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# 8th TFW Wolfpack



# F-4C

## MiG Hunters

## Operation Bolo & Beyond

### FD48032

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# The 8th TFW Wolfpack...



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The U.S. Air Force's 8th Tactical Fighter Wing, though one of the most famous in USAF history, only traces its existence as a wing back to 1948 during the occupation of Japan following WWII. The wing flew hundreds of combat missions during the Korean War. It remained in Japan until 1964, when it moved to George AFB, California. In 1965 it became the third USAF wing to convert to the brand new F-4C Phantom II, then pouring off the assembly line at McDonnell Aircraft in St. Louis.

After a year's worth of training on the Phantom at George, the wing moved to Ubon Royal Thai Air Force Base, located at the far eastern edge of Thailand, approximately 300 miles northeast of Bangkok, and only 37 miles from the border with Laos, and a short hop to Vietnam. The move to Ubon was completed in December of 1965.

Operations with the Phantom during the 1966 Rolling Thunder campaign were less than satisfactory. We highly recommend reading Robin Olds' book "Fighter Pilot" for his take on what was wrong at Ubon (and elsewhere in Southeast Asia) when he arrived a year after the wing had commenced operations there. Suffice it to say, a serious lack of visionary leadership coupled with political meddling from Washington was causing the USAF to enjoy very little success in combat, and to suffer an alarmingly high loss rate of both aircraft and aircrews.

When Col. Olds arrived in late 1966 to take command of the 8th TFW, he immediately set about making significant changes from top to bottom. He hand picked his deputy - Colonel "Chappie" James, and their troops almost immediately coined the phrase "Black Man & Robin" to describe the dynamic duo.

Of the many troubles plaguing USAF operations in Southeast Asia in 1966, perhaps the most problematic was that of the Vietnamese People's Air Force (VPAF) MiG-17s and its newly delivered MiG-21PFLs. USAF tactics were predictable, and often uncoordinated and haphazard, allowing the Vietnamese ample opportunity to pick off American aircraft almost at will, resulting in devastating loss rates across the board.

## Operation Bolo

Olds quickly recognized these problems, and set about devising plans to entice the VPAF up for some real old fashioned air-to-air combat where he was sure his better trained pilots could win. The Air Force hierarchy at the time was resistant to change, and it took Olds some time to convince his superiors of the wisdom of an operation to level the playing field. Eventually he received the green light, and a plan which would come to be known as Operation Bolo was born. A detailed description of the intricacies of Operation Bolo is beyond the scope of our instructions, and again we highly recommend reading Olds' book for the details of the fascinating story of this historic campaign.



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A shot of the 8th TFW's ramp at Ubon during 1967

Political interference in USAF operations had hamstrung its ability to effectively combat the new MiG-21 threat from the VPAF by 1966. Visual identification was required before taking a shot, effectively eliminating the use of the AIM-7 Sparrow medium range missile. The AIM-9B Sidewinder was considered effective by the standards of the day (in reality it was highly unreliable), but encounters allowing its use were too few and far between for it to make much difference in the overall picture. The MiGs tended to use a slashing, hit and run type of attack that was devastatingly effective in the absence of coordinated counter-air strategy.

A compounding factor in the lack of success against the VPAF





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Ubon RTAFB, showing the Wolfpack's revetments at lower left. Olds significantly improved Ubon's facilities during his tenure as commander.

was a lack of real-time intelligence on its MiG operations. The USAF Security Service, in coordination with the National Security Agency, was capable of monitoring Vietnamese fighter communications, however NSA was reluctant to release such intelligence to end users before it had been thoroughly washed and sanitized, so as to protect its "sources & methods" used to obtain it. Obviously, finding out that MiGs were taking off for an intercept was great information to have if you were about to unload your bombs nearby, but utterly useless if you didn't get it until days or weeks later. Olds knew the information was out there, and he fought hard to convince the powers that be that his pilots really needed it to do their jobs effectively. Ultimately he won the battle, and real-time intelligence was provided during the Operation Bolo period.



1st Lt. Ralph Wetterhahn

Electronic warfare in the tactical arena was still a relatively new concept in 1966, and most USAF aircraft lacked radar homing and warning (RHAW) gear at the time. The US had developed a small self-contained radar jamming pod, known at the time as the QRC-160. The pod was hung on a stores pylon, and provided its own electrical power generation with a small wind driven generator in the nose. The QRC-160 was effective in jamming the Vietnamese search radars, but in late 1966, there was a severe shortage of them, and they were only routinely used by the F-105 squad-

rons. Just prior to Operation Bolo, Olds managed to borrow sufficient pods to equip his aircraft, and an all-out effort was initiated to fit them to his wing's F-4Cs. Unfortunately, the F-4C at that time was only able to carry the pod on the outboard wing pylon, which precluded its use for the normal 370-gallon fuel tank and causing a potentially dangerous asymmetrical load situation - especially bad on takeoff with full tanks. Later, the QRC-160 could be hung on the USAF style inboard pylon, but most aircraft in early 1967 lacked this capability, retaining the earlier Navy style inboard pylons. When AIM-9 missiles were carried on the inboards, no other load could be carried below the pylon.

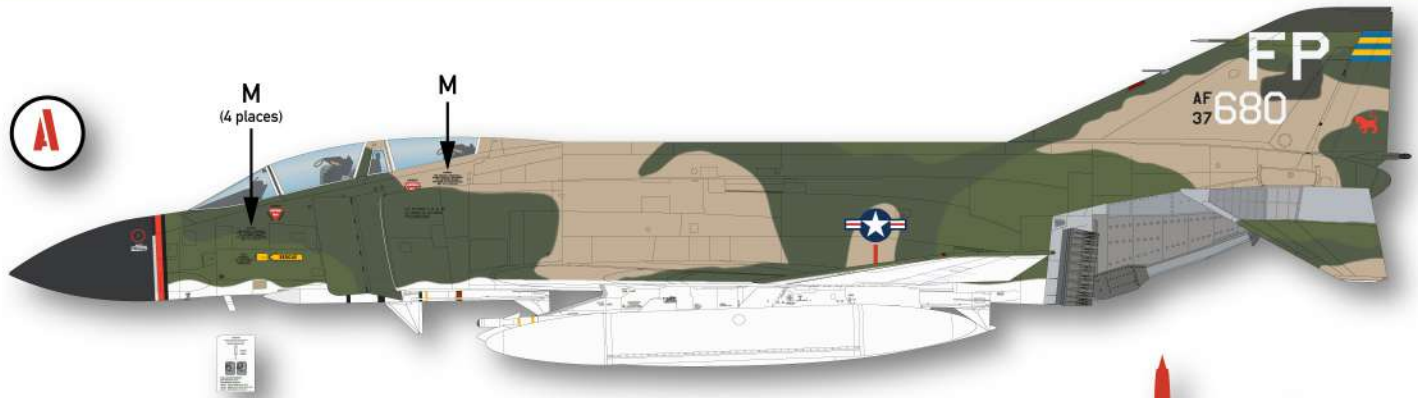
Olds tasked several of his junior officers with formulating a specific operational plan during late 1966, including his tactics officer, Capt. John B. Stone, and 1st Lt. Ralph Wetterhahn (who graciously collaborated on this project). The gist of the plan was for the F-4s to masquerade as F-105s, using their tactics, callsigns, ingress routes, timing, and altitudes, as well as their ECM outfit. An "east force" of 366 TFW F-4s from Da Nang AB, Vietnam and a "west force" of 8 TFW aircraft from Ubon was to strike the blow. The plan depended on tricking the Vietnamese into launching the MiGs against the "F-105s", and this was where the real-time communications intelligence became crucial. A period of intense study and planning took place at the end of 1966. Highly detailed plans were drawn up, and all the pieces put in place. Olds tasked his maintenance troops with the Herculean task of preparing and launching the maximum number of F-4s, and they came through for him.

After a day's delay due to poor weather over the target area, Operation Bolo was launched on the morning of 2 January 1967. The 8th TFW used American car manufacturer names as its callsigns, and naturally, the lead flight was OLDS flight. Other flights were FORD flight, led by Chappie James, and RAMBLER flight, led by Capt. Stone. Due to a layer of overcast over their airfield, the Vietnamese controllers delayed launching their MiG-21s by 15 minutes, but Olds rolled with the punches and successfully engaged the MiGs when they finally showed up. Four other 8th TFW flights had to abandon their attacks because of the threat posed by surface-to-air missiles, while the "east flight" from Da Nang failed to make contact due to deteriorating weather conditions. In the end, 26 of the 56 aircraft from the 8th TFW entered the engagement area, and 12 of the 26 engaged in air combat. Between the three flights from the 8th TFW (including both the 433rd and 555th TFS's), a total of seven MiG-21s was claimed, four with AIM-7s and three with AIM-9s. The VPAF later admitted to five MiG-21 losses that day, claiming that all five pilots ejected safely and were rescued.

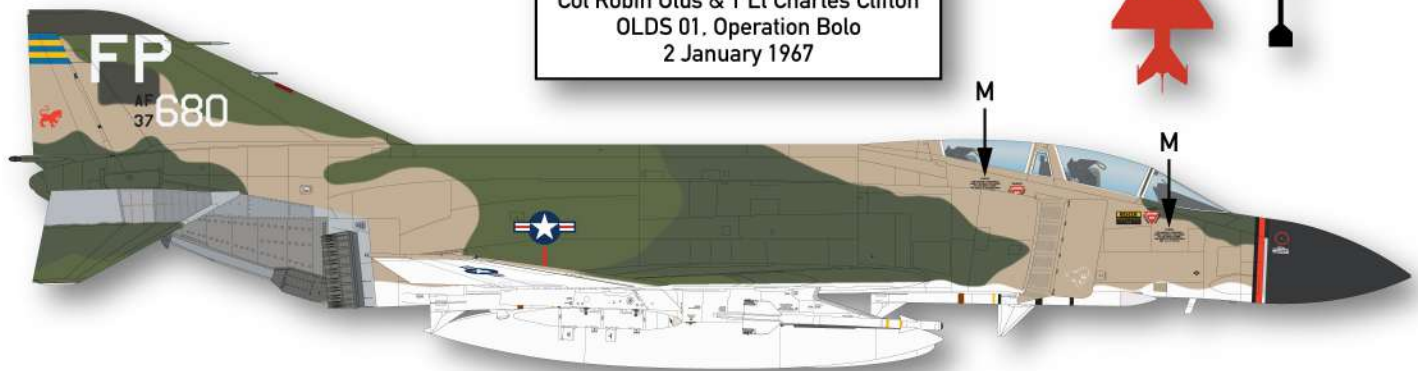
On 5 and 6 January 1967, further Bolo-type missions were flown, simulating RF-4C reconnaissance missions, with Capt. Richard Pascoe and 1st Lt. Norman Wells flying as CRAB 01 claiming one, and another by Maj. Thomas Hirsch and 1st Lt. Roger Strasswimmer flying as CRAB 02.

The success of Olds' plan and the outstanding efforts of his men led the VPAF to immediately ground their interceptors for several months and, with the help of their Soviet patrons, devise completely new tactics to use against the USAF.



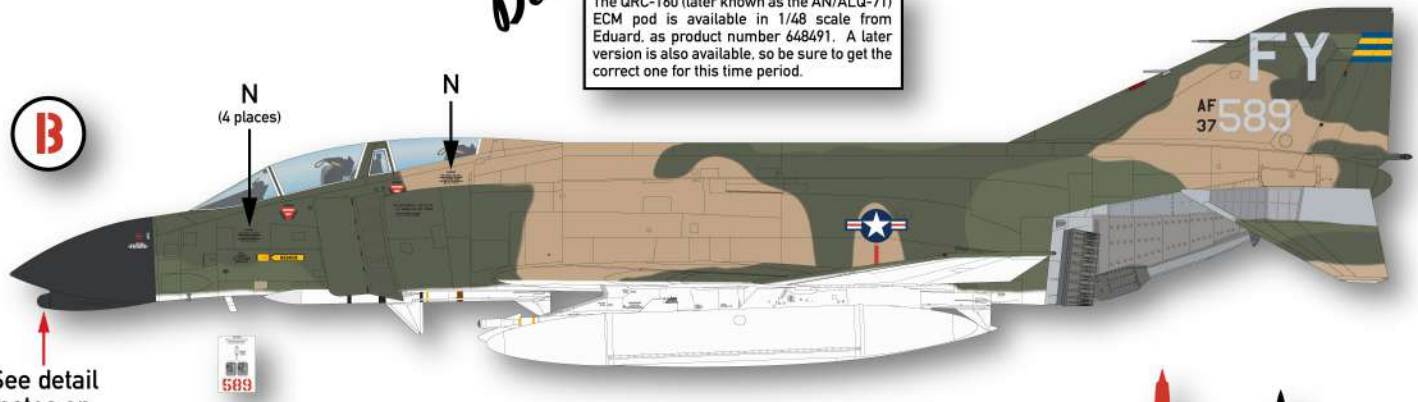


F-4C-21-MC, 63-7680, 497 TFS  
Col Robin Olds & 1 Lt Charles Clifton  
OLDS 01, Operation Bolo  
2 January 1967



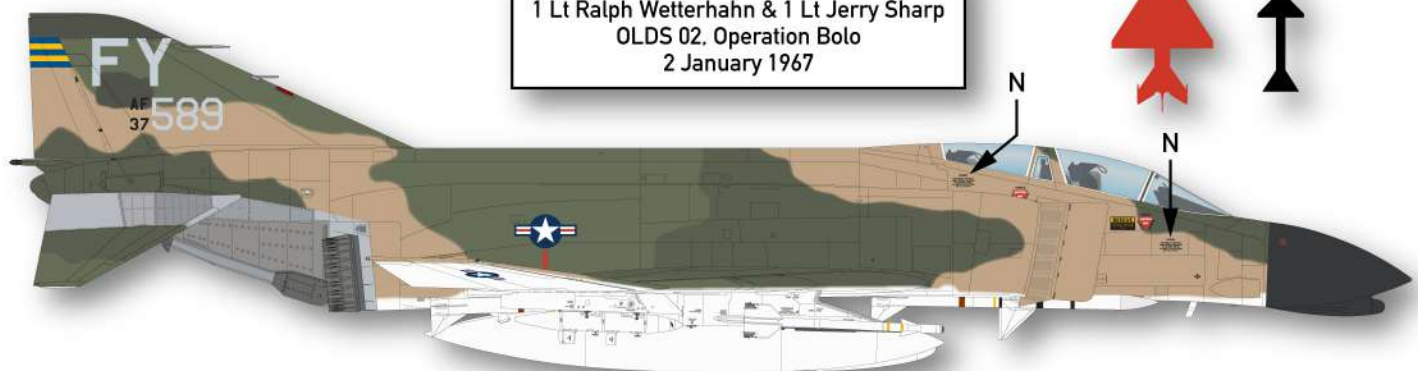
## Detail Note

The QRC-160 (later known as the AN/ALQ-71) ECM pod is available in 1/48 scale from Eduard, as product number 648491. A later version is also available, so be sure to get the correct one for this time period.

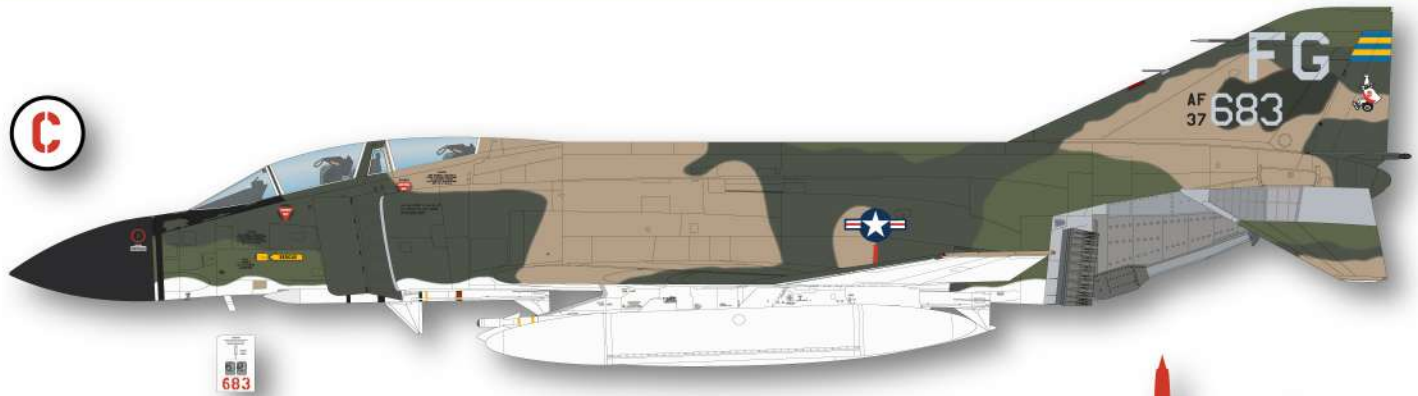


See detail notes on fairing

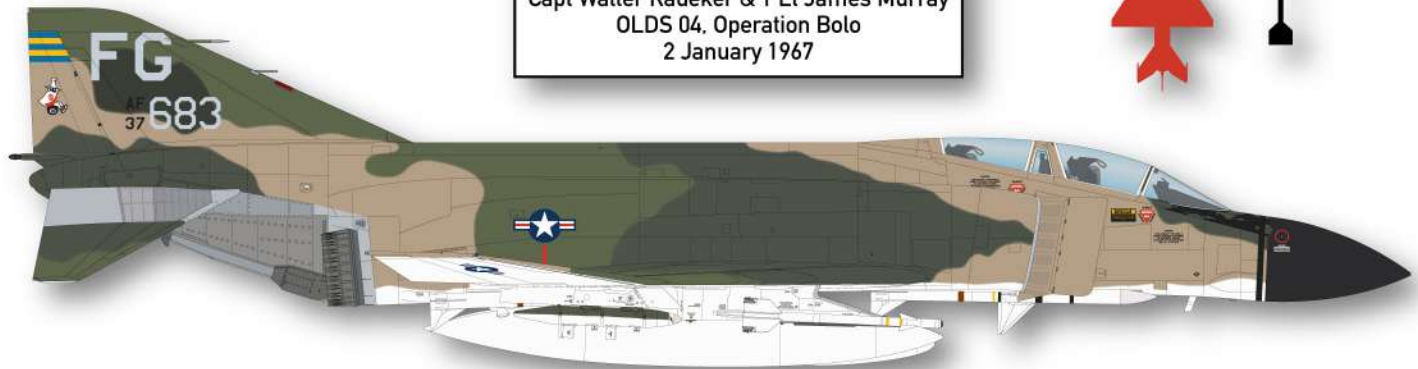
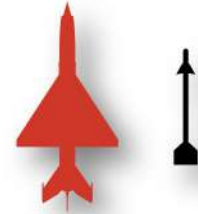
F-4C-19-MC, 63-7589, 555 TFS  
1 Lt Ralph Wetterhahn & 1 Lt Jerry Sharp  
OLDS 02, Operation Bolo  
2 January 1967



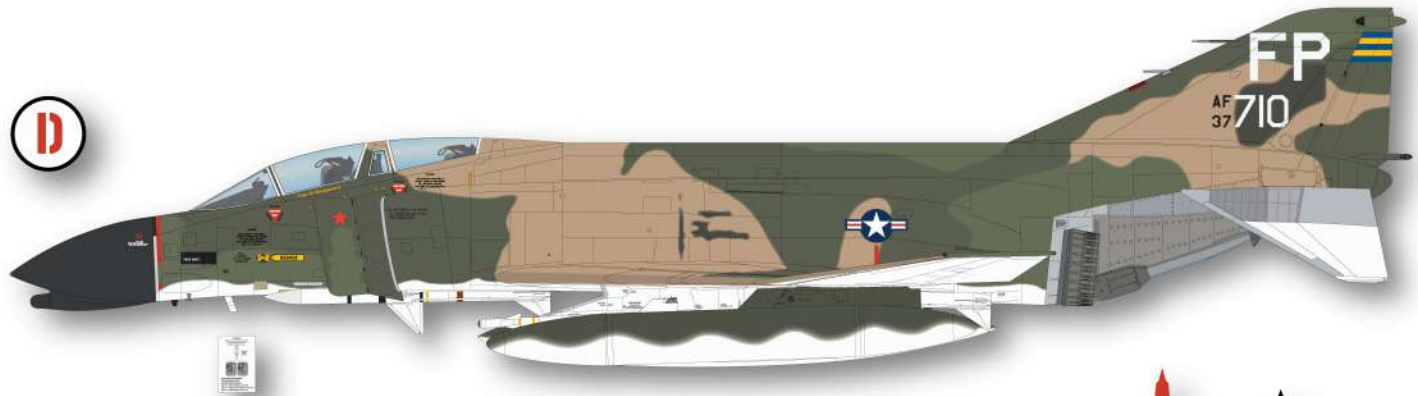
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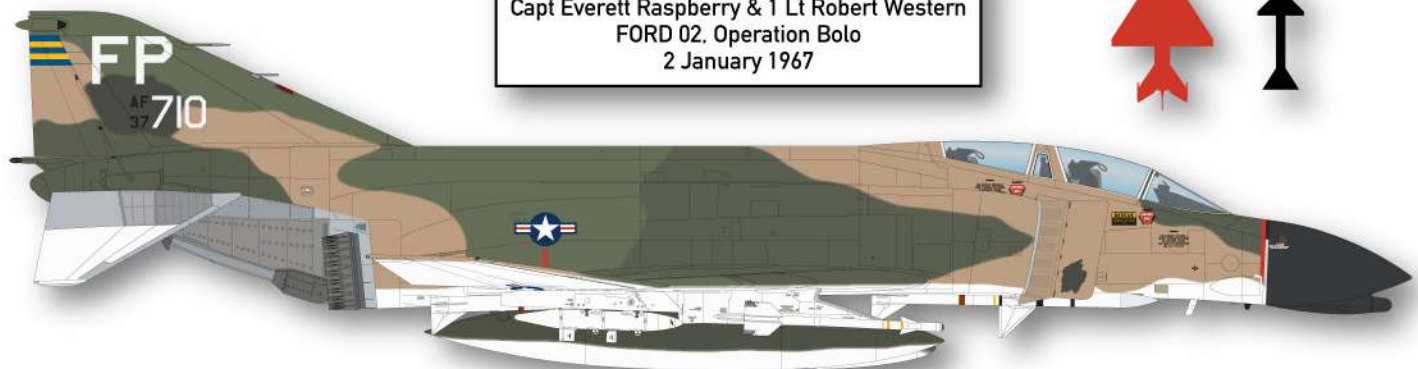
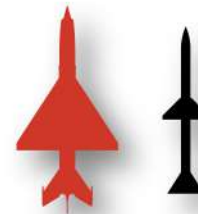
F-4C-21-MC, 63-7683, 433 TFS  
Capt Walter Radeker & 1 Lt James Murray  
OLDS 04, Operation Bolo  
2 January 1967



D

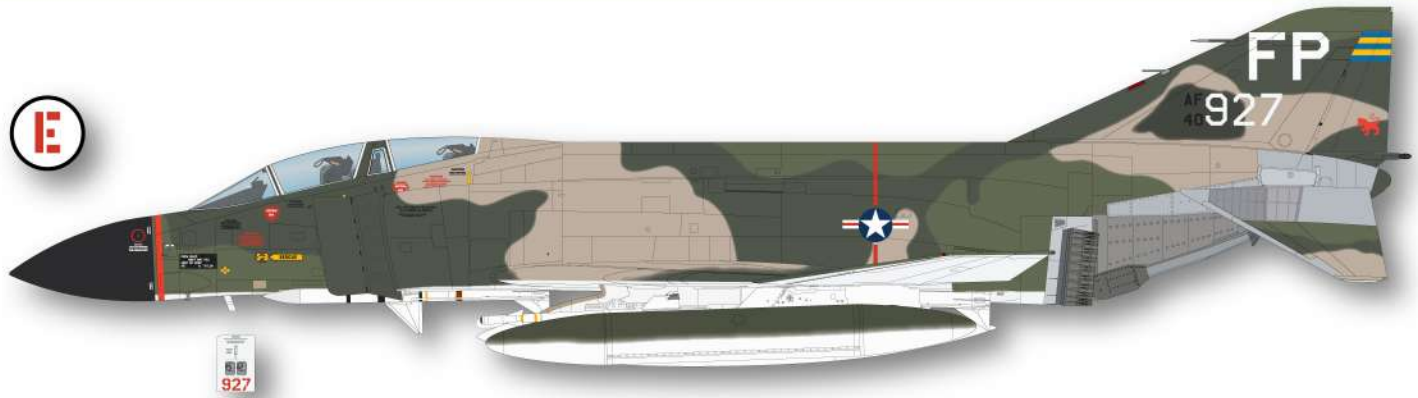


F-4C-21-MC, 63-7710, 497 TFS  
Capt Everett Raspberry & 1 Lt Robert Western  
FORD 02, Operation Bolo  
2 January 1967

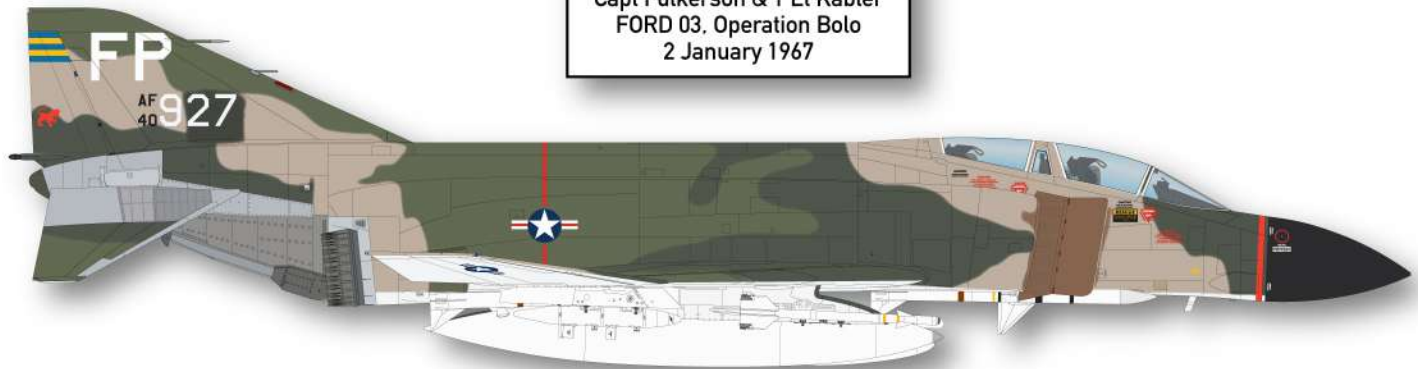




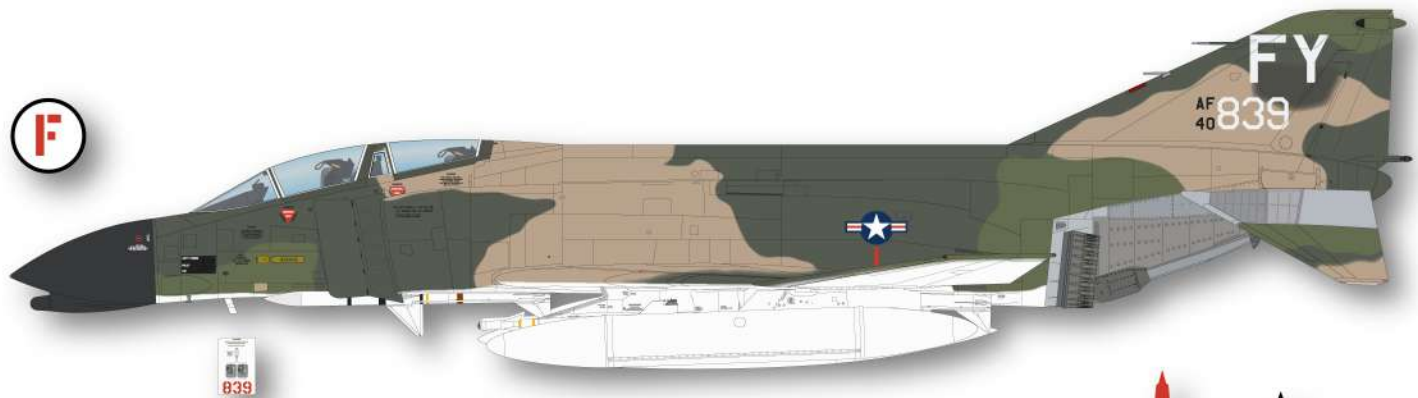
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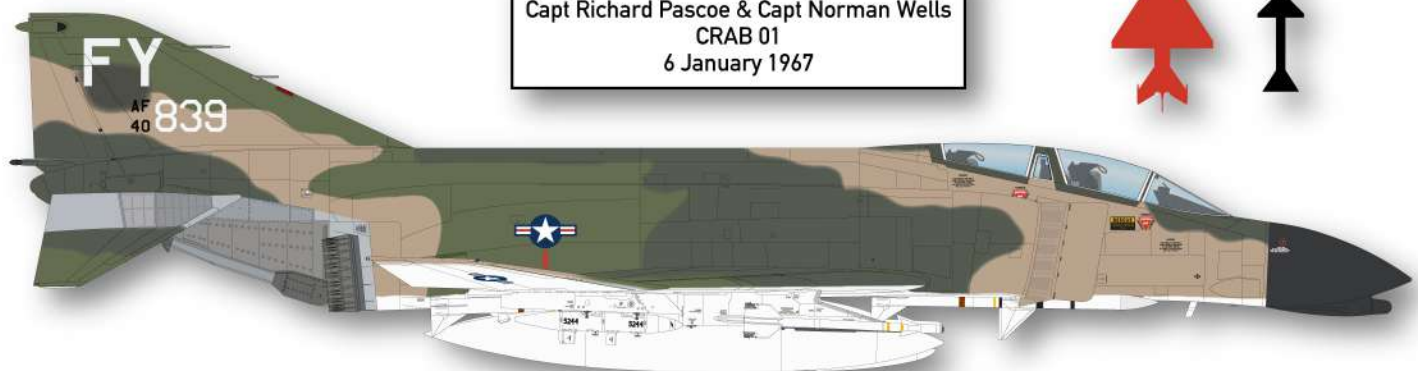
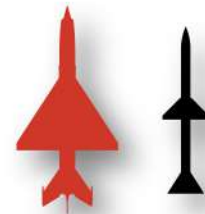
F-4C-25-MC, 64-0927, 497 TFS  
Capt Fulkerson & 1 Lt Kabler  
FORD 03, Operation Bolo  
2 January 1967



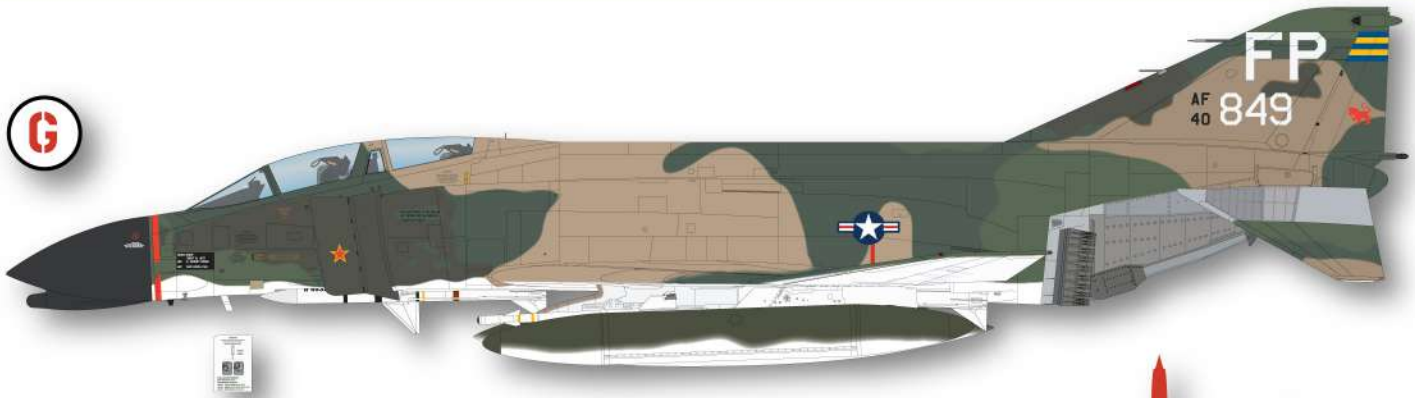
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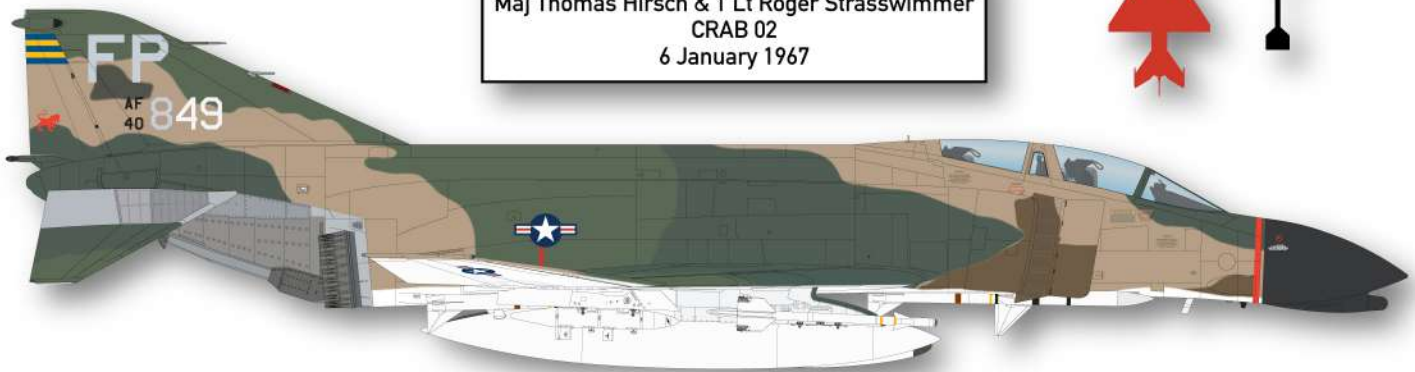
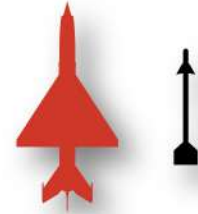
F-4C-24-MC, 64-0839, 555 TFS  
Capt Richard Pascoe & Capt Norman Wells  
CRAB 01  
6 January 1967



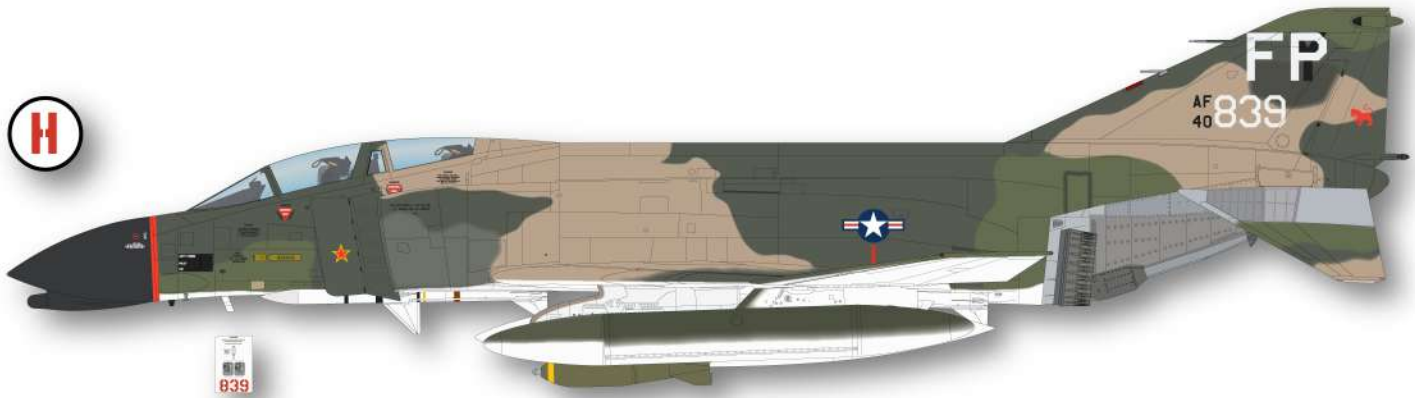
G



F-4C-24-MC, 64-0849, 497 TFS  
Maj Thomas Hirsch & 1 Lt Roger Strasswimmer  
CRAB 02  
6 January 1967



H



F-4C-24-MC, 64-0839, 497 TFS  
Capt Robert Pardo & 1 Lt Steve Wayne  
CHEETAH 03 - "Pardo's Push"  
10 March 1967

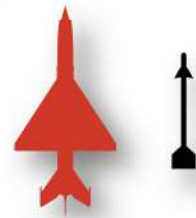




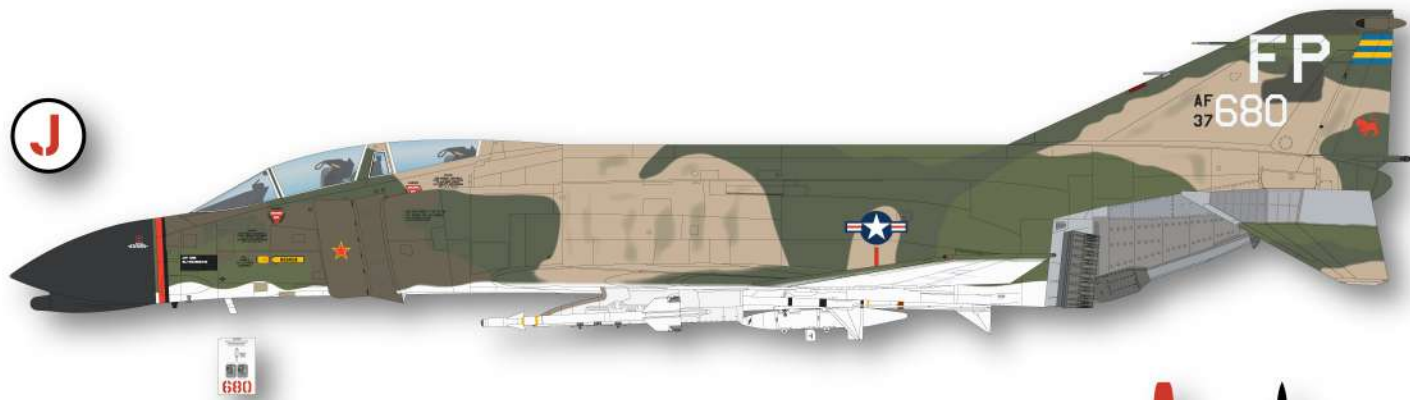
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F-4C-21-MC, 63-7668, 555 TFS  
Col Robin Olds & 1 Lt William Lafever  
FLAMINGO 01  
4 May 1967



J

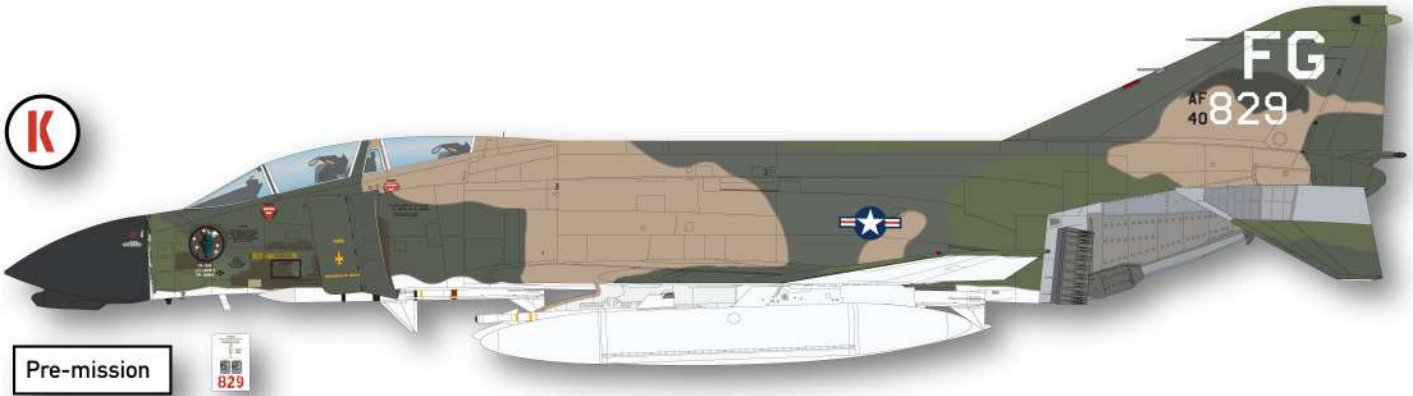


F-4C-21-MC, 63-7680, 497 TFS  
Lt Col Fred Haeffner & 1 Lt Michael Bever  
HARPOON 03  
13 May 1967



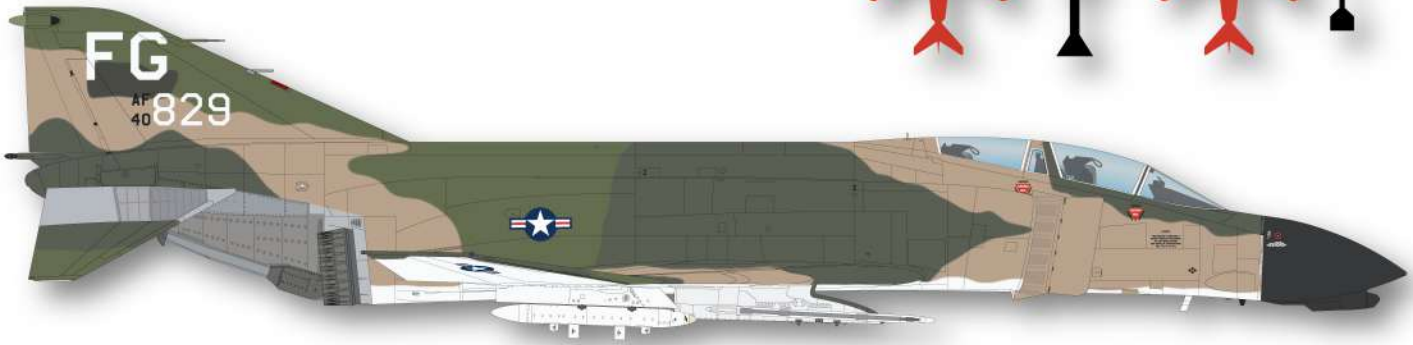
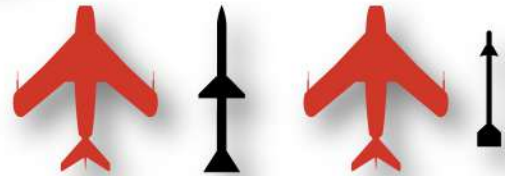
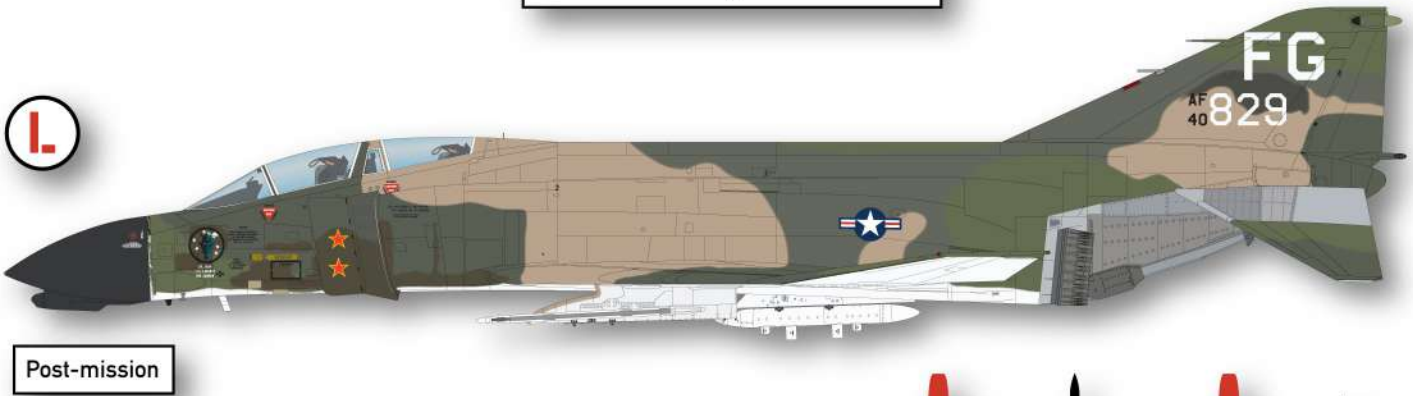


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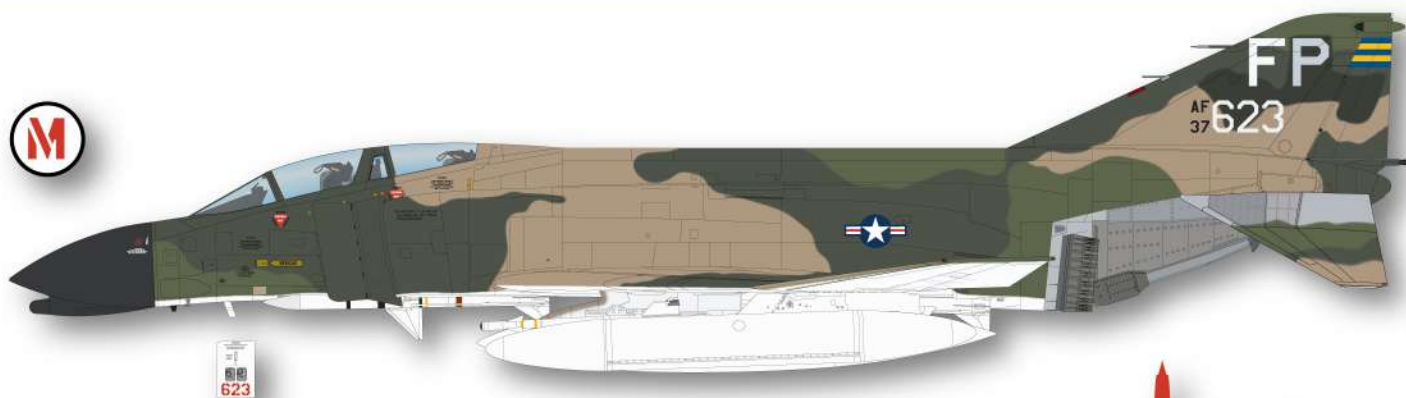
F-4C-24-MC, 64-0829, 433 TFS  
Col Robin Olds & 1 Lt Stephen Croker  
TAMPA 01  
20 May 1967

L

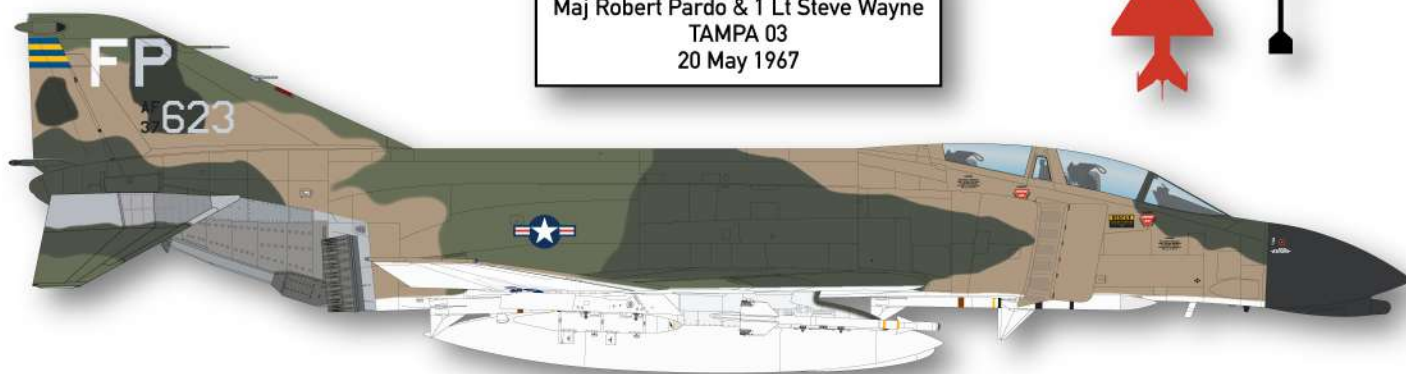
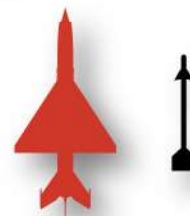




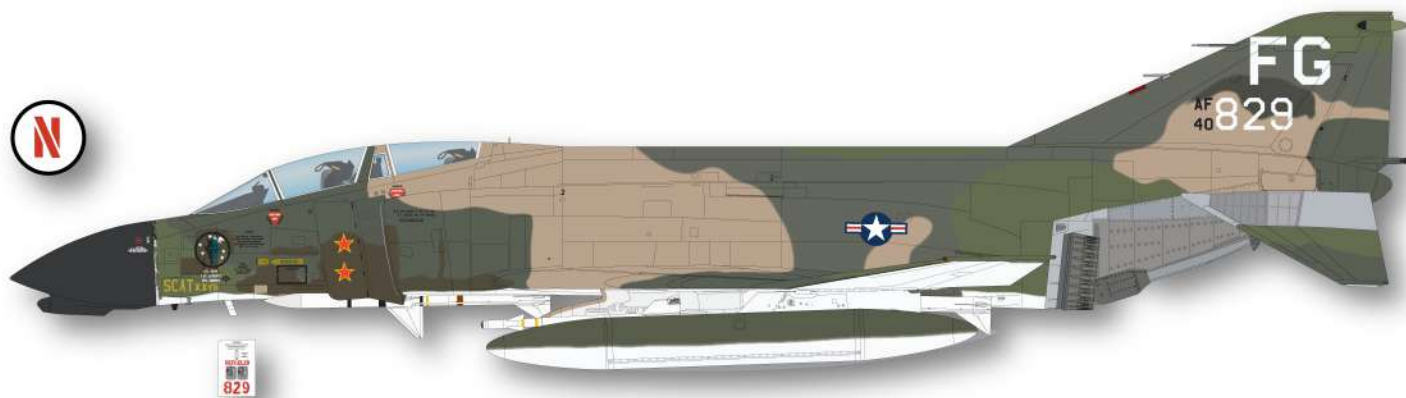
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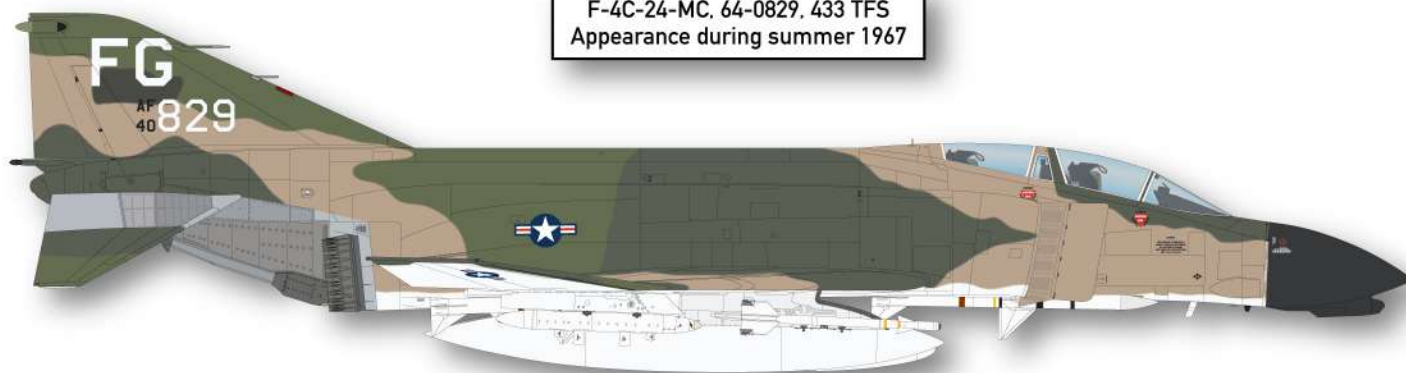
F-4C-20-MC, 63-7623, 497 TFS  
Maj Robert Pardo & 1 Lt Steve Wayne  
TAMPA 03  
20 May 1967



N



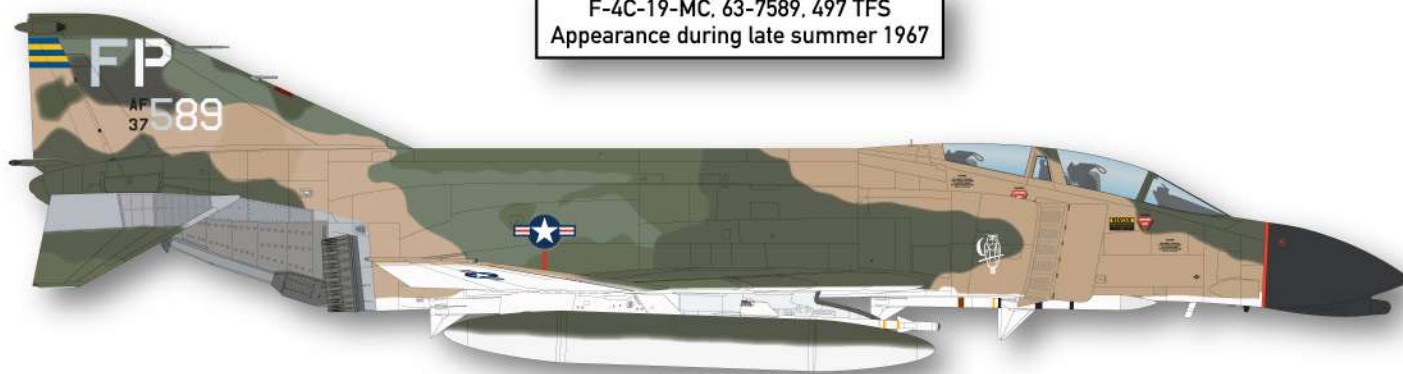
F-4C-24-MC, 64-0829, 433 TFS  
Appearance during summer 1967



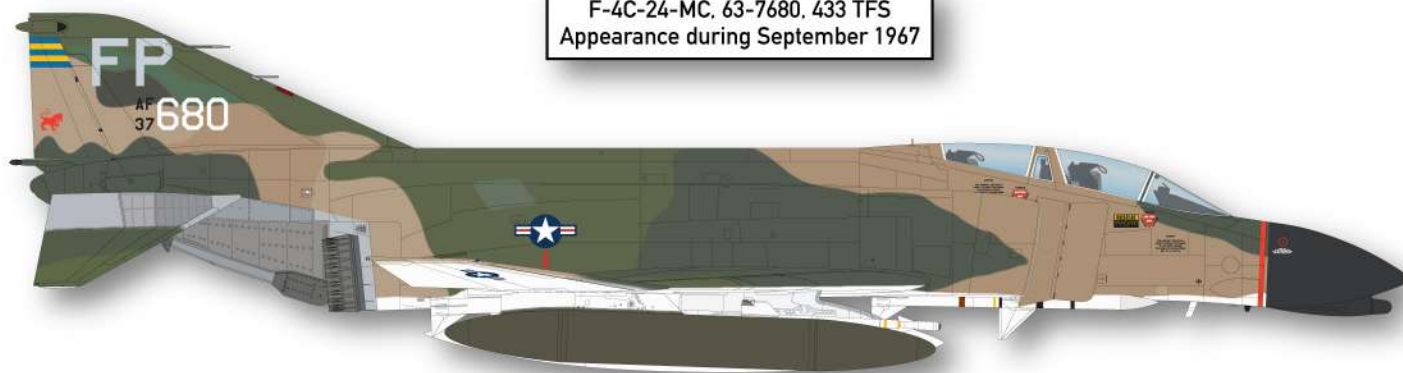




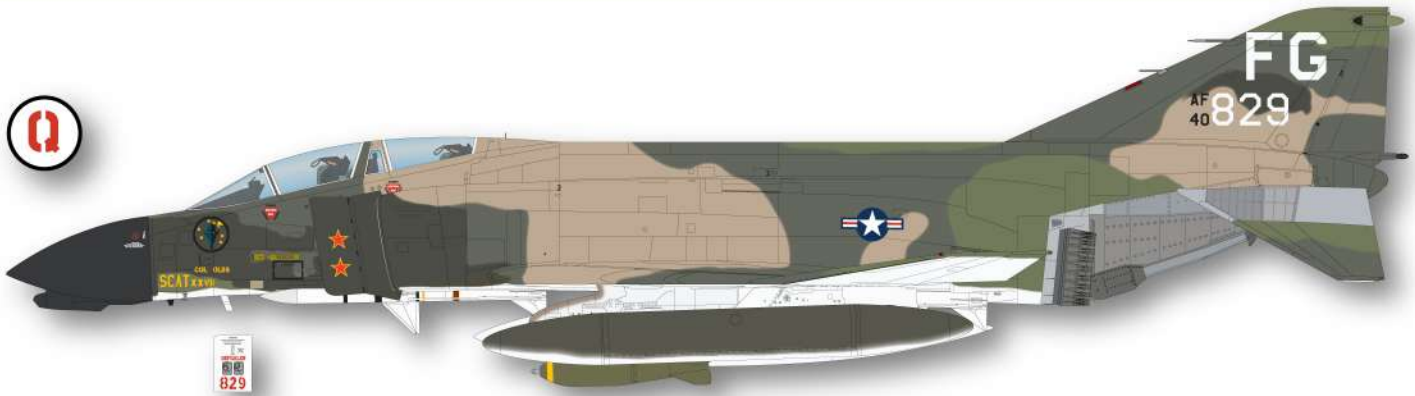
F-4C-19-MC, 63-7589, 497 TFS  
Appearance during late summer 1967



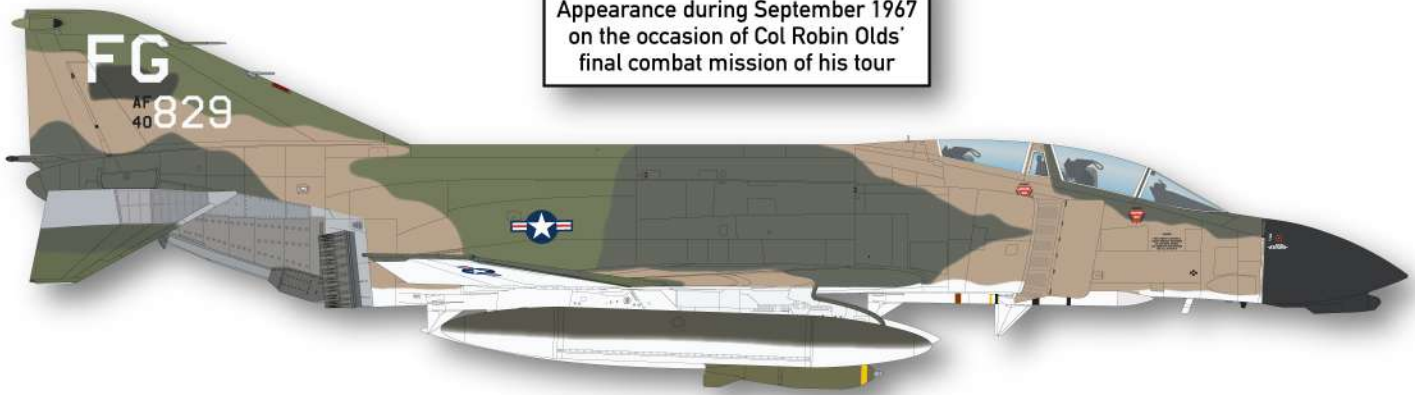
F-4C-24-MC, 63-7680, 433 TFS  
Appearance during September 1967



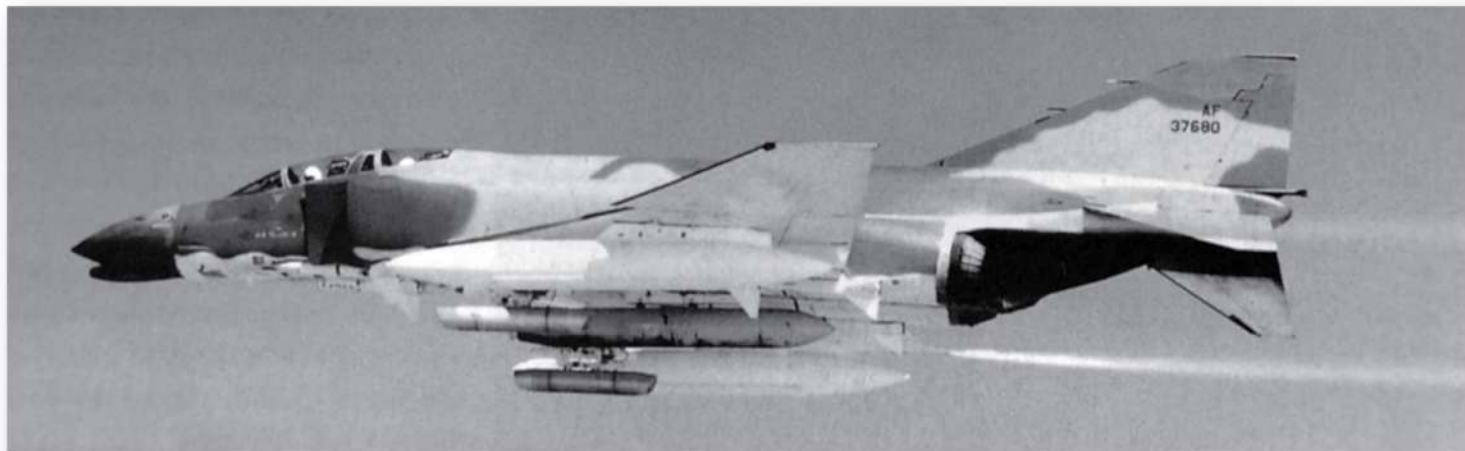




F-4C-24-MC, 64-0829, 433 TFS  
Appearance during September 1967  
on the occasion of Col Robin Olds'  
final combat mission of his tour







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F-4C-21-MC 63-7680 not long after SEA camouflage had been applied. Note the faintly visible "USAF" under the wing and the treatment of the leading edge camouflage on the lower wing.



F-4C-21-MC 63-7680 was arguably one of the most famous of all F-4s, and until now, one of the most often misrepresented in profiles, decals, etc. A study of the

way her markings progressed from the factory applied Light Gull Gray over white scheme to the way she looked in late 1967 helps to understand why she looked the way we have depicted her. This also applies to all of our other subjects with the exception of the factory camouflaged 64-0927.

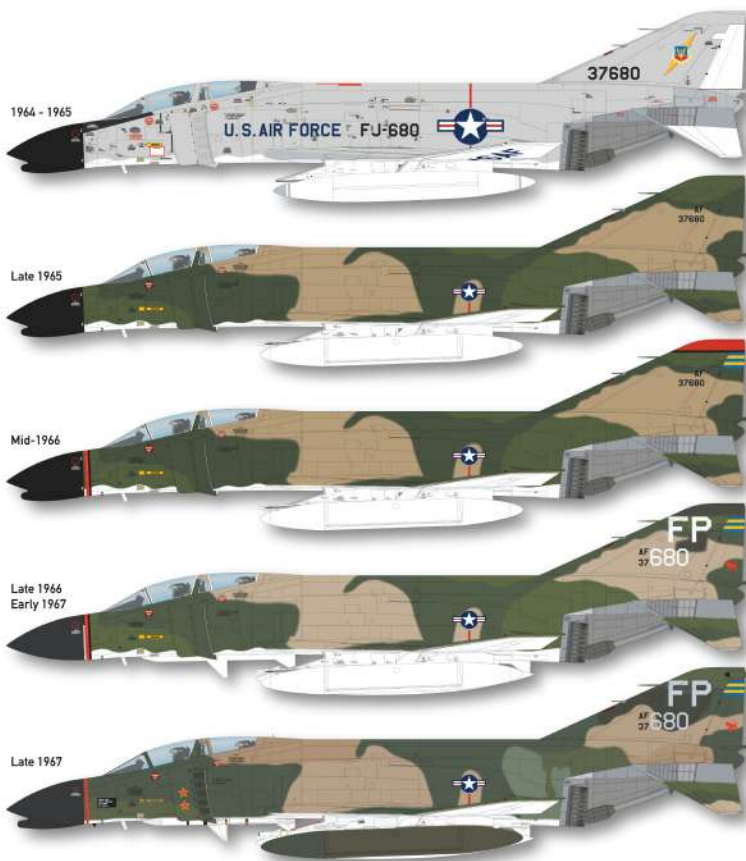
As delivered, she carried the Light Gull Gray over gloss white scheme with full factory stencil data, along with the standard TAC markings of the 1964 period (see Fündekals sheet 48033 for markings for this period in her history). When the Southeast Asia camouflage scheme came into being in 1965, she, like most of our subjects, likely had her camouflage applied at Clark AB, Philippines. The paints used were either of inferior quality to start with, or possibly the hot, humid, and often rainy weather at Ubon

took more than the usual toll on them. '680's camouflage was relatively standard per the T.O. 1-1-4 pattern, though the painters systematically ignored the lower surface camouflage color (FS 36622). We have not found documentation, but it is possible that it had not been ordered yet at that time, leaving the factory gloss white with full stencil data as it was. The large

"USAF" and "40" national insignia were overpainted with gloss white, but their positions remained faintly visible. We recommend doing exactly that to your model - use the supplied decals, then overpaint them to achieve the effect shown here.

Most aircraft had the 15" lower wing insignia applied in the specified position, but we have no photo of '680 to prove conclusively that it was there at all, or in what position.

The camouflage colors were carried across the previously Corroguard areas of the aft fuselage above the horizontal stabilator, with the brake chute tail cone completely finished in FS 34079 (see diagram on a later page). The natural metal areas below and forward of the stabs remained, as did the small "pie wedge" of Corroguard directly above the exhaust nozzle. Camouflage also completely covered the outer sections of the stabilators, including the leading edges. See diagrams regarding the specific details



of the stabs. The demarcation between the upper camouflage colors and the gloss white belly followed a distinctive wavy pattern, with a relatively tightly sprayed edge.

Originally, the camouflaged aircraft had only "AF" (or sometimes "USAF") and the last five of the serial applied in 6" high black characters on the vertical fin. The system of two-letter



squadron codes and the larger serials did not come into use until sometime in August-September of 1966. Prior to that the 497th TFS appears to have used a black-bordered red stripe aft of the radome and vertical fin cap as a squadron ID. The wing adopted the blue and yellow flash on the rudder as a wing ID.

By late 1966, the APR-25 RHAW system was coming online, finally giving the F-4C crews some measure of awareness of the electronic environment they found themselves in. This resulted in the "dork" fairing receiving the new, longer forward fairing that we now associate with the F-4C/D (see detail page). We believe that this modification was done at Clark AB, as we have documentation of aircraft spending time there during 1966-'67 coincident with the APR-25 mods appearing. It also seems that the black neoprene coating on the radomes did not weather well at first, resulting in the need to refinish them at depot level.

It is clear that while the radomes were being refinished and modified with the APR-25 antennas, McDonnell was supplying "dorkless" radomes (possibly from F-4J production) to be temporarily fitted to keep the aircraft operational. This explains the Light Gull Gray and white camouflage, with a black anti-glare panel on top, seen on the narrow metal mounting collar at the aft end of the radome on '680 and other aircraft. Presumably, once the APR-25 antennas were installed in the new, longer forward fairing, the modified radome was reinstalled, as evidenced by photos of '680 later in 1967.

The new larger tail codes and serials were applied in an off-white color that may or may not have been an FS595 standard color - we have found no documentation on it. The previous black "AF 37680" as well as the red/black fin cap markings were painted out in a darker olive drab color unlike either of the two camouflage greens. This color is seen frequently on almost all of these aircraft, used to cover over previous markings as described above, to perform corrosion control touch-ups, and as camouflage on the factory gloss white wing and belly fuel tanks. See information on the tanks elsewhere in our instructions.

Sadly, 63-7680 was shot down by AAA on 20 November 1967 while assigned to the 480th TFS, 366th TFW at Da Nang AB, Vietnam, with the loss of her pilot.

### Airframe/ordnance details:

- Slick radome with factory colors & markings
- No RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 2 January 1967:

- Relatively standard colors, faded, FS 30219 tending toward beige
- White factory finish on lower surfaces with full stencils
- Thinly overpainted "USAF" and lower wing 40" insignia
- Dark olive drab over previous serial location and probably on fin cap, covering previous squadron color
- No visible touch up paint around nose area. Safety markings appear in full intensity colors with no overspray
- Tail code and last three of serial in off-white
- Singha beer lion on both sides of rudder
- Reverse stencil Singha lion in white on RH intake ramp
- Brighter blue variation of wing ID stripes on rudder
- McDonnell factory style radome static port stencils
- LGG/white/black radome mounting collar (decal provided)
- No nose gear door number. Full factory stencil visible
- Red and black nose stripes, carried across ACS inlets
- Light grey canopy frame outlines
- Very thin natural metal lip on intakes (possibly just worn paint)
- No kill markings carried on 2 Jan 67
- Warning placard "M" in four places

Right: Inscribed "Morning of Bolo" on the back, this, plus the photo below left, conclusively prove that '680 had the "dorkless" radome on that historic day. Also note the red and black stripe aft of the radome mounting collar, carried across the ACS inlet lip.

Smoking on the ramp. Colonel Olds!?!?



Above: Olds and Clifton taxi in after their successful 2 Jan 67 mission.

Fündekals collection



Above: 1st Lt. Ralph Wetterhahn poses in front of '680, showing the reverse stencil Singha lion on the intake ramp.

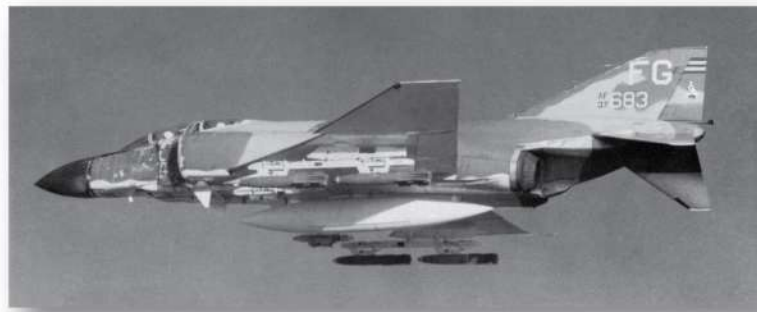


**B** F-4C-19-MC, 63-7589 was flown on the morning of Operation Bolo by 1st Lt. Ralph Wetterhahn and 1st Lt. Jerry Sharp as OLDS 02 (Col. Olds' wing). Wetterhahn, one of the architects of Operation Bolo, and Sharp bagged a MiG-21 with an AIM-7 Sparrow.

Our depiction of '589 as she appeared during Bolo is a reconstruction based on later photos of her and her known history. We have depicted her with fairly fresh looking camouflage, with the previous serial location and the fin cap painted in dark olive drab. She carried the darker blue wing ID stripes on the rudder, but no other squadron markings.

'589 is known to have gone to Clark AB, we believe for the APR-25 modification package, in late January 1967. Thus, we have depicted her with her original short-nosed "dork" fairing and no RHAW antennas. It is equally possible that she was fitted with the "dorkless" radome like 63-7680 and others at this time, but lacking any photographic proof it is impossible to say with certainty. Either would result in a unique looking model of this historic bird.

The aircraft survived hostilities in Vietnam, and went on to a long career in the ANG. When she was with the 171st FIS of the Michigan ANG she had a reputation as a hangar queen. She went on to the Texas ANG before, sadly, ending her days as a target at Tolicha Peak Electronic Combat Range, Nevada.



Fündekals collection

**C** F-4C-21-MC, 63-7683 was flown on the morning of Operation Bolo by Capt. Walter Radeker and 1st Lt. James Murray as OLDS 04, the pair claiming a MiG-21 with an AIM-9B.

Uniquely among all of our subjects, '683 carried the early spook sitting on an eight-ball on the rudder. Other aircraft appear to have had this motif, but on all of them but this one it was overpainted (for whatever reason). Photos dated later than Bolo show it still present. Her camouflage was fairly fresh looking, except for the peeling sheets of green paint on the nose (all of which we didn't attempt to show in the profiles), allowing the black anti-glare panel to show through in large areas. It may also be the case that she had a black anti-glare panel added after her camouflage, and that's what is peeling off. That would be unusual, but nothing is impossible. See photo above. She carries a broad black nose band on the fuselage structure aft of the radome mounting collar.

This aircraft was another survivor of Southeast Asia hostilities, and ended up on display at the Museo Nacional Aeronautico de Chile, in Los Cerillos near Santiago.



### Airframe/ordnance details:

- Original short style forward radome fairing (?)
- No RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 2 January 1967:

- Relatively fresh standard colors
- White factory finish on lower surfaces with full stencils
- Dark olive drab over previous serial location and on fin cap
- No visible touch up paint around nose area. Safety markings appear in full intensity colors with no overspray
- Tail code and last three of serial in medium grey
- Darker blue variation of wing ID stripes on rudder
- Depot style radome static port stencils
- Nose gear door number
- Light grey canopy frame outlines
- No kill markings carried on 2 Jan 67
- Warning placard "N" in four places

### Airframe/ordnance details:

- Slick radome with factory SEA camouflage & markings
- No RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 2 January 1967:

- Faded camouflage, with FS 30219 tending toward beige
- White factory finish on lower surfaces with full stencils
- Dark olive drab over previous serial location and probably on fin cap, covering previous squadron color
- No visible touch up paint around nose area. Safety markings appear in full intensity colors with no overspray
- Tail code and last three of serial in medium grey
- Spook motif on both sides of rudder facing forward
- Brighter blue variation of wing ID stripes on rudder
- Light grey canopy frame outlines
- McDonnell factory style radome static port stencils



- Camouflaged radome mounting collar
- Nose gear door number
- Black nose stripe, carried across ACS inlets
- Light grey canopy frame outlines
- Natural metal lip on intakes (possibly Corroguard)
- No kill markings carried on 2 Jan 67
- Warning placard "M" in four places

**D** F-4C-19-MC, 63-7710 was flown on the morning of Operation Bolo by Capt. Everett Raspberry and 1st Lt. Robert Western as FORD 02, on Chappie James' wing, the pair claiming a MiG-21 with an AIM-7 Sparrow.



The aircraft appears to have received damage to its horizontal stabilizers at some point prior to January 1967, since she was fitted white painted replacements. Due to the nature of the structure of the stabs, combat damage needed to be repaired at depot level. Both stabs and the carry-through structure on which they pivoted were a single unit, so the entire thing was replaced with a new one (presumably delivered from McDonnell). Unique among all of our subjects, this replacement stabilator had the later natural metal leading edge with the now familiar extra skin doubler at the outboard end.

Her camouflage was fairly standard, but there were dark OD touchups on the left side of the mid fuselage and on the right hand intake splitter ramp, as well as covering her earlier serial number presentation.

The aircraft only survived until June of 1967, when she crashed on takeoff from Ubon after a hydraulic failure.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 2 January 1967:

- Relatively standard colors
- White factory finish on lower surfaces with full stencils
- Dark olive drab over previous serial location and probably on fin cap, covering previous squadron color
- No visible touch up paint around nose area. Safety markings appear in full intensity colors with no overspray
- Tail code and last three of serial in medium grey
- Darker blue variation of wing ID stripes on rudder
- Depot style radome static port stencils
- No nose gear door number, factory stencil visible
- Light grey canopy frame outlines
- No kill markings carried on 2 Jan 67
- Warning placard "M" in four places

**E** F-4C-25-MC, 634-0927 was flown on the morning of Operation Bolo by 1st Lt. Fulkerson and 1st Lt. Kabler as FORD 03. They made no claims that day, but we have included the aircraft here because among the Bolo participants we researched she was the only one to carry McDonnell factory camouflage and markings.

The camouflage paints used by McDonnell at the St. Louis factory in 1965 and '66 were basically garbage (not to put too fine a point on it). The colors faded horribly, even after just a short time in service. The tan shifted to an almost mauve color, and all of the colors tended to become faded and chalky looking very quickly. '927 is also a good example of the very odd chocolate brown touchup color we see on many of these jets, particularly on the right side of the nose. Here, her entire intake ramp, the lip of the intake itself, and some significant overspray on the fuselage forward of the ramp show this color. The pattern on these factory camouflage jobs was also unique, especially on the right side. McDonnell painted the upper aft fuselage in Corroguard, just as they had on the Light Gull Gray scheme, but with the drag chute tail cone painted in FS 34079. They eliminated the Corroguard "pie wedge" directly above the exhaust, and the nozzle ring and the titanium panels aft of the nozzles were in their natural metal finish. Note the unique McAir style of borderless national insignias on the upper surfaces, and the full turbine warning stripe.

In January 1968, while assigned to the 366th TFW at Da Nang, one of '927's bombs exploded prematurely, causing the aircraft to crash in North Vietnam. Both crew members ejected and were rescued.

### Airframe/ordnance details:

- Slick radome with factory colors & markings
- No RHAW antennas
- Later USAF style inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod



- Faded McDonnell factory applied camouflage, with FS 30219 tending toward mauve
- FS 36622 on lower surfaces with full stencils
- Dark brown touchups on right side of nose. Safety markings appear in full intensity colors with no overspray
- Tail code and last three of serial in off-white
- Singha beer lion on both sides of rudder
- Brighter blue variation of wing ID stripes on rudder
- McDonnell factory style radome static port stencils
- Camouflaged radome mounting collar
- Nose gear door number
- Red nose stripe, carried across ACS inlets
- Light grey canopy frame outlines

**F** Moving on now from Operation Bolo, Capt. Richard Pascoe & Capt. Norman Wells flew F-4C-24-MC, 64-0839 as CRAB 01 on 6 January 1967, simulating an RF-4C reconnaissance mission, with the same effect that Bolo had simulating F-105 bombers. Pascoe & Wells claimed a MiG-21 with an AIM-7 Sparrow.

Her camouflage was fairly standard, but there were dark OD touchups on the left side of the mid fuselage and on the right hand intake splitter ramp, as well as covering her earlier serial number presentation. The feather on the OD covering her previous serial appears much wider than on other aircraft. For reasons unknown, it appears that both of her canopy frames were painted solid FS 34079 green, with a patch of that color visible from the right side aft of the rear canopy (where there should be no green).

The aircraft was lost while participating in "Pardo's Push" (see below) on 10 March 1967.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 6 January 1967:

- Relatively standard colors
- White factory finish on lower surfaces with full stencils
- No visible touchup paint around nose area, but visible on other areas
- Tail code and last three of serial in off-white
- Depot style radome static port stencils
- Nose gear door number
- Light grey canopy frame outlines
- Warning placard "N" in four places



First to score on the morning of 6 January 1967, F-4C-24-MC, 64-0849 was flown by Maj. Thomas Hirsch and 1st Lt. Roger Strasswimmer as CRAB 02. They claimed a MiG-21 with an AIM-9B Sidewinder.

The aircraft had somewhat faded camouflage, particularly the tan, which was quite noticeably faded and color shifted. There were large areas of dark, almost chocolate brown touchup on the right side, and a huge area of dark olive drab on the left side. All of the forward fuselage safety markings had been oversprayed in the local camouflage color, rendering them all but invisible. We believe this was done at the time the aircraft were painted in camouflage, as it was fairly common on many of these birds. Her codes and serials were in an odd mixture of off-white and medium grey. She carried a red Singha beer lion on the rudder, a red nose stripe (with areas missing), and the darker blue wing ID stripes. We have depicted her with the kill marking on the left intake ramp that was applied immediately after the mission.

This aircraft shot down by SAM near Xom Lom just a short time later on 26 March 1967, with her crew becoming POWs.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- LAU-17/A inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 6 January 1967:

#### Colors & Markings - 6 January 1967:

- Relatively standard, but faded colors
- White factory finish on lower surfaces with full stencils
- Dark olive drab touchups in extensive areas around the left side of nose and on the left side of vertical fin, including over previous serial location
- Dark brown touchup around right intake, splitter plate, and lower nose
- All safety/rescue markings around forward fuselage oversprayed with local camouflage color
- Tail code and last three of serial in a mix of off-white and medium grey
- Darker blue variation of wing ID stripes on rudder
- Depot style radome static port stencils
- No nose gear door number, factory stencil visible
- Red stripe on fuselage structure aft of radome mounting collar, weathered with areas missing. Carried across ACS inlet lips
- No canopy frame outlines
- No kill markings carried on 6 Jan 67 - applied after mission
- Warning placard "M" in four places



## Pardo's Push



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Bob Pardo and Steve Wayne pose in front of another 8th TFW F-4C in 1967

**H** On 10 March 1967, the 433rd TFS was assigned a bombing mission against Thai Nguyen steel mill complex located north of Hanoi. Two aircraft participating in the mission were F-4C-23-MC, 64-0839, flown by Capt. Robert Pardo and 1st Lt. Steve Wayne as CHEETAH 03, and F-4C-20-MC, 63-7653, flown by Capt. Earl Aman and 1st Lt. Bob Houghton as CHEETAH 04. Ordnance for the mission consisted of six Mk.117 750 lb. bombs carried on TERs on the onboard pylons, plus the usual Sparrow, fuel and QRC-160 load. Both crews dropped their bombs on the target, but on their egress both were hit by devastatingly accurate radar-directed AAA fire. Aman's jet took the worst punishment, causing severe damage to the aircraft and causing it to begin pouring fuel out at a prodigious rate. Pardo's aircraft suffered relatively less damage, but he, too, was losing fuel.

With the pair still over North Vietnamese territory, bailing out didn't seem like the best idea, but options and time were in short supply. Capt. Pardo got the idea to try to push Aman's jet far enough that he and Wayne could eject over Laos, where odds of a successful pickup were much greater. His first idea was to have Aman jettison his drag chute, using the open door as a receptacle to plug the tip of his radome into. It was quickly apparent that that wasn't going to work, so in a classic example of thinking outside the box, Pardo told Aman to lower his arresting hook. Pardo nudged his jet into position, putting the hook shoe up against his lower windscreen.

By this time Aman's jet was completely out of fuel and both engines had flamed out. Both jets were descending at approximately 3,000 feet per minute, but as soon as the "hook up" happened, the decent rate went to only 1,500 feet per minute. Because the Phantom's tail hook is designed to allow lateral movement, it would slip out of position, causing Pardo to have

to reposition it. In addition, the pressure of the hook against the windscreen had caused it to crack ominously. Pardo carefully flew the hook into position against the structure at the base of the windscreen, and continued to push.

At this point Pardo's #1 engine caught fire. He immediately shut it down, and now had two Phantoms flying on one engine - and barely flying at that! The descent rate increased with the loss of half of available thrust, but it also cause Pardo to have to do a lively dance on the rudder pedals to keep both aircraft flying in the same general direction. Against every conceivable procedure or common sense, Pardo attempted to restart his #1, as they were not yet out of bad guy territory. Very quickly, Wayne told Pardo that the #1 was overheating and in danger of exploding, so it was once more shut down.

Pardo pushed on for another few minutes until the Laotian border was reached. Aman and Houghton ejected, and very shortly afterward, Pardo's good engine ran out of fuel and flamed out, so he and Wayne punched out as well. Both jets were lost, but thankfully both crews were retrieved by Air Force rescue forces in short order. Aman and Houghton suffered back injuries from their ejection, but both recovered.

In typical USAF fashion, Pardo was initially pilloried for not saving his aircraft first. It took until 1989, but eventually the USAF reexamined the incident, and Pardo and Wayne were both awarded the Silver Star for one of the most amazing feats of precision airmanship and bravery ever seen in the USAF.

By the time Pardo performed his amazing feat, 64-0839's appearance had changed quite a bit from early January (subject F). It is fascinating how much the appearance of many of these workhorses changed in a relatively short amount of time. She had been swapped from the 555th TFS (FY) to the 497th TFS (FP), with the "Y" overpainted in black and the new "P" applied over it. Her canopy frames now appear in the correct local camouflage colors, but the patch of green on the right side aft of the rear canopy remained. She gained the red Singha beer lions on the rudder and a red squadron stripe butted up against the black radome coating. There was a noticeably lighter/greyer shade of green covering a large area of her left intake. There was also a dark green corrosion control touchup on the left side just above the exhaust, following the panel joint in that area.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- Later USAF style inboard pylons
- Stores:
  - Sargent Fletcher 370-gallon tank
  - 3x Mk117 on a TER (no Sidewinder rails fitted)
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 3x Mk117 on a TER
  - QRC-160 ECM pod



### Colors & Markings - 10 March 1967:

- Relatively standard, but faded colors
- White factory finish on lower surfaces with full stencils
- Dark olive drab over previous serial location
- No visible touch up paint around nose area. Safety markings appear in full intensity colors with no overspray except rescue arrow on left side
- Lighter greyish green area on left intake, dark olive drab touchup around left aft fuselage panel
- Tail code and last three of serial in off-white, with "Y" overpainted black
- Depot style radome static port stencils
- Nose gear door number
- No canopy frame outlines
- Kill marking on left intake ramp
- Crew name placard above left ACS intake
- Warning placard "N" in four places

**I** F-4C-21-MC, 63-7668 was flown by Col. Olds and 1st Lt. William Lefever on their MiG-21 kill mission of 4 May 1967 as FLAMINGO 01. She is somewhat unusual among our subjects. We believe she may have been an attrition replacement aircraft flown in from the U.S. owing to her very fresh, very standard looking camouflage paint. All of the safety/rescue markings on the forward fuselage were oversprayed in the local camouflage color to render them less visible. The area where the older style serial was located on the vertical fin was painted over with what we can only describe as looking like the old Pactra "Human Flesh" color - almost Pepto Bismal pink! She lacked the red turbine warning stripe below her fuselage insignias. We have shown her kill marking as applied immediately after the mission. She carries a fresh (not oversprayed) black armament loading panel below the rescue arrow on the left side of the forward fuselage.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- Later USAF style inboard pylons
- Stores:
  - Sargent Fletcher 370-gallon tank
  - 3x Mk117 on a TER (no Sidewinder rails fitted)
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 3x Mk117 on a TER
  - QRC-160 ECM pod (shown with green camouflage as seen on some pods)

### Colors & Markings - 10 March 1967:

- Fresh, vibrant colors, very close to FS595 standard
- White factory finish on lower surfaces with full stencils
- Bright, almost pink paint covering previous serial location

- Safety/rescue markings over sprayed in local camouflage colors to tone them down
- Tail code and last three of serial in off-white
- Depot style radome static port stencils
- Nose gear door number, factory stencil overpainted in white
- No canopy frame outlines
- No kill marking carried on 4 May 67
- Warning placard "M" in four places

**J** Here once more we have 63-7680, five and a half months after Operation Bolo, and looking much worse for the wear. On 13 May 1967, flying as HARPOON 03, Lt. Col. Fred Haeffner (flying a bonus mission while TDY from the 366th TFW at Da Nang for a tactics and best practices conference) and 1st Lt. Michael Bever nabbed themselves a MiG-17 with an AIM-7 Sparrow.

By this time, '680 had received the full APR-25 RHAW mod, and her "dork" radome had been reinstalled. Her camouflage paint had faded and chalked even more, with the tan showing bleed through of the green underneath it (which seems odd, but there it is). Most of her previous markings remained unchanged, but with the addition of a crew name block and a kill marking for her Bolo kill. There was extensive dark olive drab touchup paint around the left side nose and intake area, and some darker tan around the right side.

We have depicted her with the missile load out she would have had upon landing after this mission.



These two scrap views show the extensive touchups around the nose area on 63-7680 by the time of the 13 May 1967 mission. Note the dark olive drab carrying across the upper nose and onto the right side, partially covering the black part of the squadron ID stripe. Fresh 30219 on the right side of the nose and intake ramp.





### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- Later USAF style inboard pylons (finished in FS 36622)
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank expended
  - 2x AIM-9B
  - Empty AIM-7 wells forward and aft
  - Royal Jet 600-gallon tank expended
  - 1x AIM-7E in aft well only
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 13 May 1967:

- Colors as 2 Jan 67, but more chalked and faded. Large areas where underlying green begins to show through tan (see MacSorley photos)
- Large areas of dark olive drab touchup around left side of nose and left intake. Darker tan touchups around right side of nose and intake
- Previously visible reverse stencil Singha lion in white on right intake ramp now overpainted.
- Brighter blue variation of wing ID stripes on rudder
- Depot style radome static port stencils
- Camouflaged radome mounting collar
- Nose gear door number now applied. Factory stencil overpainted white
- Red and black nose stripes, carried across ACS inlets
- Light grey canopy frame outlines
- Kill marking from 2 Jan 67 mission on left intake ramp
- Warning placard "M" in four places



Now we come to probably *the* most famous F-4C of them all - F-4C-24-MC, 64-0829. It was in this aircraft on 20 May 1967 that Col.

Olds and 1st Lt. Stephen Croker, flying as TAMPA 01, bagged a pair of MiG-17s, one each using an AIM-7 Sparrow and an AIM-9B Sidewinder. There has probably been more misinformation published on this aircraft than almost any other Phantom, a situation we will try our best to rectify here.

She was unique among our subjects, and very unusual among all F-4Cs in Southeast Asia, in having the strike camera radome modification (see photos). It appears that the early style F-4B/C "dork fairing" with the shorter hemispheric fairing at the front was used for this mod. The forward end was cut off at an angle, a clear window installed, and a forward-facing strike camera mounted inside. The aft end of the fairing was fabricated separately, and incorporated a forward-hinged access door in addition to another window with an aft-facing strike camera mounted inside. As far as we can tell, '829 had this mod prior to Olds' 20 May mission, and kept it throughout the rest of her service in Southeast Asia. Later in her life she received a standard radome with the intact "dork" fairing. She is now on display at the National Museum of the United States Air Force in Dayton, Ohio. This aircraft also had the small

SST-181X rendezvous beacon antenna just behind the rear canopy, offset to the right (see detail page).



Col. Olds stepping aboard '829, showing the strike camera radome modification.

'829's camouflage was worn and somewhat faded, but not excessively so. Her radome mounting collar showed remnants of the older Light Gull Gray and white scheme where its paint was wearing/peeling away. The aft end of the APR-25 bullet fairing on the vertical fin was a lighter color of green (?) than the rest of the fairing. She lacked the red turbine warning stripe below the fuselage insignias, but it likely remained on the factory applied white belly. Her yellow rescue arrow on the left side of the nose was overpainted with the local green camouflage color to tone it down, but the other safety/rescue markings were full color. Note that the rescue arrow is angled very slightly nose-down.

By May of 1967, the 433rd TFS had begun using its "Satan's Angels" squadron motif on the left side of the nose. Careful scrutiny of photos shows that this badge was applied twice on '829. Our profiles K, L, and N show the original position and colors. See description following for profile Q for the later variation.

We believe that a series of photos taken of Olds & Croker immediately post-mission on 20 May 67 show that '829 had a "zap" courtesy of the F-104C troops of the 435th TFS, then attached to the 8th TFW, but remotely based at Udorn RTAFB. We can't prove the presence of the "Zipper zap" conclusively, so it's your choice to use it or not, but we think it was probably there during the MiG kill mission. Immediately upon landing, the ground crew likely got busy with some dark olive drab and painted much of the intake ramp, obliterating the zap, and painting a pair of kill marks in their place. The shape of the OD touchup almost perfectly matches the location of the F-104 zap. Note that at this time she was not yet named "SCAT XXVII".



### Airframe/ordnance details:

- Strike camera radome modification (see detail page)
- Full RHAW antennas
- Later USAF style inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank expended
  - 2x AIM-9B
  - Empty AIM-7 wells forward and aft
  - Royal Jet 600-gallon tank expended
  - 1x AIM-7E in aft well only
  - 2x AIM-9B
  - QRC-160 ECM pod



Col. Olds is interviewed in front of what we believe is '829 just after the 20 May 1967 mission, showing the 435 TFS zap.

### Colors & Markings - 20 May 1967:

- Relatively standard colors, with tan tending toward beige
- Areas of dark olive drab touchup around left side of nose and left intake
- Depot style radome static port stencils
- Camouflaged radome mounting collar with previous Light Gull Gray/white showing through
- Nose gear door number now applied. Factory stencil overpainted white
- Light grey canopy frame outlines
- Warning placard "M" in two places (forward positions only)



F-4C-20-MC, 63-7623, flown by Maj. Robert Pardo and 1st Lt. Steve Wayne as TAMPA 03 on 20 May 1967 notched up a MiG-21 using an AIM-9B Sidewinder.

The aircraft was a long time 8th TFW veteran, and her camouflage showed some interesting variations from the standard. Colors were fairly standard, but her pattern, particularly around both sides of the aft fuselage, was unique. She also lacked red turbine warning stripes below the fuselage insignias. There was no visible touchup work around the nose, and her yellow rescue arrow was oversprayed thinly in green to tone it down. There were fairly large areas of dark olive drab on the vertical fin. It appears she had the older spook on an eight-ball motif on the rudder and a different squadron ID letter overpainted

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- Later USAF style inboard pylons
- Stores, left to right:
  - Sargent Fletcher 370-gallon tank
  - 2x AIM-9B
  - 2x AIM-7E
  - Royal Jet 600-gallon tank
  - 2x AIM-7E
  - 2x AIM-9B
  - QRC-160 ECM pod

### Colors & Markings - 10 March 1967:

- Relatively standard colors, somewhat faded
- Large areas of dark olive drab on both sides of vertical fin, covering previous spook motif on rudder, early serial location, and previous squadron code letter
- White factory finish on lower surfaces with full stencils
- Left side rescue arrow oversprayed in local camouflage
- Mixture of off-white and medium grey codes and serials
- Depot style radome static port stencils
- Nose gear door number, factory stencil overpainted in white
- No canopy frame outlines
- Warning placard "N" in four places



Now named "SCAT XXVII" - the latest in the long series of Robin Olds' airplanes named "Scat" after his friend and West Point roommate, Scat Davis. Davis had washed out of cadet flight training due to poor eyesight, and Olds had vowed that Davis would fly with him throughout his career. All of Olds' aircraft from WWII onward were named "Scat." The aircraft's appearance is not much changed since May of 1967, except for the addition of the name on and aft of the left hand ACS inlet fairing. Note that at this point, the name was painted with very thin yellow paint, showing a distinct greenish cast compared to its later appearance.





63-7589 taxis in post-mission sometime in late 1967. Note the lack of AIM-9 launcher rails when air-to-ground ordnance was carried

**O** We decided to include these late summer 1967 markings for 63-7589 simply because she is so completely ratty looking and would make such an interesting looking model. She is literally festooned with patches of different colors - almost too many to adequately describe with words. We strongly recommend studying the MacSorley photos of her to get an appreciation of just how unusual she looked. The owl motif of the 497th TFS was used starting in June 1967. She had been swapped from the 555th TFS (FY) to the 497th TFS (FP), so her older tail code was painted out using all manner of different colors. The medium grey "Ys" were replaced with off-white "Ps", and we have no idea what happened with her multi-colored serial numbers...

By this time, she had received the SST-181X rendezvous beacon antenna aft of the rear canopy, offset to the right (see detail page), and the APR-25 RHAW update with the longer forward fairing on the radome "dork." She has the later Air Force style inboard pylons.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- SST-181X rendezvous beacon antennas
- Later USAF style inboard pylons, overall FS 36622 finish
- Stores:
  - Air-to-air load out shown, but any number of configurations was possible depending on the mission

### Colors & Markings - Summer 1967:

Generally similar to her January appearance (subject B), but with touchups and overpainting of old markings with a wide variety of colors. See MacSorley photos on the Picciani web site for details.

**P** Back to '680 again... By September of 1967 she had received an almost complete repaint. Gone was the faded, chalked out camouflage (for the most part), replaced by more standard, fresh colors. She still had some odd colored patches here and there, including a weird blue-green area on the right side of the vertical fin, and a pale grayish green area on the left side of the fuselage. The left side of the fin had a large area of dark olive drab up the leading edge and behind the serial and tail code.

And we can't explain any of it... She retained her Singha beer lion and wing ID stripes on the rudder, as well as her red nose band.

In common with '589 above, she had received the SST-181X rendezvous beacon antenna aft of the rear canopy. She now had the Air Force style inboard pylons, but they were uniquely finished: the right hand pylon had a Corroguard leading edge. The left hand pylon's leading edge was FS 30219 except for the vertical portion tucked up under the wing, where the leading edge was Corroguard.

### Airframe/ordnance details:

- Longer style forward fairing on radome fairing
- Full RHAW antennas
- SST-181X rendezvous beacon antennas
- Later USAF style inboard pylons, uniquely finished (see above)
- Stores:
  - Air-to-air load out shown, but any number of configurations was possible depending on the mission. By September 1967 the QRC-160 could be carried on the left inboard pylon, so a fuel tank or other ordnance could be carried on the outboard station

### Colors & Markings - September 1967:

- Camouflage pattern completely changed from previous appearance
- Colors generally less faded and more standard
- Large areas of dark olive drab on left side of vertical fin
- Darker tan areas on right side and upper left side
- White factory finish on lower surfaces with full stencils
- Left side rescue arrow oversprayed in local camouflage
- Mixture of off-white and medium grey serials
- Depot style radome static port stencils
- Nose gear door number, factory stencil overpainted in white
- Light grey canopy frame outlines
- Warning placard "M" in four places



64-0829 showing the extensive dark olive drab touchups covering most of her older squadron markings and crew names



**Q** Scat XXVII's appearance on the occasion of Col. Olds' final combat mission on 23 September 1967 remained much as before, but with some notable exceptions on the left side of the nose. Her older left side squadron badge and crew name locations were painted out with fresh dark olive drab, as was her entire left hand intake ramp and a large section of the intake. The kill marks were arranged in slightly different relative positions, and the previously off-register problem with one of the stars was fixed. The squadron badge was reapplied in a slightly different method (part of the stencil was flipped left to right), with the previously white elements now in bright yellow. The name "SCAT XXVII" was touched up with the same bright yellow, and the previous crew names were obliterated and replaced by "COL OLDS" using a larger stencil, also in bright yellow.

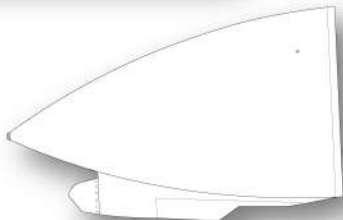
### Airframe/ordnance details:

- No changes from previous appearance

### Strike Camera Radome Mod



Another view showing an airman loading the aft-facing strike camera in the unique F-4C strike camera radome.



64-0829 as she would have appeared when delivered from McDonnell Aircraft in 1965. The TAC badge and lightning bolt on the tail were eliminated somewhere between 64-0713 and 64-0735.



# 64-0829 Shots...

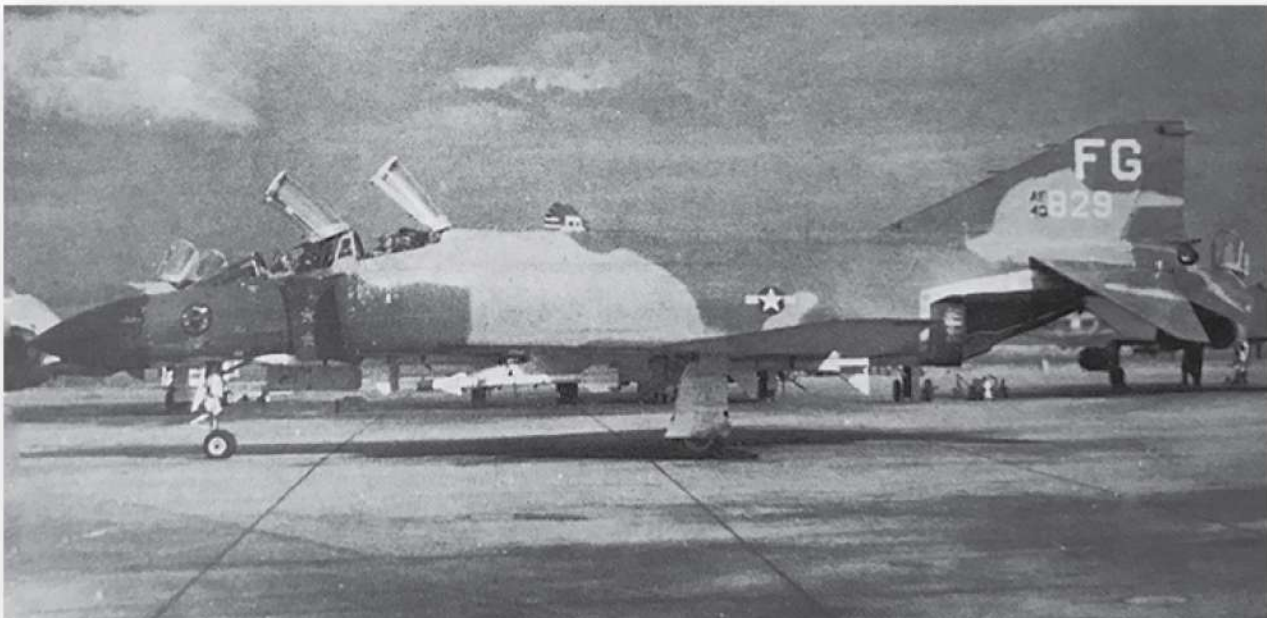


Robin Olds and a very youthful Steve Croker beaming just after returning from their successful 20 May 1967 mission. Again, we believe that 64-0829 carried this zap on the intake ramp before and during the mission, and that very soon after landing, it and a section of the intake were painted out in dark olive drab and the two mission kill stars applied. Note the wavy camouflage demarcation on the intake, which disappeared when the kill markings were applied. See photo below.

With apologies for the poor quality, we believe this shot is from late May or June 1967, prior to addition of "SCAT XXVII" over the ECS scoop. It depicts the two red stars, the data block is almost completely wiped out by scarring on the left intake, white belly demarcation line has been straightened out at the bottom of the intake, and the wing root overpainted in dark olive drab.



Colonel Olds nails up some more MiG kill stars at the 8th TFW Headquarters building at Ubon after the 20 May 1967 mission. It's a good bet that a considerable quantity of alcohol was consumed at the Ubon officers' club that night!





# 64-0829 Shots...



Two versions of the same photo showing details of '829's appearance probably sometime in August 1967. The "DEFUELER" (for which we have no plausible explanation) stencil is not on the nose gear door yet. The jet is heavily weathered and scarred from ladders, boots, and screw drivers, including the red stars. At least two separate green/OD touch-up patches visible on left intake if you scrutinize the photos closely. Sure wish the USAF would bring back the 1505 khaki uniforms! Everybody loved them...





# 64-0829 Shots...

Two shots we believe were taken at the same time as the previous two. Obviously a cloudy day, these two were taken with a flash (note the harsh shadows behind everyone). But they show the extensive paint chipping all over '829's left nose area, and even on the center fuselage where crew walking down the intake would slide down onto the wing. Of note is the rather rare application of small black lift hook markings (unique among our subjects) in two places on each side of the fuselage. Also visible in the lower shot is the small SST-181X homing beacon antenna fitted just aft of the rear canopy, offset to the right. Note that most Air Force AGE was painted yellow at this time.





## 64-0829 Shots...



Late summer of 1967, within days or weeks of the shots on the previous pages. The "DEFUELER" stencil is now present, and the kill stars have been touched up to eliminate the paint chipping seen in the earlier photos. The original off-white crew names are still present, and the "SCAT XXVII" is still in rather thin yellow.

Probably taken in mid-September 1967, in this shot the entire left side of the nose has now been touched up with dark olive drab, the 433 TFS badge has been reapplied in a slightly different style and location, the crew names have been obliterated and a larger "COL OLDS" applied in yellow. Oddly, it appears the "SCAT XXVII" has not yet been touched up with brighter yellow paint to match the Colonel's name.





# 64-0829 Shots...



Olds' last combat mission on 23 September 1967 was an occasion to be celebrated. He had made a huge impact on USAF tactics and operations, markedly improving its success rate and reducing its loss rate. He was a true leader, beloved of his subordinates and respected by his superiors. Note in the photo immediately below that the "SCAT XXVII" has been retouched in much brighter yellow, matching the "COL OLDS".





# Last minute find!!



*Ubon, Thailand 1967*

*Photo by Jerry Adamson*

Photo: Jerry Adamson via Christina Olds

With enormous thanks to Gen. Olds' daughter Christina and Jerry Adamson, this amazing photo showed up literally as we were finalizing our instruction sheet. It is a true time capsule of early 1967 flight line activity at Ubon (before Olds & Croker's 20 May mission) showing '829 being bombed up for an air to ground sortie, with all the equipment required to get a Phantom off the ground. Sadly, the canvas intake cover prevents us from proving conclusively that the F-104 zap was present, but none the less it shows her markings and weathering perfectly. Note the strike camera radome mod, the weathered appearance of the black neoprene radome coating, and her camouflage and markings. This is a great example of the factory grey stencils on the factory gloss white belly, with the last three of the tail number stencil applied over it. Enjoy soaking up the atmosphere!



### Color Note

We're going to be 100% completely honest with you: we have absolutely no idea what the precise upper surface camouflage pattern on any of our subject aircraft looked like. Sadly, unless a given tail number was photographed from the control tower or from the back end of a KC-135 during refueling (and we happened to find those photos in the ether), we simply have no way to know what the exact pattern on any of them looked like. We can glean clues from the side view photos, but they don't give us more than small crumbs of information. The best we can do is to provide you with what the Air Force tech order that was used to paint them showed, and direct you to the photos we used to create our artwork. From there you're on your own.

A couple of general notes however - given the variation in patterns seen on the sides of these aircraft, you have fairly wide latitude to alter this basic pattern. The areas outboard of the inboard leading edge flaps where the boundary layer control air (which is very hot) exhausts was supposed to be left in natural metal (see diagram below). It is our belief that the depot that applied camouflage seen on most of these birds simply painted that panel over. It's possible the paint may have scorched off or been discolored by the BLC exhaust, but again, we just don't have photos to prove it either way. On jets such as 64-0927 that

left the factory in this camouflage, the BLC exhaust panel was definitely left in dark natural metal.

Generally speaking, the only stencil data we see on the upper surfaces of these aircraft is around both sides of the cockpit area. Safety and emergency rescue placards, and ejection seat warnings were about the extent of it. In many cases these markings appear to have been lightly overpainted with the local camouflage color to tone them down, and we have noted this where relevant in the individual subject pages. Most aircraft had the red turbine warning stripe applied below the fuselage insignias, with the exception of 64-0927 with its factory applied camouflage, which had a full top side turbine stripe.

As noted below, the entire upper surface of the outer stabilizers was painted, right out to the leading edge, unlike almost every reference source will show you. The only exceptions are 63-7710 with its gloss white replacement stabs and 64-0927's factory camouflage.

The paints used in 1965 and '66 were terribly prone to color shifting and fading, and got beat up and abused, often allowing the previous Light Gull Gray to show through, sometimes in large sheets. Consult the photos referenced elsewhere, and have at it. It's almost impossible to do it wrong.

### Detail Note

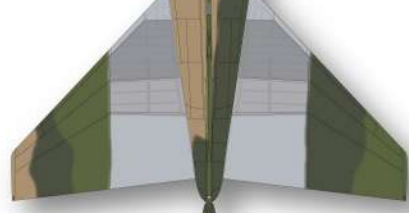
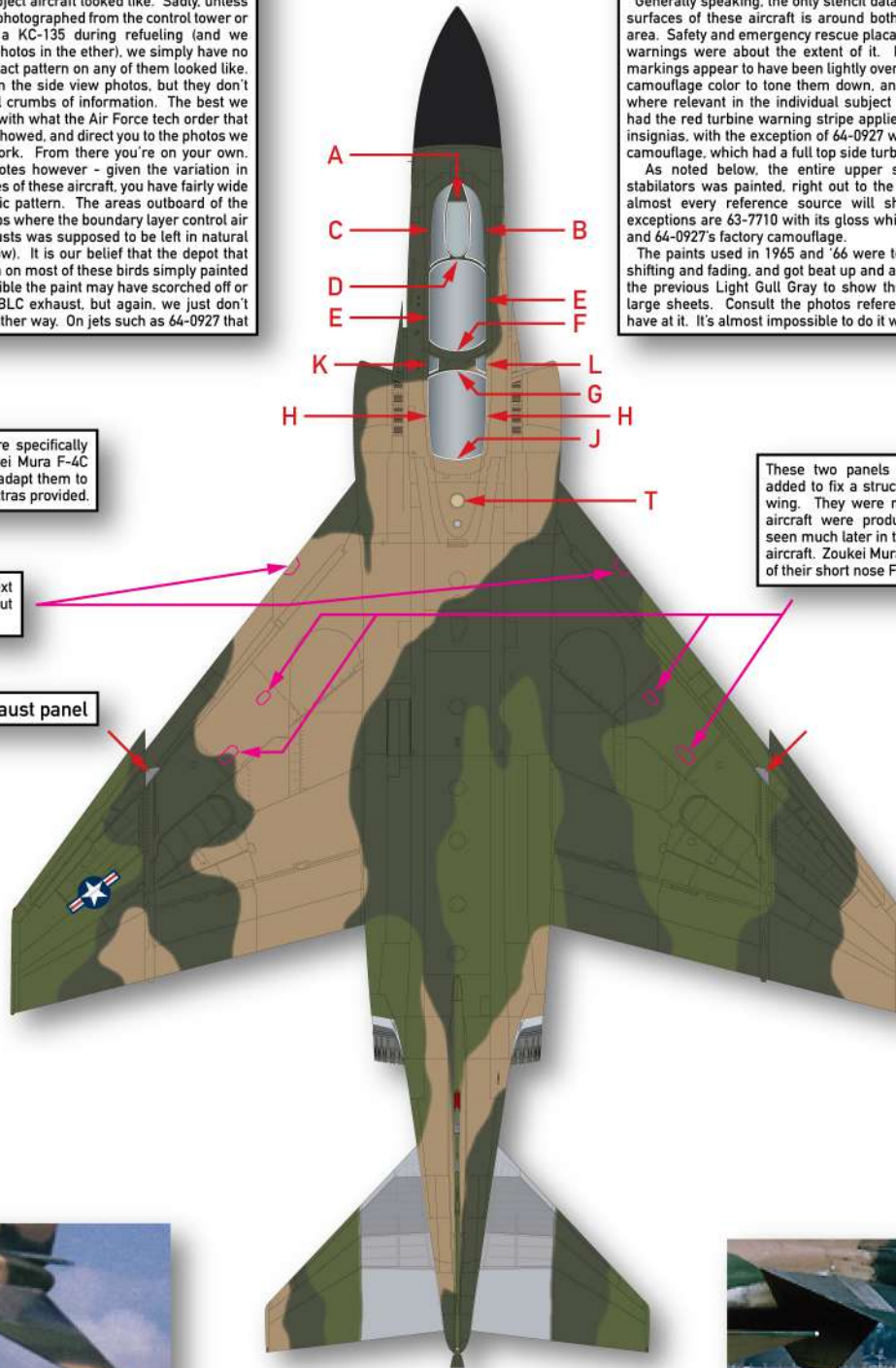
Canopy frame decals are specifically designed to fit the Zoukei Mura F-4C kit. You may be able to adapt them to fit other kits using the extras provided.

See Detail Note on next page for information about these RHAW antennas.

BLC exhaust panel

### Detail Note

These two panels on each wing were added to fix a structural issue inside the wing. They were not present when the aircraft were produced, and were only seen much later in the service lives of the aircraft. Zoukei Mura included them on all of their short nose F-4 kits. Fill and sand.



A couple of examples showing the way the entire outer panels of the stabilizers were painted, with no natural metal leading edges, as was commonly seen in later years. Some aircraft had a soft sprayed edge (as shown here), and some had a masked edge between the inner and outer panels. Also note there were no chevron shaped stiffener plates, which only came into existence much later.



### Color Note

Our apologies. Yes, in order to do these birds accurately you have to put every one of these factory stencils on the belly! Sorry, but that's just the fact... Seriously though, we, like you, had always assumed that when Phantoms got their camouflage paint during 1965-66 the belly got the prescribed FS 36622 light grey as well, but we were wrong! With the exception of the factory camouflaged 64-0927 on our 1/48 sheet, every one of our subjects retained its factory gloss white belly, with full Futura stencil data.

We have shown the Corroguard leading edges on the wings and the intakes. The wing areas were generally overpainted by wrapping the camouflage color above around the leading edge. Some had a hard masked edge, and others had a soft sprayed edge. The intake leading edge is impossible to see in most photos, but it is likely to have remained finished as shown here.

On many aircraft, you can clearly see where the large size insignia and "USAF" titles were oversprayed in fresh,

sometimes rather thin, gloss white, leaving the underlying colors faintly visible. On others they disappeared completely. Application of the new 15" insignias was inconsistent, with some getting them in the specified location, some directly centered over the old insignia and some not getting any at all. We recommend applying the large insignia and "USAF" titles, then doing exactly the same as the painters in 1965 and '66 did: spray over them, building up paint until just the faintest image is still visible.

All aircraft retained the red turbine warning stripes on the belly, but note that these did not cross the AIM-7 wells. There was a very short segment of red outboard of the missile well on the side of the fuselage.

One detail that we are not aware ever having been portrayed by any F-4C/D kit, decal, or reference is the presence of the two APN-155 radar altimeter antennas (decal U). These were not fitted to Navy versions of the Phantom.

Note: Decal S are left and right handed. Wide end is forward.

\*\* - This antenna panel was raw fiberglass colored, similar to decals S, R, and U. Paint dirty yellow-brown to match.

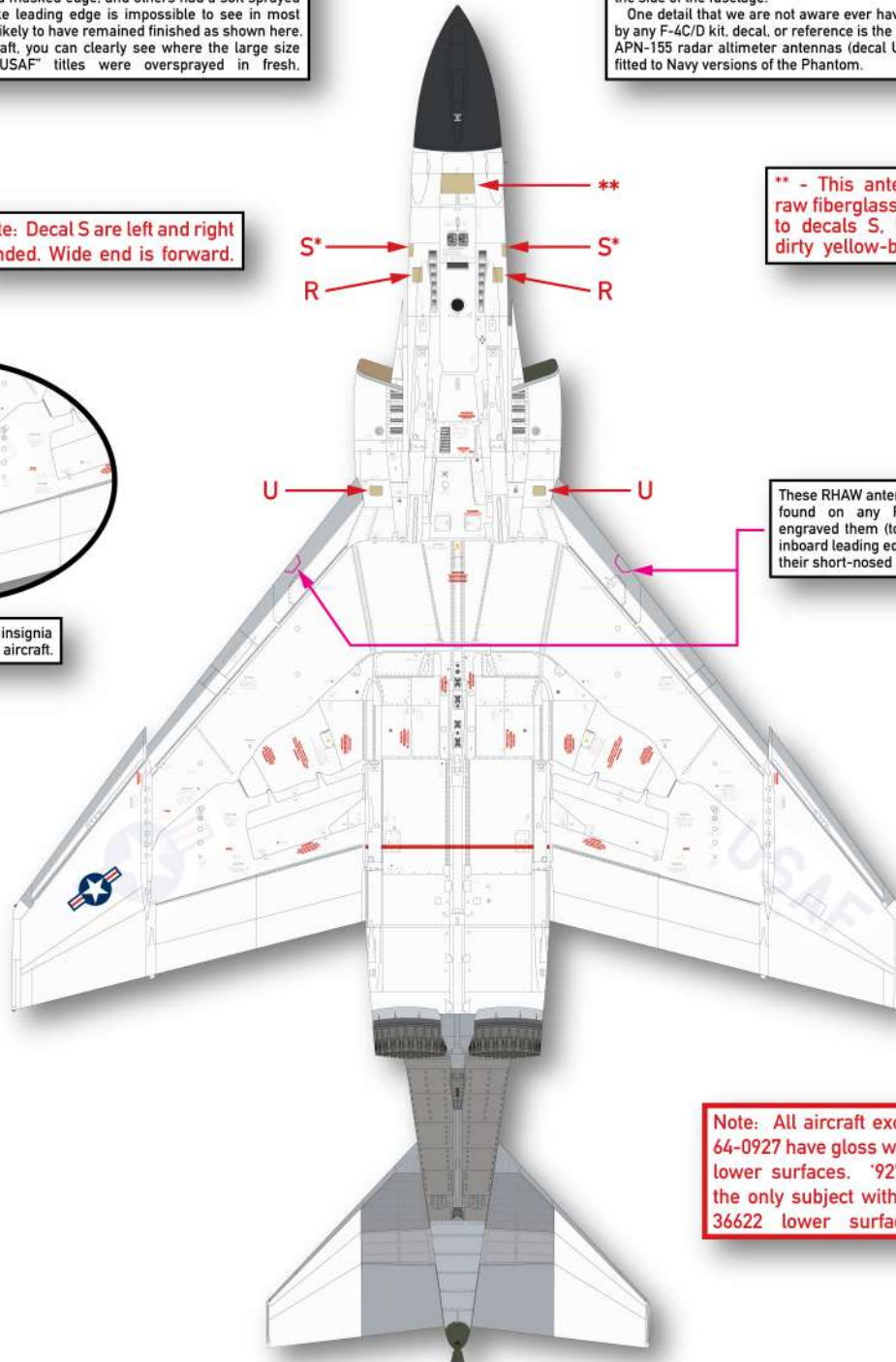


Variation of 15" insignia location seen on some aircraft.

### Detail Note

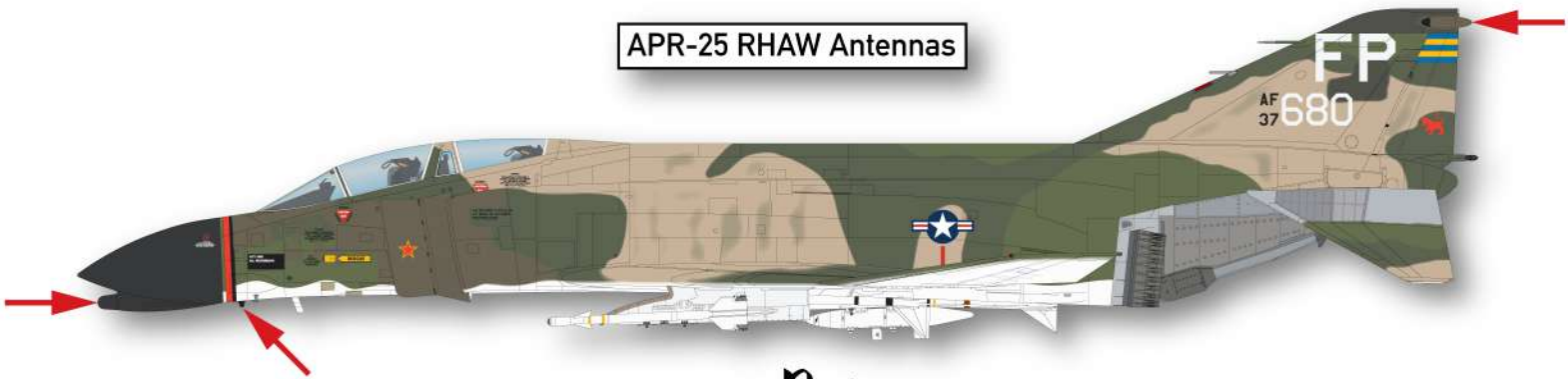
These RHAW antenna panels were never found on any F-4C. Zoukei Mura engraved them (top and bottom) on the inboard leading edge flap pieces on all of their short-nosed F-4 kits. Fill and sand.

Note: All aircraft except 64-0927 have gloss white lower surfaces. '927 is the only subject with FS 36622 lower surfaces.

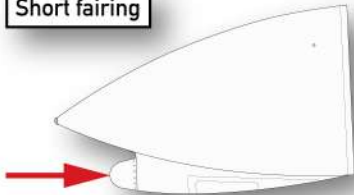




#### APR-25 RHAW Antennas



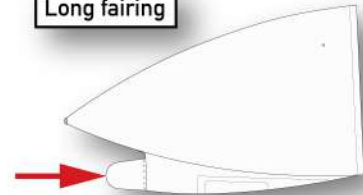
#### Short fairing



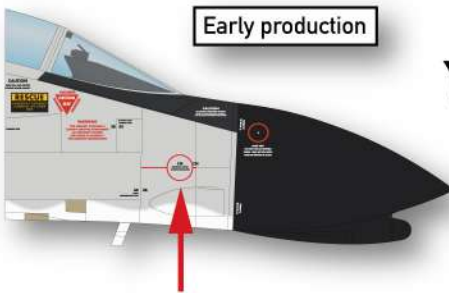
### Detail Note

As originally produced, F-4Bs and Cs had the short hemispheric fairing on the forward end of the IRST fairing below the radome. This fairing gave the aircraft an "overbite" appearance. When the APR-25 RHAW gear was installed, a longer, more conical fairing was fitted. The later style is what modelers consider "standard" on the F-4B/N and F-4C/D. The USAF and USN used different RHAW equipment, but the fairings were identical.

#### Long fairing



#### KY-28 Secure Voice System

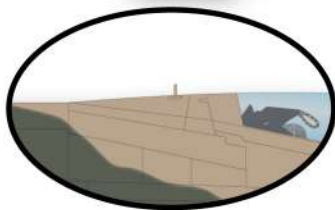


### Detail Note

Early production F-4Bs and Cs lacked the KY-28 secure voice system. They had a circular panel (Panel 124) on the right side of the nose. When the KY-28 system was installed, the trapezoidal panel replaced it. Aircraft produced after approximately mid-1967 had the KY-28 system installed on the production line, and most in-service aircraft had it retrofitted. Where it is possible to determine it from photos, our profiles show which configuration each aircraft had at the time it is depicted.



#### SST-181X Rendezvous Beacon

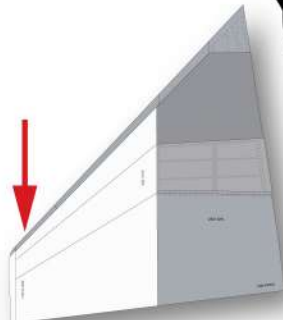


A shout-out to our friends at Hypersonic Models ([www.hypersonicmodels.com](http://www.hypersonicmodels.com)), who produce a superb range of 1/48 F-4 accessories, including the Martin Baker Mk.H5 seats and assorted other Phantom paraphernalia that you can't live without. Arigato gozaimasu!

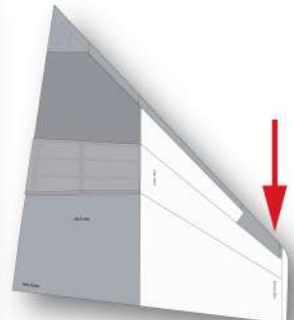
#### Horizontal stabilator changes

### Detail Note

The original production horizontal stabilator lacked the now familiar extra reinforcement panel at the outboard leading edge. As produced, most early F-4Bs and F-4Cs had horizontal stabilators that looked like the one on the left. Sometime during 1965-66 it appears that the reinforcement panel was added on the production line. In-service aircraft continued flying with the original style for quite some time, and unless they developed fatigue cracks or received battle damage, they were left alone until the aircraft went through major depot level overhaul. If the stabilators required repair, both stabs plus the center carry-through structure on which they pivot were replaced as a complete unit. Repairs were conducted at depot level. All F-4Cs (and Ds) had the **unslotted** stabilators. If using a kit that contains both the slotted and unslotted type, be sure to use the correct parts.



#### Early production



#### Late production





Photo: USAF

A great shot showing the way the LAU-7 (and later, Aero-3B) launchers for the AIM-9Bs were mounted during 1967. The launcher was mounted directly to the pylon, with a slight lateral down angle. This prevented carrying any other stores below the pylon as long as the LAU-7s were attached. For air-to-ground missions requiring a TER on this pylon, the LAU-7s and AIM-9s were not carried, leaving only the fuselage mounted AIM-7s for air-to-air engagements. This photo shows the later "MAU-12" pylon, but the mount was the same as the earlier LAU-17A.

One of Col. Olds' recommendations based on his combat experience with the 8th TFW was an extender that allowed the LAU-7s and a TER to be fitted at the same time. That configuration became the standard on every F-4 ever after.

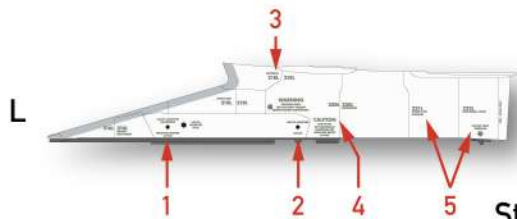
### Color Note

The LAU-17A pylons (the early Navy style) were factory finished in gloss white with a Corruguard (dull silver paint) leading edge. The later "MAU-12" (unofficial designation) curved leading edge Air Force style pylons came factory finished in FS36622. The leading edge of those pylons has been seen in Corruguard, as well as the local camouflage color, as well as a combination of the two, as well as with either a hard edge or a soft sprayed edge between the colors! See individual aircraft profiles for specifics on each aircraft.

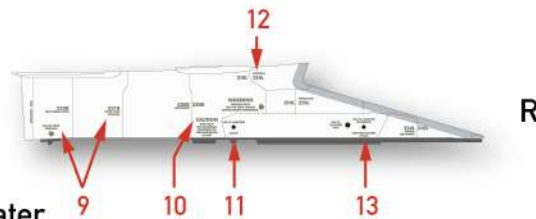
The outboard pylons that were integral with the Sargent Fletcher 370-gallon wing tanks were generally white, although some were painted in the field with various shades of green and olive drab. Most did not have stencils, but some did.

The outboard stores pylon, which looked similar to the wing tank pylon, but differed in detail, was also generally finished in gloss white at this time. As far as we are aware, the stencil data applied to both types.

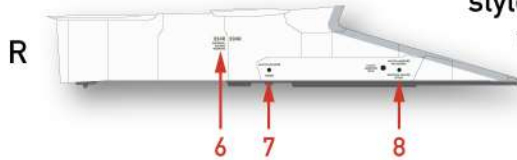
Port Inboard LAU-17/A Pylon



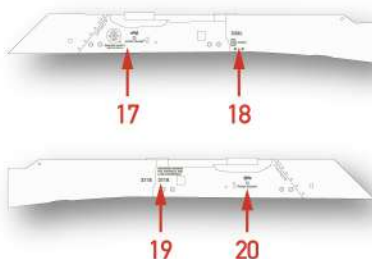
Starboard Inboard LAU-17/A Pylon



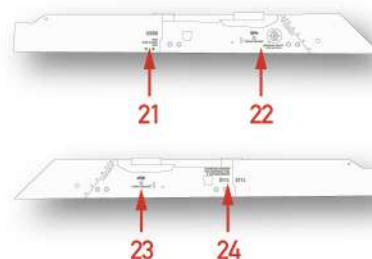
Stencils on later style inboard pylons were similar



Port Outboard Fuel Tank Pylon



Starboard Outboard Stores Pylon



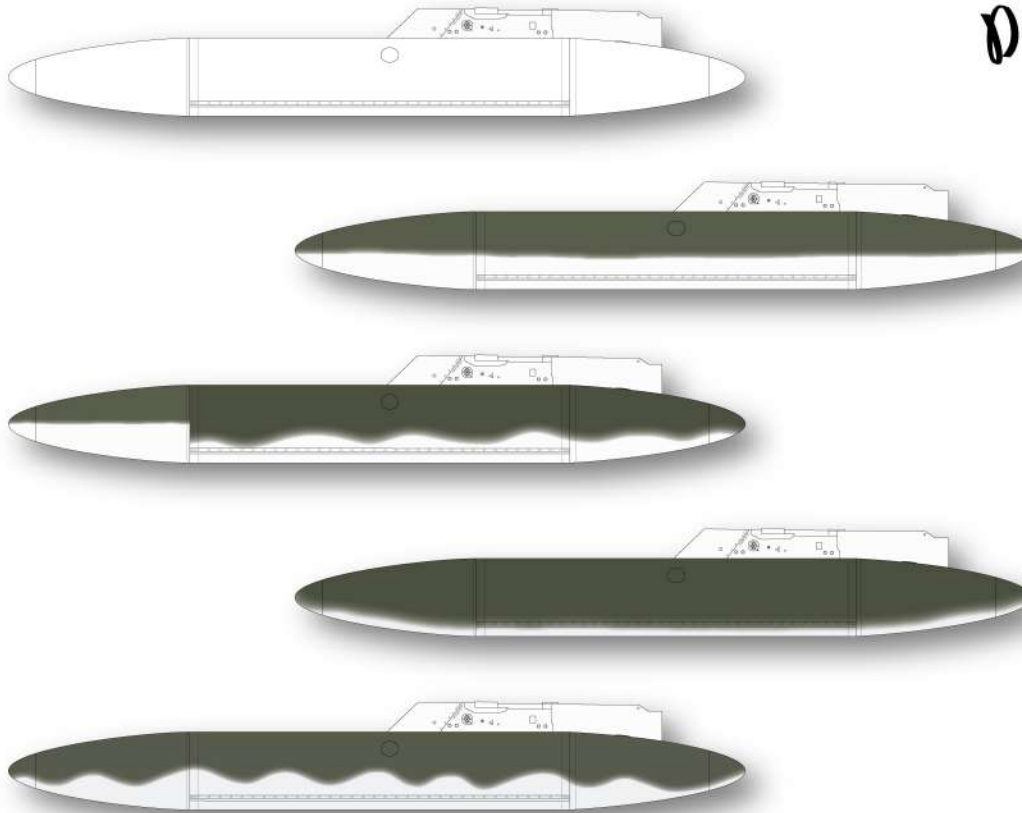


### Sargent Fletcher 370-gallon wing tanks

### *Detail Note*

The Sargent Fletcher 370-gallon wing fuel tanks were the only type seen on our subjects by late 1966. They featured a staggering variety of paint schemes, from overall white to almost completely dark green. The colors seen are generally darker than the FS 34079 seen on the jets themselves - more of a dark olive drab. The pylon and tank were integral, yet we see instances where the pylon was left entirely white, partially green, or even all green. As can be seen at left, the forward and aft parts of the tank could be swapped, so mismatched camouflage was not uncommon. The demarcation between the green and white was always hand sprayed, and ranged from relatively tight to widely feathered. It is literally almost impossible to do it wrong. We have seen no instances on our subject aircraft of tanks finished with FS 36622 - all of them started out gloss white overall. These tanks were generally expended on almost every mission.

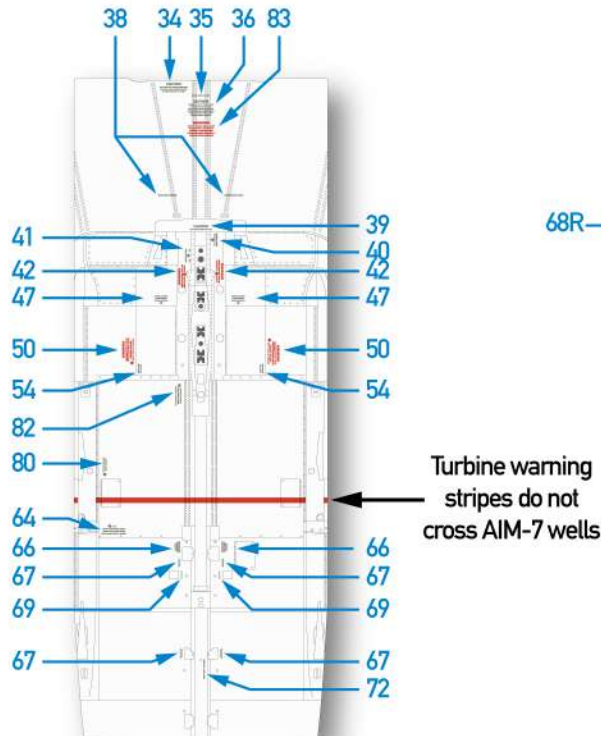
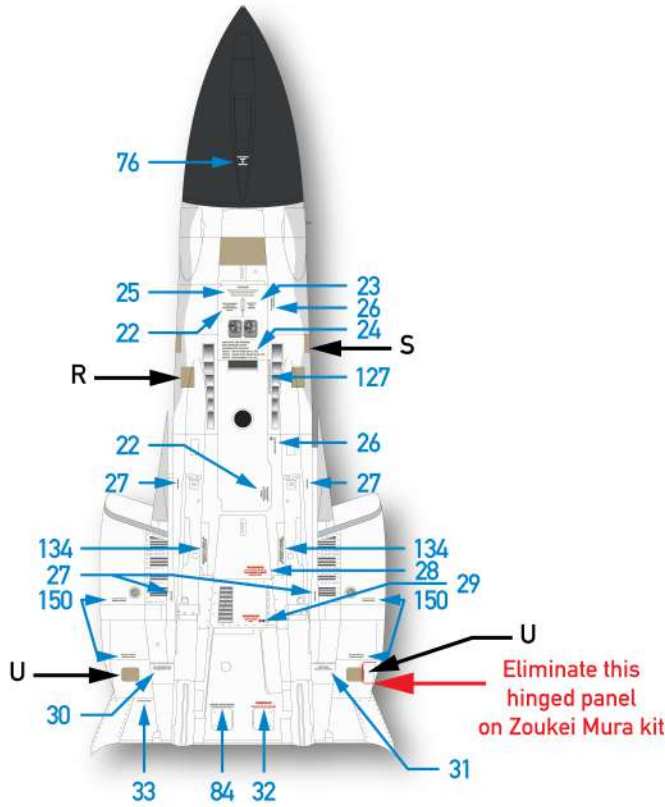
The centerline 600-gallon tanks were made by Royal Jet. In general they were finished similarly to the wing tanks. Again, all of them started out overall gloss white. We have seen tanks with green camouflage as shown below, with the pylon and the upper half of the tank sprayed green. We have also seen instances of just the tank painted green, and instances of almost the entire tank and pylon painted green.



### Royal Jet 600-gallon belly tanks

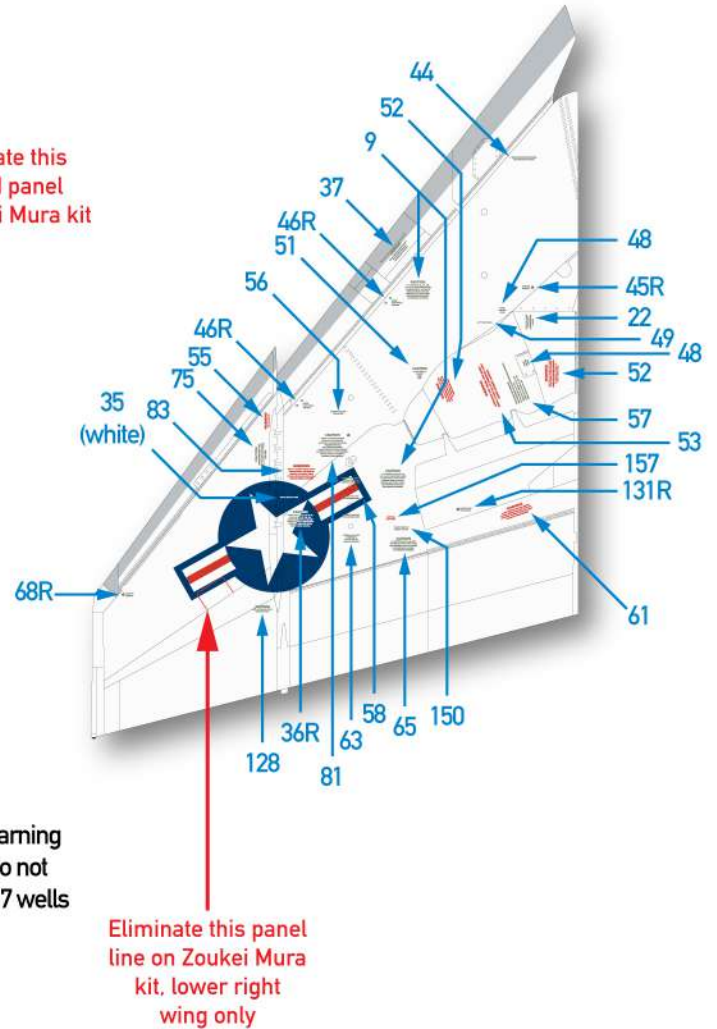




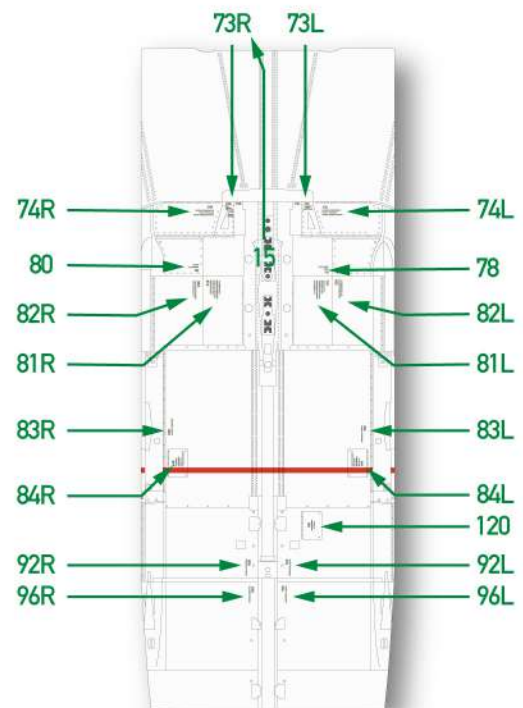
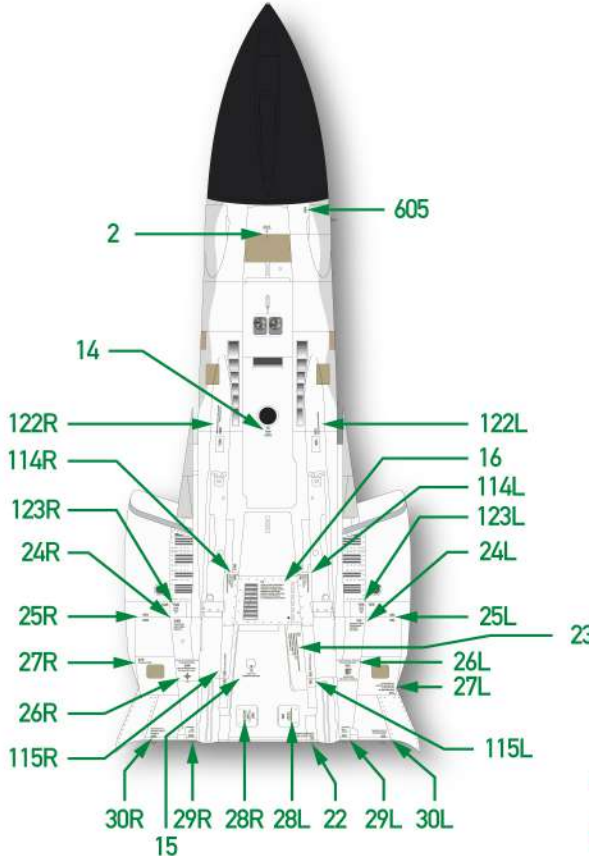


### Note

All items shown are applied to the left and right sides. Some items are handed (marked "L" and "R"). Decal #35 is supplied in white for application over the blue of the national insignia. The one opposite is grey. Decal 36R is split grey/white to overlay the white and blue parts of the insignia, respectively. The items marked in red apply to panel lines on the Zoukei Mura F-4C kit only.

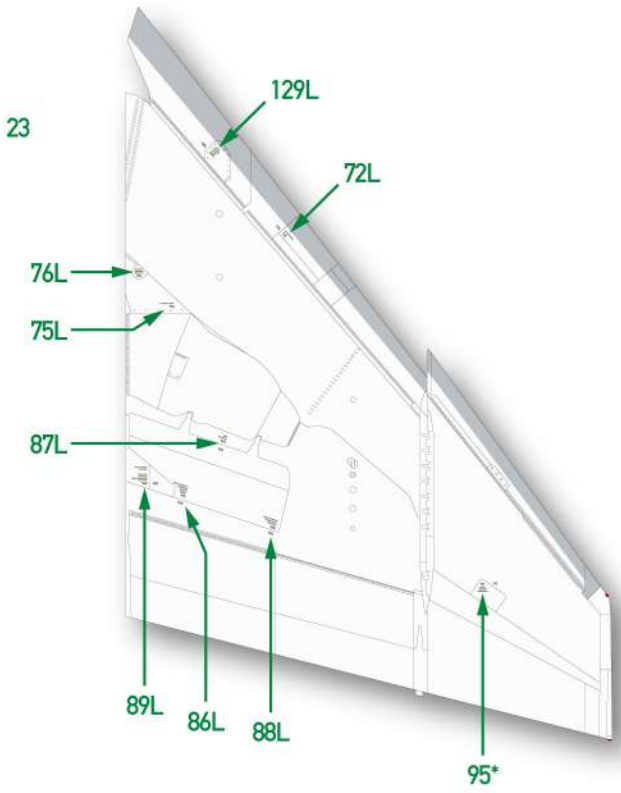




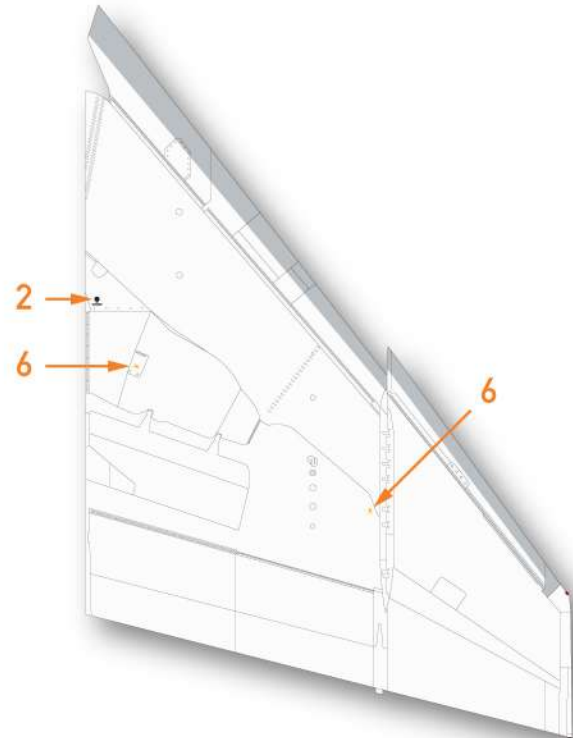
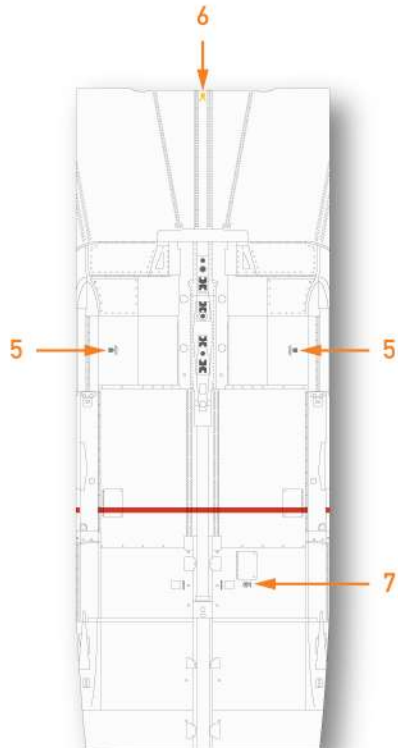
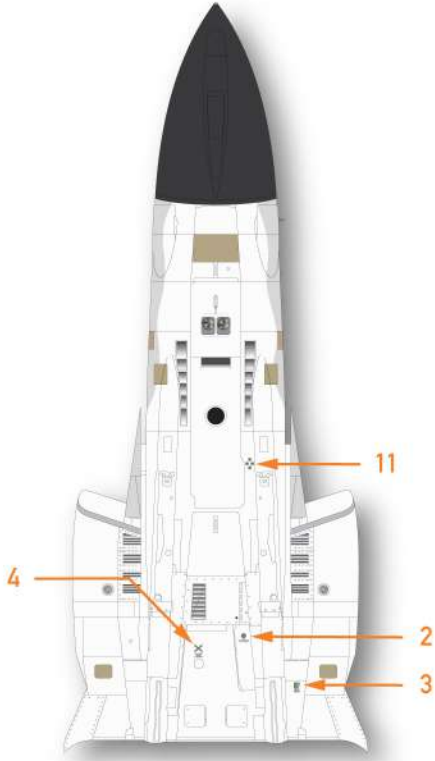


*Note*

All items shown are applied to the left and right sides. Some items are handed (marked "L" and "R").







### Assorted Photos...

An F-4C relatively fresh from a depot camouflage paint job in 1965. Items to note are the initial style of 6" high characters for the "AF" and serial number, the fairly standard T.O. 1-1-4 pattern, the wavy demarcation between the upper and lower surface colors, the white belly, and the way the camouflage covers the previously Corroguard area above the horizontal stabilizers. At this point there was no APR-25 RHAW gear, and the LAU-17/A Navy style pylons were still standard fit.



Typical markings on the AIM-7 Sparrows used in Southeast Asia circa 1966-'67. Both styles of serial numbers are provided, so mix and match at your discretion.



A trio of Mk.117 750 lb iron bombs loaded on a TER under the inboard pylon. Note that during the time period covered here, the AIM-9 launch rails could not be fitted when other ordnance was loaded on the inboard pylons.



Some examples of the McDonnell factory applied camouflage seen on 64-0927. Both the colors and the pattern used by McAir were non-standard. Also note the borderless national insignias on the fuselage (and upper wing), the full turbine warning stripe, and the Futura font style warning placards around the nose. The belly was in the correct FS 36622 on these aircraft.



# Assorted Photos...



A terrific shot from sometime in 1965, showing a trio of Light Gull Gray over white F-4Cs accompanied by a recently camouflaged bird. Note how the "FJ-xxx" buzz codes on the light grey birds have been painted out with a much darker grey on two, and a somewhat darker grey on the center one. Standards? Who needs standards?

### The foe...



USAF

Perennially jovial (or else...) VPAF MiG-17F pilots kitted up for flying walk the flight line in front of their mounts. The MiG-17F with its afterburner-equipped engine remained a potent adversary against the F-4 right up to the end of the Vietnam War. Its small size, agility, and acceleration made it a worthy opponent, even for a multi-million dollar "gee-whiz" airplane equipped with the latest in radar and missiles, like the F-4C.



USAF

A VPAF MiG-21PFL deploys its drag chute on landing. The first Fishbeds reached the VPAF during 1966, and were the very latest pure interceptor version available at that time. Improved radar and a more powerful engine made the PFL variant very capable fighters for an air arm like the VPAF. Their AA-2 Atoll missiles - a reverse engineered copy of the AIM-9Bs being used by the USAF and USN - suffered from the same operational limitations as their AIM-9B cousins.

Some sources claim that this very aircraft, assigned to the 921st Fighter Regiment, flown by 4th ranking VPAF ace Vu Ngoc Dinh, was shot down on the morning of 2 January 1967, though by which specific F-4C is not known.



## *Note on our photo source*

With a few exceptions, the photos we used as our primary reference source for this project come from an incredible collection of shots taken by Frank MacSorley between February and November 1967 at Ubon. These photographs represent a time capsule of what these historic aircraft looked like while they were plying their trade, and are a must-see for anyone with the slightest interest in this subject.

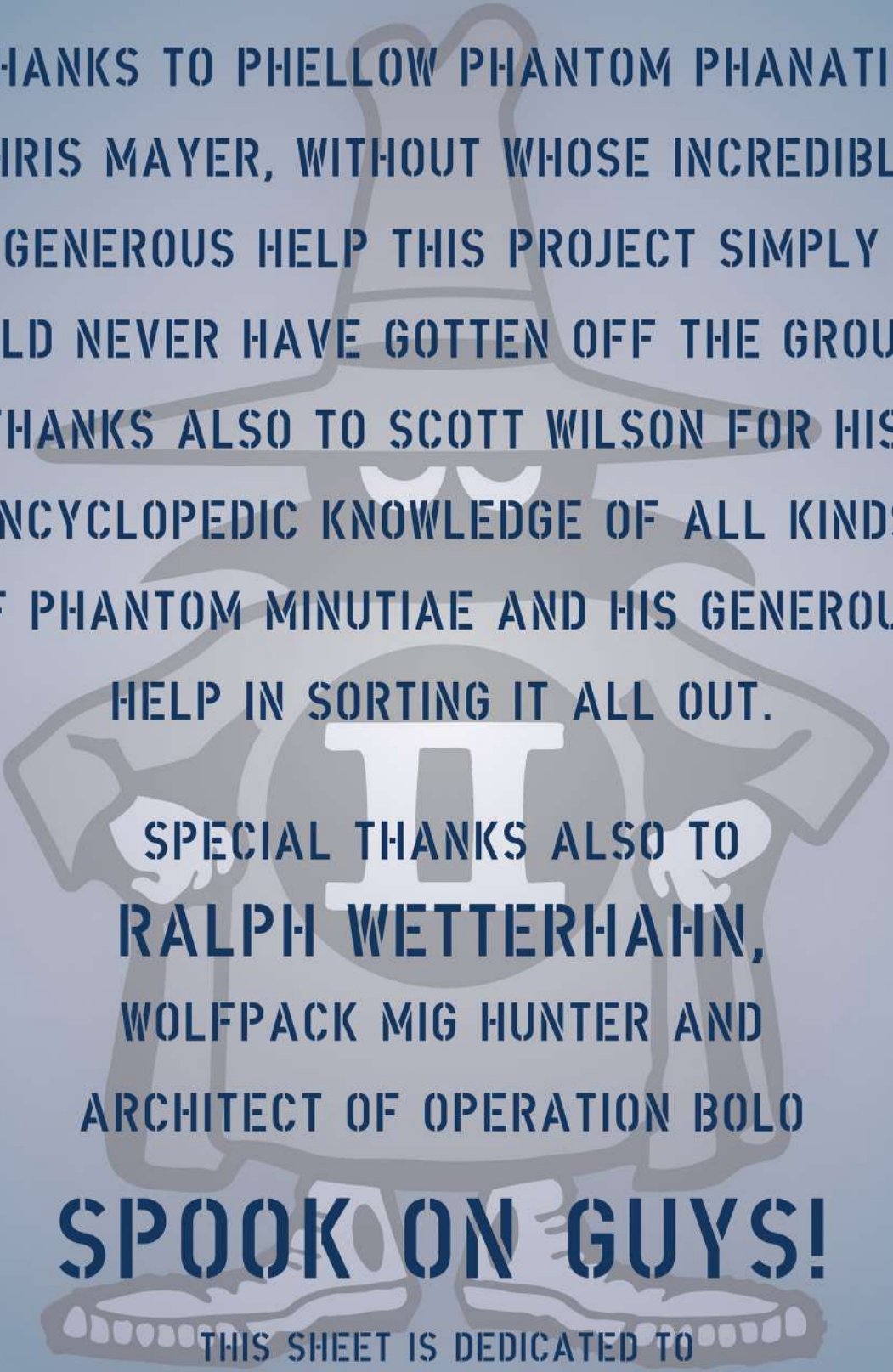
Mr. MacSorley's photos are now owned by Ron Picciani of Picciani Aircraft Photos. We attempted to purchase the rights to use them in our instructions, where their addition would have been invaluable, however Mr. Picciani no longer allows their use for anything other than personal, non-commercial use. The photos have prominent copyright markings on them, which thankfully don't cover the aircraft themselves, but which none the less render them less than optimal. But we still highly encourage you to visit the Picciani web site and download and pour over these amazing images for yourself. They will give you a good insight into the way these aircraft weathered that can be used to make your model as accurate as possible.

A note on the colors seen in the MacSorley photos - due to the myriad factors that contribute to exactly what you see in a photo on the internet, the camouflage colors in many of the MacSorley photos appear quite blue shifted, making them look very different from what we see in other photos of the same aircraft from different sources.

The URLs for the two pages of 8th TFW images are:

[http://www.piccianiaircraftphotos.com/f-4c\\_phantom\\_page\\_one](http://www.piccianiaircraftphotos.com/f-4c_phantom_page_one)

[http://www.piccianiaircraftphotos.com/f-4c\\_phantom\\_page\\_two](http://www.piccianiaircraftphotos.com/f-4c_phantom_page_two)



THANKS TO PHELLOW PHANTOM PHANATIC  
CHRIS MAYER, WITHOUT WHOSE INCREDIBLY  
GENEROUS HELP THIS PROJECT SIMPLY  
COULD NEVER HAVE GOTTEN OFF THE GROUND.

THANKS ALSO TO SCOTT WILSON FOR HIS  
ENCYCLOPEDIA KNOWLEDGE OF ALL KINDS  
OF PHANTOM MINUTIAE AND HIS GENEROUS  
HELP IN SORTING IT ALL OUT.

SPECIAL THANKS ALSO TO  
**RALPH WETTERHANN,**  
WOLFPACK MIG HUNTER AND  
ARCHITECT OF OPERATION BOLO

**SPOOK ON GUYS!**

THIS SHEET IS DEDICATED TO  
BRIGADIER GENERAL ROBIN OLDS, USAF RET  
AND TO ALL THE DEDICATED, HARD WORKING  
MEMBERS OF THE 8TH TFW