

Combat Aircraft recalls the little-known combat exploits of the US Air Force's F-104 Starfighter, which enjoyed two successful periods deployed at the height of the war in South-east Asia.

REPORT
Warren Thompson

LOCKHEED'S CHIEF ENGINEER Clarence 'Kelly' Johnson went to Korea in December 1951. He needed to find out what kind of fighters pilots wanted. At the time, the MiG-15 was providing the main opposition for the US Air Force's F-86. In some respects the MiG was superior to the more complex Sabre, and it had several features that the American jets lacked, including cannon armament. Above all, the pilots were after a small and simple aircraft with excellent performance. When Kelly left he immediately started work designing a new fighter. His plan was to create the lightest, most aerodynamically efficient airframe possible around a single, powerful engine — the General Electric J79. This would offer performance that far outstripped the aircraft then in service. The design was presented to the air force in November 1952 as a replacement for the existing F-100 Super Sabre. Lockheed won the bid and was instructed to produce two prototypes. The first of these XF-104s took to the air in early March 1954. The final production



run would amount to 2,578 F-104s, and ensure a place in aviation history.

Less well remembered is the F-104's stint in South-east Asia (SEA). Eventually, Starfighters would make two deployments to Vietnam between 1965 and 1967.

On April 4, 1965, two North Vietnamese MiG-17s attacked a group of F-105s, escorted by F-100s. The communist jets downed two F-105s and caused major disruption to the mission. Past pleas for F-104s had been rejected and it took this incident to finally wake up the management. Another factor expected to help secure air superiority for the USAF was the increased use of EC-121D College Eye airborne command centers. The next step for the Starfighters was to take part in Operation 'Two Buck', which would bring them into the war in Vietnam.

Operation 'Two Buck'

A rotational tour by the 476th Tactical Fighter Squadron (TFS)/479th Tactical Fighter Wing (TFW), Operation 'Two Buck' began in mid-April 1965 when 24 primary F-104s plus

Right: An example of the flamboyant nose art painted on 435th TFS F-104Cs at Udorn, this example being the mount of Maj Bobby Bedsworth. **Bobby Bedsworth via author**

Below: F-104s adopted the SEA camouflage scheme during later deployments. This 435th TFS Starfighter is set up for a landing at Udorn following a check flight with no ordnance or external fuel tanks attached. **Bobby Bedsworth via author**

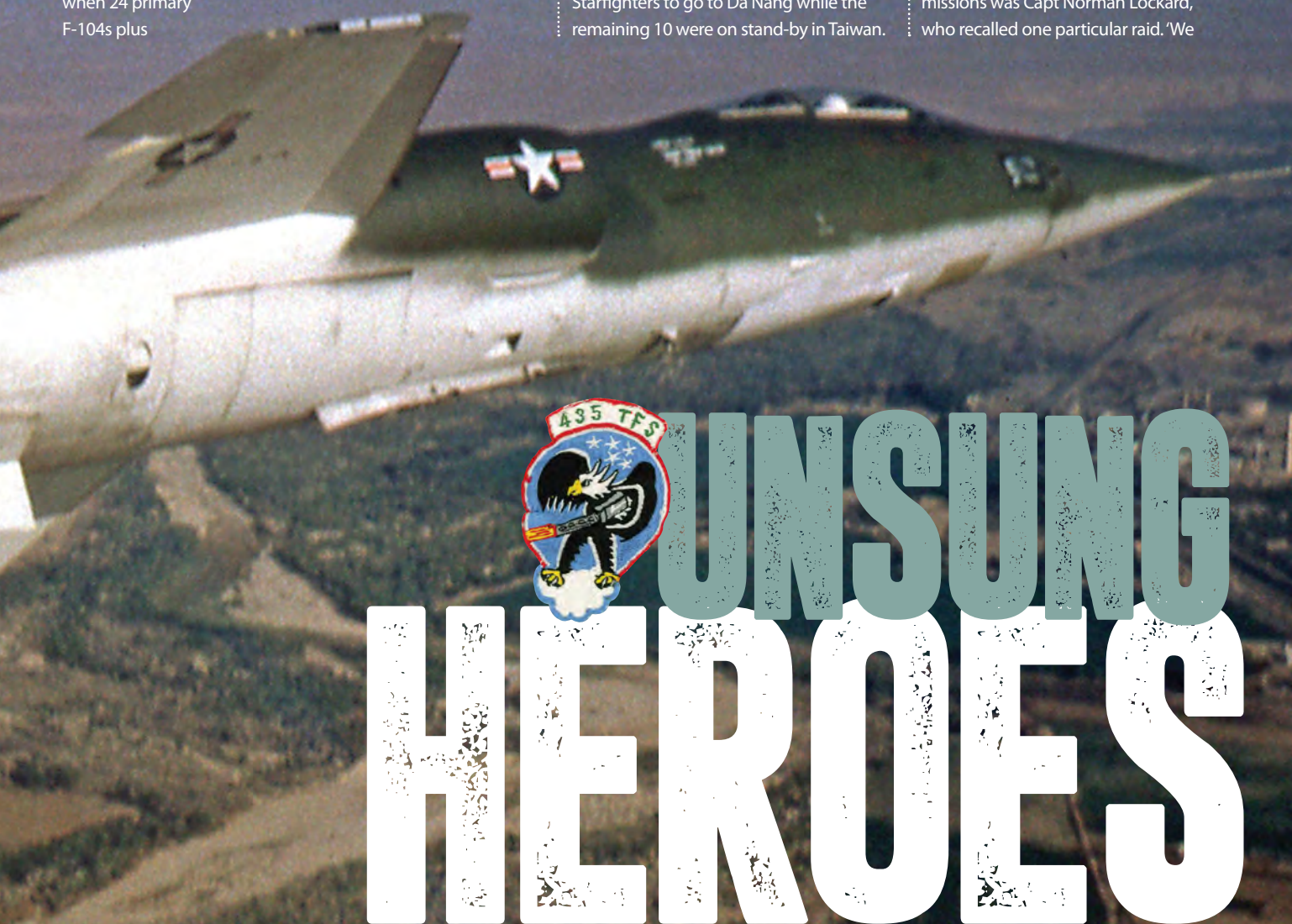


four spares launched from George Air Force Base, California, for a stop-over at Hickam AFB, Hawaii. The second leg of the flight was to Guam. From there, the jets launched for Kung Kuan Air Base in Taiwan. On arrival the squadron was told that Kung Kuan would be its main operating base (MOB) and Da Nang AB the forward operating base (FOB). Flying from Da Nang, operations would be intense. For that reason, the original plan called for 14 Starfighters to go to Da Nang while the remaining 10 were on stand-by in Taiwan.

Four to six aircraft were rotated to South Vietnam every 10 days to keep the force at full strength.

The basic mission of the 476th TFS at Da Nang was to maintain air superiority over North Vietnam. This was accomplished primarily by flying escort sorties and 'MiG screen' sorties. Another of the early duties for the Starfighter was to hit known Viet Cong concentrations.

One of the pilots who flew these missions was Capt Norman Lockard, who recalled one particular raid. 'We



UNSUNG HEROES

“Our little fighters could carry two 750lb conventional bombs and on many occasions we were assigned missions against ground targets up north

Capt Marvin Roupe



were attacking a Viet Cong stronghold in Kontum Province where fuel and ammunition was stored. We had a total of three Starfighters lining up to drop bombs on the storage facility. We lined up to drop our bombs and as a result they ignited a chain of spectacular secondary explosions that caused black smoke to rise up over a six-mile radius. I didn't know what we had uncovered but the village must have been a huge storage dump. A report from our pilots confirmed the destruction of 35 buildings, 15 huts and a factory'. When the post-strike reconnaissance aircraft came to record what had happened, all the buildings in the village had been destroyed in the explosion.

Maintenance achievement

The demands on the squadron meant the F-104s kept up a steady pace of operations. With a ground-controlled interception (GCI) system provided by the Soviets, the North Vietnamese were well aware of the Starfighters' presence in theater. Lockheed technical representative Ben McAvoy stated in one of his reports, 'A seven-day work schedule had enabled the squadron to fly 12 aircraft as many as 90 hours per day in support of our mission there. Crew chiefs, maintenance and munitions personnel worked in shifts around the clock. When ground temperatures reach 106° on the flight line at Da Nang, these dedicated troops take a break in the only shade



Above: This pair of Starfighters is riding shotgun on F-105s as they attack targets in North Vietnam. This image was taken in May 1965 and the aircraft belong to the 476th TFS. **Larry Knox via author**

Left top to bottom: The 479th TFW was the dominant provider of Starfighters in Vietnam. This group of F-104Cs is flying in formation near a tanker. **Ray Holt via author**

The flight line of the 476th TFS – the first Starfighter unit into Vietnam in 1965. **Bob Donaldson**

there is — under the wing of an F-104. During the 476th Squadron's tenure in Vietnam, they maintained an outstanding in-service rate of 94.7 per cent. The credit for this achievement went to the maintenance troops.'

With the threat of MiGs greatly diminished by the presence of the Starfighter, Pacific Air Forces (PACAF) looked at other ways of utilizing the aircraft's talents. With air superiority assured, the pilots from the 476th TFS began ranging out into weather reconnaissance and ground attack roles. In October 1965, F-104s from the 435th TFS arrived at Da Nang to assume the mission commitments of the 476th. In all, the unit had flown 1,182 combat sorties, just over half of which were EC-121 escort.

The 435th TFS deployment was cut short when, on November 21, 1965, its F-104s were recalled to Kung Kuan in preparation for redeployment back to the United States. Temporary duty units were to be replaced by permanently based units and the F-4Cs of the 390th TFS assumed the 435th's escort mission at Da Nang. The 435th returned to George AFB, with the final equipment-carrying cargo aircraft landing on Christmas Day, which marked the start of the 1965 Christmas bombing halt.

During the 'Two Buck' deployment, North Vietnamese MiG activity had



Left top to bottom: Capt Morgan Lilly had trouble refueling from the tanker between Clark Air Base in the Philippines and Kung Kwan in Taiwan...

Darrell Hatcher via author

A guard at Kung Kwan AB in Taiwan in May 1965 with a 476th TFS aircraft.

Larry Knox via author

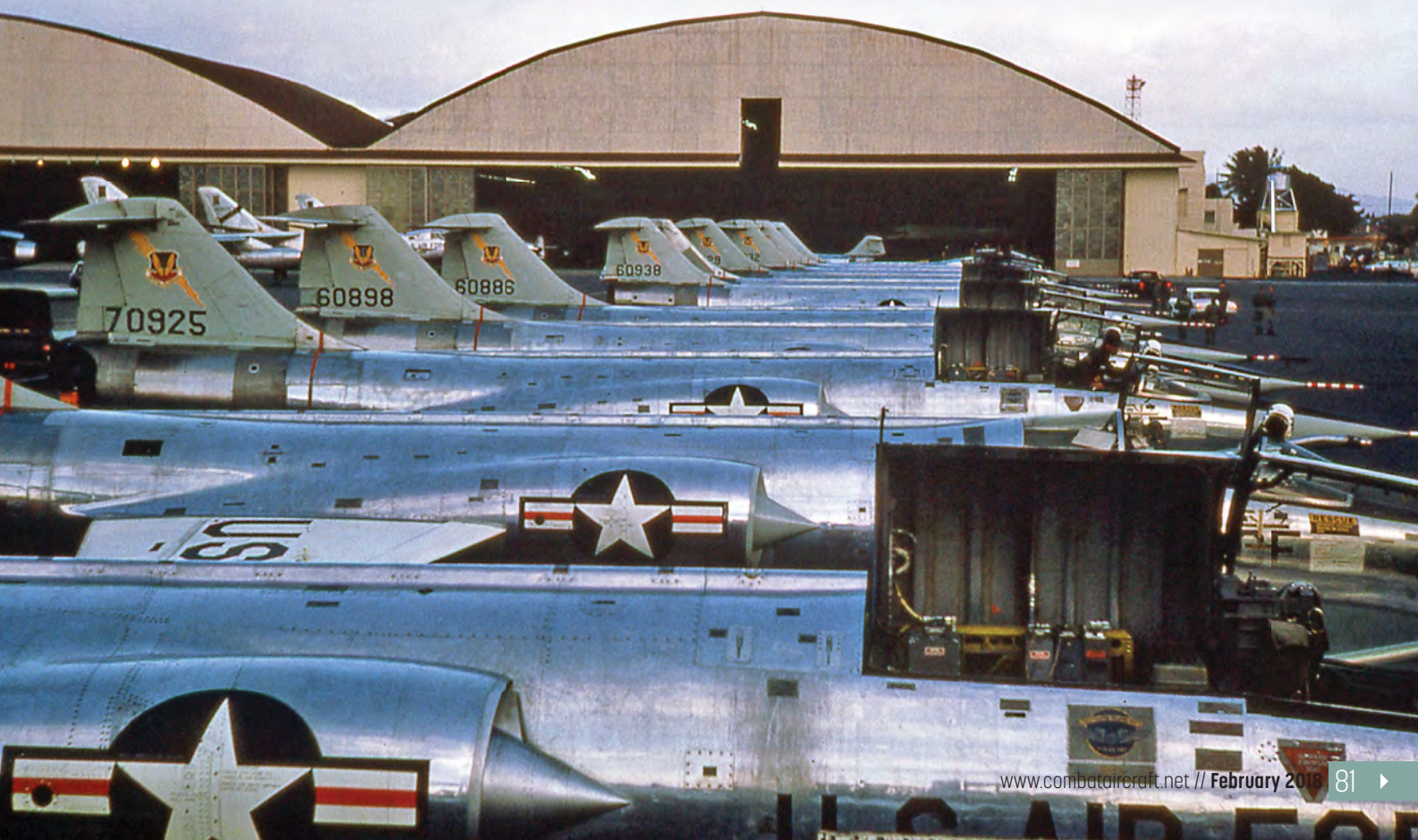
Below: F-104Cs during a stop-over at Hickam, Hawaii, en route to Vietnam for the 'Two Buck' deployment.

Ray Holt via author

decreased to the point where MiGs were not considered a primary threat to USAF aircraft in SEA. Tactical Air Command (TAC) and the State Department recognized the F-104's contribution to the decrease in MiG activity, but PACAF seemed only to dwell on the 'waste' of maintaining single-mission aircraft in SEA. PACAF felt that the F-4C could effectively fill the F-104's MiGCAP and escort roles while providing the capability to deliver a greater tonnage on close air support missions.

More MiGs arrive

During the early months of 1966, MiG operations in SEA began to increase again. In addition, MiG-21s began to be spotted in reconnaissance photos in March that year and were first seen flying over North Vietnam on April 23. Three days later, two MiG-21s attacked a pair of F-4Cs that were escorting an EB-66C over the north. The fact that the Phantoms had no on-board guns became a great concern to the Seventh Air Force (7AF). Air superiority in SEA was once again in jeopardy. A 7AF request for the renewed presence of F-104s was met with approval and within days eight Starfighters from the 435th TFS had landed at Udorn AB, where they touched down on June 6, 1966. At the time, TAC was in the process of phasing out the type. When the 435th's F-104s crossed the international dateline they were automatically attached to the 8th TFW. On June 7 the Starfighters began





flying missions, escorting F-105 strikes in the north.

The F-104's top speed and the simplicity of its systems allowed it to reach targets at least 250 miles (463km) from Da Nang within 40 minutes of the alert. This allowed 10 minutes for the pilot to get to his aircraft and begin getting airborne. Capt Thomas 'Sharkbait' Delashaw of the 476th remembers, 'We were over in Vietnam strictly to counter any efforts by the MiGs to intercept the bombers or EC-121s. The first close encounter involved a pair of

F-104s that were vectored after a MiG-21 had just departed Hainan Island. Directed by Red Crown [a US Navy vessel in the Gulf of Tonkin], the two Starfighters engaged in a supersonic chase over North Vietnam before the MiG-21 crossed over the Chinese border. One of our pilots related to us how the F-104s were rapidly closing on the MiG at Mach 1.4 when they entered the buffer zone and were forced to turn back before crossing the border.

The second encounter occurred during the return from a MiGCAP [MiG combat

Above left to right: The 476th TFS maintained at least 14 jets at Da Nang, here sharing the flight line with F-102s in May 1965. The Delta Daggers were on strip alert in case North Vietnamese aircraft attempted to attack the airfield.

Bob Donaldson via author

A 435th TFS Starfighter awaits its pilot at Udorn in 1967 ahead of an F-105 escort mission.

Bobby Bedsworth via author

Left: Maj Drisko and his crew chief pose with F-104 Snoopy Sniper at Udorn.

Herb Drisko via author

Below: The 476th TFS arrived at Da Nang in April 1965 to begin operations.

Larry Knox via author

air patrol] mission approximately 30 miles [48km] south of Hanoi. Four F-104s were proceeding back to Da Nang low on fuel, when a People's Republic of China J-6 popped out of an undercast only a mile in front of the flight, facing away. Before any of the pilots could react, the J-6 lit both of his afterburners and dove into the clouds. In my opinion, the J-6 'Farmer' had been under GCI control and had been warned of the F-104's approach by ground radar. By 1962, the Starfighter had established a reputation as almost unbeatable in ACM [air combat maneuvering] and throughout 1965-66 we maintained that edge.'

When it came to air-to-air combat, the F-104 was hard to beat with its blinding speed and 20mm Vulcan six-barrel 'Gatling' cannon (with 725 rounds), and it could also carry four AIM-9 Sidewinder missiles. The MiG-17s and MiG-21s took care about who they got into a dogfight with. Fortunately for them, their GCI let them know if an F-104 was in the vicinity. With this in mind, Starfighter pilots increasingly took on air-to-ground and close air support missions.

1st Lt Harold Alston flew several missions heavily loaded with ordnance. He recalls one that gave him a lot of satisfaction. 'This was to be my last mission on September 30, 1966 out of Udorn AB [Thailand]. I was leading four F-104Cs in an armed





“ 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 configuration of tip tanks and gun. My F-104 would not accelerate and I wasn’t catching the rest, so I stroked the burner and got minimal acceleration. But I was going through gas like crazy

1st Lt Ace Rawlins

reconnaissance mission, which was one of my favorites because of the flexibility it gave us on target selection. On this mission, two A-1Es were working an area and they called us to assist. This happened to be a major ammunition storage site with the only opening located in the side of a steep hill. I was loaded with finned napalm canisters, which allowed me to deliver the ordnance from a 30° dive. I lined up with the opening in my sights and at the right moment released my napalm. Seconds later, the A-1s reported my load went straight into the cave’s entrance. At about the time they were telling me about it, some huge secondary explosions went off inside the opening. Fire and smoke billowed out of the opening. What a way to finish off my 100th and final mission.’

Finned napalm was meant to improve accuracy. The bomb kept its course, unlike the unfinned napalm, which could ‘tumble’ — no good when you were bombing

close to friendly troops. In addition, the Starfighter was adept in the delivery of larger stores like the 750lb (340kg) general-purpose bombs.

Capt Marvin Roupe flew a memorable mission with this ordnance. ‘Our little fighters could carry two 750lb conventional bombs and on many occasions we were assigned 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 came on the radio to tell us we were being diverted to a much more critical target.

‘It seemed that the enemy had moved artillery and anti-aircraft guns into position overnight and they had a unit of our ground troops pinned down in a valley. The friendlies were in a very precarious position. We immediately picked up our new vector and headed there hoping we could help. Once we arrived on the scene I could see it wouldn’t be easy. The

enemy forces had dug in on a hillside and our only access meant we would have to lay our bombs in on a downhill run, which would increase our chance for error. Our fighter was really a stable bombing platform, however, and I elected to drop our bombs one at a time rather than let both of them go at the same time. This would give us both two chances at taking out the target. I rolled in on the first run and put my 750lb bomb dead on a bunker. Then my wingman came in and did the same thing. At that time we were catching a lot of anti-aircraft fire, which indicated we still had a lot of work to do. So, we came in again and lined the target back up. Our second passes were just as effective as our first ones and we found out later that we had just about wiped out the emplacement. In any case, our guys were able to come out and mop them up for good. It was the single most rewarding and satisfying mission of the 100 I had flown over in Vietnam.’

This F-104C ran into trouble in the pattern and overran the runway at Udorn. Trimble Collection via author



Deception mission

Operation 'Bolo' took place on January 2, 1967 with Col Robin Olds leading a pack of F-4s deep into North Vietnam. This time, the F-104s would fly escort for the F-4s below the Hanoi area. Olds had devised a plan that would make his F-4s look like bomb-laden F-105s heading into Hanoi. F-104 pilot 1st Lt Ace Rawlins recalls that mission. 'That was our biggest opportunity to kill MiGs and we were all excited. I was a few minutes behind and I remember the need to make our station on time. Our job was to orbit the Black River south-west of Hanoi at about 8,000ft [2,438m] and be ready

if the F-4s got into trouble and needed our help.

'I was the last to get gas and the boss was ready to go. I plugged and got my gas easy enough, but when it came time to push off Col Presiado led the flight north and told me to finish filling up and then catch up with 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 configuration of tip tanks and gun. In the distance, the rest of the flight was getting smaller and smaller and I was afraid of losing sight of them. My F-104 would not accelerate and I

Above: A pair of F-104Cs on an escort mission with F-105s, to protect the 'Thuds' from enemy MiGs while they attacked surface-to-air missile sites.
Ed Skowron via author

Below: The busy flight line at Udorn with pristine F-104Cs ready for action.
Charles Carr via author

wasn't catching the rest, so I stroked the burner and got minimal acceleration. But I was going through gas like crazy. In the excitement of getting left behind and not having enough time to get a full load of fuel, I had let my emotions get the better of me, popped the speed brakes to rapidly disconnect from the tanker and left them on once I was free. I caught up with the flight, but a little short of gas.

'We headed into northern Laos, hit channel 97 [tactical air navigation] and turned toward Hanoi. Then channel 97 went off the air, and for the rest of the mission we were without navigational aids, meaning we did not know exactly



where we were, above an undercast — tops were about 7,000ft [2,134m] — in MiG country, over territory defended by SAMs [surface-to-air missiles]. In the target area, we split into pairs and set up our assigned CAPs. We stayed there for 45 minutes waiting for the call that never came. We orbited the area at 8,000ft, line abreast — maybe 30° back — straining our eyes for any sign of the bad guys. My job was to 'check six' for MiGs, across the flight and down for SAMs coming through the undercast, and to protect my wingman.

'At some point, my wingman had picked up a bogey a long way out. We stroked it up and turned into him but soon lost the dot — it is tough to see a little MiG-21 outside from three miles — and so returned to the orbit. We then headed back to base and it took a little longer because we had been orbiting a little north of downtown Hanoi. On

Clockwise from below: Capt Harold Alston's 100th mission is celebrated by the 435th TFS at Udorn. **Charles Carr via author**

The 435th gets ready to go back home in 1967. It moved to San Juan to turn its jets over to the Puerto Rico ANG. **Art Poe via author**

A table with refreshments laid out to celebrate a pilot's 100-mission tally in September 1966. The jet carries napalm in preparation for its next mission. **Mike Korte via author**

the way back, we kept our Mach up and turned a lot, but we were still lucky no SAMs launched against us. The 1,000ft [305m] above the clouds doesn't provide the required detection and reaction time should a SAM pop up through the undercast. The results of the day were good as Col Olds and the 'Pack' bagged seven MiGs. We 'Zippers' got to participate, but none of the enemy engaged the F-104 and timing was everything. And for the Starfighter, killing MiGs just wasn't on the cards on that mission.'

SAM threat

Starting in summer 1966, the biggest threat to those going close to Hanoi was not MiGs but SAMs. The North Vietnamese had built up a number of SA-2 sites between the demilitarized zone (DMZ) and Hanoi. The S-75 Dvina (SA-2 'Guideline') proved itself deadly for the F-104s — two were shot down by SAMs

while on a MiGCAP mission close to Hanoi on August 1, 1966. SAMs downed another Starfighter while flying a reconnaissance mission at 10,000ft (3,048m) on October 2 that year. The Vietnamese were firing SAMs that could go higher than 50,000ft (15,240m) and cruise at Mach 3.5. As a countermeasure, by late 1966 all F-104s in SEA had received APR-25/26 radar warning receiver gear under Project Pronto. With this in place, they again began flying missions over the north. The aircraft continued escort missions over the Gulf of Tonkin up until mid-1967.

During this second deployment to SEA, the 435th TFS completed 5,306 combat sorties for a total of 14,393 combat flight hours. However, due to increasing parts shortages and unrelenting sortie rates, readiness dropped to 62 per cent. Nevertheless, despite its tired aircraft, the 435th maintained the reputation of the F-104 among the warriors in SEA. 