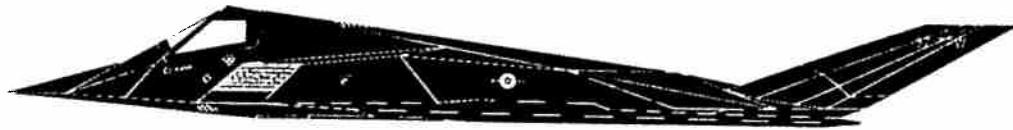
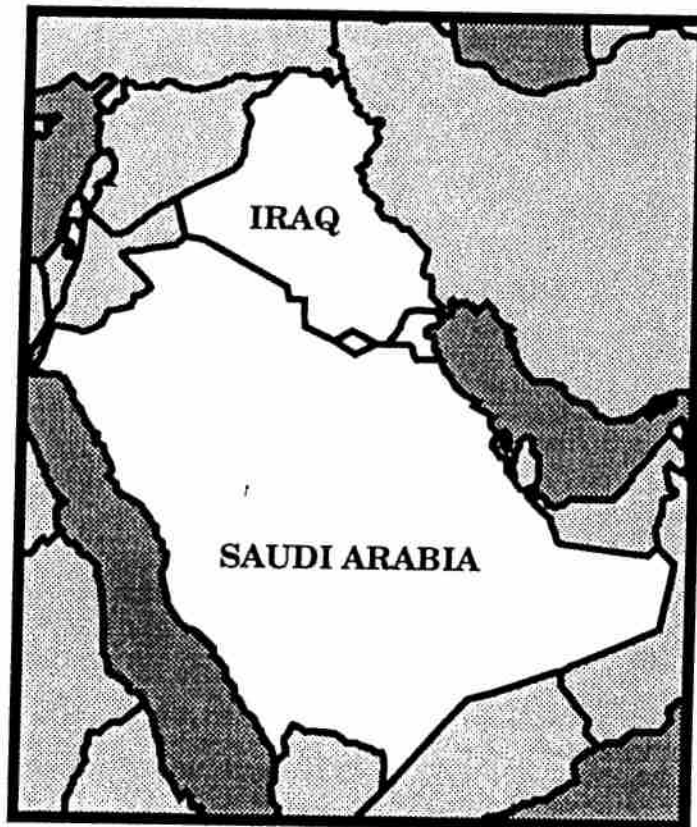


**NIGHTHAWKS OVER IRAQ:  
A CHRONOLOGY OF THE F-117A STEALTH FIGHTER  
IN OPERATIONS DESERT SHIELD AND DESERT STORM**



**SPECIAL STUDY: 37FW/HO-91-1**



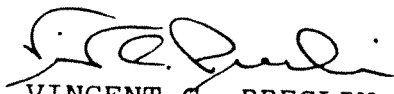
**OFFICE OF HISTORY  
HEADQUARTERS 37TH FIGHTER WING  
TWELFTH AIR FORCE  
TACTICAL AIR COMMAND**

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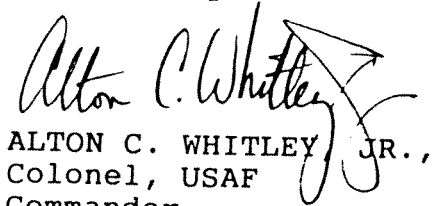
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9 JAN 1992

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## Preface

This unclassified account of the 37th Tactical Fighter Wing's accomplishments during Operations DESERT SHIELD and DESERT STORM was prepared to permit members of the "Team Stealth" community to reflect with pride on their contribution to sustained world peace. They proved their mettle in battle and have earned the title of American warrior. It is a testament to their love for country and their willingness to sacrifice for the ideals they defend every day of their lives. The peoples of the United States and the entire Free World are forever in their debt.

Nighthawks Over Iraq is based entirely on the contingency historical reports developed by SMSgt Phil Myers during his visit to Saudi Arabia as historian of the 37th Tactical Fighter Wing and the mission tally sheets developed by the wing's operations network.

## Introduction

On 5 October 1989, the 37th Tactical Fighter Wing (TFW) relocated to Tonopah Test Range, Nevada, to take up the role as the Air Force's only Stealth Fighter unit. Since assuming the stealth mission, the 37th has twice taken part in combat operations. The wing's F-117As led the attack against Panama on 21 December 1989 during Operation JUST CAUSE. Pinpoint bombardment stunned and disrupted the Panamanian infantry at Rio Hato and paved the way for U.S. paratroopers to land and crush Panama Defense Force resistance. It is important to note that Operation JUST CAUSE did not test the F-117A's stealth technology because Panama had no radar defense network. Rather, the F-117A was picked for this mission on the basis of its bombing accuracy.

The proof of the pudding for stealth technology came during the F-117A's second combat employment. On 19 August 1990, the 37 TFW deployed to Saudi Arabia for Operation DESERT SHIELD. That deployment transformed into Operation DESERT STORM's combat operations against Iraq from 16 January to 28 February 1991.

Operation DESERT STORM featured the F-117A in its first real-world test against a modern, integrated air defense. The "Nighthawks" of the 37 TFW repeatedly flew into and through intense anti-aircraft artillery and surface-to-air missile fire, accurately employing 2,000 tons of precision-guided munitions during 1,300 combat sorties. Wing pilots scored 1,600 direct hits against enemy targets in nearly 400 locations. Without suffering a single loss, or experiencing any damage, they destroyed hardened command and control bunkers, aircraft shelters, production and storage facilities for nuclear, biological, and chemical weapons, and other heavily defended targets of the highest military and political significance.

Employing just 2.5 percent of the USAF assets in theater, the 37th not only led the U.N. coalition force against Iraq, but also hit nearly 40 percent of the Iraqi targets that came under fire in the first three days. Twenty-nine Stealth Fighters hit 26 high value targets on the first night alone. The F-117As were so effective that the Iraqi air defense system practically collapsed. Iraq's command, control, and communications network never recovered.

Thereafter, the wing constantly hit key political and military targets to further weaken Iraqi resistance and to prepare for the ground campaign. Early on, and employing only four F-117As, Stealth Fighter pilots attacked Baghdad's nuclear research facility, obliterating its three reactor cores. Of significance, the F-117A was the only coalition aircraft tasked to fly over Baghdad during the entire conflict.

In another strike, the wing destroyed a whole network of surface-to-air missile sites in central Iraq in the space of one hour, thus enabling B-52s to come in and carpet-bomb military production facilities without fear of interception. Immediately prior to the start of the coalition's ground campaign, the F-117As destroyed a complex of pumping stations and a distribution network that fed oil into anti-personnel fire trenches in southern Kuwait. This attack earned strong praise and the gratitude of the multinational ground forces.

The 37th's performance and devastating air power also drew high praise from military and political leaders. In particular, Senator Sam Nunn, Senate Armed Services Committee Chairman, stated that: "[The F-117A was] the heart of our offensive power and targeting capability." Brigadier General Buster C. Glosson, Fourteenth Air Division Commander, called the wing "the backbone of the strategic air campaign." General Colin S. Powell, Chairman of the Joint Chiefs of Staff, commented: "You are showing the nation what it's all about--the combination of the very highest technology with the very best kind of people we can put together in the field as a team." Secretary of Defense, Richard B. Cheney, stated: "You have gone far beyond anything anybody envisioned. . . It has been phenomenal." Statistically, the 37th Tactical Fighter Wing compiled a record that is unparalleled in the chronicals of air warfare: the "Nighthawks" achieved a 75 percent hit rate on pinpoint targets (1669 direct hits and 418 misses) while crippling nearly 40 percent of enemy strategic targets.

## Chronology of Events

### DESERT SHIELD

#### August 1990

- 17 Aug At 1000 hours, Col Alton C. Whitley, Jr., assumed command over the 37th Tactical Fighter Wing (TFW) from Col Anthony J. Tolin. At 1400 hours, the wing received its deployment orders to Saudi Arabia.
- 18 Aug The 37 TFW began processing people and cargo for deployment to Saudia Arabia for Operation DESERT SHIELD.
- 19 Aug Twenty-one F-117A Stealth Fighters from the 415th Tactical Fighter Squadron (TFS) deployed to Langley Air Force Base, Virginia, completing their first leg to Saudi Arabia.
- 20 Aug The first C-5 touched down at King Khalid Air Base in Saudia Arabia, with Colonel Whitley and Lt Col Ralph W. Getchell III, 415 TFS Commander, on board. They were officially greeted by Brig Gen Abdulaziz Bin Khalid Al-Sudairi, Base Commander, and Col Faisal Eurwailli, Flying Wing Commander.
- 21 Aug Eighteen 37 TFW F-117As arrived from Langley Air Force Base, Virginia, at King Khalid Air Base, Saudi Arabia.
- 23 Aug The 415 TFS launched eight orientation sorties with the Saudis. The host wing used four F-5s, three F-15s, and one Tornado to chase 37 TFW aircraft.
- 26 Aug The F-117A assumed alert duty for the first time in its history.

#### September 1990

- 4 Sep Maj Guy C. Fowl, the deployed Deputy Commander for Maintenance, initiated Shade Tree Aircraft Repair (STAR) procedures to repair broken line replaceable units (or avionics boxes). This was another F-117A first.
- 12 Sep Gen Michael J. Dugan, the Air Force Chief of Staff, visited the wing at King Khalid.

Sep 90 (Cont)

- 22 Sep Two C-141s brought the 37 TFW's avionics maintenance vans from Tonopah Test Range, Nevada, to King Khalid Air Base, Saudi Arabia.
- 23 Sep Colonel Whitley issued Special Order #1 to assign all previously attached personnel to the wing for the duration of Operation DESERT SHIELD.
- 25 Sep General Norman Schwarzkopf, US Central Command Commander, visited the 37 TFW (Team Stealth) at King Khalid Air Base, Saudi Arabia.

October 1990

- 1 Oct The 1880th Communications Squadron became a TAC unit and joined the 37 TFW as the 37th Communications Squadron.
- 3 Oct Colonel Whitley initiated Sneaky Sultan I, a limited operational readiness exercise, to challenge the 37 TFW's response capability.
- 3 Oct His Royal Highness, Prince Sultan Abdul Aziz ibn Saud, Saudi Defense Minister, conferred with Colonel Whitley and viewed an F-117A static display.
- 18 Oct Colonel Whitley returned to the Tonopah Test Range to requalify in the F-117A. The Deputy Commander for Operations, Col Klaus J. Klause, assumed command over the deployed forces.

November 1990

- 12 Nov Colonel Klause initiated Sneaky Sultan II, an exercise to test the wing's ability to recall and generate aircraft on short notice to support D-Day planned operations.
- 15-18 Nov The 37 TFW flew thirty-two sorties for Imminent Thunder, a six day joint and combined exercise that enhanced warfare skills. Headquarters, Central Air Forces tasked coalition air forces to attack a simulated "mirror image" of Kuwait and Southeast Iraq.

## December 1990

- 3 Dec At 1903 hours, the 416 TFS Commander, Lt Col Gregory T. Gonyea, took off from Langley AFB, Virginia, leading an element of six F-117As to King Khalid Air Base. Another six aircraft left 30 minutes later, followed by two successive groups of four on 30 minute intervals. Colonel Whitley flew with the third group on his return journey to Saudi. The entire group of 20 F-117As arrived in Saudi on the following day.
- 5 Dec Central Air Forces underwent an internal restructure resulting in the creation of the 14th and 15th Air Divisions. The Command assigned the 37 TFW to the 14th Air Division.
- 11 Dec Team Stealth received a "how goes it" visit from Lt Gen Charles A. Horner, the Commander, Central Air Forces.
- 14 Dec Representative Dave McCurdy (D-Oklahoma), accompanied by Brig Gen Buster Glossen, 14th Air Division (Prov) Commander, visited the 37 TFW.
- 20 Dec To standardize and stabilize organizational structure, Central Air Forces redesignated all wings as provisional units. Thus, the 37 TFW deployed became the 37 TFWP (Provisional). The Command also established provisional combat support groups under each wing.
- 23 Dec Headquarters, Central Air Forces initiated Threat Condition Charlie to heighten the command's security posture during the Christmas holiday period.
- 23 Dec Colonel Whitley initiated Sneaky Sultan III to evaluate the wing's ability to accomplish tasks outlined in the D-Day air tasking order.

## January 1991

- 5 Jan General Merrill A. McPeak, Air Force Chief of Staff, arrived in an F-15 to visit the 37 TFWP.



Jan 91 (Cont)

- 13 Jan        The 37 TFWP started a gradual load out to prepare for hostilities with Iraq.
- 15 Jan        The Joint Chiefs of Staff declared Defense Condition 2.
- 16 Jan        The 37 TFWP received orders to execute its D-Day tasking against targets in Iraq; however, the first wave of F-117As did not take off until after midnight.

DESERT STORM

Jan 91 (Cont)

- 17 Jan        Day 1, Wave One: At 0022 hours, the 415 TFS launched ten F-117As against a combined integrated operations center/ground control intercept site at Nukhayb, two air defense control sector headquarters and the Iraqi Air Force Headquarters in Baghdad, a joint integrated operations center/radar facility at Al Taqaddum, a telephone center at Ar Ramadi and two in Baghdad, an integrated operations center at Al Taji, a North Taji military related facility, and the Presidential grounds at Abu Ghurayb. The 415th paved the way into Iraq for other Air Force units scoring 13 hits in 17 attempts.

Day 1, Wave Two: The 37 TFWP sent 12 F-117As (three 415th and nine 416th jets) to repeat strikes on the Iraqi Air Force Headquarters, air defense sector headquarters, and telephone exchanges in Baghdad; the Al Taqaddum integrated operations center/ground control intercept facility; military related facilities at North Taji, and the Presidential grounds at Abu Ghurayb. New targets included the Salmon Pak troposcatter station; a television transmitter station, international radio transmitter, and the Presidential bunker in Baghdad; Rasheed Airfield; a joint integrated operations center/ground control intercept site at Ar Rutbah; a troposcatter station at Habbaniyah; and the communications satellite terminal at Ad Dujayl. This wave scored ten hits on 16 attempts.

Jan 91 (Cont)

30 Jan (Cont)

Day 15, Wave Two: Just before midnight, 14 F-117As took off to strike bridges at Al Basrah, Saqash, and Tannunah; airfield facilities at Ali Al Salem, Ubaydah Bin Al Jarrah, and Tallil; and communications systems at Al Basrah, and Um Qasr. The Stealth pilots struck cleanly on 16 of 28 attempts.

31 Jan

Day 15, Wave Three: Of ten scheduled sorties, the 415 TFS lost one due to a ground abort and the 416 TFS lost two due to non-availability of aircraft. Seven jets still launched to bomb stores of ammunition at An Nasiriyah, Ad Diwaniyah, Karbala, Habban-iyah, and Fulluja, as well as chemical and biological facilities at Salmon Pak and Abu Ghurayb. These aircraft achieved 11 hits in 12 tries. Two bombs were not dropped due to inclement weather.

Day 16, Wave One: The wing began alternating between two and three waves per day, sending nine F-117As from the 415 TFS and seven from the 416 TFS on the first wave. Targets included enemy bridges at Al Basrah, Tannunah, Al Madina, and Saqash; communication systems at As Samawah, Tallil, Ad Diwaniyah, and Al Kuwayt; and ammunition stores at Ash Shuaybah, Ad Diwaniyah, and An Nasiriyah. On the way, one 415 TFS jet aborted, but the other F-117As hit on 23 of 28 tries.

February 1991

1 Feb

Day 16, Wave Two: The two squadrons combined operations once again with six aircraft each for the second wave. This wave concentrated on bridges at Al Basrah, Al Qurnah, Ar Rumaylah, and Al Fifi; communications facilities at Al Kut, Al Amarah, and An Nasiriyah; chemical warfare bunkers at Tallil; ammunition storage facilities at An Nasiriyah and Ash Shuaybah; and Ubaydah Bin Al Jarrah Airfield. Stealth pilots hit 13 targets on 23 attempts.

Feb 91 (Cont)

1 Feb (Cont)

Day 17, Wave One: The 37 TFWP formed the evening's first combat wave against Iraqi targets with six F-117As from the 415 TFS and four from the 416 TFS. Roughly two and a half hours into the mission, the Stealth Fighters reached their objectives: bridges at Al Basrah, Al Madina, Tannunah, Ar Rumaylah, and An Nasiriyah; communications installations at Jalibah and Tall Af Lahm; ammunition dumps at Ash Shuaybah and An Nasiriyah; and Ubaydah Bin Al Jarrah Airfield. In this strike, Stealth pilots achieved 18 hits and missed only once.

Day 17, Wave Two: This wave concentrated on communications installations at Al Amarah, Al Kut, Az Zawr, Shaibah, As Samawah, and Al Ahmadi; military headquarters buildings at Az Zubayr; and airfields at Ahmed Al Jaber and Tallil. Six 415 TFS and seven 416 TFS jets joined in the attacks scoring 20 hits and one miss.

2 Feb

Day 17, Wave Three: Five F-117As (three 415 TFS and two 416 TFS) attacked Tallil Airfield and ammunition storage facilities at Karbala and Habbaniyah scoring five hits and two misses.

Day 18, Wave One: Poor weather resulted in only two launches against an ammunition storage depot at Karbala. One of the two air aborted, but the other scored two for two against the depot.

Day 18, Wave Two: The 415 TFS and 416 TFS launched a combined attack (six aircraft from each squadron) against hardened aircraft shelters at Ubaydah Bin Al Jarrah Airfield. Stealth pilots scored 11 hits on 13 attempts. Eleven additional drops cancelled due to bad weather.

3 Feb

Day 19, Wave One: Each squadron launched eight F-117As against Baghdad telephone exchanges, highway bridges, and the Nuclear Research Center; Al Taqaddum and Mudaysis Airfields; and chemical/biological warfare facilities at Samarra and Abu Ghurayb. Bad weather limited attack results to 17 hits

Feb 91 (Cont)

3 Feb (Cont)

(mostly on secondary targets) and six misses.

4 Feb

Day 19, Wave Two: The second wave also involved mixed unit operations with six F-117As from each squadron. Stealth pilots attacked chemical warfare bunkers at Samarra and Habbaniyah; a bridge at Ar Ramadi; and unspecified airfield alternate targets. Eight hits, seven misses, and nine no drops evidenced the poor weather wing pilots faced in most target areas.

Day 20, Wave One: The first wave of four 415 TFS and five 416 TFS jets left before sunset to bomb Iraqi communications (primarily radio and television) sites at Az Zubayr, Al Kuwayt, Ar Rawdatayn, Al Jahrah, and An Nasirayah. The pilots successfully dropped 14 bombs on target; four others missed.

Day 20, Wave Two: The two squadrons combined forces for strikes against chemical warfare bunkers at Samarra. Additional tasking featured hits on the Ministry of Defense, Air Force, and Intelligence Service Headquarters in Baghdad; military related facilities in North Taji; a biological warfare facility at Abu Ghurayb; and a chemical warfare facility at Habbaniyah. Thirteen jets posted 19 hits and five targets missed.

5 Feb

Day 20, Wave Three: Five 415 TFS and four 416 TFS aircraft joined in a concentrated attack against the chemical and biological warfare research laboratories at Salmon Pak. Independent operations on the part of the 416 TFS squadron featured strikes on the short-range ballistic missile assembly plant in Baghdad and the Presidential grounds at Abu Ghurayb. Unilateral 415 TFS strikes pasted the Iraqi Air Force Headquarters in Baghdad. Bombing results reflected 16 hits and four misses.

Feb 91 (Cont)

5 Feb (Cont)

Day 21, Wave One: Six 415 TFS and four 416 TFS jets attacked various missile production and launch facilities. Pilots of the 415 TFS struck production targets in Al Maiden and Baghdad while the 416 TFS went after launch sites at Iskandiriyah and Al Taqaddum. Both squadrons mounted attacks on the steel fabrication plant at Taji. Wing aircraft released 17 of 18 bombs (one no drop) and scored 17 direct hits. One aircraft aborted.

Day 21, Wave Two: For this offensive, Headquarters Central Air Forces tasked the 37 TFWP to send 12 F-117As (six from each squadron) against hardened aircraft shelters on Balad Airfield. Also on the agenda were a telecommunications center at Jenoub; the Al Jumhuriya fiber optics bridge; a biological warfare facility at Taji; and several key targets in Baghdad, including an ammunition depot, the Ministry of Military Industry, and the headquarters buildings for the Iraqi Intelligence Service, Security Service, and Republican Guard. Stealth pilots hit their targets 18 times in 20 attempts.

6 Feb

Day 21, Wave Three: Twelve F-117As (six from each squadron) accomplished this early morning raid on enemy chemical and biological warfare targets at Salmon Pak and Samarra, and ammunition depots at Tikrit and Kirkuk. Pilots racked up 16 direct hits and five misses.

Day 22, Wave One: Hardened aircraft shelters, ammunition stores, the fuel farm, and the main runway at Rasheed Airfield became the objects of attention on this raid as six pilots of the 416 TFS and four of the 415 TFS squadrons crippled yet another cog in the Iraqi war machine. Fifteen direct hits, two misses, and three no drops for bad weather left a memorable impression on Iraqi airmen at Rasheed.

Day 22, Wave Two: The wing sent 14 jets (eight 415 TFS and six 416 TFS) to attack

Feb 91 (Cont)

6 Feb (Cont)

possible chemical warfare sites at Habbaniyah, the Saddam International Airport, communications and Presidential facilities in Baghdad, and a newly built airfield at Wadi Al Khirr. Above the designated targets, the pilots lashed out with uncanny accuracy, hitting 26 of their 27 targets.

7 Feb

Day 22, Wave Three: For the third wave of the day, the wing cut its sorties to ten. Once underway, four 415 TFS and six 416 TFS F-117As went after the Baghdad nuclear reactor, the Habbaniyah Airfield, a biological warfare facility at Taji, a Baghdad petroleum refinery, and an ammunition storage depot at Latifiya. At the targets, the pilots scored 15 hits in 20 attempts.

Day 23, Wave One: Twelve jets (six from each squadron) took off to attack communications sites in Ar Ramadi, Sawaij Ad Dacha, and Al Kuwayt; the Balad Air Defense Operations Center; the Presidential command, control, and communications bunker; the Air Force Air Defense Headquarters and Ministry of Industry in Baghdad; an integrated operations center and radar facility at Karbala, and the Salmon Pak troposcatter station. At their targets, Stealth pilots enjoyed great success bombing 20 targets and achieving direct hits on 18.

Day 23, Wave Two: Another 12 F-117As, (six from each squadron) participated in the day's second wave. This attack converged on the chemical warfare facilities at Samarra where the pilots dropped 22 bombs with calamitous effect; only three missed their mark.

Wave 2, Milestone Event: A 416 TFS pilot, Capt Scott Stimpert achieved a milestone for the 37 TFWP as he delivered the 1000th bomb against Iraq in Operation DESERT STORM. Captain Stimpert's mission took him over the Samarra chemical warfare weapons bunkers where he successfully dropped two bombs.

Feb 91 (Cont)

8 Feb

Day 23, Wave Three: The wing decreased its sortie load to ten jets for the third wave. For target objectives, the wing again sent a few aircraft to Samarra while others went to Kirkuk to attack an ammunition depot. The squadrons also hit Iraq's K-2 Airfield, a pumping station, a signals intelligence facility at Ar Rutbah, and a radio relay station at Ar Ramadi. Target evaluations revealed a tremendous success--18 hits in 18 attempts: 100 percent efficiency.

Day 24, Wave One: Six pilots and F-117As from each squadron traveled to Tallil Airfield to once again attack various bunkers. At Tallil, the pilots dropped 20 bombs perfectly onto their targets. Four bombs missed the mark.

Day 24, Wave Two: Twelve more F-117As, with six again from each unit, participated in the second wave. The pilots headed for their objectives: targets at the Rasheed and Al Taqaddam Airfields; a liquid fuel rocket facility at Shahiyat; and a motor production plant and chemical warfare production factory at Habbaniyah. The results were almost as gratifying as the first wave's outcome with 18 hits in 22 attempts.

9 Feb

Day 24, Wave Three: For this wave, the wing dropped its mission load to ten sorties, four by 415 TFS pilots and six by 416 TFS pilots. All ten then traveled to Samarra to assault chemical warfare bunkers. This wave achieved the greatest success of the day by knocking out sixteen out of seventeen targets. Aircraft S.N. 790 returned to base and blew a nose wheel tire on landing. Pieces of the tire damaged the left and right E-bay panels and three probes.

Day 25, Wave One: Attacks on the enemy targeted possible chemical warfare production facilities at Habbaniyah; an aircraft engine repair and test factory at Al Taji; bridges at Ash Shuad and Baghdad;

Feb 91 (Cont)

9 Feb (Cont)

communications sites at Balad, Baghdad, and Injanah; and integrated operations centers at Al Amarah and Al Kut. Over the targets, both squadrons (six aircraft of the 415 TFS and four of the 416 TFS) had a good night, registering 11 hits in 17 attempts.

Day 25, Wave Two: About three hours after the first wave took off, the wing launched six 415 TFS and eight 416 TFS F-117As. 415 TFS pilots concentrated on various surface-to-air missile sites and the Shab Al Hiri tropospheric center, while the 416 TFS assailed a suspected missile facility at Ash Sharqat, the Ministry of Military Industry in Baghdad, and the Al Yusufiyah military facility. At their assigned objectives the pilots executed flawlessly, achieving 24 hits in as many attempts.

10 Feb

Day 25, Wave Three: The last wave of the day featured ten F-117As striking ammunition depots at Kirkuk and Qayyarah West and the Qayyarah West Airfield. Six 415 TFS and four 416 TFS jets produced six hits, three misses, and nine no drops for bad weather.

Secretary of Defense Richard B. Cheney and General Colin Powell, Chairman of the Joint Chiefs of Staff, visited the 37th TFWP. Secretary Cheney commended the wing for doing a great job and for exceeding all expectations.

Day 26, Wave One: The 415 TFS and 416 TFS squadrons launched four and six F-117A Stealth Fighters, respectively, to bomb Iraqi surface-to-air missile sites, exclusively. Al Taji, Saad, Baghdad, Samarra, and Al Iskandiriyah all felt the destructive power of Stealth fighter munitions. Stealth pilots made 18 direct hits in 20 attempts.

Day 26, Wave Two: The two Stealth squadrons increased their pressure on Iraq's military in the second wave. Eight F-117As from the 415 TFS launched attacks against the Taji armored vehicle repair facility,



Feb 91 (Cont)

11 Feb

Saddam International Airfield buildings, and the Latifiya liquid propellant plant. Meanwhile, six 416 TFS pilots went after the signals intelligence center at Al Taqaddum, hardened shelters on Saddam International Airfield, surface-to-surface missile production facilities at Latifiya, and the Al Haqlaniyah radio relay station. Pilot effectiveness dropped slightly in this wave based on 19 hits and six misses.

Day 26, Wave Three: The 415 TFS and 416 TFS launched four and six F-117As, respectively, towards a different target set. This wave primarily focused on Iraqi communications centers at Salmon Pak, Al Jahrah, Aydahah, Al Basrah, Al Kuwayt, and Shaibah, but in addition the jets dropped bombs on a commando camp at Al Jahrah. This wave achieved the night's greatest success with 18 targets hit in 20 attempts.

Day 27, Wave One: The 415 TFS led off with six F-117As, while the 416 TFS followed in the takeoff sequence with four more jets. Once in the air, the Stealth aircraft winged their way towards the evening's first targets: the airfield and ammunition stores at Qayyarah West and the ammunition stores at Kirkuk. The pilots registered impressive results with 17 hits in 20 tries.

Day 27, Wave Two: The 416 TFS dispatched nine F-117As to bomb hardened aircraft shelters at Kut Al Havy and Ubaydah Bin Al Jarrah. Additional bombing raids laid waste to the Iraqi Intelligence Services, Ministry of Information, and Ba'ath Party Headquarters. The 415th sent six jets to bomb hardened aircraft shelters at Qalat Salih Airfield and Kut Al Havy. Pilots involved in this wave registered 23 hits and four misses.

12 Feb

Day 27, Wave Three: Six 415 TFS and four 416 TFS jets worked in concert, bombing hardened aircraft shelters at Ubaydah Bin Al Jarrah Airfield, Saddam International

Feb 91 (Cont)

12 Feb (Cont)

Airfield, the Baghdad Military Intelligence Headquarters, the Iraqi Central Intelligence Agency, the Abu Ghurayb command, control, and communications bunker, and the Ministry of Information and Culture. The pilots again demonstrated the effectiveness of the Stealth Fighter by striking 17 targets in 19 tries.

Day 28, Wave One: This wave's objectives included military related facilities in North Taji, and the Iraqi Air Force Headquarters Building, a conference center, radio relay station, and Ministry of Defense building in Baghdad. The 415 TFS handled this tasking independently, scoring 15 direct hits in 16 attempts.

Day 28, Wave Two: A larger wave continued the night's assault against Iraqi targets. Eight 415 TFS and six 416 TFS jets took part in the evening's work. The 415 TFS bombed a fighter direction post/interceptor operations center at Al Kut; various radio, television, and communications centers; and the headquarters for military intelligence and the Iraqi Central Intelligence Agency in Baghdad. Pilots of the 416 TFS delivered weapons on communications centers too, but they also hit the Balad alternate air defense operations center and the Ba'ath Party building in Baghdad. Wing pilots hit 22 of 24 attempted targets.

13 Feb

Day 28, Wave Three: For the last wave of the day, the wing dispatched four 415 TFS and six 416 TFS F-117As to bomb miscellaneous bridges, a missile site in Al Adbaliyah, a command, control, and a communications bunker at Al Firdos, and various headquarters buildings in Baghdad. Pilots scored seventeen hits in twenty tries.

Day 29, Wave One: Six 415 TFS and four 416 TFS jets went after a military barracks at Al Jahrah, communications facilities at Al Basrah, Ad Darraji, An Naayim, and Al Maqwa, command posts at Hsiu Az Zabi and An

Feb 91 (Cont)

13 Feb (Cont) Naayim, and a commando camp at Al Matla Umm Al Aish. This wave achieved 15 direct scores and four misses.

14 Feb Saudi officials at King Khalid Air Base approved the wing's request to broadcast Armed Forces Radio and Television Station programs.

Day 29, Wave Two: Iraqi military barracks at Dibdibba and garrisons at Al Abrad; communications sites at Al Qashaniyah, Tall Af Lahm, Hsiu Az Zabi, Dibdibba, Baghdad, Jenoub, Maidan Square, Shemal, and Al Hillah; and airfield bunkers at Kirkuk were selected as this wave's targets. The 37th committed 14 F-117As (six from the 415 TFS and eight from the 416 TFS) to the attack. Over the targets, the pilots precisely dropped 17 bombs and missed with three others.

Day 29, Wave Three: This night's final wave concentrated on communications sites at Al Hillah, Al Kut, Baghdad, Al Qashaniyah, Al Basrah, and Az Zubayr; a radar site at Ash Shuaybah; and the Navy Headquarters at Basrah. The jets delivered 13 hits in 18 tries.

Day 30, Wave One: No rest for the Iraqi military machine this night as the 37 TFWP routed ten F-117A sorties over enemy targets in the first of three waves. The first wave chiefly attacked hardened aircraft shelters at Al Asad and Shayka Mazhar Airfields, along with a surface-to-air missile site at Shayka Mazhar and a rocket motor test facility at Al Musayyib. Stealth pilots struck successfully on 15 of 18 attempts.

Day 30, Wave Two: The wing launched 14 F-117As against a possible nuclear facility at Tarmiya, Rasheed Airfield, Karbala and Taji ammunition depots, Dibdibba command post, and communications sites at Al Basrah, Tall Af Lahm, Jalibah, and Sayyidaat. Pilots scored 22 direct hits in 25 attempts.

Feb 91 (Cont)

15 Feb

Day 30, Wave Three: Ten more sorties closed out this day of combat for the 37 TFWP. Four 415 TFS jets bombed communications sites at Al Zubayr, As Shubar, An Nasiriyah, Al Kut, Al Basrah, Ar Rumaylah, and Ad Darraji while six 416 TFS aircraft attacked an assortment of targets, including the military garrison at Al Abrad, a radar facility at Ash Shuaybah, and communications sites at Al Basrah, Al Rubishin, Al Kut, Al Amara, Qualat Salih, Dibdibba, and As Zubayr. Stealth pilots scored 16 hits and two misses.

Day 31, Wave One: Six 415 TFS aircraft went after Baghdad's aircraft repair depot, the Salmon Pak chemical/biological facility, a possible Scud missile production facility at Basrah, and two surface-to-air missile sites. The 416 TFS also directed four planes to five missile sites, the Salmon Pak chemical/biological research plant, and the Batra probable missile production site. Over their appointed targets, the F-117A pilots administered the severest form of punishment--16 direct hits of explosive destruction. Three bombs missed their mark.

Day 31, Wave Two: The night's second wave worked to prevent a raging firestorm. Headquarters Central Air Forces tasked the wing to negate the trench defensive system that surrounded Iraq's troops in Kuwait. As such, the wing sent six 415 TFS and eight 416 TFS Stealth Fighters to take out distribution points and pump stations that could pump oil into the trenches to create a fiery barrier. Stealth pilots also attacked the Mosul missile research and development facility. Wing pilots scored 24 hits in 27 attempts and destroyed the T-junctions, distribution points, and pump stations needed to build an oily inferno.

16 Feb

Day 31, Wave Three: The evening's last wave pitched the 415 TFS squadron against a missile research and development facility and a missile production plant at Mosul.

Feb 91 (Cont)

16 Feb (Cont)

Two jets went after suspected missile facilities at Ash Sharqat and the Shahiyat rocket engine test facility. The 416 TFS concentrated on the latter two targets. Stealth pilots attacked their assigned targets with routine precision--14 direct hits in 20 attempts.

Day 32, Wave One: The 37 TFWP radically altered its flying schedule this evening. Rather than three waves with intermixed squadron forces, the wing set up a wave of 14 jets from each unit. The 416 TFS took off first to conduct strikes on hardened aircraft shelters at three airfields--Tallil, Ubaydah Bin Al Jarrah, and Kut Al Havy. Two pilots also traveled to Al Basra to attack the railroad yard there. One jet air aborted. The other 13 reached their objectives and hit 21 of 24 targets attempted.

Day 32, Wave Two: The 415 TFS launched its 14 jets some two hours after the 416 TFS's takeoff. Four pilots revisited the Al Basrah railroad yard, while others sought out the tactical direction finding site at Dibdibba, radio transmitters, receivers, and relays at Al Jahrah, and a repeater station at As Samawah; the Um Qasr military barracks; and missile support facilities at Al Jahrah. This wave delivered 24 precise hits in 27 attempts.

17 Feb

Day 33, Wave One: For the thirty-third day of Operation DESERT STORM, Headquarters Central Air Forces tasked the 37 TFWP to fly 34 combat missions against Iraqi targets. Ten first wave pilots attacked an ammunition depot and a steel fabrication plant at Taji; surface-to-air missile sites at Saad, Baghdad, and Habbaniyah; chemical/biological warfare research facilities at Salmon Pak; and the new airfield at Wadi Al Khirr. One aircraft air aborted. The remaining nine jets dropped 14 bombs in poor weather conditions, missing with all but five.

Feb 91 (Cont)

17 Feb (Cont)

Day 33, Wave Two: The day's second wave of Stealth Fighters attacked the Salmon Pak chemical/biological warfare research facilities; an arms plant at Al Iskandar-iyah; the Wadi Al Kir Airfield; Taji's surface-to-surface missile storage plant; a Scud assembly factory at Fallujah; and a motor case production plant and an artillery production plant at Habbiniyah. Stealth pilots demolished 23 of 28 possible targets.

18 Feb

Day 33, Wave Three: The night's final wave sent ten more fighters on bombing raids to a Scud plant at Taji, a solid propellant plant at Latifiya, and a probable Scud assembly plant at Fallujah. One aircraft air aborted, but the remaining nine pilots delivered their bombs scoring 14 direct hits and four misses.

The Central Air Forces Commander, Lt Gen Charles D. Horner, escorted four US Senators to King Khalid Air Base to visit the 37 TFWP. These visitors included Senators Sam Nunn (D-Ga), John Warner (R-Va), Daniel Inouye (D-Hi), and Ted Stevens (R-Alaska).

Day 34, Wave One: Pilots of the 415 TFS and 416 TFS set out at dusk to destroy nuclear research facilities in Baghdad. Upon reaching their target, all four 415 TFS pilots found weather obscuring their primary target so they settled for a total of eight direct hits on a road bridge and the Karbala ammunition storage facility. The nuclear research facility proved less deceptive for the 416 TFS pilots as they delivered nine out of ten bombs directly on target. Another 416 TFS aircraft visited the Karbala ammunition storage facility to add two more direct hits to the night's tally.

Day 34, Wave Two: The night's second mission package called for the F-117A Stealth pilots to attack hangers at Baghdad Muthenna Airfield, an ammunition storage dump at Karbala, and the new Iraqi Air

Feb 91 (Cont)

18 Feb (Cont)

Force headquarters in Baghdad. Fourteen aircraft (eight 415 TFS and six 416 TFS) achieved an impressive hit ratio by putting 26 of 28 bombs on target.

19 Feb

Day 34, Wave Three: The third wave featured attacks on Al Asad Airfield and an unidentified tunnel at Al Qaim. Pilots put 14 of 19 bombs on target.

Day 35, Wave One: The night's first wave concentrated on three familiar targets in Iraq: Baghdad's nuclear research facilities; Karbala's ammunition storage facility; and Latifiya's solid propellant plant. Two F-117A's also bombed a suspected biological warfare facility at Latifiya. Stealth pilots scored on 28 of 30 attempts on target.

20 Feb

Day 35, Wave Two: Jalibah Southeast Airfield was the sole target for ten F-117As in the night's second wave. Bad weather inhibited all ten sorties and no bombs were dropped.

Day 36, Wave One: Four pilots of the 415 TFS and six of the 416 TFS attacked strategic railroad bridges in Umm Al Wasum and Al Haqlaniyah, and a superphosphate fertilizer plant in Al Qaim. The 415 TFS took responsibility for targets in Al Qaim, and, upon reaching the phosphate and fertilizer facility, four F-117As put eight bombs directly on target. The 416 TFS pilots flew against the bridges in Umm Al Wasum and Al Haqlaniyah and successfully put nine of ten bombs on their targets. Two of the six 416 TFS pilots also visited Al Qaim, but their bombing attempts were unsuccessful.

21 Feb

Day 36, Wave Two: Targets for this wave included an ammunition storage facility in Ad Diwaniyah, an arms plant in Al Iskandariyah, a rocket motor test facility in Al Musayyib, an ammunition depot in Habbaniyah, and Al Taqaddum Airfield. Pilots of

Feb 91 (Cont)

21 Feb (Cont)

the 415 TFS concentrated on the test facility in Al Musayyib, and achieved a perfect 12 for 12 bombing score against it. The 416 TFS's pilots took on the balance of the night's work and put 14 of 15 bombs on target.

Day 37, Wave One: Radio relays, bridges, bunkers, and an early warning facility were targets for Stealth pilots on this day. In the first wave the 415 TFS sent six F-117As against the Al Taqaddum Airfield, an early warning site at Al Habbaniyah, and communications facilities at Al Amarah and An Nasiriyah. Meanwhile, four 416 TFS jets targeted an international radio communications transmitter in Baghdad, a biological warfare facility at Taji, and a possible chemical warfare production facility at Habbaniyah. 415 TFS pilots put nine of ten bombs on target while 416 TFS pilots scored with eight of eight.

Day 37, Wave Two: Fourteen F-117As attacked suspected chemical and biological weapons storage and production facilities in Habbaniyah and Latifiya; fiber optics repeater stations in Karbala, Tallil, and As Samawah; Al Hillal's radio relay station; and H-2 Airfield. The 415 TFS dropped 11 of 12 bombs on intended targets, while the 416 TFS scored on 13 of 16 attempted strikes.

22 Feb

Day 37, Wave Three: Targets for this night's final attack included a railroad yard, radio communications equipment, and highway bridges at Tikrit; chemical warfare weapons and ammunition storage bunkers at Qayyarah West and Mosul Airfields; the Scud missile plant at Taji; and an underground nuclear facility. Five fighters from the 415 TFS arrived over target only to be plagued with weapons guidance and target identification problems. Of the ten munitions expended, only four found the mark. The 416 TFS had a better time of it, putting seven of eight bombs directly on target.



Feb 91 (Cont)

22 Feb (Cont)

Day 38, Wave One: For wave one of Day 38, Headquarters Central Air Forces tasked the wing to concentrate on a suspected research facility in Baghdad, a steel fabrication plant in Taji, and a suspected Scud missile production facility in Latifiya. The 37 TFWP sent ten aircraft--four 415 TFS and six 416 TFS--to accomplish the task. Upon arriving over Baghdad's research facility, the four 415th pilots and one 416 TFS pilot directed ten bombs to target for a perfect bombing performance. Remaining 416 TFS pilots attacked production facilities in Taji and Latifiya, striking them on seven of eight attempts.

Day 38, Wave Two: A nuclear research facility in Baghdad represented ground zero for fourteen Stealth fighter pilots in the second wave. The 415 TFS successfully unleashed eight F-117As toward Baghdad, while the 416 TFS offered six jets for the attack. One aircraft air aborted enroute to the target, but the remaining 13 pilots reached the nuclear research facility and pounded it with 19 direct hits. Four weapons missed their target.

23 Feb

Day 38, Wave Three: Wing pilots pooled their resources once again and attacked the Iraqi Intelligence and Special Operations headquarters in this night's third wave. Ten jets from the 415 TFS and 416 TFS (four and six, respectively) launched as planned to destroy these strategic targets. One aircraft air aborted. The others flew on to Iraq and struck their targets with 15 direct hits. Only one bomb failed to hit the mark.

Day 39, Wave One: On this day, the F-117A strike force began in earnest to pave the way for a coalition ground invasion of Iraq and Kuwait. Just before sunset, the 37 TFWP began the massive launch that put 31 jets in the air within 44 minutes. In this first wave, the largest Stealth fighter attack to date, pilots concentrated on six different targets: a Baghdad bomb assembly plant at Cardoen, a chemical warfare site

Feb 91 (Cont)

23 Feb (Cont)

at Samarra, a possible nuclear facility in Tarmiya, an arms plant in Al Iskandariyah, and the special security services and regular intelligence services headquarters buildings in Baghdad. Enroute to these targets, one aircraft air aborted; all of the others advanced to their targets and guided 44 of 53 bombs directly on target.

24 Feb

Day 39, Wave Two: The day's second wave featured 37 TFWP attacks on communications equipment and facilities in Iraq and Kuwait. The wing sent four jets from the 415 TFS and two from the 416 TFS to accomplish the task. All six fighters departed as scheduled and successfully arrived over their targets, only to be thwarted by bad weather. Of the 12 bombs carried by the six F-117As, the pilots dropped only four. Three bombs hit their targets: radio relay stations at Ar Rumaylah, Az Zubayr, and Mufrash. The 24 Stealth pilots returned to base with eight bombs still in their weapons bays.

Day 40, Wave One: First wave targets for this night included a probable Presidential facility in Abu Ghurayb; a possible fuze plant in Al Narawan; and a Samarra chemical warfare storage building. The 37 TFWP launched four F-117A Stealth Fighters from the 415 TFS and six from the 416 TFS. After successfully reaching their marks, Stealth pilots struck all three Iraqi targets with 19 of 20 bombs released.

Day 40, Wave Two: The 37 TFWP launched 14 Stealth Fighters to revisit the site of a probable Presidential complex in Abu Ghurayb, a fuze factory in Al Narawan, the special security services facility in Baghdad, and an ammunition depot at Kirkuk. Second wave pilots easily achieved their goals, delivering 18 of 21 bombs on target.

25 Feb

Day 40, Wave Three: For wave three, the 37 TFWP hit the Abu Ghurayb probable Presidential complex and the Baghdad special security services facilities from the prev-

Feb 91 (Cont)

25 Feb (Cont)

ious list again and added the Ab Dalli long-haul radio relay and Al Musayyib rocket motor plant to that list. The 415 TFS sent four fighters to Al Musayyib and Ab Dalli, while six 416 TFS jets struck out at the Abu Ghurayb and Baghdad targets. Weather conditions over Baghdad and Ab Dalli negated bomb release; but Stealth pilots successfully dropped eight bombs for direct hits on the Abu Ghurayb target and three out of four on the Al Musayyib objective.

Day 41, Waves 1, 2, and 3: Headquarters Central Air Forces cancelled all 34 Stealth missions due to poor weather.

26 Feb

Day 42, Wave One: Concentrating on a myriad of targets in Iraq, the wing initiated a 32-turn-32 flying schedule, with each flying squadron contributing 16 aircraft per wave. In the first wave, the 415 TFS managed to launch 14 of 16 aircraft, but unfortunately lost two sorties to aborted air refueling tanker missions. Following several maintenance ground aborts and replacements, the 416 TFS managed to launch 15 of 16 aircraft. Unfortunately, poor weather conditions over Iraq persisted and the wing failed to drop 56 of its 58 bomb payload, and the two that did drop missed.

27 Feb

Day 42, Wave Two: Poor weather continued to inhibit Stealth Fighter operations as the 37 TFWP took position over a Tarmiya rocket facility, a fuse factory at Narawan, the Al Musayyib rocket motor production works, a terrorist camp at Salmon Pak, the Ba'ath Party Headquarters in Baghdad, the Shahiyat rocket test facility, an artillery plant in Habbaniyah, Baghdad's Muthena Airfield, and H-2 Airfield. The wing managed to drop only eight of the 54 weapons it had brought over target, but all eight were direct hits.

Day 43, Wave One: Team Stealth got back on track with ten launches from each fighter squadron and a bomb score of 32 for 32 as

Feb 91 (Cont)

27 Feb (Cont)

they devastated the Ba'ath Party Headquarters and Muthenna Airfield in Baghdad and the Salmon Pak chemical/biological research facility. Weather conditions inhibited the release of three weapons while mechanical faults prevented the use of two others.

Day 43, Wave Two: For the second wave, the 37 TFWP sent ten (five from each squadron) F-117As to destroy a possible missile research, development, and production plant, as well as the rocket motor test facility at Al Musayyib. Stealth pilots achieved 14 hits on 20 attempts at target.

At 2330 hours, Headquarters Central Air Forces canceled the night's third wave. The headquarters also told Colonel Whitley to put future attacks against Iraqi targets on hold, but to stand by in case events dictated a renewed assault.

#### Desert Calm

28 Feb

At 0015 hours, Headquarters Central Air Forces relayed good news: all operations were suspended to give the Iraqis an opportunity to sign a cease fire agreement.