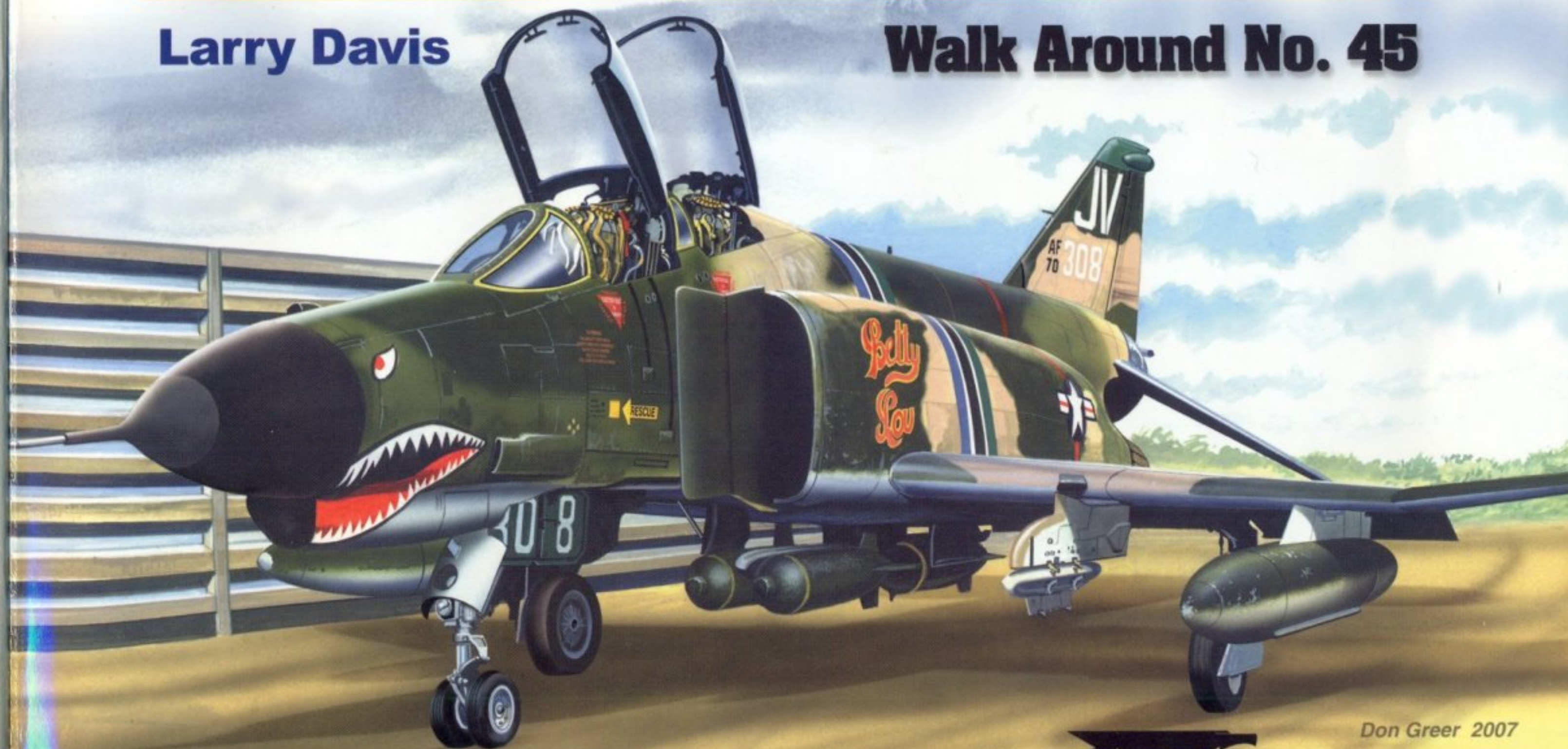


F-4E Phantom II

Larry Davis

Walk Around No. 45



Don Greer 2007

Squadron Signal
Publications

F-4E Phantom II Walk Around No. 45

Larry Davis

Color illustrations: Don Greer

Line art : Dave Gebhardt, Don Greer, and Matheu Spraggins



The McDonnell-Douglas F-4 Phantom II was easily the most famous and prolific aircraft of the 1960s. The F-4 came in many flavors — from fleet interceptor to fighter bomber to recon airplane to MiG killer to Wild Weasel. F-4s ruled the skies over Vietnam and the Middle East. During Gulf War I, Wild Weasel F-4Gs brought fear to the hearts of Iraqi air defense crews. And on top of that, it was a premier “showman,” serving with both the Navy’s Blue Angels and Air Force Thunderbirds aerobatic teams.

The F-4 was designed and developed in the years following the Korean War for the U.S. Navy. Navy pilots had taken a beating from the MiGs over Korea. The admirals were adamant that it would not happen again in any future war. The Navy wanted a true “double sonic” interceptor to protect the fleet. The answer came from the McDonnell Aircraft Co. with the F4H-1 Phantom, later designated F-4A.

Rolled out in May 1958, the F4H-1 looked very strange with its upturned wingtips and down-turned stabilators. It had two big J79 engines that put out over 16,000 pounds of thrust each. Despite an ungainly appearance, the F-4 was fast, very fast indeed — like 1,606.3 mph during the Skyburner tests of 1961. It was a big fighter, weighing over 58,000 pounds in combat trim. And it was one of the new breed of fighters that were armed strictly with missiles.

But in the skies over Vietnam, pilots discovered a flaw in the thinking that deleted any gun armament in the design — the missiles weren’t perfect. And when Air Force and Navy pilots missed with their missiles, the North Vietnamese MiGs were waiting to bore in for the kill. Only the high speed of the F-4 kept the air-to-air conflict from becoming a feast for the MiG pilots. What was needed was a gun.

Air Force crews tried a gun “pod” on some combat F-4s, but it was erratic. In 1966, the McDonnell engineers came up with the solution — an internally mounted General Electric M61A-1 20mm Gatling cannon. Rolled out in 1967, the “gunfighter” version of the Phantom was designated F-4E. Production F-4Es began to be delivered in October 1967, and combat tests of the new aircraft were conducted by the veteran crews of the 388th TFW at Korat Royal Thai Air Base, Thailand, in 1968. Before long, F-4Es were operating from every Air Force base in America, including Alaska, and with units in NATO and the Far East.

The first foreign nation to purchase the F-4E was Israel, which began taking delivery of its first F-4Es in September 1969. In 1972, Japan began operations with the F-4EJ, a license-built variant manufactured by Mitsubishi. The F-4F was another variant that was built for the West German Bundesluftwaffe, and was the first to have the leading edge slats that greatly increased combat maneuverability. Subsequently, most F-4Es were retrofitted with the leading edge slats.

In the mid-1970s, the U.S. Air Force needed to replace its aging fleet of F-105G Wild Weasel aircraft. The answer was to modify existing F-4E airframes for the Wild Weasel mission. The internal gun was again deleted and replaced with a sophisticated electronics suite to monitor the various Soviet radar frequencies, and attack them with the latest ordnance.

In the end, McDonnell-Douglas would produce no less than 5,057 F-4 Phantoms in some fifteen variants, and would operate with at least thirteen major air forces. The F-4E left service with the U.S. forces in 1991 when the Missouri Air Guard traded their veteran F-4Es for F-15 Eagles. However, the F-4E remains in front line service with many nations throughout the world even today, and will remain so for many years to come.

List of Contributors

The author gives thanks to Tom Brewer, Marty Isham, Bert Kinzey, G.A. Kromhout, McDonnell Douglas (McAir), David Menard, Hugh Muir, John Poole, Mick Roth, Thunderbirds Aerobatic Team, Bob Ulrich, and U.S. Air Force.

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Front Cover: “Betty Lou,” an F-4E flown by Col. Allen K. McDonald, commander of the 388th TFW at Korat Royal Thai Airbase in 1969.

Title Page: A 34th TFS F-4E Phantom heads north after topping off its fuel tank from a “Young Tiger” KC-135 tanker. The aircraft is “Spunky VI,” the personal aircraft of Col. J.M. Breedlove, CO of the 388th TFW at Korat, as denoted by the three color “command bands” painted around the fuselage and drop tanks. (USAF)

Back Cover: “YGBSM” (“You Gotta Be Shittin’ Me”), an F-4G with the 561st TFS at Nellis AFB in 1996, with eight SAM-site kills during Desert Storm.



The fourth F4H-1 on the ramp at Andrews AFB during an open house in spring 1959. The F4H-1 was rolled out in May 1958, with its mission being that of a fleet defense interceptor. Before the end of the Phantom's career, it would be used in every conceivable mission and be flown by the USAF, USMC, and USN. (Paul Stevens)



An F-110A Phantom II on the tarmac at Langley AFB, home of the Air Force Tactical Air Command. In January 1962, two Navy F-4Bs were delivered to Langley with Air Force markings for tests that would result in the Air Force purchase of the type as a tactical fighter. The designation was changed from F-110A to F-4C during production. (USAF)

F-4 Evolution

F4H-1



YF-4E



Production F-4E





"El Toro Bravo," an F-4E flown by Lt. Col. Ericksen and Lt. Williams from Korat RTAB in April 1970.



"Road Runner," a 4th TFS F-4E based at Udorn RTAB during Linebacker II operations in December 1972.



"Spunky VI," an F-4E flown by Col. I.M. Breedlove, with Capt. "Hawk" Hawkinson as WSO. Korat 1969.





The RF-4C prototype, serial number 62-12200, was used to test the feasibility of mounting the General Electric M61A-1 20mm Gatling cannon internally in an F-4 airframe. Combat pilots in the skies over North Vietnam had loudly complained about a lack of a gun when all their missiles had been fired. McDonnell-Douglas answered their complaints with the F-4E. *(Tom Brewer)*



An F-4E modified for use as a spin test aircraft. The large protuberance from the aft fuselage carried a special drag chute which would induce the aircraft into a flat spin. The tail is painted Orange, while the outer wing panels are Orange and White for photo purposes. *(USAF)*

"Arizona Chicken" (68-371) and "Here Come The Judge" (67-208), a pair of 34th TFS F-4Es, form up just off the wingtip of the KC-135 tanker prior to turning toward North Vietnam in 1968. Both of these aircraft carry a full load of 500-pound Mk. 82 low drag general purpose (LDGP) bombs, some having 36-inch fuse extenders. *(USAF)*





Cutaway drawing of the F-4E Phantom II showing the new APQ-120 radar unit and the M61A-1 Gatling cannon and ammo drum. (McDonnell-Douglas)



An F-4E-34 (67-265) taxis out at Eglin AFB for a test flight in 1968. Eglin was the home of the Air Force Armament Development Test Center, where every new weapon and system was tested prior to delivery to combat units. The badge on the nose is that of ADTC at Eglin. (Tom Brewer)

The first F-4Es arrive at Korat RTAB, Thailand, in November 1968. The F-4Es were originally assigned to the 40th TFS at Eglin AFB, Florida, before taking their new "gunfighter" Phantoms to the war in Southeast Asia. The new F-4Es were assigned to the 388th TFW at Korat, and the squadron was redesignated as the 469th TFS. The shark's teeth were added at Hickam AFB, Hawaii, and remained a unit marking of the 388th crews until the end of the war. (USAF)





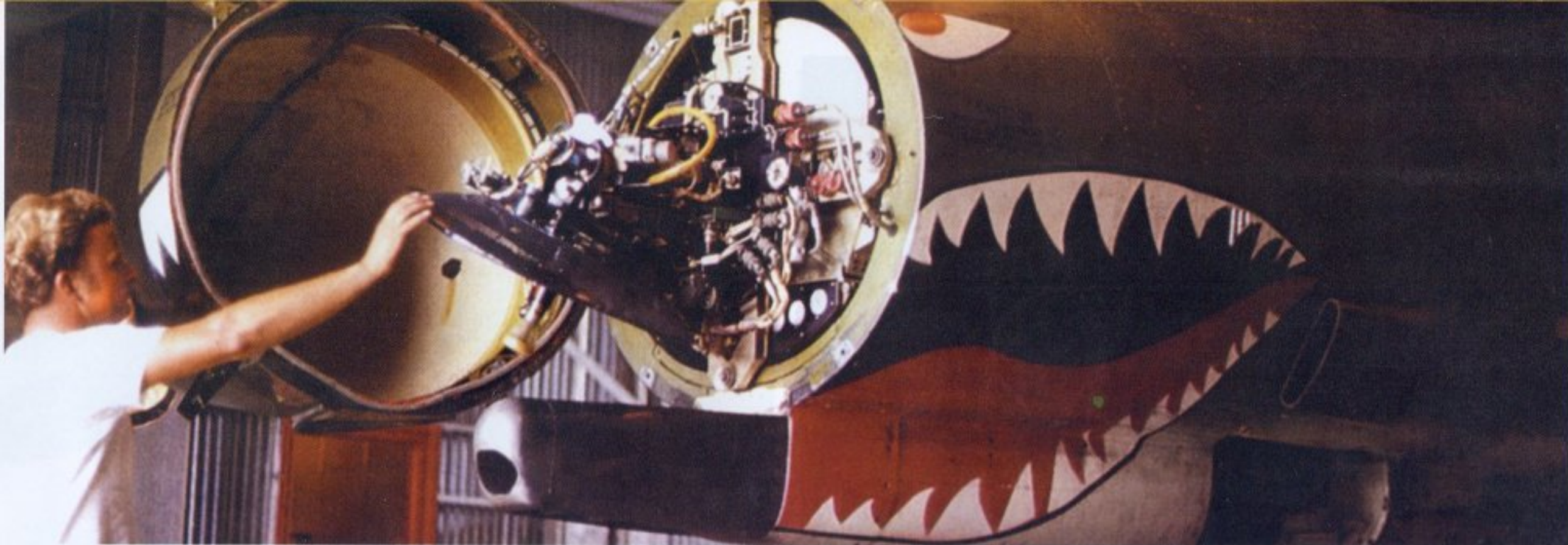
Capt. Pete Gillespie, a 366th TFW Weapons System Operator or WSO, stands next to the F-4E he was assigned to at DaNang in early 1970. The short muzzle cover over the Gatling cannon barrels, typical of early F-4Es, is clearly shown, as is the smaller radome that covered the APQ-120 radar unit. (USAF)



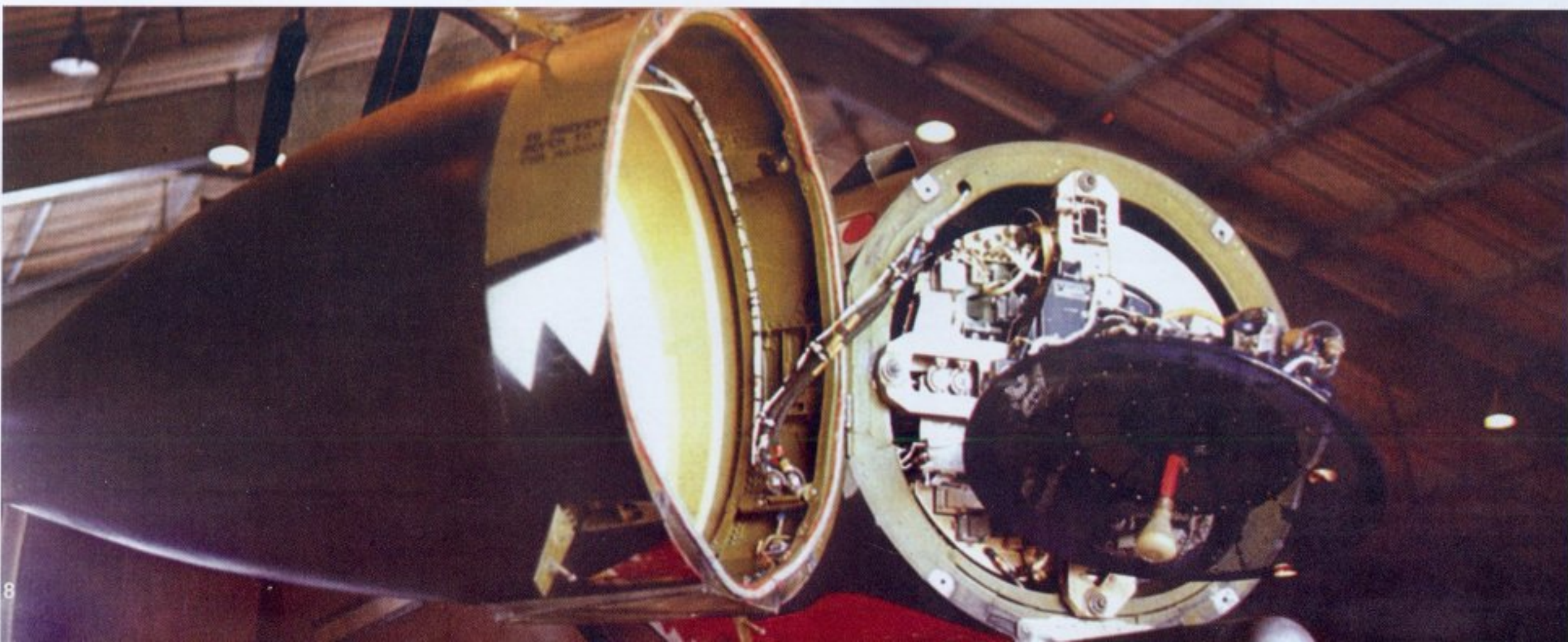
A pair of 469th TFS F-4Es depart the tanker en route to a target in Laos during May 1970. Note the interesting ordnance load. The right wing pylon has cluster bombs, while the left pylon carries three Mk. 82 500-pound LDGPs with 36-inch fuse extenders. On the centerline station are six Mk. 82 LDGPs. This was obviously an antipersonnel mission. (USAF)

"Paper Tiger" (67-268) and another 469th TFS F-4E (67-296) get ready to take on fuel from the waiting KC-135 as denoted by the upraised refueling door on -296. Both aircraft carry a mixed load of CBUs and LDGP bombs. The light tan radome on -296 was unusual but not uncommon on the early F-4Es. (USAF)





(Above and below) The open radome reveals the Westinghouse solid state APQ-120 radar system developed specifically for the F-4E. The APQ-120 radar used a much smaller radar antenna dish, resulting in a smaller diameter radome over that of the F-4B/C/D and J. The radome was actually hinged at the first panel behind the actual Plexiglas radome. The small cable running down the inside top of the radome was the pitot tube sensor cable. The APQ-120 radar unit slid out on dual tracks for servicing. This F-4E has the longer muzzle brake that was retrofitted to all F-4Es. (Detail & Scale photos by Bert Kinzey)





"Betty Lou," F-4E, 67-308, was the personal aircraft of Col. Allen MacDonald, the CO of the 388th TFW at Korat in 1968. The aircraft carries a pair of Douglas AGM-12B Bullpup missiles on the inboard pylons, for a strike against a bridge target on the Ho Chi Minh Trail in 1969. The inside of the nose wheel door is painted dark Green with the aircraft tail number in White. (Tom Brewer)

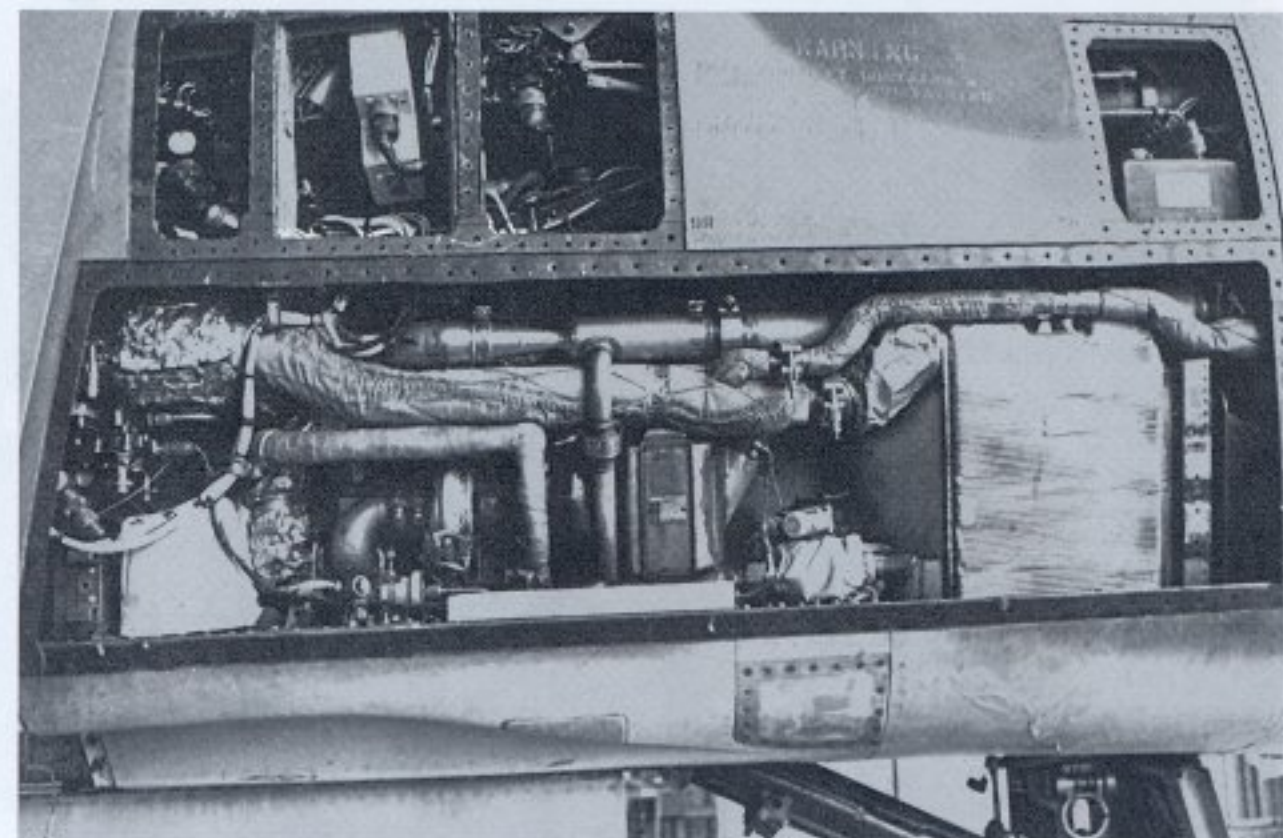
The right side of the nose showing the air conditioning scoop and cooling vent for the avionics bays. Atop the nose is the open gun gas intake scoop, which helps clear the gun compartment of explosive gun gases. The scoop is usually open when the aircraft is parked. (Hugh Muir)



During 1969, McDonnell-Douglas engineers changed the length and shape of the M61A-1 Gatling cannon's gas diffuser to counteract the effect of gun gas possibly entering the engine air intakes, which could result in an engine shutdown or "flameout." The MIDAS 4 gun gas diffuser was longer and had small slots in the underside, which caused the gas to break up and be blown away from the aircraft. (USAF)

The left side of the nose also had an intake scoop and cooling vent, which was of a different shape than on the right side. The small door open on the bottom of the gun compartment revealed the electrical motor and breech mechanism of the cannon. (author)





(Above photos) The air conditioning bays on the right side of the aircraft. The interior color of the bay was Olive Green, as was the inside of the doors that covered the bay, while piping and air conditioning units are various shades of aluminum and metal. (author)

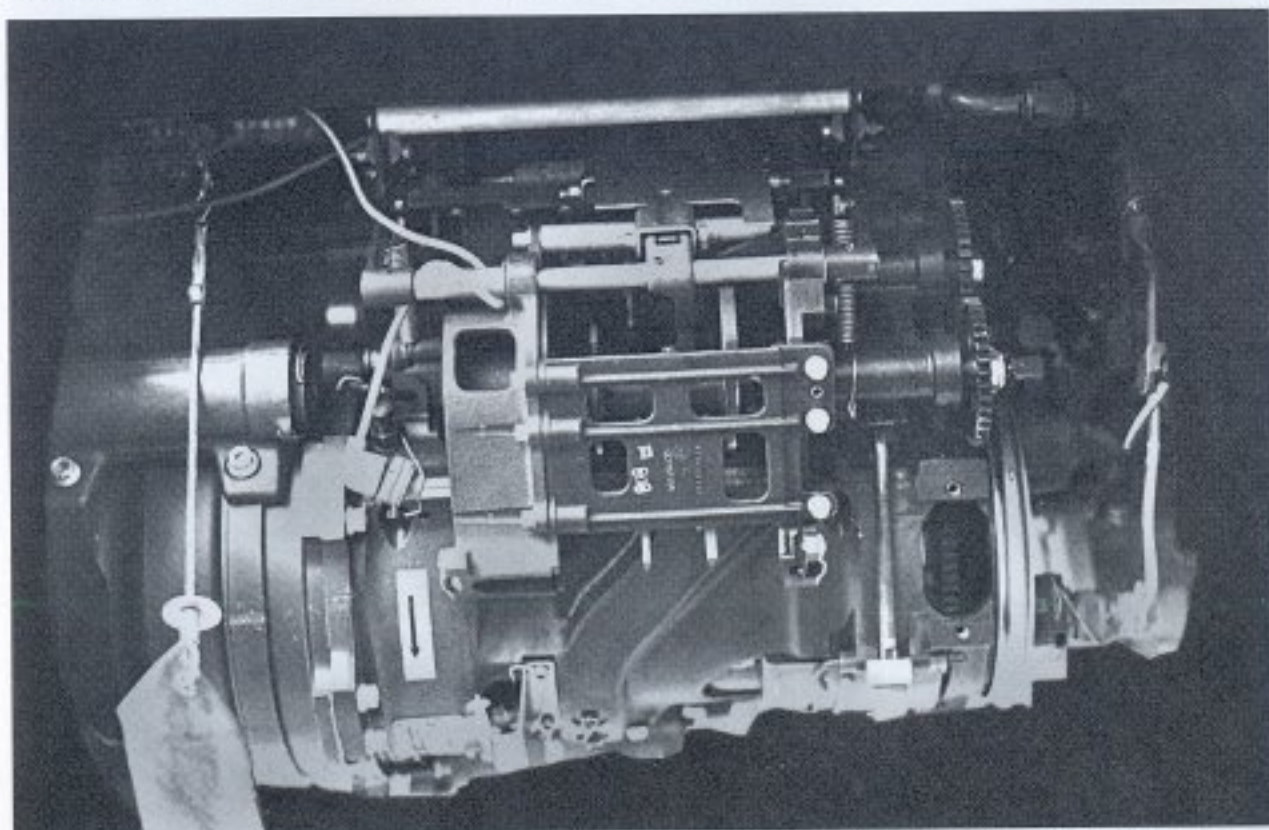
A pair of 421st TFS F-4Es return to DaNang AB, RVN, following a mission against Viet Cong targets in July 1969. The 366th TFW, based at DaNang, was the only other unit to fly the F-4E in combat during the war in Vietnam, although the 432 TFW had F-4E units assigned TDY. The 366th converted from F-4D Phantoms in April 1969. (USAF)



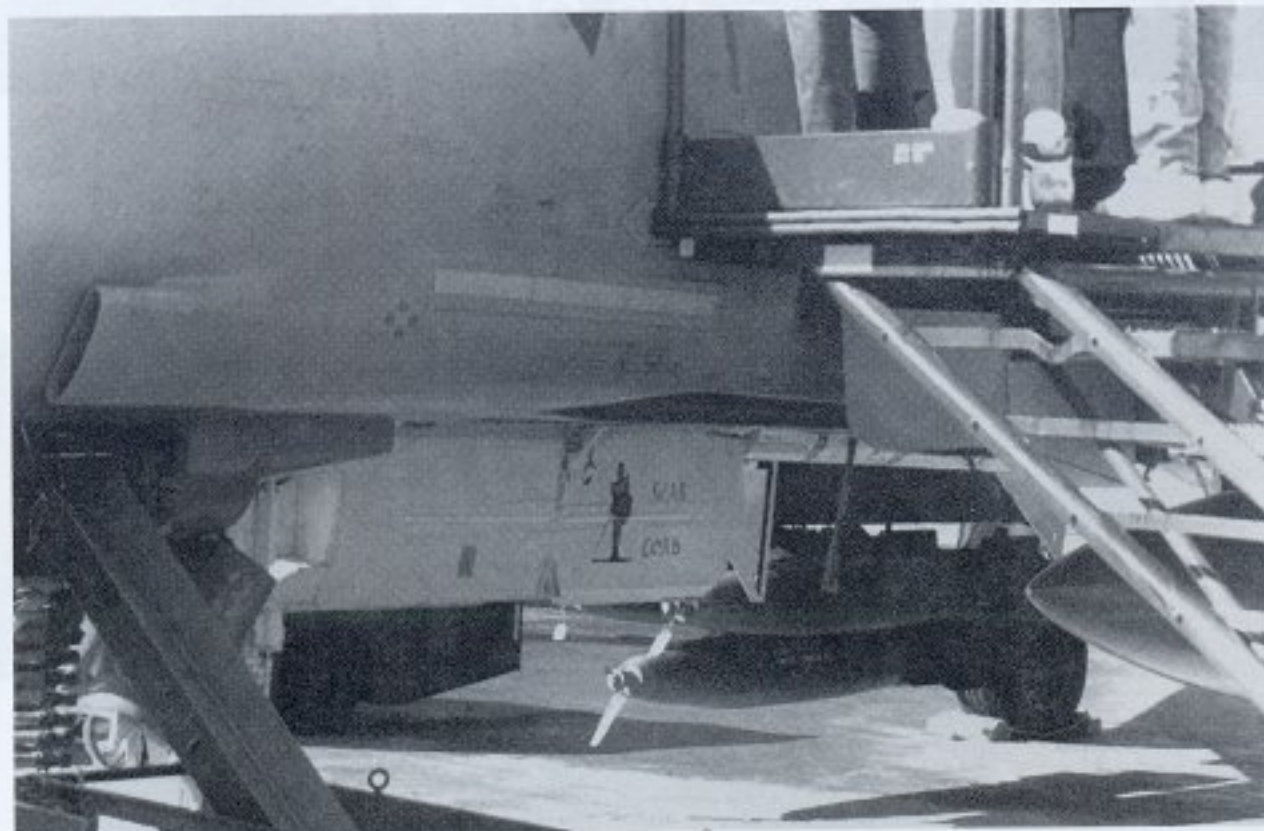


A 4th TFS F-4E sits outside a covered shelter at DaNang in 1970. Tail codes (LA for 4th TFS, LC for 421st TFS) were applied to all aircraft in Southeast Asia beginning in 1967. The drooped leading edge flaps can be seen. The 366th TFW adopted the shark's teeth marking that was a natural on the stepped F-4E nose, much as it was on the P-40 Warhawk during World War II. The shelter is constructed of steel tubing covered with twelve inches of concrete. (USAF)

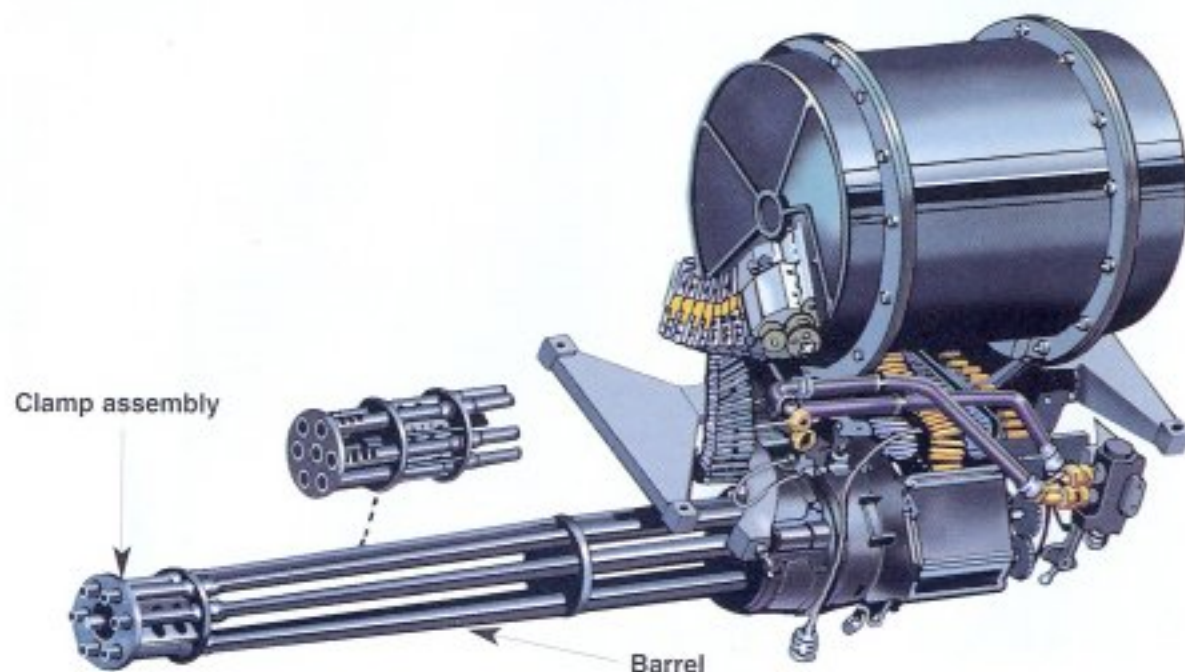
The breech mechanism of the M61A-1 Gatling cannon showing the electric motor that rotated the barrel. Spent cartridges were retained inside the ammunition drum. (author's collection)



Close-up of the air conditioning inlet scoop of an F-4E. The ammunition belt is "cranked" into the drum assembly, while empty shells exit down the chute coming out of the open breech door. (author's collection)



General Electric M61A-1 Gatling Cannon

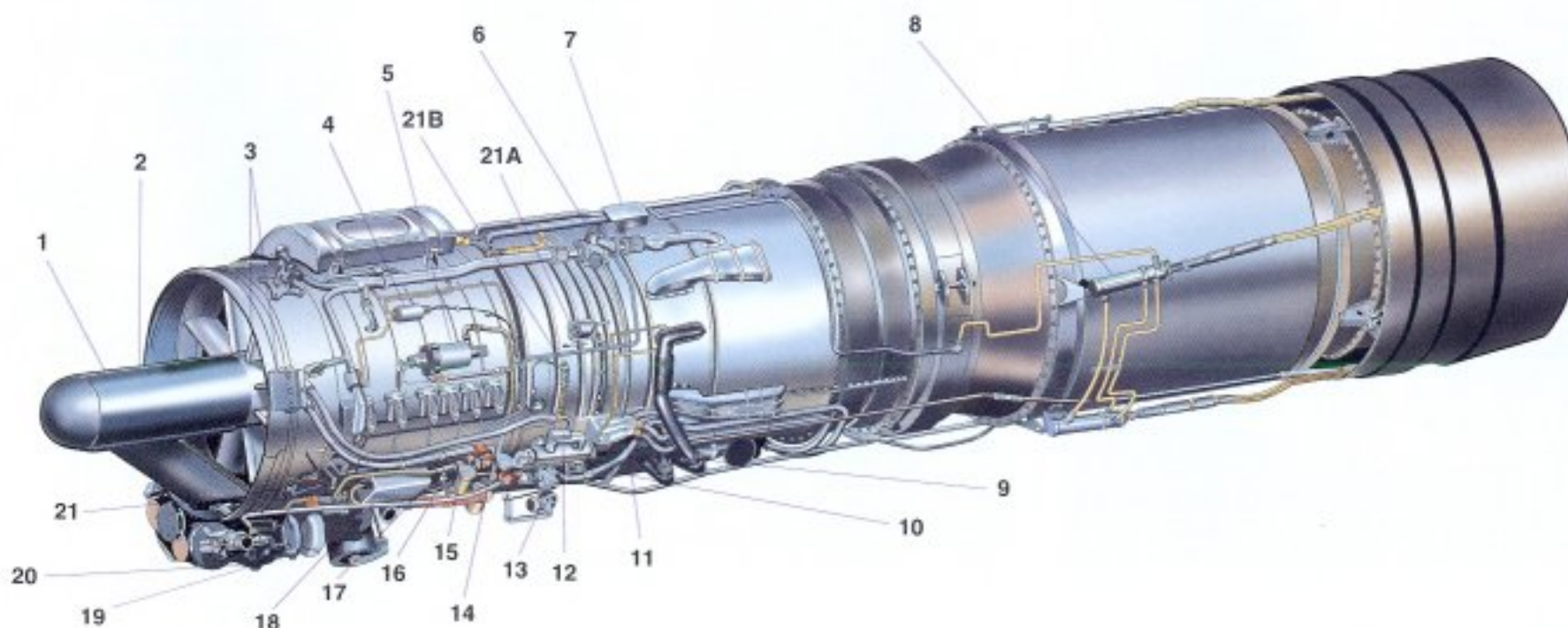


The M61 consists of a housing which encloses and supports a rotating assembly. Each of the six barrels fires one round per revolution, which enables a high rate of fire with little danger of overheating. It is air cooled, externally driven, and normally fuselage or pod mounted.

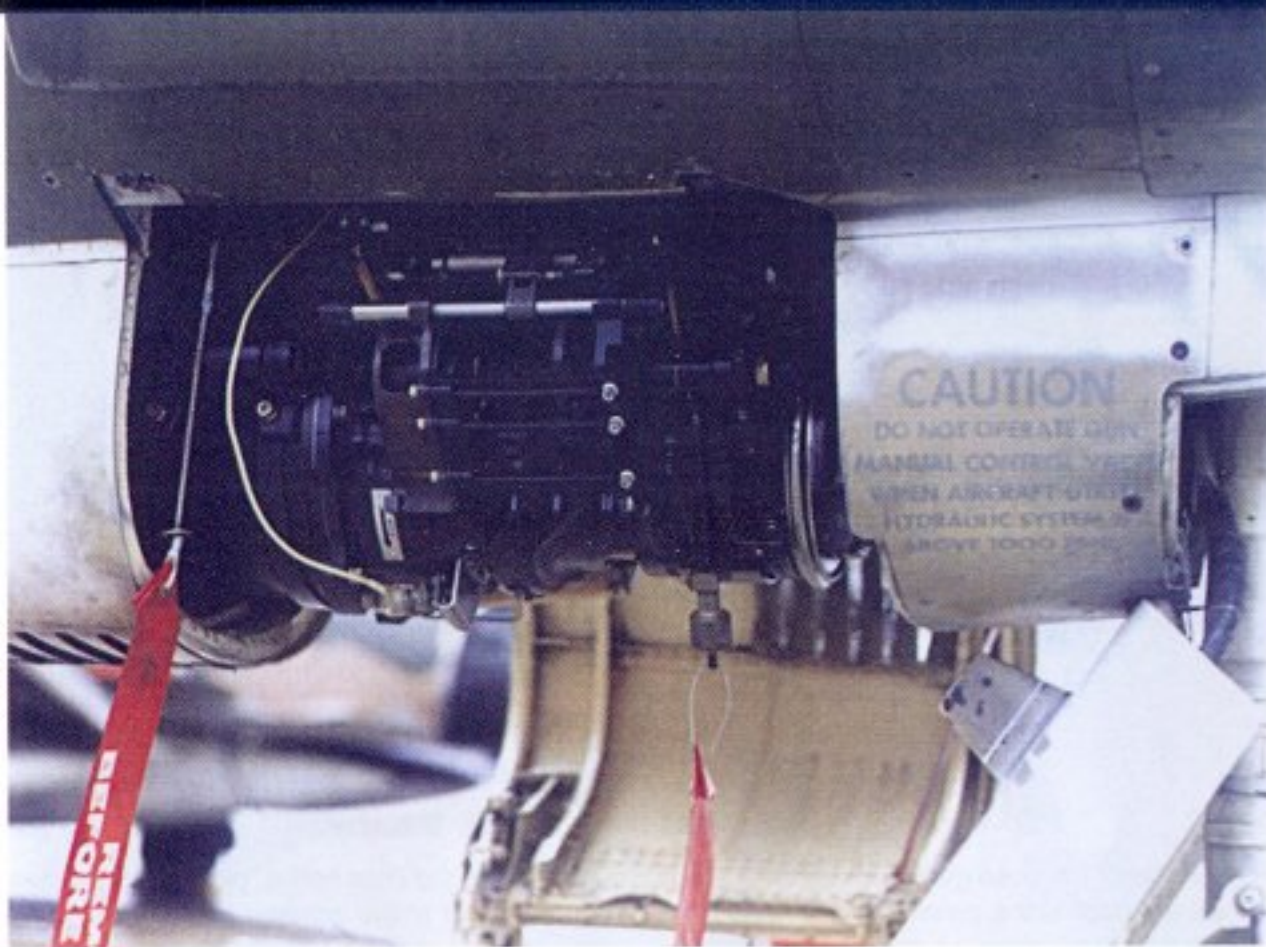


The M61A-1 Gatling cannon with the lower fuselage gun fairing removed. An electric motor spun the rotating barrels at two different speeds, which resulted in the cannon being able to fire 20mm cannon shells at a rate of either 3,000 or 6,000 rounds per minute. (Mick Roth)

General Electric J79-GE-17 Engine



- | No. | Item |
|-----|-------------------------------------|
| 1 | AC generator |
| 2 | Constant speed drive unit |
| 3 | Air/oil cooler and valve |
| 4 | Anti-icing indicator switch |
| 5 | Variable vane actuator |
| 6 | Anti-icing valve |
| 7 | Heat shield |
| 8 | Nozzle actuator |
| 9 | Compressor bleed air manifold |
| 10 | Nozzle area control |
| 11 | Oil pressure transmitter |
| 12 | Afterburner oil cooler |
| 13 | Torque booster |
| 14 | Afterburner ignition switch |
| 15 | Scavenge oil filter |
| 16 | Afterburner fuel control |
| 17 | Afterburner fuel filter |
| 18 | Temperature amplifier |
| 19 | Afterburner fuel pump |
| 20 | Control alternator |
| 21 | Compressor inlet temperature sensor |
| 21A | * CDP switch |
| 21B | * T5 reset cutout switch |
- * J-79-17 engine only



The electric motor and breech could be accessed by a door that swung down and to the right of the aircraft. It was also through this door that empty shell casings were removed. Two red "Remove Before Flight" streamers kept locks in place, blocking the gun from firing during servicing. (author's collection)

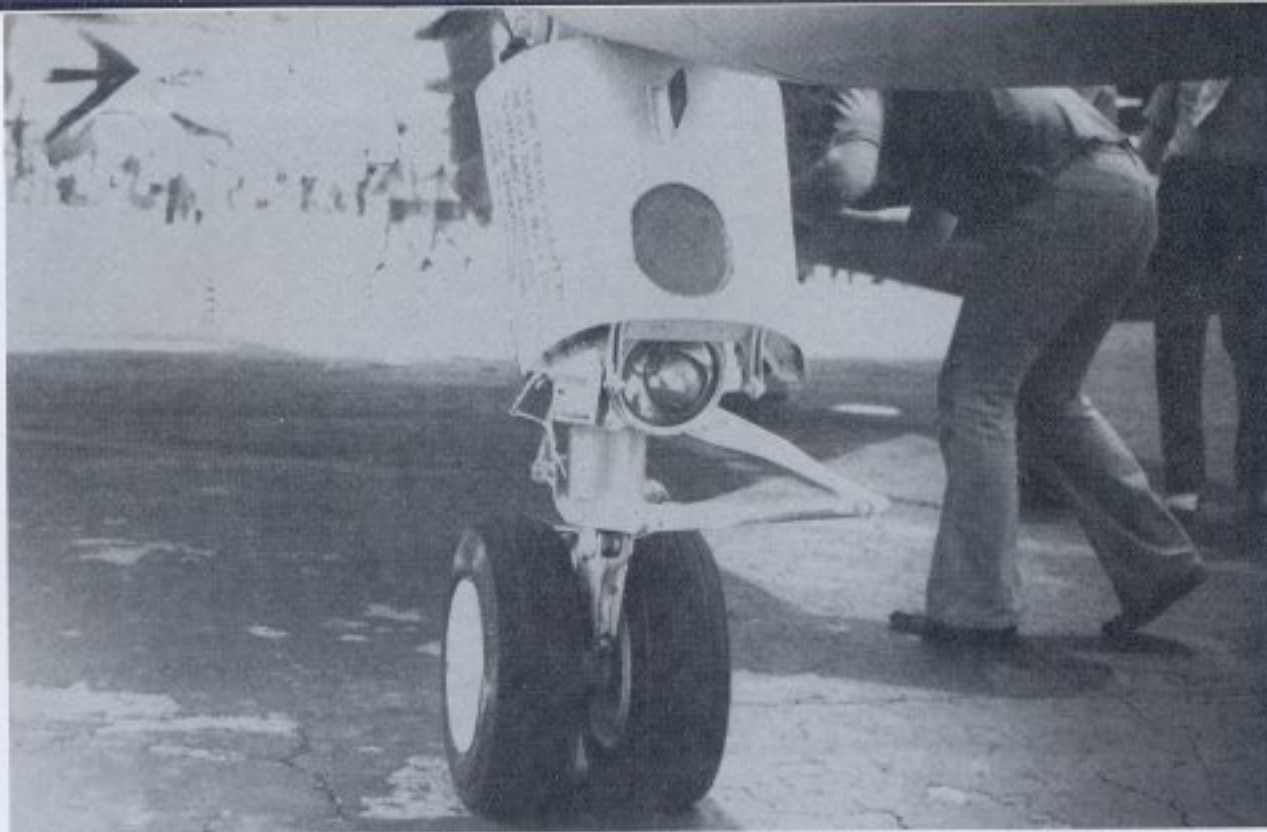
"City Of Homestead," the personal F-4E of Col. W. "Pancho" Secura, CO of the 31st TFW at Homestead AFB, Florida, in 1970. The F-4E-35, 67-320, was one of the first to carry artwork of any kind. The shark's teeth on Col. Secura's baggage pod under the left wing are significant. (author's collection)



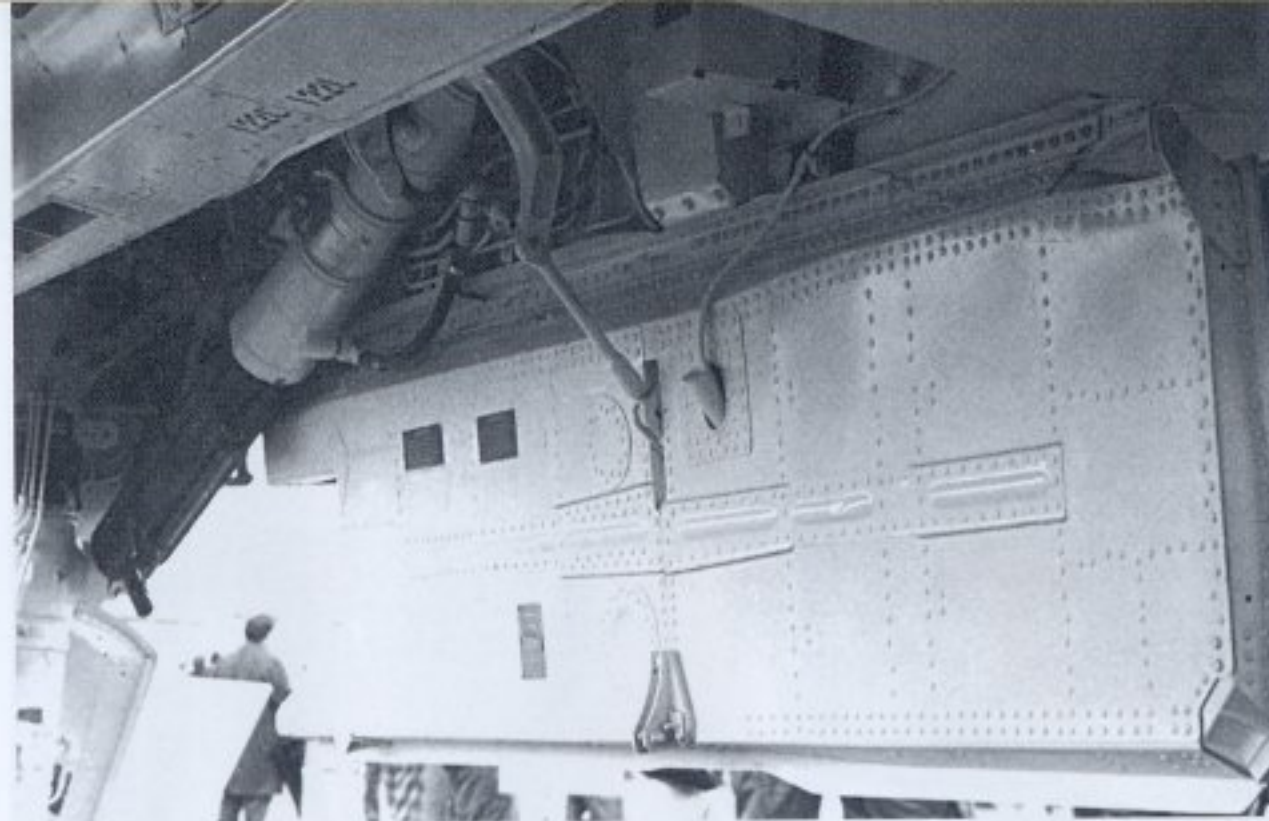
The right side of the nose showing the spring-loaded gun access door swung to its maximum point. Two rows of vents helped keep explosive gun gas to a minimum inside the gun bay. (author's collection)

(From left) Capt. Ron Thurlow and Maj. George Koch stand by a 3rd TFS F-4E during a visit to Yokota AB, Japan. The red striping around the air conditioning bay is tape used to "seal" the electronics bays during a competition for Pacific Air Force fighter units. It would seem that all Pacific-based F-4E squadrons adopted the shark mouth decoration. (Ron Thurlow)



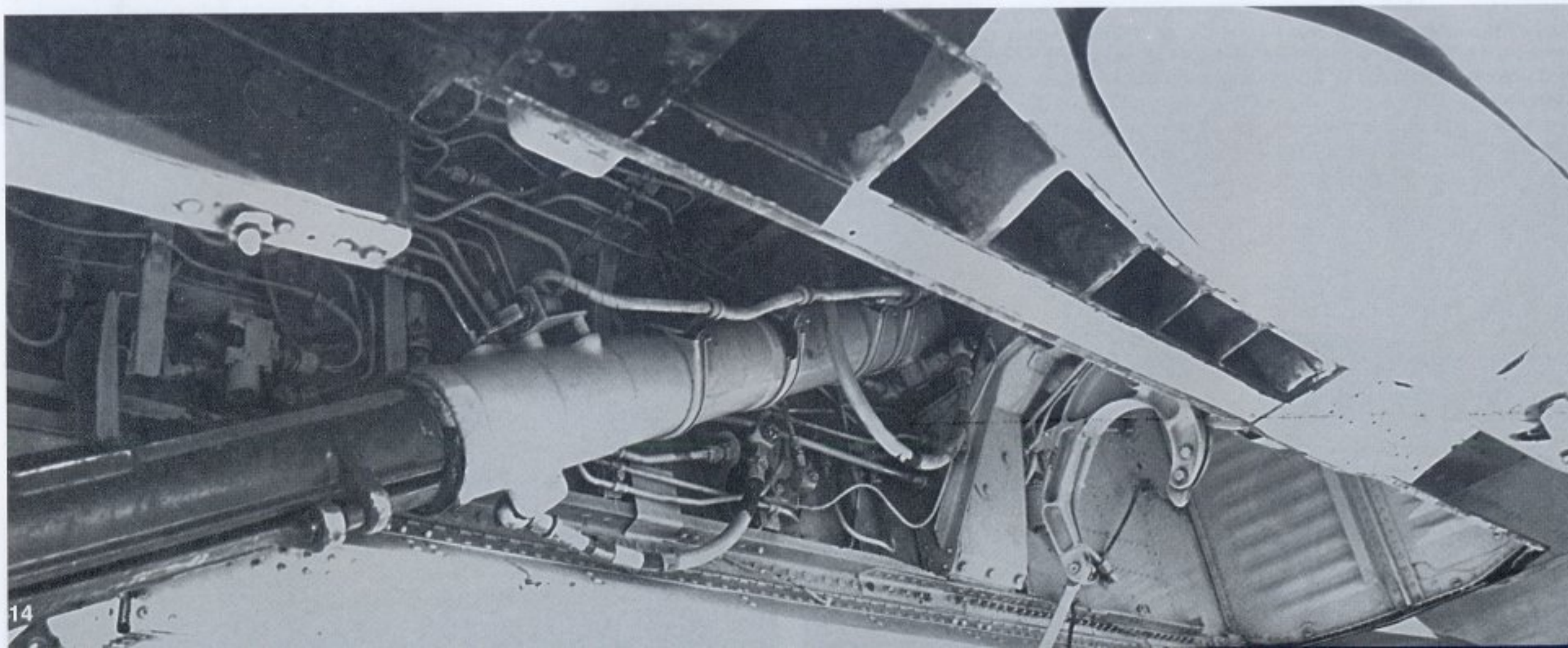


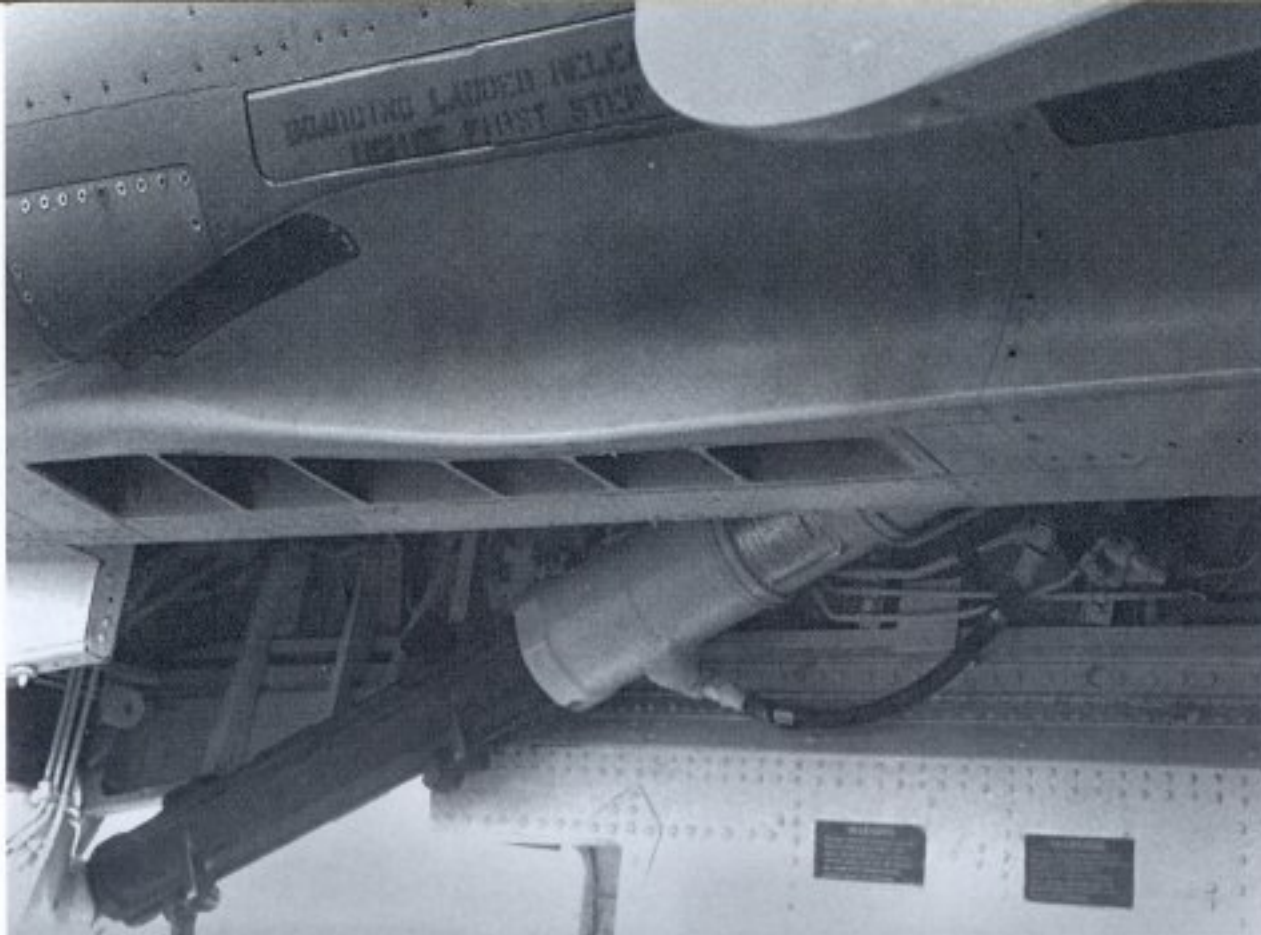
The nose landing gear of the F-4E was the same as other Air Force F-4s, but the door configuration was quite different, as it was part of the streamlined gun fairing. The large landing lights can be seen. The writing on the door is towing instructions. (author)



The inside of the nose gear door had a sheet metal cover, and the door had a "piano hinge" with a single actuator at the center. The wire entering the door just aft of the actuator is for the antenna that is part of the door. (author)

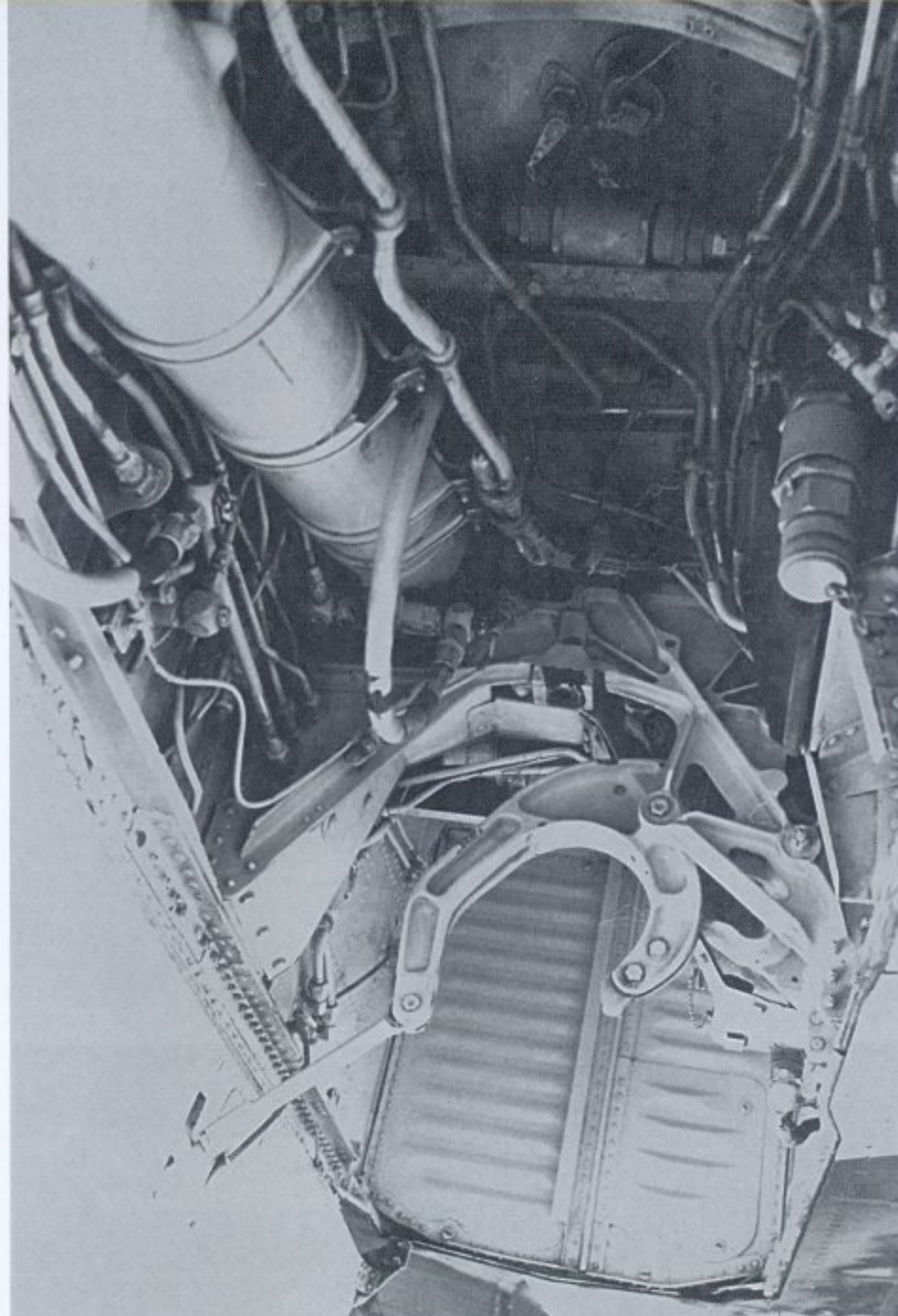
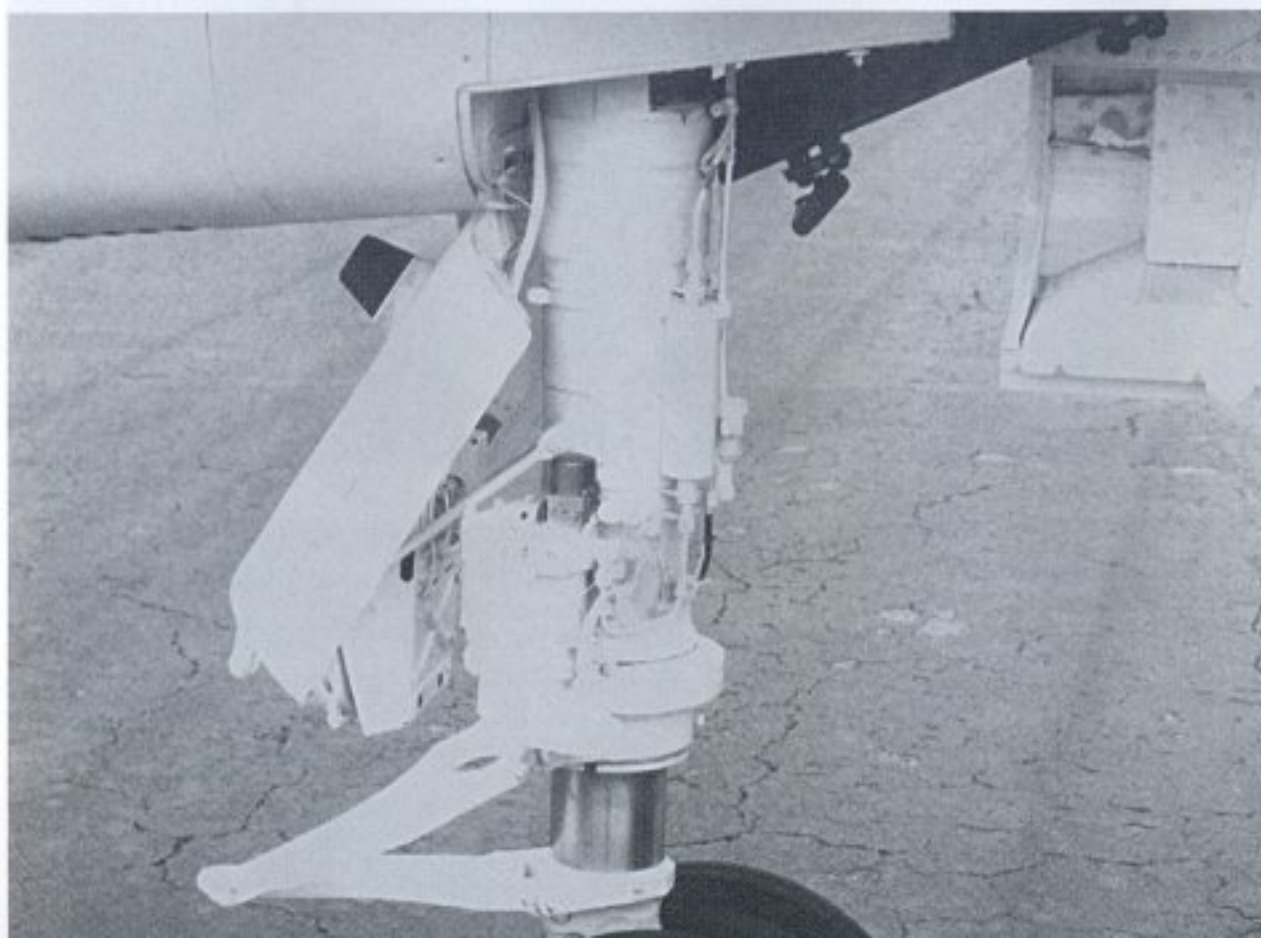
Looking into the nose wheel bay from the left front showing the retraction strut and plumbing on the right side of the bay. The door actuator can also be seen. At the rear of the bay is an avionics compartment that can be accessed through the wheel well. The bay interior is white. (Mick Roth)





Looking toward the front of the nose wheel bay showing the retraction strut with its antiretraction lock in place that kept the nose gear from accidentally retracting while on the ground. The "lock" is painted Red. (author)

The nose landing gear strut assembly showing the torque link which is offset 30 degrees to the left. The dual nose wheels have 14-ply tires that are 18 inches tall and 5.5 inches wide. (author)



The nose wheel bay clearly showing the door actuator and extra bracing for the pivot point of the retraction strut. Interior of the bay was painted White, but copious amounts of dirt quickly built up on the top of the bay. This is a Thunderbirds F-4E, with the most meticulous maintenance of any F-4E. (Mick Roth)



(Top left) The nose wheel strut showing the typical condition of the White paint that covered everything except the polished portion of the strut. (author)

(Above) The nose wheel strut from the right side. The Remove Before Flight (RBF) streamer is attached to the front of the antiretraction lock assembly. (author)

(Bottom left) The nose wheel door had an ILS glide slope antenna and a landing light built into the door. (author)





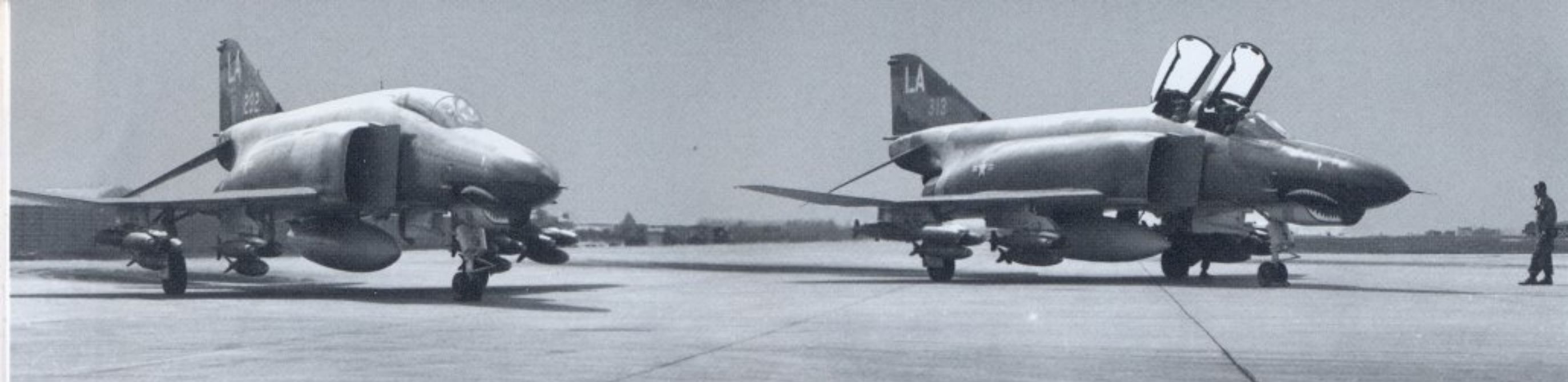
A 34th TFS F-4E, 67-269, in a revetment at Korat RTAB, Thailand in 1969. The upper surface camouflage is clearly shown. Camouflage paint of Air Force tactical aircraft was initiated in 1965, and the F-4Es were delivered in what is commonly referred to as the Southeast Asia or "Lizard" scheme of two greens (FS 595a: FS 34102 and 34079) and Tan (30219). The revetments were made of corrugated steel which was filled with dirt. (USAF)

The F-4E could be started with an electrical cart but often used the internal cartridge starting system. A cannon shell was fired, which started the turbine spinning. Using the cartridge start system always caused a cloud of smoke, and ground crew personnel were instructed to wear respirators during the starting sequence. (USAF)



A 43rd TFS F-4E, 68-493, taxis to the active runway at Tyndall AFB, Florida, during the William Tell Meet, in 1976. As older F-4Es were rotated back from the combat zone, they were assigned to other squadrons after going through a complete IRAN inspection. This F-4E was a 34th TFS combat veteran with one MiG kill, a MiG-21 shot down by Capt. Dick Coe on 5 October 1972. (Ken Buchanan)





A pair of 4th TFS F-4Es pull into the arming pits at DaNang. Armorers then rush to the aircraft and pull all the RBF streamers from ejector racks and drop tank pylons. Both aircraft have Multiple Ejector Racks, called MERs, on the outboard ordnance pylons, which could only hold five bombs because of ground clearance on takeoff. The inboard pylons have Triple Ejector Racks, called TERs, with three bombs. (USAF)

A 308th TFS F-4E-37 in a revetment at Udorn in 1972 armed with 500-pound LDGP bombs for a strike against North Vietnamese Army targets. The 308th TFS deployed from Homestead AFB, Florida, to the war in Southeast Asia as part of Operation Linebacker to counter the North Vietnamese Easter invasion of South Vietnam. Both front Sparrow missile bays contain ALQ-87 electronic countermeasures pods. (John Poole)



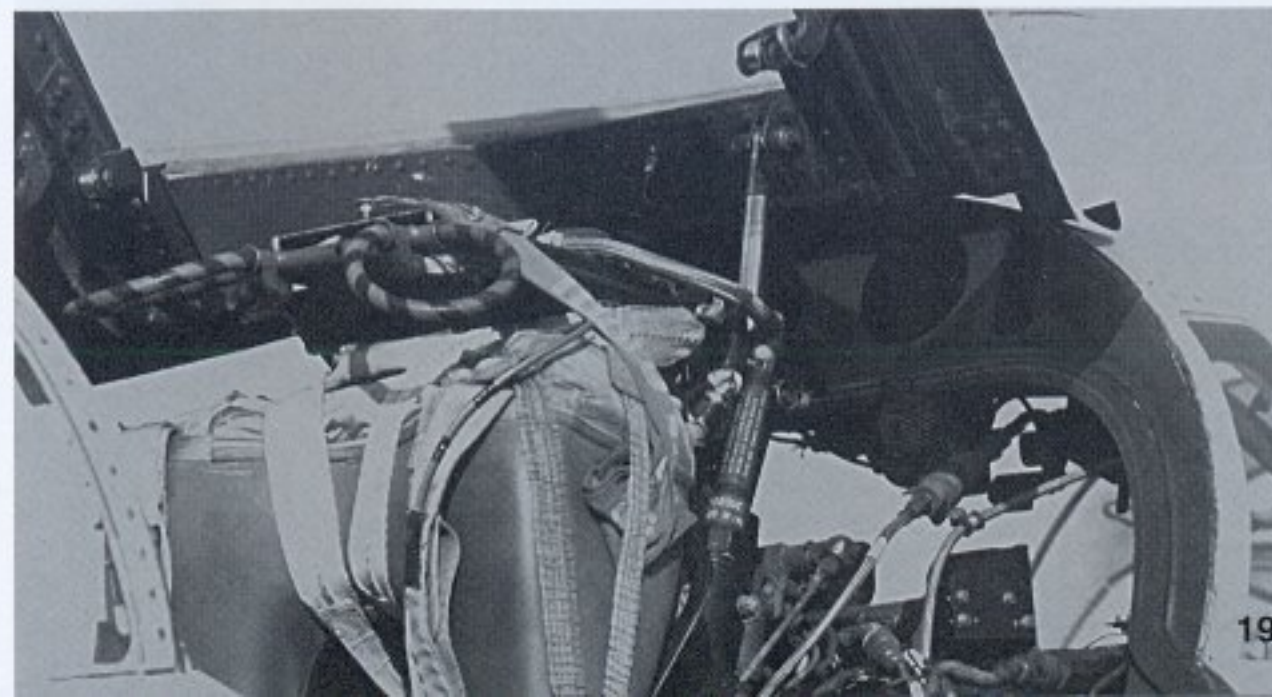


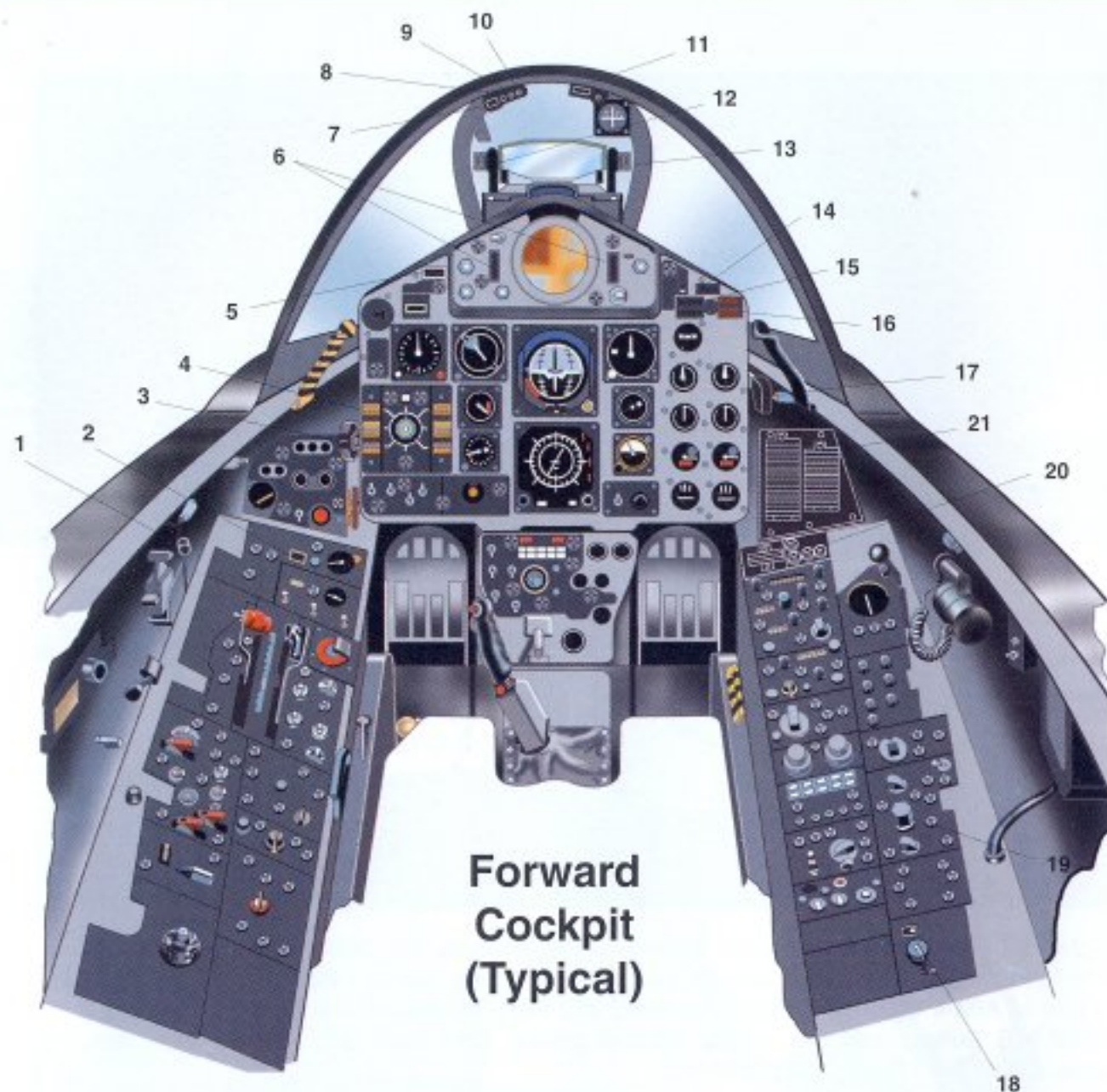
Sgt. John Miller hooks up the electrical starting cable to a 4th TFS F-4E at DaNang AB in September 1969. Electrical starting of the big J79s was much preferred over the cartridge start system. The heavy electrical cables ran from a large auxiliary power cart with a gasoline-fired generator. (USAF)



Sgts. Bill Spickerman and John Widner, armorers with the 388th TFW at Korat RTAB, Thailand, inspect the connections on the centerline bomb rack in 1969. The F-4E also carries a pair of AIM-4 Sparrow missiles recessed into the underside of the fuselage, and a pair of AGM-12B Bullpup missiles on the inboard pylons. This view also looks directly into the exhausts of the J79 engines. (USAF)

The underside of the F-4E canopy was hinged at two points on the structure that separated the front and rear canopies. A single actuating rod pushed and held the canopy open. (Mick Roth)





**Forward
Cockpit
(Typical)**

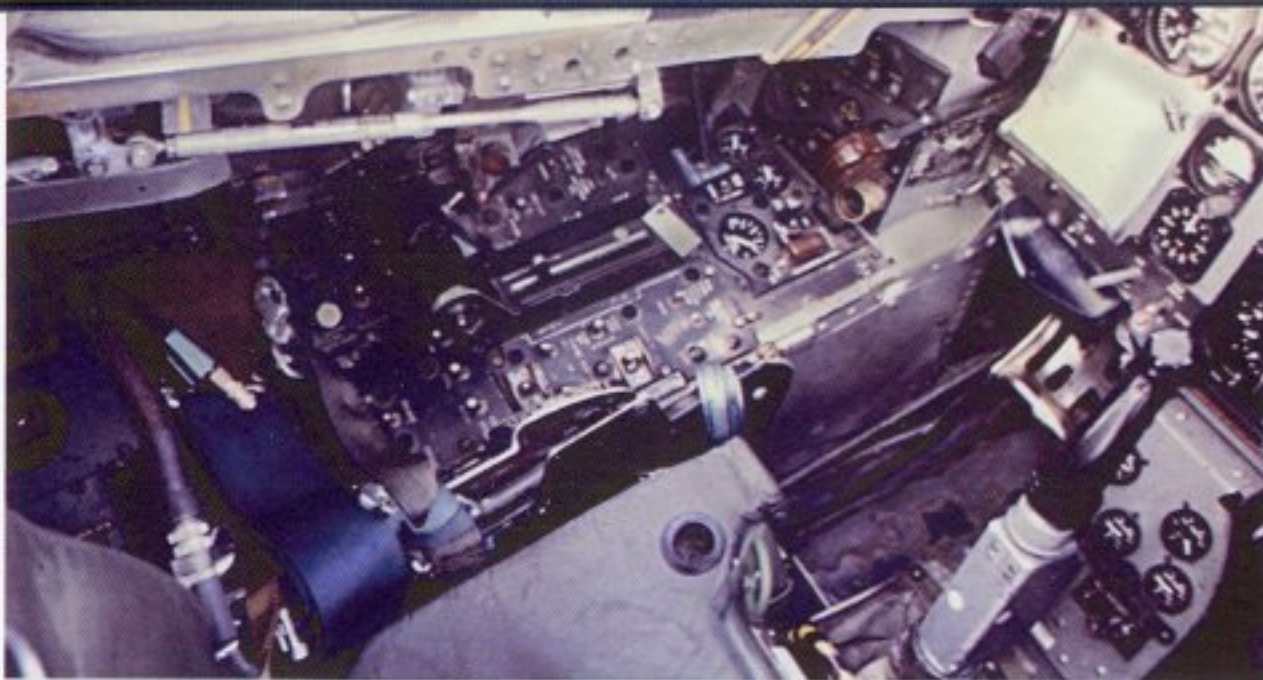
- | No. | Item |
|-----|---|
| 1. | Eject command light switch |
| 2. | Anti-skid inoperative warning light |
| 3. | Landing gear warning light |
| 4. | Missile status panel lights |
| 5. | Wheels warning light |
| 6. | a. Azimuth-elevation-range indicator lights (F-4D)
b. Intra-target-data indicator (F-4E) |
| 7. | Air refueling ready light |
| 8. | LH ext tank full light |
| 9. | Ctr ext tank full light |
| 10. | RH ext tank full light |
| 11. | Air refueling disengage light |
| 12. | Fwd left AOA indexer light |
| 13. | Fwd right AOA indexer light |
| 14. | Master caution |
| 15. | Left engine fire and overheat warning light |
| 16. | Right engine fire and overheat warning light |
| 17. | Arresting hook warning light |
| 18. | Spare lamps container |
| 19. | Warning lights switch |
| 20. | Generator control switch panel |
| 21. | Right vertical panel |



The main instrument panel of the F-4E. The engine instruments are on the right side, while the left side has the air speed and altitude indicators. The large dials under the radar scope are the attitude director indicator and the horizontal situation indicator. Just in front of the control stick is the weapons select panel. (author)

The control stick. (author)





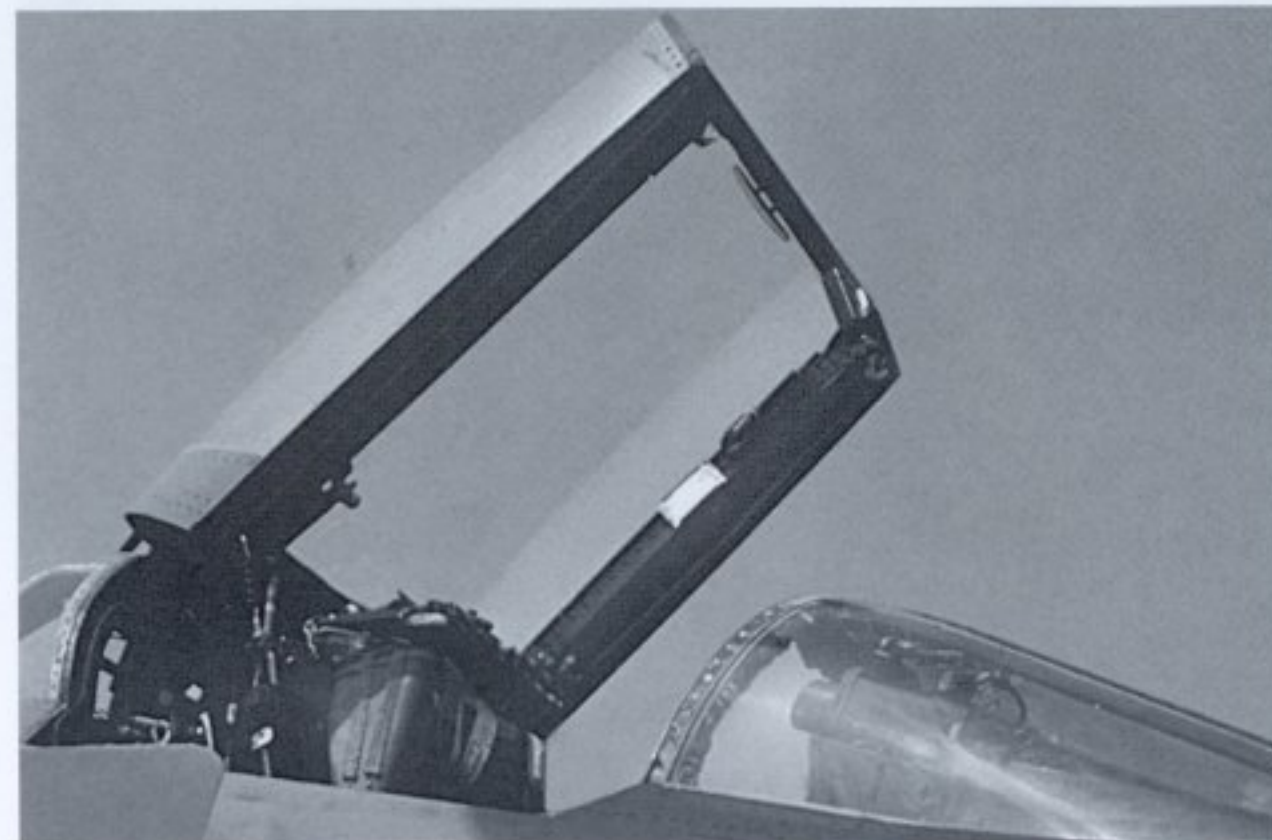
(Clockwise from above) The front left side console has the throttles, drag chute handle beside the seat, and landing gear actuating handle with red knob. Consoles, floors, and walls are Dark Gray (36231) with Black panels. (Hugh Muir)

The seat is Black with Olive Green cushions. The Yellow and Black loops on top of the seat are the ejector seat handles that also pull down the face shield over the pilot. (author)

The front right console showing the vertical fire sensor panel at the front. Right console contains the lighting and radio controls. The oxygen hose can be seen at the rear of the panel. (author)

Back of the rear instrument panel and the canopy actuator system for the front canopy. The canopy frame is Black, but all panels are Dark Gray (36231). (author)

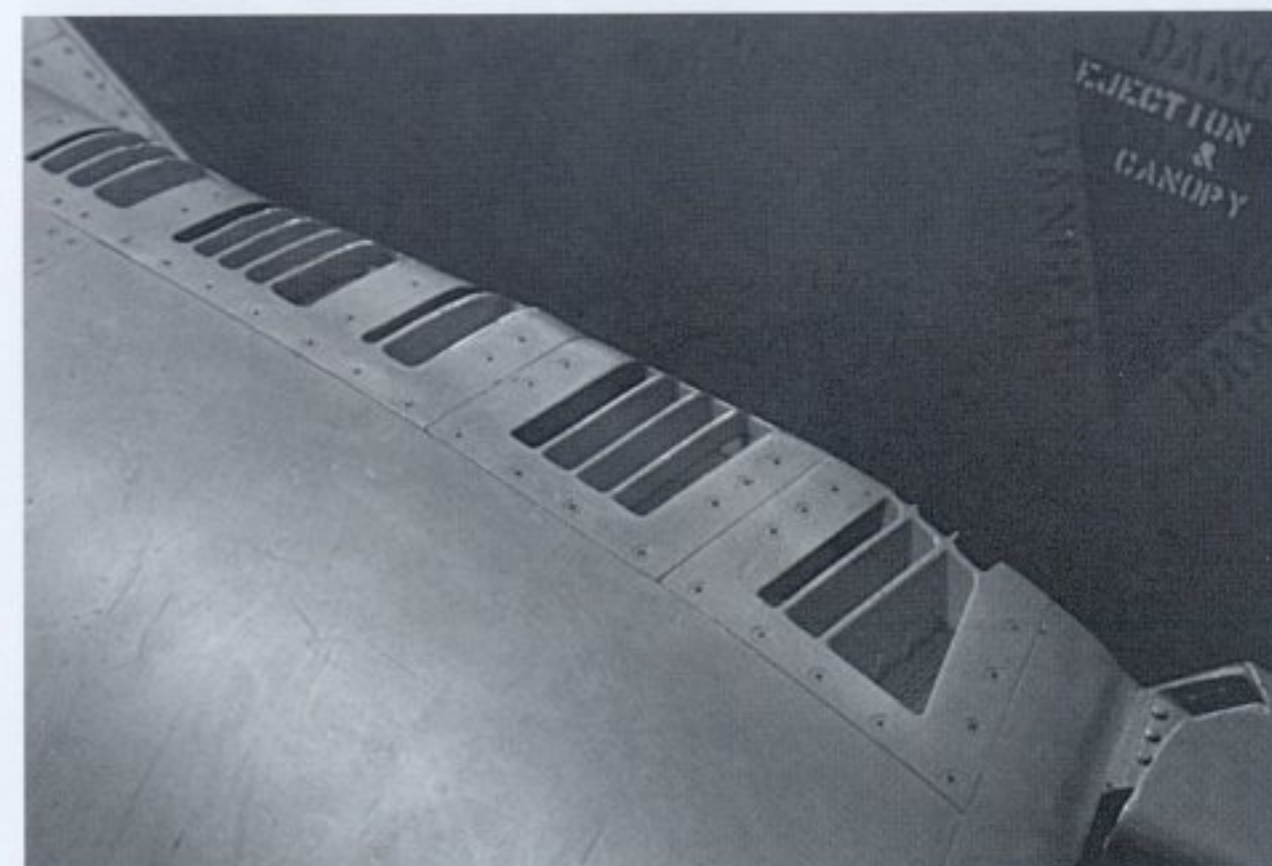




(Above photos) Two views of the underside of the canopy, which is Black, showing two different types of rear view mirrors. The hooks extending from the bottom of the canopy are locks. The object fastened to the front left side of the canopy frame is a knife to allow the pilot to cut through the Plexiglas canopy in case of an emergency, a very difficult thing with the sharpest knife. (author)

Underside of the left engine intake showing the bleed air vents and open bottom on the intake splitter allowing excess air to escape. (author)

Upper side of the engine intake also has a number of bleed air vents with screen. (author)

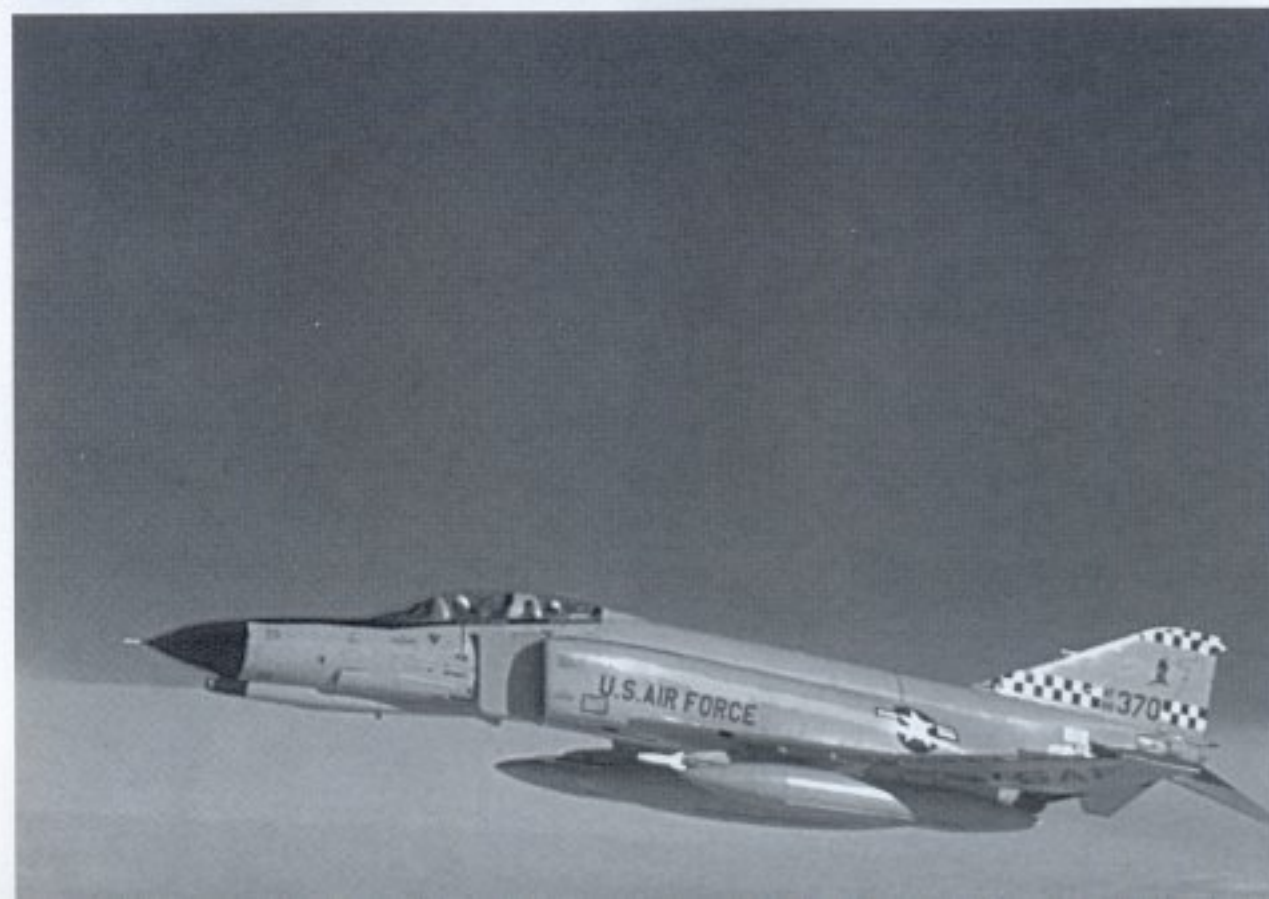




"RRRRibit," an F-4E-48, 71-237, assigned to the 555th TFS at Udorn in March 1974. The aircraft has all the latest improvements including leading edge slats. The object protruding from the leading edge is the Target Identification System Electro-Optical or TISEO, a powerful telescopic TV camera for identifying targets at extreme ranges. The F-4E is armed for a counter-air mission with four AIM-9J Sidewinder missiles, four AIM-7 Sparrow missiles, and ALQ-101 ECM pods. (Joe Bruch collection)

An F-4E-33 assigned to the 57th FIS based at Keflavik, Iceland. The 57th FIS was assigned to Aerospace Defense Command and was painted Gloss Aircraft Gray (16473) instead of the standard tactical camouflage scheme. The 57th FIS F-4Es routinely intercepted Soviet TU-95 Bear intercontinental bombers flying to and from Cuba. (Doug Barbier)

The boarding ladder slipped over the canopy sill and leaned against the fuselage side. The WSO routinely entered the rear cockpit by climbing the ladder then stepping on the intake. However, there was a ladder available that extended over the intake. Ladders were normally Yellow except in combat zones, where they were often painted Olive Green. (author)



Cockpit Details

Basic F-4E Rear Cockpit



Martin Baker Mk H7 Ejection Seat



Control Sticks

Front Cockpit

Rear Cockpit





The upper rear instrument panel of noncombat F-4Es which contained basic engine and flight instrumentation. As with all Air Force F-4s, the F-4E could be flown from the rear cockpit and had a control stick and throttles. (Hugh Muir)



The rear instrument panel in a combat F-4E had a threat display panel attached at the top right of the panel. The large instruments in the center of the panel are flight instrumentation, while the smaller gauges on the right side are basic engine gauges. (Mick Roth)

Looking down into the rear cockpit with the radar scope removed, showing the large Yellow canopy operation handle and two Black and Yellow striped handles that operated the landing gear and parachute brake system. (Hugh Muir)



Behind the seat in the rear cockpit of an F-4E showing the canopy actuator. The spiral line is the canopy extractor line that blows off the canopy just prior to ejection. (Hugh Muir)





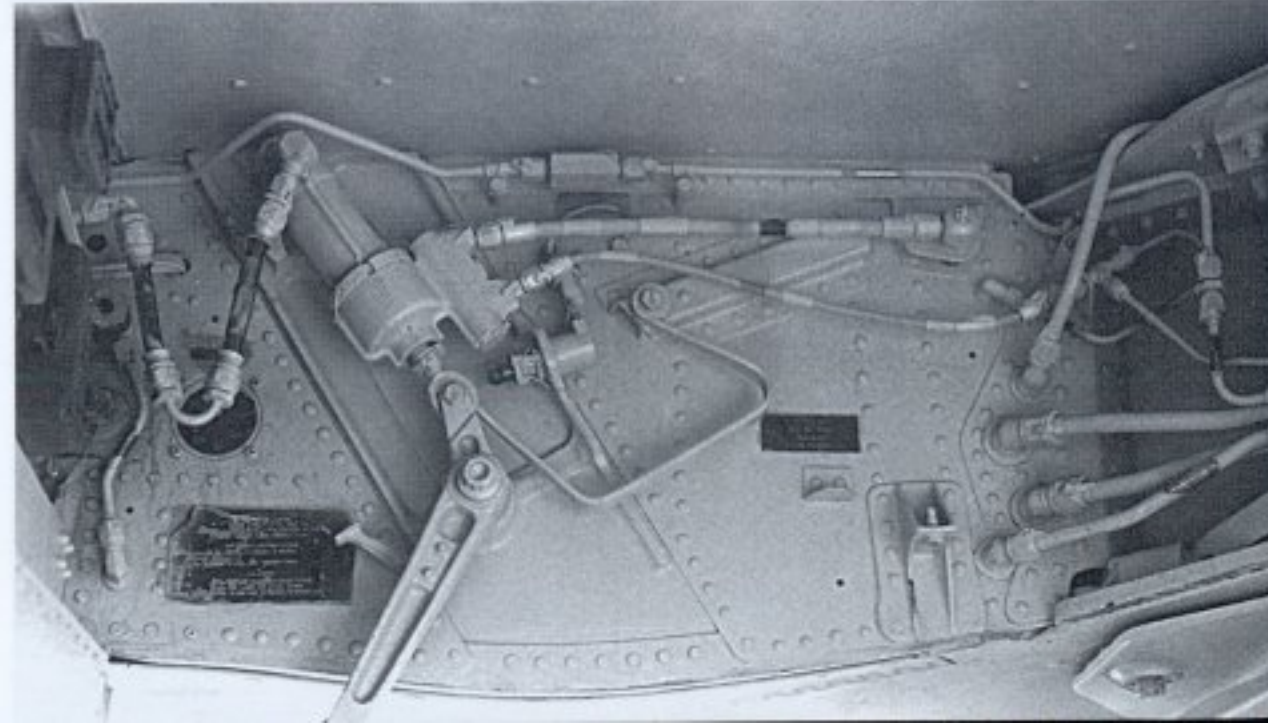
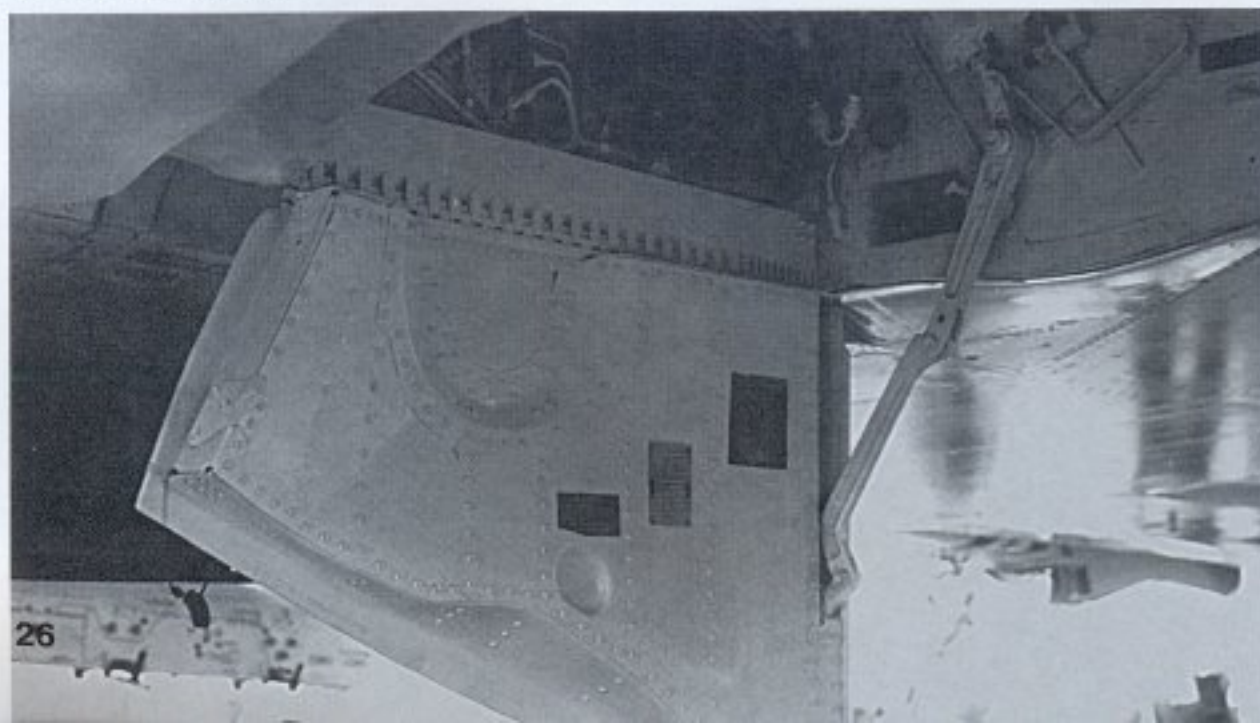
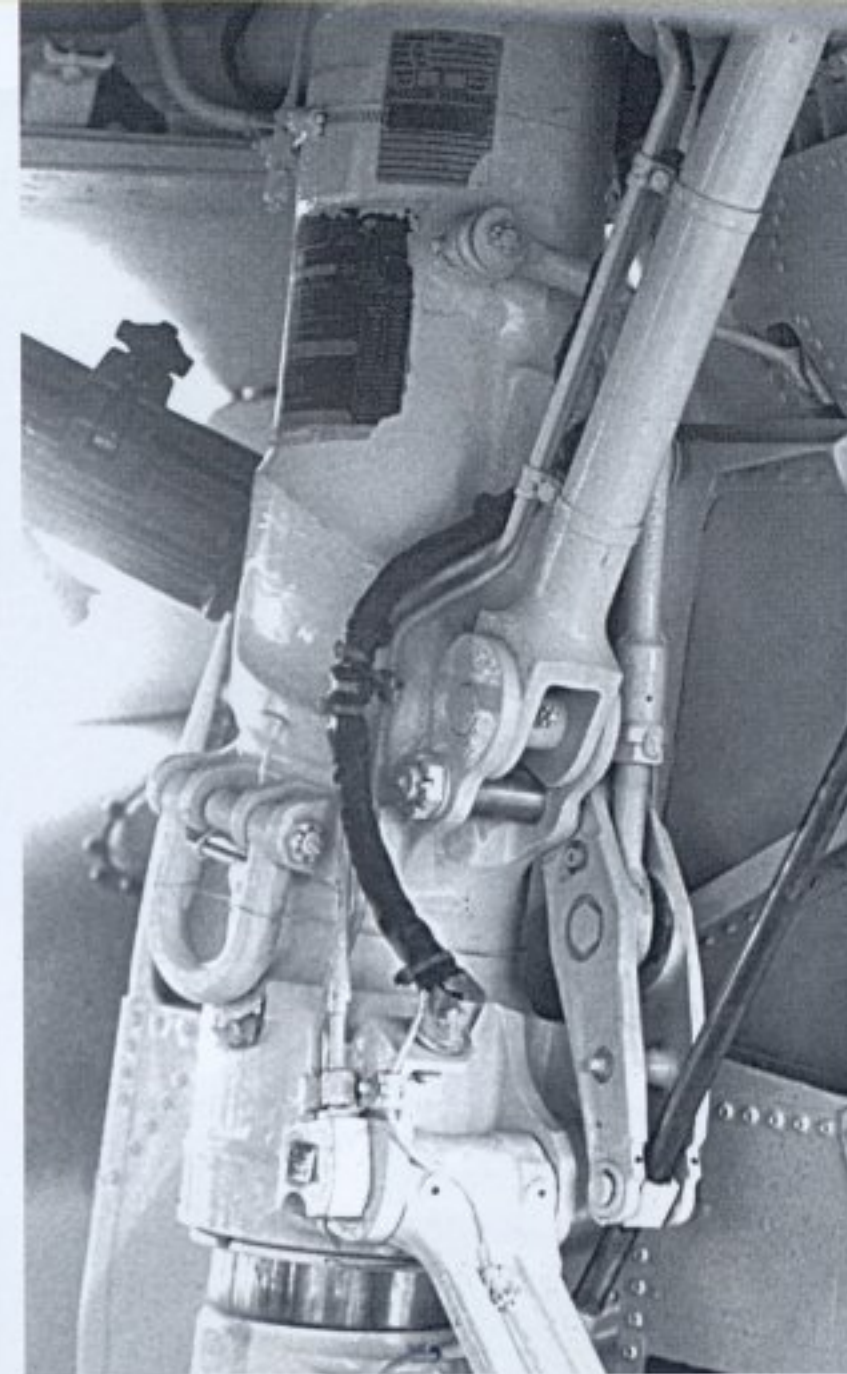
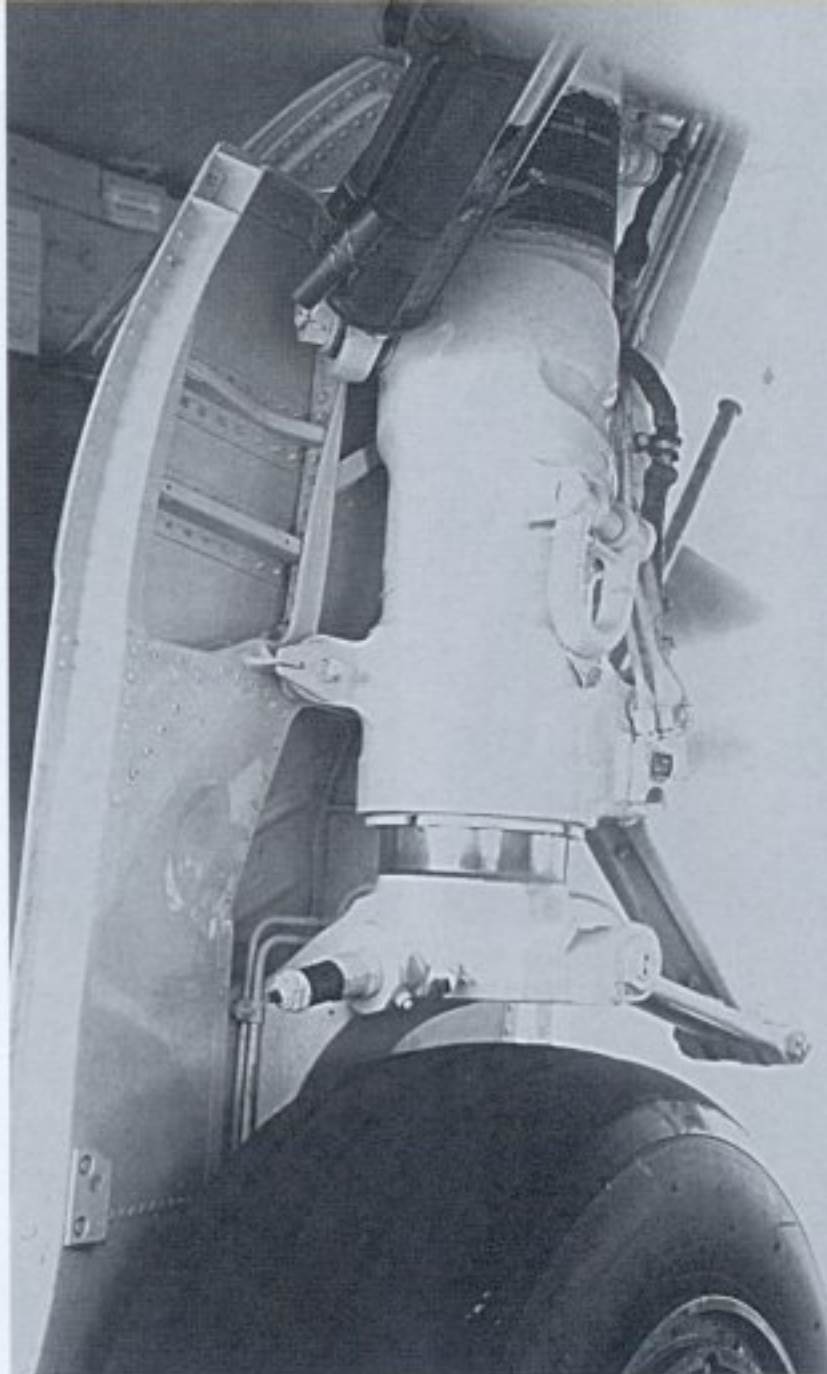
(Clockwise from left) The right main landing gear of the F-4E. The main wheel mounted a 30-inch-tall, 11.5-inch-wide 24-ply tire. (author)

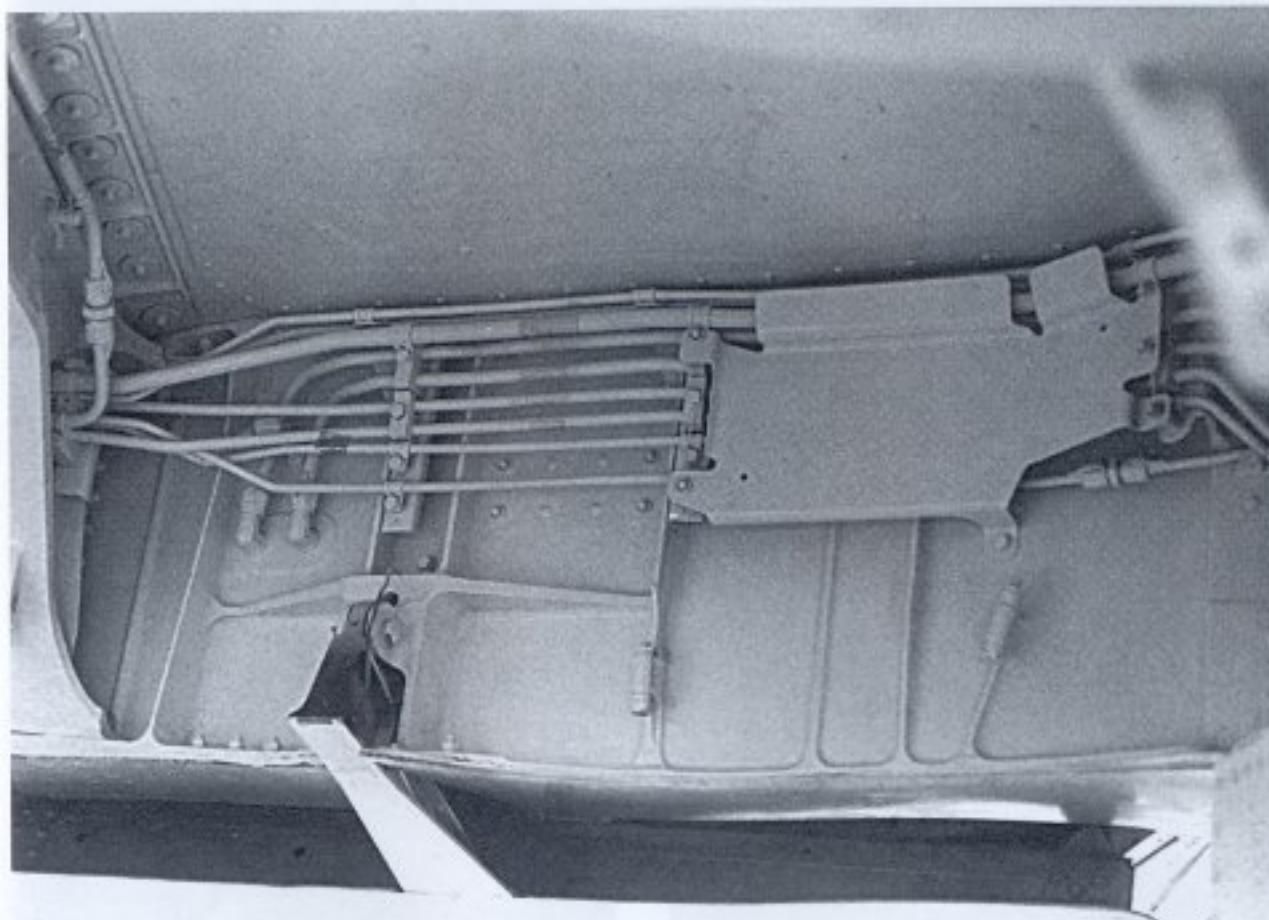
The right main landing gear strut and inner door assembly. The small ring on the strut is used to tow the aircraft. Strut and door assembly are painted White. (author)

Rear shot of the main gear strut assembly showing the torque link, brake line, and door actuator rod. (author)

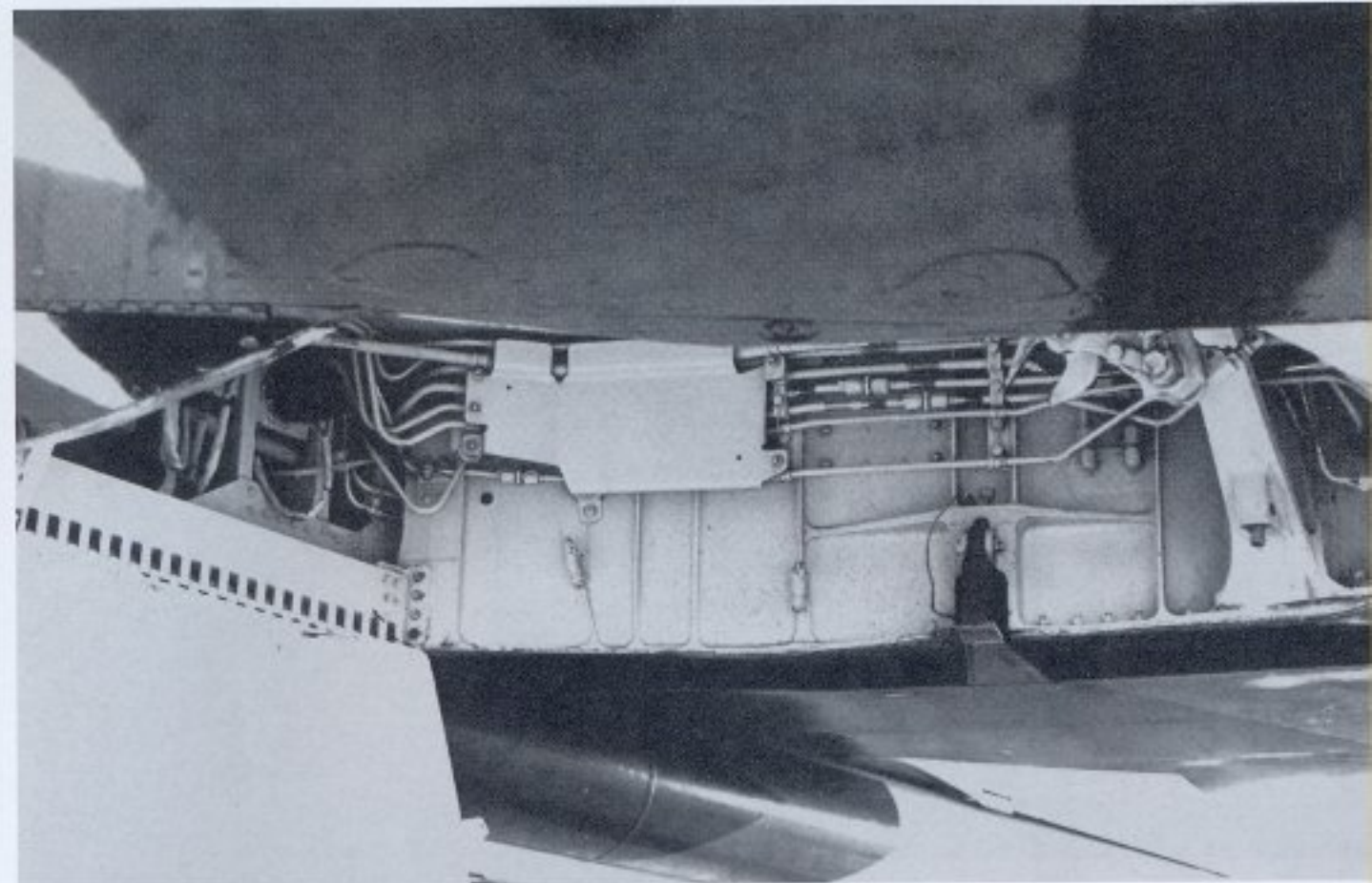
The forward bulkhead of the right landing gear bay showing the many hydraulic lines and door actuating cylinders. (author)

The right landing gear inner door showing the piano hinge and actuator arm. (author)



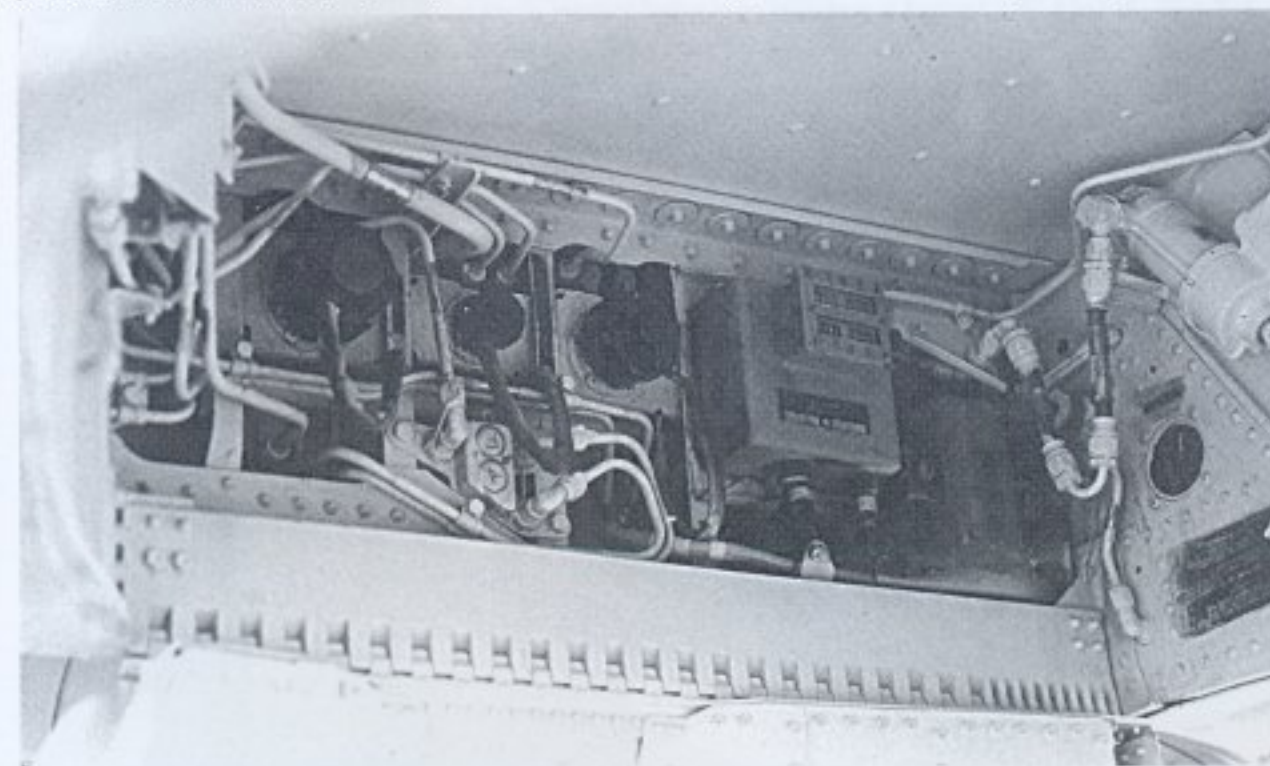
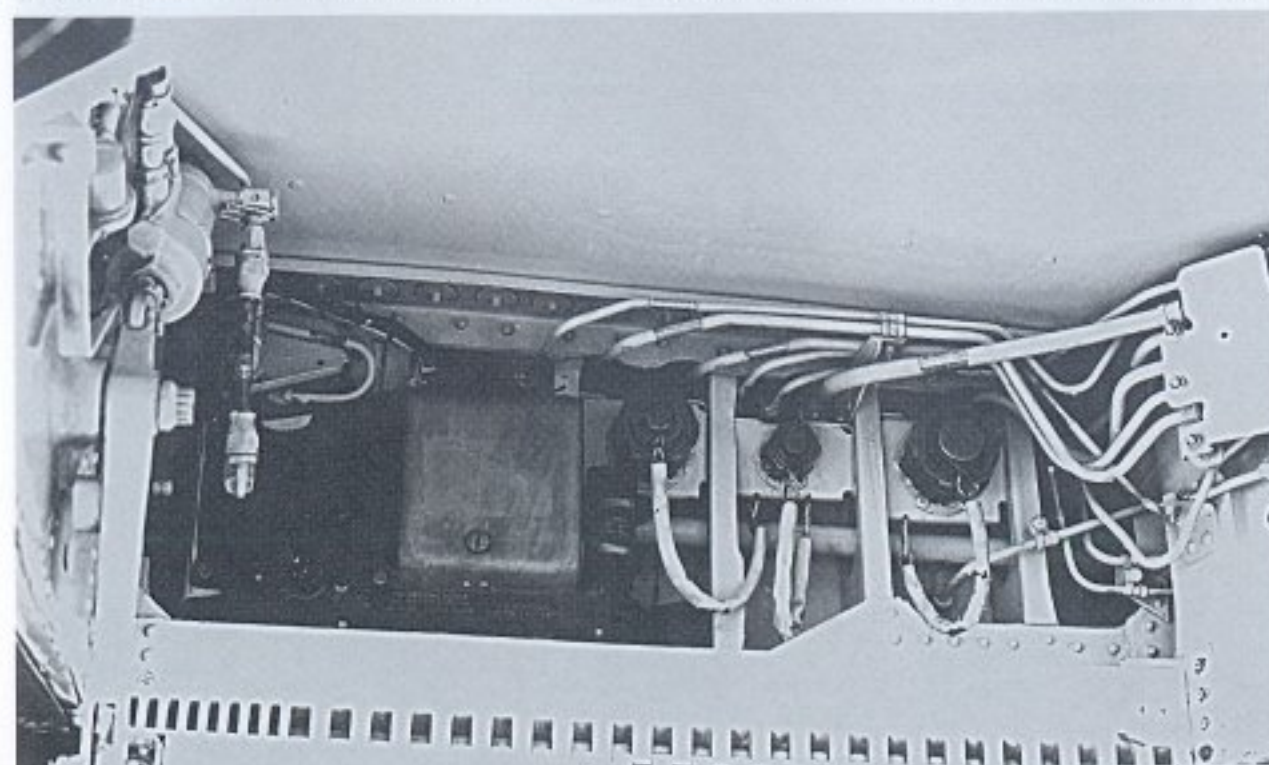


The aft bulkhead of the right landing gear bay. Note that the dive brake hinge extends into the rear of the main wheel bay. *(author)*



The aft bulkhead of the left landing gear bay is a mirror image of the right main gear bay. *(Mick Roth)*

(Below) The inner side wall of the landing gear bays showing the difference between the left bay (left photo) and right bay (right photo), and the maze of wiring and electrical lines. *(author)*



(Near right) The main landing gear showing the circumferential tread design on the 30-inch-tall 24-ply tire.
(Bob Ulrich)

(Far right) Right main landing gear strut.
(Bob Ulrich)



(Near right) The inside of the main landing gear door and rear of the strut assembly. *(author)*

(Far right) The wheel and tire on the left side of the F-4E. The Bendix disc brake assembly is clearly shown. The tire diameter was 30 inches.
(author)





West German F-4Fs went through a variety of different camouflage schemes over the life of the type. This camouflage pattern in three shades of Gray was known as Norm 90J. The "ICE" logo on the tail stood for Improved Combat Efficiency, which added such things as the Hughes APG-65GY radar, Marconi digital air data computer, and ability to fire the AIM-120 AAMRAM missile. Full ICE capabilities included a new Gray radome. (Mick Roth)

In the mid-1970s, the Shah of Iran began purchasing new F-4E aircraft to equip his air force. This IIAF 306 Squadron F-4E has leading edge slats and includes the TISEO camera in the wing leading edge. IIAF camouflage colors were Dark Green (34079), Brown (30140), and Tan (20400), with Light Gray (36622) undersides. (USAF)



An F-4EJ from 302 Squadron at Chitose AB, Japan wears a special Medium Blue camouflage for air combat exercises during the early 1990s. Japanese Air Self Defense Force F-4EJs were delivered starting in January 1971, with Mitsubishi Heavy Industries building a further 136 aircraft. The F-4EJ was virtually identical to its USAF brethren. (Mick Roth)





The West German Bundesluftwaffe F-4F was the first of the type to have the leading edge combat maneuvering slats that were eventually fitted to all USAF F-4Es. West German Phantoms were designated F-4F. This F-4F was assigned to JBG-36, and was delivered in standard West German hard-edged splinter camouflage (Norm 72) of RAL-6014 Olive Green and RAL-7012 Basalt Gray, with RAL 9006 Silver undersides. (Marc Rostaing)



West German air and ground crews trained in the United States, initially at George AFB. The German F-4F Phantoms retained their distinctive camouflage but wore U.S. insignia and tail codes. This F-4F, 72-117, has "GA" tail codes for George AFB where the German crews were trained, and even carries a 35th TFW badge on the intake. (Mick Roth)

The Royal Australian Air Force had ordered twenty-four General Dynamics F-111C fighters in the late 1960s, but when deliveries were delayed, they accepted twenty-four F-4E Phantoms in their stead. Under Project Peace Reef, the first aircraft were delivered in September 1970. In June 1973, the first of the Australian F-111Cs were delivered and the F-4Es were returned to the United States where many were converted to F-4G Wild Weasels. (Hugh Muir)

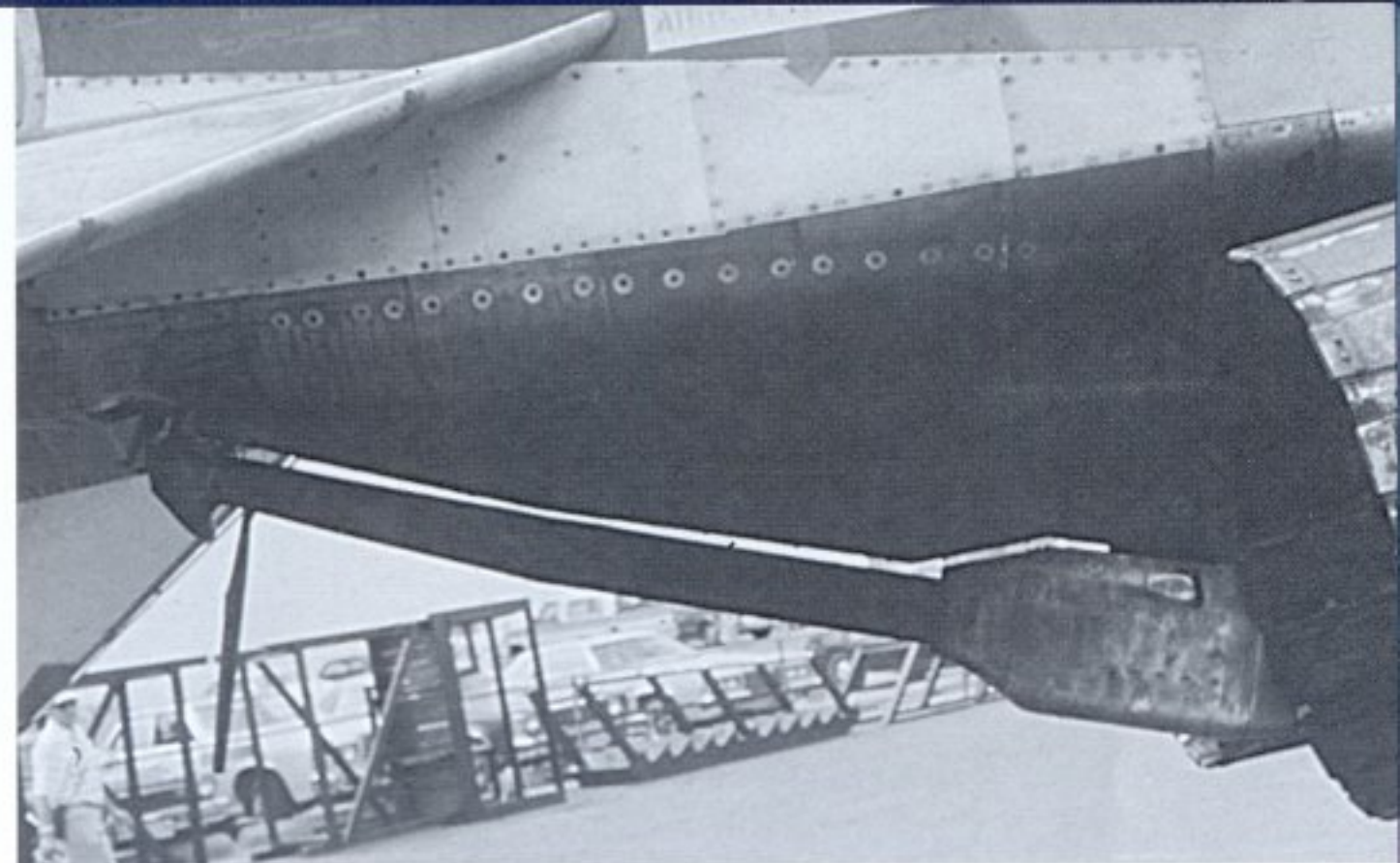
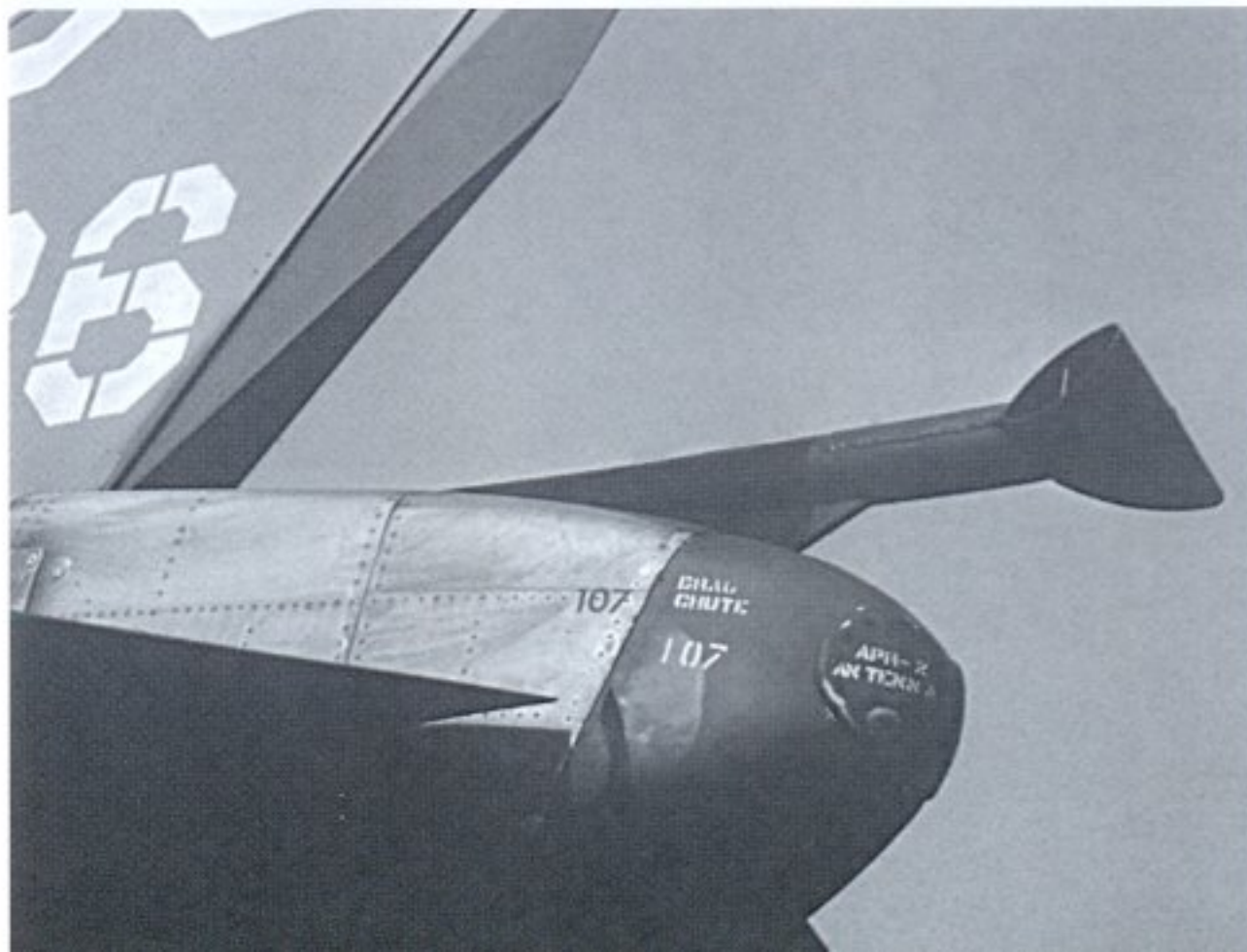
Under Operation Peace Pharaoh, thirty-five ex-USAF F-4Es were delivered to the Egyptian Air Force starting in September 1979. Initially delivered in standard Southeast Asia camouflage, the Egyptian F-4Es were soon camouflaged in two shades of Compass Ghost Gray, Dark Gray (36320), and Light Gray (36375). The scheme was known as Egypt I. (USAF)





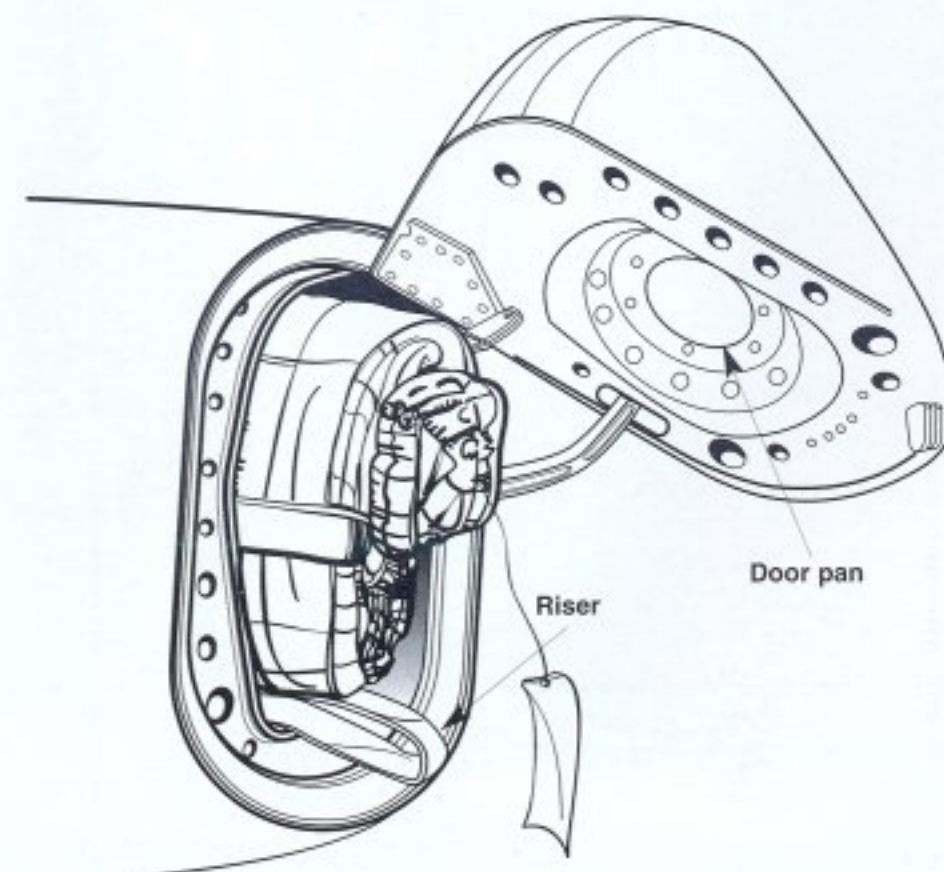
The left side of the aft fuselage showing the exhaust pipes and the natural metal areas that were subject to great heat from the engines. The vertical fin was 207.2 inches long at the chord, and 47.1 inches at the tip, and was swept back at an angle of 58 degrees. The rudder had a maximum sweep of 30 degrees to each side. (author)

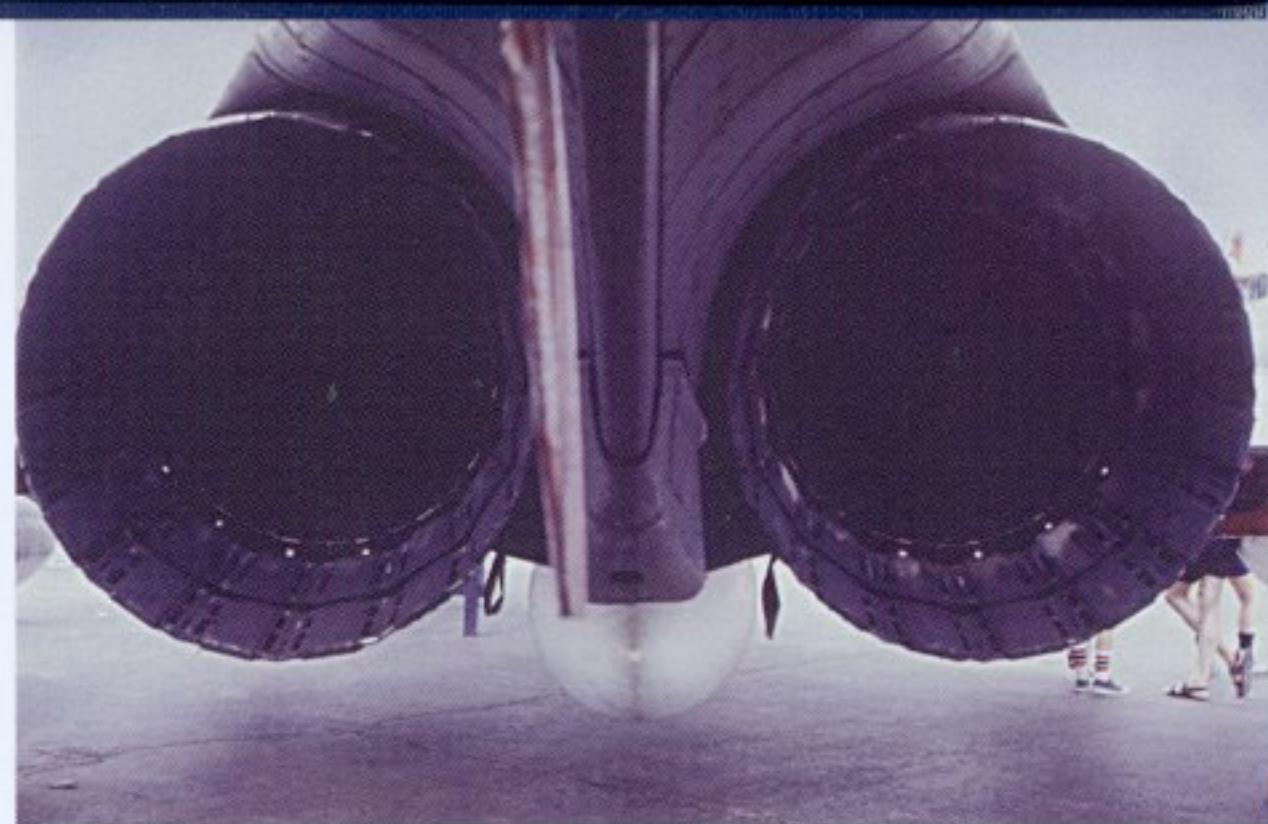
The fuel dump pipe located at the base of the rudder. The small bumps on the parabrase door are ARN-101 antennas. (author)



The tail hook assembly found on all F-4 Phantom aircraft. An RBF safety streamer locks the tail hook in place while on the ground. (Bob Ulrich)

Drag Chute Compartment





(Above photos) The afterburner exhaust pipes of the J-79-GE-17 engines. The exhausts are variable in size, which increases the thrust of the engines. (Bob Ulrich)

The left stabilator showing the triangular reinforcement added at the midsection of the stabilator, as well as the swivel mechanism that moves the stabilator up and down. The stabilator was 16 feet 5 inches in length. The root chord was 107.8 inches, while the tip chord was 21.4 inches. (author)

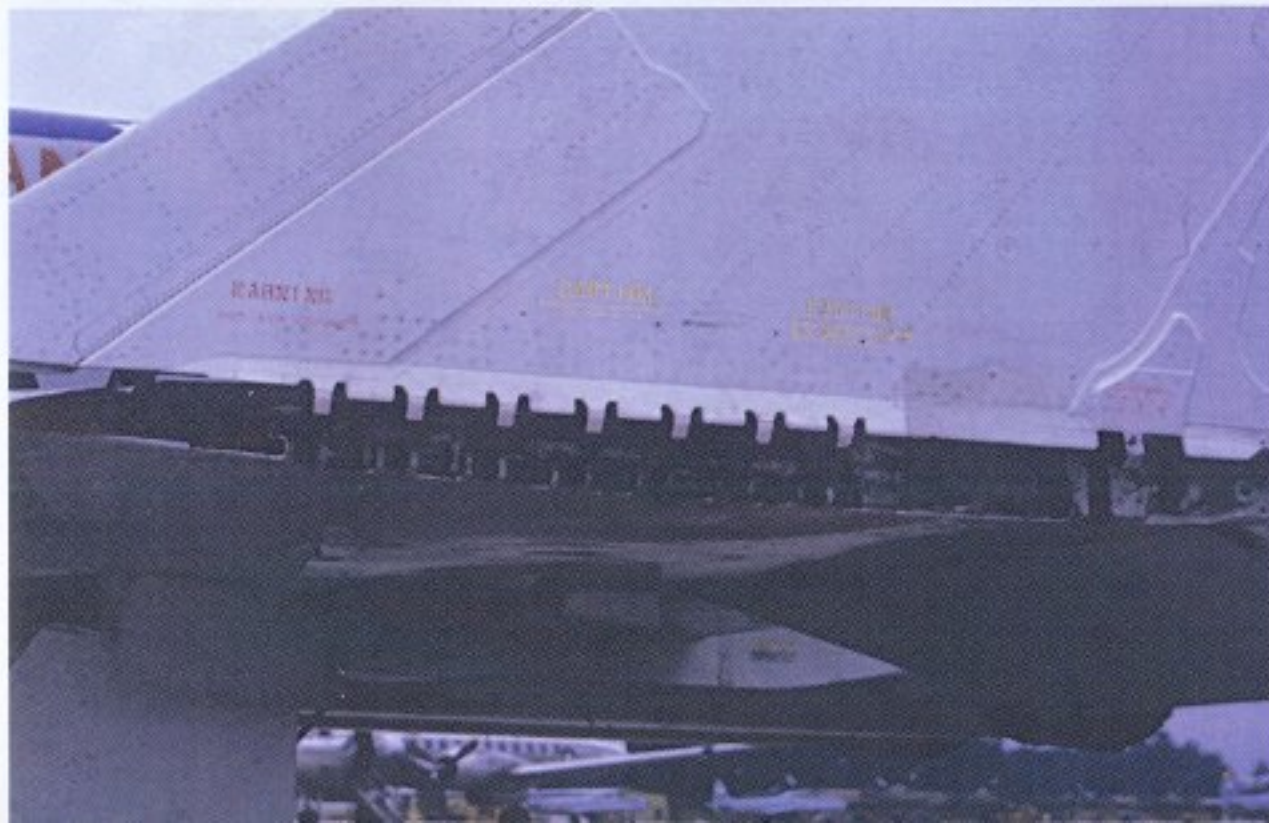
The right stabilator showing the slotted leading edge that was standard on U.S. F-4Es, but not included on West German F-4Fs. The slotted leading edge was in natural metal. The stabilator had a cathedral of 23.25 degrees. (author)





A 35th TFW F-4E on the wash rack at George AFB showing that even with leading edge slats, Air Force Phantoms retained the folding wingtip capability originally designed for Navy carrier operations. (author)

Close-up of the wingtip fold mechanism. It was the same with or without leading edge slats. (author)



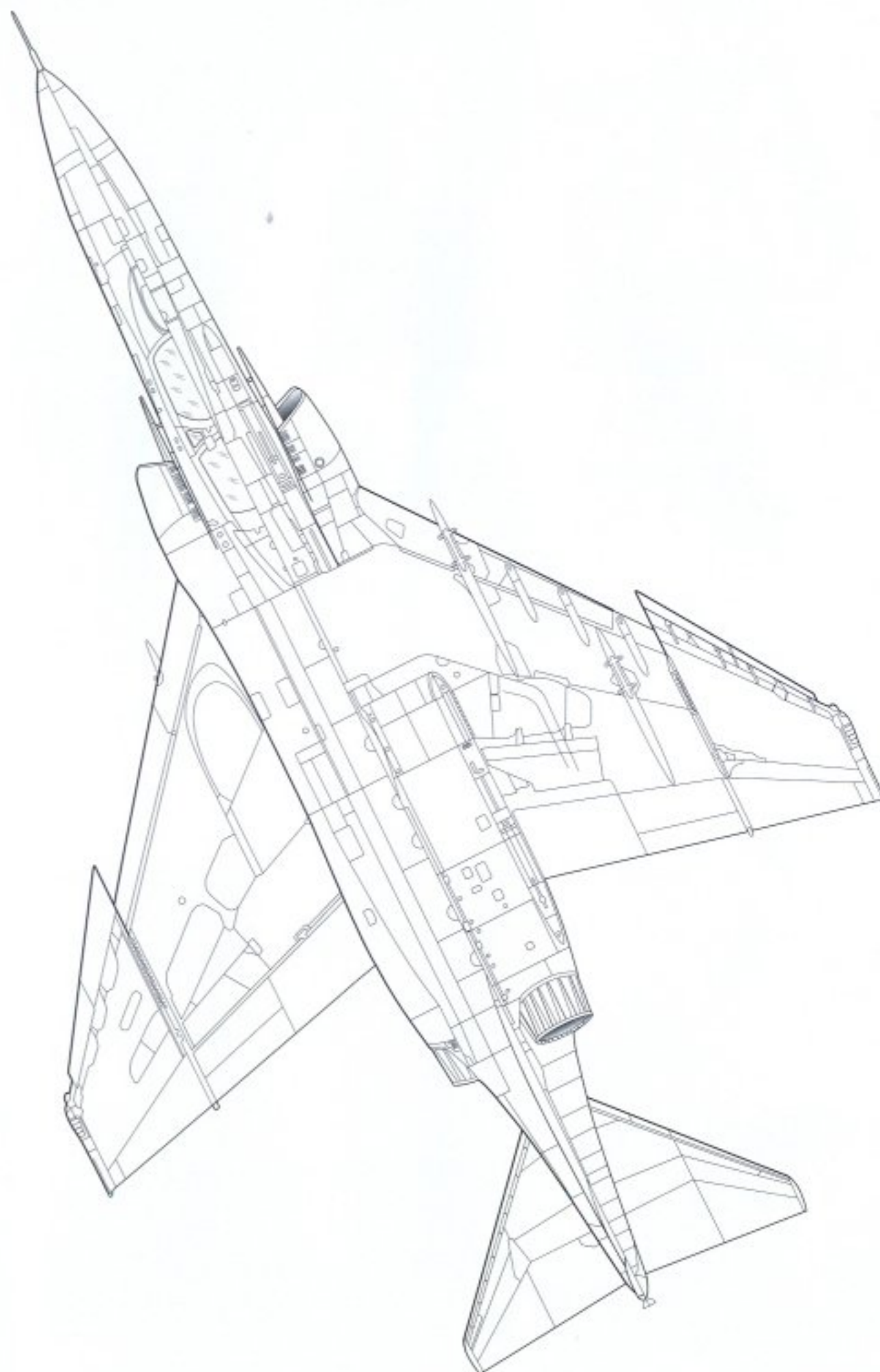
A 469th TFS F-4E, 67-315, banks away from the camera to show the full underside of the aircraft. The weathered areas and dirt around the engine bays are significant. The aircraft has a bomb damage assessment camera mounted in the left forward Sparrow bay. (Don Logan)



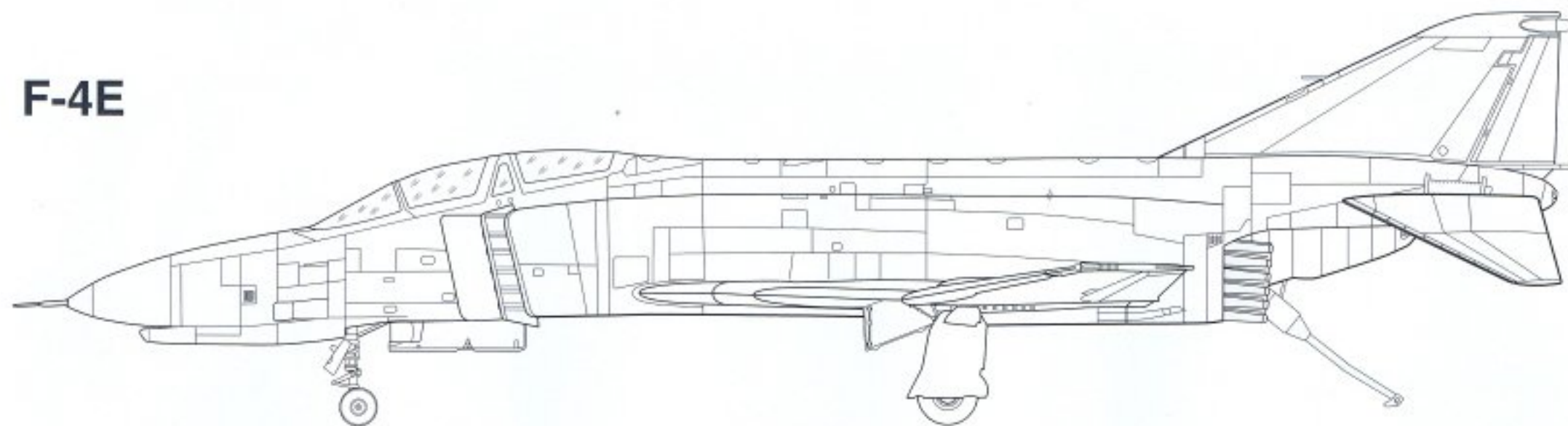


F-4E Phantom II Specifications

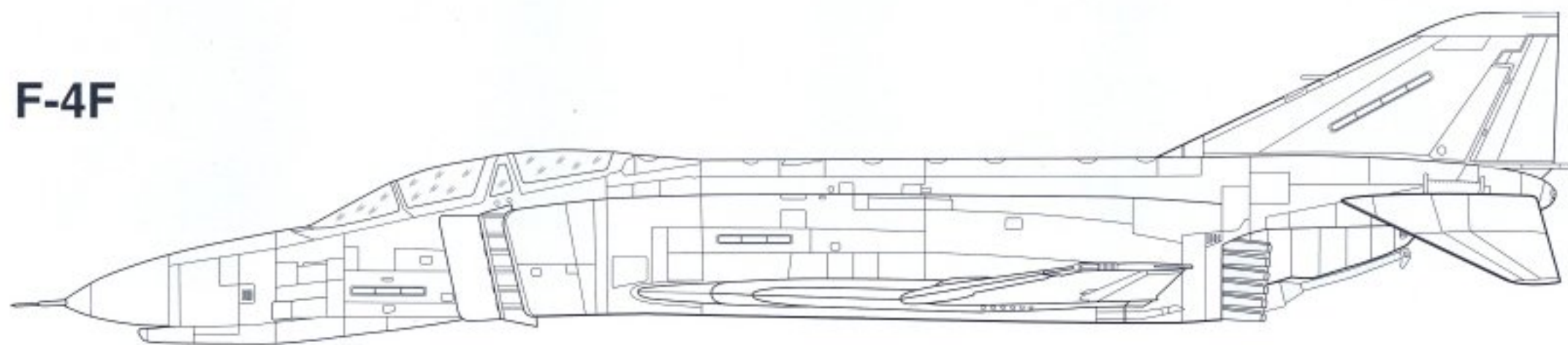
Type	two seat fighter-bomber
Crew	two, Pilot and Weapons System Operator
Length	63 feet
Height	16 feet 5 1/2 inches
Span	38 feet 4 7/8 inches
Engines	two General Electric J79-GE-17 at 17,900 pounds thrust in afterburner
Empty weight	29,535 pounds
Combat weight	41,135 pounds
Maximum takeoff weight	58,000 pounds
Maximum speed	Mach 2.24
Rate of climb	41,300 feet/minute
Combat ceiling	57,200 feet
Total internal fuel	2,056 gallons
Combat radius	367 miles
Ferry range	1,400 nautical miles
Armament	one M61A-1 20mm Gatling cannon with 639 rounds four AIM-7 Sparrow radar-guided missiles four AIM-9 Sidewinder heat-seeking missiles two 370 gallon underwing fuel tanks one 600 gallon centerline fuel tank various ordnance packages
Number built	969



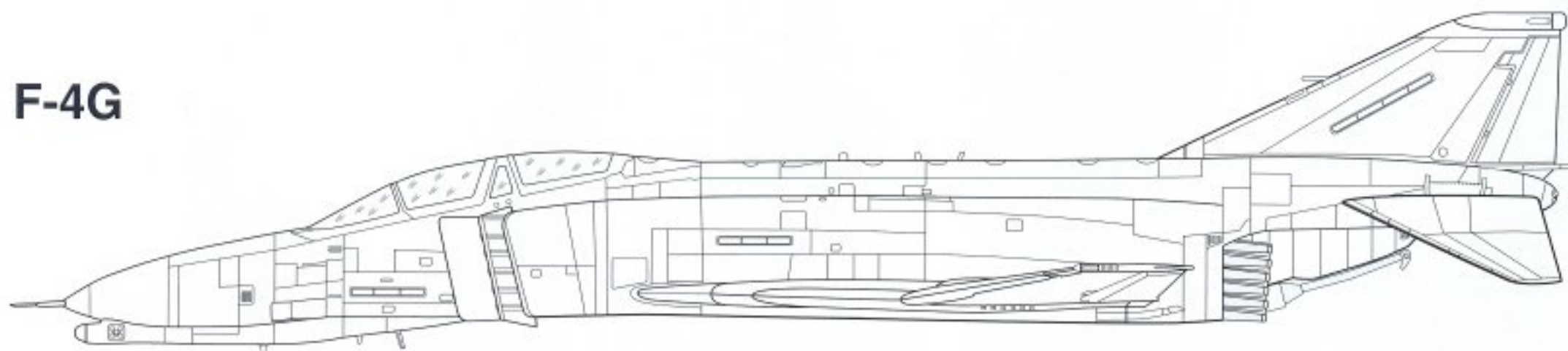
F-4E



F-4F



F-4G





The left outer wing panel showing the wingtip formation light panel with a Red formation light on the front and rear of the wingtip, which had a dihedral of 12 degrees. The right wing had Green lights. This F-4E has the leading edge maneuvering slats. (author)

The upper wing of a slat-equipped F-4E showing the size, shape, and position of the flow fence. The Red and White stripe is a "no step" border for the main wing slats. (author)

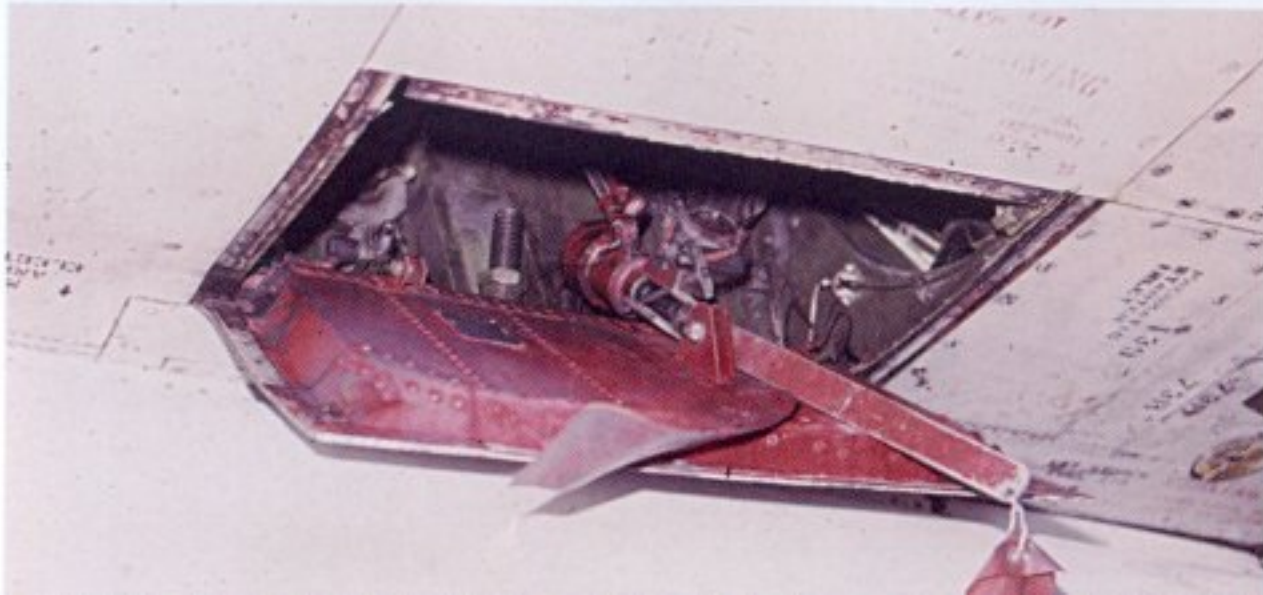
Close-up of the wingtip showing the ECM antenna and the Red formation light. (author)





A 4th TFW F-4E on the hardstand at Lahr AB, Germany, in September 1977. The 4th TFW made regular deployments to NATO bases throughout the 1970s. The hardened aircraft shelter is identical to the ones constructed in Vietnam except for the opening doors at the front and rear. (USAF)

The auxiliary air intake doors on the bottom of the fuselage allowed additional air into the engine compartment on the ground during engine run-ups. (Bob Ulrich)



Just aft of each main landing gear bay was a large dive brake panel with a hydraulic actuator. Note that although the actual bay interior is Olive Green, the inside of the door is Red, the same as the auxiliary air intake doors. (author)





(Clockwise from left) The rear fuselage and trailing edge of the wing showing the right flaperon deployed. The interior of the flap bay is Red. Flaps were often dropped on the ground. *(author)*

An F-4E banks with leading edge maneuvering slats fully deployed. The slats are hydraulically operated in conjunction with the flight computer. *(McAir)*

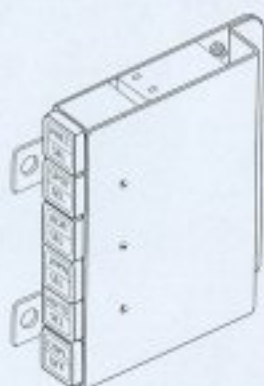
The underside of a typical combat F-4E from the 469th TFS during Operation Linebacker in October 1972. The aircraft carries two Sparrow missiles, four SUU-30B/B CBU's, an ALQ-87's in the forward missile bays, and a full load of fuel tanks. *(USAF)*



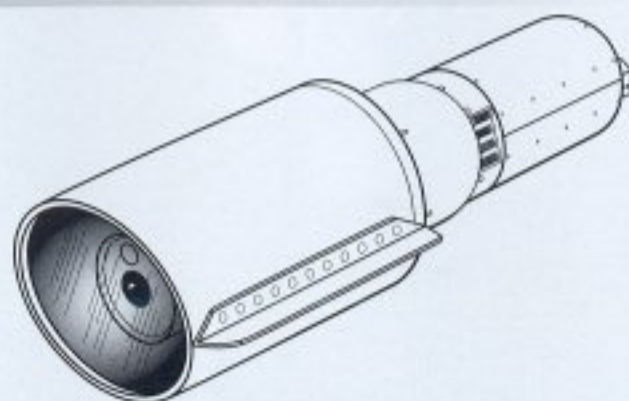


"Hey Jude," an F-4E-37 assigned to the 421st TFS at Udon in 1972. The aircraft has a TISEO unit on the wing leading edge, but it is not equipped with leading edge slats. On the left pylon is a baggage pod to carry the crew's personal items. The canopy trim is Red and White, while the tail tip is Red. The name is White. (USAF)

Target Identification System, Electro-Optical (TISEO)



128Z205 Forward Scope Display Panel



128Z912 Converter-stabilization
generator group LRU-1

The wing showing the leading edge maneuvering slats in full deployed position. (author)

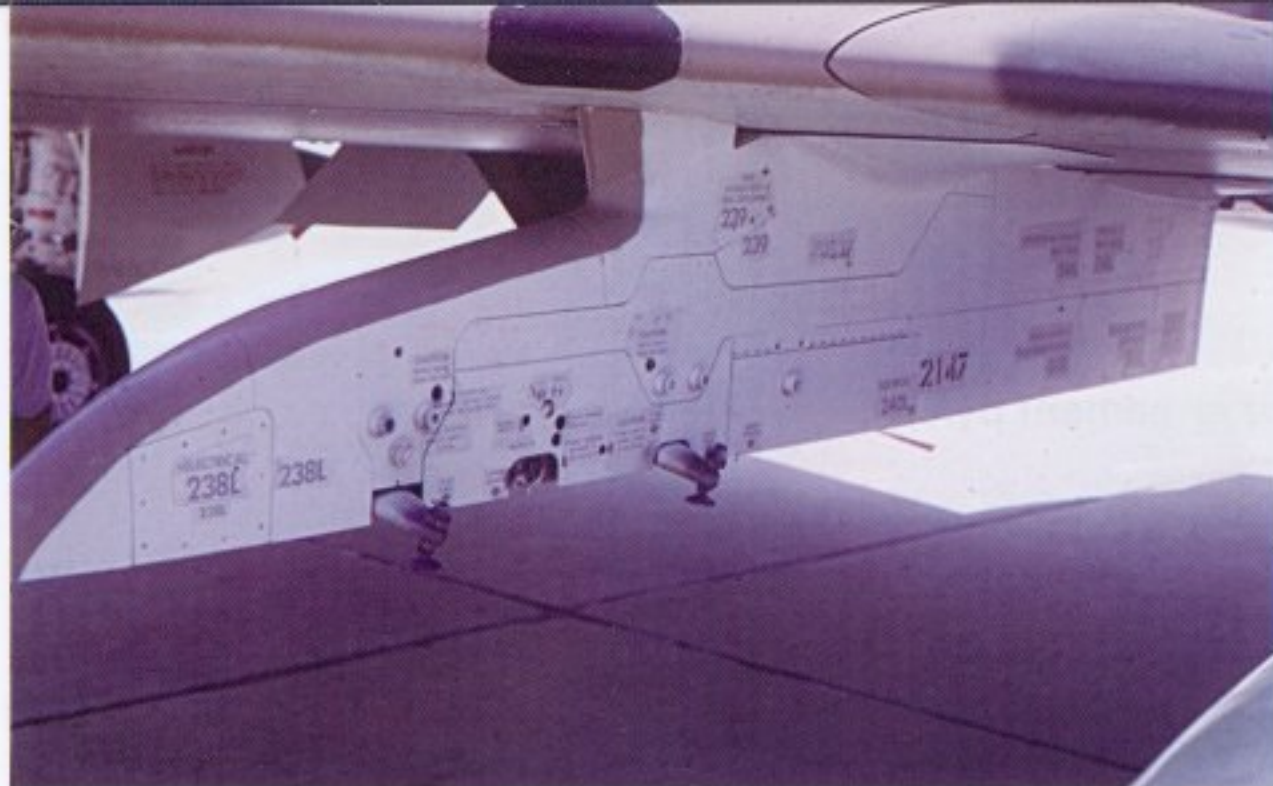




(Top photo) An F-4E-35 assigned to the 469th TFS at Korat in October 1969. This F-4E has the Light Tan radome seen on some early model F-4Es in the combat zone. Note the ordnance load, MERs on the outer pylons with five Mk. 82 LDGP bombs, and TERs on the inner pylons with three M117 750 GP bombs. The inside of the nose gear door is painted dark Green with the tail number repeated in White. (USAF)

(Bottom two photos) Side view and top view of the TISEO camera mounted on the left leading edge of the wing. The AIM-9 Sidewinder launch rails are also shown to advantage. Note placement of the RBF tapes on the missile rails. (author)





The inner pylon for the left side showing the stabilizing screws that firmly held in place whatever ordnance or ejector rack was attached to the pylon. (author)



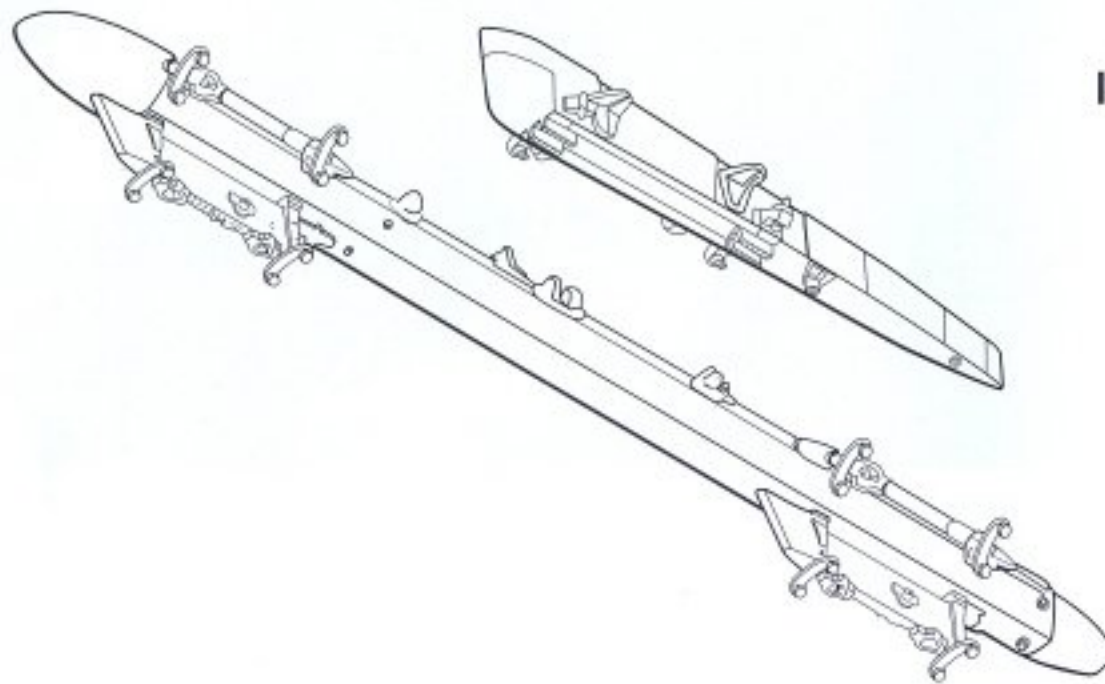
Under the right inner wing is the combat camera mount, not to be confused with the gun camera. Note the Yellow cover over AIM-9 seeker head. (author)

(Bottom photos) The underwing fuel tank pylons and stabilizing winglet attached to the top of the pylon. (author)

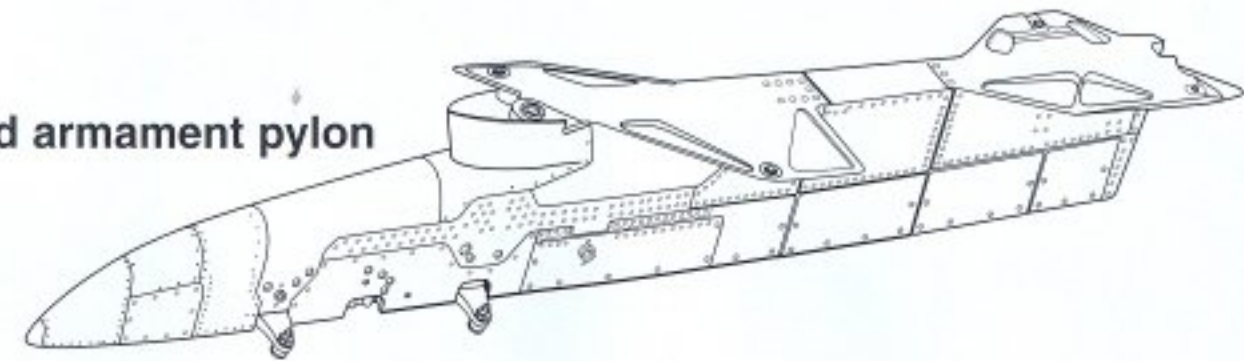


F-4 Underwing, Centerline Pylons

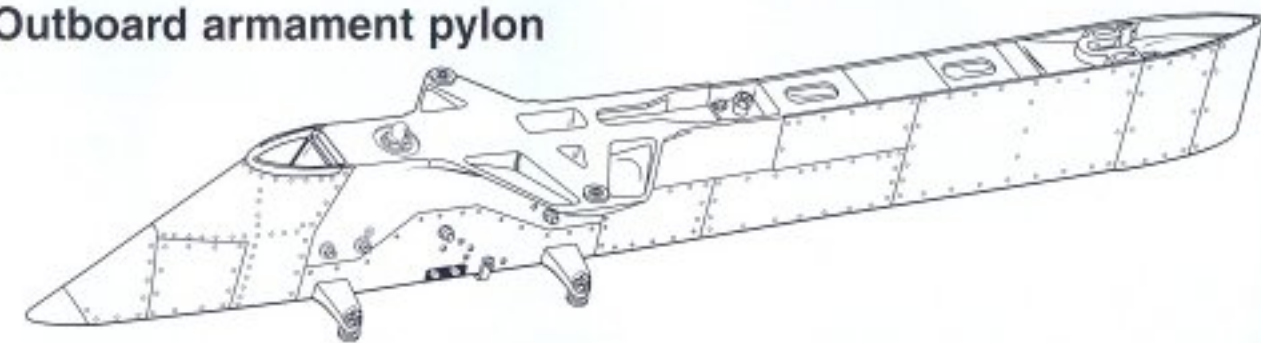
Centerline rack and MER



Inboard armament pylon



Outboard armament pylon



F-4 Underwing, Centerline Drop Tanks

External wing fuel tank



External centerline fuel tank



F-15 style centerline drop tank



Sgt. Dale Klinbile, a 388th TFW armorer, screws a 36-inch fuse extender into the nose of a Mk. 82 LDGP 500-pound bomb, allowing the bomb to explode above ground for maximum antipersonnel effect. Just visible under the bottom of the intake is the bomb damage assessment camera. (USAF)





A 31st TFW F-4E-43 in a revetment at Udorn in 1972 armed with six Mk. 82 LDGPs with fuse extenders. The 31st deployed from Homestead AFB, Florida, to the war zone as part of Operation Constant Guard, which built up forces in SEA to counter the North Vietnamese Easter Offensive. (John Poole)

A 469th TFS pilot dodges raindrops going to his F-4E-35 in the alert revetment at Korat in July 1969. The ordnance load is very significant — five Mk. 82 LDGPs with snake eye fins on the outer left pylon, three SUU-30B/B CBY dispensers on the left inner pylon, three Mk. 82 LDGPs with fuse extenders on the right inner pylon, and another six 500-pound Mk. 82s on the right outer pylon. Although this is NOT a maximum ordnance load, it's pretty close! (USAF)



The pilot and WSO climb into "Road Runner," an F-4E-34 assigned to the 4th TFS at Udorn RTAB, Thailand, in 1972. The airplane is apparently being moved to another base in SEA, as no ordnance is carried other than the ALQ-101(V)-1 ECM pod on the left inner pylon. (Harley Copic)





(Left two photos) The AIM-9J Sidewinder missile and close-up of the infrared seeker. Color of seeker was different for other AIM-9 types — Blue for AIM-9B, Milky Gray for AIM-9M. (author)

(Above) A 2,000-pound GBU-10 Laser Guided Bomb. All "smart bombs," whether laser, TV, or satellite guided, use a standard bomb casing. (author)

(Bottom) A 421st TFS F-4E-37 taxis to the arming pits at DaNang AB in 1972 armed for an air-to-air mission with four AIM-9E Sidewinders, two AIM-7 Sparrow missiles, and two ALQ-87 ECM pods. Armorers will remove the Yellow caps from the Sidewinder seeker heads in the arming pit. (USAF)





A 34th TFS F-4E drops a pair of M118 3,000-pound LDGP bombs on a North Vietnamese target in 1969. The M118 3,000-pound bombs could only be carried on the outer wing pylon of the F-4. (USAF)

The GBU-8 TV-guided smart bomb, commonly called "HOBO." (author)



An F-4E-49 on the ramp at Langley AFB, armed with a GBU-15(V)-1 2,000-pound Modular Guided Glide Bomb on the left pylon and a standard GBU-10 2,000-pound Paveway LGB on the right pylon, during an open house in 1979. (Dick Starinchak)

The Pave Spike pod was mounted in the left forward missile bay, and was used to guide several types of munitions to the target. (Mick Roth)

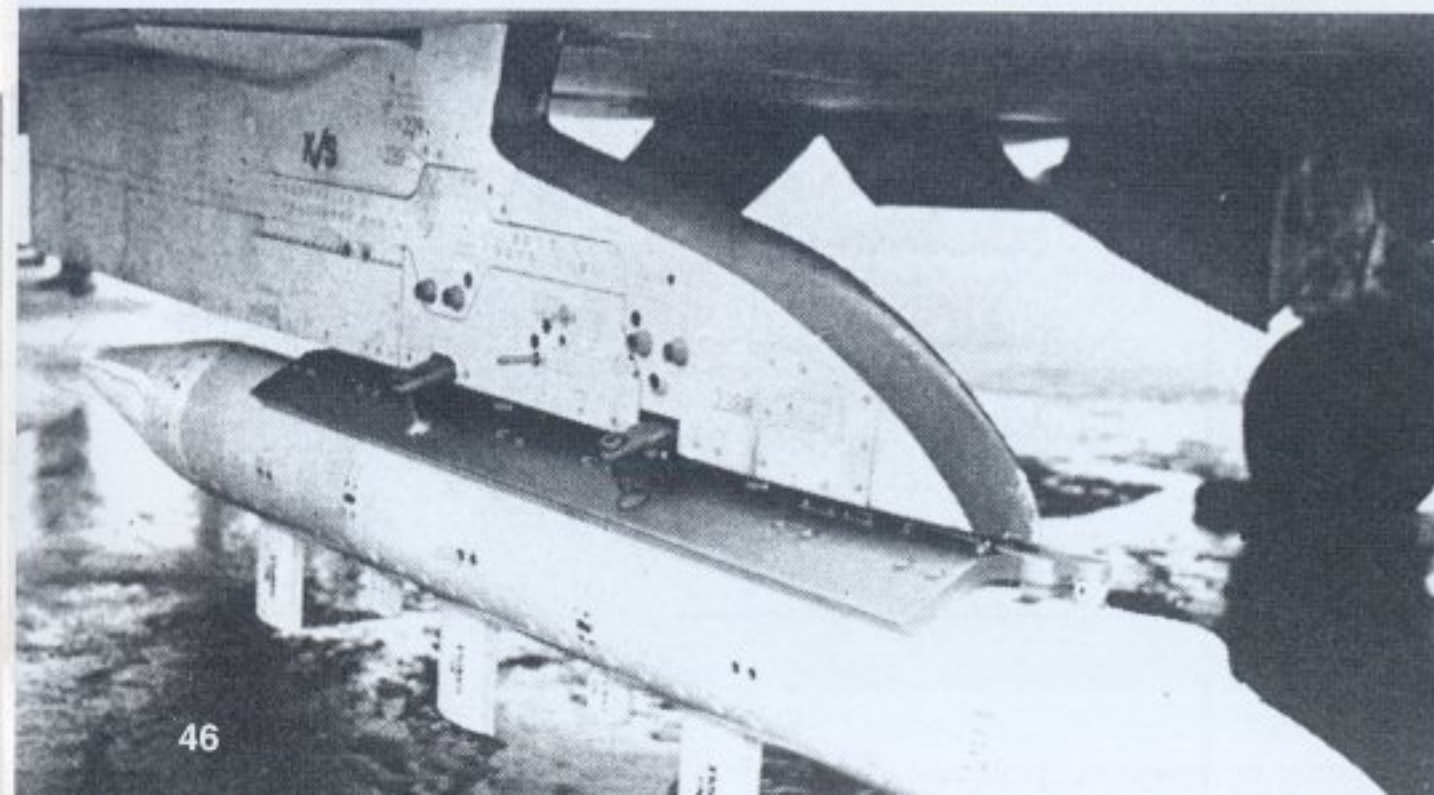




An F-4E-35, aptly named "Aggressor," en route to targets in Laos during May 1970. "Aggressor" was assigned to the 469th TFS at Korat. Shortly after this photo was taken, 13th AF issued a rule forbidding nose art and shark's teeth decorations on their "friendly fighter bomber" aircraft. Canopy rail is Leaf Green with White trim, with Leaf Green tail tip and tank nose. (USAF)

A three-canister ALQ-71 ECM pod mounted on the inner pylon of an F-4E. Most of the time, combat aircraft carried the ECM pods in the forward Sparrow missile bays. (Mick Roth collection)

This 421st TFS F-4E-34 had to make an emergency fuel stop at Nakhon Phanom RTAB in July 1972 following a mission over North Vietnam during Linebacker operations. MiGs must have been encountered, as the pilot dropped all his external tanks. (John Poole)





Another unit that deployed to Southeast Asia during the 1972 Linebacker operations was the veteran 4th TFW from Seymour Johnson AFB, North Carolina. This F-4E-42 is armed with a pair of GBU-10 2,000-pound LGBs. The F-4 would drop the LGBs near the target, and a target designator aircraft, usually an F-4D, would then guide the bombs to the target. *(John Poole)*



A 4th TFW F-4E-33 heads toward a target in Laos during 1970, carrying a pair of GBU-10 laser guided bombs. The GBU-10 used a Paveway II seeker head attached to a 2,000-pound Mk. 84 bomb casing. A designator aircraft, usually an F-4D, carried the guidance pod and directed the bombs to their target. *(USAF)*

A 4th TFS F-4E-33 taxis to the active runway at DaNang in 1969, with twelve Mk. 82 LDGPs on MERs on the outboard pylons. Interestingly, there is no ordnance of any kind on the inboard pylons. The 4th TFS was assigned to the veteran 366th TFW, which had been operational in F-4s from DaNang since 1965. The leading edge flaps are deployed for takeoff. *(USAF)*





Close-up of the Multiple Ejector Rack mounted on the fuselage centerline of an F-4E at Udorn in 1972. The ordnance is six Mk. 82 LDGP 500-pound bombs. Note that the centerline pylon, the MER itself, and each bomb on the MER has its own stabilizing screws. *(Tom Brewer)*

A 421st TFS F-4E takes on fuel from a Young Tiger KC-135 tanker. The F-4E is armed with a very unusual but lethal ordnance load — four Mk. 20 Rockeye CBU dispensers and two SUU-23 20mm Gatling cannon pods. With the internal M61A-1 gun, a total of three could bring up to 18,000 20mm rounds per minute at maximum rate of fire. *(author's collection)*

A 32nd TFS F-4E-38 F-4E taxis to the active runway at Soesterberg AB, Netherlands, armed for an air defense mission with four AIM-7 Sparrow radar-guided missiles, and four AIM-9J Sidewinder infrared heat-seeking missiles. The 32nd TFS was the only USAFE squadron assigned to a base in The Netherlands, and was under the control of NATO. *(Hugh Muir)*





A 4th TFW F-4E-58 on the ramp at Seymour Johnson AFB with an ALQ-119 ECM pod in the forward Sparrow bay. The ALQ-119 was the pod of choice well into the 1990s, and could be configured to jam a variety of different enemy defenses. *(author)*

In the Far East, the 3rd TFW was equipped with F-4Es at Clark AB, Philippines. This F-4E-61 has all the latest modifications including leading edge slats and TISEO, and is carrying an ALQ-119(V) in the forward missile bay. It was around this date, 1974, that Air Force F-4s began receiving the new "wraparound" camouflage, which is why the outer drop tanks are painted overall Green. *(Mick Roth)*



In 1977, in anticipation of equipping the Iranian Air Force with F-4Es, the 50th TFW deployed to Shiras AB, Iran, for a demonstration of the F-4E's capabilities, including the AGM-65 Maverick air-to-ground missile. The AGM-65 was carried on three missile launchers on the inboard pylon. *(USAF)*

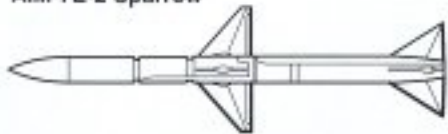
A 36th TFW F-4E-38 blasts off from the Bitberg runway with four AIM-4D Falcon air-to-air missiles. The AIM-4 Falcon series was designed for use as a bomber destroyer, and was not intended to be a dog-fighting missile like the AIM-9 Sidewinder series. *(author's collection)*



Various Ordnances Carried by F-4Es

AIM missiles

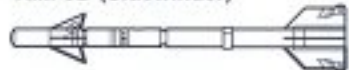
AIM-7E-2 Sparrow



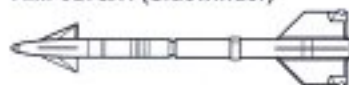
AIM-4D Falcon



AIM-9B (Sidewinder)



AIM-9D/G/H (Sidewinder)



AIM-9E (Sidewinder)



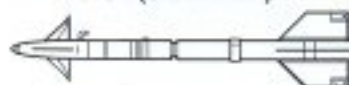
AIM-9J/J-4/N/N-1/N-2/N-3/P-4 (Sidewinder)



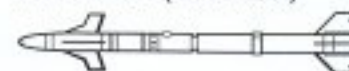
AIM-9J-1/J-2/J-3/P/P-1 (Sidewinder)



AIM-9L/M/R (Sidewinder)



AIM-9P-2/P-3 (Sidewinder)

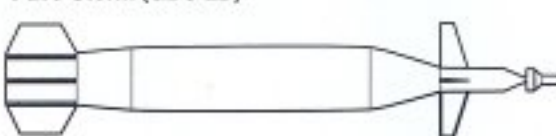


Laser guided bombs

KMU-370 (GBU-11B)



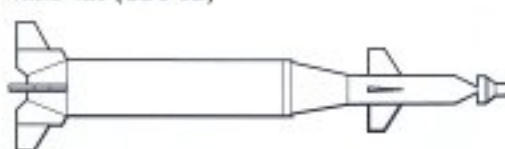
Pave Storm (GBU-2B)



KMU-351 (GBU-10B)



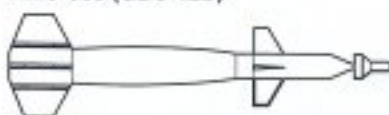
KMU-420 (GBU-5B)



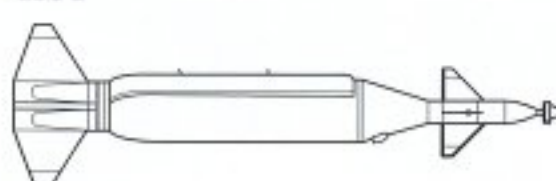
KMU-342 (GBU-1B)



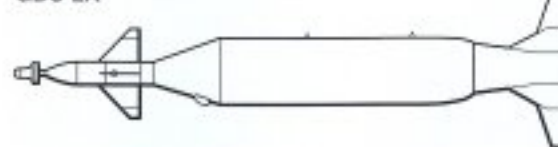
KMU-388 (GBU-12B)



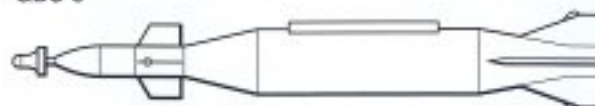
GBU-2



GBU-2A



GBU-3



GBU-10



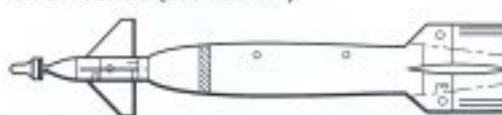
GBU-10A



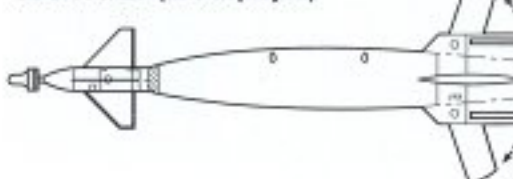
GBU-11A



GBU-10G/H/J (fins stowed)



GBU-10C/E/F (fins deployed)

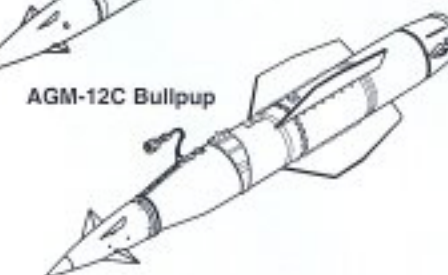


Air-to-ground missiles

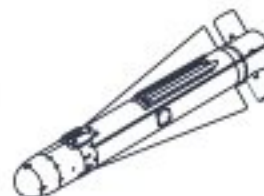
AGM-12B Bullpup



AGM-12C Bullpup



AGM-65A Maverick



Fire bombs

BLU-1/B fire bomb





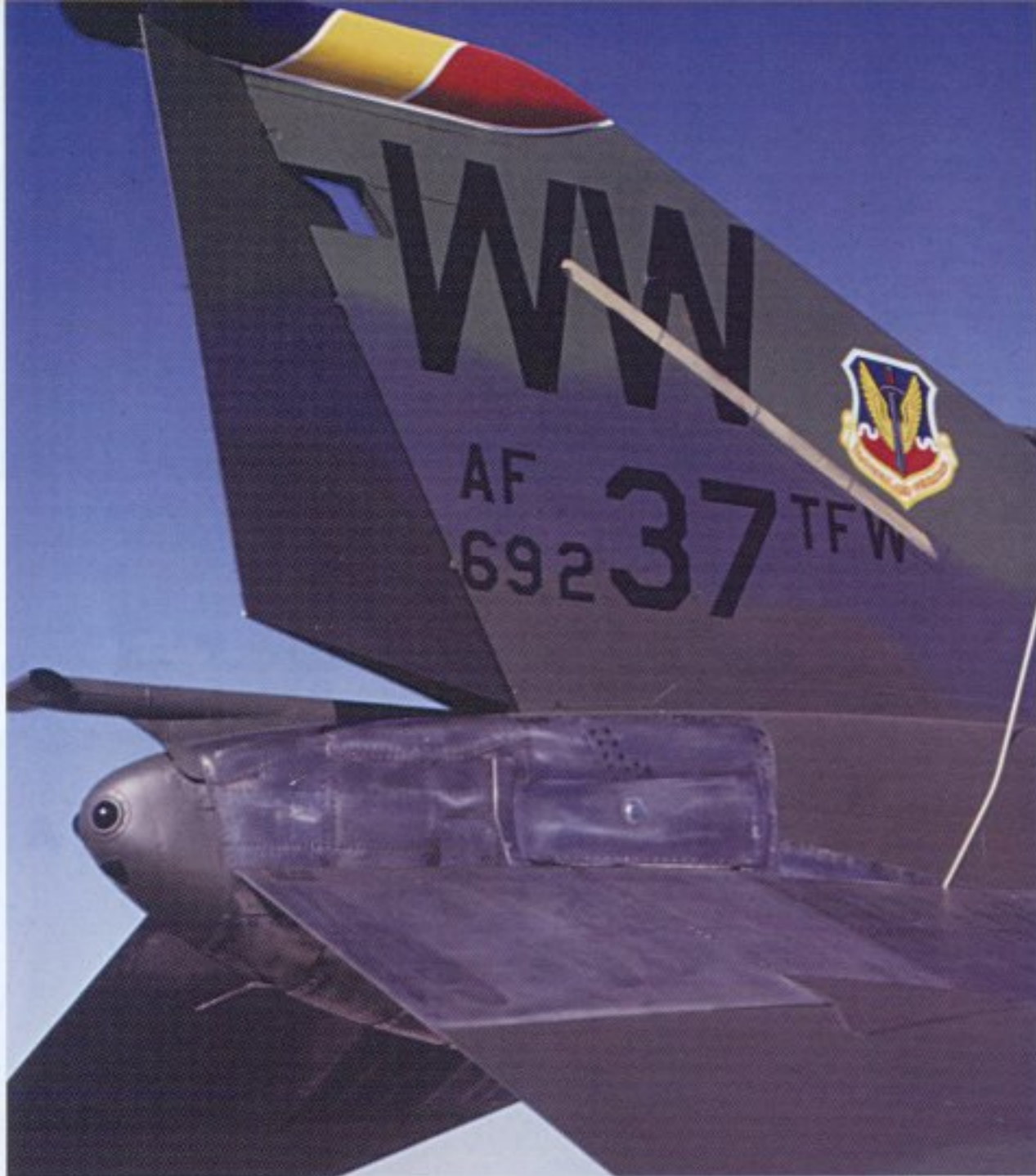
A 57th FWW F-4E-49 sits on the parking spot at Nellis AFB with a practice AGM-62 Walleye TV-guided missile. Practice ordnance, whether air-to-air or air-to-ground, was usually painted Blue and White. (Hugh Muir)



The 57th FIS began receiving F-4Es in the early 1970s. The aircraft were delivered still wearing the tactical camouflage of two Greens and Tan. This 57th FIS F-4E-37 has full squadron markings applied, including large Black and White checkerboard on the intake splitter plate and vertical tail. The 57th FIS "Black Knights" insignia was added to the tail. (author's collection)

A pair of 57th FIS F-4Es in formation with a Boeing E-3 AWACS aircraft over Iceland in 1974. The F-4Es now wear glossy Aircraft Gray (16473) paint overall, with standard 30-inch insignia, as called for in Air Defense Command regulations. The mission of the 57th FIS was interception of the Russian TU-95 Bear bombers that made regular flights between Soviet bases and Cuba. (USAF)





(Clockwise from above) This view of the tail of a 37th TFW F-4G showing the APR-38 aft receiver antenna housing, and another APR-38 low-band antenna blade in the middle of the forward "W." The small bumps on the parachute housing door are nonfunctional. (Paul Minert)

The first F-4G Wild Weasel aircraft on the ramp at Edwards AFB in August 1976. All F-4Gs were modified from 1969 model F-4Es. The major modification was removal of the internal M61A-1 Gatling cannon and replacing it with the APR-38 electronic countermeasures equipment. Externally, the F-4G had leading edge slats and the upgraded J79-GE-17 engines rated at 17,900 pounds of thrust in afterburner. (Mick Roth)

Close-up of the forward nose showing the APR-38 low-band antenna blades, three on each side of the nose. (Mick Roth)

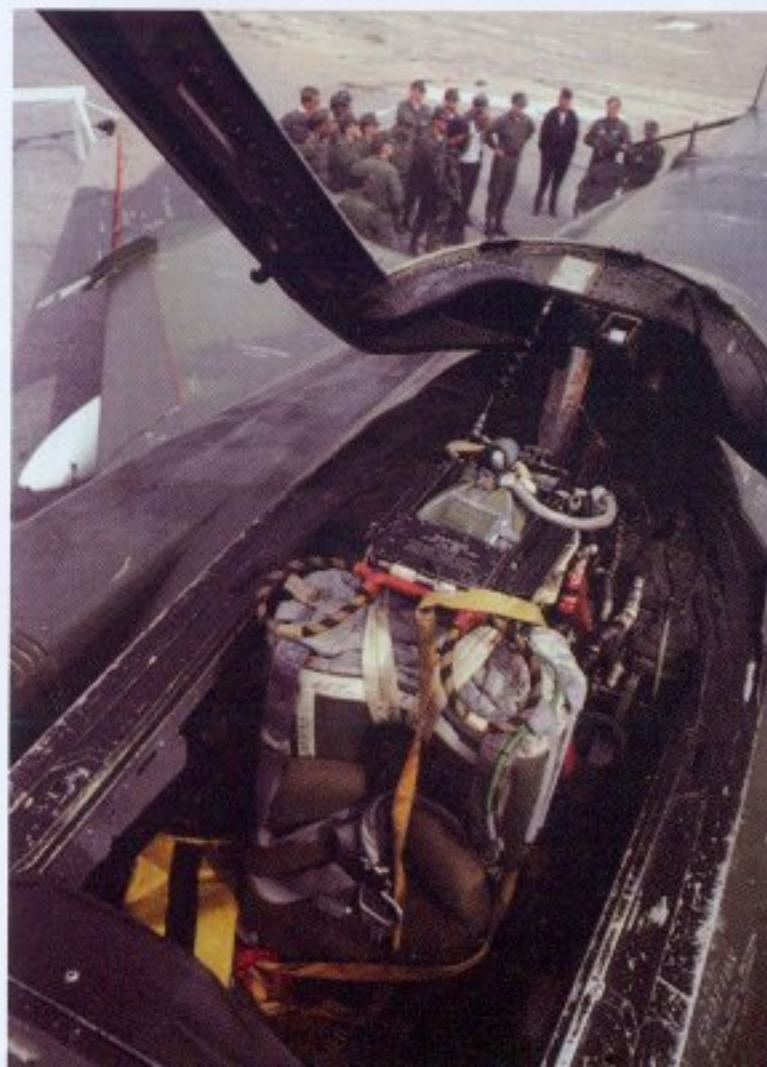
The lower nose area that once housed the cannon was enlarged and had a large antenna housing, that housed the APR-38 forward receiver in place of the gun muzzle. Under the Red protective covers are the APR-38 beam receiver antennas. (Hugh Muir)





Publicity photo showing the full capabilities of the F-4G Advanced Wild Weasel aircraft. The F-4G could carry (from left) the AGM-45 Shrike ARM, AGM-78 Standard ARM, ALQ-119 ECM pod, AGM-65 Maverick air-to-ground missile, and the brand new AGM-88 High Speed Anti-Radiation Missile, or HARM. The wraparound camouflage is clearly shown. (McAir)

F-4G Rear Cockpit



Rear cockpit looking aft showing the top of the ejection seat and the canopy hinge mechanism. The canopy rails are black. The rear cockpit in the "Weasel" is crammed full of instruments that extend all the way to the top of the cockpit, restricting all forward visibility. (Detail & Scale photo by Bert Kinzey)

F-4G Serial Numbers

F-4G-42-MC

A.F. serial 69-0236 thru 69-0243
A.F. serial 69-0245 thru 69-0248
A.F. serial 69-0250 thru 69-0255
A.F. serial 69-0257 thru 69-0259
A.F. serial 69-0261
A.F. serial 69-0263
A.F. serial 69-0265
A.F. serial 69-0267
A.F. serial 69-0269 thru 69-0275
A.F. serial 69-0277
A.F. serial 69-0279 thru 69-0281
A.F. serial 69-0283 thru 69-0286
A.F. serial 69-0292 thru 69-0293
A.F. serial 69-0297

F-4G-43-MC

A.F. serial 69-0304
A.F. serial 69-0306
A.F. serial 69-7201 thru 69-7202
A.F. serial 69-7204 thru 69-7220
A.F. serial 69-7223
A.F. serial 69-7228
A.F. serial 69-7231 thru 69-7236
A.F. serial 69-7251
A.F. serial 69-7253 thru 69-7254
A.F. serial 69-7256 thru 69-7260

F-4G-44-MC

A.F. serial 69-7262 thru 69-7263
A.F. serial 69-7270
A.F. serial 69-7272
A.F. serial 69-7286 thru 69-7291
A.F. serial 69-7293
A.F. serial 69-7295
A.F. serial 69-7298
A.F. serial 69-7300 thru 69-7303
A.F. serial 69-7546
A.F. serial 69-7550
A.F. serial 69-7556
A.F. serial 69-7558
A.F. serial 69-7560 thru 69-7561
A.F. serial 69-7566
A.F. serial 69-7571 thru 69-7572
A.F. serial 69-7574

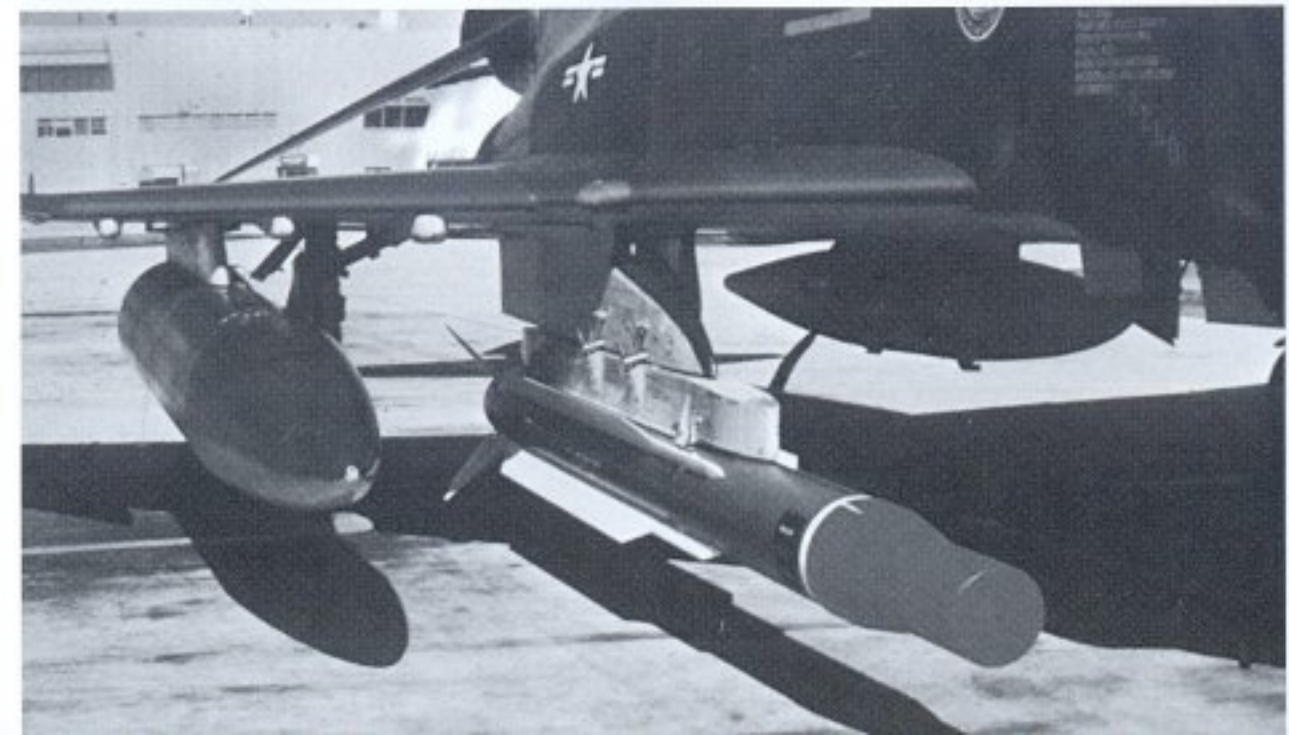
F-4G-45-MC

A.F. serial 69-7579 thru 69-7584
A.F. serial 69-7586 thru 69-7588

Aircraft data legend

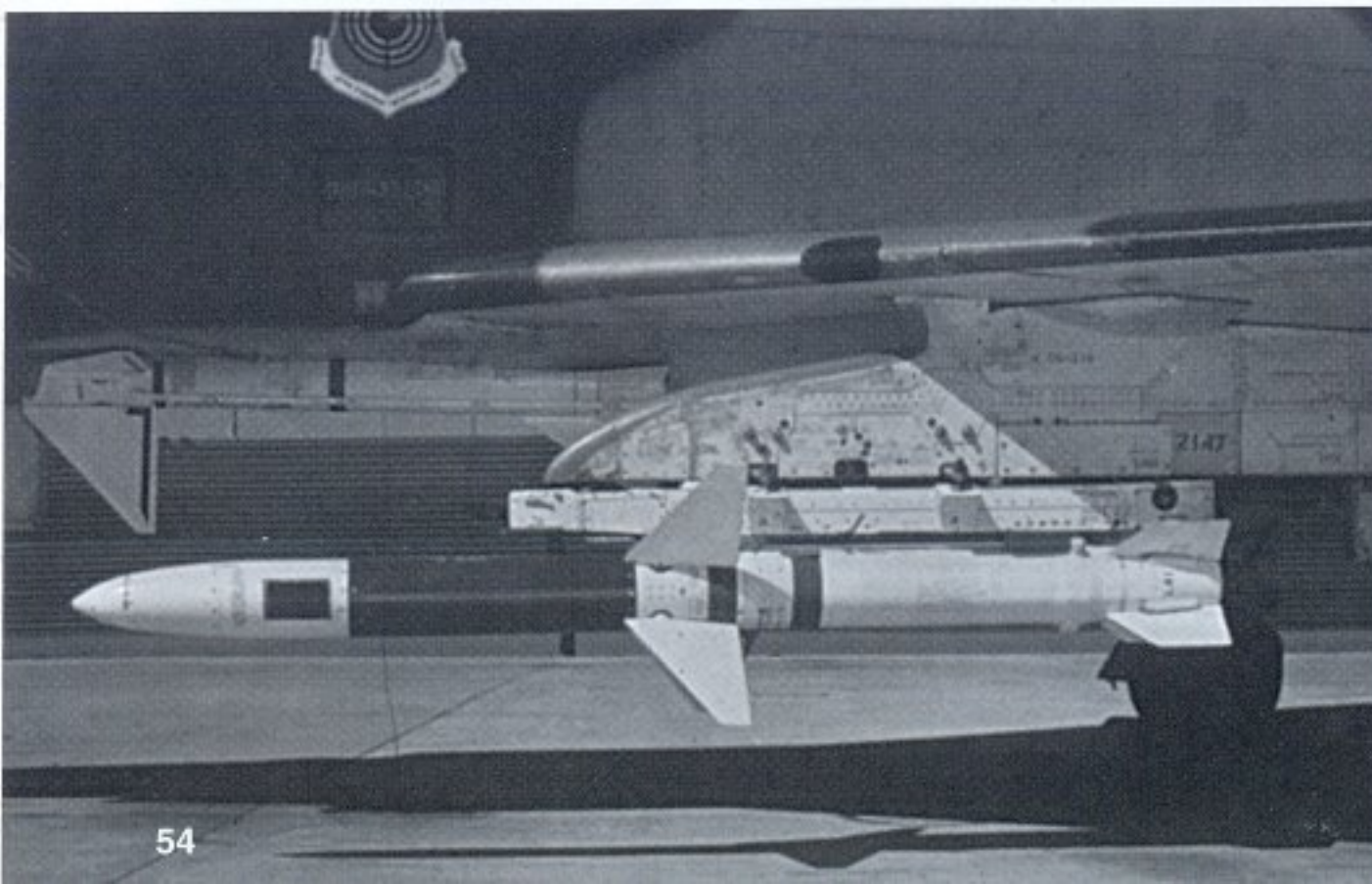


A practice AGM-78 Standard ARM on the special LAU-80 launch rail that was needed to carry the large Standard ARM missile. The AGM-78 had been phased out by the time the first Gulf War began. (Hugh Muir)



An early F-4G from the 35th TFW at George AFB, California, en route to the "live-fire range" at Edwards AFB during tests of the AGM-65 Maverick air-to-ground missile in 1978. The additional APR-38 special warning antenna blades are seen atop the fuselage spine. (USAF)

One of the main weapons of the F-4G was the Vietnam-era AGM-45 Shrike Anti-Radiation Missile, commonly referred to as an "ARM." Even though the AGM-88 HARM was more advanced, crews during Desert Storm fired twice as many Shrikes as any other type of ARM. As denoted by the large Blue band, this is a practice missile. (author)



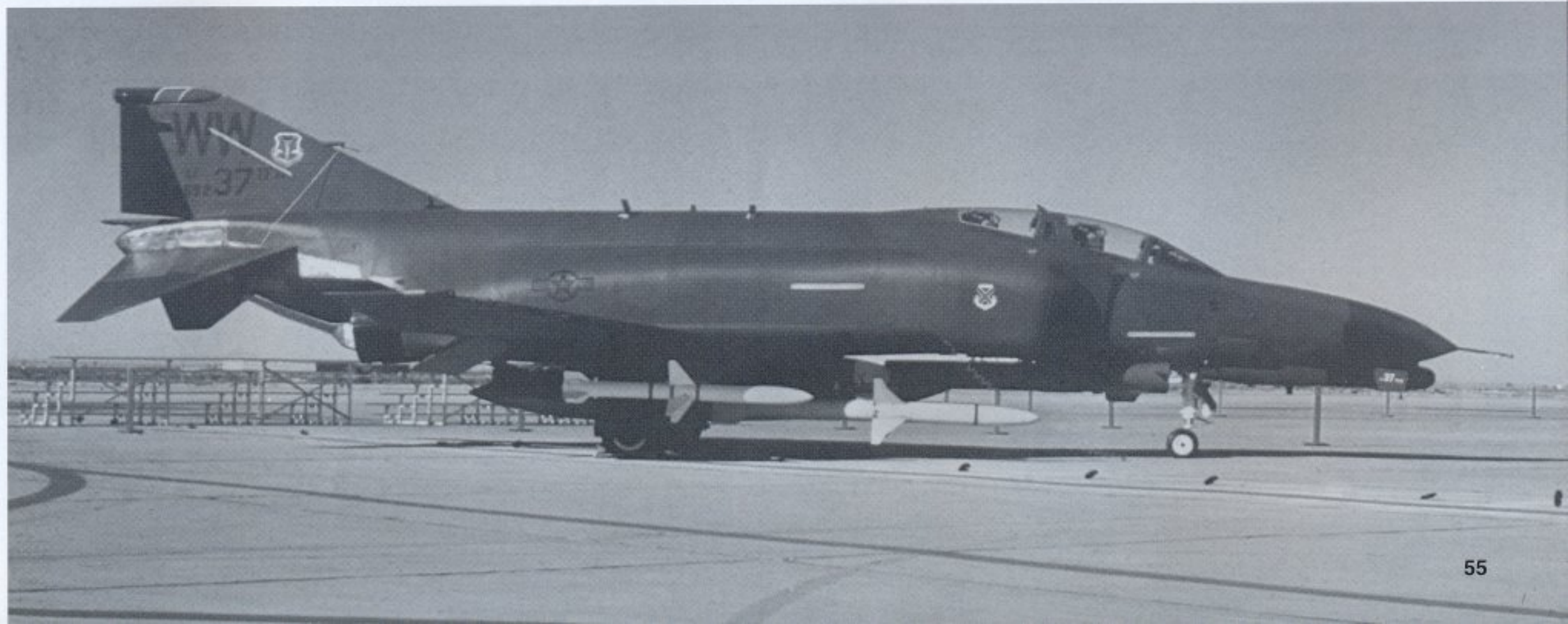


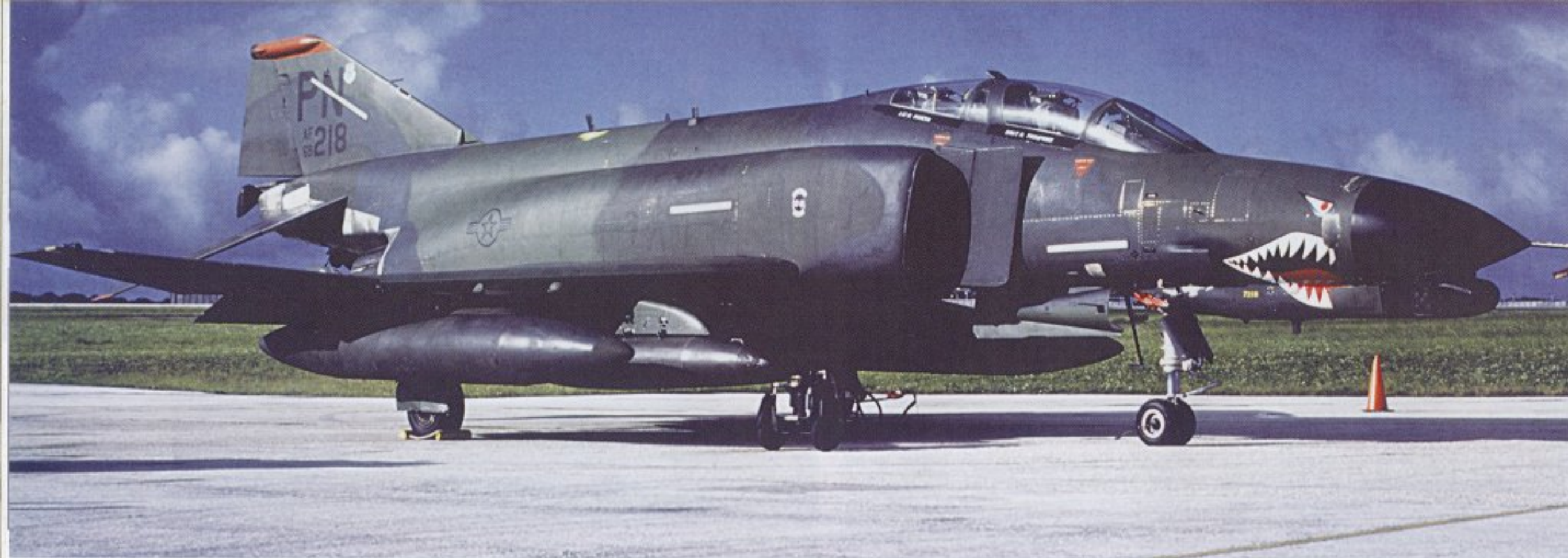
"City Of Victorville," F-4G-43, 69-208, carried these special markings for an open house display at Edwards AFB in October 1978. Interestingly, the 35th TFW had tail codes that described their mission — "WW" or Wild Weasel. (Mick Roth)



A 561st TFS F-4G-43 on the ramp at George AFB in May 1981. The 35th TFW was renumbered the 37th TFW on 30 March 1981, retaining its "WW" tail codes, and absorbing its squadron assets, including the 561st and 562nd squadrons F-4Gs. The F-4G carried the 600-gallon centerline fuel tank originally designed for the F-15 Eagle. (Brian Rogers)

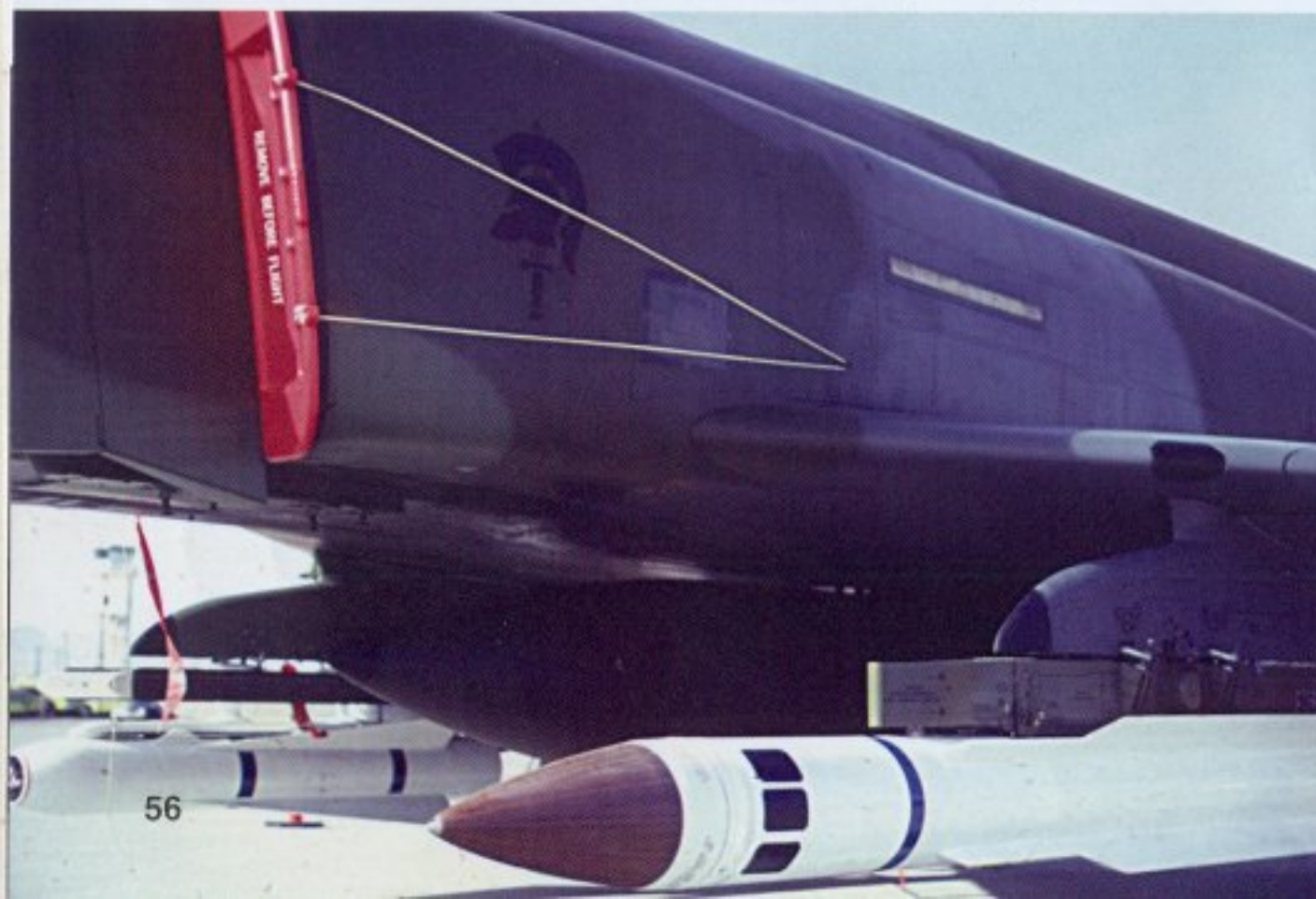
Beginning in the early 1980s, Air Force tactical aircraft began changing from the Southeast Asia camouflage of two Greens and Tan, to a new wraparound scheme known as Europe One, which replaced the Tan with Gunship Gray (36118). This is the 37th TFW CO's F-4G-43 as denoted by the three-color antenna housing and the large "37," which was part of the serial number 69-237. (Paul Minert)





Even though based in the Far East at Clark AB, Philippines, the 3rd TFW also painted their aircraft in the new Europe One scheme — with shark's teeth, of course. The special warning antenna blades on the fuselage spine can be seen. "PN" were the code letters for Clark AB, Philippines. *(Brian Rogers)*

Close-up of the seeker head on an active AGM-78 Standard ARM carried on the inboard pylon of a 561st TFS F-4G. On the right pylon is an AGM-65 Maverick. *(Mick Roth)*



The standard ECM pod carried by combat F-4Gs in Desert Storm was the ALQ-131(V-14). This 561st TFS F-4G, 69-232, is a veteran of Desert Storm with eight confirmed radar site "kills." *(Dan Simonsen)*





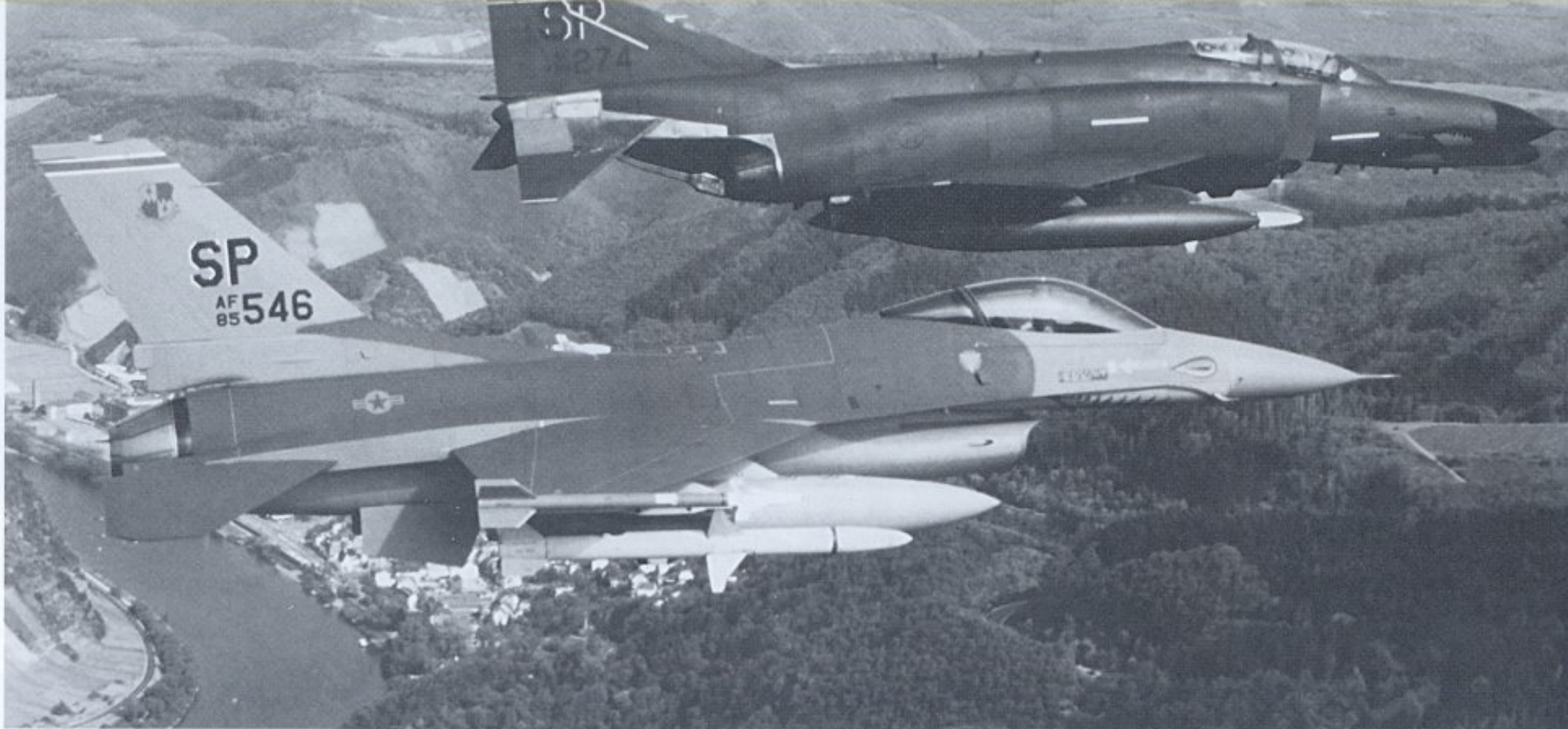
Just prior to Desert Shield/Desert Storm, the Air Force changed the tactical camouflage to a two-tone Gray scheme. This is the 37th TFW CO's F-4G on the ramp at George AFB in 1988. The two colors are Gunship Gray (36118) and Aircraft Gray (36270). The aircraft carries four AGM-88 HARM missiles. (USAF)



A 561st TFS F-4G shows off the upper surface camouflage during a live-fire exercise on the Nellis AFB firing range in 1988. The thin stripe atop the fuselage and intakes is the outline of the walkway areas. (USAF)

An 81st TFS F-4G-43 in front of one of the covered hard shelters at Spangdahlem AB, West Germany, in 1993. The aircraft carries AIM-9L Sidewinder missiles. The F-4G also carried two AIM-4 Sparrow missiles for defensive purposes. Because the F-4G had no internal gun, air-to-air missiles were its only defense against enemy fighters. (Paul Bigelow)





The old and the new. Just prior to the first Gulf War, Air Force made the decision to replace the two-seat F-4G with the newer block-50 F-16C. This Europe One camouflaged F-4G flies formation with one of the brand new F-16Cs that were assigned to the 52nd TFW for the Wild Weasel mission. However, it would be the F-4G that would go to war against Iraq. (USAF)

Just before Desert Shield operations, the 81st TFS painted their aircraft in the new camouflage of dark Gunship Gray (36118) and Aircraft Gray (36270), with all markings being in the contrasting shade of Gray. (Glenn Ashley)

Photo of the artwork on a combat veteran F-4G of the 561st TFS in 1996. The intake splitter plate has thousands of small holes to bleed excess air from behind the intake. (Dan Simonsen)





An F-4G-42 from the 562nd TFFS with a full load of live AGM-65 Mavericks and AGM-88 HARMs on its way to the live-fire range at Edwards AFB. All the squadrons within the 37th TFW were training units, thus the unit designation TFFS. (USAF)



Looking like a large insect, an 81st TFS F-4G taxis back to its parking spot at Spangdahlem AB, West Germany. The up-angle of the new 600-gallon centerline tank can be seen. The older F-4 centerline tank had a down-angle when mounted. (G.A. Kromhout)

As the F-4Gs were phased out of front line service, they went to Air National Guard units. In 1991, the 192nd Squadron, Nevada ANG was slated to transition from RF-4C reconnaissance Phantoms into the new F-4G Wild Weasel. The plan was cancelled and the F-4Gs went to the 190th TFS, Idaho ANG, but not before one F-4G was painted in full "High Rollers" markings. (Ben Knowles)

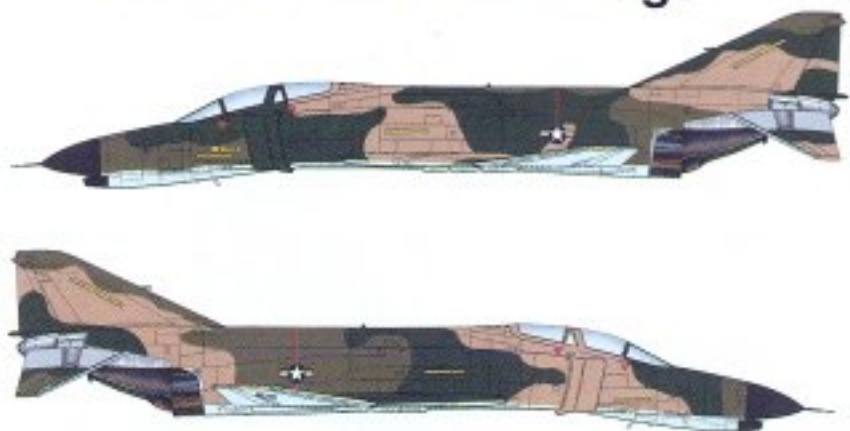


USAF Camouflage Patterns and Colors

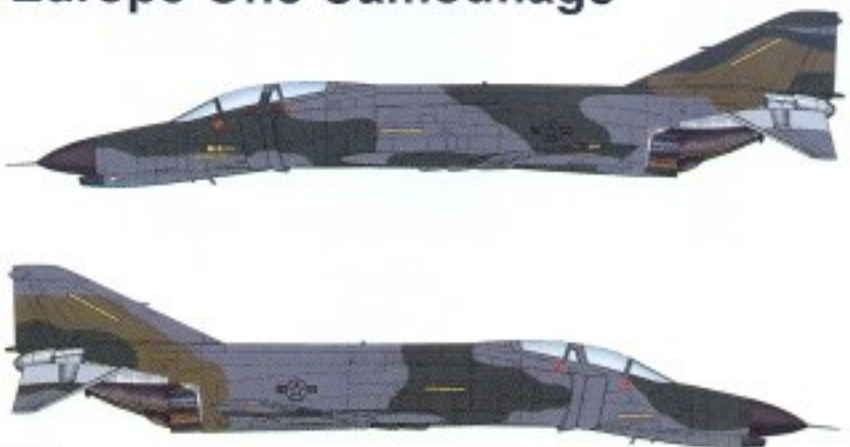
Ghost Gray Wraparound



Southeast Asia Camouflage



Europe One Camouflage



Bundesluftwaffe Camouflage Schemes

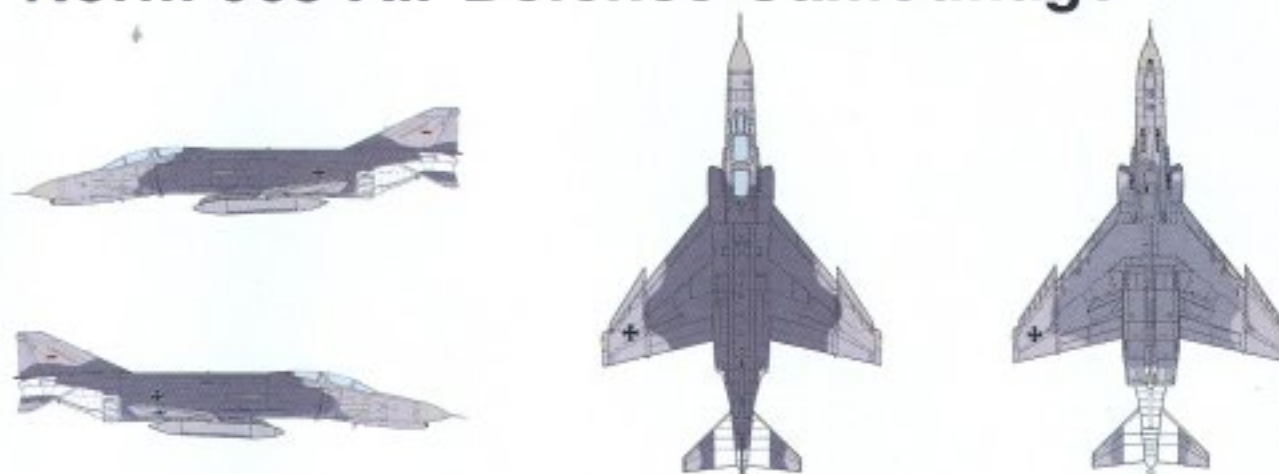


West German F-4Fs were delivered in early 1975 in a hard-edged splinter camouflage of Green and Gray called Norm 72. But in the early 1980s, the Bundesluftwaffe adopted a new more subtle camouflage called Norm 81A, in overall RAL 7001 Gray, with a splotch pattern in RAL 9005 Dark Green, RAL 7012 Gray, and RAL 6014 Dark Gray. The rudder and stabilizers are painted Red for Air Combat Maneuvering flights. (Mick Roth)

Some F-4Fs were delivered in USAF camouflage of Gunship Gray (36118) and Aircraft Gray (36270), which were then changed to one of the standard German schemes. (Mick Roth)



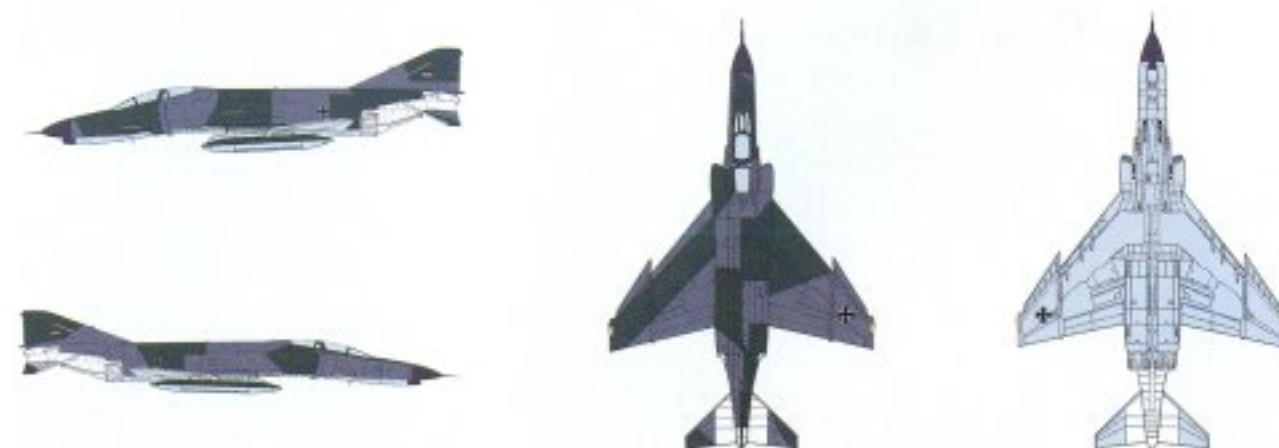
Norm 90J Air Defense Camouflage



Norm 81 Camouflage

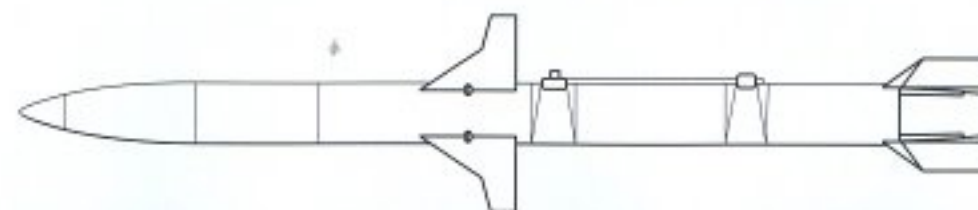


Norm 72 Pattern (not a wraparound)

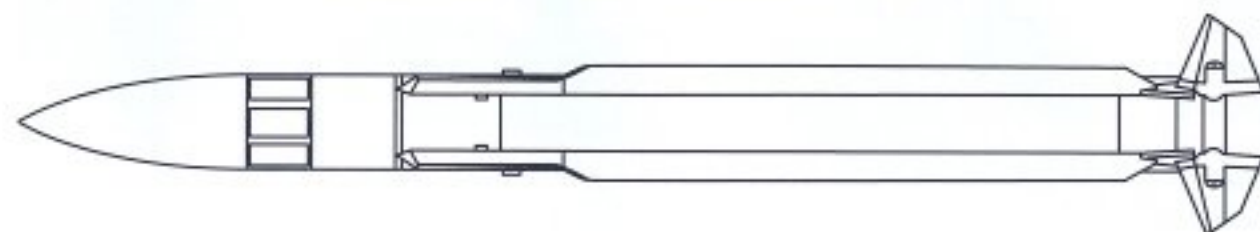


F-4G 'Wild Weasels' Ordnances

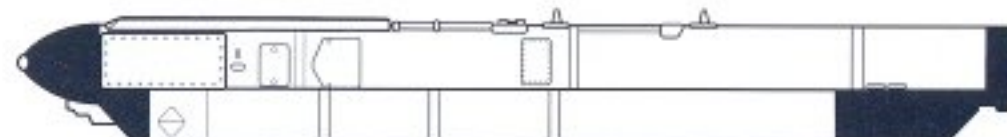
HARM AGM-88



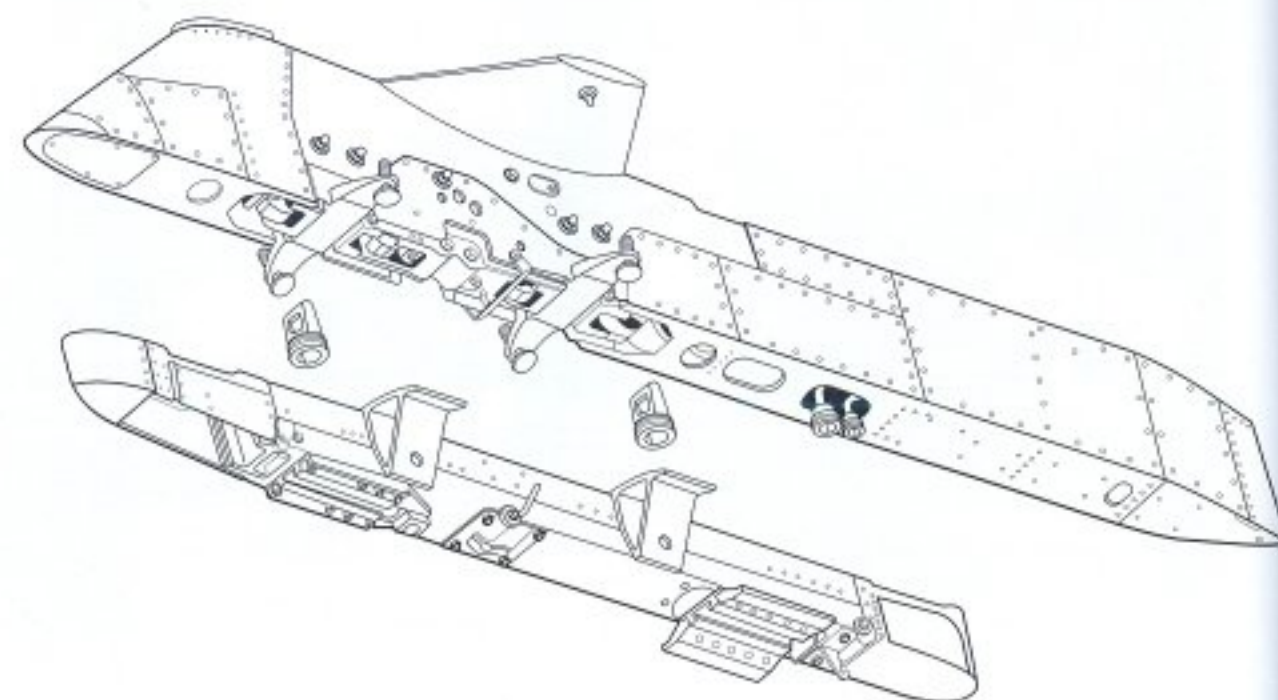
Standard ARM AGM-78



ALQ-119(V)-10



LAU-34A Shrike launcher



In June 1992, just prior to the redeployment of the 81st TFS F-4Gs to Nellis AFB, Nevada, and their assignment to the 57th FWW, this F-4G, 69-241, was adorned with a tail logo to indicate it was assigned to the commander of the 81st TFS. *(Paul Bigelow)*

An 81st TFS F-4G-43, 69-212, on the ramp at Soesterberg AB, Netherlands, showing the complete wraparound markings. Under the nose is a painted area to resemble the ant glare and canopy area. An enemy fighter pilot seeing this would not know if the Phantom was in a normal attitude or upside down. *(Dirk Lowers)*



An F-4G Wild Weasel of the 561st TFS following the squadron's return from combat in Desert Storm. The 561st and 562nd squadrons were reassigned to the 57th FWW at Nellis AFB instead of returning to control of the 35th TFW at George AFB, California. The aircraft, F-4G-44, 69-7295, carries White AGM-88 HARM missiles, and Olive Green AGM-65 Mavericks under the wings. The checkerboard is Yellow and Black. *(Doug Slowiak)*

An F-4G with the 561st TFS undergoes maintenance at Nellis AFB in September 1996. Note that the wingtips can be folded even on the F-4G. The "WA" tail codes were replaced with "WW" to indicate the mission — Wild Weasel. *(Marty Isham)*



In June 1991, the 190th TFS, Idaho ANG, converted from RF-4Cs to F-4Gs. Their aircraft were drawn from returning assets from the 3rd TFW. The 190th TFS was the only defense suppression squadron in the Air Guard, and was based at Boise Airport. *(Marty Isham)*





This YF-4E, 65-0713, was painted White with Red lightning bolts and Red tail when it was assigned to the Flight Test Center at Edwards AFB, California. The aircraft was actually built as an F-4D-28 and then modified to YF-4E specifications. It was used as a flying test bed for virtually all the modifications performed on the F-4E series. (Mick Roth)

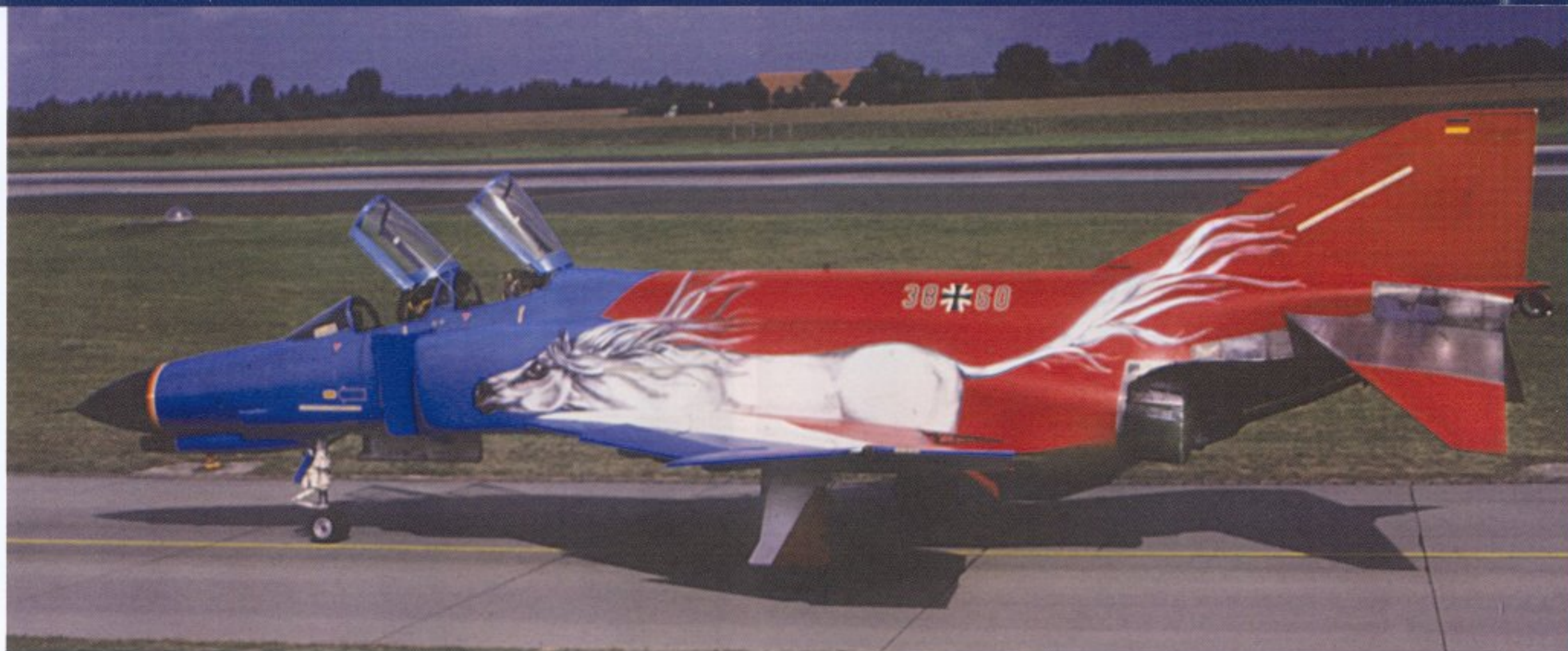
Unit commanders were allowed to paint "command bands" on their aircraft to designate them as those of unit commanders. A wing commander would have color bands for all the squadrons assigned. This is the 336th TFS CO's aircraft as designated by the single Yellow band around the fuselage. (David Menard)



When the U.S. Bicentennial took place in 1976, the Air Force authorized special markings to celebrate the occasion. This F-4E-41, 68-517, has the Bicentennial markings applied by the 36th TFW crews at Bitburg AB, West Germany, as seen on 1 June 1976. (author's collection)



These are very special markings indeed, as they were applied to the final F-4G mission flown by the 561st TFS on 22 March 1996. The aircraft is F-4G-44, 69-7295. (Marty Isham)



Anniversary markings were applied by many of the nations that flew the F-4, but none were as gaudy as those of the West German Bundesluftwaffe. This F-4F has the complete figure of a white horse painted on the upper fuselage and wings. The scheme wraps around and is completed on the underside. (Ralf Jahnke)

This is the anniversary aircraft from JG-71 "Richtoffen" squadron, and carries not only the colors of the legendary Red Baron, but also the tulip nose that was the hallmark of Erich Hartmann, top scoring ace of any nation with 352 victories during World War II. (Ralf Jahnke)



The markings on the anniversary aircraft for JG-74 are rather mundane when compared with others. The airplane has the new overall Gray paint, with bands in the German national colors in Red, Yellow, and Black. The crest on the tail is that of Bavaria. (Christof Kugler)





A 561st TFS F-4G takes on fuel prior to a mission in Desert Storm. Normal armament for a strike into Iraq was a pair of either AGM-45 Shrike ARMs or AGM-88 HARMs, two AIM-7 Sparrow missiles for defense, and an ALQ-131(V-14) ECM pod. (USAF)

Armorers prepare to load AGM-88 HARMs onto the special launch rails on the inboard pylons of this 81st TFS F-4G in a revetment at Shaikh Isa AB, Bahrain, during Desert Storm. By the time of Desert Storm, the electronics suite had been upgraded from APR-38 to APR-45, but the external antenna configuration did not change. (USAF)



A 561st TFS F-4G comes up on the tanker to top off his tanks. The open refueling door is just behind the canopy. Note that all unit badges have been overpainted prior to deployment to Bahrain. (USAF)

The attitude of the Air Force Wild Weasel crews operating in Desert Storm is exemplified by the "Thumbs Up!" given by this 561st TFS pilot departing from his aircraft from the Bahrain revetments. (USAF)





Hooked up and taking fuel from a KC-10 tanker, this 35th TFW (Prov) F-4G is bound for a SAM suppression mission near Baghdad as signified by the ordnance load — two HARM missiles and three drop tanks. (USAF)



A 561st TFS F-4G blasts off the runway at Shaikh Isa AB for a mission over Kuwait. Missions over Kuwait called for less fuel, thus the F-4Gs carried twice the ordnance load — four AGM-88 HARM missiles. (USAF)

A mixed flight of four F-4Gs outbound from Shaikh Isa AB, bound for Kuwait. Each aircraft carries four AGM-88 HARM antiradar missiles. Two aircraft are from the 561st TFS, coded "WW," while the other two are from the 81st TFS, coded "SP." (USAF)





"The Wreckin' Crew," a 34th TFS F-4E flown by Maj. Don Parkhurst, with Lt. "Black" Barton as WSO. Korat RTAB, 1969.



"T.D.s Teeloc," a 34th TFS F-4E flown by Maj. T.D. Smith, with Maj. Larry Johnson as WSO. Korat RTAB, April 1970.



"Easy Rockin' Mama II," a 34th TFS F-4E at Korat in 1970, flown by Maj. George Koch, with Lt. Paul Brown as WSO.

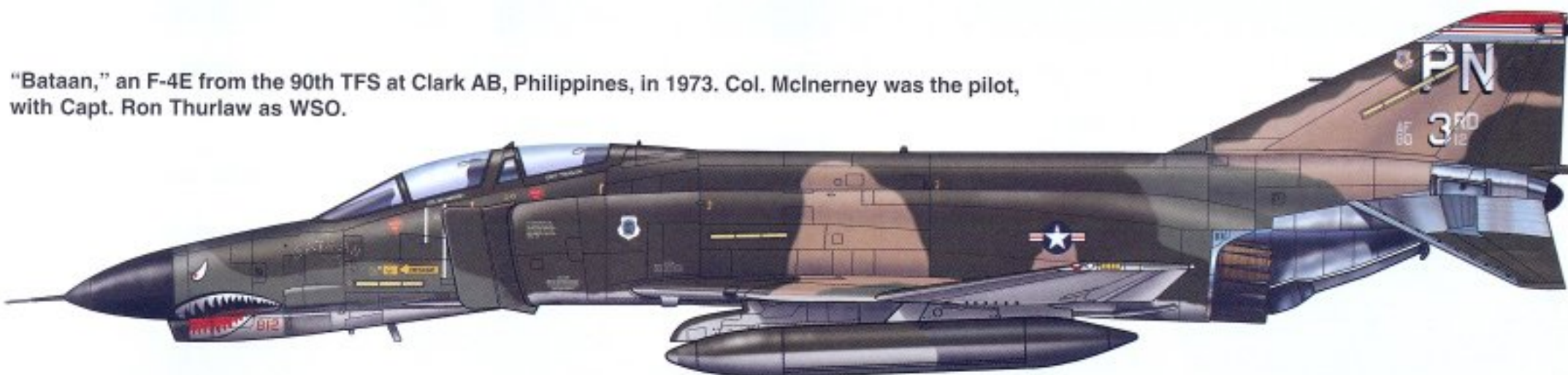




An F-4E with the 57th FIS at Keflavik, Iceland, 1970.



"Bataan," an F-4E from the 90th TFS at Clark AB, Philippines, in 1973. Col. McInerney was the pilot, with Capt. Ron Thurlaw as WSO.



"RRRRibit," a 555th TFS F-4E at Ubon in March 1974.





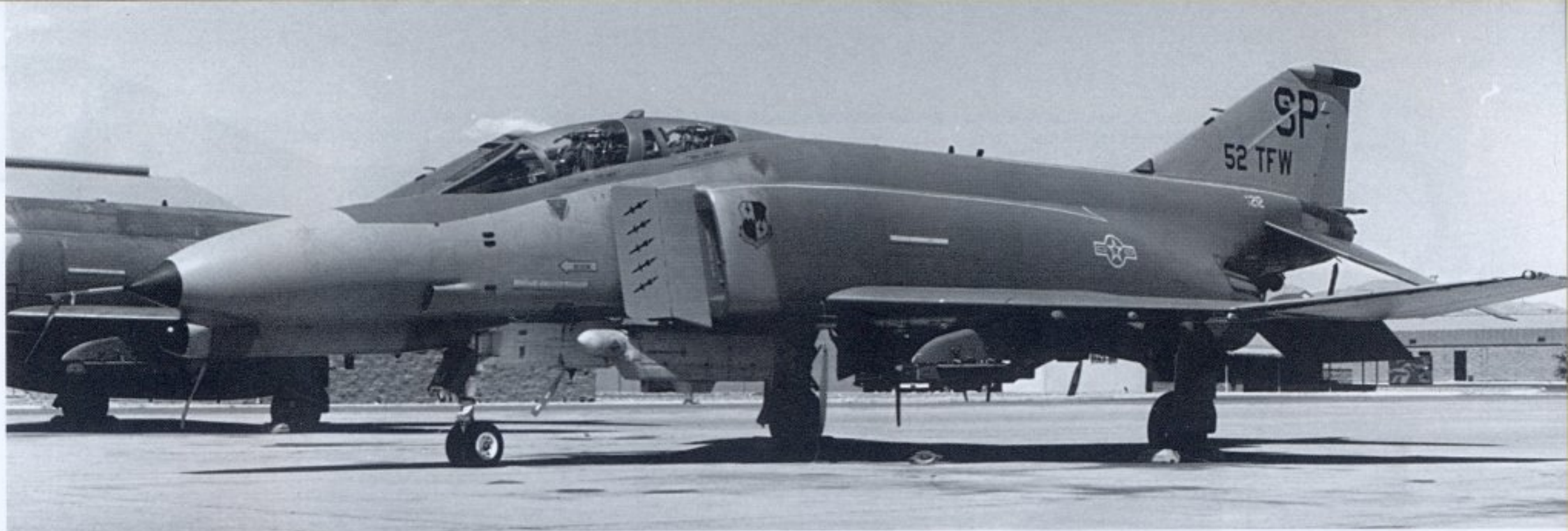
F-4Gs of the 81st TFS return to Spangdahlem AB, West Germany, following a tour of duty to the combat zone. Note that each aircraft carries two baggage pods on the inboard pylons — one for the pilot's effects and the other for the WSOs. (G.A. Kromhout)



A 562nd TFS F-4G pops the chute on landing at Nellis AFB, following a Red Flag mission over Northern Nevada. The aircraft of the 562nd TFS painted their fin tips Medium Blue. (Dennis Meehan)

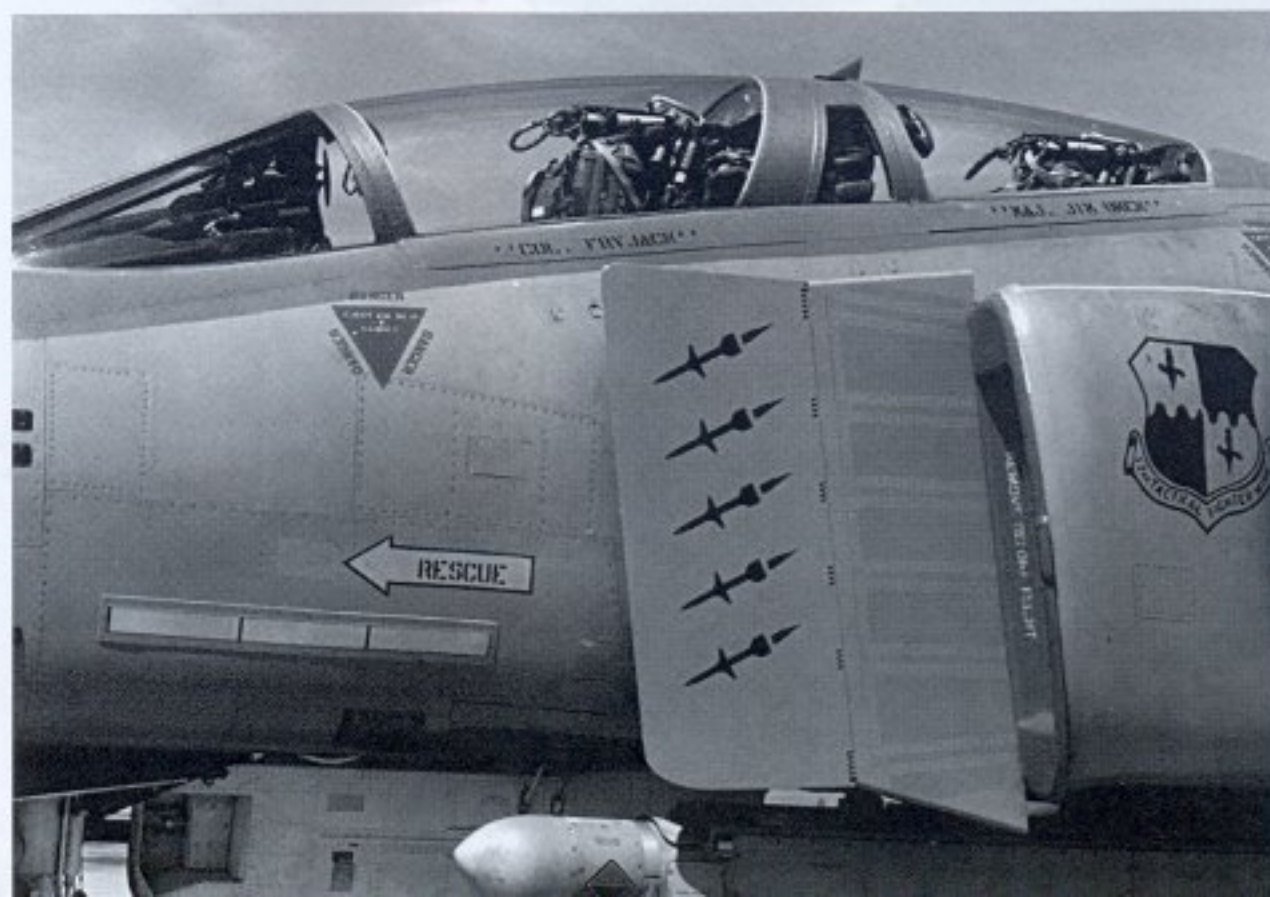
This combat veteran F-4G-42, 69-291, is seen on the hardstand at Spangdahlem AB following its return from combat in Iraq. Of note are the 26 radar site "kills" on the splitter plate, signified with little Phantom "Spooks," and the deletion of the unit badge from the intake sides. (G.A. Kromhout)





(Above and below left) Col. Fryjack, the 52nd TFW CO, flew F-4G-43 69-212 with the ECM fin tip painted in the three colors of the squadrons (from front) Yellow, Red, and Blue. The airplane is credited with five SAM-site kills during Desert Storm. (Dennis Meehan)

(Bottom right) This F-4G, 69-211, had artwork on the splitter plate showing "Willie Weasel," the mascot of all Wild Weasel personnel, along with two SAM "kills." The Red intake covers can be seen as well as details of the ECM pod in the left missile bay. (Dan Simonsen)





"Positive Thinker," the F-4E flown by Col. John Nelson, CO of the 388th TFW at Korat in 1969. His WSO was Lt. Sovitsky.



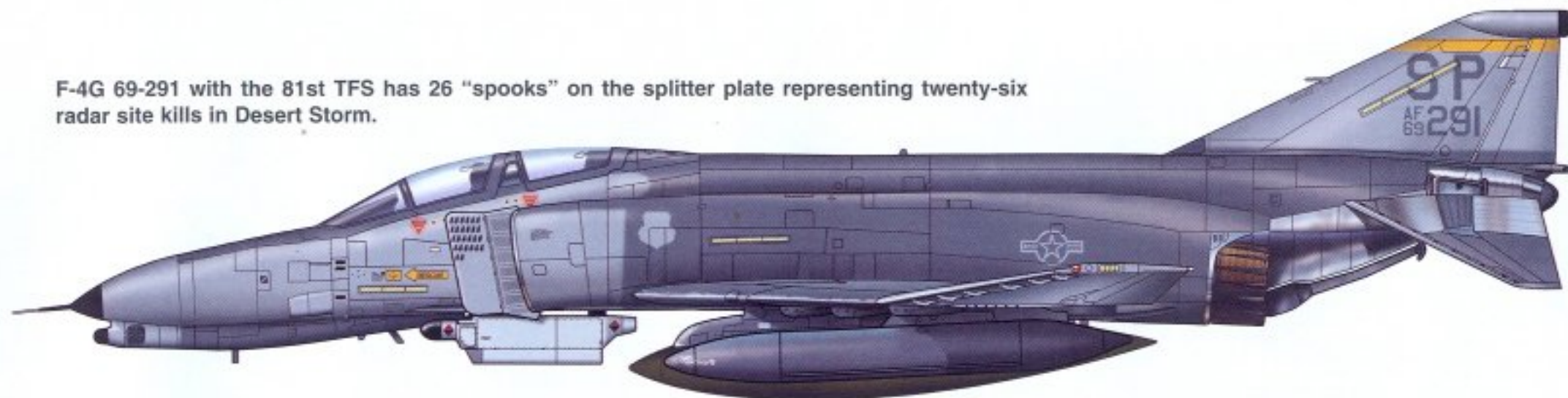
An F-4E assigned to the Commander of the 4th TFW at Seymour Johnson AFB in 1985, camouflaged in the Europe One scheme.



F-4E, flown by Capt. Tom Gibbs, Thunderbirds Slot, has the blackened tail from flying in the exhaust of Thunderbirds Lead.



F-4G 69-291 with the 81st TFS has 26 "spooks" on the splitter plate representing twenty-six radar site kills in Desert Storm.



Col. Fryjack, commander of the 52nd TFW at Spangdahlem AB, Germany, flew this F-4G when the 81st TFS redeployed back to Nellis AFB in 1996.



The only F-4G that was painted in the markings of the 192nd Fighter Squadron, Nevada ANG — "High Rollers." Reno, Nevada, 1991.

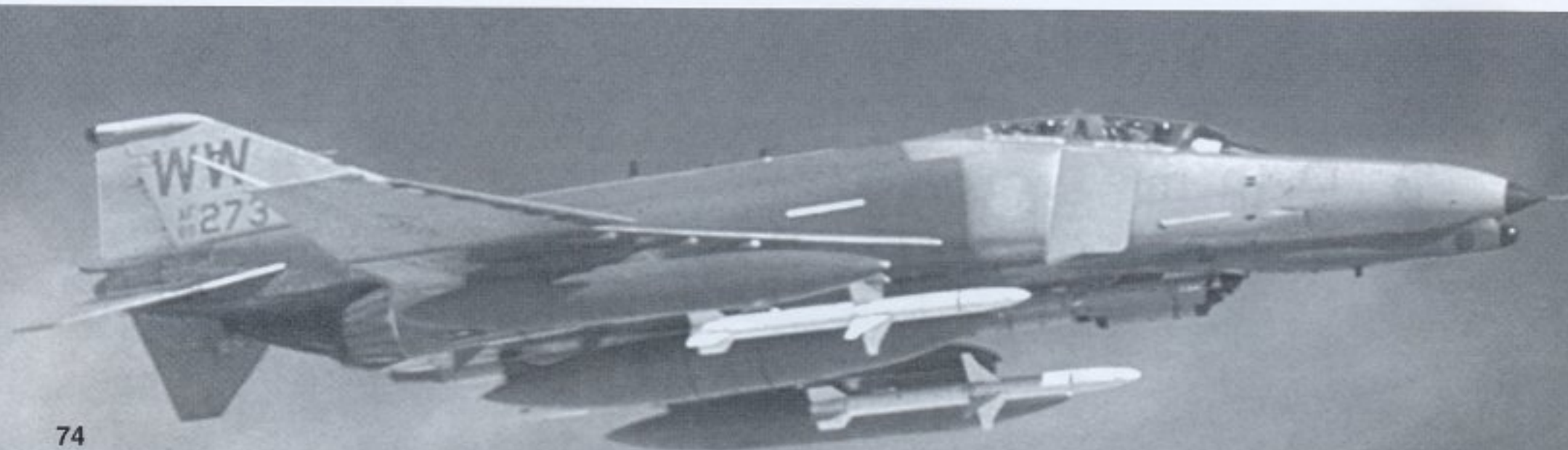
High Rollers





A 561st TFS F-4G-42, 69-265, in a revetment at Shaikh Isa AB on the island nation of Bahrain in the fall of 1990, where it was under the control of the 35th TFW (Provisional). The aircraft is carrying a baggage pod on the inboard pylons, with the crew members' personal effects inside. (USAF)

A 561st TFS F-4G en route to targets near Baghdad. The number of missiles was determined by the distance to the target area. Aircraft with missions over Kuwait carried four missiles, while those going deep into Iraq had just two missiles as they needed the extra fuel to loiter over the target area. (USAF)





Training of the West German F-4F pilots was assigned to the 20th TFS, which moved from George AFB, California, to Holloman AFB, New Mexico. The aircraft assigned to the 20th TFS were true F-4Fs, wearing the Norm 90J camouflage but having USAF identification and insignia, which were overpainted across the West German items. *(Mick Roth)*

An ex-Egyptian Air Force F-4E-34 on the Spangdahlem AB ramp after being returned to U.S. control in 2002. The Yellow tail band and stabilizers were painted so that Egyptian pilots could easily identify their F-4Es when encountering Israeli F-4Es. Note that all Egyptian markings are overpainted Gray, and have Black stencil U.S. national insignia in two places. *(G.A. Kromhout)*



A very unusual aircraft was the F-4E(S), which was built for the Israeli Air Force. It was basically an RF-4E with a special HIAC LOROP camera for very high resolution photos. Only three were built, all for Israel. The Israeli camouflage scheme is seen. *(Mick Roth)*





An Israeli Kurnass 2000 assigned to 201 Squadron.



An F-4F assigned to the 20th TFTS at Holloman AFB, New Mexico, in 1993.



An F-4F in Norm 72 and with an anniversary paint scheme for JBG-35, West German Bundesluftwaffe, in 1979.

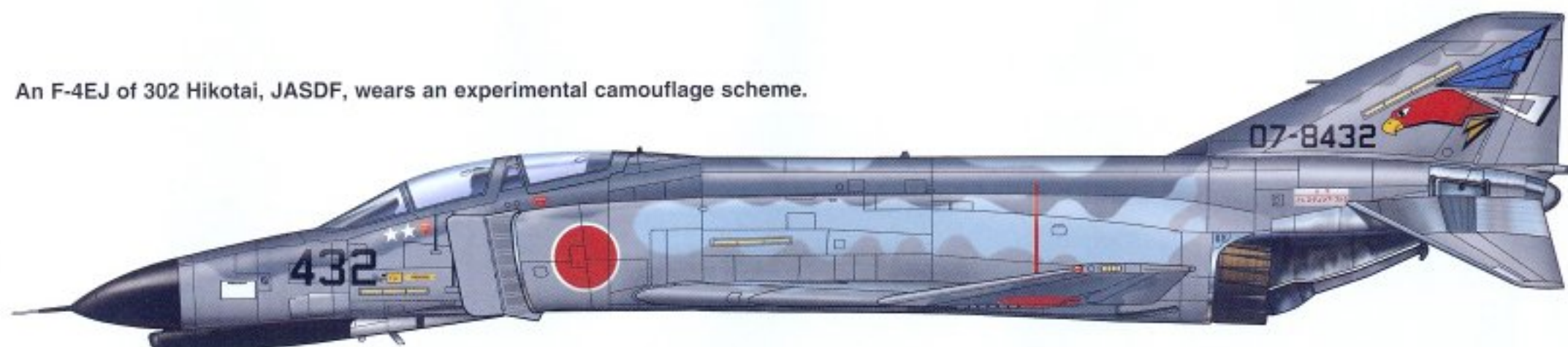




An ex-Egyptian Air Force F-4E after reassignment to the 52nd TFW at Spangdahlem AB, West Germany.



An F-4EJ of 302 Hikotai, JASDF, wears an experimental camouflage scheme.



An F-4E of the 110th TFS, Missouri ANG, with the special markings applied for the last F-4E flight at St. Louis in September 1991.

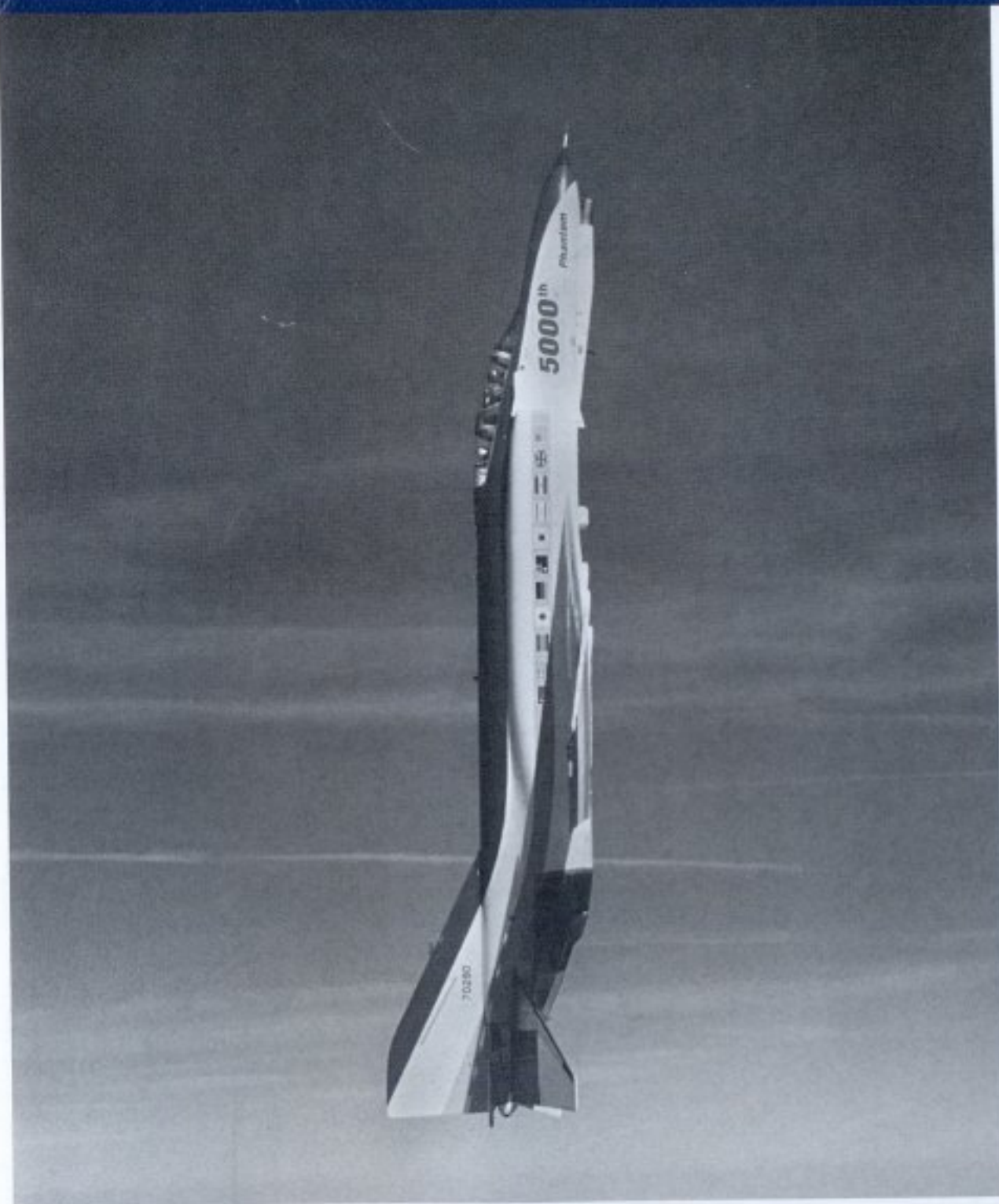




(Clockwise top left) The U.S. Air Force Thunderbirds flew the F-4E beginning in 1969. Unlike the Blue Angels' F-4Js, the Thunderbird F-4Es were not combat capable, having all offensive and defensive weaponry removed and replaced with ballast. So great were the modifications that when the F-4Es were replaced with Thunderbird T-38s, the F-4Es were relegated to that of trainer aircraft. (author)

The underside of the all-White Thunderbird F-4Es carried a stylized Thunderbird emblem in Blue outlined in Red. (USAF)

Three Thunderbird F-4Es form up off the wingtip of a KC-135 tanker in 1969. One of the things that was retained on T-Bird F-4Es was the in-flight refueling capability. The near aircraft is Thunderbird #4, the slot aircraft, which wears the blackened tail proudly to show he held his position in the exhaust of the lead airplane. (Hugh Muir)



(Clockwise from above) McDonnell-Douglas gave the 5,000th Phantom a special paint job in Gloss White and Light and Medium Blue. On the light Blue band down the side of the fuselage were the flags of every nation that was then flying the F-4 in some form. The airplane was later delivered to Turkey. (McAir)

Thunderbird F-4Es were painted overall Gloss White, with Red, White, and Blue nose scallops; a Red scallop on the tail; and a Blue number outlined with thirteen Blue stars. Wing and stabilator tips are (from outboard) Red, White, and Blue. On the left intake was a flag panel of each nation ever visited by the Thunderbirds. On the right intake was the Thunderbird emblem. (USAF)

Although Mitsubishi Heavy Industries was still building the F-4EJ, the 5057th and last F-4 built by McDonnell-Douglas' St. Louis plant was F-4E-67, 78-744. The airplane was delivered in the new Compass Ghost Gray air superiority camouflage and was delivered to the Republic of Korea Air Force in September 1979. (McAir)



An 81st Tactical Fighter Squadron F-4E Phantom II aircraft releasing eighteen Mk. 82 500-pound bombs over the Bardenas Reales Gunnery Range, 1990s.
(USAF photo by Staff Sgt. David Nolan)



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