# GENERAL DYNAMICS F-16A

1/32 SCALE

MINICRAFT Hasegawa 100


## F-16A HISTORY

Winner of an Air Force competition for a light-weight, low cost fighter in 1975, the General Dynamics F-16A is proving to be a versatile machine with a great potential. With the first F-16's entering service in early 1979, production orders already approach 2,000 units. Such a quantity guarantees its service for several decades as it replaces the Lockheed F-104 Starfighters and McDonnell Douglas F-4 Phantom II's now in service.

At a time when the costs of combat aircraft were soaring as high as the airplanes themselves could fly, the F-16 was designed to cost only a quarter of the price of contemporary fighters. This low cost was achieved by careful engineering and some unique approaches to airframe design. For example, several of the major parts of the F-16 are interchangeable with each other. The horizontal stabilizers, wing controls and most of the landing gear are reversible right to left. In addition, more than half of the parts used on the F-16 are interchangeable with other aircraft types, and the F100 engine is the same powerplant used by the F-15 Eagle.

The F-16 is nimble and highly responsive to the pilot's commands through the use of "Fly-by wire" control systems. In this arrangement the standard pushrods and levers used to activate the control surfaces are replaced by electrical wires which feed control commands as electrical impulses directly to servo motors at the control surfaces. The response is instantaneous, thus giving remarkable maneuverability to the trim little fighter.

The pilot of the F-16 literally sits in the middle of a glass bubble which gives him complete visibility around the upper half of the airplane. Bulging canopy sides permit a great degree of downward vision giving the pilot an ideal vantage point during combat. To aid in combat maneuvering, the pilot's seat is tilted rearward 30 degrees to help him resist the high "g" forces encountered during tight radius turns. With this arrangement the F-16 has been able to reach 9 G's during maneuvering without adverse effects on the plane or pilot. In addition, the control column takes the form of a small handle on the right side of the cockpit and is operated by simple wrist movement.

The distinctive appearance of the F-16 is caused by the location of the engine air inlet in the belly of the fighter. This position was chosen in order to shorten the ducting to the engine and draw in undisturbed air. By placing the nose gear behind the intake there is also less chance of ingesting foreign objects during engine operation on the ground. Even the location of a pair of Sidewinder missiles on the wingtips is a result of careful engineering studies. This position creates an advantageous air flow around the wingtips, and after the missiles are launched the fixed rails themselves contribute to the flow pattern.

What is the F-16's place in the make-up of the U.S. Air Force through the 1980's? In comparison with the F-4 E Phantom II, the General Dynamics fighter has twice the combat range, can accelerate and maneuver more than 60 percent faster and has greater unrefueled range. This in addition to weighing only half as much and costing far less than an F-4.

The first combat group to receive the F-16A is at Hill AFB, Utah. Decal markings have been supplied for the first plane delivered to the 388th Tactical Fighter Wing, but the placement of the squadron emblem at this time is subject to change.

The F-16 program is international in scope with major components for the fighters being constructed in Holland, Belgium and Denmark, as well as in the United States. Foreign orders alone account for 635 of the planes, with the USAF requirement being 1,388 F-16s. As the production lines begin to swell, other foreign countries are showing an interest in obtaining the new fighter as their standard front line interceptor and attack plane.

A two-seat training version of the F-16 is in production along with the single-seater. The cockpit bubble has been extended rearward to accommodate the second crewman, but otherwise the proportions remain the same and the two-seater has all the performance and capabilities of the single-seater.

### GENERAL DYNAMICS F-16A CHARACTERISTICS

| | |
|---|---|
| Dimensions: | Overall wingspan with missiles - 32 feet 10 inches<br>Overall length - 49 feet 6 inches<br>Height - 16 feet 5 inches |
| Powerplant: | One Pratt & Whitney F100-PW-100(3) turbofan of over 25,000 lbs thrust with afterburning. |
| Performance: | Maximum speed over 1,320 mph (Mach 2) at 40,000 feet.<br>Service ceiling over 50,000 feet. |
| Armament: | One General Electric M61A-1 20mm rotary cannon with 515 rounds.<br>Assorted missiles and bombs, including AIM-7F Sparrows, AIM-9L Sidewinders, Mk 82 500lb bombs, Mk 351 laser-guided bombs. |

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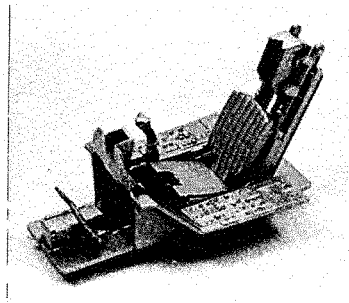
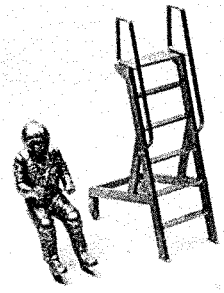
**1** COCKPIT ASSEMBLY

Cement D50 to D60, then cement D60 to C9.
Cement D55 and D56 to C9, then cement D59 in place.
Cement D51, D52 and D53 to C9, then cement D58 as shown.
Cement D48 and D49 together, then cement D40 and D41 to sides.
Cement D46 to rail assembly.
Cement D47 to D46 and Cement D42 and D43 to sides as shown.
Cement D44 to notch in D47.
Cement assembled seat to cockpit.
Cement F17 to F18, then cement F19 and F22 in place.
Cement F20 and F21, together and slide over pilots head.
Cement C28 and six C27's to C36, then cement to C33.

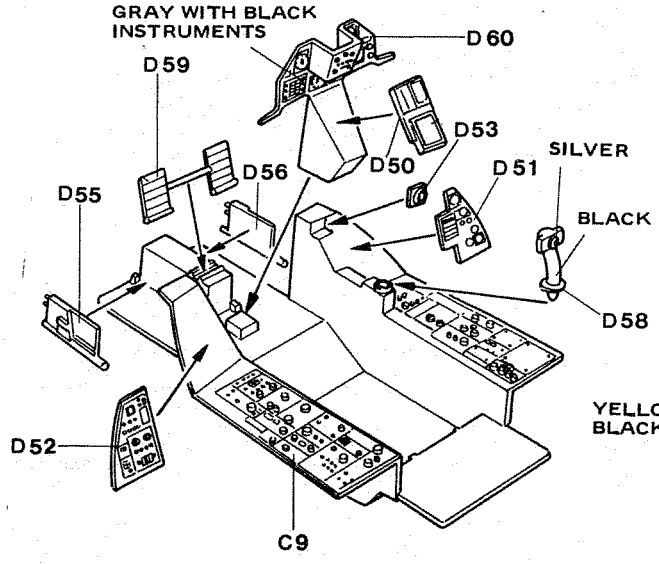


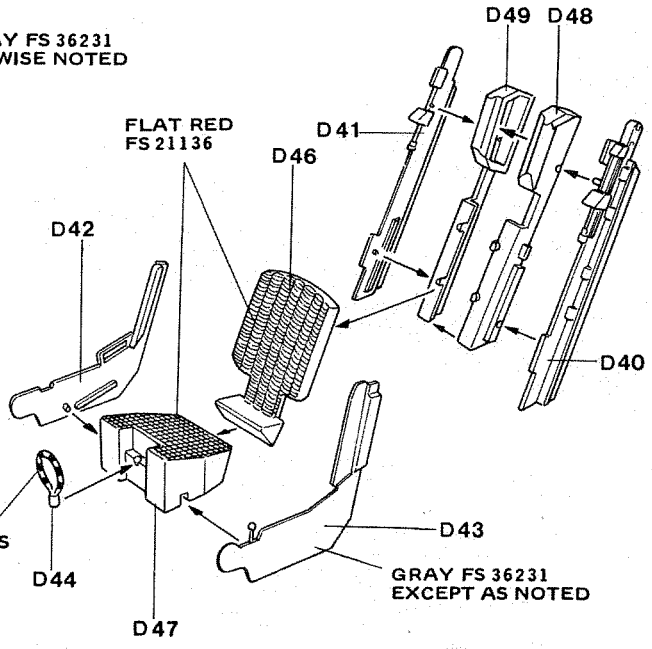


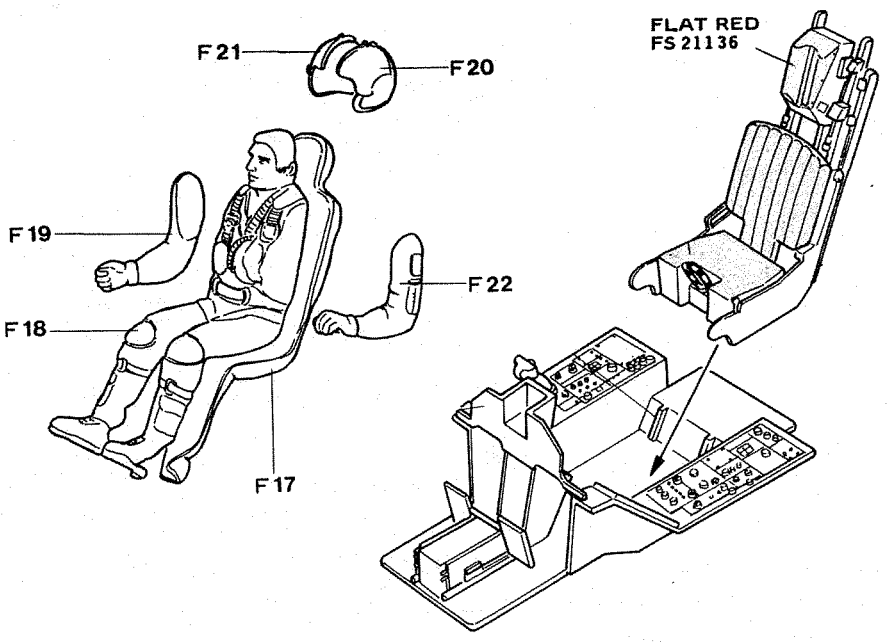
PARTS

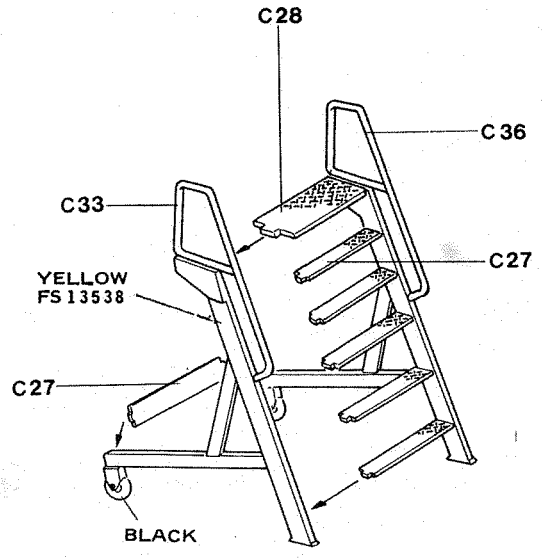
C9 Cockpit floor
D50-53 Consoles
D55-56 Consoles
D58 Control Stick
D59 Rudder pedals
D60 Instrument panel
D48-49 Seat body
D40-41 Seat rails
D46-47 Seat cushions
D42-43 Seat sides
D44 Ejection handle
F17-18 Pilots body
F19, 22 Pilots arms
F20-21 Pilots helmet
C33, 36 Ladder sides
C28 Ladder platform
C27 Ladder steps (6)

ALL PARTS GRAY FS 36231
UNLESS OTHERWISE NOTED

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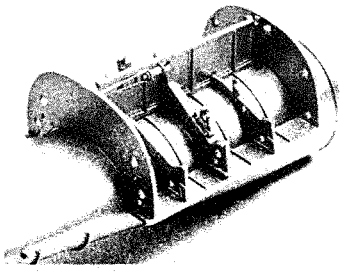
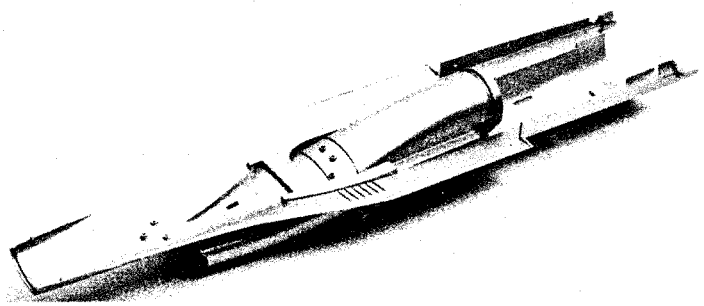
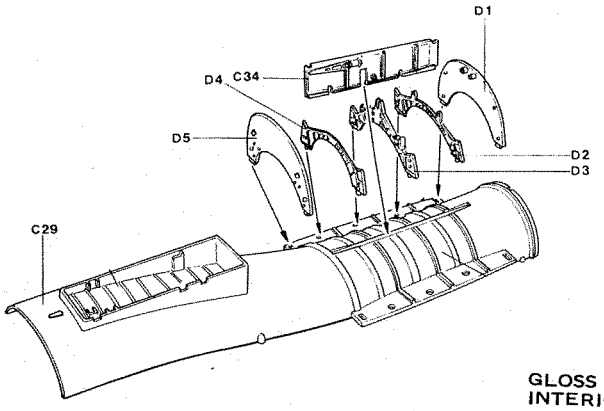
**2** ENGINE INLET ASSEMBLY

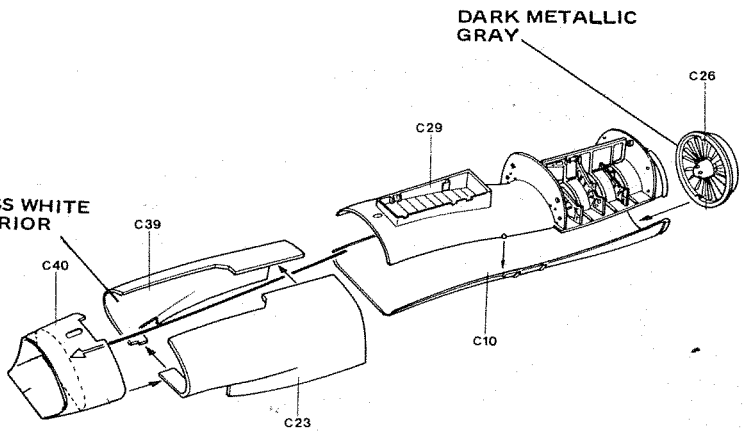
Cement bulkheads D5, D4, D3, D2 and D1 to C29 in the position indicated.
Cement C34 over the three center bulkheads into the groove in C29.
Cement C10 to C29, then cement C26 into round end of duct as shown.
Slide front of duct into C40 until front edge seats against step in C40, (shown by dotted line) and cement.
Cement C23 and C39 together over the duct and behind C40.
Cement C37 into A2 in front of second row of ribs.
Slip inlet assembly into place in A2 as shown, then cement assembly to A2.
Cement C19, C20 and D6 to A2.
Dust cover, C32, can be pressed into duct opening or discarded, if desired.



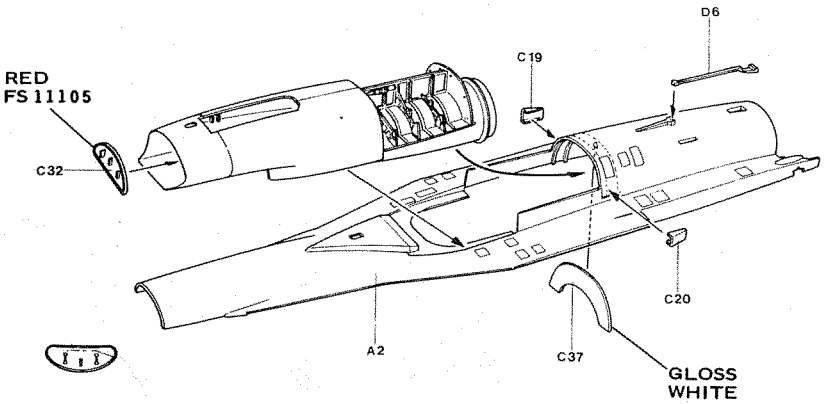
PARTS
D1-5 Bulkheads
C29 Duct bottom
C34 Keel
C10 Duct top
C23, 39 Inlet sides
C26 Engine face
C40 Air intake
C19-20 Air scoops
C32 Inlet dust cover
C37 Firewall bulkhead
D6 Arrestor hook
A2 Fuselage bottom






ALL PARTS GLOSS WHITE

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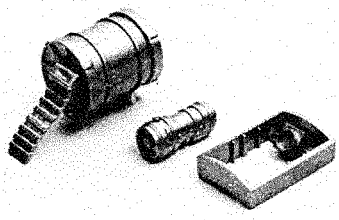
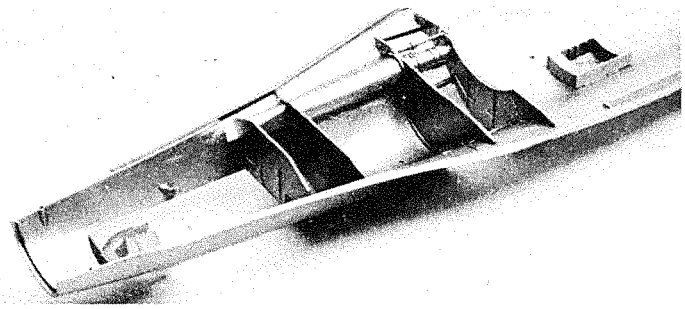
## 3 FUSELAGE ASSEMBLY

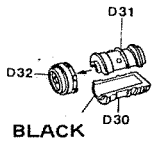
Cement D57 and D54 to locating pads inside A1. (Note, the drawing shows the relative position of the parts when mounted.)
Cement C13 to ledge behind cockpit opening.
Cement C25 and C31 to C11, as indicated by arrows, then cement C25 and C31 into A1 with C11 fitting behind long access opening.
Cement D30, D31 and D32 together then cement this unit and D35 to C30 as shown.
Cement C30 into place behind large opening, be sure gun parts seat properly in C31.
If you wish to show the refueling receptacle open, carefully cut out the wedge-shaped cover from the fuselage back on part A1.
Cement this piece in the position shown in dotted line.
If you wish to have the entire cover removed, cut along the rectangular opening instead.
Cement C18 to C21, then cement C21 under opening. (The refueling receptacle may be left closed if you wish, in which case C18 and C21 may be discarded.)
Cement D24A and D24B together then cement D22 and D23 to the ends.
Cement D33 and D34 to assembly as shown.
Cement cockpit assembly from STEP 1 to fuselage bottom.
Slide D61 through slot above intake until it stops, then cement.
Cement D36 and ammunition drum assembly into locators on top of duct in fuselage bottom.
Place round pads on B3 and B4 into notches in A2 then cement A1 to A2.
Cement C3 and C4 to slots in A2, Note that these fins should tilt outward 15 degrees.



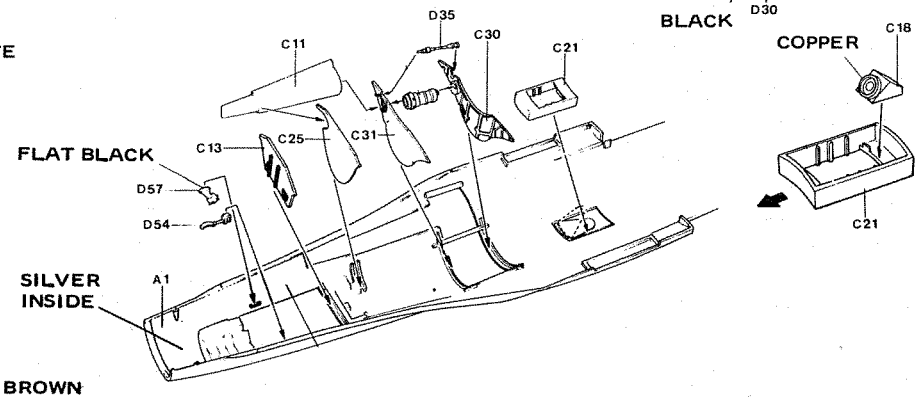


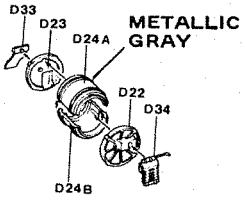
PARTS

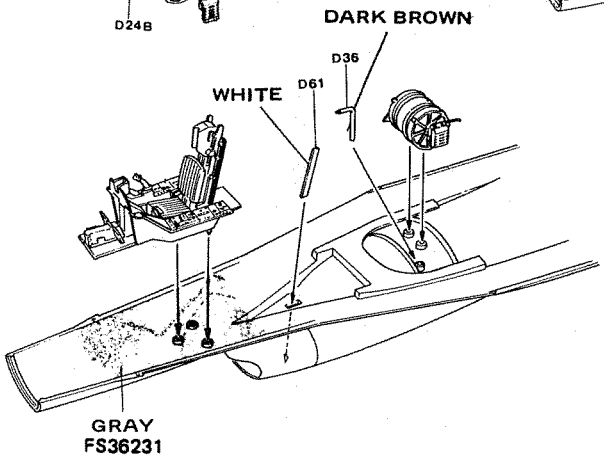
A1 Fuselage top
C11 Gun bay
C13 Cockpit bulkhead
C18 Fuel receptacle
C21 Fuel compartment
C25, 30, 31 Bulkheads
D30, 31, 32, 35 Cannon body
D54, 57 Cockpit fixtures
D22, 23, 24A, 24B Ammunition drum
D33, 34 Ammunition belts
D36 Air conditioning pipe
D61 Antenna lead in
B3, 4 Horizontal stabilizers
C3, 4 Ventral fins

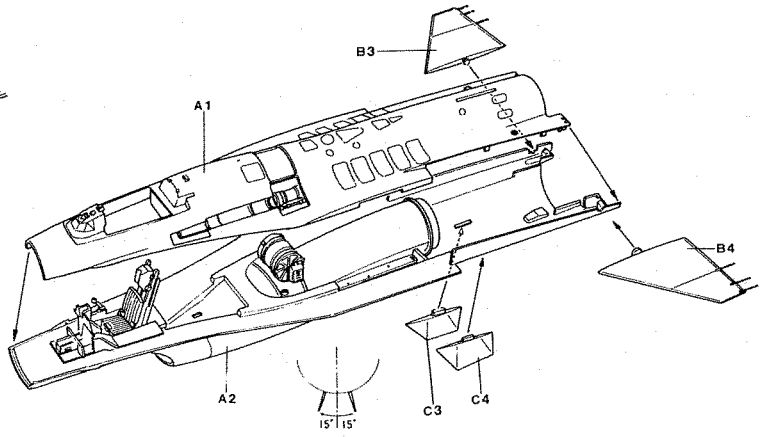



ALL PARTS GLOSS WHITE
EXCEPT AS NOTED

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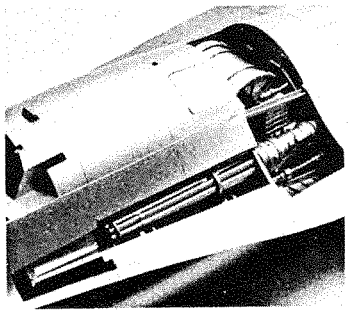
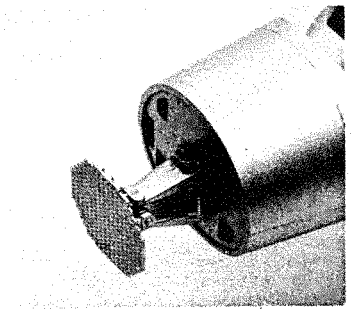
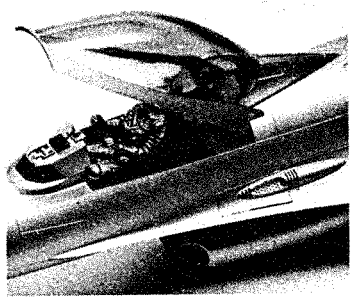
## 4 CANNON AND RADOME ASSEMBLY

Cement D37, D38 and D39 together as shown, then cement unit into gun bay.
Cement G6, D9, D10 and D11 to C15.
Carefully separate C12 into two parts.
C12, C14 and C15 may be pressed into their proper positions for later removal if desired.
Cement C16 into fuselage nose.
Cement D20 to D26 and D25, then cement unit to C16.
D16 and D17 should be cemented to the nose of the camouflaged F-16's only. Do not use if you are making the General Dynamics color scheme.
Cement D18 to outside of fuselage where indicated.
If the radar gear is to be displayed, cement D14 and D15 in position on C16, then cement C22 in the open position. Otherwise, C22 may be pressed over the pins on the radar bulkhead.
Cement pilot into cockpit.
Cement G7 to G3, then cement G7 to coaming.
Cement G2 to fuselage.
For open cockpit, cement two pins on D62 horizontally into the two notches at the rear of the cockpit as shown. When cement has set, slide tabs on G1 into slots in fuselage and rest pads inside G1 on the ends of D62, then apply cement to canopy hinges and fuselage. If canopy is to be closed, remove pins from D62 and cement ends of D62 below pads inside G1, then cement G1 to fuselage.

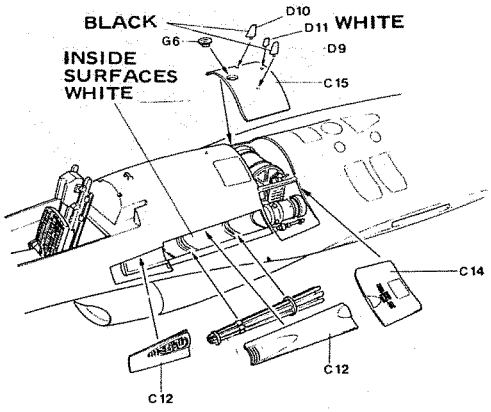


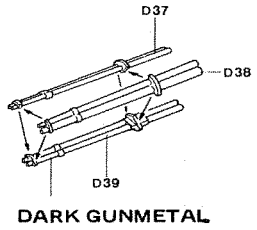


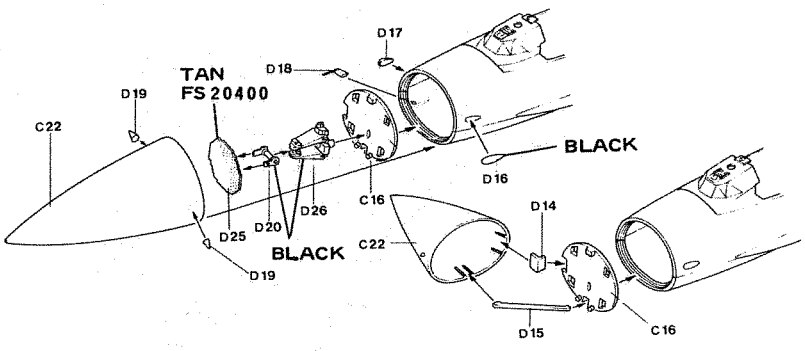


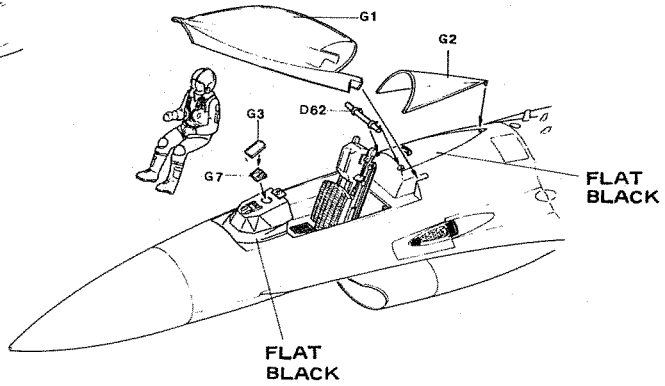
PARTS

| | |
|---|---|
| C12, 14 Cannon bay covers | D9, 10, 11 Antennas |
| C15 Ammo box cover | D14 Radome hinge |
| C16 Radar bulkhead | D15 Radome brace |
| C22 Radome | D16, 17 Radar warning antenna |
| D18 Pitot tube | D62 Canopy hinge |
| D19 Radar sensors | G1, 2 Canopy |
| D20 Radar gimbal | G3 HUD reflector |
| D25 Radar scanner | |
| D26 Drive motors | G6 Light |
| D37, 38, 39 Cannon barrels | G7 Reflector support |

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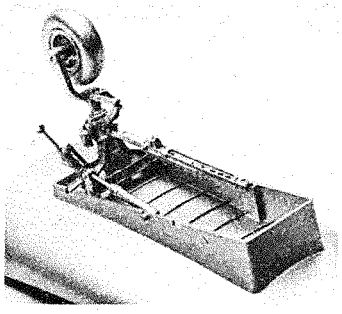
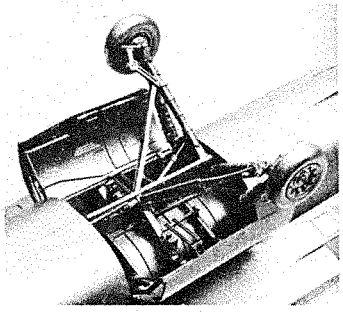
## 5 LANDING GEAR ASSEMBLY

Cement D73, D79 and D80 to D72, then cement D72 into nose wheel well.
Cement D75 and D78 between D72 and well sides as shown.
Cement D27 to D72.
Cement D74 to locator inside well, then cement C35 to notches on well side and attach end of D74 to C35.
Cement D7 and two D8's in place.
Cement D83 to D66 and D84 to D68. Cement these struts into wheel wells then cement D69, D65 and G5 to right gear strut, and D67, D64 and G4 to left strut.
Cement D76 and D77 between well and struts.
Cement D70 and D71 between struts and well as indicated.
Cement D85 and D88 to edge of well. (Angles should rest on bottom edge of fuselage with lip inside)
Cement D86 and D87 into small locators on bulkhead indicated by arrows. Double bars are attached to back of D85 and D88.
Cement D81 to C1, then cement C1 to fuselage, locating pin on D8 in hole in forward well bulkhead.
Repeat with C2 and D82.
Cement C38 to keel between wells.

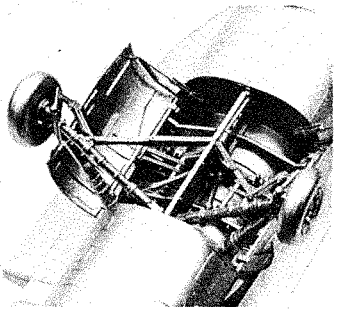


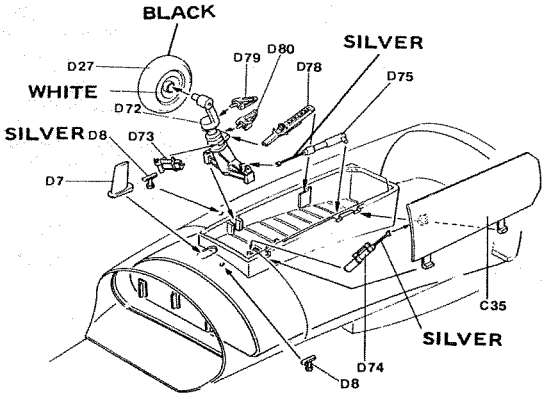


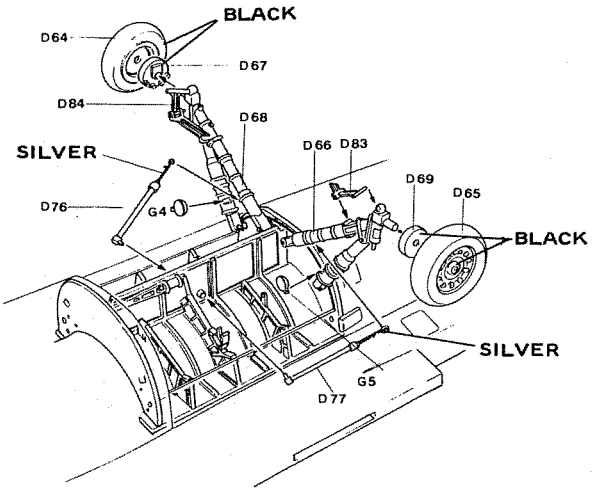
PARTS

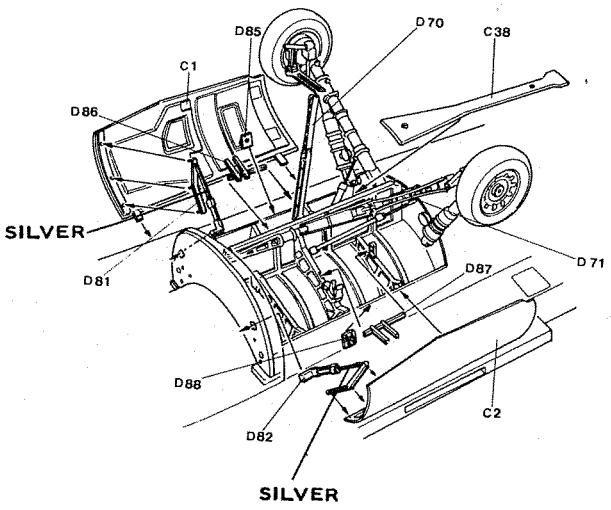
C1, 2 Main gear doors
C35 Nose gear door
C38 Center fairing
D7 Antenna
D8 Sensors
D27 Nose wheel
D64, 65 Main wheels
D66, 68 Main struts
D67, 69 Brakes
D70, 71 Retracting struts
D72 Nose strut
D73 Steering gear
D74 Door Actuator
D75 Actuator
D76, 77 Main gear actuators
D78 Nose gear brace
D79, 80 Oleo scissors
D81, 82 Main door actuators
D83, 84 Main gear linkages
D85, 86, 87, 88 Braces
G4, 5 Lights

ALL PARTS WHITE
UNLESS OTHERWISE NOTED



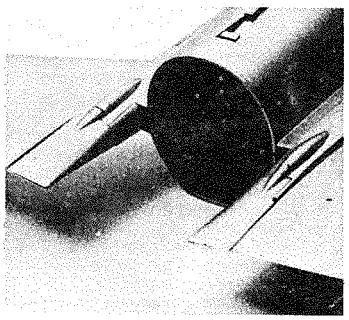


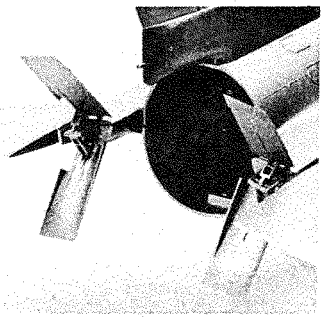
## 6 EMPENNAGE AND FINAL ASSEMBLY

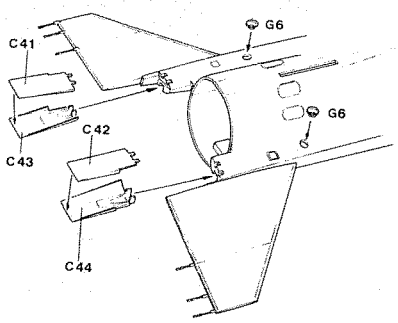
Cement two G6's into holes shown.
Note: Speed brakes may be assembled open or closed.
For closed position, cement C42 to C44 and C41 to C43, then cement these assemblies to aft fuselage as shown.
For open position, make actuators by cementing D29, D12 and D28 together. and D29, D13, D28 together.
Cement pads on D12 and D13 into notches on fuselage rear.
Now cement C42 and C44 to right side and C41 and C43 to left side as shown.
Cement C5 to C6
Cement C7 into C17, then cement this unit into C5/C6, and cement the entire subassembly into C8.
Cement C24 to C8 and cement the tailpipe assembly to the fuselage.
Cement B1 to B6 and B2 to B5. Cement wings to fuselage.
Cement B7 to B8 and cement to fuselage. Cement G10 to fin top.
Cement D63 to nose.



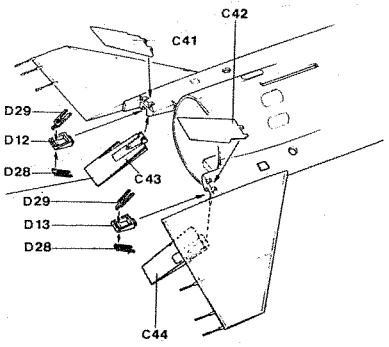
PARTS

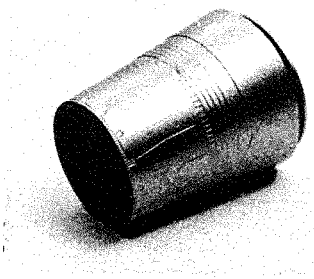
| | |
|---|---|
| B1, 2 Wing tops | C5, 6, 8 Tail pipe |
| B5, 6 Wing bottoms | C7 Turbine |
| B7, 8 Vertical stabilizer | C17 Flameholder |
| D12, 13, 28, 29 Speed brake actuators | C24 Afterburner |
| D63 Pitot tube | C41, 42, 43, 44 Speed brakes |
| | G6, 10 Lights |

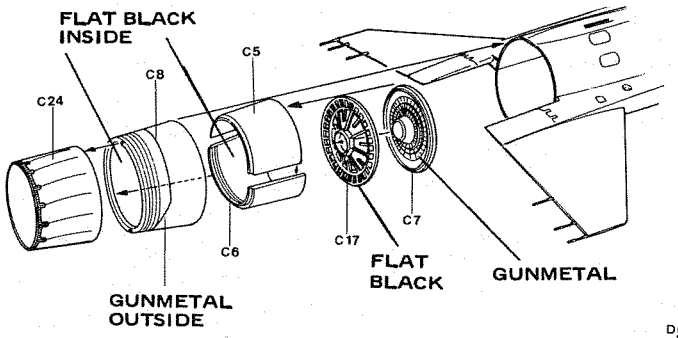


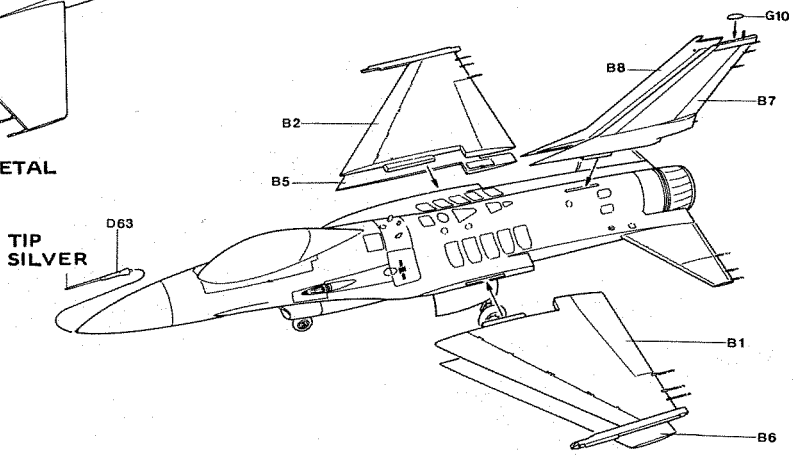



RED FS11105 ON CAMOUFLAGED PLANES
GRAY ON WHITE PLANES



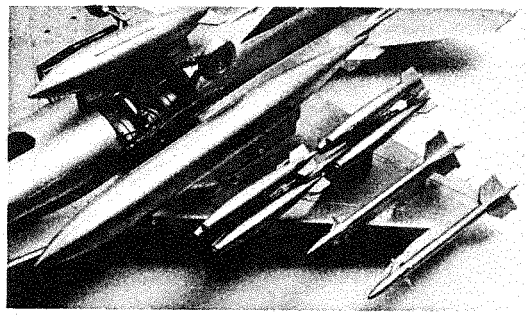



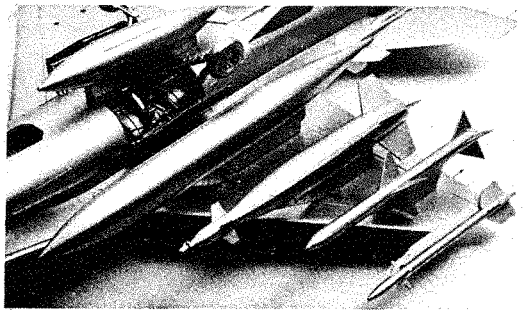


**7**

UNDERWING STORES
350 GALLON FUEL TANKS (2)
Cement F4 and F5 to F3.
Cement F9 and F10 together then cement E3 to notch in top and attach pylon to tank.
Repeat with remaining parts F3, F4, F6, F11, F12 and E3.
150 GALLON FUEL TANK
Cement F13 and F14 together.
Cement F1 and F7 together, then cement to pylon.
AIM-7F SPARROW MISSILES (2)
Cement E14 to E15 and E16 to E17.
Cement E12 to E13 and cement missiles to pylons.
Mk 351 LASER-GUIDED BOMBS (2)
Cement E4, E19 and E20 together.
Cement E18A to E9A and attach to pylon.
Repeat with E4, E21, E22, E18B and E9B.
AIM-9L SIDEWINDER MISSILES (4)
Cement an E6 to E23 and E24.
Cement a fin (E7, F15 or F16) to missile body (E8, F2, or F8).
Cement two missiles to pylons. Remaining two Sidewinders should be cemented to wingtip rails.
Mk 82 500 LB BOMBS (12)
To make bombs, cement E1 to E2.
Cement E10 and E11 together.
Cement four D21's, eight D45's and E5 to rack as shown.
Cement six assembled bombs to the shackles on each rack.
Locate the weapons on the model following the suggested positioning in the illustrations.



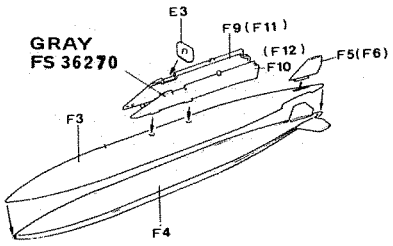


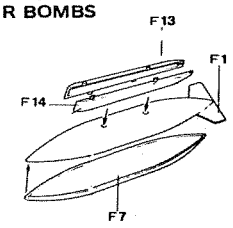
PARTS

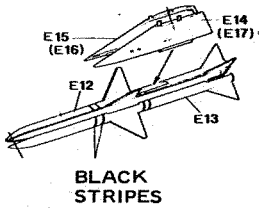
D21, 45 Bomb shackles
E1, 2 Bomb halves
E3, 4, 5, 6 Pylon braces
E7 Sidewinder fin
E8 Sidewinder body
E9, 18A / B Laser bomb halves
E10, 11 Bomb ejector rack
E12, 13 Sparrow halves
E14, 15, 16, 17 Sparrow pylons
E19, 20, 21, 22 Laser bomb pylon
F1, 7 150 gallon fuel tank halves
F2, 8 Sidewinder body
F3, 4 350 gallon tank halves
F5, 6 350 gallon tank fins
F9, 10, 11, 12 350 gallon tank pylon
F13, 14 150 gallon tank pylon
F15, 16 Sidewinder fins

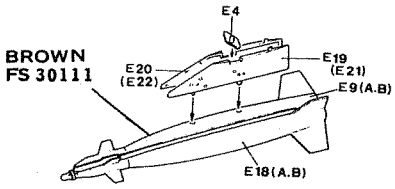
ALL PYLONS GRAY
FS 36270

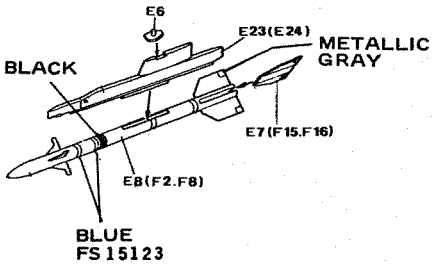
ALL WEAPONS AND BOMB RACKS WHITE EXCEPT LASER BOMBS

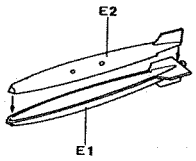


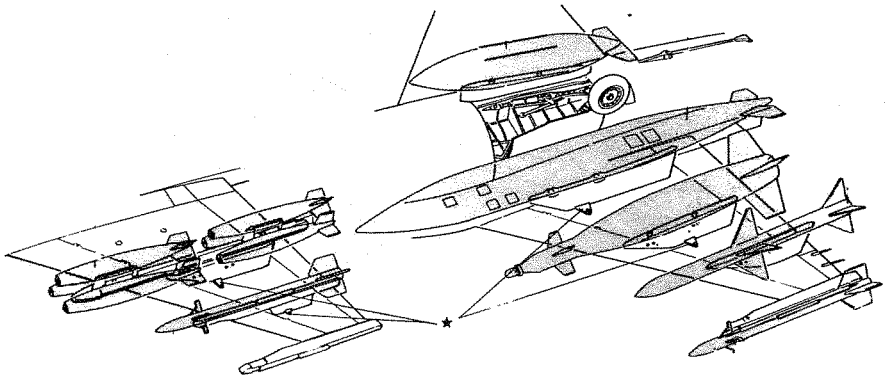



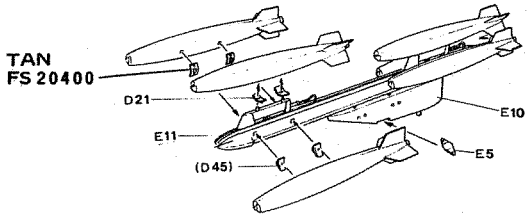



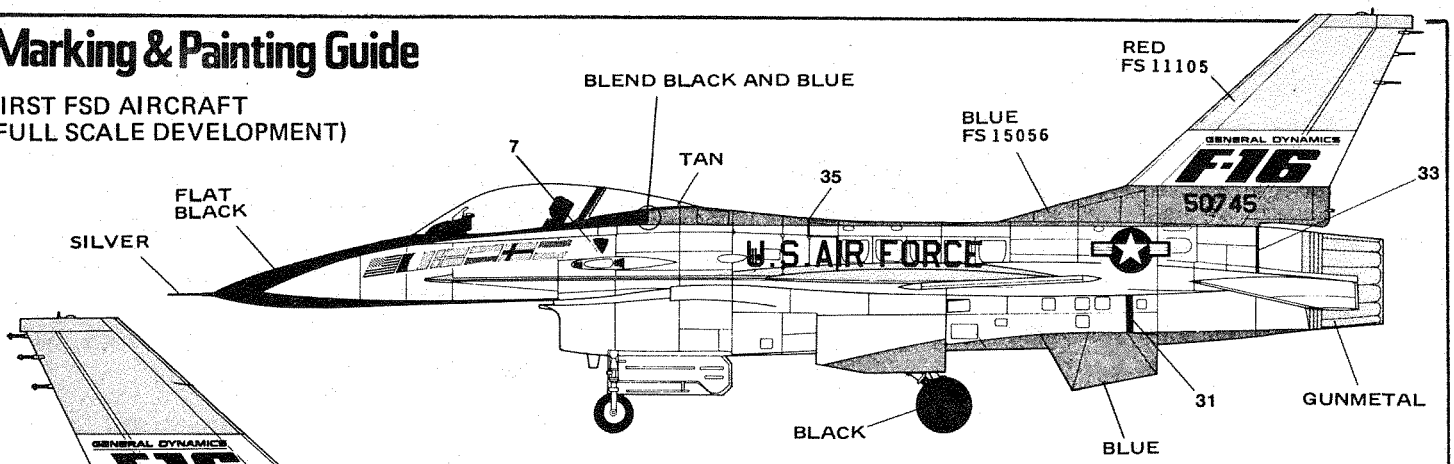



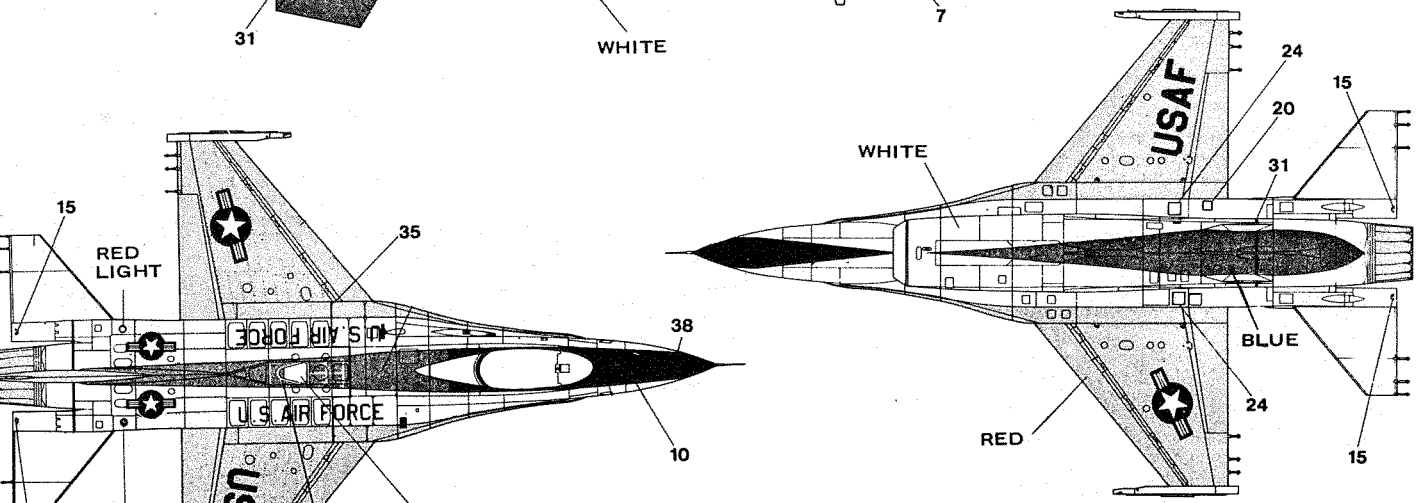





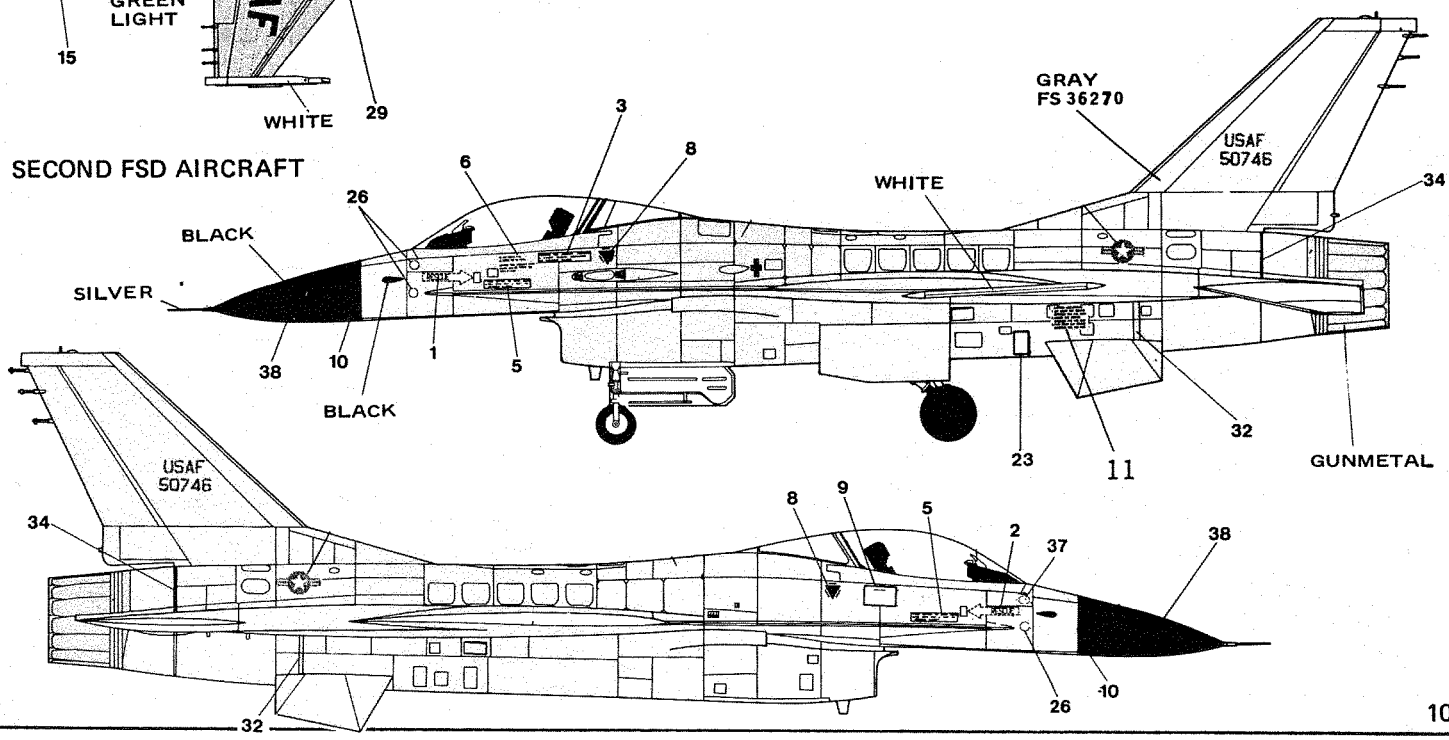
# Marking & Painting Guide

FIRST FSD AIRCRAFT
(FULL SCALE DEVELOPMENT)




SECOND FSD AIRCRAFT

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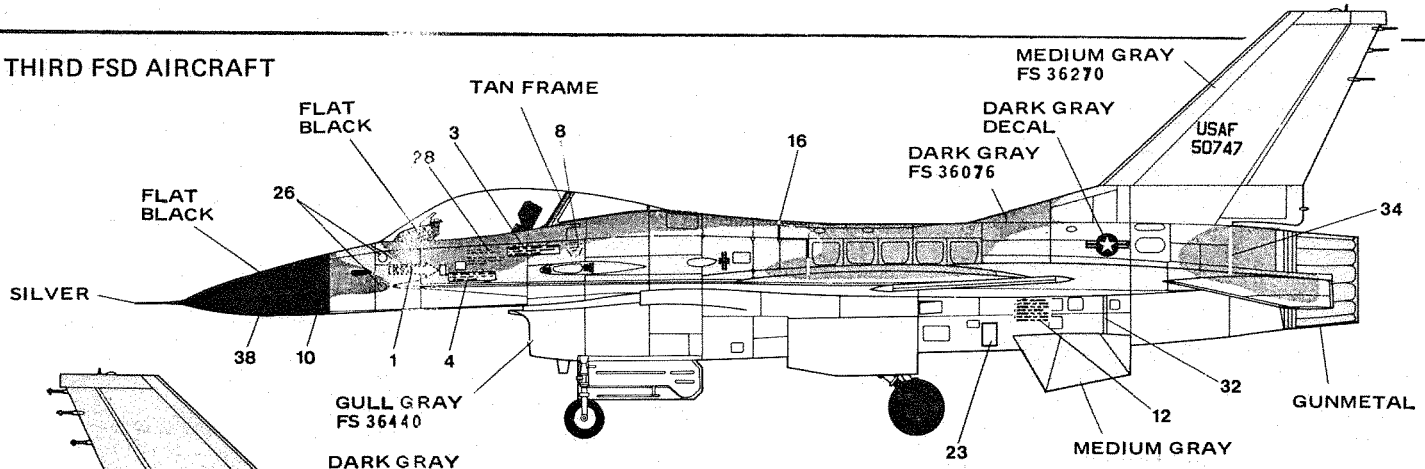
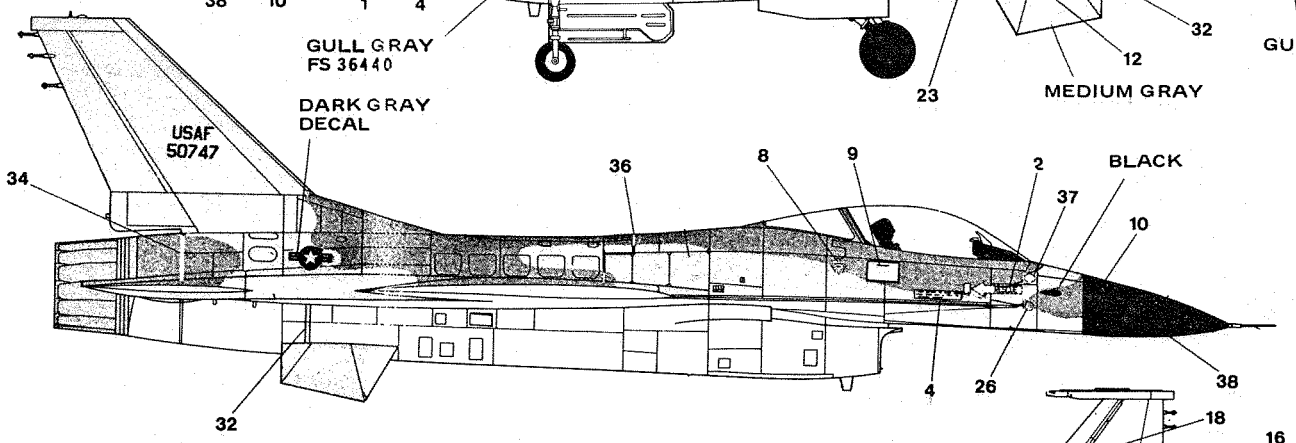
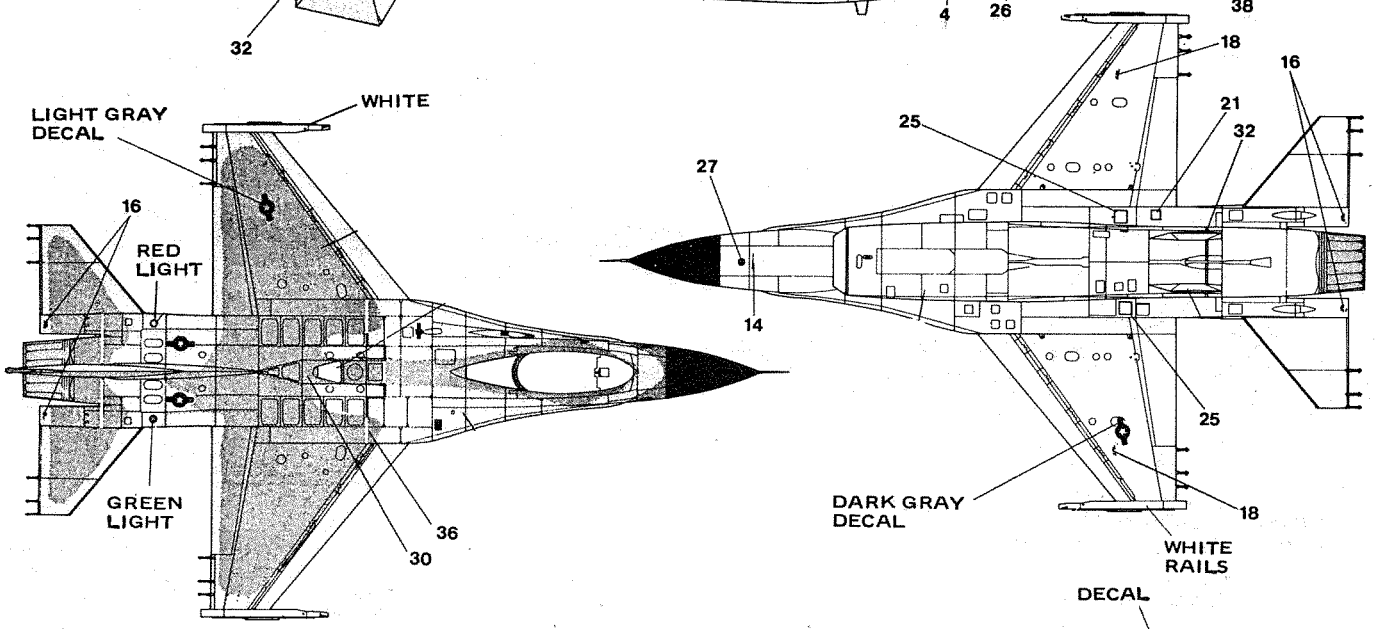
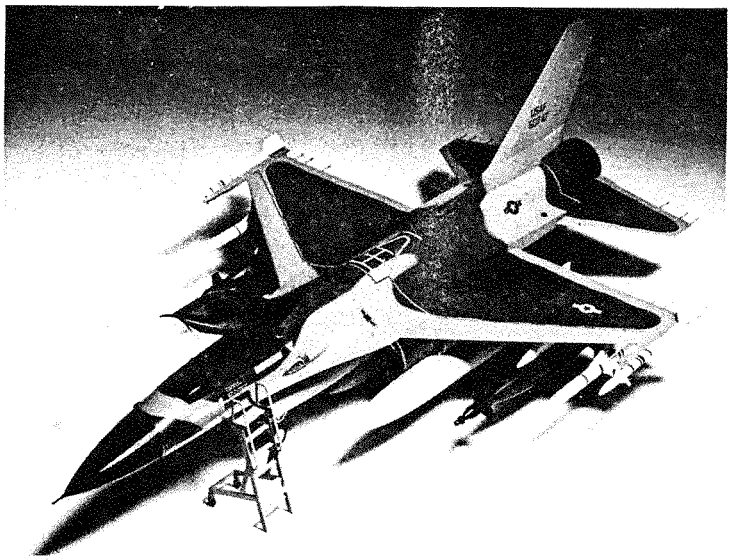
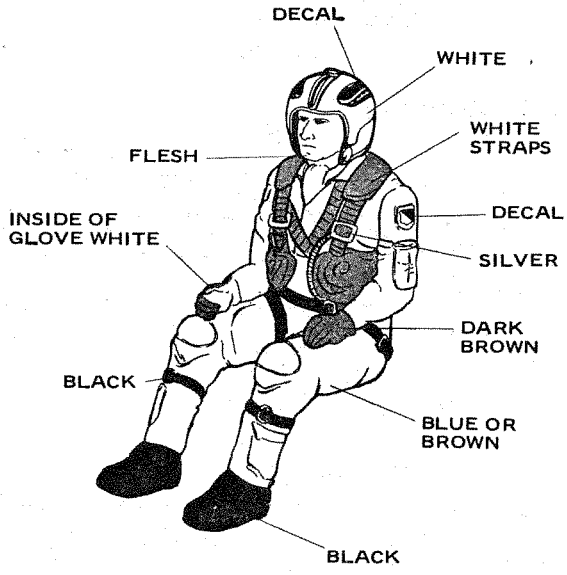
## THIRD FSD AIRCRAFT



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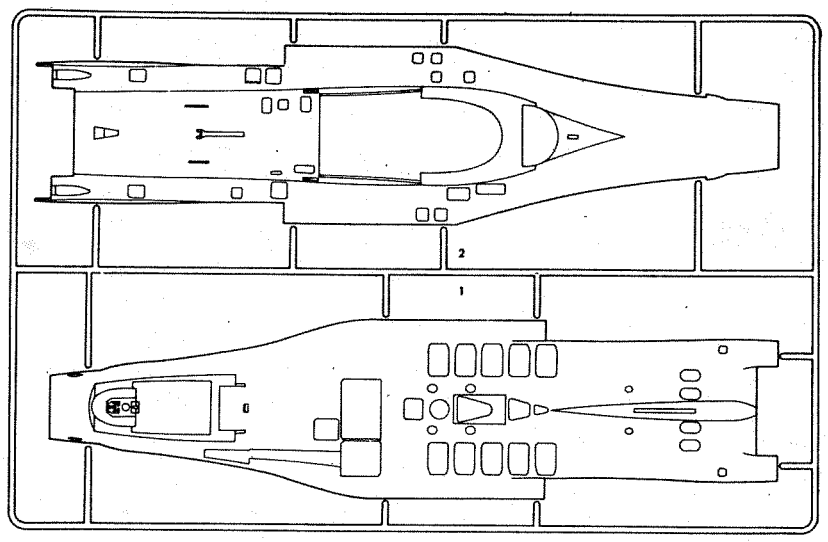
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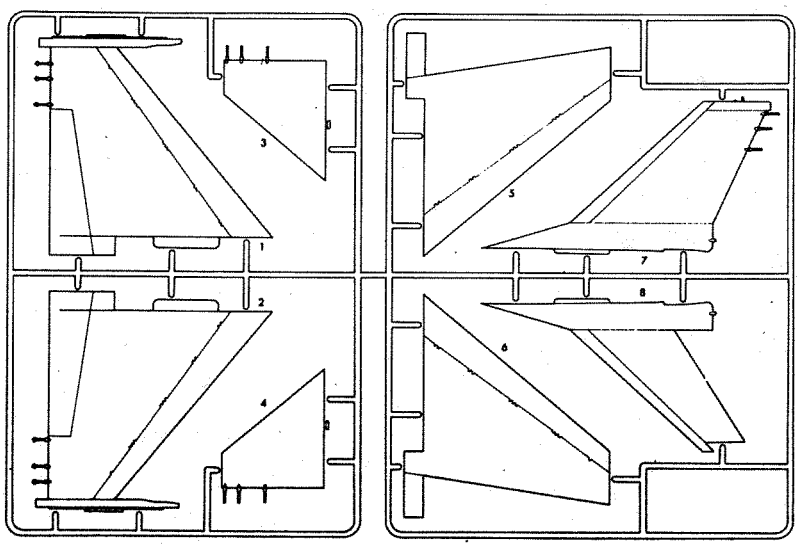
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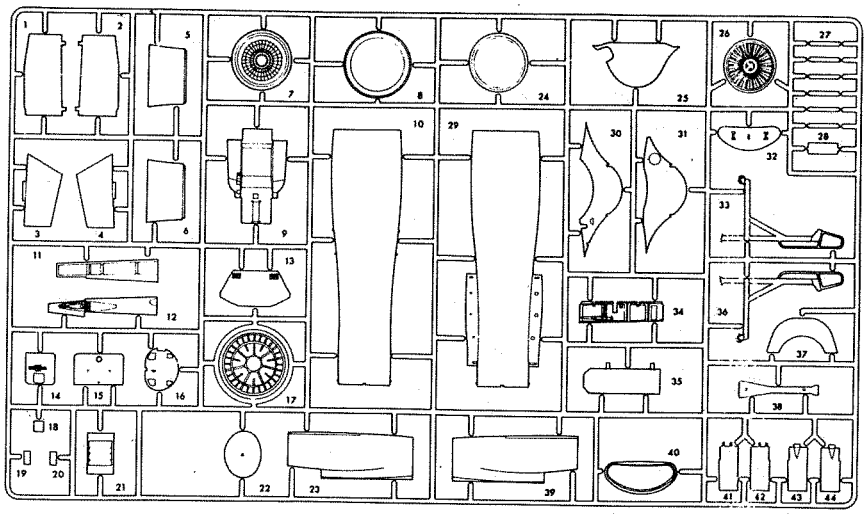
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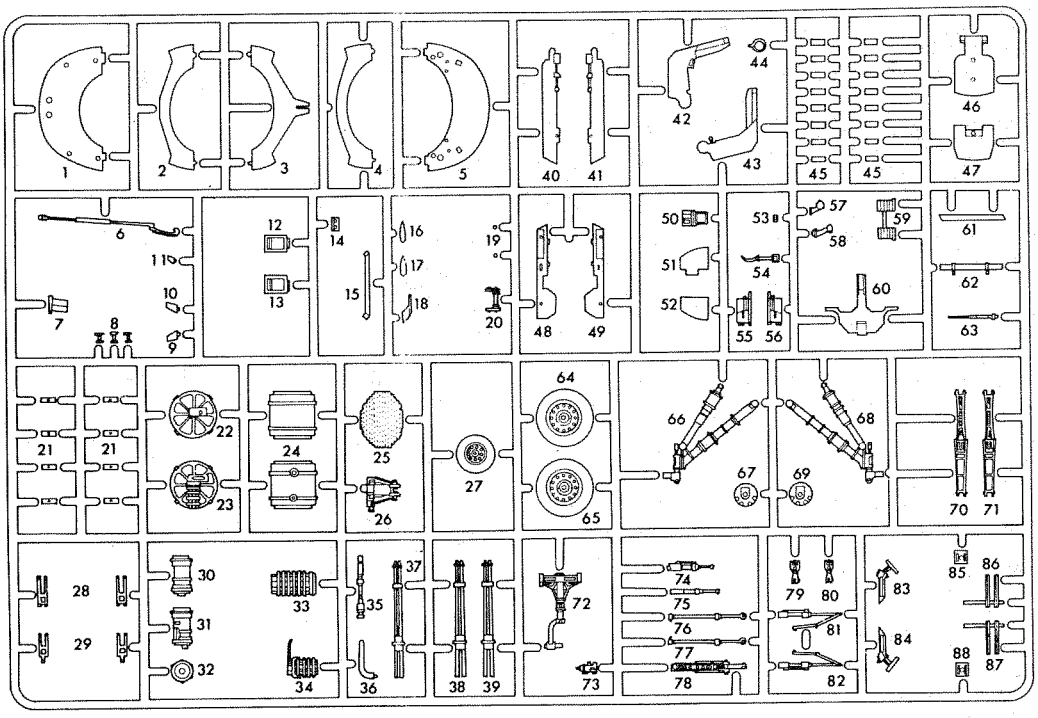

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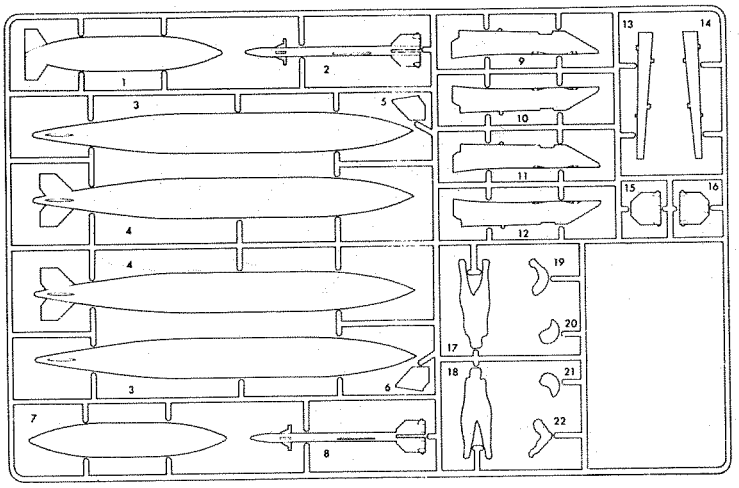

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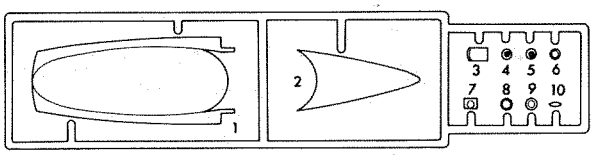

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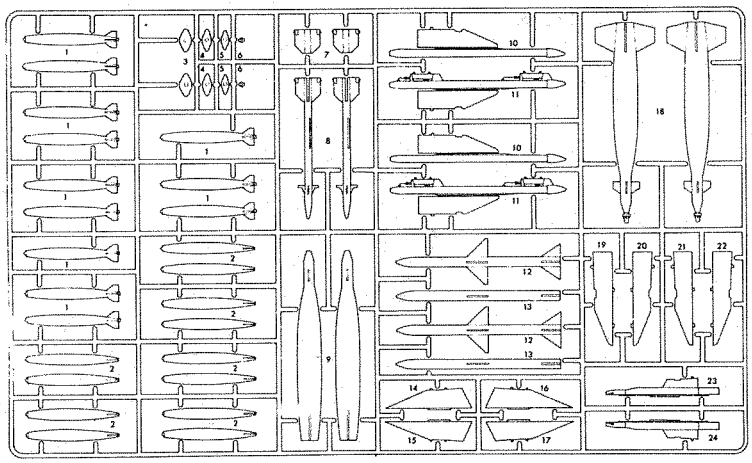

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