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HISTORY
OF THE
49TH FIGHTER WING (U)
1 JULY 1996-31 DECEMBER 1997

NARRATIVE
VOLUME NO. 1

Assigned to
Twelfth Air Force, Air Combat Command

Stationed at
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Executive Summary (U)

(U) The events of the 49th Fighter Wing (FW), from July 1996-December 1997, were a microcosm of the Air Force itself--varied and busy. When Air Force senior leadership sought an answer to Saddam Hussein's aggression, the 49 FW responded and deployed F-117 stealth fighter power. First, in Operation Desert Strike, September 1996, the Wing deployed its F-117s in a non-stop, 7,990 mile flight to Kuwait. Then again, in November 1997, when Iraq blocked UN inspectors, the nation's leaders called upon the 49 FW to deploy its stealth fighters. Both times, the F-117s stood ready at the front lines, ready to employ their munitions, and return with the familiar call, "bombs on target." However, both times, Saddam Hussein blinked, and the threat of attack was enough to make the Iraqi government comply with United Nations' resolutions.

(U) In many ways, the 49th Fighter Wing was more than the "typical" wing. Not only did the 49th train and employ combat air power with the world's only stealth fighter, but supported other unique missions. The 48th Rescue Squadron deployed three times to Southwest Asia, providing seamless 24-hour combat search and rescue support for operation Southern Watch. Maintaining one of only 29 Air Transportable Hospitals (ATH) in the Air Force, the 49th Medical Group deployed its ATH and 35 personnel to Guyana. Although the ATH was meant to support deployed civil engineers, the mobile hospital served thousands of local nationals in dire need of quality health care. Contributing in nearly ever global contingency, the 49th Materiel Maintenance Group provided expert bare base support numerous times in Southwest Asia, Central America, Africa, and were a key element to the Air Force's newest deployment concept...the Air Expeditionary Force.

(U) As the Air Force streamlined and realigned, so did the 49th Fighter Wing. The Wing bid farewell to the 435th Fighter Squadron and their AT-38Bs, as the Taiwan Air Force pilot training program came to an end. Closing a chapter in Air Force history, in October 1997, the Wing sent its last Air Force F-4Es to the "boneyard", the Aerospace Maintenance and Regeneration Center. However, this was also a time for new missions and challenges. The Air Force F-4Es were replaced with German F-4Fs, as the German

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Tactical Training Center, stationed at Holloman AFB, operated as the only German unit outside its borders. The German Air Force used the open New Mexico skies to train in both the F-4 and the Tornado.

(U) With all these accomplishments it would be easy for a unit to brag. However, following an Air Combat Command Operational Readiness Inspection, it was the inspectors praising the 49th Fighter Wing with comments like, "To date, the best teamwork attitude we've seen in Air Combat Command" and "Teamwork and pride permeated from every organization in the wing, and directly impacted the 49th's warfighting ability." Not only did the 49th receive high praise from the Inspector General, but was recognized with only its fifth Air Force Outstanding Unit Award in the Wing's 57 year history. In the 18 month period of this history, the 49th Fighter Wing faced many challenges, but proved over and over why the United States Air Force was the most professional, respected, and feared air force in the world.

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CHAPTER I MISSION AND ORGANIZATION (U)

MISSION (U)

(U) The 49th Fighter Wing (FW), stationed at Holloman Air Force Base (AFB), New Mexico, supported national security objectives with its F-117A *Nighthawk* stealth capability. The 49th operated under the command and control of Air Combat Command, Langley AFB, Virginia, with an intermediate headquarters of 12th Air Force, Davis Monthan AFB, Arizona. Through the use of the 8th and 9th Fighter Squadrons (18 primary aircraft authorized per squadron), the 49th implemented the Air Force's vision of Global Engagement, providing a core competency known as *Global Attack*: the ability to attack rapidly anywhere on the globe at anytime.¹

(U) Under the objective wing concept, Air Combat Command (ACC) dictated the mission and organization of its wings. As such, the Command directed the following mission statement:²

To execute directed missions designed to identify and destroy enemy forces, supplies, equipment, communications systems, and installations with nuclear (when equipped) or conventional weapons within the design limits of the weapon system capabilities.

¹ Study (U), SAF, "Global Engagement: A vision for the 21st Century," Nov 96, SD I-4; Fact Sheet (U), ACC/PA, "USAF Fact Sheet 96-04, F-117A Nighthawk," Mar 96, SD I-5.

² ACCMD 23-23 (U), "Organization and Mission-Field, Wing/Bomb Wing/Fighter Wing," 14 Jul 93, SD I-6.

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When appropriate, active units will provide for the replacement training of combat aircrews and maintenance personnel, in accordance with prescribed syllabi and directives, for replacement to organizations world wide.³

(U) Further defining its roles, the 49th Fighter Wing published a self-appointed statement in the Wing's 1997 Strategic Plan:⁴

- Mission-ready forces and equipment to meet worldwide contingencies
- The best training for our people and international aircrews
- Quality support for all base personnel, associate units, and the local community⁵

(U) In addition to delivering combat airpower, the 49th Fighter Wing supported other national and command objectives. The Wing provided combat search and rescue capability through the 48th Rescue Squadron's HH-60Gs, used the T-38A to conduct the only F-117A training in the Air Force, trained German Air Force aircrews in the F-4E/F, operated one of only 29 air transportable hospitals in the Air Force, and through the 49th Materiel Maintenance Group, deployed material and personnel in support of global base operations.⁶

(U) As the host unit of Holloman Air Force Base, the 49th Support Group provided security, civil engineers, and all other needed support activities for over 40 tenant units. These units included the German Air Force Tactical Training Center, 46th Test Group, 586th Flight Test

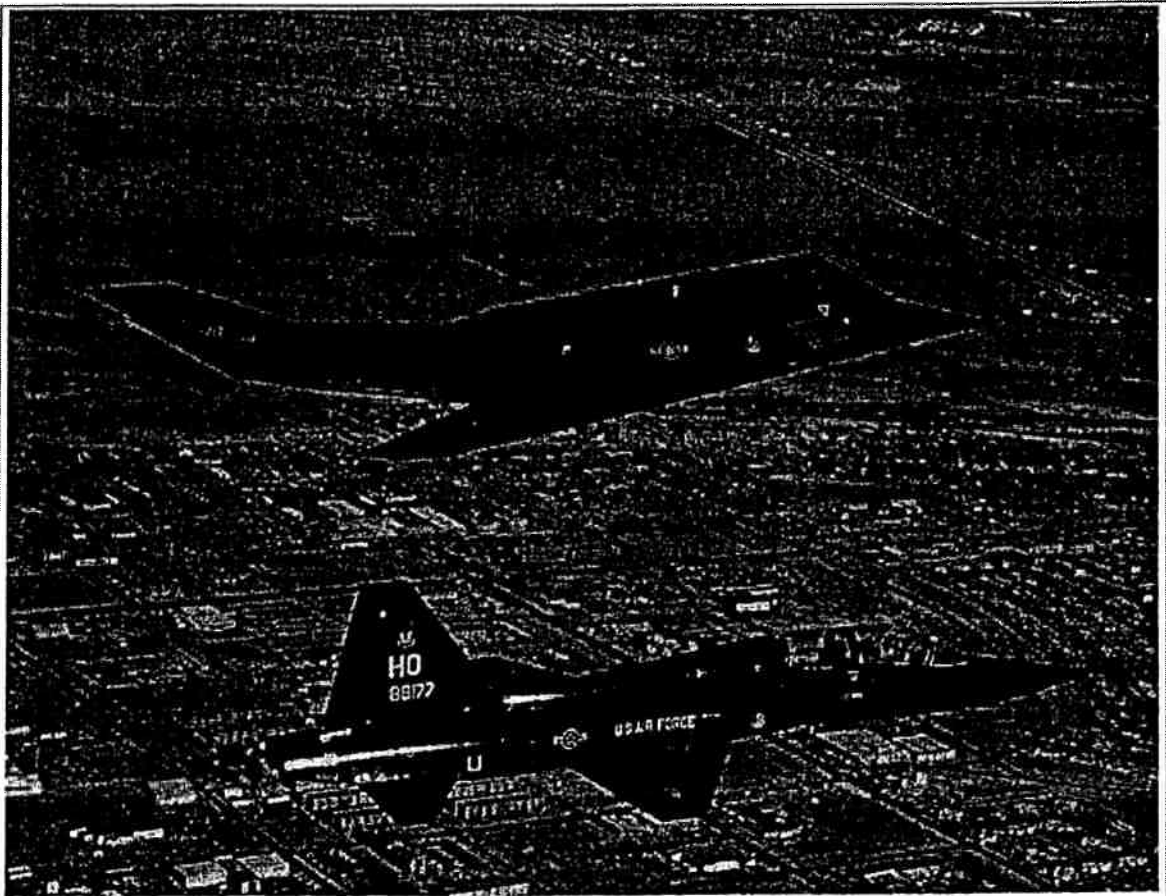
³ ACCMD 23-23 (U), "Organization and Mission-Field, Wing/Bomb Wing/Fighter Wing," 14 Jul 93, SD I-6.

⁴ Plan (U), 49FW/MQ, "Strategic Plan," ca. 1997, SD I-7.

⁵ *Ibid.*

⁶ Fact Sheet (U), 49FW/PA, "49th Fighter Wing," Apr 96, SD I-8.

Squadron, Radar Target Scatter Division, Detachment 1, 82d Aerial Target Squadron, and 4th Space Surveillance Squadron.⁷



(U) The mission of the 49th Fighter Wing included both employing combat airpower with the F-117A, and training pilots using the T-38A.

Designed Operational Capability (U)

(U) Air Combat Command outlined the missions and taskings of its associate units through the publication of designed operational capability (DOC) statements. According to Air Force Instruction 10-201, *Status of Resources and Training System* (SORTS), the primary purpose of the DOC statements was to provide specific measurement standards for

⁷ Brfg (U), 49FW/PA, [Mission Briefing] nd, SD 1-9.

CHAPTER II

OPERATIONS AND TRAINING (U)

Operations (U)

(U) The 49th Operations Group (OG) provided the combat arm of the 49th Fighter Wing. The arsenal of the 49 OG included the F-117A stealth fighter, the nation's only air-to-ground fighter capable of radar evasion at any altitude. Employing this power, the 8th and 9th Fighter Squadrons served as the Group's combat squadrons, while the 7th Fighter Squadron provided combat training.¹

(U) In addition to the F-117, the 49 OG supported combat search and rescue through the 48th Rescue Squadron (RQS). Not only did the 48 RQS serve annual rotations in Southwest Asia, and maintain currency in training, the squadron conducted numerous real-world rescue operations in the United States Southwest.²

(U) Summarizing, the Group's mission was best stated through its goal:

Combat Readiness and Power Projection: Continue to improve our ability to meet any world wide tasking by modernizing, equipping and training to put bombs on target, on time, and providing combat search and rescue whenever and wherever needed.³

¹ Rpt (U), 49OG, "1998 Goals," nd, SD II-1.

² *Ibid.*

³ *Ibid.*

49th Medical Group (U)

NR

non-responsive

Pilot Training (U)

(U) Since Holloman AFB served as the sole home for the F-117, the aircraft did not have a central instruction school, similar to other weapon systems. Rather, the 49 FW, through the 7th Fighter Squadron and 49th Training Squadron (TRS), conducted all F-117 initial, currency, and instructor pilot training. The 7 FS provided flight training while the 49 TRS conducted classroom training. Additionally, the 49th Fighter Wing provided training in the T-38 and F-4.²⁰

(U) ⁹ Initial F-117 qualification was based on a two track system. The first track included flying 14 sorties for 18.7 hours with 28 days of ground training, while the second track required 12 sorties for 16.0 hours with 26 days of ground training. Additionally, in both tracks, students had to achieve a number of hours in the F-117 simulator. However, these students were not untrained pilots, to apply for the F-117

97, SD II-4; Extract (U), USAF/XOO, "AFI 10-201, Status of Resources and Training System," 1 Oct 95, SD I-10.

¹⁹ See Note Above.

²⁰ Table (U), 7FS, "F-117/T-38 Training Syllabi Supported," ca Apr 98, SD II-5.

program a pilot had to be at least a captain with 500 flying hours* in another fighter, attack, reconnaissance fighter, or strategic reconnaissance aircraft. As stated, the 7th Fighter Squadron also conducted instructor pilot training. This block included flying eight sorties.²¹

(U) Since the F-117 was a single-seat fighter, in-flight instruction was given by a T-38, operating as a chase plane. Supporting training for this mission, the 7th conducted the T-38 companion trainer qualification course and the companion trainer instructor upgrade course. In all, the 49 FW trained 72 initial F-117 pilots from October 1996-December 1997. From July 1996-December 1997 the 49 FW also trained 32 US Air Force and 32 Taiwan pilots in the T-38. During that same time the Wing trained 55 German Air Force and 18 US Air Force pilots in the F-4.²²

(U) Many Air Force units suffered a shortage of pilots, as personnel left the military to work for the civilian airlines. This was not a direct problem for the 49 FW. Since the F-117 program only had senior captains and above, this lessened the impact. Indirectly, this trend created a potential problem for the F-117 program. Since so many junior officers elected to sepearate, the Air Force had a shortage of captains. In fact, in FY 1998, the 49 FW received only majors and lieutenant colonels, no captains. This created "top heavy" squadrons. Potentially, the situation could create future problems as those who would've been F-117 captains would not be there in the future to serve as senior leadership. The few captain fighter pilots the Air Force had served in F-15 and F-16

* (U) NOTE: this requirement had been 750 hours, but changed to 500 in June 1997 at the request of the 49 FW.

²¹ Rpt (U), ACC, "F-117A Transition/Requalification Training Course," Nov 97, SD II-6.

²² Telecon (U), SSgt G Henneman, 49FW/HO, with Faye McGee, 49TS/DO1, [Training], 21 Apr 98; Rpt (U), ACC, "F-117A Transition/Requalification Training Course," Nov 97, SD II-6.

units. Since these squadrons also had lieutenants, they needed the captains more to serve as mentors to the younger pilots.²³

Flying Hour Program (U)

(U) Air Combat Command monitored fiscal commitments and helped ensure aircrew readiness through the execution of the flying hour program. Flying hour allocations were determined after a review of mission taskings, aircrew training requirements, unit equipment, aircrew ratio, and other factors. These factors, accumulated to maintain combat capability, were expressed as an aircraft utilization (UTE) rate.²⁴

(U) According to ACC Instruction 11-103, "The execution of individual monthly programs toward this yearly goal is at the prerogative of the unit. Skillful management of the current year's program is required to optimize every budget dollar and flying hour."²⁵ This instruction, and a desire to use every training dollar, caused wings to attempt to fly the complete allocation. However, in an era of increased operational tempo, the Command instructed its units not to "...attempt to zero out unit flying hour allocations. Telling an aircrew to log a certain amount of time on any sortie, especially the last sortie of the FY [fiscal year], is a breach of integrity."²⁶ General Richard E. Hawley, Commander, Air Combat Command, emphasized this point stating "I do not expect units to go to extraordinary measures in an effort to execute

²³ Inw (S/DECL 11 Sep 2006), SSgt G Henneman, 49FW/HO, with Brig Gen D. Larsen, 49FW/CC, "Commander's Interview," 8 Apr 98, (information used is U), SD I-2.

²⁴ Extract (U), ACCI 11-103, Flying Hour Program, 15 Nov 96, SD II-7.

²⁵ *Ibid.*

²⁶ Msg (U), ACC/CC to AIG 7151/CC et al, "ACC Flying Hour Program - FY 97 End of Year Closeout," 191409Z Sep 97, SD II-8.

their annual programs. As I've said before, we will not do this on the backs of our people."²⁷

FY 96 (U)

(U) Air Combat Command issued its "first look" message for the fiscal year (FY) 96 flying hour program to its wings on 28 March 1995. This tentative plan, based upon Congressional budgeting, force structure, and historical data, gave the Command's wings the opportunity to ensure the flying hour program would fulfill training requirements. The tentative outline called for the 49 FW's F-117s to fly 5,768 sorties for 11,016 hours, with an average sortie duration of 1.91 and a UTE rate of 13.35.²⁸

(U) After receiving feedback from its wings, and Congressional funding, ACC issued the FY 96 flying execution order. While the initial look gave an overall outlay for the F-117, the execution order split the stealth's flying between training and operations. Under training, Air Combat Command scheduled the 49th to fly the F-117s for 1,426 sorties and 2,207.2 hours, while flying 5,537 sorties for 9,956 operational hours.²⁹

(U) The first changes with the FY96 program concerned the 435th Fighter Squadron's T-38A trainers. In June 1995, ACC approved a 435 FS request for additional sorties and hours, funding 28 hours more than the FY95 flying hour program. However, with the announced departure of the Taiwan Air Force, the squadron asked in September to reduce the number of sorties from 6,088 to 6,032, and a drop in hours from 5,784

²⁷ Msg (U), ACC/CC to AIG 7151/CC et al, "ACC Flying Hour Program - FY 98 Contract," 161413Z Oct 97, SD II-9.

²⁸ Msg (U), ACC/DOS to AIG 7154 et al, "FY96 Flying Hour Program-First Look," 282058Z Mar 95, SD II-10.

²⁹ Msg (U), ACC/DOSB to IOSS/OSOS et al. "FY96 Flying Hour Execution," 301346Z Jan 96, SD II-11.

to 5,730 (for more on the departure of the Taiwan Air Force and the inactivation of the 435 FS, see Chapter 1). Although the AT-38B program was not scheduled to shut down until February 1997, the squadron projected fewer sorties and hours with preparation for inactivation. Air Combat Command approved the request on 23 October 1995. Nonetheless, the 435th flew more than originally planned, completing 6,092 sorties for 5,786.4 hours.³⁰

(U) The 48th Rescue squadron requested a change in their flying hour program, shifting hours from Southwest Asia to home station flying. The squadron flew less hours than anticipated in SWA, and with their redeployment in September 1996, ACC approved the change.³¹

(U) The most significant changes in the FY96 flying hour program took place within the F-117s. Most notably, the unforeseen Desert Strike deployment necessitated a reduction from the operations area into Southwest Asia. Also, in August 1996, ACC announced the "opportunity" for units to plus-up their flying programs. Additionally, the command stated "Units should expect to fly through the end of September if necessary to complete training requirements. Otherwise, Wed. 25 Sep, should be the last projected flying day." The 49 FW responded with a volley of requests for additional sorties in support of

³⁰ Msg (U), ACC/DOS to 49OG/CC et al, "Taiwan Air Force CONUS Continuation Pilot Training Program," 291315Z Jun 95, SD II-12; Email (U), Lt Col M. Matthews, 435FS/CC, to 435FS/DO Ops Officer, "FHP," 11 Sep 95, SD II-13; Msg (U), 49 OSS/OSOS to ACC/DOSB, "49 FW Taiwan AT-38B of Sorties and Flying Hours Request for FY96," 121600Z Oct 95, SD II-14; Msg (U), ACC/DOSS to 49OSS/CC et al, "49 FW Taiwan AT-38B Change of Sorties and Flying Hours Request," 231604Z Oct 95, SD II-15; Msg (U), Maj W. Gildner, ACC/DOSBB to 49OSS, "49 FW Taiwan AT-38B Change of Sorties and Flying Hours," 20 Nov 95, SD II-16; Msg (U), 49OG/CC to ACC/DOSB, "435 FS Taiwan Flying Hour Plan FY 96," 281700Z Nov 95, SD II-17.

³¹ Msg (U), 49OSS/OSOS to ACC/DOSB, "49 FW Flying Hour Change and Reflow for 48RQS," 062000Z Aug 96, SD II-18.

local operations, airshows, and Southwest Asia. In all, the 49th flew 427.5 more F-117 hours than originally contracted.³²

Table II-1
FY 96 Flying Hour Program (U)³³

Weapon System	Mission	Initial Contract Sorties/Hours	Actual Flown Sorties/Hours
T-38A	TNG	3,016/3,800	3,049/3,830.0
AT-38B	TAF	6,032/5,730	6,092/5,786.4
F-4E	GAF	3,636/4,363	3,648/4,365.2
HH-60G	RES	NA/1,064	740/1,415.0
HH-60G	SWA	NA/760	NA/232.6
F-117A	OPS	5,691/9,845	5,537/9,956.0
F-117A	SWA	Not Scheduled	110/275.3
F-117A	TNG	1,406/2,166	1,426/2,207.2

FY 97 (U)

(U) Air Combat Command and the 49th Fighter Wing executed the fiscal year 1997 flying hour program in the same manner as the 1996 program. The Command issued its "first look" message, giving its wings the opportunity to review and recommend changes. The first look noted that due to financial constraints, hours and sorties listed were less than anticipated; however, they would be increased should additional funding become available. Also, this first look did not account for contingencies and deployments. This initial forecast called for the F-117s to fly 1,300 training sorties for 2,002 hours with an average sortie duration of 1.54

³² Msg (U), ACC/DO to AIG 7151/CC et al, "EOY Training Opportunities," 121437Z Aug 96, SD II-19; Msg (U), 49OG/CC to ACC/DOSB, "49FW Flying Hour Change," 041016Z Aug 96, SD II-20; Msg (U), 49 OSS to ACC/DOSB, "49FW Flying Hour Change," 260745Z Aug 96, SD II-21; Msg (U), 49 OSS to ACC/DOSB, "49FW Flying Hour Change," 260841Z Aug 96, SD II-22; Msg (U), 49 OG/CC to ACC/DOSB, "49FW Flying Hour Change for FY96 FHP," 180824Z Sep 96, SD II-23; Msg (U), 49 OG/CC to ACC/DOSB, "49FW Flying Hour Change for FY96 FHP," 242041Z Sep 96, SD II-24.

³³ Msg (U), ACC/DOSB to IOSS/OSOS et al, "FY96 Flying Hour Execution," 301346Z Jan 96, SD II-11; Msg (U), ACC/DOS to IOSS/OSOS, "FY96 Flying Hour Execution-July 96," 271255Z Aug 96, SD II-25; Msgs (U), 49 OSS/OSOS to ACC/DOSB, [Monthly Flying Hour Updates] Nov 95-Oct 96, SD II-26.

and a 17.75 UTE rate. Flying operational sorties, the F-117s were projected to complete 5,574 sorties for 9,921 hours, with an average sortie duration of 1.78 and a 12.9 UTE rate.³⁴

(U) On 20 December 1997, Air Combat Command issued its FY97 flying hour contract. This contract factored in projected contingencies, including Southwest Asia deployments. Although average sortie durations remained the same for the F-117s, the Command dropped the training UTE rate from 17.75 to 12.04.³⁵

(U) This contract maintained the same number of training sorties and hours projected in the first look. However, the Command subtracted Southwest Asia requirements from operational flying. Therefore, ACC contracted the 49 FW's F-117s to fly 5,329 operational sorties for 9,486 hours; and, 245 Southwest Asia sorties for 436 hours.³⁶

(U) Throughout the year the 49 FW worked with ACC to adjust the program, based on training and operational needs. In all, the command issued seven program changes to the FY97 flying hour program. On 1 April 1997, ACC asked its wings to review their flying hour programs to meet training requirements. The 49th responded on 8 April with a request to decrease HH-60G hours, both for home station and Southwest Asia flying. Additionally the 49 FW requested a shift of 96.8 hours from operations to Southwest Asia; and, the 20th Fighter Squadron asked to return 179 F-4 hours. The Command concurred, and issued its adjusted program on 28 April.³⁷

³⁴ Msg (U), ACC/DO to AIG 7151/CC et al, "ACC FY 97 Flying Hour Program-First Look," nd, SD II-27.

³⁵ Msg (U), ACC/DOSB to AIG 7151/CC et al, "ACC FY 97 Flying Hour Program-FY 97 Contract Allocation," 201124L Dec 96, SD II-28.

³⁶ *Ibid*.

³⁷ Msg (U), ACC/DO to AIG 7151/CC et al, "Evaluation of FY97 Flying Hours," 012030Z Apr 97, SD II-29; Msg (U), 49OSS/OSOS to ACC/DOS, "49FW FY97 Flying Hour Program Adjustment,"

(U) Adjustments continued throughout the year. Most notably, the F-117s and HH-60s flew more Southwest Asia sorties than originally projected, requiring a decrease in home station flying.³⁸ As the fiscal year came to a close, the Wing asked for 22 additional T-38A and 26 F-117 sorties to support scheduled airshows. This increased the F-117 obligation to 5,040 operational sorties for 8,843 hours. However, following the F-117 crash near Baltimore*, and the subsequent grounding of the fleet, the Wing completed the year flying 4,910 operational sorties for 8,648.5 hours.³⁹

Table II-2
FY 97 Flying Hour Program (U)⁴⁰

Weapon System	Mission	Initial Contract Sorties/Hours	Actual Flown Sorties/Hours
T-38A	TNG	2,851/3,592	2,880/3,645.5
AT-38B	TAF	2,273/2,159	2,273/2,161.0
F-4E	GAF	2,637/3,956*	3,149/3,770.6
HH-60G	RES	NA/1,767	741/1,326.4
HH-60G	SWA	NA/465	284/485.8
F-117A	OPS	5,329/9,486	4,910/8,648.5
F-117A	SWA	245/436	628/1,228.8
F-117A	TNG	1,300/2,002	1,273/1,987.6

082000Z Apr 97, SD II-30; Msg (U), ACC/DO to AIG 7151/CC et al, "FY97 Flying Hour Execution," 241955Z Apr 97, SD II-31.

³⁸ (U) Numerous unclassified messages between the 49 FW and ACC/DO concerning flying hour program changes, Dec 96-Sep 97, SD II-32.

* (U) For more information on the F-117 crash, see Chapter 3.

³⁹ Msg (U), 49OG/CC to ACC/DOS, "49FW FY97 Flying Hour Adjustment," 101500Z Sep 97, SD II-33; Msg (U), 49CS/SCBC to 49OG/CCEA, "FY97 Flying Hour Execution-September," 211350Z Oct 97, SD II-34.

⁴⁰ Msg (U), ACC/DOSB to AIG 7151/CC et al, "ACC FY 97 Flying Hour Program-FY 97 Contract Allocation," 201124L Dec 96, SD II-28; Msg (U), 49CS/SCBC to 49OG/CCEA, "FY97 Flying Hour Execution-September," 211350Z Oct 97, SD II-34.

* (U) Hours and sorties for the F-4Es were not included in the contract allocation, these numbers were taken from the first look message

FY 98 (U)

(U) The 49th executed its FY97 program as preparations began for fiscal year 1998. While planners began to project the flying schedule, General Hawley emphasized the importance of programming from ready aircrew program models and not accounting for "fact of life" issues. Although the Commander emphasized he did not expect units to go to extreme measures to zero out the program,

"...your job is to plan an annual FHP [flying hour program] that fully trains your aircrews. When events occur beyond your control, you should return the unused flying hours/sorties....When building your monthly and weekly contracts, I expect you to fully factor the very shortfalls I'm asking you to ignore in planning your annual programs."⁴¹

(U) Following this guidance, ACC issued its flying hour contract on 20 November 1997. The plan called for the F-117s to fly 1,300 training sorties for 2,002 hours with an average sortie duration of 1.54 and a 12.0 UTE rate. Under operations, the F-117s were programmed for 6,401 sorties for 10,875 hours. At the time, ACC did not project a Southwest Asia deployment for the 49 FW; however, with the Wing's deployment in November, the 49th already flew 240 sorties for 376.6 hours in Southwest Asia by 31 December 1997.⁴²

⁴¹ Msg (U), ACC/DOT to ACC/CC to AIG 7151/CC, "ACC Flying Hour Program-FY98 Contract Allocation," 202127Z Nov 97, SD II-35.

⁴² Msg (U), ACC/DOT to ACC/CC to AIG 7151/CC, "ACC Flying Hour Program-FY98 Contract Allocation," 202127Z Nov 97, SD II-35; Rpts (U), 49 OSS/OSOA, "F-117 Monthly Maintenance Summary," Oct 96, Oct 97, Dec 97, SD VI-7.

Table II-3
FY 98 Flying Hour Program (U)⁴³

Weapon System	Mission	Initial Contract Sorties/Hours	Actual Flown Sorties/Hours (as of 31 Dec 97)
T-38A	TNG	3,241/4,084	1,035/1,307.2
F-4F	GAF	3,761/4,513	1,253/1,488
HH-60G	OPS	620/1,681	354/530.8
HH-60G	SWA	123/344	38/50.5
F-117A	OPS	6,401/10,875	1,626/2,877.9
F-117A	SWA	Not Scheduled	240/376.6
F-117A	TNG	1,300/2,002	0/0

Deployments (U)

(U) The 49 FW, in line with the Air Force, continued to support numerous real-world taskings. Not only did the Wing have to do more with less funding, but attempted to balance high deployment rates, lowering the strain on assigned personnel. The demand on personnel to support training exercises and contingency deployments was known as operational tempo (OPTEMPO).⁴⁴

(U) In 1997 the Air Force addressed the problem of a high OPTEMPO. Although the demand for air power, specifically in Southwest Asia, was not going to go away, leadership attempted to lessen the burden. First, ACC outlined a post-deployment stand-down time for personnel returning from deployment. Second, the Command scaled back its self initiated exercises such as Gunsmoke, William Tell, Quick Force, and Air Warrior. Also, the Air Force abolished quality air force

⁴³ Rpts (U), 49 OSS/OSOA, "F-117 Monthly Maintenance Summary," Oct 96, Oct 97, Dec 97, SD VI-7.

⁴⁴ Article (U), ACC News Service, "Update: Initiatives to reduce OPTEMPO," 12 Sep 97, SD II-36.

assessments, and cut operational readiness exercises by 10 percent in fiscal year 1998, and 30 percent in fiscal year 1999.⁴⁵

(U) Nonetheless, the Wing was still called upon to serve in global operations. For example, in an 18 month period, the 49 Security Forces Squadron deployed 455 personnel. Security Police served in worldwide locations ranging from Southwest Asia to Italy to South America. Demands on the 49 SFS were so great, while having to provide security for the F-117 and Holloman AFB, that the squadron implemented a "Ready Program." Under this program, personnel from outside Security Forces received training and manned security police positions at Holloman AFB. On average, a cadre of 90 augmentees served under the Ready Program. Major deployments and exercises supported by the 49 FW are discussed on the following pages.⁴⁶

Southwest Asia (U)

F-117 Deployments (U)

(U) Over five years after the end of the Gulf War, and two years since Iraqi forces encroached on the border of Kuwait, resulting in Operation Vigilant Warrior, Saddam Hussein again aggressively moved his forces in violation of United Nations (UN) resolutions. In late August 1996, an Iraqi mechanized brigade moved above the 36th parallel, towards the city of Irbil. The city of Irbil, a UN safe haven, was contested between two Kurdish groups, the Patriotic Union of Kurdistan (PUK) and the Iraqi-backed Kurdistan Democratic Party (KDP).⁴⁷

⁴⁵ Article (U), ACC News Service, "Update: Initiatives to reduce OPTEMPO," 12 Sep 97, SD II-36.

⁴⁶ Rpt (U), 49 SFS, [Deployment History], 28 Apr 98, SD II-37.

⁴⁷ Article (U), CNN, "US may send more warplanes to Gulf," 30 Aug 96, SD II-38.

(U) At first, Sadddam's troop movements caused a raised eye from military leaders in the United States and Western Europe. However, when Iraqi forces and KDP attacked the PUK on 31 August, US Forces were placed on stand-by, as F-15 and F-16 Air Force units prepared for an Air Expeditionary Force deployment.⁴⁸

received the nickname Desert Strike.

The operation

⁴⁸ Article (U), CNN, "US readies forces in response to Iraqi attack on Kurds," SD II-39.

⁴⁹ Brfgs (S/ DECL X4), JTF-SWA, [Desert Strike Briefings (U)], ca Oct 96, SD II-40.

⁵⁰ *Ibid*

⁵¹ *Ibid*

(U) Also on 3 September 1996, the United States announced the movement of the southern no-fly zone from 32 degrees parallel to 33 degrees parallel. Saddam Hussein responded that he would no longer abide by the no-fly zones, stating "From now on, consider as non exist the damned imaginary no-fly zones above 36 degrees parallel and below 32 degrees parallel."⁵³ Additionally, after the skirmishes in Irbil, Iraqi forces began moving toward the city of As Sulaymaniyah. More importantly, Iraq threatened to shoot down any allied aircraft which flew over Iraqi air space.⁵⁴

U (S)

This was the first such deployment for the Wing, so issues needed to be worked out.

⁵² Brfgs (S/ DECL X4), JTF-SWA, [Desert Strike Briefings (U)], ca Oct 96, SD II-40; Article (U), CNN, "US launches missile strikes against Iraq," 3 Sep 96, SD II-41; Article (U), CNN, "US launches 2nd attack against Iraq," 3 Sep 96, SD II-42.

⁵³ Article (U), CNN, "US launches 2nd attack against Iraq," 3 Sep 96. SD II-42.

⁵⁴ *Ibid.*

(U) Although pilots obviously had Iraq on the front of their minds, they first had to battle the worst New Mexico weather in several months, while performing the first tanker rendezvous. All primary aircraft refueled successfully and the two spare aircraft returned to Holloman AFB. This was not the only storm faced by the pilots, a hurricane moved up the East Coast of the United States, causing the pilots to fly further north. Pilots not only battled numerous weather fronts, but they endured a non-stop flight of over 18 hours, including 16 air refuelings.* Each F-117 used over 100,000 pounds of fuel. The following table shows

⁵⁵ Intvw (S/DECL 11 Sep 2006), SSgt G Henneman, 49FW/HO, with Brig Gen D. Larsen, "Commander's Interview," SD I-2.

⁵⁶ See Note Above; Msg (S/ DECL 11 Sep 2006), ACC/BSD to 49FW/CC et al, [Deployment Order (U)], 120154Z Sep 96, SD II-43; Memo (U), 9FS/DO to 49 OG/CC, "Operation Desert Focus," 19 Dec 96, SD II-44.

* (U) Note: The 49 FW staked claim to this mission as the longest single seat fighter sortie in history.

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the breakdown of each deployed aircraft. [Note: All times listed are local].⁵⁷



(U) The eight F-117s landed without incident at Al Jaber Air Base, Kuwait on 13 September 1996.* Six of the eight aircraft landed "code one"⁺⁺ and all eight received code one designation within two hours of arrival. In less than 48 hours from initial notification eight F-117s stood on the front line of Kuwait, ready for combat.⁵⁹

(U) Hours after the F-117s landed in Kuwait, Defense Secretary William Perry announced he was going to the Persian Gulf to consult with allies on a planned military attack.⁶⁰ Facing increased military

⁵⁷ Memo (U), 9FS/DO to 49 OG/CC, "Operation Desert Focus," 19 Dec 96, SD II-44; Intvw (S/DECL 11 Sep 2006), SSgt G Henneman, 49FW/HO, with Brig Gen D. Larsen, "Commander's Interview," 8 Apr 98, (Information used is U), SD I-2.

⁵⁸ Charts (S/DECL 18 Sep 2006), 49FW/CP, [Flying Summaries (U)] 18 Sep 96, SD II-45.

* (U) For more information on the deployed F-117s see the histories of the 4404th Wing, Provisional.

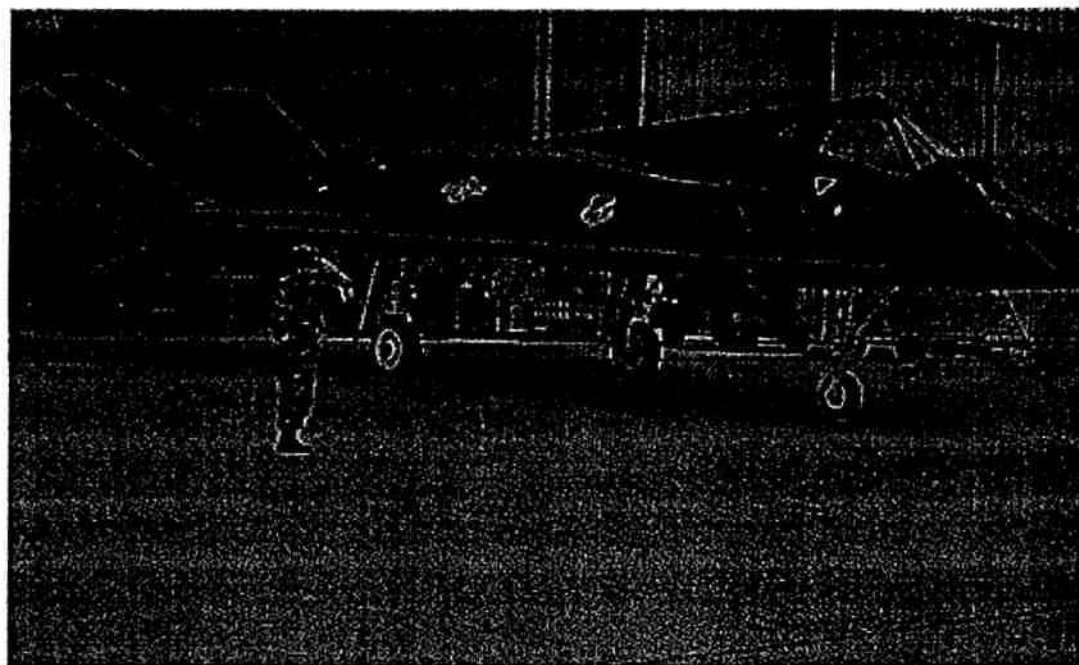
⁺⁺ (U) Code One designated an aircraft as mission ready.

⁵⁹ Memo (U), 9FS/DO to 49 OG/CC, "Operation Desert Focus," 19 Dec 96, SD II-44; Memo (U), 49OG/CV to 49OG/CC, "Trip Report," 23 Oct 96, SD II-46; Article (U), AFNews, "Stealth fighters join force patrolling zone," nd, SD II-47.

⁶⁰ Article (U), CNN, "US dispatches 5,000 more troops to Kuwait for exercises," 13 Sep 96, SD II-48.

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(U) Stealth fighter power deploys. Top: An F-117A takes off from Holloman AFB, bound for Kuwait. Bottom: Moments before a crew chief saluted the departing pilot.

power poised for attack, including the F-117s, Iraqi state television announced the cessation of military actions and called off its threat to shoot down planes over the no-fly zone. However, an Iraqi military spokesman defended their actions stating "We are not here in a game. We are here in defense of rights, authorized under international law, defending our sovereignty and integrity."⁶¹ A US State Department spokesman countered, "[Saddam] has dug himself a very deep hole, and I think he's going to have a long time coming out of that hole."⁶²



(U) For this initially deployed team, crew rest for night missions also proved difficult. Tents failed to block out light making daytime sleeping difficult; and, billeting personnel placed day shift and night shift workers in the same tents. The 9th Fighter Squadron endured these conditions for the duration of the deployment; however, when members of the 8th Fighter Squadron replaced them, they moved directly into trailers previously used by A-10 pilots.⁶⁴

⁶¹ Article (U), CNN, "Momentum toward US strike on Iraq Slows," 13 Sep 96, SD II-49.

⁶² *Ibid.*

⁶³ Intvw (S/DECL 11 Sep 2006), SSgt G Henneman, 49FW/HO, with Brig Gen D. Larssen, "Commander's Interview," 8 Apr 98, SD I-2.

⁶⁴ Memo (U), 9FS/DO to 49 OG/CC, "Operation Desert Focus," 19 Dec 96, SD II-44.

(U) As planners had to determine the number of aircraft deployed, the duration of deployment was also uncertain. However, Secretary Perry cleared any rumors about the 49 FW returning home during a Thanksgiving trip to the region. The Secretary stated that the F-117s



(U) Members of the 8th Fighter Squadron load onto a C-5 at Holloman AFB. The C-5 came from the 437th Airlift Wing, Charleston AFB, South Carolina.

would remain in theater "as long as they are needed."⁶⁵ Secretary Perry went on to state that the F-117s served as a strong deterrence in the region. After the announcement, Gen Larsen informed the Wing that a swapout of personnel would occur so those personnel deployed for Thanksgiving would be home for

Christmas. Therefore, on 11 December 1996, members of the 8th Fighter Squadron replaced the 9th, using the previously deployed fighters.⁶⁶

(U) Although the F-117s were accustomed to the hot, dry desert, the facilities in Kuwait did not sufficiently protect the fighters. The hangars used for the aircraft were little more than tin boxes, whose rear doors wouldn't open and front doors wouldn't close. Because of space restrictions, two F-117s were crowded into each hangar. Since the front doors wouldn't close, the sun absorbed into the black skin of the

⁶⁵ Capt L. Cox, "Perry: F-117As to stay in Kuwait as long as needed," Sunburst, 6 Dec 96, SD II-50.

⁶⁶ Memo (U), 9FS/DO to 49 OG/CC, "Operation Desert Focus," 19 Dec 96, SD II-44; A1C A Cram, "Welcome home 49ers," Sunburst, 21 Nov 97, p1, SD II-51.

Nighthawks, this degraded the aircraft's radar absorbent material and hurt avionics.⁶⁷

(U) The 8th Fighter Squadron returned to Holloman AFB in February 1997. In all, the 8th and 9th flew a cumulative 722 sorties for 1,482.6 hours.⁶⁸ Upon return to Holloman the 49 FW received a personal note from Secretary of the Air Force Sheila E. Widnall:

Dear General Larsen,

I noted the recent return of the 49th Wing from Kuwait and wanted to commend everyone for the superb manner in which they carried out this difficult deployment. You deployed to Al Jaber with little advance warning or preparation. The Wing then operated magnificently for almost six months in an austere location and through the holiday period, the toughest time to be separated from family. However, the presence of your F-117s in the region sent an unmistakable message to the Iraqi leadership and stabilized the tense situation in the aftermath of Desert Strike.

Again, my congratulations and please pass a "job well done" to the men, women, and families of the 49th Wing.

Sincerely,

Sheila E. Widnall⁶⁹

(U) Eight months later, in November 1997, tensions rose again in the region. This time the Iraqi government prohibited UN inspectors access to suspected weapons sites. Iraq threatened the United States, claiming it would shoot down any U-2 spy planes which flew over its airspace. President William J. Clinton countered that Saddam Hussein

⁶⁷ Intvw (S/DECL 11 Sep 2006), SSgt G Henneman, 49FW/HO, with Brig Gen D. Larssen, "Commander's Interview," 8 Apr 98, (Information used is U), SD I-2.

⁶⁸ Chart (U), 49FW/HO, "Deployed Sorties/Hours," ca Feb 98, SD II-52.

⁶⁹ Ltr (U), SECAF to 49FW/CC, nd, SD II-53.

"needs to know it would be a big mistake"⁷⁰ if Iraq attempted to shoot down a US aircraft.⁷¹

~~(F9UO)~~ When the call came to increase forces in the region, employing airpower, ACC called upon the 49 FW to deploy its stealth fighters.

(U) On 18 November 1997, the 49 FW received official notification of the deployment, 10 aircraft departed less than 24 hours later on 19 November. Aircraft stopped overnight at Langley AFB, Virginia, from which the six primary fighters departed on 20 November. In the first two months of the deployment aircrews flew 240 sorties for 376.6 hours. [Note: This deployment extended beyond the period of this history, for a more detailed report see the histories of the 4404th Wing, Provisional and the 49 Fighter Wing History, January-June 1998.] Summing up the Southwest Asian mission, Lt Col Gary Woltering, 8 FS Commander stated "He [Saddam Hussein] doesn't like us here because he knows he can't stop us. The result of the Gulf War is evidence of that. Our job is to make Saddam comply with UN sanctions."⁷³

⁷⁰ Article (U), AFNews, "Tensions rise between United Nations, Iraq," 14 Nov 97, SD II-54.

⁷¹ *Ibid.*

⁷² Msg (U), ACC/AODX to 49FW/CC, "Coronet East Air Tasking Order, OSW, Change One," 192229Z Nov 97, SD II-55; Rpts (FOUO), 49FW, "Monthly Maintenance Reports," Nov 97, SD VI-6; NOTE: (U) A0833 belonged to the 9th Fighter Squadron.

⁷³ Charts (U), 49FW/DCC, [Mobility Schedule of Events, Chalk listings] ca Nov 97, SD II-56; Article (U), AFNews, "F-117s stop at Langley before heading to Kuwait," 21 Nov 97, SD II-57; Amn C Uhles, "F-117s deploy to Kuwait," Sunburst, 21 Nov 97, p1, SD II-58; TSgt A Proctor, "F-117s, troops ready to rock and roll," Sunburst, 12 Dec 97, p4, SD II-59; Article (U), AFNews, "Holloman F-117s, troops in Kuwait," 27 Nov 97, SD II-60.

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Red Flag 97-1 (U)

~~(FOUO)~~ The 49 FW participated in Red Flag 97-1 at Nellis AFB, Nevada; the first F-117 Red Flag deployment. In the past, F-117s participated in the multi-national exercise, but only launching from home station. The 49th participated in periods two and three of Red Flag 97-1, from 17 October-16 November 1996. The 8 FS participated in period two deploying four F-117s (tail numbers A0800, A0819, A0832, A0843) and 63 personnel. On 2 November the 9 FS exchanged four F-117s (tail numbers A0786, A0790, A0830, A0836) and a rainbow of personnel from both squadrons to replace the initial group.⁷⁷

(U) Just a month before Red Flag, the 49 FW deployed eight F-117s to Southwest Asia in response to Operation Desert Strike. This made planning for participation in Red Flag difficult. The planning process and project officer changed as previously identified Red Flag personnel departed on the real-world contingency. In fact, the period of deployment and level of Wing participation in Red Flag was in a continual flux until the departure to Nellis AFB. In the end, ACC and the Wing decided on the four-ship F-117 participation, which flew a three-turn-three schedule.⁷⁸

(U) From the 49 FW's perspective, the mission of this Red Flag was to educate mission planners on F-117 integration and capability. The Wing hoped to employ stealth fighter power in multi-ship operations and simultaneous attacks. Since the ranges operated under a sanitized airspace environment, security prevented the F-117s from employing its stealth capability in integrated packages. However, the Wing did

⁷⁷ Rpt (U), 9FS/DO, "Red Flag 97-1 Periods 2 and 3 After Action Report," 10 Dec 96 SD II-65; Rpt (FOUO), 49 FW, "Weekly Maintenance Plan and Flying Schedule," Jul 96-Dec 97, SD VI-6; 2Lt J. Tews, "Black Sheep support Red Flag," Sunburst, 25 Oct 96, p1, SD II-67.

⁷⁸ Rpt (U), 9FS/DO, "Red Flag 97-1 Periods 2 and 3 After Action Report," 10 Dec 96 SD II-65.

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demonstrate its capability in terms of hard kills and bombs-on-target. During the third period, the 49 FW did fly an integrated package with B-2's from Whiteman AFB, Missouri.⁷⁹

(U) Before mission employment, pilots had to fly a familiarization sortie. However, on familiarization day, the 49th lost sorties due to maintenance problems and lack of range time. As a result, the Red Flag Director of Operations granted waivers for pilots who had flown the range within one year. For future exercises, Lt Col Gary R. Woltering, 9 FS Operations Officer, recommended having Nellis AFB experienced pilots fly in the second cell, to cover possible drop-outs.⁸⁰

(U) During the second period, Red Flag planners tasked the 8 FS with 51 lines. However, due to weather, the deployed 49th lost four days of flying (24 lines). Therefore, 27 employment sorties were flown, in which pilots successfully employed all munitions (GBU-12 and GBU-10).⁸¹

(U) The third phase tasked the 49 FW to fly 45 lines. During this period three sorties were lost to maintenance and range availability. The F-117s flew 17 heavy munitions sorties, although one sortie was lost to a bad bomb and two others to target limitations. The largest drawback during this phase was the lack of good photographic intelligence. The quality of printed target material was poor, and there were no overall target area photographs. Overall, pilots found printed target information inadequate.⁸²

(U) On 16 November 1996, three of the four F-117s returned to Holloman AFB, the fourth aircraft (delayed by maintenance) and all

⁷⁹ Rpt (U), 9FS/DO, "Red Flag 97-1 Periods 2 and 3 After Action Report," 10 Dec 96 SD II-65.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*

equipment returned on 18 November. Meanwhile, the last personnel returned on 20 November. Wing leadership viewed this exercise as a stepping stone, in an ongoing effort to bring the "black jet" into the mainstream of the Air Force.⁸³

NR

FWIC Training (U)

non-responsive

⁸² Rpt (U), 9FS/DO, "Red Flag 97-1 Periods 2 and 3 After Action Report," 10 Dec 96 SD II-65

⁸³ See Note Above; Ltr (U), 49FW/CC to ACC/CC, 15 Jan 97, SD I-3.

⁸⁴ Rpt (U), 20FS/CC, "FWIC Class 96-BDA," 20 Dec 96, SD II-67; Rpt (U), 20FS/CC, "FWIC Class 97-ADA," 24 Jun 97, SD II-68; Rpt (U), 20FS/CC, "FWIC Class SCC 97," 15 Dec 97, SD II-69; Email (U), Lt Cintron, 20FS/CCE, to SrA Libby, 49FW/HO, "20FS After Action Reports," 3 Oct 97, SD II-70.

⁸⁵ See Note Above.

F-117 Upgrades (U)

(U) The F-117 underwent continuous upgrades and improvements to increase its safety, performance, and facilitate better maintenance. Upgrades ranged from simple changes, done locally, to complex overhauls completed at the F-117's depot at Palmdale, California. Discussion of major modifications follows.⁹

RNIP (U)

(U) The ring laser gyro navigational improvement program (RNIP) was one of the most significant renovations of the F-117. This program, conducted at Palmdale, replaced the conventional inertial navigation system (INS) with ring laser gyro technology and the global positioning system (GPS). While GPS was common in almost all other USAF aircraft, the ability to use it and maintain stealth capability required the Air Force to invest extra time and money in development. With this implementation, a flush mounted antenna provided pilots with the GPS, while maintaining the F-117s low observable capability.¹⁰

(U) Primarily, RNIP increased the navigational capability of the F-117, guiding the aircraft more precisely to its target. However, the new system also alleviated aircraft maintenance. Less aerospace ground equipment was needed to generate and maintain the aircraft, especially ground power. Previously, an hour or two before takeoff, ground based

⁹ Memo (U), 49MXS/LGMVT, "Modification testing of maintenance van Hot Mock-up Unit (HMU) trip report," 16 Dec 96, SD V-6; Memo (U), 49MXS/LGMVS, "Trip Report-Texas Instruments Site Visit," 21 Oct 96, SD V-7; Memo (U), 49MXS/LGMVT, "Trip Report-Double Wide Avionics Van (DWA V) Jack testing and field operation evaluation," 18 Aug 97, SD V-8; Memo (U), 49MXS/LGMVT, "Trip Report-Consolidated Automated Test Equipment Quarterly Program Review" 2 Sep 97, SD V-9; Memo (U), 49MXS/LGMVT, "Trip Report-Consolidated Automated Test Equipment (CATE) Program Review and Electro-Optics bay Critical Design Review," 23 Jan 97, SD V-10; Memo (U), 49MXS/LGMVT, "Trip report," 14 Feb 97, SD V-11; Memo (U), 49MXS/LGMVT, "Trip report-Video Tracker/System Controller Preliminary Design review," 27 Jan 97, SD V-12; Rpts (U), 49LG, [LG Squadron Historical Reports] Jan 96-Dec 97, SD V-13.

¹⁰ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14; Ltrs (U), 49FW/CC to ACC/CC, Oct 96-Jan 98, SD I-2.

power was needed to align the INS. With RNIP, the aircrew aligned the navigation system within the F-117. For this reason, when the 49 FW deployed to Southwest Asia in November 1997, the Wing took its RNIP planes. This greatly reduced the size of the deployed maintenance package.¹¹

(U) Although RNIP increased navigation capability and decreased the size of maintenance, the Wing withstood some growing pains, particularly with the training of aircrews. Before an aircrew member could fly an RNIP aircraft, he had to achieve academic training, spend time in the simulator, and fly at least one mission in the new configuration. Also, the pilot had to maintain currency in training. Therefore, only RNIP qualified pilots could fly RNIP F-117s. Scheduling personnel had to be aware of this, and match pilots with proper aircraft. If an aircrew became sick, which was scheduled to fly an RNIP, the replacement crew had to also be qualified.¹²

(U) As stated, this modification took place as aircraft rotated through the depot. Typically, each F-117 went through the depot once every two years. The table on the following page shows which aircraft had the RNIP upgrade as of 5 January 1998.¹³

¹¹ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14; Ltrs (U), 49FW/CC to ACC/CC, Oct 96-Jan 98, SD I-2.

¹² See Note Above.

¹³ See Note Above.

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Table V-1 ~~(FOUO)~~
RNIP Aircraft (U)¹⁴

7 FS	8 FS	9 FS
A0796	A0789	A0818
A0837	A0795	A0819
	A0798	A0827
	A0799	A0829
	A0800	A0832
	A0802	A0834
	A0813	A0838
	A0814	A0841
	A0816	A0842
	A0817	A0843

LOCOMM (U)

(U) Also improving the capability of the F-117, the Wing received the low observable communication (LOCOMM) antenna. This antenna replaced the ultra high frequency (UHF) radio system. The UHF system had a retracting antenna, which extended during use and retracted to maintain stealth. Obviously, this system depended on mechanical apparatus and moving parts. If the parts broke, either the antenna would not extend, prohibiting communication, or would not retract, defeating the stealth ability. This new antenna was flush mounted at the bottom of the aircraft, allowing communication while remaining low observable.¹⁵

(U) As aircraft rotated through the depot, they received the LOCOMM system. Additionally, a combat logistics support team (CLSS) assisted in the modification of some aircraft on site at Holloman AFB. The CLSS team rewired the aircraft, and Holloman members installed the

¹⁴ Extract (FOUO), 49FW, "Weekly Maintenance and Flying Schedule," 5 Jan 98, SD V-15.

¹⁵ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14; Ltrs (U), 49FW/CC to ACC/CC, Oct 96-Jan 98, SD I-2.

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actual antenna. Although the UHF system was disconnected, the old antenna remained in the aircraft, unused.¹⁶

(U) Transition to LOCOMM was relatively painless. Initially, parts were a problem as the 49 FW had the third priority behind the depot and the need for spares in the supply system. However, once the manufacturer increased production, this problem stopped. Also, maintenance personnel had to get used to the external antenna. When the aircraft was fully painted and covered with radar absorbent material (RAM) the antenna was barely visible. Initially no markings were placed on the aircraft identifying the antenna. Some antennas sustained damage during sanding or other maintenance, basically because the mechanic did not know the antenna was there. But, as more aircraft received the LOCOMM, and maintenance personnel became familiar with it, this problem also ceased.¹⁷

(U) From an aircrew perspective, some concerns existed concerning the quality of transmissions. Pilots complained that the clarity with LOCOMM was not as good as the old UHF system. However, plans existed to improve the quality of LOCOMM. The following table lists F-117s with LOCOMM as of 5 January 1998.¹⁸

¹⁶ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14; Ltrs (U), 49FW/CC to ACC/CC, Oct 96-Jan 98, SD I-2.

¹⁷ See Note Above.

¹⁸ See Note Above.

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Table V-2 (~~FOUO~~)
LOCOMM Aircraft (U)¹⁹

7 FS	8 FS	9 FS
A0796	A0789	A0817
A0837	A0795	A0786
	A0798	A0790
	A0799	A0794
	A0800	A0824
	A0803	A0832
	A0816	A0830
		A0833

Low VOC Paint (U)

(U) In October 1997, the 49 FW received its first shipment of BK-99, low volatile organic compound (VOC) paint. This new painted saved the Wing over \$100,000 per year and reduce painting time by 25 percent. Perhaps more importantly, the new paint met environmental guidelines, which allowed the same paint to be used at the depot and test facilities in California, and at the Wing in New Mexico.²⁰

(U) The only initial problem was conversion of the fleet to a new paint. If an aircraft needed a touch up, the entire airplane had to be initially repainted with the new paint. Fortunately, the Wing began conversion in the fall and winter; however, when the summer of 1998 approached, and the demands for airshows increased, the Wing would have to repaint a large number of aircraft in a short time.²¹

(U) Another benefit to the paint was its durability. In tests, the new low VOC paint proved more durable then the high VOC; the 49 FW began testing this. Each squadron identified one F-117 with the new

¹⁹ Extract (FOUO), 49FW, "Weekly Maintenance and Flying Schedule," 5 Jan 98, SD V-15.

²⁰ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14; Ltrs (U), 49FW/CC to ACC/CC, Oct 96-Jan 98, SD I-2.

²¹ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14.

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paint, and cleaned it with only alcohol and water, vice the solvents normally used. If the paint withstood this method, the Wing would also save money in reducing or even eliminating the solvents currently used.²²

Other Upgrades (U)

(U) In September 1996 the 49 FW completed the two year, \$151 million form, fit, and function Infrared Acquisition Designation (IRAD) System modification. The new IRAD improved the targeting capabilities of the F-117. The F-117 had both a forward and downward looking infrared, the "eyes in the sky" of the aircraft. Without the downward infrared, the aircraft could not accurately target.* This upgrade improved both reliability and the performance. Since the IRAD was such a vital component to the aircraft, future modifications were expected including the ability to filter out moisture, clouds, smoke, and any other obstacles to targeting.²³

(U) In order to reduce the heat signature of the aircraft, and improve safety, the 49 FW upgraded much of the back-end of the F-117 including the tailpipes, heat shield, and brick area. The new tailpipes improved reliability and lasted longer. If a tailpipe burned through during flight, not only was the expensive pipe lost, but serious damage could occur to the aircraft. Because of this, the old pipes had to be inspected every 300 flight hours. This inspection often took up to two weeks. With the new pipes, a shorter one-day inspection took place at

²² Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14.

* (U) The F-117 could target with the forward IRAD, but without the downward IRAD for guidance the target would be missed.

²³ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14.

the 300 hour mark, with a full inspection every 600 hours. Additionally, the bricks at the back, which absorbed and reflected the heat from exhaust, were replaced. The new bricks had less pieces, resulting in easier maintenance.²⁴

(U) One of the overall goals of the F-117 program was to have a single aircraft configuration. When the aircraft were built through the Skunk Works program, they were constructed in sets of three. As construction continued, modifications and improvements were made. Therefore, the first three aircraft were very different from the last three. To rectify this, planners hoped to standardize the aircraft more, thus each aircraft would have the same tailpipes, same bricks, same RAM, etc.... Not only would this ease aircraft maintenance, it reduced the number of parts carried in the supply system. Although this standardization would occur as aircraft rotated through the depot, ideas on what should be standard continuously evolved.²⁵

(U) For example, the spray coating of RAM became more prevalent than sheet coating. Also, the use of "zip strips" increased. These strips could be placed over screws and other fasteners, instead of RAM material. Then, when a mechanic had to access the screw, he/she could merely remove the strip for access, instead of having to scrape off the RAM. However, concerns existed over the adhesiveness of the strips, especially in the presence of oils and other lubricants.²⁶

Engines (U)

(U) The 49th Fighter Wing used the F404-F1D2 (commonly and hereafter referred to as F404) General Electric engine to power its F-117

²⁴ Intw (U), SSgt G Henneman, 49FW/HO, with Capt P Griffith, 9FS/MAO, "F-117 Upgrades," 2 Apr 98, SD V-14.

²⁵ *Ibid.*

²⁶ *Ibid.*

fleet. As the F-117 was unique, so was the F404. The *Nighthawk* was the only aircraft in the USAF fleet to use this engine model. Although the Navy's F-18 also used the F404 (-F1D1), that aircraft used a different model with an afterburner. Therefore, the F404 model used by the 49th was truly the only of its kind.²⁷

(U) This uniqueness proved to be an asset for the Wing's engine management program. As the only Air Force user, the Wing did not have to compete for parts with other organizations. Also, the Wing enjoyed a special and close relationship with General Electric. Engine managers and General Electric often met face-to-face to discuss product improvements and problems in the field.²⁸

(U) The engine program operated under the two-level maintenance concept. The propulsion flight conducted inspections and performed relatively minor engine maintenance. Major maintenance was performed at the Jacksonville, Florida depot. However, the Wing's engine shop tried to do as much maintenance locally as possible to cut down on costs and decrease time. Typically, an engine seen at the depot took 30-60 days from shipment to return, depending on the type of maintenance performed. Also, the engine part needing repair was identified on contract. If additional work needed to be done, the contract had to be amended, which also caused delays. Transportation costs, when accumulated, absorbed funds. Transportation of each engine cost approximately \$400.²⁹

(U) Scheduled engine maintenance was determined by component. For example, the engine's high pressure turbine nozzles required

²⁷ Intvw (U), SSgt G Henneman, 49FW/HO, with MSgt I Burgos, 49MXS/LGMP, "Engines/Hush House," 6 Apr 98, SD V-16.

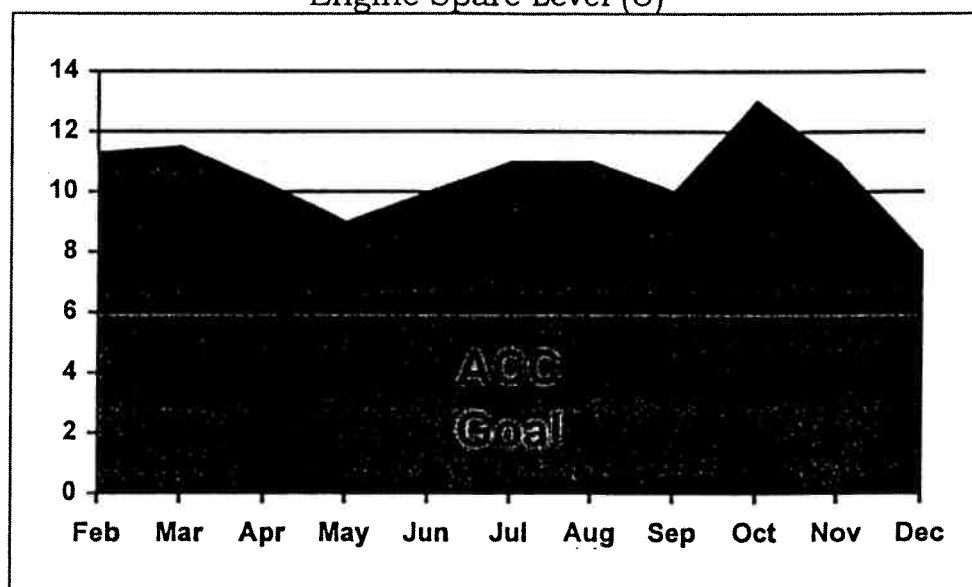
²⁸ *Ibid*.

²⁹ *Ibid*.

inspection every 400 operating hours because of a manufacturing discrepancy. The nozzles wore out quicker than designed, and this one-time inspection required that engines would be removed, disassembled, and inspected. During inspection faulty nozzles were replaced and again made serviceable. Different parts had different time requirements. The F404 had little unscheduled maintenance, the unscheduled it did have was mostly due to foreign object damage.³⁰

(U) Wing engine managers worked to maintain 10-12 spare engines on hand at any time. This surpassed the ACC goal of six. The chart below illustrates the number of average spares on hand in 1997. The Wing exceeded the goal throughout the year. However, numbers did fall in November and December 1997 as the Wing deployed to Southwest Asia.³¹

Chart V-1

Engine Spare Level (U)³²

³⁰ Telecon (U), MSgt I. Burgos, 49MXS/LGMP, to SSgt G. Henneman, 49FW/HO, [Engine Program] 7 Apr 98; Intvw (U), SSgt G Henneman, 49FW/HO, with MSgt I Burgos, 49MXS/LGMP, "Engines/Hush House," 6 Apr 98, SD V-16.

³¹ Intvw (U), SSgt G Henneman, 49FW/HO, with MSgt I Burgos, 49MXS/LGMP, "Engines/Hush House," 6 Apr 98, SD V-16.

³² Table (U), 49 MXS/LGMP, "1997 Propulsion Flight Goals," nd, SD V-17. (U) Note: Data for January 1997 was unavailable.