear struts, **43/44** and 52/53, around wheels. Build four sets of wheels, **41/45**, and glue to outside strut axles. Cement struts into wheel wells.
2. Glue retraction cylinders, **46**, to struts. Glue door links, **48** and **55**, to struts.
3. Glue door actuators, **50** and **51**, to wheel cover doors, **49** and **56**. Glue doors in place.
4. Glue main strut doors, **47** and **54**, in place. See helpful photos on back page.

TECHNICAL NOTE

The special tires contain many layers of fabric and are rated at 22 ply. Aluminum particles are contained in the rubber to help solve heat problems. The main wheels retract into an explosion shield so that if a tire overheats and blows out it won't scatter rubber and rip up the delicate hydraulic lines inside the wheel well. All tires are filled with nitrogen rather than air. Inflation pressures are near 300 psi.





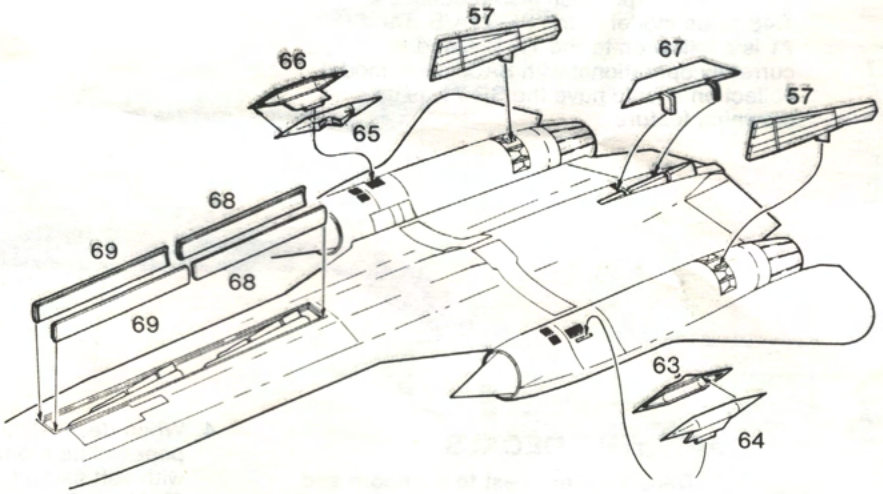
10 Parts 57,63,64,65,66, 67,68,69

Preliminary Painting

68,69 inside surfaces:
Titanium - see mix page 9

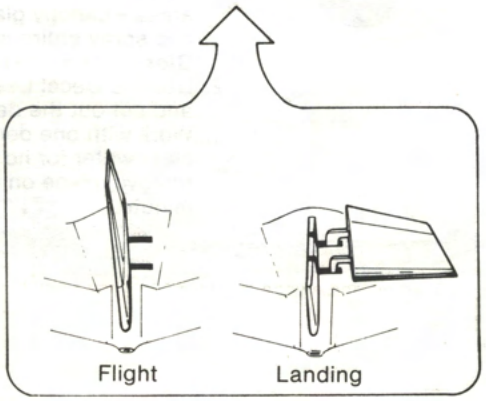
Assembly

1. Glue camera pod halves, **63** and **64**, **65** and **66**, together. Now glue pods to nacelles as shown.
2. Glue missile bay doors, **68** and **69**, into place.
3. Glue ventral fins, **57**, into position on nacelles.
4. Glue fuselage folding ventral fin, **67**, into place. The fin is down in flight and folded for landing. See inset illustrations.



TECHNICAL NOTE

The rocket-like devices slung beneath the engine nacelles are camera pods to record the release of missiles in flight test.



Folding center ventral fin is shown here in its ground and landing position. Fin hinges into vertical position for high speed flight.

11 Parts 70,71,72,73,74,75

Preliminary Painting

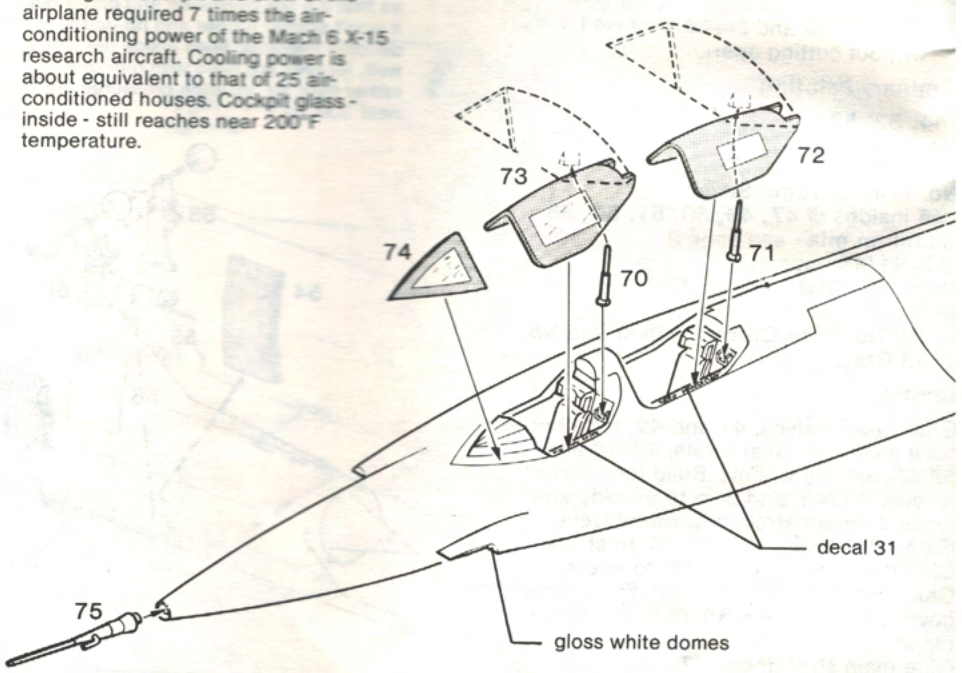
70,71: No. 1146 Chrome Silver
72,73,74 inside surfaces but not window areas:
FS 36231 Dark Gull Gray
72,73,74 outside surfaces but not window areas:
scheme according to version selected
75: Titanium mix - see page 9

Assembly

1. Glue windshield, **74**, to fuselage.
2. Canopies can be glued in place either opened or closed. If closed discard lift cylinders, **70** and **71**, and glue **72** and **73** into place.
3. Top surface of cockpit opening is **Titanium** color. Apply decal element 31 to openings.
4. Glue **70** and **71** into place in notches on back walls. Now cement canopies, **72** and **73** to fuselage guiding lift cylinders into position as shown.

TECHNICAL NOTE

Cooling the cockpit and crew of the airplane required 7 times the air-conditioning power of the Mach 6 X-15 research aircraft. Cooling power is about equivalent to that of 25 air-conditioned houses. Cockpit glass - inside - still reaches near 200°F temperature.

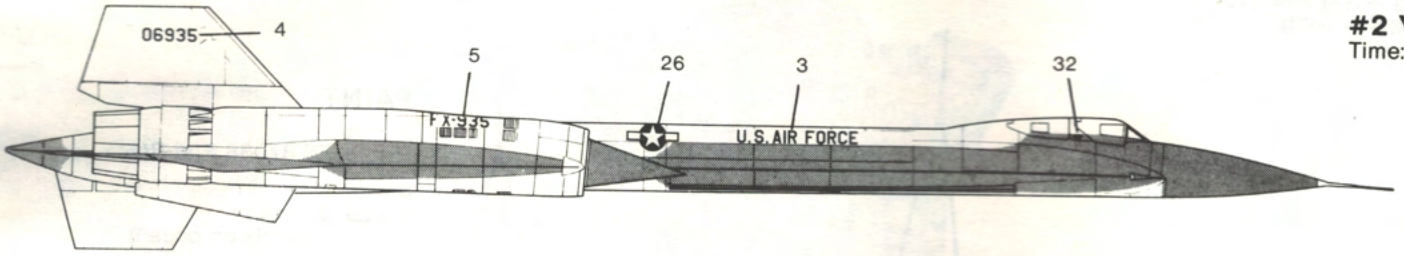


The Testor Corporation also produces a 1:48 scale model of the SR-71A/B. The SR-71 is a follow-on to the YF-12A and is currently operational with SAC. Every model collection should have the SR-71 as its crowning feature.

APPLYING DECALS

1. Decals adhere best to a smooth and shiny surface. If you have finished your model in a flat finish mask the clear areas – canopy glass – and spray entire model with ***Testor Glosscote*** #1261. Let dry thoroughly.
2. Use the Decal Use Charts on page 9 and cut out the decals you will use.
3. Work with one decal at a time, dip in clear water for no more than 5 seconds, remove, place on dry paper towel for 1 minute.
4. When decal slides easily on backing paper, slide it onto surface of the model with soft paintbrush – the ***Testor Model Master*** #2 is perfect for this. Remember: decals are thin and can be ripped. Work slowly and patiently.
5. Apply a small amount of ***Testor Decal Set*** #8804 to each decal. Allow the decal to dry undisturbed.
6. When the decals are completely dry (usually overnight), apply a coat of Testor Dullcote #1260 to the entire model. this will give an authentic dull finish and protect the decals. Remove masking from canopy

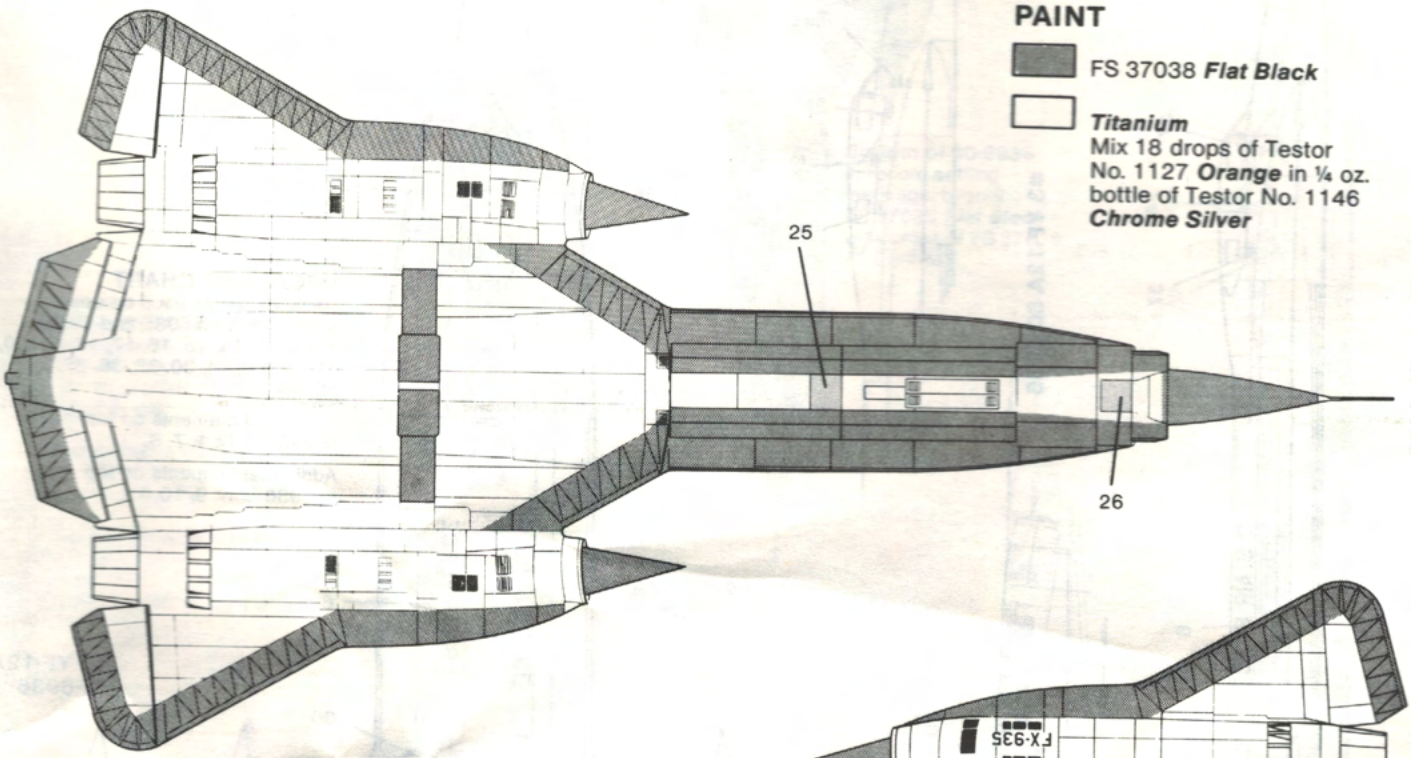
#2 YF-12A
Time: 1963

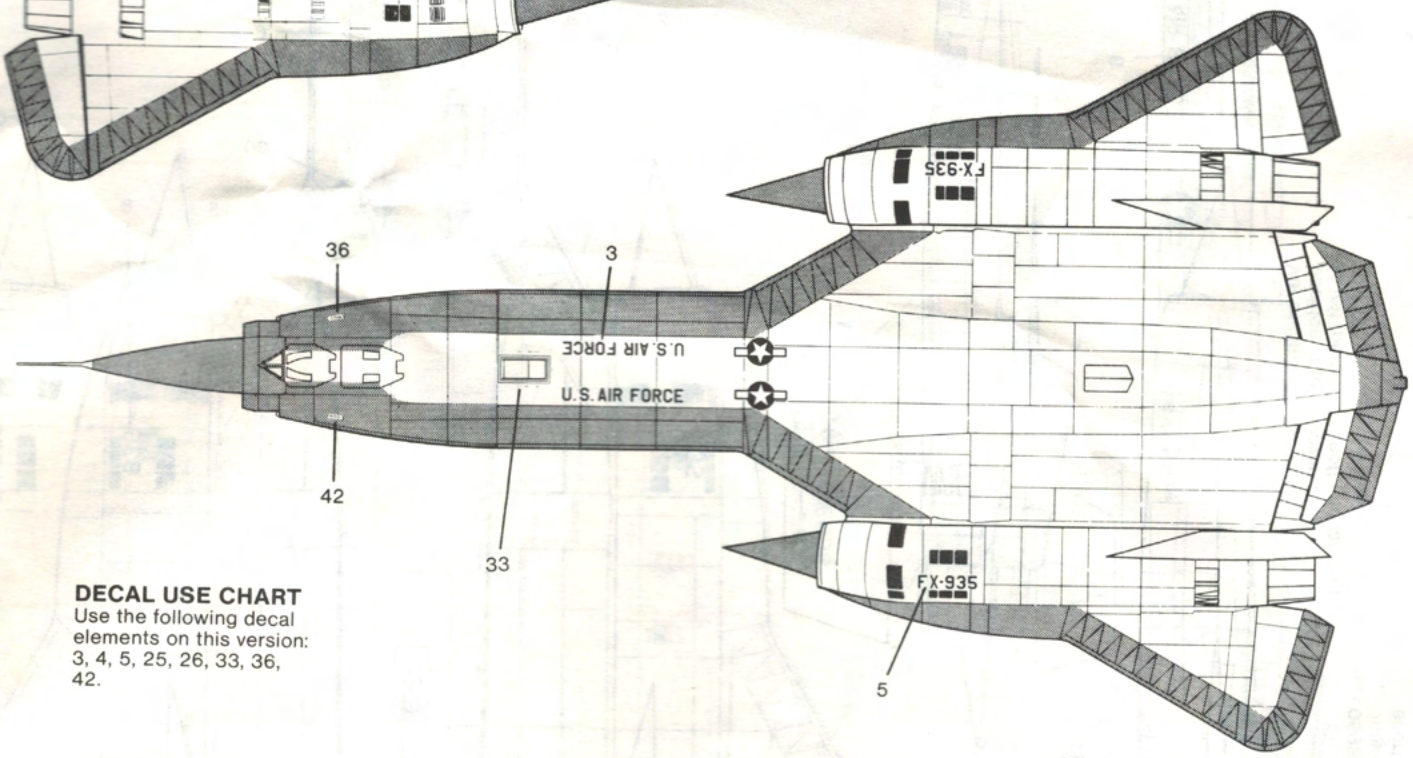


PAINT

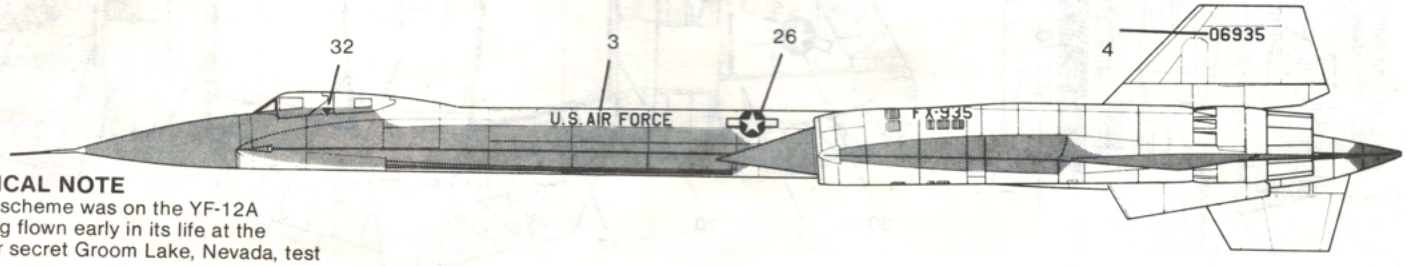
FS 37038 ***Flat Black***

Titanium
Mix 18 drops of Testor No. 1127 ***Orange*** in ¼ oz. bottle of Testor No. 1146 ***Chrome Silver***



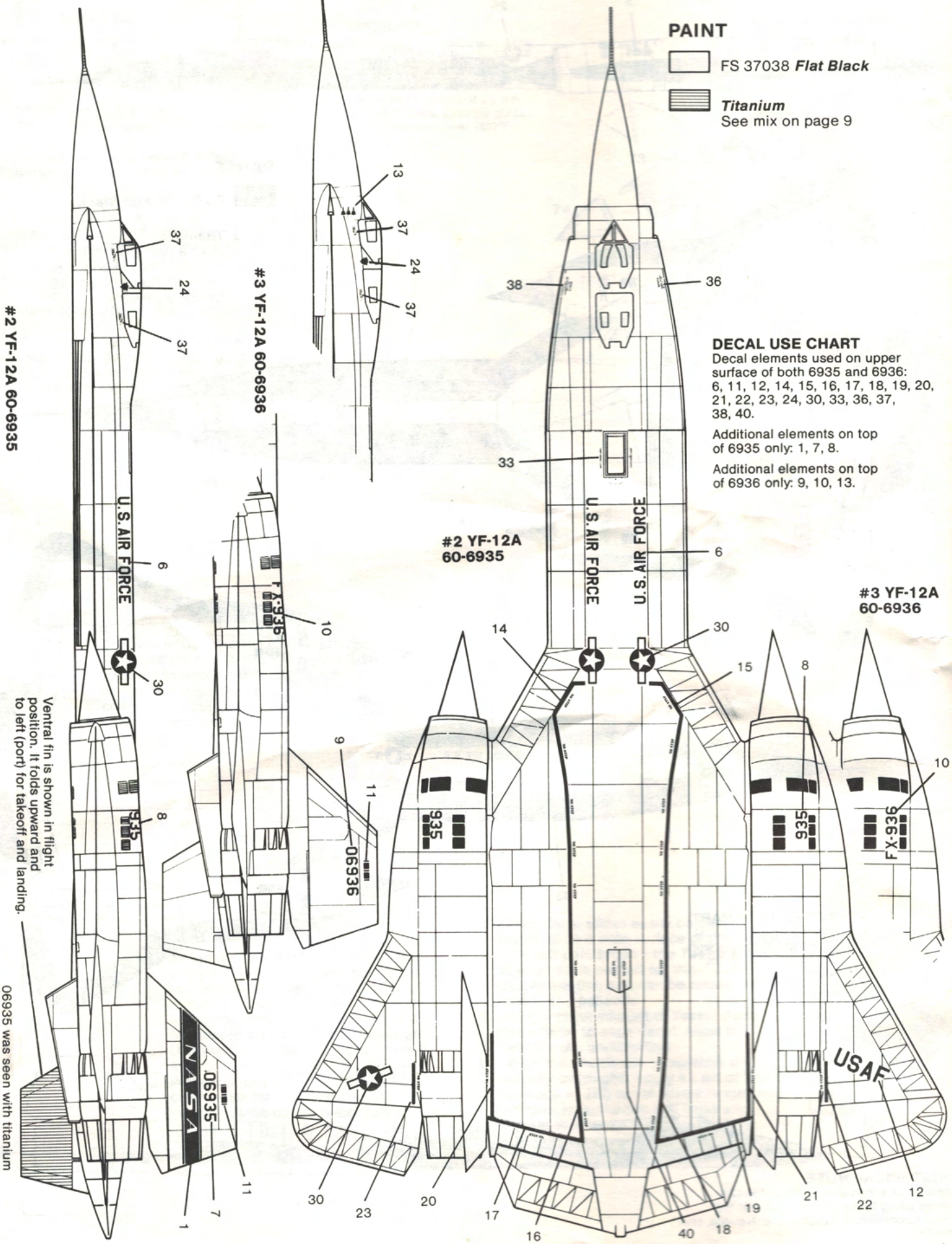


DECAL USE CHART
Use the following decal elements on this version: 3, 4, 5, 25, 26, 33, 36, 42.



HISTORICAL NOTE
This paint scheme was on the YF-12A when being flown early in its life at the then super secret Groom Lake, Nevada, test facility.

#2 and #3 YF-12A
Time: 1965 to 1979



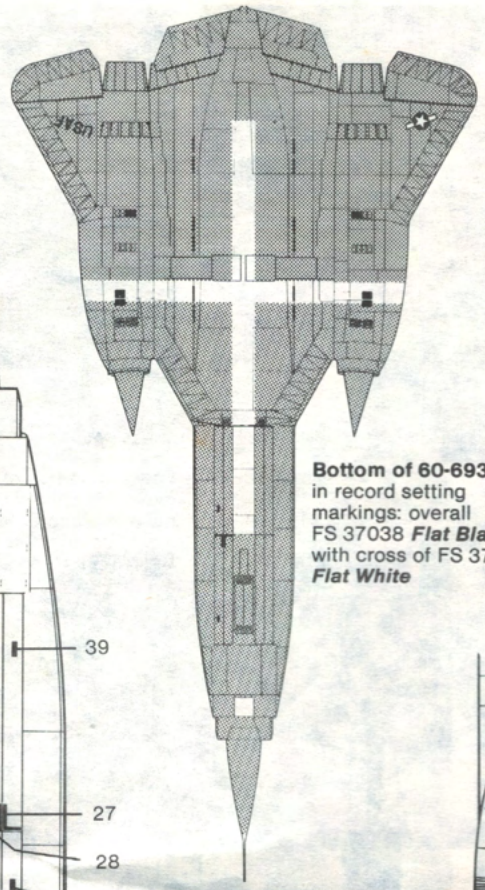
#2 and #3 YF-12A

Time: 1965 to 1979

PAINT

FS 37038 ***Flat Black***

Titanium
See mix on page 9



Bottom of 60-6936 in record setting markings: overall FS 37038 ***Flat Black*** with cross of FS 37875 ***Flat White***

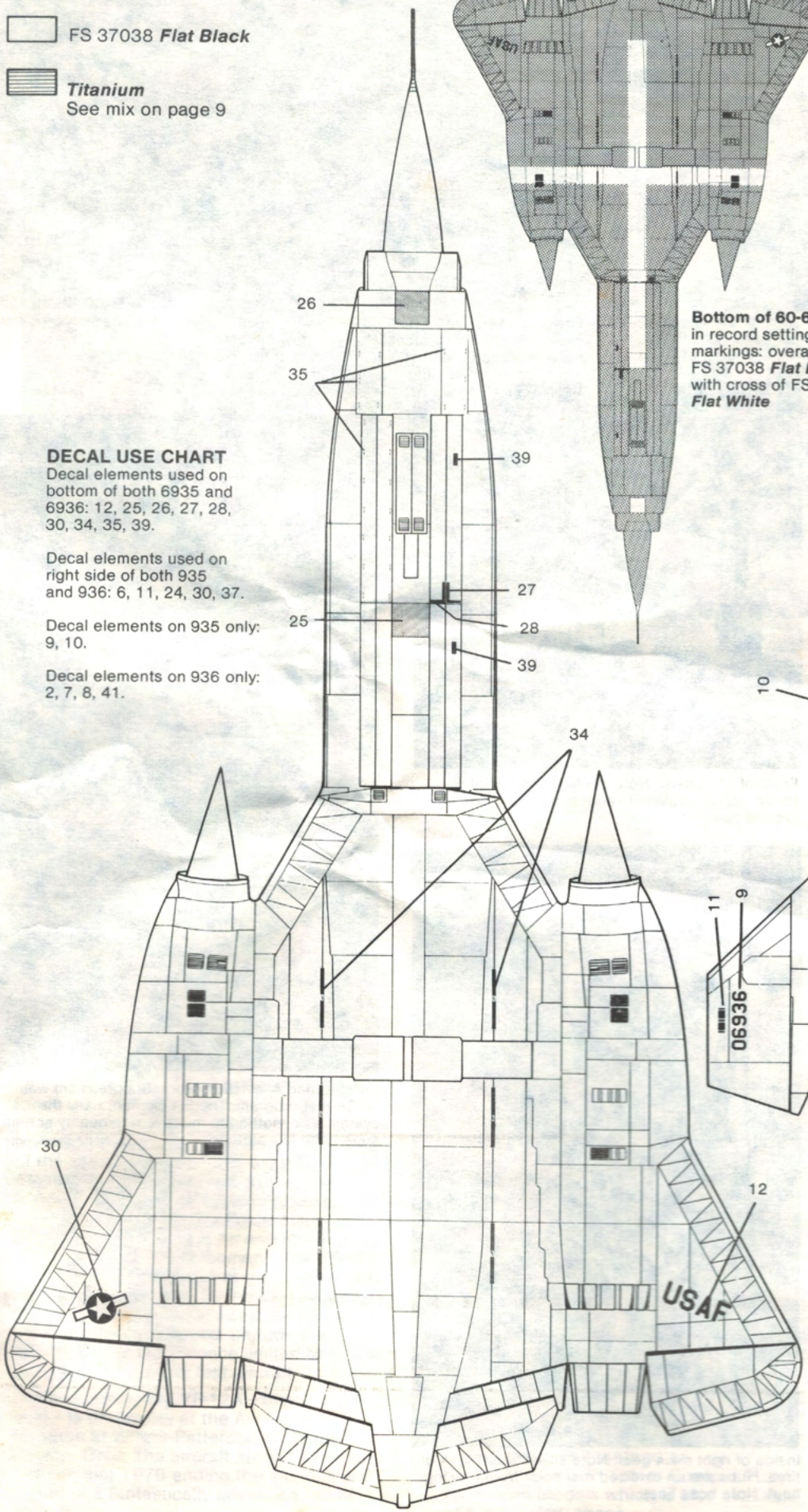
DECAL USE CHART

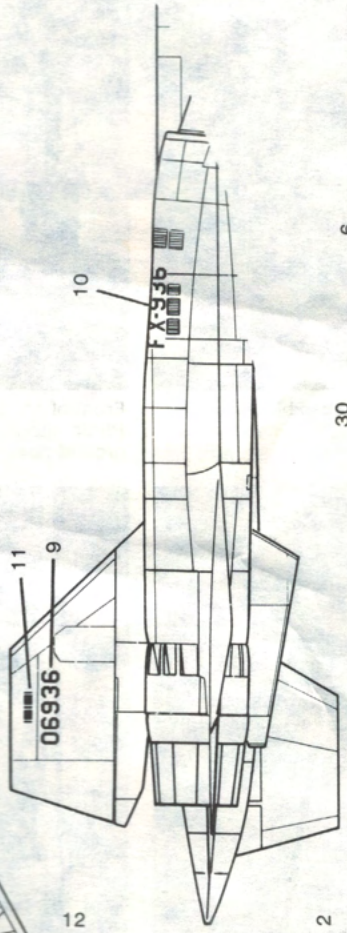
Decal elements used on bottom of both 6935 and 6936: 12, 25, 26, 27, 28, 30, 34, 35, 39.

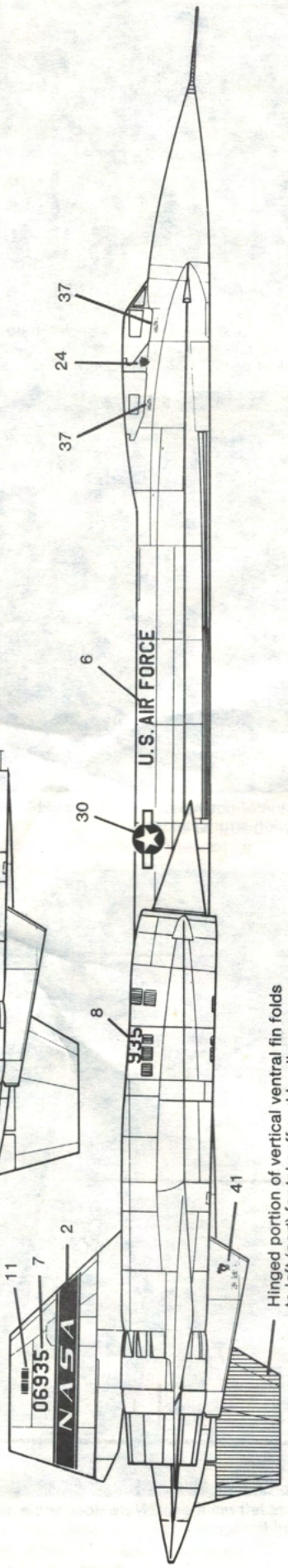
Decal elements used on right side of both 935 and 936: 6, 11, 24, 30, 37.

Decal elements on 935 only: 9, 10.

Decal elements on 936 only: 2, 7, 8, 41.

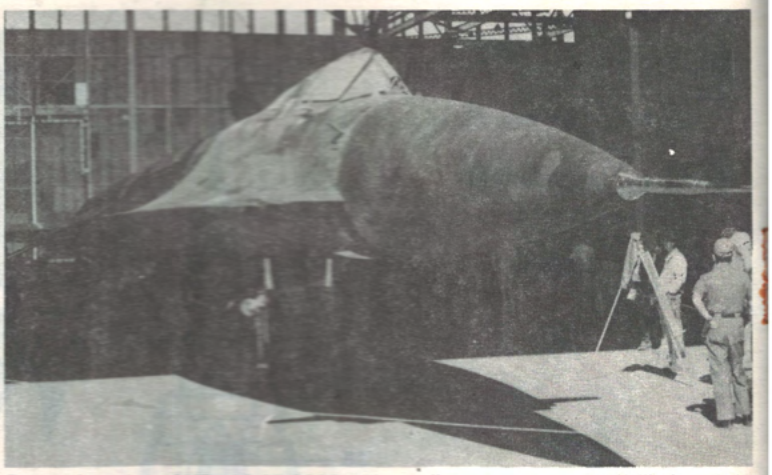




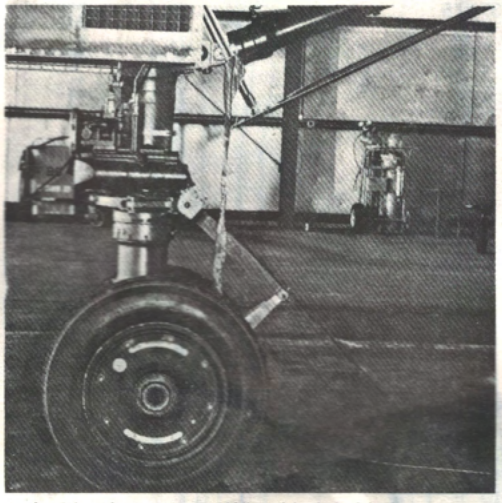


Hinged portion of vertical ventral fin folds to left (port) for takeoff and landing.

Folding center ventral fin is shown here in its ground and landing position. Fin hinges into vertical position of high speed flight. Joe Nottingham photo

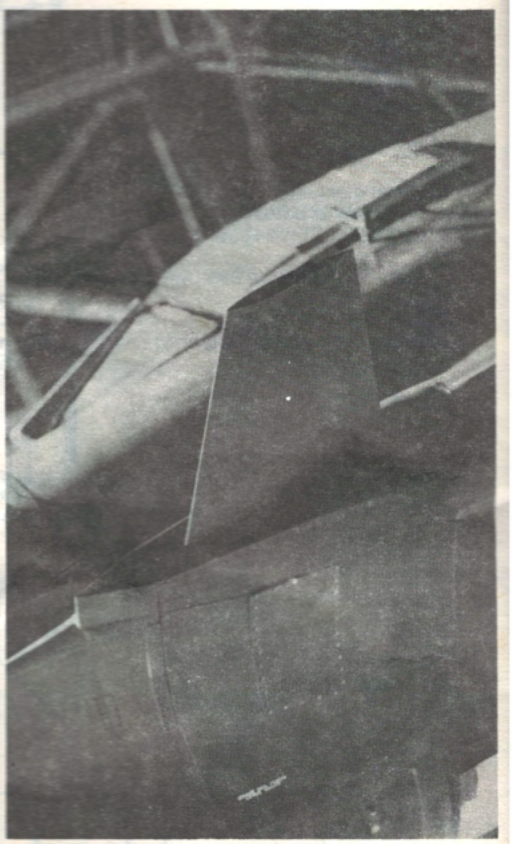


Forward portion of YF-12A 60-6935 with small moveable canard surfaces. Note shadow beneath nose of aircraft. Span of canard is 11 ft. 9 in. This would be an interesting modification to the model. Joe Nottingham photo

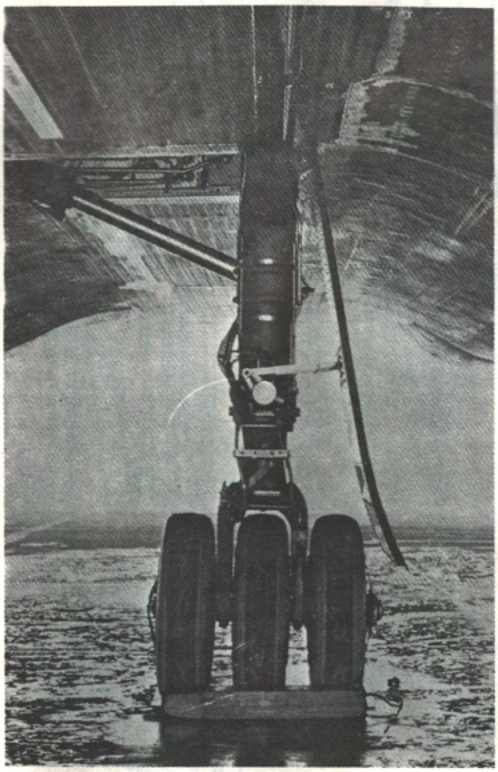


Left side of nose gear. Wheel hub is black as is retraction strut cylinder.

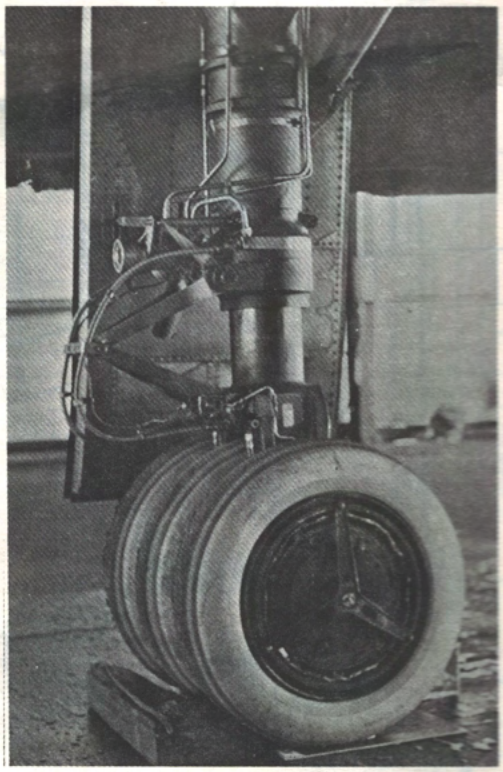
Front of nose gear. Note double landing light. Photo shows angles of various doors in normal ground position.



LAMS (**L**oad **A**lleviation **M**ode **S**uppression) was NASA test program. The B-1 bomber uses the system as a method to improve ride quality at high speed and low altitude. Joe Nottingham photo



Front of left main gear. Note door angle and scuffed tires.



Inside of right main gear. Note silver "dust" look of tires. Hubs are an oxidized rust color from braking heat. Note hose lines.