STAR

MANNED MISSILE GOES TO WAR

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IN EARLY 1965, THE VIETNAM WAR WAS HEATING UP, and U.S. involvement was accelerating to a point at which a major military commitment would have to be made. The Rolling Thunder bombing strikes against the north triggered the escalation. The increase in troop strength was steady, but the USAF was tasked with pounding countless targets all over South and North Vietnam. The increase in the number of U.S. aircraft in theater was phenomenal, and it elicited much more resistance from the North Vietnam Air Force and their MiG-17s. When the intrusions into North Vietnamese airspace reached a certain point, the enemy brought in a new player, and it was a deadly one: the MiG-21.

FIGHTER IN VIETNAM

476th Squadron Starfighters are on their way to escort a C-130E flying command post over the Gulf of Tonkin. The F-104 was rushed into the Vietnam War partly to protect the slower support aircraft. (Photo courtesy of USAF via author.)

In response, the U.S. sent in the Lockheed F-104 Starfighter to protect its air assets. Among these were the EC-121s—call-sign "Red Crown"—that flew over the Gulf of Tonkin. On April 7, 1965, the 476th Tactical Fighter Squadron took off from George AFB en route to the Far East and Vietnam. For the Starfighters' pilots, who affectionately referred to their high-Mach stubby little fighters as "Zippers," this move just might lead into a battle against the MiG-21. The squadron's primary operating base would be Kung Kuan Airbase in Taiwan, and its forward operating base would be at Da Nang in South Vietnam. Their mission was to maintain air superiority over North Vietnam by flying escort for strike aircraft and MiG screens that were within the MiG-21's range. The Starfighter and the MiG-21 were capable of speeds exceeding 1,200mph so they were on an even playing field.

1967, on the 435th Squadron's flightline in Udorn: during the F-104's deployment in the Far East, its forward operating bases were at Da Nang and Udorn. (Photo by Bobby Bedsworth via author.)

But the 476th never had the chance to take on the MiG. The controllers on the EC-121s indicated that there was never much MiG activity when the enemy knew that the F-104s were airborne in the area. The squadron's mission was therefore altered to close air support in South Vietnam. Many of the Starfighter's critics believed it could be used only as a high-altitude, supersonic interceptor, but its performance on this mission silenced them.

The pilots hoped for a chance to bag a MiG during January 2, 1967's, Operation *Bolo*. The brainchild of Col. Robin Olds, C.O. of the Wolfpack (F-4s),this major plan was to lure the MiGs up and engage them. Young pilot Lt. Addison "Ace" Rawlins was included on this mission. He recalls what has to be one of the most exciting Starfighter missions in Southeast Asia:

"Like all great operations in a war, it was on-again-and-off-again—and then it happened! Our squadron was selected to go with the big boys—F-4s—and we were excited because of the chance of taking on some of the MiGs. I was to be in the number-four position in the fourth flight, and my wingman was Capt. Roger Wichers. Col. Olds had devised a great plan to fake a normal mission and sucker the MiGs into a trap that was made up of hunters rather than heavily laden bombers. It set the stage for a decisive one-day aerial victory/lesson. We were the Cub pack [F-104s stationed at Udorn and assigned to Col. Old's Wolf Pack] and therefore brought into the mission's planning and execution. Our job was to orbit the Black River southwest of Hanoi at about 8,000 feet and be ready if the F-4s got into trouble and needed help. But that call never came!"

The F-104s launched on time and started to hit the tanker for fuel. The Starfighter mission was led by Col. Robert Preciado, and he was the first to refuel. Lt. Rawlins flew in the last slot and was the last to get gas. They were eager to top off and get into position, and it was critical that they make their station on time. The leader

1963, at a weapons display for the media: the Lockheed F-104C's versatility is being demonstrated. It could handle any airborne adversary with its AIM-9B Sidewinder missiles and M61 cannon. It was also a deadly close-air-support weapon that carried napalm and the larger GP bombs. (Photo by Ray Holt via author.)

Capt. Wells says he and his wingman rapidly closed on the fleeing MiG at Mach 1.4. When they realized they had just entered the buffer zone between the two countries, Wells broke off the pursuit.

told Rawlins to finish up and then catch up because they didn't have any time left. As the F-104s headed north, Rawlins was still on the boom.

"As I saw my flight disappear into the distance, I let my emotions overrule good airmanship. I popped the speed brakes to rapidly disconnect and turned to fall in behind the rest. We were in a slightly unusual and draggy configuration—AIM-9s on the tips and drop tanks under the wings, as opposed to our normal setup of tip tanks and gun. In the distance, the rest of my flight was getting smaller and smaller, and I was afraid of losing sight of them. My fighter just would not accelerate, and I was not gaining on them. So I stroked the burner. The result was minimal acceleration, and I was going through gas like mad! This wasn't any way to start a mission, and then I realized what the problem was: in the excitement of being left behind, I had popped the speed brakes open and never pulled them back in! When I did pull them in, my speed accelerated and I came out of burner. Shortly after this, I joined up with my flight, but I was already a little short of gas!"

The Starfighter force headed into northern Laos, tuned in to Channel 97 and then turned towards one of the deadliest areas—Hanoi. Even on the best-planned missions, Murphy's Law could kick in at any time, and this time wasn't any different. Channel 97 suddenly went off the air, so for the rest of the mission, the F-104s did not know exactly where they were. But they did know they were in a precarious position: above an undercast (tops at 7,000 feet), deep in MiG country and over an area that was known to be heavily defended by SAMs!

"In the target area, we split into pairs and

F-104s have their tanks topped off so that they'll be able to cover for Wild Weasel Thuds on a SAM suppression mission. Starfighters often escorted strike aircraft close to their targets in case of MiG attacks. (Photo by Ed Skowron via author.)

STARFIGHTER RECORDS

Lockheed's "Skunk Works" designed and built this manned rocket that seemed to have deformed wings—21 feet 9 inches from tip to tip, and each wing was only about 7 feet 14 inches long without wingtip tanks. (The P-51 Mustang had a wingspan of 37 feet.) The F-104's powerful engine could push it to more than Mach 2.0, and incidents during which it reached or exceeded Mach 2.2 at 45,000 feet are on record. Its dangerous shortcoming was its lack of gliding capability. "High key" was the term for making a dead-stick landing and being able to execute a 360-degree turn to line up with the runway. The minimum altitude for a dead-stick was 22,000 to 25,000 feet with a minimum approach rate of 250 knots. Factors that played a key role in any pilot's deciding to land in this way were weight and configuration, how much fuel he had on board, whether the engine was windmilling or frozen and the landing runway's elevation. With less than 1,000 pounds of fuel, the turn to final was at about 175 to 180 knots, and the touchdown speed was gradually slowed to 145 knots.

The rate of descent on a radar approach was between 1,000 and 1,500 feet per minute. On a VFR overhead pattern, it was initially higher than that and then decreased slowly to zero at touchdown. The first 180-degree turn in the traffic pattern was to reduce airspeed to below the maximum permitted to lower the flaps and gear.

The F-104's rate of climb was outstanding. In December 1958, an F-104A set a time-to-climb record by reaching slightly more than 49,000 feet in two minutes and 18 seconds. One year later, an F-104C reached 103,389 feet—a new world record. It achieved this by climbing from takeoff to that altitude in 15 minutes and five seconds. As a high-Mach interceptor, it had very few, if any, equals anywhere in the world—at least, during its operational life.

—Maj. Bobby Bedsworth and Maj. Mel V. Corley

Late 1966: a Starfighter flight en route to its new forward operating base at RTAB Udorn—its last base before its combat tour in Vietnam was ended. On long flights, the aircraft were always accompanied by fuel tankers such as the KC-135 shown here. (Photo by Charles Carr via author.)

set up our assigned combat air patrol areas. We stayed there for about forty-five minutes waiting for the call that never came. We orbited the area at 8,000 feet, line abreast, maybe 30 degrees back, straining our eyes for any signs of the bad guys. My job was to check our six-o'clock position for MiGs and [to check] across the flight and down for SAMs coming through the undercast, and, above all, make sure my element lead, Capt. Wichers, was protected. At one point in the patrol, Wichers picked up a fast-moving bogey a long way off. We stroked it up and turned into him but soon lost the "dot," which was a MiG. It was very tough to see a little MiG-21 from about four miles out, so we returned to our regular orbit.

SPEED DEMON

The F-104's powerful engine could push it to more than Mach 2.0, and there are recorded incidents where it reached or exceeded Mach 2.2 at 45,000 feet.

"There was no doubt that this MiG was being closely guided by his ground controller [GCI], and he knew exactly where the F-104s were at all times. Once the friendly-fighter screen turned towards him, the MiG pilot was told to exit the area quickly, and he did. When all the fun was over, we headed home. It took a little longer than we calculated to get back to a known spot, so we figured we had been orbiting right over downtown Hanoi, maybe a little north of it, but with the undercast, there wasn't any way to tell. We kept our Mach up and turned a lot, but we were still very lucky that SAMs weren't launched against us!"

The success of the Wolfpack F-4s on that day is still talked about. Col. Old's pilots bagged at least seven MiGs in a very short time. The F-104s were there but were never given the chance to engage the MiGs; it just wasn't in the cards. But there was another player in the game, and that player's MiG-19s proved to be a major problem, although there weren't any "in-your-face" duels. The new player was the People's Republic of China (PRC). The EC-121s called out many MiGs that had come across the Chinese border and were close to American U.S. strike aircraft. But MiG activity from both countries decreased when F-104s were in the area.

April 1965, Hickam AFB, Hawaii: the 476th Fighter Squadron was the first to take Starfighters into combat. Deployed to Taiwan to begin operations out of Da Nang AB in South Vietnam, during their long flight to the Far East, they stopped over in Hawaii. (Photo by Ray Holt via author.)

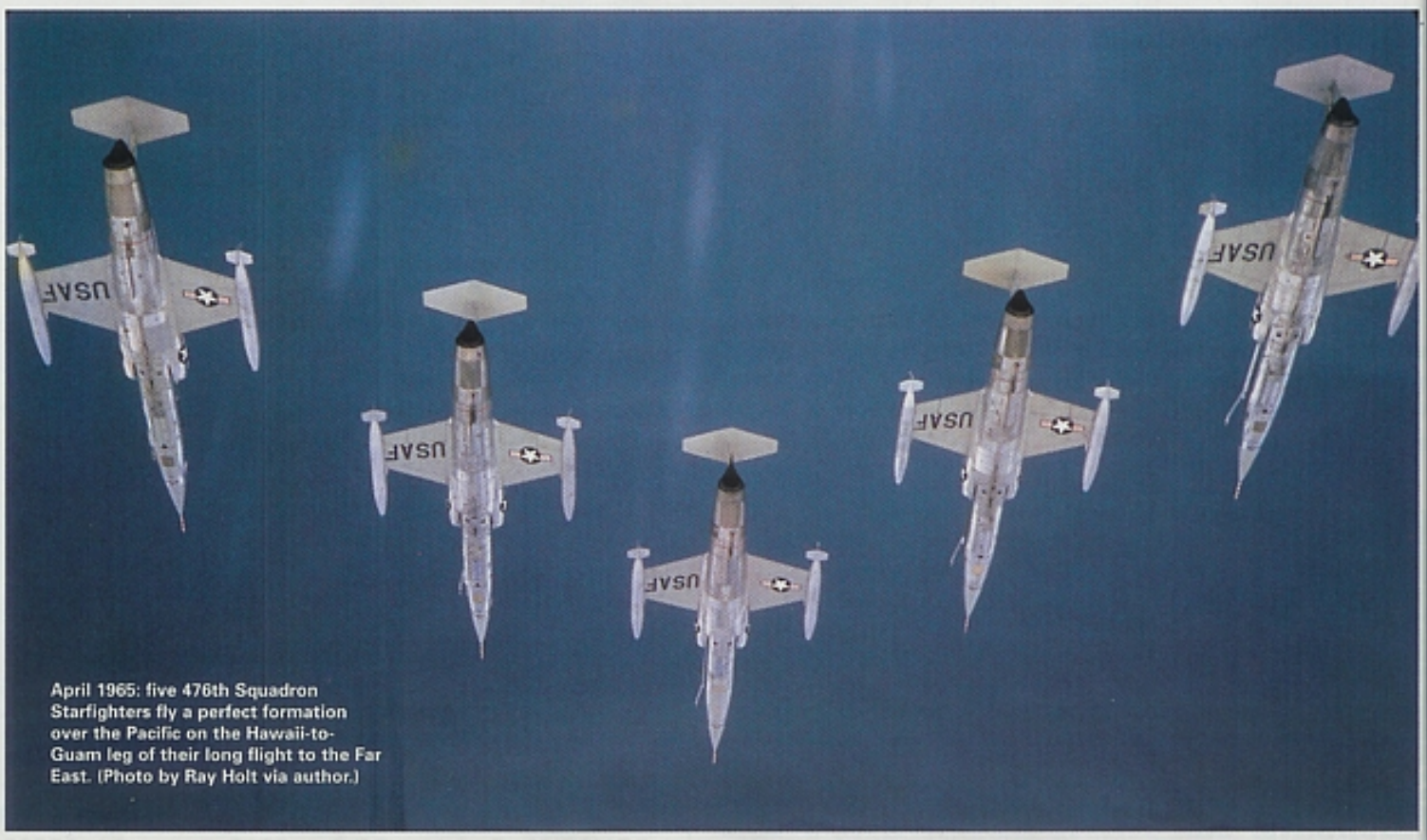
One MiG incident involved Starfighter pilot Capt. George Wells and his wingman when they were on escort duty over North Vietnam (NV). A radio transmission from "Red Crown" told them that a MiG-21 had just departed Hainan Island and was heading their way. The two turned in towards the oncoming MiG and were quickly involved in a supersonic chase over NV, but the intruder darted back across the Chinese border. Capt. Wells says that he and his wingman rapidly closed on the fleeing MiG at Mach 1.4. When they realized they had entered the buffer zone between the two countries, he broke off the pursuit.

There were several distant encounters with MiGs (mostly PRC). One ended in tragedy for the 436th Squadron. On September 20, 1965, Capt. Philip Smith flew an escort mission with the EC-121 out over the Gulf of Tonkin. Official reports of the incident state that he became lost after a series of equipment failures and several incorrect steering commands from Da Nang and a tanker. His situation deteriorated rapidly and, as fate would have it, he wandered over Hainan Island and was shot down by a PRC J-6 fighter (MiG-19S). Two F-104s from the squadron were dispatched to search for him but failed to find him. As they returned after dark, they let down through bad weather and collided. Both pilots ejected and were recovered unharmed. The loss of three fighters on that day and another that had crash-landed several weeks earlier had far-reaching consequences for the involvement and eventual removal of the F-104 from service in Vietnam.

When the MiGs avoided contact with the Starfighters, it put the latter in a position of having to find something else to do. This quickly led to other assignments, one of the main ones being close air support (CAS) that tasked them with hitting targets in the south and the north. The airborne forward air controllers had an abundance of targets, and the F-104 was a favorite CAS provider because of its fast reaction time. The pilots used their aircraft perfectly by accurately delivering napalm and 750-pound GP bombs.

Assigned to the 435th Squadron, Maj. Hugh Spencer climbs into the cockpit of his *Sex Machine*. (Photo by Rod Trimble via author.)

First Lt. Harold Alston flew several missions loaded with ordnance. He recalls one, in particular, that gave him a lot of satisfaction: "My final mission was flown on September 30, 1966, out of Udorn. I led four F-104Cs in an armed reconnaissance, which was one of my favorites because of the flexibility it gave us on target



April 1965: five 476th Squadron Starfighters fly a perfect formation over the Pacific on the Hawaii-to-Guam leg of their long flight to the Far East. (Photo by Ray Holt via author.)

This Starfighter was part of a flight that protected a Silver Dawn C-130E flying command post over the Gulf of Tonkin. Escorting Starfighters were great deterrents to MiGs, but they had short legs and were constantly in need of tanker support, especially on missions that took them into the North. (Photo by Rod Trimble via author.)

selection. On this mission, two A-1Es worked an area, and they called us in to assist. It was an ammunition storage site, and its only entrance was in the side of a steep hill.

"I was loaded with finned napalm canisters, which allowed me to deliver the ordnance from a 30-degree dive. I lined up with the opening in my sights, and at the right moment, I released the napalm. Seconds later, the A-1s reported that my load went straight into the entrance. At about the time they told me about it, huge secondary explosions went off inside the cave. What a way to finish my hundredth, and final, mission!"

All the aircraft that could deliver napalm and served in Vietnam carried one of two canisters types: finned and unfinned. The latter tended to tumble as they fell, and they were most effective in relatively flat areas where there were few trees. When dropped over thick jungle canopy, they were more than likely to explode in the treetops and not do much ground damage. The finned type usually hit where it was aimed or was close, so it was better for targets that required more precision.

In addition to being able to deliver napalm, the Starfighter carried larger bombs such as the 750-pound GPs. Capt. Marvin Roupe flew a memorable mission with this ordnance; he relates: "Our little Starfighters could carry two, 750-pound conventional bombs, and on many occasions, we were assigned bombing missions against ground targets up north. One day, just after my wingman and I had established ourselves on a vector to our assigned target, the ground controller told us to divert to a much more critical target.

"The enemy had moved artillery and antiaircraft guns into position overnight, and they had a unit of our ground troops pinned down in a valley and in a very precarious position. We immediately picked up our new vector and headed in to see if we could help. When we arrived on the scene, I could see it would not be easy. The enemy forces had dug in on a hillside, and our only access route meant we would have to lay our bombs on a downhill run, which would increase our chance for error.

"The little F-104 was a really stable bombing platform, however, and I elected to drop our bombs one at a time, rather than letting them both go at the same time; this would give each of us two chances of taking out the target. I rolled in on the first run and put the 750-pound bomb dead-on a bunker. Then my wingman did the same thing. At that time, we caught a lot of antiaircraft fire, which indicated we still had work to do, so we went around again and lined it up. Our second passes were just as effective as the first, and we later found out that we had nearly wiped out the emplacement. In any case, the friendlies on the ground came out and mopped them up for good. This was the single most satisfying mission of the 100 I flew in Vietnam."

During the Starfighter's operational years, the public always seemed to think that the F-104 was designed as a high-altitude bomber interceptor. According to some of the pilots who were involved in the early testing and knew its designer, Kelly Johnson, this just wasn't the case. It was designed as an air-superiority fighter with a secondary ground-attack capability. This was proven many times during its deployment in the Vietnam War.

Capt. Tom Delashaw, one of the more experienced F-104 pilots, reinforced this by saying, "The Starfighter's high speed and simplicity of systems allowed it to reach targets at 250 nautical miles from Da Nang within 40 minutes of an alert, and this included the 10 minutes it took for pilots to reach their aircraft from Ops and take off. This fast reaction time made it a favorite of the FACs, especially when the aircraft were already airborne and in the general area!"

Starfighter pilot Lt. Jim Trice flew out of Udorn and is here shown next to his *Pussycat*. Soon after this photograph was taken, the Starfighter was pulled out of Vietnam. (Photo by Rod Trimble via author.)