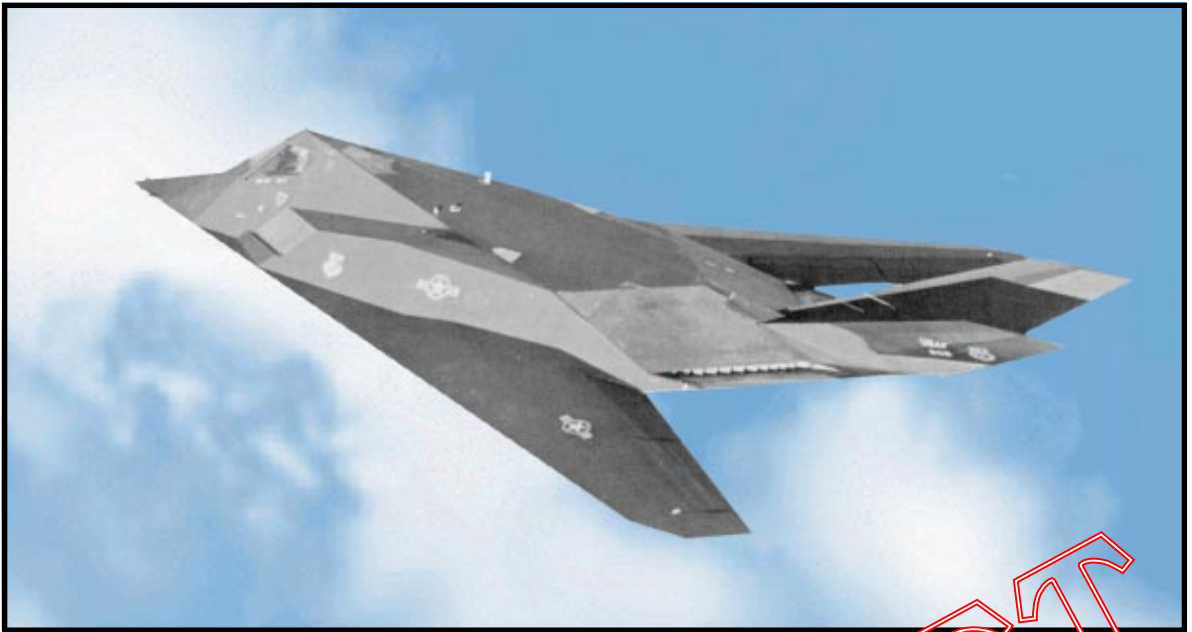


# Lockheed's F-117A Stealth Fighter

## PAPER CARD MODEL



Once shrouded in secrecy, the F-117A Stealth Fighter was officially unveiled by the United States Air Force in early 1990. This public display at Nellis Air Force Base, on April 21, 1990, showed a most-unusual aircraft. Instead of smooth, flowing curves, the F-117A was dead black and all flat-plate angles — even its airfoil had the flat-plate construction. Definitely ugly, and certainly not aerodynamic like the sleek jet fighters one is used to seeing.

Lockheed created the F-117A at its famous Skunk Works. Long known for special aircraft, like the U-2 and SR-71 spy planes, the talents of the Skunk Work's designers turned to producing an aircraft invisible to Radar. This design has all flat surfaces, with all set at carefully calculated angles to each other. Each surface is designed to bounce off Radar beams at angles, much like one can reflect the sun with a mirror. Other parts of the plane's surface absorb the Radar signal. This makes the F-117A invisible to Radar — if no signal is bounced back to the enemy Radar system's antenna, no detection is possible. Other *Stealth* tricks included shrouding the exhaust system to prevent Infra-Red (IR) detection of engine exhaust. And, the F-117A doesn't carry Radar. The Radar signal would be picked up as it approaches. Instead, flight-path data are from an inertial-navigation system (INS) and IR detectors.

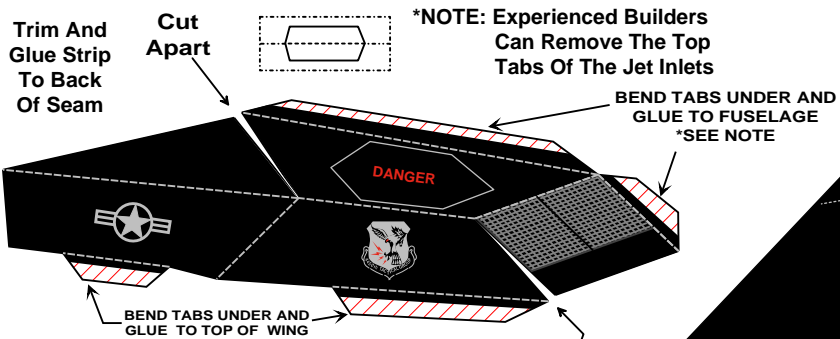
It's called a fighter, but the F-117A is really a bomber. It is unarmed. The plane relies on its Stealth capability to approach and acquire a target, drop its ordnance and sneak away without detection. Its weapons system relies on Video/IR image data to guide smart bombs to their target. Target acquisition is from the nose-mounted Forward Looking Infra-Red (FLIR) system that projects a TV-like image for the pilot. A second system is mounted on the bottom of the F-117A. This is the Downward-Looking Infra-Red (DLIR) system. Both systems are steerable, adjustable for wide- or narrow-angle view and can be used for flight or weapons guidance.

The F-117A Stealth Fighter is rather large and carries just the pilot. The aircraft design required a computer-controlled flight system for stability. And, it's a true fly-by-wire system — pilot inputs are to a computer, not directly to the control surfaces. Generally accepted specifications are:

**Wingspan** 43 Feet 4 Inches  
**Length** 65 Feet 11 Inches  
**Height** 12 Feet 5 Inches  
**Power** Two GE 10,600-lb Thrust  
F404-F1D2 Jet Engines  
**Speed** 646 MPH  
**Range** 1000 Miles - Extended Range  
With In-Flight Refueling







## RIGHT SIDE JET INLET

Trim And Glue Strip To Back Of Seam

Cut Apart

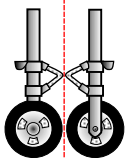
## NOSE "CONE"

TOP

BEND TABS UNDER AND GLUE TO FRONT OF FUSELAGE

BEND TABS UNDER AND GLUE TO FRONT OF CENTER SECTION

## NOSE GEAR & DOOR

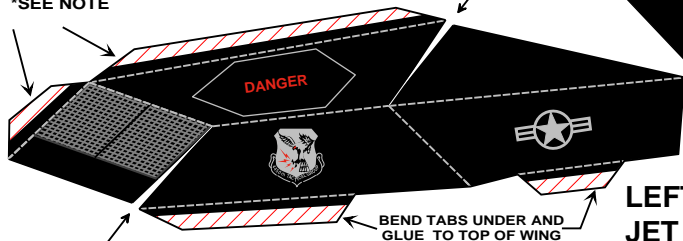


MAKE FOUR PITOT TUBES FROM TOOTHPICKS

Trim And Glue Strip To Back Of Seam

Cut Apart

BEND TABS UNDER AND GLUE TO FUSELAGE \*SEE NOTE

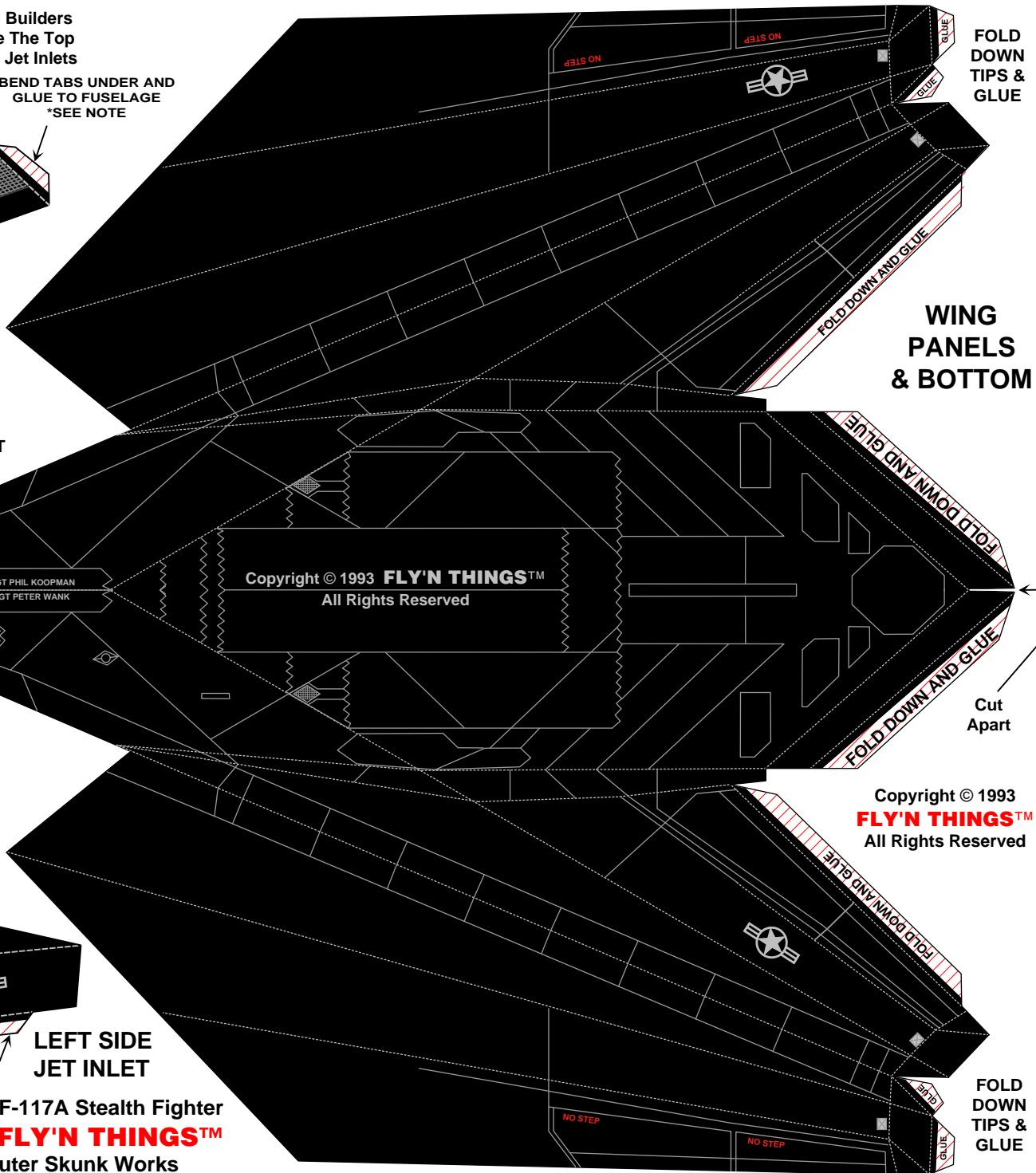


## LEFT SIDE JET INLET

Cut Apart

Trim And Glue Strip To Back Of Seam

Lockheed F-117A Stealth Fighter  
From The **FLY'N THINGS™**  
Computer Skunk Works



FOLD DOWN TIPS & GLUE

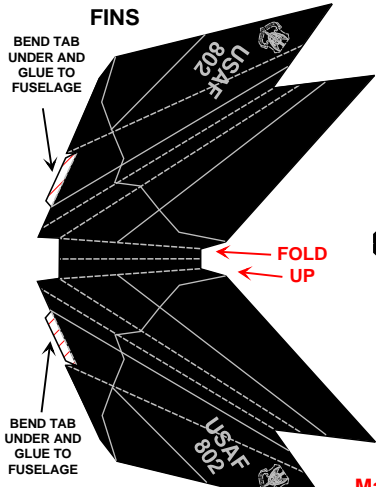
## WING PANELS & BOTTOM

Cut Apart

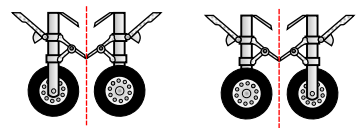
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FOLD DOWN TIPS & GLUE

Lockheed F-117A Stealth Fighter  
From The **FLY'N THINGS™**  
Computer Skunk Works



COLOR ALL "CUT" EDGES  
WITH A BLACK MARKER PEN



MAIN LANDING GEAR

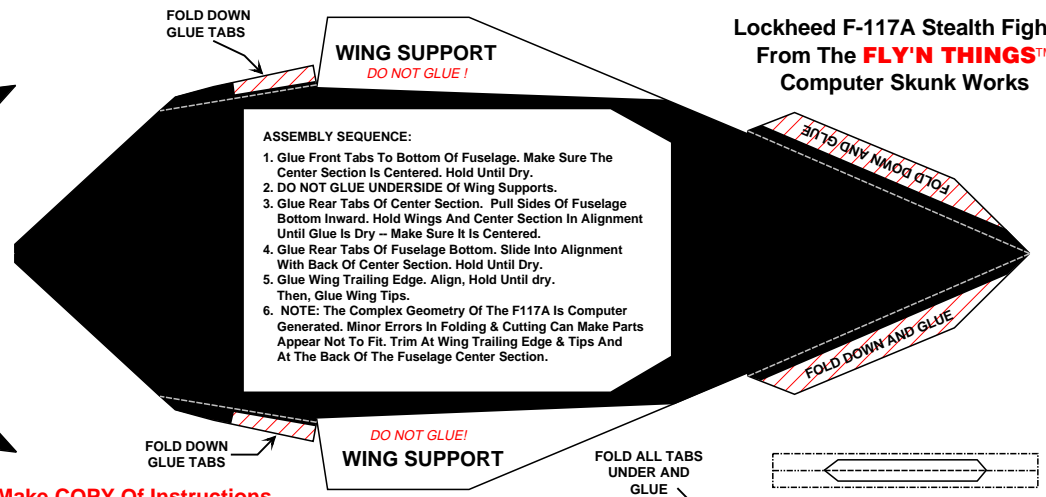
GLUE ALL LANDING-GEAR STRUTS  
AROUND A STRAIGHT PIN



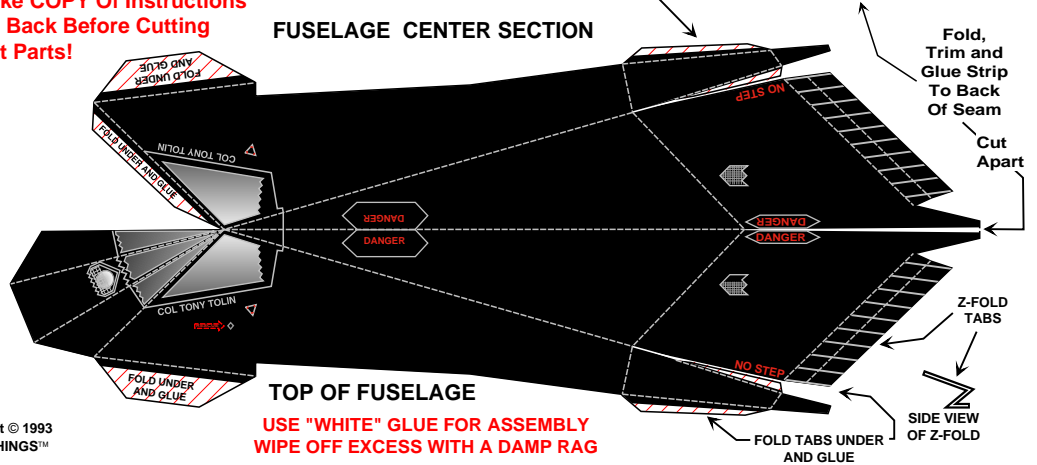
MAIN GEAR DOORS

Make COPY Of Instructions  
On Back Before Cutting  
Out Parts!

Copyright © 1993  
FLY'N THINGS™



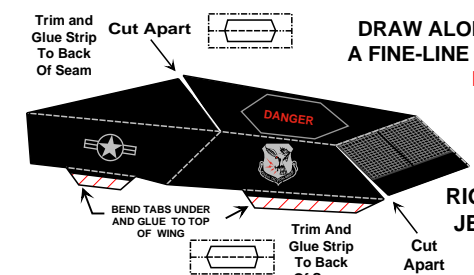
- ASSEMBLY SEQUENCE:
1. Glue Front Tabs To Bottom Of Fuselage. Make Sure The Center Section Is Centered. Hold Until Dry.
  2. DO NOT GLUE UNDERSIDE Of Wing Supports.
  3. Glue Rear Tabs Of Center Section. Pull Sides Of Fuselage Bottom Inward. Hold Wings And Center Section In Alignment Until Glue Is Dry -- Make Sure It Is Centered.
  4. Glue Rear Tabs Of Fuselage Bottom. Slide Into Alignment With Back Of Center Section. Hold Until Dry.
  5. Glue Wing Trailing Edge. Align, Hold Until dry. Then, Glue Wing Tips.
  6. NOTE: The Complex Geometry Of The F117A Is Computer Generated. Minor Errors In Folding & Cutting Can Make Parts Appear Not To Fit. Trim At Wing Trailing Edge & Tips And At The Back Of The Fuselage Center Section.



FUSELAGE CENTER SECTION

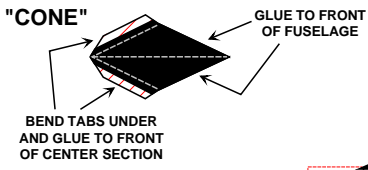
TOP OF FUSELAGE

USE "WHITE" GLUE FOR ASSEMBLY  
WIPE OFF EXCESS WITH A DAMP RAG

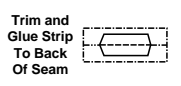
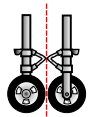


NOSE  
"CONE"

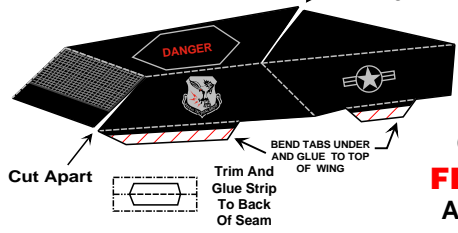
DRAW ALONG DASHED LINES WITH  
A FINE-LINE BLACK BALL POINT PEN.  
DO NOT CUT!



NOSE GEAR & DOOR

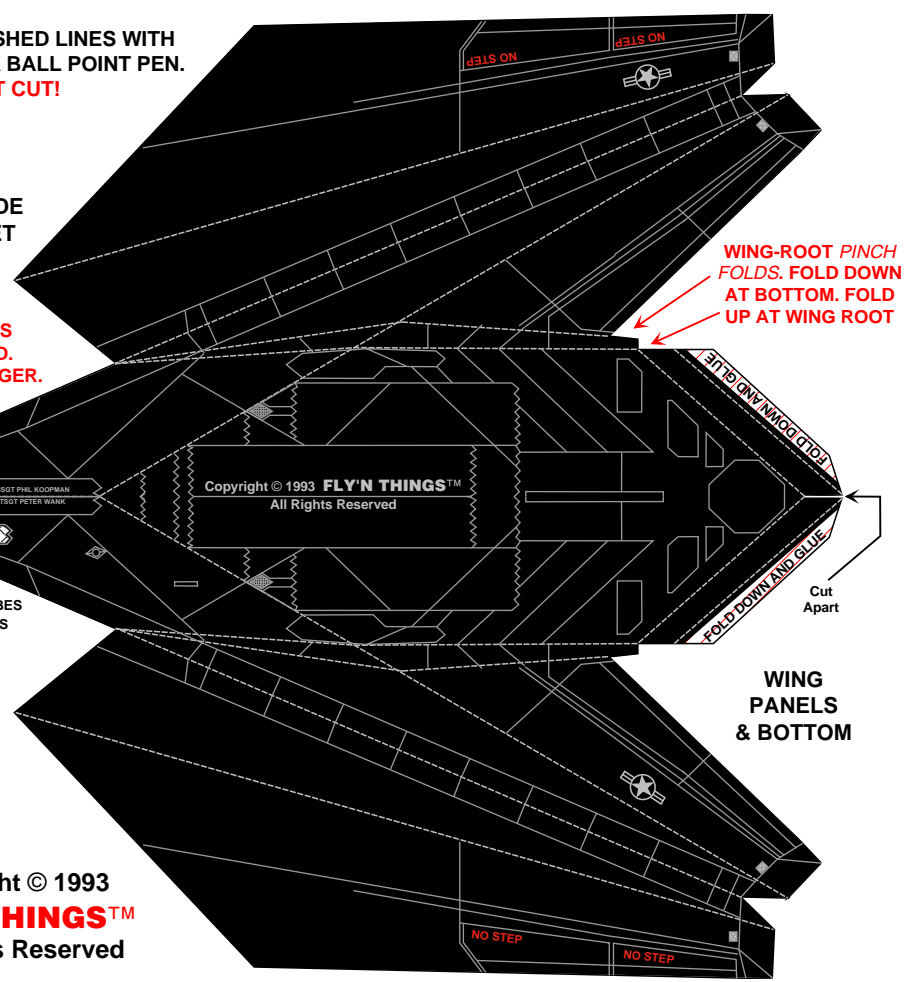


LEFT SIDE  
JET INLET



MAKE FOUR PITOT TUBES  
FROM STRAIGHT PINS  
(CUT OFF HEADS)

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WING  
PANELS  
& BOTTOM