

# The Raven





# USAF/Grumman EF-111A *Raven*: the most advanced electronic warfare aircraft

Armed with the world's most sophisticated jamming system, the Air Force EF-111A *Raven* presents a formidable challenge to enemy electronic air defense networks and radar-directed weaponry. Deployed in the Tactical Air Command and with NATO strike forces, it offers a three-way protection option: escort into and out of target areas, close-in support jamming, or barrier standoff. With a combat range of 2000 miles, supersonic performance, and low or high altitude maneuverability, this tactical jamming aircraft has the power and versatility to master the electronic battlefield.

## Most Powerful Jammer in the Skies

Grumman Aerospace Corporation produces the EF-111A, a blend of the proven AN/ALQ-99 jamming system and the F-111A airframe, for the U.S. Air Force. Our comprehensive modification program results in a virtually new aircraft with a 30-year anticipated service life. During the remanufacturing process, all fuselage wiring is replaced and automatically tested end-to-end; the weapons bay is modified

and outfitted with multi-frequency exciters and transmitters; and ultrasensitive receivers are housed in a prominent radome atop the vertical stabilizer. The EF-111A *Raven* emerges as the most powerful tactical jammer in the skies.

## Power Management is the Key

The key to the EF-111A's effectiveness is automatic management of jamming power. Operating under computer control, each ALQ-99 jamming transmitter radiates energy at the precise frequency to counter each threat as it arises. Power is dedicated to neutralizing specific threats, not wasted on continuous brute-force jamming.

The *Raven* flies with a two-man crew, a pilot and an electronic warfare officer (EWO) who controls both active and passive equipment through on-board computers. Efficient computer management enables one EWO to handle the heavy workload formerly assigned to several operators using manually operated equipment. Preflight programming of the computer with known emitters frees the EWO to concentrate on the changing scenario encountered during the actual mission and to reprogram the computer in

flight to combat unanticipated enemy threats.

## Versatile Mission Performance and ATE Support

"Smart" jamming makes the versatile EF-111A effective for standoff, close-in, and escort missions. In barrier standoff, the *Raven* loiters on the edge of the battle area, screening friendly aircraft from enemy radars. In close-in support missions, it uses its jamming power to neutralize hostile anti-air radars while the strike force delivers its weapons. In escort missions, *Ravens* accompany strike aircraft to high-priority targets deep behind enemy lines, jamming all electronic air defense elements along the flight path.

The tactical jamming system onboard the EF-111A is supported by Grumman's AN/ALM-204V automatic test equipment (ATE). This modular test station performs a wide range of RF, analog, and digital functions for optimum levels of mission readiness.

## EF-111A...The Force Multiplier

The EF-111A shields the strike force by jamming early

warning, ground control intercept, and fire control acquisition radars. Successful jamming saves both crews and aircraft—a significant tactical advantage.

## A Viable ECM Asset for Today and Tomorrow

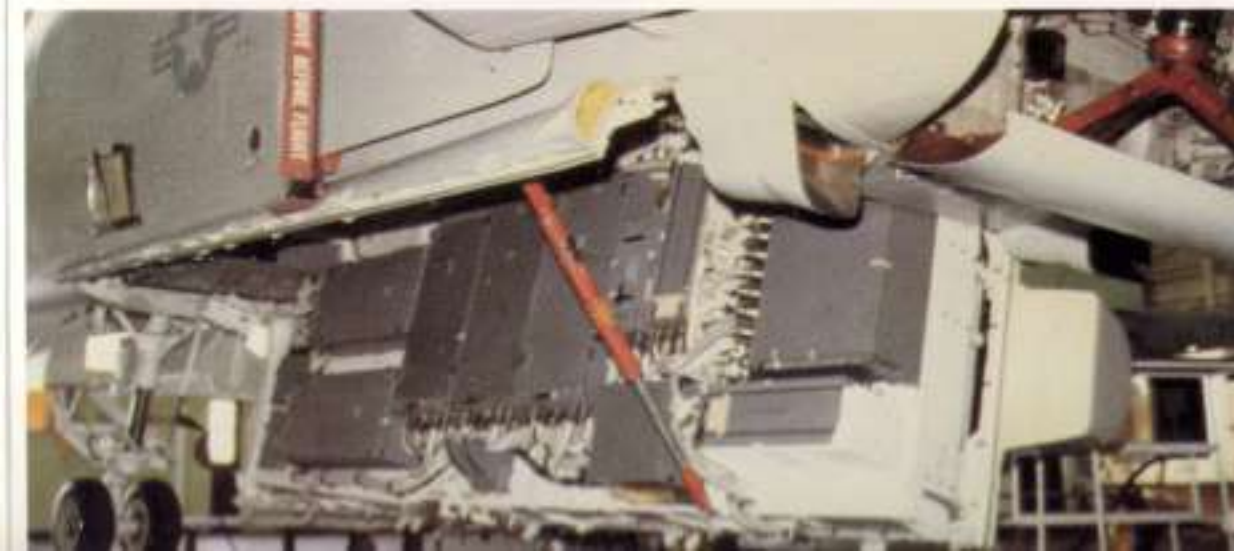
Verification of this newest ECM aircraft under realistic operating conditions revealed several outstanding features: an ample service life for all modified areas of the airframe; flying qualities and maneuverability virtually identical to those of the proven F-111; jamming system reliability exceeding current Air Force requirements; and built-in growth to combat future threats. And, in a simulation of the Central European air defense environment, the EF-111A demonstrated its ability to detect, identify, and neutralize this dense thicket of enemy radars.

With its long service life, superior aerodynamic and jamming capabilities, and built-in growth potential, the *Raven* should remain a viable Air Force ECM asset well into the next century.

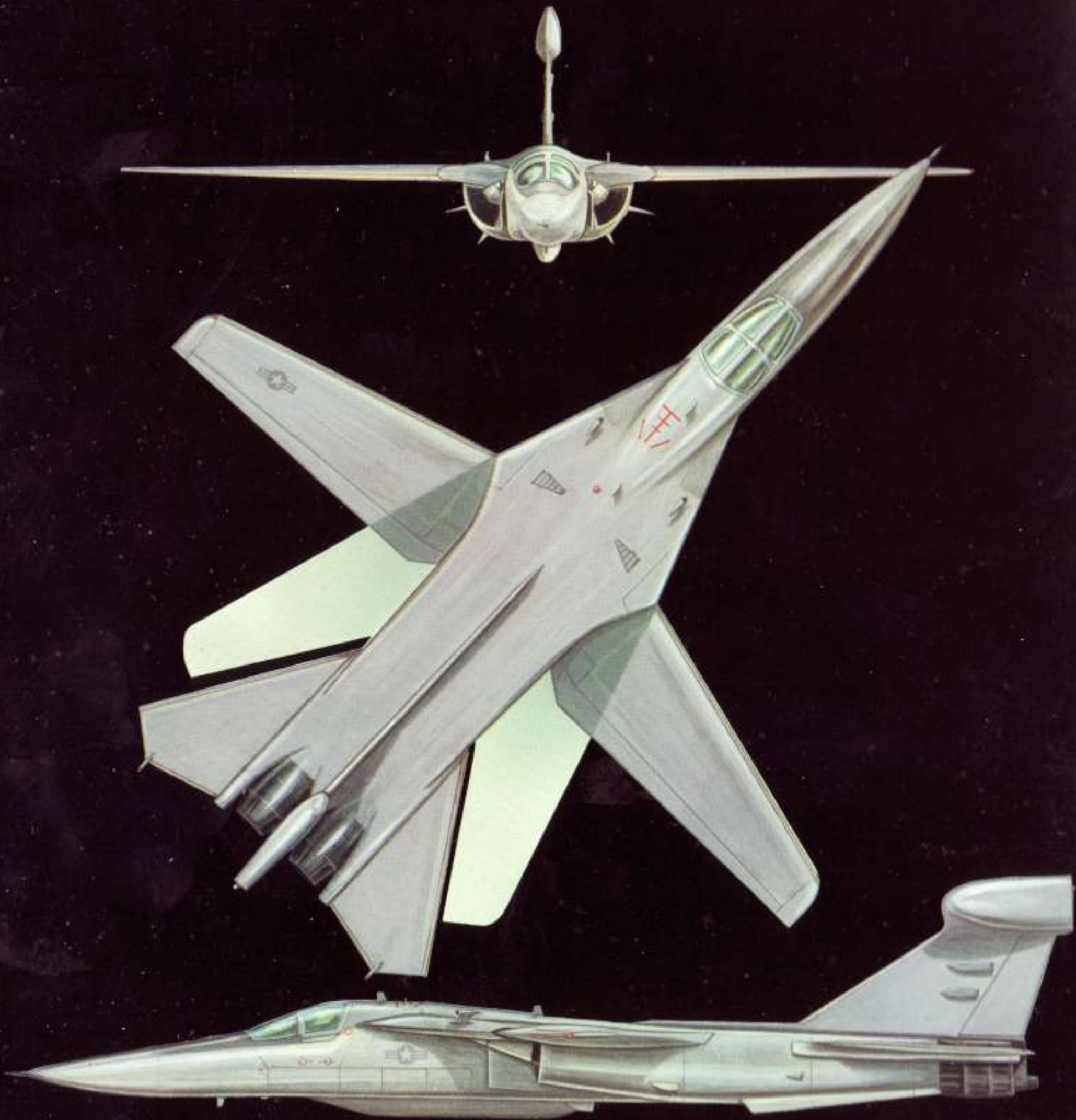
The EF-111A *Raven*...it's in a class by itself.















## EF-111A — The *Raven*



- World's most powerful jammer**  
Blending the proven ALQ-99 jamming system and the reliable F-111A airframe results in unmatched ECM power and versatility.
- Power management is the key**  
Computer-controlled jamming transmitters radiate power at specific frequencies.
- Versatile mission performance and ATE support**  
EF-111A is effective for barrier standoff, close-in support, and escort missions. And Grumman ATE supports optimum mission readiness.
- A viable ECM asset for today and tomorrow**  
*Raven's* longevity is assured by ample service life and built-in growth potential.

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## EF-111A TACTICAL JAMMING SYSTEM

The Grumman EF-111A Tactical Jamming System (TJS) is the latest United States Air Force tactical aircraft to be dedicated specifically to electronic warfare (EW) and the most modern, fully integrated EW aircraft designed to date. The supersonic EF-111A will be capable of flying with, and providing, protective jamming coverage for the tactical strike force throughout its entire mission profile.

Adding an updated version of the proven ALQ-99 electronic jamming subsystem (the ALQ-99E) to the F-111A airframe has resulted in an aircraft with both outstanding aerodynamic performance and superior EW capability. This combination provides our strike forces with a 3-way protection option — escort into and out of target areas, close-in support jamming, or loiter to protect our aircraft over both hostile and friendly territory.

The EF-111A's tactical jamming functions are managed by a single Electronic Warfare Officer (EWO) who controls both active and passive equipment through the on-board computer. Computer management enables the single EWO in the EF-111A to handle a tactical EW workload previously requiring several operators and larger equipment. For example, preflight programming of the computer with known emitters frees the EWO to concentrate on new and more urgent threat radars. Also, the automated ALQ-99E has exceptional agility and versatility for picking up, identifying, and assigning jammers to neutralize enemy emitters over a wide range of frequencies.

With its powerful jamming and computer-managed versatility, the USAF/Grumman EF-111A TJS provides increased strike force effectiveness and survival in a sophisticated electronic warfare environment — well into the 1980s.

Identifying features are the fin cap antenna radome and a slim 19-ft-long faired radome built into the belly of the aircraft.

### PERFORMANCE

Max speed . . . . . 1,262 kt  
Cruise speed . . . . . 430 kt  
Min T.O. distance . . . . . 5,000 ft  
Service ceiling . . . . . 50,000 ft  
Ferry range . . . . . 2,100 n mi

### DIMENSIONS

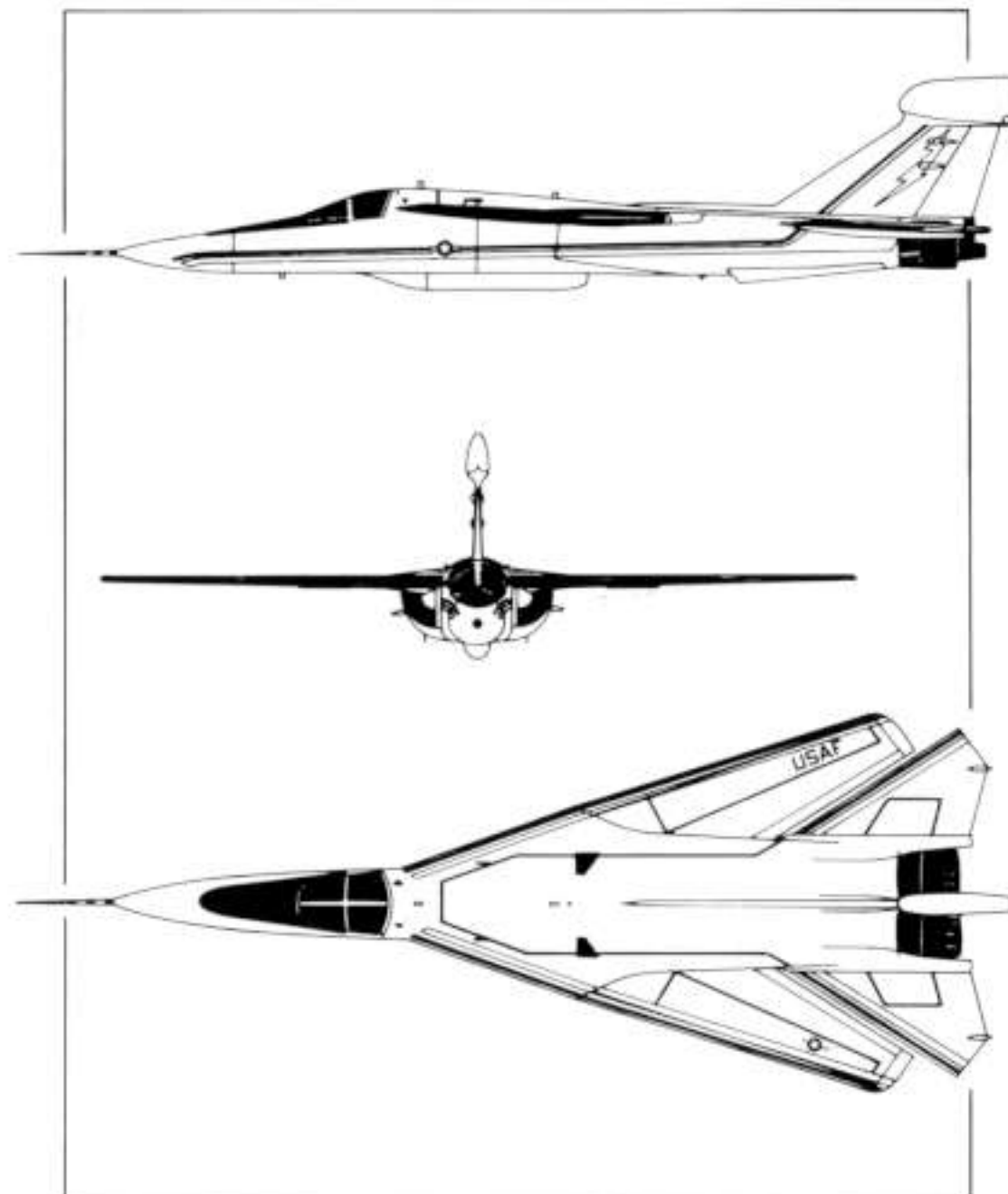
Wing span (swept) . . . . . 32 ft  
Wing span . . . . . 63 ft  
Length . . . . . 77 ft  
Height . . . . . 20 ft

### PROPULSION

(2) TF30-P-3 afterburning Turbofans  
with thrust ratings of:  
18,500 lb/engine (A/B)  
10,750 lb/engine (Mil)

### WEIGHT

Empty . . . . . 53,600 lb  
Internal fuel . . . . . 32,785 lb  
Max TOGW . . . . . 87,800 lb



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